



2012 Update - National Green Building Standard™

Proposed changes to 2008 NGBS

February 2011

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TG-1: Administration, Compliance, and Operation & Owner Education

Chapter 1 – Scope and Administration

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
227	Robert Hill NAHB Research Center NAHB Research Center	101.2 Scope Revise as follows	The provisions of this Standard shall apply to design and construction of the residential portion(s) of any building not classified as an institutional use in all climate zones within the United States. This Standard shall also be used for subdivisions, building sites, <u>and the residential portions of</u> alterations, additions, renovations, mixed-use residential buildings, and historic buildings, where applicable. <u>The standard may also be applied to buildings located outside of the United States provided equivalent climate zone, radon zones, and termite zones are established.</u>	To clarify the statement as it applies to multifamily buildings where there may be common areas. We have had a number of inquiries about apply the standard outside of the US.		
139	Steve Hale Build Green NM Build Green NM	101.3 Intent Revise as follows	101.3 Intent. This Standard shall establish practices for the design and construction of green residential buildings, building sites, <u>and subdivisions--and renovation thereof.</u>	The Green Renovation portion of the Standard is unworkable. We have certified several "Gut" rehabs but the remodeling is too tedious to use. It would be much better to have a seperate document for renovations.		
557	Robert Hill NAHB Research Center NAHB Research Center	102.2 Referenced Documents Revise as follows	The codes, standards, and other documents referenced in this Standard shall be considered part of the requirements of this Standard to the prescribed extent of each such reference. <u>The version of the codes, standard or other referenced documents shall be the version referenced in chapter 11.</u>	Anytime there is an updated code or standard there are always questions regarding how the new versions impact this standard. Adding language to clarify the issues would be helpful.		

Chapter 2 – Definitions

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
226	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	Entire Chapter 2 Revise as follows	Review the entire set of definitions for consistency with 2012 I-codes. Where there is a difference try to use the exact definitions from the 2012 I-codes.	Consistency with the I-code family will facilitate use of ICC 700.		

Chapter 3 – Compliance Method

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
410	Robert Hill NAHB Research Center NAHB Research Center	301.1 Environmental performance levels Revise as follows	Environmental Performance Levels.	Performance is difficult to define and measure for "environmental". I think this would be better to say Environmental Impact Level or Rating or some other word.		
145	Randall K. Melvin Winchester Homes Inc. Winchester Homes, Inc.	301.2 Awarding of points Revise as follows	(1)The maximum number of points that can be awarded for each practice, <u>other than for a Regional Credit Multiplier, as referenced in item 4 below, is noted</u> for that practice. (4) A Regional/Local Credit Multiplier factor of 2.0 may be applied to any given practice the governing jurisdiction shall deem to be regionally important to voluntarily encourage the selection and use of thoes practices. The multiplier shall not change the threshold points required for any given chapter or the performance level points required for the entire standard.	Provides a means of incentivising the selection of specific practices which are regionally or locally deemed to be of particular importance.		
146	Randall K. Melvin Winchester Homes Inc. Winchester Homes, Inc.	301.2 Awarding of points Revise as follows	Provide another scoring table and means of compliance with the standards which only addresses the building by decoupling it from the Lot Design, Preparation and Development Chapter, Chapter 5 and reducing the required point requirements accordingly.	Encourages the use of the standard and construction of green building even in thoes situation where the lot may not qualify under chapter 5, or the substantiating information necessary to comply with chapter 5 is unknow or impractical for the builder to acquire.		
411	Robert Hill NAHB Research Center NAHB Research Center	301.2 Awarding of points Delete without substitution	(3) The Adopting Entity shall allow new products and practices to be added where deemed to meet the intent of this Standard. Points assigned for any new product or practice shall be determined by the Adopting Entity.	The original section allows an adopting entity to modify the standard in ways that might result in widely varying certifications. If new practices or point values are added without removing other practices then the point balance will be altered. As an adopting entity this clause opens the door to many special requests and lobbying by special interests.		
68	Steve Hale	303.1 Green		From bare lot subdivisions to acre wooded lots. There is too much		

Build Green NM Build Green NM	buildings Revise as follows	Revised Table 303					variation across the country in some of the six sections of the NGBS. By setting appropriate minimums in the Lot, Resource and Indoor Environmental Quality, then allowing Energy and Water (which are less subjective and more quantifiable) to get more stringent at higher levels and at the same time making category 7 Additional Points also get more stringent this will allow for a more flexible Standard that is more adaptable to different regions of the country. Also the Emerald Level should be slightly more attainable. (For example; In the southwest there are fewer practices available in Resource Efficiency than in other parts of the country)	
		Category		Bronze	Silver	Gold		Emerald
		1	Lot..	50 all levels	66	93		119
		2	Resource.	45 80 All Levels	79	113		140
		3	Energy...	30	60	100		120
		4	Water...	44 20	26 30	41- 45		60
		5	I E Q..	36- 50 Bronze and Silver	65	100- 90 Gold and Emerald		140
		6	Education	8 10 All Levels	40	44		42
		7	Additional	50 0	100 120	100 170		100 230
			Totals		240	400		545

Chapter 10 – Operation, Maintenance, and Building Owner Education

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
151	glynn rountree NAHB NAHB	1001.1 Homeowner's Manual Add new as follows	(13) Maintenance checklist, <u>to include maintenance of any low impact development (LID), sometimes also referred to as "green infrastructure," stormwater management devices that are part of the building or installed within the owner's property.</u>	LID infiltration devices require periodic maintenance to ensure that they continue to function properly. Under EPA's Clean Water Rules, if the building is within the watershed of an impaired water body, certification must be done to document that the maintenance of all LID devices in the watershed of the impaired water body has been performed. (See additional EPA requirements for LID under the "Renovations Note" at the end of this section.)		
158	glynn rountree NAHB NAHB	1001.1 Homeowner's Manual Add new as follows	Revenovations Note: A building owners' manual that includes the following: (4) <u>A state or EPA may require that the homeowner or building owner sign an agreement that guarantees access to the property in order for third parties to certify that LID devices installed in the property remain in place, have not been damaged, and are functioning properly.</u>	LID devices are used to improve local water quality, recharge underground aquifers, and have other environmental benefits. Local or national requirements may mandate that the LID device be mapped by the state and its performance certified by the state or by third parties. Access to the LID device for inspection and maintenance is necessary to carry out those requirements.		
282	Kelly Wedell US EPA US EPA	1001.1 Homeowner's Manual Add new as follows	<u>Full MSDS. For each product required by United States Occupational Safety and Health Administration (OSHA) to have a material safety data sheet (MSDS), an MSDS shall be submitted to the project team. MSDS shall be prepared within the previous five years in accordance with ANSI Z400.1. Information for MSDS Sections 1-16 shall be included as available; where information is not available, documentation shall so indicate.</u>	Exposure to toxic chemicals is an important environmental issue that to date has not been given the attention it deserves by the green building community. This is in part due to the complexity of the issues involved and the relative lack of scientific data on, and commercial substitutes for, certain specific chemicals widely in use. Nonetheless, EPA's position is that there is a sufficient scientific basis for NAHB to include several toxics-related practices. We suggest that NAHB add several practices to minimize chemical and other life-cycle risks to human health and the environment. As part of this, EPA suggests adding a practice to require the provision of a full Material Safety Data Sheet (MSDS) for all covered materials. This should apply to both one- and two-family dwellings and to multi-unit buildings; thus, under NAHB's current structure, the following language should appear twice, in sections 1001.1 and 1003.1.		
556	Robert Hill NAHB Research Center NAHB Research Center	1001.1 Homeowner's Manual Add new as follows	(21) <u>A narrative describing the safety and indoor environment quality concerns with operating a wood burning fireplace (when applicable).</u>	Since there are significant safety and IEQ issues associated with woodburning fireplaces this information seems like a reasonable addition to a home owners manual.		
290	Steven Orłowski National Association of Home Builders	1001.1 Homeowner's Manual	(13) Maintenance Checklist, <u>to include maintenance of any low impact development (LID) – sometimes referred to as "green infrastructure," stormwater management devices that are part of the building or installed within the owner's property.</u>	LID infiltration devices require periodic maintenance to ensure that they continue to function properly. Under EPA's Clean Water Rules, if the building is within the watershed of an impaired water body, certification		

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	NAHB	Revise as follows		must be done to document that the maintenance of all LID devices in the watershed of the impaired water body has been performed. (See additional EPA requirements for LID under the "Renovations Note" at the end of this section.)		
292	Steven Orlowski National Association of Home Builders NAHB	1001.1 Homeowner's Manual Add new as follows	<u>(21)A state or EPA may require that the homeowner or building owner sign an agreement that guarantees access to the property in order for third parties to certify that Low Impact Devices (LID) installed in the property remain in place, have not been damaged, and are functioning properly.</u>	LID devices are used to improve local water quality, recharge underground aquifers, and have other environmental benefits. Local or national requirements may mandate that the LID device be mapped by the state and its performance certified by the state or by third parties. Access to the LID device for inspection and maintenance is necessary to carry out those requirements.		
902	Ed Whitby Burnaby Manufacturing Same	1002.1 Green Building Goals/Strategies	IT SHOULD BE ENCOURAGED THAT BUILDERS INCORPORATE A PROPER GAS OUTLET BOX ON THE OUTSIDE PATIO WALL AREA SO THAT HOMEOWNERS CAN UTILIZE THE GAS THAT IS ALREADY PIPED IN TO THE HOUSE TO FUEL THEIR BBQ's, PATIO HEATERS AND ANY OTHER OUTDOOR GAS APPLIANCE.	A VERY LARGE NUMBER OF HOMES STILL USE PORTABLE PROPANE BOTTLES THAT HAVE TO BE REFILLED REGULARLY. THE CARBON FOOTPRINT OF PROPANE FROM THE REFINERY TO THE PATIO IS HUGE COMPARED TO NATURAL GAS AND THE ADDED CARBON FOOTPRINT OF ADDING A PIPE TO THE OUTSIDE WALL IS MINIMAL. THE GAS IS ALREADY AVAILABLE TO THE HOMEOWNER SO WHY DO WE NOT GIVE HIM ACCESS TO THE GAS OUTSIDE LIKE WE DO WATER AND ELECTRICITY. THERE IS AN ONGOING REDUCTION OF CO2's OF ABOUT 15 % WHEN USING NATURAL GAS OVER PROPANE AS WELL. THIS IS ESPECIALLY RELEVANT IN URBAN AREAS WHERE GAS IS GENERALLY AVAILABLE VERSUS RURAL AREAS WHERE PROPANE CAN BE THE ONLY OPTION. THE AMERICAN GAS ASSOCIATION GIVES 2 POINTS IN THEIR GREEN SCORING SYSTEM FOR EVERY GAS OUTLET INSTALLED ON A HOME AND ENCOURAGING THIS WILL HELP THE HOMEOWNER BY BEING MORE CONVENIENT AND LESS EXPENSIVE AS WELL AS HELP THE AIR QUALITY. THERE ARE PRODUCTS ALREADY AVAILABLE THAT HAVE SAFETY FEATURES BUILT IN FOR FIRE PROTECTION AND CHILD PROOFING BUT IF A PIPE IS SUPPLIED TO THE PATIO NOW IT IS OFTEN CRUDELY FINISHED BY THE HOMEOWNER HIMSELF WITH NO SAFETY BENEFITS AT ALL. PLEASE LET ME KNOW IF YOU HAVE ANY QUESTIONS BUT I WOULD BE GLAD TO DISCUSS THIS WITH ANYONE AT ANYTIME. THANK YOU		
313	Nicole L. Villamizar U.S. EPA Office of Resource Conservation & Recovery U.S. Environmental Protection Agency	1002.1 Training of Building Owners Revise as follows	1002.1 Training of building owners. Building owners/occupants are familiarized with the green building goals and strategies implemented and the impacts of the occupants' practices of the costs of operating the building. Training is provided to the responsible party(ies) regarding all equipment operation and control systems <u>and other green building strategies such as recycling.</u> Systems <u>and strategies</u> include, but are not limited to, the following: (7) Solid waste recycling.	It is important that building owners and occupants of one and two family dwellings and multi unit buildings understand sorting, storage and collection requirements associated with successful recycling practices. This training will ensure awareness and understanding of effective practices to support optimal diversion of waste.		
221	Steven Orlowski National Association of Home Builders NAHB	Add New Section Add new as follows	<p><u>1004</u></p> <p><u>CONSTRUCTION, OPERATION, AND MAINTENANCE MANUALS AND TRAINING FOR STORM WATER MANAGEMENT FACILITIES</u></p> <p><u>1004.0 Intent.</u> Manuals are provided to the responsible parties (owners, home owner's association and/or maintenance team) regarding the construction, operation, and maintenance of the storm water features or facilities. Paper or digital format manuals are to include information regarding those aspects of the storm water management maintenance, and operation that are within the area of responsibilities of the respective recipient. One or more responsible parties are to receive a copy of all documentation for archival purposes.</p> <p><u>1004.1 Storm Water Construction Manual.</u> A building construction manual is compiled and distributed in accordance with Section 1003.0.</p>	Post-construction stormwater management is the responsibility of the property owners once construction is complete. There are few mechanisms to inform the public of their responsibilities to reduce pollution and control stormwater on their lots and in common areas. This addition to the NGBS can set the tone for informing the public about the stormwater utilities that serve their communities and preserve water quality.		

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			<p>(1) <u>A narrative detailing the importance of constructing a green building, including a list of green building attributes included in the storm water management plan. This narrative is included in all responsible parties' manuals.</u></p>	Mandatory		
			<p>(2) <u>A local green building program certificate as well as a copy of the <i>National Green Building Standard</i>TM, as adopted by the Adopting Entity, and the individual measures achieved by the building.</u></p>	Mandatory		
			<p>(3) <u>A record drawing of the site including stormwater management plans, utility lines, landscaping with common name and genus/species of plantings (for HOAs & maintenance teams).</u></p>			
			<p>(4) <u>Record drawings of the low-impact development features for each lot (for owners).</u></p>			
			<p>(5) <u>A photo record of storm water features installed. Photos are taken during each step of installation and clearly labeled.</u></p>	Optional		
			<p>1004.2 Operations & Maintenance manual. <u>O &M manuals are created and distributed to the responsible parties in accordance with Section 1004.0.</u></p>	1		
			<p>(1) <u>A narrative detailing the importance of operating and maintaining on-site and community storm water management features. This narrative is included in all responsible parties' manuals.</u></p>	Mandatory		
			<p>(2) <u>A list of local service providers that offer regularly scheduled observation and maintenance contracts to ensure proper performance of community or individual lot storm water management feature including but not limited to vegetative swales, French drains, wetlands, drywells, rain gardens, and similar features.</u></p>			
			<p>(3) <u>User-friendly O &M checklist that includes:</u></p> <ul style="list-style-type: none"> (a) <u>rain gardens</u> (b) <u>rain barrels</u> (c) <u>vegetative swales</u> (d) <u>constructed wetlands</u> (e) <u>retention/detention ponds</u> (f) <u>other features</u> 			

TG-2: Site and Lot Development

Chapter 2 – Definitions

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
317	Erin Ashley National Ready Mixed Concrete Association NRMCA	202 Definitions Revise as follows	HARDSCAPE. Stone, masonry, concrete, asphalt, wood <u>Asphalt, concrete, masonry, stone, wood</u> and other non-plant elements external to the building shell on a landscape.	Examples of hardscape (i.e., concrete, stone, etc.) should be written in alphabetical order as to not imply preference for first material in list.		
205	Gary Ehrlich NAHB NAHB	202 Definitions Add new as follows	FLOOD HAZARD AREA. The greater of the following two areas: 1. <u>The area within a flood plain subject to a 1-percent or greater chance of flooding in any year.</u> 2. <u>The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.</u>	Add a definition for "flood hazard area" to be used in connection with proposals for Chapter 4 and Chapter 5 on avoidance of flood hazard areas.		
210	glynn rountree NAHB NAHB	202 Definitions Add new as follows	<u>LOW-IMPACT DEVELOPMENT (LID).</u> A storm water management approach that attempts to recreate the predevelopment of a site by using a lot level topography and landscape to deter storm water runoff and promote soil infiltration and recharge. <u>Sometimes referred to as "green infrastructure" or by other names, LID includes the use of "green roofs," "rain gardens," tree boxes, and infiltration devices or other means to contain or slow storm water runoff from impervious surfaces and allow it to seep into the ground.</u>	LID nomenclature is confusing and used in different ways by different people. LID is expected to become much more prevalent in the U.S. because of new mandates or encouragement by the states and EPA as a way to improve water quality and other storm water issues. Providing a few examples of LID may help nonprofessionals to better understand what the term covers.		
394	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Environmentally Sensitive Area. Areas within wetlands as defined by federal, state, or local regulations; areas of steep slopes; "Prime Farmland" as defined by the U.S. Department of Agriculture; areas of "critical habitat" for any federal or state threatened or endangered species, <u>areas defined by state or local jurisdiction as environmentally sensitive.</u>	The current definition would not recognize the Chesapeake Bay Critical area.		
395	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Hardscape. Stone, masonry, concrete, asphalt, wood <u>(including elevated decks)</u> and other non-plant elements external to the building shell on a landscape.	It was unclear if decks were intended to be included or not. The language should clarify this one way or the other.		
397	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Infill Site. Vacant or underutilized land that includes <u>is serviced by two or more of the following: road, electrical power, sewer, or water and is bounded on at least 75% of the perimeter by previously developed areas.</u>	The original definition was too encompassing; a rural field bounded on one side with a road and an electric power line would qualify. An additional definition of an infill lot should also be added.		
398	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	<u>Infill lot. A vacant or underutilized lot that is serviced by two or more of the following: road, electrical power, sewer, or water and is bounded on at least 75% of the perimeter by previously developed areas or a lot that is part of an infill site provided the infill site is less than 25 acres.</u>	The original definitions did not provide clear guidance on how to consider multiple lots within an infill site. These changes are intended to make the definition more specific and to allow credit for lots within an infill site. The task group should make the final determination on how large of an infill site can be subdivided into lots and the lots still earn the infill lot points.		
408	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Site. Any area of land that is or will be developed into two or more parcels (<u>lots</u>) of land intended for multiple ownership, uses, or structures and designed to be part of an integrated whole such as a residential subdivision, mixed-use development, or master planned community. Site, as defined, generally contains multiple lots. (also see Lot)	Bob to complete.		
63	Steve Hale Build Green NM Build Green NM	202 Definitions Add new as follows	Infill Site. Vacant or underutilized land that includes two or more of the following: Road, electrical power, sewer or water. <u>Also an infill site shall be surrounded on at least two of four sides with existing development that is 5 years or older.</u>	Virtually any site could be considered "infill" by the existing definition.		
244	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	CONSTRUCTED WETLAND - A constructed wetland is an artificial <u>wetland, marsh or swamp created as a new or restored habitat for native and migratory wildlife, for anthropogenic discharge such as wastewater, stormwater runoff, or sewage treatment, for land reclamation after mining, refineries, or other ecological disturbances such as required</u>	Constructed Wetland is not a commonly understood term except among industry experts.		

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			<u>mitigation for natural wetlands lost to a development.</u>			
245	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>INFILL LOT - is located in an area served by existing infrastructure and must include centralized water and sewer connections and the site boundaries should be 50% adjacent to development or active public parkland, is selected.</u>	A better more specific definition of infill is needed. The existing definition for infill was too broad and could be applicable to sites not really considered "infill" by industry experts.		
246	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>LANDSCAPE PRACTICE, LANDSCAPING - refers to any activity that modifies the visible features of an area of land and may include living elements, such as flora or fauna; natural elements such as terrain shape and elevation, or bodies of water; human elements such as structures, buildings, fences or other material objects created and/or installed by humans; and abstract elements such as the weather and lighting conditions.</u>	There is at present no definition for Landscape, Landscaping or Landscape Practice in the NGBS. A large percentage of points in both Chapters 4 and 5 are derived from Landscape planning, design and techniques. Therefore a definition is warranted.		
248	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>LOT. A single parcel of land generally containing one primary structure or use. Lot development, as defined, may include multiple ownership (such as with a condominium building) or multiple uses (such as with a mixed-use building). A lot is predominately represented by a single-family dwelling unit, a multi-family structure, or a retail, commercial or industrial mixed-use building also containing offices and shops. Lots maybe located in urban, suburban and rural/exurban locations. . A lot can be located within a site. (also see SITE)</u>	Greater specificity of what activities can occur on a lot and where geographically a lot can exist was needed, as these deviations can greatly affect the ability of a developer or builder to accrue points.		
249	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>LOW-IMPACT DEVELOPMENT (LID). A storm water management approach that attempts to recreate the predevelopment of a site by using a lot level topography and landscape to deter storm water runoff and promote soil infiltration and recharge. Sometimes referred to as "green infrastructure" or by other names, LID includes the use of "green roofs," "rain gardens," tree boxes, and infiltration devices or other means to contain or slow storm water runoff from impervious surfaces and allow it to seep into the ground.</u>	LID nomenclature is confusing and used in different ways by different people. LID is expected to become much more prevalent in the U.S. because of new mandates or encouragement by the states and EPA as a way to improve water quality and other storm water issues. Providing a few examples of LID may help nonprofessionals to better understand what the term covers.		
251	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>RURAL/EXURBAN - Rural or Exurban locations would be areas where residential density is less than 2 dwelling units per acre and/or more than 10 miles from an MSA defined central city.</u>	Geographic location of a site or lot within a region can affect the ability to accrue points differently. Therefore, there should be a point gradient based on geographic location, awarding more points for developers and Builders who build and develop in more difficult locations.		
252	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>SOFTSCAPE - Softscape refers to the elements of a landscape that comprise live, horticultural elements. Softscaping can include, flowers, plants, shrubs, trees, flower beds, etc. The term softscape stands in contrast to hardscape which represents inanimate objects of a landscape such as pavers, stones, rocks, etc.</u>	Softscape stands in contrast to the term "hardscape," which represents inanimate objects of a landscape such as pavers, stones, rocks, etc. The term softscape should be added, as the term "hardscape" is currently defined in the standard.		
253	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>SUBURBAN – Suburban locations are located outside of central cities, generally developed after 1945, consist of large tracts of single-use developments and generally have a residential density of less than 7 dwelling units per acre.</u>	Geographic location of a site or lot within a region can affect the ability to accrue points differently. Therefore, there should be a point gradient based on geographic location, awarding more points for developers and Builders who build and develop in more difficult locations.		
254	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>URBAN – Urban locations are located within central cities, generally developed prior to 1945, have a mix of land uses within ¼ mile distance, and generally have a residential density greater than 6-7 dwelling units per acre.</u>	Geographic location of a site or lot within a region can affect the ability to accrue points differently. Therefore, there should be a point gradient based on geographic location, awarding more points for developers and Builders who build and develop in more difficult locations.		
255	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>WASTEWATER - is any water that has been adversely affected in quality by anthropogenic influence. It comprises liquid waste discharged by domestic residences, commercial properties, industry, and/or agriculture and can encompass a wide range of potential contaminants and concentrations.</u>	Wastewater is mentioned throughout the standard, not just in reference to vertical development highlighted in Chapters 4 and 5, but also vertical construction addressed in Chapters 6 -10. Therefore, a definition is warranted to provide clarification to the verification process.		
256	Steven Orlowski National Association of Home Builders NAHB	202 Definitions Add new as follows	<u>WILDLIFE HABITAT/CORRIDOR - is an ecological or environmental area that is inhabited by a particular species of animal, plant or other type of organism. It is the natural environment in which an organism lives, or the physical environment that surrounds (influences and is utilized by) a species population.</u>	In Chapters 4 and 5, points are awarded for developers who preserve wildlife habitats on site, as well as provide on-site amenities to encourage urban wildlife. Therefore, it is pertinent to provide a definition to this term to help clarify the verification process.		

Chapter 3 – Compliance Methods

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
561	Robert Hill NAHB Research Center NAHB Research Center	302.1 Site design and development Revise as follows	Site Design and Development. The threshold points required for the environmental performance levels to qualify a new or existing subdivison as green under this standard	When the Standard was originally created it made sense to allow retroactive certifications but going forward it makes more sense to only allow certification of new developments		

Chapter 4 – Site Design and Development

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
427	Robert Hill NAHB Research Center NAHB Research Center	400.0 Intent (Site Design and Development) Revise as follows	400.0 Intent. This section applies to land development for the eventual construction of buildings or additions thereto that contain dwelling units. The rating earned under Section 303 based on practices herein, applies only to the site as defined in Chapter 2. The buildings on the site earn their own performance level by complying with the provisions of Section 303, 304, or 305.5, as applicable. <u>However, practices marked with "Ch5.xx.xx appropriate" automatically convey points for those practices in certified developments to the lot provided the builder does not do anything to preclude the intent of the practice.</u>	There is significant confusion regarding which practices/points can convey from the development to the lot. It seems reasonable that the lot should get credit for the green practices done by the builder. This makes the lot more attractive to builders and thus more developers will follow the standard. But the appropriateness of the practices/points needs to be clearly defined by the task group and committee.		
257	Steven Orlowski National Association of Home Builders NAHB	401.1 Infill Site Delete and substitute as follows	401.1 Infill site. An infill site, is selected which is located in an area served by existing infrastructure and must include centralized water and sewer connections and the site boundaries should be 50% adjacent to development or active public parkland, is selected.	An expanded definition of infill is needed so that the criteria is applicable to a true infill site. The existing definition for infill was too broad and could be applicable to sites not really considered "infill" by industry experts.		
258	Steven Orlowski National Association of Home Builders NAHB	401.2 Greyfield Site Delete and substitute as follows	401.2 Greyfield site. A greyfield site, and or a EPA recognized brownfield site, is selected. 401.3 Brownfield site. A brownfield site, is selected.	Greyfield sites and Brownfield sites are distinctly different entities and should be separated out as such in the criteria.		
111	Anthony Floyd City of Scottsdale City of Scottsdale	403.1 Natural Resources Revise as follows	Make line items (1) and (2) mandatory.	Local building departments already require sites plans to identify existing natural and manmade features. A natural resources inventory merely identifies the site's environmental attributes. This is simple and straightforward. As part of this inventory, priority site attributes and resources can be identified and made part of the site development plan. This is a prerequisite for beginning any green building project and should be mandatory for the National Green Building Standard.		
436	Robert Hill NAHB Research Center NAHB Research Center	403.10 Existing and Recycled Materials Add new as follows	(Points awarded for every 10 percent of total building materials that are reused, deconstructed and/or salvaged. <u>The percentage is calculated on either a volume or cost basis.</u>	Guidance is needed on how to calculate the percentage. The task group should determine a preference for volume or cost basis.		
437	Robert Hill NAHB Research Center NAHB Research Center	403.11 Environmentally Sensitive Areas Revise as follows	(1) Development does not impact an environmentally sensitive areas are avoided.	The original text is unclear if the entire site must be void of any sensitive areas or if the site can include sensitive area but the development activity must not impact these areas.		
438	Robert Hill NAHB Research Center NAHB Research Center	403.11 Environmentally Sensitive Areas Revise as follows	(2) Compromised environmentally sensitive areas are mitigated or restored <u>beyond any government mandated mitigation.</u>	Some guidance should be provided as to how much restoration/mitigation is needed to meet the intent of this practice. Perhaps stating a percentage of the environmentally sensitive area on the site.		
153	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.11 Environmentally Sensitive Areas Revise as follows	This section should be a mandatory requirement, not one that provides credits. (This proposed change is also being submitted for Section 503.8)	Locational considerations are fundamental to the definition of a green building. Moreover, the importance of environmentally sensitive areas to human health and the environment makes their protection essential in any standard that aims to promote increased environmental protection.		
156	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.11 Environmentally Sensitive Areas Revise as follows	(1) Environmentally sensitive areas are avoided. (2) Compromised environmentally sensitive areas are mitigated or restored. (3) <u>Buildings are not erected, and landscape improvements are not conducted, on land that is undeveloped or that has been developed only for agricultural purposes, and that is within a 100-year floodplain.</u>	Locational considerations are fundamental to the definition of a green building. NAHB is notably weaker than other green building rating and certification systems on the issue of site sustainability, and in particular, in discouraging building on environmentally sensitive and valuable lands. NAHB has only one optional credit restricting building in sensitive areas, which nonetheless allows building if the area is to be mitigated or restored. With no specific requirements or definition for mitigation or restoration, nor with a means of enforcement for this provision, this practice is insufficient to guarantee protection of sensitive lands. This shortcoming is a major weakness in the standard. Sections 503.8 and 403.11 should be revised to correct this shortcoming.		
164	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.12 Density Add new as follows	(4) <u>The lot [or site] is within one-quarter mile of developed residential land with an average density of at least 8 units per acre.</u> (5) <u>The lot [or site] is adjacent to existing development with pre-project connectivity of at</u>	The standard provides points for densely-built projects in sections 503.9 and 403.12, as well as in several innovative practices for subdivisions in 405. EPA supports these practices, but recommends that NAHB go further by incentivizing buildings or subdivisions to be built adjacent to densely-built areas as well.		

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			<p><u>least 90 intersections/mile of any continuous segment equaling 25 percent of the project boundary. Areas excluded from the calculation shall be water bodies, parks larger than 1/2 acre, recreational facilities, public campuses (such as universities), airports, rail yards, areas preserved from development by codified law or prerequisites of the rating system, and land that cannot be developed due to a unique topographic or geologic condition (such as steep slopes). Street rights-of-way may not be excluded.</u></p>					
439	Robert Hill NAHB Research Center NAHB Research Center	403.13 Mixed-use Development Revise as follows	Mixed-use development is incorporated.	Can adjacent mixed use also qualify here?				
271	Steven Orłowski National Association of Home Builders NAHB	403.13 Mixed-use Development Delete and substitute as follows	<p>403.13 405.8 Mixed-Use Development Mixed-use development is incorporated. <u>Sites 20 acres or less in size with boundaries adjacent to a minimum of two uses containing retail, services and employment may achieve the mixed-use points, given that a pedestrian network of sidewalks, pathways or plazas exist that connect a majority of lots within the site with the adjacent non-residential uses.</u></p>	Single uses, such as single-family residential, if designed properly can use adjacent, existing nonresidential uses to help build an overall mixed-use environment. Developers who design with this objective, within the proposed parameters, should be awarded points under this category.				
428	Robert Hill NAHB Research Center NAHB Research Center	403.2 Building Orientation Revise as follows	<p>403.2 Building orientation. A minimum of 75 percent of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south <u>and appropriate covenants are included requiring builders to construct buildings which take advantage of that orientation.</u></p>	The benefit of site orientation will only be realized if builders are required to take advantage of it.				
272	Steven Orłowski National Association of Home Builders NAHB	403.2 Building Orientation Delete and substitute as follows	<table border="1"> <tr> <td> <p>403.2 Building orientation. A minimum of 75 percent of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south.</p> </td> <td style="text-align: center; vertical-align: middle;">6</td> </tr> </table> <p>405.9 Site Design for Climate Conditions and Energy Efficiency.</p> <p><u>(1) Solar Orientation – A minimum of 75 percent of the building lots within the site are designed with the longer dimension of structure to face within 20 degrees of south.</u></p> <p><u>(2) Tree Plantings –</u></p> <p>a. <u>Plant Deciduous Trees to the east and west of a lot(s) to create shade.</u></p> <p>b. <u>Plant evergreens to the north and west to block winter winds.</u></p> <p>c. <u>Avoid plantings to the south.</u></p> <p><u>(3) Heat Island Mitigation – The following is provided through site design in all common areas in the community site plan:</u></p> <p style="padding-left: 40px;"><u>(a) Shading of hardscaping: Shade is provided from existing or new vegetation (within five) years or from trellises or similar structures. Shade of hardscaping to be measured at summer solstice at noon.</u></p> <p style="padding-left: 40px;"><u>(b) Light colored hardscaping: Horizontal hardscaping materials are installed with a solar reflectance index of 29 or greater.</u></p> <p style="padding-left: 40px;"><u>(c) The use of open grid paving systems and open-graded aggregate systems that reduce hardscape.</u></p> <p style="padding-left: 40px;"><u>(d) Common area buildings, such a club houses and maintenance facilities, utilize light colored roofing, high reflectivity, or green roof technologies.</u></p> <p><u>(4) Lighting – Energy efficient lighting is used in the common open space areas and in</u></p>	<p>403.2 Building orientation. A minimum of 75 percent of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south.</p>	6	Consolidating all the criteria that relates to climate and energy into one section. Additionally, have added several criteria related to climate and energy efficiency that can be carried out on the lot or site by a builder or developer, and can also be done relatively easily and will have a credible green effect.		
<p>403.2 Building orientation. A minimum of 75 percent of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south.</p>	6							

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action												
			<p>private and public rights-of-way.</p> <p>(5) <u>Alternative Energy Sources – Dedicating a common area within a community site plan for the installation of an alternative energy facility that would generate electricity for the community. An alternative energy facility may generate electricity using solar, wind or hydro technologies.</u></p>															
429	Robert Hill NAHB Research Center NAHB Research Center	403.3 Slope Disturbance Revise as follows	<p>Slope disturbance. [BH1] Slope disturbance is minimized by one or more of the following:</p> <p style="text-align: center;">(Points awarded only if there are developable steep slopes in the project area.)</p> <p>(1) The site has a slope of greater than 25% and all or a percentage of development on steep slopes is avoided.</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 5%;">(a)</td> <td>less than 25 percent</td> </tr> <tr> <td>(b)</td> <td>25 percent to 75 percent</td> </tr> <tr> <td>(c)</td> <td>greater than 75 percent</td> </tr> </table> <p>(2) The site has a slope of greater than 25% and Hydrological/soil stability study for steep slopes is completed and used to guide the design of all buildings on the site.</p> <p>(3) The site has a slope of greater than 25% and All or a percentage of roads are aligned with natural topography to reduce cut and fill.</p> <table border="1" style="width: 100%;"> <tr> <td style="width: 5%;">(a)</td> <td>less than 25 percent</td> </tr> <tr> <td>(b)</td> <td>25 percent to 75 percent</td> </tr> <tr> <td>(c)</td> <td>greater than 75 percent</td> </tr> </table> <p>(4) The site has a slope of greater than 25% and Long-term erosion effects are reduced by the use of terracing, retaining walls, landscaping, and restabilization techniques.</p> <p>(5) The site has not slopes greater than 25% 10 points</p>	(a)	less than 25 percent	(b)	25 percent to 75 percent	(c)	greater than 75 percent	(a)	less than 25 percent	(b)	25 percent to 75 percent	(c)	greater than 75 percent	<p>We receive a number of questions regarding why a developer should be able to get up to 19 points just because the site has steep slopes when another developer may choose a flat site in order to avoid the adverse impact of slopes. Recognizing some credit for choosing a flat site would reduce this concern. The task group/committee should decide on the point value as well as any qualifications as to how much of the site must have a steep slope to earn points for this practice. It may also be worth considering merging this practice with 403.11</p>		
(a)	less than 25 percent																	
(b)	25 percent to 75 percent																	
(c)	greater than 75 percent																	
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(c)	greater than 75 percent																	
128	Anthony Floyd City of Scottsdale City of Scottsdale	403.4 Soil Disturbance and Erosion Revise as follows	<p>Make line items (1) and (3) mandatory.</p>	<p>Soil exposed by construction activities is especially vulnerable to erosion. Soil erosion contributes to stormwater run-off pollutants and air borne particulates that make up air pollution. Most city and county authorities require a Stormwater Pollution Prevention Plan to minimize stormwater pollutant runoff. Based on the site inventory and an established site plan, it is simple to identify the limits of clearing and grading. Most jurisdictions already require a grading and drainage plan as part of civil engineering and building permit requirements. This process has long been established in the engineering and regulatory process around the country. This should be a prerequisite and therefore mandatory for the National Green Building Standard.</p>														
216	Steven Orlowski National Association of Home Builders NAHB	403.4 Soil Disturbance and Erosion Add new as follows	<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">403.4 Soil disturbance and erosion. Soil disturbance and erosion are minimized by one or more of the following: (also see Section 404)</td> <td style="width: 20%;"></td> </tr> <tr> <td>(1) Construction activities are scheduled to minimize length of time that soils are exposed.</td> <td style="text-align: center;">4</td> </tr> <tr> <td>(2) Utilities are installed by alternate means such as directional boring in lieu of open-cut trenching. Shared easements or common utility trenches are utilized to minimize earth disturbance. Low ground pressure equipment or temporary</td> <td style="text-align: center;">4</td> </tr> </table>	403.4 Soil disturbance and erosion. Soil disturbance and erosion are minimized by one or more of the following: (also see Section 404)		(1) Construction activities are scheduled to minimize length of time that soils are exposed.	4	(2) Utilities are installed by alternate means such as directional boring in lieu of open-cut trenching. Shared easements or common utility trenches are utilized to minimize earth disturbance. Low ground pressure equipment or temporary	4	<p>Proposed language will greater flexibility and options for soil erosion and sediment. It is important that all contractors and subcontractors are aware of alternatives to protect against wind or water erosion.</p>								
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			matting is used to minimize excessive soil consolidation. (3) Limits of clearing and grading are demarcated in the plan. 4 (4) <u>Limit the soil disturbance to 10 percent of the total acreage of the project or 10 acres, whichever is greater</u> (5) <u>Soil disturbances are properly stabilized within fourteen (14) days (7 days on steep slopes) after construction activity is completed for any portion of the project</u>			
131	Anthony Floyd City of Scottsdale City of Scottsdale	403.5 Storm Water Management Revise as follows	Make line item (2) mandatory.	Building permit authorities already require site surveys along with a proposed site plan and grading/drainage plan. Most city, town and county authorities have master stormwater surveys and plans to ensure public infrastructure and development will not adversely affect regional drainage paths. This process has long been established in the engineering and regulatory process around the country. A site stormwater management plan should be a prerequisite and therefore mandatory for the National Green Building Standard.		
430	Robert Hill NAHB Research Center NAHB Research Center	403.5 Storm Water Management Add new as follows	(3) <u>A storm water management plan is developed to manage storm water during construction on the development.</u> ??points	The current text is not clear regarding managing storm water during or after construction is complete. It seem reasonable to award points for proper management during construction.		
563	Robert Hill NAHB Research Center NAHB Research Center	403.5 Storm Water Management Revise as follows	(3) Permeable materials are selected/specified for <u>common area</u> roads, driveways, parking areas, walkways and patios.	The current text is not clear if this is too apply only to areas finished by the developer or if is should also be required of any buildings on the lots in the development.		
218	Steven Orłowski National Association of Home Builders NAHB	403.5 Storm Water Management Add new as follows	403.5 Storm water management. Storm water is managed using one or more of the following low-impact development techniques: (1) Natural water and drainage features are preserved and used. 6 (2) A storm water management plan is developed to minimize concentrated flows and simulate flows found in natural hydrology by the use of vegetative swales, French drains, wetlands, drywells, rain gardens, and similar features. 6 (3) Permeable materials are selected/specified for roads, driveways, parking areas, walkways, and patios. (a) less than 25 percent 1 (b) 25 percent to 75 percent 3 (c) greater than 75 percent 5 (4) <u>Storm water management features/structures should be designed for the reduction of nitrogen and phosphorus</u> (a) <u>less than 15 percent reduction</u>	Urban stream syndrome is a result of storm water management that focuses primarily on reducing storm water flows and velocity, adding an optional requirement for nutrient reduction furthers the commitment of the builder to reduce pollution through proper best management practice selection.		

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			<p style="text-align: center;">1</p> <p>(b) 15 percent to 50 percent reduction</p> <p style="text-align: center;">3</p> <p>(c) greater than 50 percent reduction</p> <p style="text-align: right;">5</p>			
166	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.5 Storm Water Management Add new as follows	<p><u>Option 1: Stormwater management practices that manage rainfall on-site and prevent the off-site discharge from all storms up to and including the volume of the 95th percentile storm event. Maintain predevelopment (natural) runoff temperatures.</u></p> <p><u>Option 2: Conduct a hydrologic analysis that results in the design of a stormwater management system that maintains the pre-development (stable, natural) runoff hydrology of the site throughout the development or redevelopment process. Post construction runoff rate, volume, duration, and temperature shall not exceed predevelopment rates.</u></p>	The standard's practice on stormwater management is commendable for encouraging the use of low-impact development techniques. However, the practice does not go far enough to ensure that buildings do not have an overly harmful impact on the hydrology of the surrounding area. This section can be strengthened through the development of several additional practices. In place of or in addition to the existing, relatively prescriptive measures in 503.4 and 403.5, EPA recommends a stormwater management practice focusing more on outcomes.		
169	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.5 Storm Water Management Add new as follows	<u>Stormwater management verification. Stormwater rate, volume and duration calculations shall be provided for pre- (stable, natural) and post- development for the 2, 10, 25, 50 and 100 year storm events in addition to other applicable state and local reporting requirements. Infiltration and evapotranspiration strategies and rainwater collection (where allowed) calculations shall be indicated. A long-term maintenance plan for stormwater management practices shall be provided.</u>	In support of the requirements that EPA suggested in a prior comment (ID# 166), we we recommend the above means of verification.		
297	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	403.6 Landscape Plan Revise as follows	403.6 #4	This section assumes that no turf means lower water use. Probably true in many cases, but we can probably find a case where really low water turf, (eg buffalo grass) in some large percentage of area would use less water than some smaller or equal percentage of other plantings. Consider creating a list of low-water plants that are treated like almost like no-water, or at least low water.		
432	Robert Hill NAHB Research Center NAHB Research Center	403.6 Landscape Plan Revise as follows	Landscape Plan. A landscape plan is developed to limit water and energy use <u>in common areas</u> while preserving or enhancing the natural environment. Examples of techniques include, but are not limited to, one or more of the following:	The current text is not clear if this is to apply only to areas finished by the developer or if is should also be required of any buildings on the lots in the development.		
433	Robert Hill NAHB Research Center NAHB Research Center	403.6 Landscape Plan Revise as follows	(9) An integrated <u>common area</u> pest management plan to minimize chemical use in pesticides and fertilizers is developed.	The current text is not clear if this is to apply only to areas finished by the developer or if is should also be required of any buildings on the lots in the development.		
565	Robert Hill NAHB Research Center NAHB Research Center	403.6 Landscape Plan Revise as follows	A landscape plan is developed to limit water and energy use while preserving or enhancing the natural environment <u>utilizing one or more of the following. Examples may include but are not limited to, one or more of the following:</u>	The original text suggests that an number of other options may be considered but this leaves open the question of how many points to award and does that mean other options are no longer available. Deleting other options makes nationwide application of the standard more consistent. It is also suggested that the task group consider adding clarification as to the extent of the practice that must be implemented to meet the practice. For example, (3) "Turf grass species, other vegetation, and trees ...". How many tress, how much other, does all the turf need to be native, and are these points appropriate for small townhouse lots that may not have any landscape are but a small flower bed in front.		
262	Steven Orłowski National Association of Home Builders NAHB	403.6 Landscape Plan Add new as follows	<p>403.6 Landscape Plan</p> <p><u>(12) Trees that might otherwise be lost due to construction are transplanted to other areas on site or off site, using (ANSI certified?) tree-transplanting techniques to ensure a high rate of survival.</u></p> <p><u>(13) Greywater irrigation systems are used to water common areas. Greywater to be used for greywater irrigation shall conform to all criteria within Section 802.1.</u></p> <p><u>(14) Cisterns, rain barrels and similar tanks are structures designed to intercept and store</u></p>	These are additional practices that are common among industry experts and recognized as being "green." This will afford builders and developers to achieve additional points by practicing some relatively easy yet very effective green practices.		

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			<p>runoff from rooftops. These systems may be above or below ground, and they may drain by gravity or be pumped. Stored water may be slowly released to a pervious area, and used for irrigation of lawn, trees and gardens located in common areas. X percent of site area must be irrigated by these means and demonstrated on the site plan.</p>			
172	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.6 Landscape Plan Delete and substitute as follows	<p>(3) The percentage of all turf areas are limited as part of the landscaping:</p> <p>(a) 0 percent</p> <p>(b) greater than 0 percent to less than 25 20 percent</p> <p>(c) 25 20 percent to less than 40 50 percent</p> <p>(d) 50 40 percent to 75 60 percent</p>	EPA supports the inclusion of a practice restricting turf areas in landscaping, but the minimum target of 75 percent of all landscaping is too low. We recommend that the minimum instead be set at 60 percent, with one additional point awarded for every further 20 percent reduction.		
174	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.6 Landscape Plan Revise as follows	<p>(9) An integrated pest management plan to minimize chemical use in pesticides and fertilizers is developed. An Integrated Pest Management plan is developed, implemented, and maintained that addresses both indoor and outdoor pest control. The plan must include the EPA's Pesticide Environmental Stewardship Program four tiered approach to pest management:</p> <p>1) Set action thresholds. Before taking any pest control action, IPM first sets an action threshold, the point at which pest populations or environmental conditions indicate that pest control action must be taken to avert a nuisance, health hazard, or economic threat.</p> <p>2) Monitor and Identify Pests. IPM programs monitor and identify pests and the most appropriate course of action for a particular pest chosen. Monitoring and pest identification ensures that appropriate actions are taken. This could include some combination of prevention and control.</p> <p>3) Prevention. The first line of defense in any IPM program is the prevention of conditions in or around a building or in an orchard that attract pests – sources of food, water, and shelter. IPM service providers use practices to prevent pests including, but not limited to:</p> <p>a. Customer education including materials for non-English speakers and those with difficulty reading.</p> <p>b. Providing customers with information about pest behavior and conditions, and that allow pests access to the site, food, water, and habitat, so that the customer can understand and participate in the pest management process;</p> <p>c. Irrigation practices, the treatment or removal of plants attractive to pests, and physical changes to reduce pest access to structures;</p> <p>d. Removal of pest habitat, sources of food and water, and breeding areas - keeping premises free of trash and overgrown vegetation, and diverting water away from a building or landscaping to avoid standing water;</p> <p>e. Prevention of access to structures - sealing areas where pests enter the buildings (weatherization).</p>	The IPM component of the standard's landscape plan (503.5.8; 403.6.9) can be improved in two main ways. First, NAHB should use more specific language to ensure that the IPM plan has a meaningful environmental impact. Secondly, the practice should require the use of pest control operators who are certified in IPM practices. We suggest the above language instead of the standard's current language on IPM.		

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			<p>4) Management. Integration of Multiple Management Strategies and Tools</p> <p>A variety of pest control strategies and tools are integrated into a comprehensive program to manage the pest. If identification, monitoring, and action thresholds indicate that pest management is required, and preventive methods are no longer effective or viable, management methods can be and should be employed. Management strategies may include, but are not limited to, the following:</p> <ul style="list-style-type: none"> a. Mechanical or physical controls including, but not limited to, traps, vacuuming, steam cleaning, or physical barriers; b. Biological controls including the use of predators, parasitoids, or pathogens to control the pest; and, c. If preventive measures along with the practices in paragraphs 'a' and 'b' directly above are insufficient to prevent or control pests, chemical controls may be used. <p>Note: Under an IPM program, management methods are evaluated based on effectiveness and relative risk. Those methods that are found to both be the most effective and pose the lowest risk are selected first. IPM combines two central methods for reduced-risk pest control:</p> <ul style="list-style-type: none"> a. Least Toxic Pest Management Options. These include use of physical controls, such as trapping, vacuuming, and steam cleaning. b. Pesticides <p>Pest management is a group activity from the prevention and monitoring phase through the chemical usage decision. All stakeholders should be involved in the decision to use chemicals. For structural situations, this includes the IPM coordinator, pest management professionals, building managers, cleaning staff, etc. In agricultural situations, this includes the crop consultant/scout, grower, and, when appropriate, food processor.</p> <p>Pest management plans should dictate action thresholds and a decision-making process for actions including pesticide selection. Universal notification (advance notice of not less than 72 hours under normal conditions and 24 hours in emergencies before a pesticide, other than a least-toxic pesticide, is applied in a building or on surrounding grounds that the building management maintains). Define emergency conditions. There are best management practices to follow if pesticides are to be used:</p> <ul style="list-style-type: none"> <input type="checkbox"/> read the label first, <input type="checkbox"/> choose the right chemical for a particular pest, and <input type="checkbox"/> have a clear understanding of the proper application rate and method – misuse can harm not only your health but also the environment. <p>When a chemical control method is required within an IPM program, a biological pesticide should be considered first. Biopesticides are usually inherently less toxic than conventional pesticides and decompose quickly so they do not leave persistent chemical residues in the environment.</p> <p>Sometimes a conventional pesticide (synthetic materials that directly kill or inactivate a pest) may be needed for satisfactory pest control. Ideally, all pesticides are used in combination with other lower-risk non-chemical pest management practices. Even within conventional</p>			

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			<p>pesticides, there is a progression of best management practices:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use baits and spot treatments are limit unnecessary exposure to chemicals, <input type="checkbox"/> Apply pesticides only as directed by the label, <input type="checkbox"/> Notify customers prior to pesticide applications - ideally, a 24 hour notice before for applications in or around any building landscape or structure. <input type="checkbox"/> In occupied structures, pest management professionals and/or IPM coordinators must clearly explain to the building occupants how to maintain safe interaction around the treated areas. <p>Hire pest management professionals certified by an EPA Pesticide Environmental Stewardship Program partner organization, such as the National Pest Management Association's Green Pro, IPM Institute's Green Shield, or other programs, as appropriate.</p>											
235	Thomas Stroud HPBA HPBA	403.6 Landscape Plan Add new as follows	403.6(8) On-site tree trimmings or stump grinding of regionally appropriate trees are used to provide protective mulch during construction or as a base for walking trails, and cleared trees are recycled as sawn lumber, pulp wood or biomass for Solid Fuel Burning Appliance as per Section 901.2.1(2) for on-site renewable energy.	This is in support of the use of on-site renewable energy.										
434	Robert Hill NAHB Research Center NAHB Research Center	403.7 Wildlife Habitat Revise as follows	Measures are planned that will support wildlife habitat.	This could use some definition as what needs to be done (including to what extent) to meet the intent of this practice. Clarification is needed to distinguish what measures are needed for points in an urban setting compared to a rural setting.										
435	Robert Hill NAHB Research Center NAHB Research Center	403.9 Existing Buildings Revise as follows	Existing building(s) and structure(s) is/are preserved, reused, modified, or disassembled for reuse or recycling of building materials.	Some guidance is needed to clarify the extent of preservation, reuse, etc. needed to qualify for this practice.										
183	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	403.9 Existing Buildings Add new as follows	<ul style="list-style-type: none"> <input type="checkbox"/> <u>Remove and replace lead piping in water systems intended to be preserved.</u> <input type="checkbox"/> <u>Replace existing drinking water plumbing materials that do not meet or exceed current health-based materials specifications, such as (but not only) NSF/ANSI 61.</u> <input type="checkbox"/> <u>Install plumbing materials compatible with the drinking water inflow to the structure without supplemental treatment under intended usage conditions, and which do not cause unhealthy water to be drawn by consumers.</u> <input type="checkbox"/> <u>Operate the internal DW system to minimize adverse water quality concerns (metals, microbial).</u> 	These additional considerations when re-using existing building (to be occupied and used by humans or domesticated animals) should be added in order to protect drinking water quality and reduce the resources required for water treatment.										
219	Steven Orlowski National Association of Home Builders NAHB	404.3 Soil Disturbance and Erosion Add new as follows	<table border="1"> <tr> <td>404.3 Soil disturbance and erosion. On-site soil disturbance and erosion are minimized by one or more of the following:</td> <td></td> </tr> <tr> <td>(1) Limits of clearing and grading are staked out prior to construction.</td> <td style="text-align: center;">5</td> </tr> <tr> <td>(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas from construction vehicles, material storage, and washout.</td> <td style="text-align: center;">4</td> </tr> <tr> <td>(3) Sediment and erosion controls are installed and maintained.</td> <td style="text-align: center;">5</td> </tr> </table>	404.3 Soil disturbance and erosion. On-site soil disturbance and erosion are minimized by one or more of the following:		(1) Limits of clearing and grading are staked out prior to construction.	5	(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas from construction vehicles, material storage, and washout.	4	(3) Sediment and erosion controls are installed and maintained.	5	Steep slopes have the greatest potential for erosion of soils and should be attended to in a more timely manner.		
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			<table border="1"> <tr> <td>(4)</td> <td>Topsoil is stockpiled and covered with tarps, straw, mulch, chipped wood, vegetative cover, or other means capable of protecting it from erosion for later use to establish landscape plantings.</td> <td>5</td> </tr> <tr> <td>(5)</td> <td>Soil compaction from construction equipment is reduced by distributing the weight of the equipment over a larger area by laying lightweight geogrids, mulch, chipped wood, plywood, OSB (oriented strand board), metal plates, or other materials capable of weight distribution in the pathway of the equipment.</td> <td>4</td> </tr> <tr> <td>(6)</td> <td>Disturbed areas are stabilized within the EPA recommended 14-day period (7 days on steep slopes).</td> <td>4</td> </tr> <tr> <td>(7)</td> <td>Soil is improved with organic amendments and mulch.</td> <td>4</td> </tr> </table>	(4)	Topsoil is stockpiled and covered with tarps, straw, mulch, chipped wood, vegetative cover, or other means capable of protecting it from erosion for later use to establish landscape plantings.	5	(5)	Soil compaction from construction equipment is reduced by distributing the weight of the equipment over a larger area by laying lightweight geogrids, mulch, chipped wood, plywood, OSB (oriented strand board), metal plates, or other materials capable of weight distribution in the pathway of the equipment.	4	(6)	Disturbed areas are stabilized within the EPA recommended 14-day period (7 days on steep slopes).	4	(7)	Soil is improved with organic amendments and mulch.	4			
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440	Robert Hill NAHB Research Center NAHB Research Center	404.4 Wildlife Habitat Revise as follows	(2) Open space is preserved as part of a wildlife corridor.	This probably needs a definition in Chapter 2.														
441	Robert Hill NAHB Research Center NAHB Research Center	405.1 Driveways and Parking Areas Revise as follows	Driveways or parking areas are shared.	It seems that in a site development all common area driveways and parking areas would be considered as shared. This needs more clarification.														
263	Steven Orłowski National Association of Home Builders NAHB	405.1 Driveways and Parking Areas Delete and substitute as follows	405.1 Driveways and parking areas. For attached or detached single-family homes, driveways or parking areas are shared. In a multi-unit project, parking capacity is not to exceed the local minimum requirements, <u>shared parking agreements are utilized to minimize parking spaces, and waivers are sought for reduced parking below code requirements.</u>	This is only applicable to single-family homes since most multi-family developments have shared driveways and parking areas to begin with. For multi-family and mixed use projects, getting waivers from parking requirement if located near transit or shared parking agreements with neighboring uses can be an effective way to reduce parking areas, impervious surfaces and stormwater runoff.														
442	Robert Hill NAHB Research Center NAHB Research Center	405.3 Cluster Development Revise as follows	(1)	Why have (1) if there is no (2)?														
264	Steven Orłowski National Association of Home Builders NAHB	405.3 Cluster Development Delete without substitution	405.3 Cluster development. Cluster development enables and encourages flexibility of design and development of land in such a manner as to preserve the natural and scenic qualities of the site and is implemented in accordance with the following: (1) Natural or scenic qualities of the site are preserved by utilizing an alternative method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks, and landscaping.	Consolidating this into one paragraph														
443	Robert Hill NAHB Research Center NAHB Research Center	405.4 Zoning Revise as follows	(2) An increase in zoned use on <u>the sites</u> where environmental effects are minimized and infrastructure is readily available and adequate, while providing for reduced development on <u>environmentally sensitive areas within the sites.</u>	The standard addresses one site at a time for land development. These changes clarify how to interpret this practice. It would be helpful to have some guidance on how much of an increase in zoned use is required to earn these points.														
265	Steven Orłowski National Association of Home Builders NAHB	405.4 Zoning Delete without substitution	405.4 Innovative Zoning Techniques. Innovative zoning techniques are implemented in accordance with the following Innovative zoning ordinances or local laws are used or developed for permissible adjustments to population density, area, height, <u>waiver</u> , open space, mixed-use, or other provisions for the specific purpose of open space, natural resource preservation or protection and/or mass transit usage. Other innovative zoning techniques may be considered on a case-by-case basis. An increase in zoned use on sites where environmental effects are minimized and infrastructure is readily available and adequate, while providing for reduced development on sensitive sites.	Zoning in itself is not "innovative." This amendment seeks to clarify what apart from zoning is actually innovative. It also aids waivers from zoning requirements as an innovative technique														

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270	Steven Orłowski National Association of Home Builders NAHB	405.4 Zoning Add new as follows	405.4 (3)Community-based Amenities (e.g., parks, plazas, mixed-use, open space) are provided that promote higher density living beyond code requirements or promote walkability.	It is unclear what is meant by "Beyond Code Requirement." The term promote walkability has been added as a green benefit of amenities.		
220	Steven Orłowski National Association of Home Builders NAHB	405.5 Wetlands Add new as follows	405.5 Wetlands. Constructed wetlands or other natural innovative wastewater <u>or storm water</u> treatment technologies are used.	7	Constructed wetlands can also be used to treat stormwater pollution through reductions in water flow, velocity and pollutants.	
445	Robert Hill NAHB Research Center NAHB Research Center	405.6 Mass Transit Revise as follows	All residential lots in the site is selected are within one-half mile (805 m) of pedestrian access to a mass transit system or within five miles of a mass transit station with available parking.	Criteria need to be established for determining the distance in the practice. For large site development some lots may be close enough while other lots are far away. The task group should decide if the distance should be measured from the closed community entrance, the closet boundary, the closest lot, the farthest lot, etc.		
267	Steven Orłowski National Association of Home Builders NAHB	405.6 Mass Transit Add new as follows	405.6 Mass Multi-Modal TransitTransportation (1) A site is selected <u>with a boundary</u> within one-half mile (805 m) of pedestrian access to a mass transit system or within five miles of a mass transit station with available parking. (3) <u>Bicycle Parking. Bicycle parking and racks shall be indicated on the site plan and constructed for mixed-use and/or multi-family buildings.</u> (4) <u>Bike share programs. Bike sharing programs participate with the developer, and their facilities are planned for and constructed.</u> (5) <u>Car sharing programs. Car sharing programs participate with the developer, and their facilities are planned for an constructed.</u>	This section is about more than just public transportation, it also includes encouraging pedestrian and bicycle parking as well as carpooling and carsharing. Therefore the term "multi-modal " is more applicable. Additional examples of multi-modal activities have been added to this sub-section.		
162	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	405.6 Mass Transit Delete and substitute as follows	405.6 Mass transit access is provided in accordance with one or more of the following: (1) A site is selected within one-quarter mile (402 m) of pedestrian access to existing or planned bus or streetcar stops or one-half mile (805 m) of pedestrian access to one-half mile (805m) of pedestrian access to a mass transit system or within five miles of a mass transit station with available parking. existing or planned bus rapid transit stops, passenger rail stations, ferry terminals, or tram terminals.	NAHB's practice on proximity to mass transit (501.2; 405.6) offers points to projects located within ½ mile of pedestrian access to a mass transit system, or within five miles of a mass transit station with parking. Setting such a low threshold for proximity significantly reduces the expected environmental benefits of mass transit for the building project, namely, reduced emissions and other impacts from automobile-based transportation. Simply put, being located within five miles of a mass transit station provides very little basis to assume that residents will make use of the transit system on a regular basis, either for commuting or for non-work trips, as would be expected if the building project and the transit station were more closely co-located.		
228	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	Add New Section Add new as follows	Considerations should be given to incorporating a model green zoning ordinance in ICC700. The appendix should not be points-based; rather it should read like an ordinance. It should not be overly complex and should focus on a few key elements of green: Orienting lots and buildings such that 80-90% face north / south. There should be a provision for the zoning authority to deem this goal excessive for reasons of the local terrain, etc. Requiring all storm water to be input into an aquifer at either the building site or development level, perhaps up to the level of the 95th percentile rainfall event (rainfall event having a precipitation total greater than or equal to 95 percent of all rainfall events during a 24-hour period on an annual basis.) Use of local water features should be explicitly permitted, such as the use of runoff to supplement or create a local pond/lake. The stormwater management system shall not cause increased erosion or other drainage related damage to adjoining lots or public property. Requirements for pervious hardscape on most of the hardscape surfaces, probably including parts of streets such as gutters, curbs and sidewalks (can some streets be pervious?). Specify pervious as something like: Pervious and permeable pavement/hardscape. Pervious and permeable	A green zoning ordinance would be established at the level of the jurisdiction. Where such an ordinance exists it facilities doing many things proposed in ICC 700. The cost of many decisions, such as how to lay out the streets is often very low in the planning stage, but prohibitive to change after the development is in place. For example orienting lots to be north/south is a very cost-effective way to improve performance. As it will not be appropriate for many jurisdictions and cannot be implemented for a single house, it should remain an appendix.		

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			<p>pavement/hardscape including open grid paving systems and open-graded aggregate systems shall have a percolation rate not less than 1.25 gallons per hour per square foot and shall have not less than 6 inches (152 mm) of open graded base below the pavement or pavers. Pervious and permeable pavement shall be permitted where the use of these types of hardscapes does not interfere with fire and emergency apparatus or vehicle or personnel access and egress, utilities, or telecommunications lines. Aggregate used shall be of uniform size.</p> <p>Requirements for "cool hardscape / pavements, including their application to streets. Something like:</p> <p>Hardscape materials. <i>Hardscape</i> materials in climate zones 1 through 5 shall have a minimum initial <i>Solar Reflectance</i> of 0.30 when determined in accordance with CRRC-1 or shading. Shading shall be permitted to be provided by elements of a building or other structures, based on the projected peak sun angle on the summer solstice. Shading shall be permitted to be provided by trees based on the projected ten-year canopy growth of trees actually in place.</p> <p>Exceptions: Pervious concrete pavements shall be deemed to comply with the criteria for solar reflectance and need not be tested.</p> <p>Requirements for (not allowances for) thinner streets, with provision to meet fire rules.</p> <p>Compliance with jurisdictional prohibitions against invasive species.</p> <p>Provision for, but not a requirement for, integration of local basic services into the development.</p> <p>Encouragement for bicycle and walking spaces in some form.</p> <p>Integration with park and/or wildlife spaces when reasonable.</p> <p>Reuse of existing structures / infrastructure / materials as is reasonable.</p> <p>Possible provisions for solar access, provided they do not conflict with the cool hardscape/shading requirements.</p> <p>Provision for a jurisdiction to integrate some level of protection/requirement for agricultural land, undeveloped land, infill lots, brownfield development, with the choice being left mostly to the jurisdiction.</p>									
207	Gary Ehrlich NAHB NAHB	Add New Section Add new as follows	<table border="1"> <tr> <td>403.14 Flood hazard areas. The development of portions of sites located within flood hazard areas is avoided as follows:</td> <td></td> </tr> <tr> <td>(1) Portions of sites located within a flood hazard area are avoided.</td> <td></td> </tr> <tr> <td>(2) Portions of sites located within areas subject to a 0.2% annual chance (500-year) flood are avoided.</td> <td></td> </tr> </table>	403.14 Flood hazard areas. The development of portions of sites located within flood hazard areas is avoided as follows:		(1) Portions of sites located within a flood hazard area are avoided.		(2) Portions of sites located within areas subject to a 0.2% annual chance (500-year) flood are avoided.		An important component of sustainable building is mitigation of natural hazards. This change proposes a credit for locating buildings and associated site developments outside of flood hazard areas. Two levels of credits are proposed; one for avoiding the standard Zone A, Coastal A Zones and V Zone areas, defined as those areas subject to a 1% annual flood risk (or the so-called "100-year floodplain"). An additional credit is proposed for avoiding areas subject to a 0.2% annual flood risk, or the so-called "500-year floodplain". This recognizes that flood damage often occurs outside of the standard flood hazard areas mapped by FEMA.		
403.14 Flood hazard areas. The development of portions of sites located within flood hazard areas is avoided as follows:												
(1) Portions of sites located within a flood hazard area are avoided.												
(2) Portions of sites located within areas subject to a 0.2% annual chance (500-year) flood are avoided.												
148	Randall K. Melvin Winchester Homes Inc. Winchester Homes, Inc.	Add New Section Add new as follows	<p>Green Sapce</p> <p>A portion of the gross area of the community have been set aside as green space.</p> <p>1 point for each 10% of the community set aside as green space</p>	Encourages on-project green space								
261	Steven Orlowski National Association of Home Builders NAHB	Add New Section Add new as follows	402.4 Builder Agreements. Developer requires builders purchasing lots to build the home to NGBS certified green community bronze level or equivalent.	A site developer can influence the type of structure being built within the community by requiring all builders to build to the NGBS standard or equivalent.								

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274	Steven Orlovski National Association of Home Builders NAHB	Add New Section Add new as follows	<p>406 SITE MAINTENANCE</p> <p>406.0 <u>The developer takes measures to ensure the long term maintenance of the community will ensure its sustainability as a certified green development/site.</u></p> <p>406.1 Homeowners Association - <u>Prepare for the transition of the green practices and management of the site to eventual management by the homeowners association and/or third parties contracted to maintain and inspect facilities.</u></p> <p>406.2 Sales Agents – <u>Establish a training manual for sales agents selling lots and homes in the community about the value of sustainability and basic practices for buyers.</u></p> <p>406.3 Education - <u>Provide for Educational brochures or newsletters providing guidance to homeowners on green practices.</u></p>	An additional section was needed to provide points to developers that map out a long term strategy for maintenance and education to ensure that the site is maintained as a sustainable community into the future. This is of critical importance once the developer exits the picture and the ownership and management is turned over to homeowners and the HOA.		
160	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Water and Wastewater Infrastructure. <u>Portions of a building site dedicated in perpetuity to open space or similar conservation uses do not have to be located within water and wastewater service areas, providing the open space has no existing development.</u></p> <p><u>Water and wastewater infrastructure do not pass through such open space portions of a project to serve land beyond the project outside of the service area.</u></p> <p><u>In addition, the lot [or site] complies with one of the following requirements:</u></p> <p>-</p> <p><input type="checkbox"/> <u>Option 1 – Existing Water & Wastewater Service: Locate the building on a site served by existing water and wastewater infrastructure; or</u></p> <p><input type="checkbox"/> <u>Option 2 – Planned Water & Wastewater Service: Locate the building within a legally adopted planned water and wastewater service area and provide new water and wastewater infrastructure for the project; or</u></p> <p><input type="checkbox"/> <u>Option 3: In Situ Water and Wastewater Service: Decentralized water or wastewater systems designed and operated so that they have no significant negative impact on ground water or surface water resources (water quality and quantity and habitat) and pose no significant risk to human health.</u></p>	Sections 501.2 and 405.6 consist of practices encouraging siting close to mass transit and other community resources. This is an important means to mitigate the detrimental transportation-related effects of urban sprawl. However, sprawl also has negative impacts from the expansion of water and wastewater infrastructure, which NAHB does not address. EPA recommends that NAHB add a practice to encourage builders to account for these impacts when siting projects and to specifically protect open space from infrastructure development.		
167	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Pollutant discharges. <u>Projects that may generate pollutant loadings that cannot be attenuated by the processes of bio-infiltration or evapotranspiration shall provide additional water quality treatment measures and practices to significantly reduce the probability of pollutants of concern entering surface or groundwaters.</u></p> <p><u>Projects that are located on brownfields, greyfields or other contaminated sites with pollution levels that do not allow for infiltration should use a combination of practices that evapotranspire and harvest and reuse stormwater. Contaminated sites shall be developed such that there is no interference with, or damage to, any response action at the site. Do not use coal tar sealants in any application exposed to stormwater.</u></p>	The standard's existing practices focus specifically on stormwater flow (rates, volumes, etc.). However, NAHB's standard is silent with respect to protecting surface and groundwater quality by minimizing pollutant discharges. EPA would like to see the above requirements added to sections 403 and 503 to ensure the protection of surface and groundwater on building sites.		
175	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Clean diesel. <u>Contract documents obligate contractors to:</u></p> <p><u>(1) Create staging areas for waiting to load or unload materials that are located 100 ft (30 m) or more from any outdoor air intakes, operable openings, and hospitals, schools, residences, hotels, daycare facilities, elderly housing, and convalescent facilities.</u></p> <p><u>(2) Enforce idle reduction policies that limit unnecessary idling to no more than 5 - 15 minutes or to a shorter time as required by local laws.</u></p> <p><u>(3) Document implementation of maintenance plan that follows engine manufacturer</u></p>	Diesel fuel combustion produces air emissions of NOx, PM, and hydrocarbons, with serious human health and environmental impacts. This is a widespread problem; air quality is significantly impaired for large segments of the U.S. due to PM and NOx pollution. EPA estimated that nonroad equipment was responsible for 24 percent of mobile source diesel NOx emissions and almost half of diesel PM2.5 in 2004. Despite the fact that construction equipment produces a substantial portion of diesel emissions, this issue is not addressed by this standard. The impact of construction activity on air quality can be significantly reduced through a series of relatively simple, low-cost steps. Thus, the standard could add an emissions reduction package		

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			<p>specifications.</p> <p>(4) Provide emissions control technologies to all equipment not meeting EPA Tier 4 standards in order to reduce particulate matter (PM) and/or nitrogen oxides (NOx) from diesel engines by a minimum of 20% for 50% of the fleet used at the site. All aftermarket emissions control technologies must be verified by EPA or California Air Resources Board (CARB).</p> <p>(5) Document that all equipment uses Ultra Low Sulfur Diesel Fuel that meets ASTM specifications with sulfur levels less than or equal to 15 ppm shall be utilized for non-road diesel engines and equipment.</p> <p>(6) Submit a summary report that includes a copy of the idling/maintenance plan and enforcement policy, and for each piece of equipment: the equipment number, type and make; engine make, horse power and/or kilowatt hour; the emission control device, make, and model; and the type and source of fuel used.</p>	with little financial or technical burden to project developers. We recommend the above set of practices, which could be implemented jointly or individually.		

Chapter 5 – Lot Design, Preparation, and Development

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action																
69	Steve Hale Build Green NM Build Green NM	501.1 Lot Add new as follows	501.1 (4) Lot is in recognized Certified Sustainable subdivision (20 points)	There is no reward for building in a certified sustainable subdivision. Other parts of Lot Design. Should be deleted that really only apply to a subdivision.																		
487	Steven Orlowski National Association of Home Builders NAHB	501.1 Lot Delete and substitute as follows	<p>501</p> <p>LOT SELECTION</p> <p>501.1 Lot. The lot is selected to minimize environmental impact by one or more of the following:</p> <table border="1"> <tr> <td>(1) An infill lot is selected.</td> <td>4</td> </tr> <tr> <td>(2) A greyfield lot or an EPA recognized brownfield lot is selected.</td> <td>5</td> </tr> <tr> <td>(1) <u>Lot Selection in a green community.</u> The Builder has selected a lot within an NGBS certified green community or equivalent on which to build. A Green Community has been developed to avoid steep slopes, avoid environmentally sensitive areas and avoid wildlife habitats, to name a few. Though a prepared lot may not contain these features within its boundaries, additional points should be given to builders for selecting to build within a green community.</td> <td>4</td> </tr> <tr> <td>(2) <u>Urban.</u> An infill lot is selected in an Urban Location.</td> <td>4</td> </tr> <tr> <td>(3) <u>Suburban.</u> An infill lot is selected in a suburban location.</td> <td>4</td> </tr> <tr> <td>(4) <u>Rural/Exurban.</u> An infill lot is selected in a rural or exurban location.</td> <td>4</td> </tr> <tr> <td>(5) <u>Greyfield location.</u> An infill lot is selected that is a greyfield.</td> <td>5</td> </tr> <tr> <td>(6) <u>Brownfield location.</u> An EPA-recognized brownfield lot is</td> <td>5</td> </tr> </table>	(1) An infill lot is selected.	4	(2) A greyfield lot or an EPA recognized brownfield lot is selected.	5	(1) <u>Lot Selection in a green community.</u> The Builder has selected a lot within an NGBS certified green community or equivalent on which to build. A Green Community has been developed to avoid steep slopes, avoid environmentally sensitive areas and avoid wildlife habitats, to name a few. Though a prepared lot may not contain these features within its boundaries, additional points should be given to builders for selecting to build within a green community.	4	(2) <u>Urban.</u> An infill lot is selected in an Urban Location.	4	(3) <u>Suburban.</u> An infill lot is selected in a suburban location.	4	(4) <u>Rural/Exurban.</u> An infill lot is selected in a rural or exurban location.	4	(5) <u>Greyfield location.</u> An infill lot is selected that is a greyfield.	5	(6) <u>Brownfield location.</u> An EPA-recognized brownfield lot is	5	The proposed changes allows builders the option of buying prepared, cleared and graded lots to receive additional points for developing in a green community whereas they may not be able to receive any points presently. Geographic location of a site or lot within a region can affect the ability to accrue points differently. Therefore, there should be a point gradient based on geographic location, awarding more points for developers and Builders who build and develop in more difficult locations. Also, the previous uses on a site or lot that is being redeveloped can also add difficulty to developing in a sustainable manner, and therefore additional points should be awarded accordingly.		
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			selected. (3) Addition and Renovation Note: A renovation or addition project is implemented. (Points awarded for using an existing building and infrastructure.)	5		
448	Robert Hill NAHB Research Center NAHB Research Center	501.2 Mass Transportation Add new as follows	(2) Walkways, street crossings, and entrances are designed to promote pedestrian activity are provided. New buildings are connected to existing sidewalks and areas of development. <u>Infrastructure in the community should be considered applicable to this practice.</u>	Chapter 5 is focused on the lot but lots typically do not have walkways, street crossings, etc. This change is intended to clarify the intent of the practice.		
281	Steven Orlowski National Association of Home Builders NAHB	501.2 Mass Transportation Delete and substitute as follows	501.2 Multi-Mass-Modal Transportation (4) Bicycle Use. Bicycle use is promoted by building on a lot located within a community that has rights-of-way specifically dedicated to bicycle use in the form of paved paths or bicycle lanes. Infill lots located within 1/2 mile of a designated bicycle lane by the jurisdiction also receive credit.	This section is about more than just public transportation, it also includes encouraging pedestrian and bicycle parking as well as carpooling and carsharing. Therefore the term "multi-modal" is more applicable. Additional examples of multi-modal activities have been added to this sub-section.		
161	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	501.2 Mass Transportation Delete and substitute as follows	501.2 Mass transportation. A range of mass transportation choices are promoted by one or more of the following: (1) A lot is selected within one-quarter mile (402 m) of pedestrian access to existing or planned bus or streetcar stops or one-half mile (805 m) of pedestrian access to a mass transit system or within five miles (8046 m) of a mass transit station with provisions for parking, existing or planned bus rapid transit stops, passenger rail stations, ferry terminals, or tram terminals.	The practice on proximity to mass transit (501.2; 405.6) offers points to projects located within ½ mile of pedestrian access to a mass transit system, or within five miles of a mass transit station with parking. Setting such a low threshold for proximity significantly reduces the expected environmental benefits of mass transit for the building project, namely, reduced emissions and other impacts from automobile-based transportation. Simply put, being located within five miles of a mass transit station provides very little basis to assume that residents will make use of the transit system on a regular basis, either for commuting or for non-work trips, as would be expected if the building project and the transit station were more closely co-located.		
449	Robert Hill NAHB Research Center NAHB Research Center	502.1 Project Team, Mission Statement and Goals Add new as follows	A knowledgeable team is established and team member roles are identified with respect go green lot design, preparation, and development. The project's green goals and objectives are written into a mission statement. <u>For lots without any environmentally sensitive areas, if the developer had a team established for this purpose with identified roles and a written goals, objective, and mission statement for the covenants for homes built in the community support mission, these points may be awarded to the home.</u>	There are two issues with this practice: (1) is the team's mission to focus strictly on the lot design & landscape or the entire project and (2) for builders building on developed lots in a community, this practice seems awkward especially if there are community covenants guiding/restricting what can be done on the lot.		
350	Anthony Floyd City of Scottsdale City of Scottsdale	503.1 Natural Resources Revise as follows	Make line items (1) and (2) mandatory.	Local building departments already require sites plans to identify existing natural and manmade features. A natural resources inventory merely identifies the site's environmental attributes. This is simple and straight forward. As part of this inventory, priority site attributes and resources can be identified and made part of the site development plan. This is a prerequisite for beginning any green building project and should be mandatory for the National Green Building Standard.		
450	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(1) A natural resources inventory is completed under the direction of a qualified professional. <u>For lots without any environmentally sensitive areas, if the developer conducted a natural resource inventory, and that information is made available to the builder, then these points may be awarded based on the development's natural resource inventory.</u>	It seems reasonable to give credit to the home when the activity has been done by the developer on a community wide basis.		
451	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(2) A plan is implemented to conserve the elements identified by the resource inventory as high priority resources. <u>For lots without any environmentally sensitive areas, if the developer conducted a natural resource inventory and the developer implemented a plan to conserve high priority resources, these points are available to the builder provided the builder does not do anything on the lot that violates the community plan.</u>	For developed lots that do not have any sensitive areas, it seems reasonable that this could be done on a community wide basis.		
452	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(3) Items listed for protection in the resource inventory plan are protected under the direction of a qualified professional. <u>When the lot has no high priority resources on the lot itself, if during the construction of the development, the developer met this practice for the entire community, these points may be awarded.</u>	It seems reasonable to give credit to the home when the activity has been done by the developer on a community wide basis.		
453	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(4) Basic training in tree or other natural resource protection is provided for the on-site supervisor. <u>If the builder's supervisor is responsible for the entire community and there are substantial trees or other natural resources in the community and the supervisor has the training required for this practice then these points can be awarded for any lot under the supervisor's control. If the lot specific supervisor has had this training and there are trees</u>	Clarification is needed as to when these points are appropriate.		

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			<u>or other natural resources on or adjacent to the lot in such a way that the construction on the lot would potentially harm them, then these points are applicable. The points are not applicable if there are no trees or natural resources to protect.</u>			
454	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(5) All tree pruning on-site is conducted by a Certified Arborist. <u>When the individual lot is treeless, if during the construction of the development the developer met this practice for trees throughout the entire community, these points may be awarded for the lot.</u>	Guidance is needed to understand when these points should be awarded.		
455	Robert Hill NAHB Research Center NAHB Research Center	503.1 Natural Resources Add new as follows	(6) Ongoing maintenance of vegetation <u>on the lot</u> during construction is in accordance with TCIA A300.	Provide clarification that this practice must be done on the lot rather than in the community.		
70	Steve Hale Build Green NM Build Green NM	503.1 Natural Resources Add new as follows	Natural Resources. Natural resources are conserved by one or more of the following: <u>Note: bare subdivision lots do not qualify for points in (1-6)</u>	This clarifies what you can't earn when building on a bare lot.		
71	Steve Hale Build Green NM Build Green NM	503.1 Natural Resources Add new as follows	503.1 (1) A natural resources inventory is completed under the direction of a qualified professional <u>or using an appropriate regional resource guide.</u>	Sometimes it is easy to identify salvageable resources without the need to hire an additional professional, especially considering this is for one lot.		
72	Steve Hale Build Green NM Build Green NM	503.1 Natural Resources Revise as follows	503.1 (3) Items listed for protection in the resource inventory plan are protected under the direction of a qualified professional <u>qualified personnel (or person).</u>	This expands the scope of who could be qualified to protect resources including the contractor or owner.		
73	Steve Hale Build Green NM Build Green NM	503.1 Natural Resources Add new as follows	503.1 (7) <u>If a bare lot in a subdivision adjoins a landscaped common area. A protection plan from construction activities next to the common area is implemented. (5 points)</u>	Allows points for a bare lot for implementing practices that save resources (another change submission suggests barring points in (1-6) of this section 503.1		
456	Robert Hill NAHB Research Center NAHB Research Center	503.2 Slope Disturbance Add new as follows	(3) All or a percentage of roads and parking are aligned with natural topography to reduce cut and fill.	This practice needs significant clarification. Most lots do not have roads but only drive ways. Parking on most single family lots is typically confined to the driveway. Some urban single family lots do not have driveways and use on street parking. If this practice is intended to apply only to multi-unit complexes it should be stated that way. If the practice is to be broadly applied to include roads in the development then guidance is needed on how to apply it (e.g. does the road in front of the house need to align with the topography or is it all roads in the community).		
457	Robert Hill NAHB Research Center NAHB Research Center	503.2 Slope Disturbance Add new as follows	(4) Long-term erosion effects are <u>significantly</u> reduced through the design and implementation of terracing, retaining walls, landscaping, and or restabilization techniques.	This is to provide clarification that any of these practices may be used (not all are required) and to provide guidance on the improvement must be more than minimal. Further guidance on the extent of the improvement necessary would be very helpful.		
74	Steve Hale Build Green NM Build Green NM	503.2 Slope Disturbance Revise as follows	503.2 Slope disturbance. Slope disturbance is minimized by one or more of the following; (Points awarded only if there are developable steep slopes on the lot)	It makes no sense if steep slopes are avoided in the first place (this is just a single lot) As written this would encourage finding steep slopes for development when they should be left alone (think of L.A. in the rainy season)		
75	Steve Hale Build Green NM Build Green NM	503.2 Slope Disturbance Add new as follows	503.2 (1) <u>(d) A lot is chosen with no steep slopes (2 points)</u>	It makes no sense if steep slopes are avoided in the first place (this is just a single lot) (Two other related changes submitted)		
76	Steve Hale	503.2 Slope	503.2(3)	It makes no sense if steep slopes are avoided in the first place (this is just a		

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	Build Green NM Build Green NM	Disturbance Add new as follows	(d) A lot is chosen with no steep slopes (2 points)	single lot)		
351	Anthony Floyd City of Scottsdale City of Scottsdale	503.3 Soil Disturbance and Erosion Revise as follows	Make lines items (1) and (3) mandatory.	Soil exposed by construction activities is especially vulnerable to erosion. Soil erosion contributes to stormwater run-off pollutants and air borne particulates that make up air pollution. Most city and county authorities require a Stormwater Pollution Prevention Plan to minimize stormwater pollutant runoff. Based on the site inventory and an established site plan, it is simple to identify the limits of clearing and grading. Most jurisdictions already require a grading and drainage plan as part of civil engineering and building permit requirements. This process has long been established in the engineering and regulatory process around the country. This should be a prerequisite and therefore mandatory for the National Green Building Standard.		
458	Robert Hill NAHB Research Center NAHB Research Center	503.3 Soil Disturbance and Erosion Add new as follows	(1) Construction activities are scheduled to minimize limit the length of time that <u>unstabalized soils</u> are exposed to <u>14 days or less</u> .	Clarification is needed define "minimize". 14 days is the EPA guideline.		
460	Robert Hill NAHB Research Center NAHB Research Center	503.3 Soil Disturbance and Erosion Add new as follows	(2) <u>At least 75% of total length of the installed Utilities on the lot</u> are installed using one or more alternative means:	Clarification is needed to define to what extent the installation must meet the practice in order to qualify for the points.		
461	Robert Hill NAHB Research Center NAHB Research Center	503.3 Soil Disturbance and Erosion Add new as follows	(3) Limits of clearing and grading are demarcated on the <u>lot</u> plan.	Clarify the practice.		
77	Steve Hale Build Green NM Build Green NM	503.3 Soil Disturbance and Erosion Revise as follows	503.3 (3) Limits of clearing and grading are demarcated on the plan (<u>not awarded for bare lots</u>)	Hard to preserve what is not there or monitor on small subdivision lots that have been scraped bare.		
352	Anthony Floyd City of Scottsdale City of Scottsdale	503.4 Storm Water Management Revise as follows	Make line item (2) mandatory.	Building permit authorities already require site surveys along with a proposed site plan and grading/drainage plan. Most city, town and county authorities have master stormwater surveys and plans to ensure public infrastructure and development will not adversely affect regional drainage paths. This process has long been established in the engineering and regulatory process around the country. A site stormwater management plan should be a prerequisite and therefore mandatory for the National Green Building Standard.		
462	Robert Hill NAHB Research Center NAHB Research Center	503.4 Storm Water Management Add new as follows	Storm water is managed using one or more of the following low impact development techniques: <u>For lots in a development, the points for items (1), (2), and (3) may be awarded for the lot when there is a community storm water management plan implemented and the builder does not violate that plan with respect to water leaving the lot.</u>	This practice is difficult to meet when it is confined strictly to the lot. Allowing credit for coordinating with a site storm water management plan clarifies this practice while still meeting the intent.		
463	Robert Hill NAHB Research Center NAHB Research Center	503.4 Storm Water Management Revise as follows	A storm water management plan...	Is this intended to be a plan for during consturction only or a plan that covers both construction and post construction?		
283	Steven Orlowski National Association of Home Builders NAHB	503.4 Storm Water Management Revise as follows	(4) <u>Green Roof</u> – A minimum of 50% of the roof is to be vegetated <u>uses vegetated roof technology</u> and shall be capable of withstanding the climate conditions of the jurisdiction and the micro climate conditions of the of the building site. <u>Invasive plant species shall not be permitted and selected plants shall not add to the potential for fire hazard in the event of severe drought.</u>	Greater specificity on green roof technology is needed. Also, this section should being with the term "green roof" so that it is more easily identified within the chapter.		
165	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.4 Storm Water Management Add new as follows	(5) <u>Option 1: Stormwater management practices that manage rainfall on-site and prevent the off-site discharge from all storms up to and including the volume of the 95th percentile storm event. Maintain predevelopment (natural) runoff temperatures.</u> <u>Option 2: Conduct a hydrologic analysis that results in the design of a stormwater</u>	The standard's practice on stormwater management is commendable for encouraging the use of low-impact development techniques. However, the practice does not go far enough to ensure that buildings do not have an overly harmful impact on the hydrology of the surrounding area. This section can be strengthened through the development of several additional practices. In place		

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			<u>management system that maintains the pre-development (stable, natural) runoff hydrology of the site throughout the development or redevelopment process. Post construction runoff rate, volume, duration, and temperature shall not exceed predevelopment rates.</u>	of or in addition to the existing, relatively prescriptive measures in 503.4 and 403.5, EPA recommends a stormwater management practice focusing more on outcomes.		
170	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.4 Storm Water Management Add new as follows	Stormwater management verification. Stormwater rate, volume and duration calculations shall be provided for pre- (stable, natural) and post- development for the 2, 10, 25, 50 and 100 year storm events in addition to other applicable state and local reporting requirements. Infiltration and evapotranspiration strategies and rainwater collection (where allowed) calculations shall be indicated. A long-term maintenance plan for stormwater management practices shall be provided.	In support of the requirements that EPA suggested in a prior comment (ID# 165), we we recommend the above means of verification.		
465	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	A landscape plan for the lot is developed to limit water and energy use while preserving or enhancing the natural environment.	Clarify the practice.		
466	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	When a lot will be less than 50% turf, A plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	For lots that are substantially all turf it seems inappropriate to award points for a plan to restore the natural vegetation.		
467	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(2) Turf grass species, other vegetation, and trees are selected and specified on the lot plan that are native or regionally appropriate for local growing conditions.	Clarify the practice.		
468	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(3) A- <u>The percentage of or all turf areas that will be mowed are limited and shown on the lot plan. The percentage is based on the landscaped area of the lot not including the home footprint, hardscape, and any undisturbed natural areas.</u>	Clarify the practice.		
469	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(4) Plants with similar watering needs are grouped (hydrozoning) and shown on the lot plan.	Clarify the practice.		
471	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(5) Species and locations for trees or tree planting of at least 3 trees are identified on the lot plan that will provide summer shading of streets, parking areas, and buildings to moderate temperatures within 5 years of completion of the building.	Clarify the practice and to define the extent of implementation required.		
472	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(6) Vegetative wind breaks or channels are designed to protect the lot as appropriate for local conditions.	Clarify the practice.		
473	Robert Hill NAHB Research Center NAHB Research Center	503.5 Landscape Plan Add new as follows	(7) On-site (or community generated) tree trimmings or stump grinding of regionally appropriate trees are used to provide protective mulch on the lot during construction, and cleared trees are recycled as sawn lumber or pulp wood.	Clarify the practice. There have also been a number of requests to allow trees to be used as firewood as an alternative to sawn lumber or pulp wood. If the task group has an opinion on this, additional clarification would be useful.		
78	Steve Hale Build Green NM Build Green NM	503.5 Landscape Plan Revise as follows	503.5 Landscape plan. A landscape plan is developed to limit water and energy use while preserving or enhancing the natural environment, (If "front" only or "rear" only plan is implemented only 1/2 the points (rounding down to a whole number) are allowed for the practices (1-6) in section 503.5.	Many builders landscape the front only and leave the rear to the home owner. Partial credit should be allowed for this practice.		
79	Steve Hale	503.5 Landscape	503.5 (e)	Zoning or covenants that are implemented later by the home owner will still reap		

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	Build Green NM Build Green NM	Plan Add new as follows	(e) no landscape plan is implemented but zoning, covenants or deed restrictions limit turf to , 25% (1 pt)	sustainable benefits.		
171	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.5 Landscape Plan Delete and substitute as follows	(3) A percentage of all turf areas are limited. (a) 0 percent (b) greater than 0 percent to less than 25 20 percent (c) 25 20 percent to less than 40 50 percent (d) 50 40 percent to 75 60 percent	EPA supports the inclusion of a practice restricting turf areas in landscaping, but the minimum target of 75 percent of all landscaping is too low. We recommend that the minimum instead be set at 60 percent, with one additional point awarded for every further 20 percent reduction.		
173	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.5 Landscape Plan Revise as follows	(8) An integrated pest management plan is developed to minimize chemical use in pesticides and fertilizers. An Integrated Pest Management plan is developed, implemented, and maintained that addresses both indoor and outdoor pest control. The plan must include the EPA's Pesticide Environmental Stewardship Program four tiered approach to pest management: 1) Set action thresholds. Before taking any pest control action, IPM first sets an action threshold, the point at which pest populations or environmental conditions indicate that pest control action must be taken to avert a nuisance, health hazard, or economic threat. 2) Monitor and Identify Pests. IPM programs monitor and identify pests and the most appropriate course of action for a particular pest chosen. Monitoring and pest identification ensures that appropriate actions are taken. This could include some combination of prevention and control. 3) Prevention. The first line of defense in any IPM program is the prevention of conditions in or around a building or in an orchard that attract pests – sources of food, water, and shelter. IPM service providers use practices to prevent pests including, but not limited to: a. Customer education including materials for non-English speakers and those with difficulty reading. b. Providing customers with information about pest behavior and conditions, and that allow pests access to the site, food, water, and habitat, so that the customer can understand and participate in the pest management process; c. Irrigation practices, the treatment or removal of plants attractive to pests, and physical changes to reduce pest access to structures; d. Removal of pest habitat, sources of food and water, and breeding areas - keeping premises free of trash and overgrown vegetation, and diverting water away from a building or landscaping to avoid standing water; e. Prevention of access to structures - sealing areas where pests enter the buildings (weatherization). 4) Management. Integration of Multiple Management Strategies and Tools A variety of pest control strategies and tools are integrated into a comprehensive program to manage the pest. If identification, monitoring, and action thresholds indicate that pest	The IPM component of the standard's landscape plan (503.5.8; 403.6.9) can be improved in two main ways. First, NAHB should use more specific language to ensure that the IPM plan has a meaningful environmental impact. Secondly, the practice should require the use of pest control operators who are certified in IPM practices. We suggest the above language instead of the standard's current language on IPM.		

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			<p>management is required, and preventive methods are no longer effective or viable, management methods can be and should be employed. Management strategies may include, but are not limited to, the following:</p> <ul style="list-style-type: none"> a. Mechanical or physical controls including, but not limited to, traps, vacuuming, steam cleaning, or physical barriers; b. Biological controls including the use of predators, parasitoids, or pathogens to control the pest; and, c. If preventive measures along with the practices in paragraphs 'a' and 'b' directly above are insufficient to prevent or control pests, chemical controls may be used. <p>Note: Under an IPM program, management methods are evaluated based on effectiveness and relative risk. Those methods that are found to both be the most effective and pose the lowest risk are selected first. IPM combines two central methods for reduced-risk pest control:</p> <ul style="list-style-type: none"> a. Least Toxic Pest Management Options. These include use of physical controls, such as trapping, vacuuming, and steam cleaning. b. Pesticides <p>Pest management is a group activity from the prevention and monitoring phase through the chemical usage decision. All stakeholders should be involved in the decision to use chemicals. For structural situations, this includes the IPM coordinator, pest management professionals, building managers, cleaning staff, etc. In agricultural situations, this includes the crop consultant/scout, grower, and, when appropriate, food processor.</p> <p>Pest management plans should dictate action thresholds and a decision-making process for actions including pesticide selection. Universal notification (advance notice of not less than 72 hours under normal conditions and 24 hours in emergencies before a pesticide, other than a least-toxic pesticide, is applied in a building or on surrounding grounds that the building management maintains). Define emergency conditions. There are best management practices to follow if pesticides are to be used:</p> <ul style="list-style-type: none"> <input type="checkbox"/> read the label first, <input type="checkbox"/> choose the right chemical for a particular pest, and <input type="checkbox"/> have a clear understanding of the proper application rate and method – misuse can harm not only your health but also the environment. <p>When a chemical control method is required within an IPM program, a biological pesticide should be considered first. Biopesticides are usually inherently less toxic than conventional pesticides and decompose quickly so they do not leave persistent chemical residues in the environment.</p> <p>Sometimes a conventional pesticide (synthetic materials that directly kill or inactivate a pest) may be needed for satisfactory pest control. Ideally, all pesticides are used in combination with other lower-risk non-chemical pest management practices. Even within conventional pesticides, there is a progression of best management practices:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use baits and spot treatments are limit unnecessary exposure to chemicals, <input type="checkbox"/> Apply pesticides only as directed by the label, <input type="checkbox"/> Notify customers prior to pesticide applications - ideally, a 24 hour notice before for 			

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			<p>applications in or around any building landscape or structure.</p> <p>□ In occupied structures, pest management professionals and/or IPM coordinators must clearly explain to the building occupants how to maintain safe interaction around the treated areas.</p> <p>Hire pest management professionals certified by an EPA Pesticide Environmental Stewardship Program partner organization, such as the National Pest Management Association's Green Pro, IPM Institute's Green Shield, or other programs, as appropriate.</p>			
237	Thomas Stroud HPBA HPBA	503.5 Landscape Plan Add new as follows	503.5(7) On-site tree trimmings or stump grinding of regionally appropriate trees are used to provide protective mulch during construction or as a base for walking trails, and cleared trees are recycled as sawn lumber, pulp wood or biomass for Solid Fuel Burning Appliance as per Section 901.2.1(2) for on-site <u>renewable energy.</u>	This is in support of the use of on-site renewable energy		
475	Robert Hill NAHB Research Center NAHB Research Center	503.6 Wildlife Habitat Add new as follows	Measures are planned that will support wildlife habitat. <u>The measures to support wildlife habitat should be commensurate with the size and surroundings of the lot. Points are available for lots when community space supports wildlife habitat. The minimum support measures should include at least 2 of the following: area for shelter, natural food source, and natural water source.</u>	Additional guidance is needed to clarify the extent and types of measures that are appropriate and required for various types of lots.		
285	Steven Orłowski National Association of Home Builders NAHB	503.6 Wildlife Habitat Add new as follows	<p>503.6 Wildlife Habitat. Measures are planned that will support wildlife habitat.</p> <p>(1) <u>Plants and gardens that will encourage wildlife, such as bird and butterfly gardens.</u></p> <p>(2) <u>Inclusion of a certified "backyard wildlife" program</u></p> <p>(3) <u>Lots are adjacent to wildlife corridors, fish and game parks, or preserved areas and are designed to be respectful of this relationship.</u></p> <p>(4) <u>Outdoor lighting techniques are utilized to be respectful of wildlife.</u></p>	In Chapters 4 and 5, points are awarded for developers who preserve wildlife habitats on site, as well as provide on-site amenities to encourage urban wildlife. Therefore, it is pertinent to provide a definition to this term to help clarify the verification process.		
478	Robert Hill NAHB Research Center NAHB Research Center	503.7 Mixed Use Development Add new as follows	<u>The building on the lot contains Mixed-uses development is incorporated. These points are intended for buildings that contain mixed use in the building. The points for a mixed use community are awarded in 501.2(3).</u>	This practice is often confused with mixed use development in 501.2(3). This change clarifies that this practice applies only to buildings that have the mixed use within the building.		
479	Robert Hill NAHB Research Center NAHB Research Center	503.8 Environmentally Sensitive Areas Delete and substitute as follows	(1) Environmentally sensitive areas are avoided. The lot does not contain any environmentally sensitive areas that are disturbed by the construction.	This change clarifies that a lot without any sensitive areas or a lot that has sensitive areas but those areas are not disturbed can meet this practice.		
480	Robert Hill NAHB Research Center NAHB Research Center	503.8 Environmentally Sensitive Areas Add new as follows	(2) <u>Compromised environmentally sensitive areas are mitigated or restored. These points are available only if the lot has a compromised environmentally sensitive area on the lot. These points are not available if the sensitive area is damaged during construction of the building. If the sensitive area is damaged by the developer (and the developer is not the builder) or if the sensitive area is otherwise less than pristine, these points may be awarded if the builder makes significant restoration efforts. Points cannot be claimed for mandatory mitigation or restoration of federally-protected sensitive areas unless the mitigation or restoration is greater than that which was required through the federal permit process.</u>	This practice needs to make it clear that to get the points any restoration or mitigation must go above and beyond and government mandated efforts and any damage caused by the builder.		
154	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.8 Environmentally Sensitive Areas Revise as follows	<p>This section should be a mandatory requirement, not one that provides credits.</p> <p>(This proposed change is also being submitted for Section 403.11)</p>	Locational considerations are fundamental to the definition of a green building. Moreover, the importance of environmentally sensitive areas to human health and the environment makes their protection essential in any standard that aims to promote increased environmental protection.		
157	Susan Gitlin US Environmental	503.8 Environmentally	<p>(1) Environmentally sensitive areas are avoided.</p> <p>(2) Compromised environmentally sensitive areas are mitigated or restored.</p>	Locational considerations are fundamental to the definition of a green building. NAHB is notably weaker than other green building rating and certification		

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	Protection Agency US Environmental Protection Agency	Sensitive Areas Revise as follows	<u>(3) Buildings are not erected, and landscape improvements are not conducted, on land that is undeveloped or that has been developed only for agricultural purposes, and that is within a 100-year floodplain.</u>	systems on the issue of site sustainability, and in particular, in discouraging building on environmentally sensitive and valuable lands. NAHB has only one optional credit restricting building in sensitive areas, which nonetheless allows building if the area is to be mitigated or restored. With no specific requirements or definition for mitigation or restoration, nor with a means of enforcement for this provision, this practice is insufficient to guarantee protection of sensitive lands. This shortcoming is a major weakness in the standard. Sections 503.8 and 403.11 should be revised to correct this shortcoming.		
569	Robert Hill NAHB Research Center NAHB Research Center	503.9 Density Revise as follows	The average density <u>on the lot</u> on a net developable area is:	Clarify that the density is based on the individual lot rather than a community wide average.		
163	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	503.9 Density Add new as follows	<u>(4) The lot [or site] is within one-quarter mile of developed residential land with an average density of at least 8 units per acre.</u> <u>(5) The lot [or site] is adjacent to existing development with pre-project connectivity of at least 90 intersections/mile of any continuous segment equaling 25 percent of the project boundary. Areas excluded from the calculation shall be water bodies, parks larger than 1/2 acre, recreational facilities, public campuses (such as universities), airports, rail yards, areas preserved from development by codified law or prerequisites of the rating system, and land that cannot be developed due to a unique topographic or geologic condition (such as steep slopes). Street rights-of-way may not be excluded.</u>	The standard provides points for densely-built projects in sections 503.9 and 403.12, as well as in several innovative practices for subdivisions in 405. EPA supports these practices, but recommends that NAHB go further by incentivizing buildings or subdivisions to be built adjacent to densely-built areas as well.		
481	Robert Hill NAHB Research Center NAHB Research Center	504.1 Onsite Supervision Add new as follows	On-site supervision and coordination is provided during clearing, grading, trenching, paving <u>on the lot</u> , and installation of utilities <u>on the lot</u> to ensure that specified green development practices are implemented. (also see Section 503.3).	Clarify the practice.		
482	Robert Hill NAHB Research Center NAHB Research Center	504.2 Trees and Vegetation Add new as follows	(1) Fencing or equivalent is installed to protect <u>all trees and other vegetation on the lot or adjacent to the lot that might be disturbed by the construction.</u>	Clarify the practice.		
483	Robert Hill NAHB Research Center NAHB Research Center	504.2 Trees and Vegetation Add new as follows	(2) Trenching, significant changes in grade, and compaction of soil and critical root zones in <u>all "tree save" areas as shown on the lot plan</u> are avoided.	Clarify the practice.		
484	Robert Hill NAHB Research Center NAHB Research Center	504.2 Trees and Vegetation Add new as follows	(3) Damage to designated existing trees and vegetation is mitigated during construction through pruning, root pruning, fertilizing, and watering <u>and these trees and vegetation are healthy at the completion of the project.</u>	Clarify the practice.		
80	Steve Hale Build Green NM Build Green NM	504.2 Trees and Vegetation Revise as follows	504.2 Trees and vegetation. Designated trees and vegetation are preserved <u>on the building lot or adjoining "open" space</u> by one or more of the following:	More clearly defines what points are awarded for. Protecting next door neighbors trees should be standard practice and not awarded points.		
485	Robert Hill NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(1) Limits of clearing and grading are staked out <u>on the lot.</u>	Additional consideration should be given to dealing with small urban lot where the lot line and the clearing limits are likely to be one in the same.		
486	Robert Hill NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas <u>on the lot or immediately adjacent to the lot</u> from construction activity.	Clarify the practice.		
488	Robert Hill NAHB Research	504.3 Soil Disturbance and	(3) Sediment and erosion controls are installed on the lot and maintained in accordance with the storm water pollution prevention plan, where required.	Clarify the practice.		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
	Center NAHB Research Center	Erosion Add new as follows				
489	Robert Hill NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(4) Topsoil (from either the lot or the community development) is stockpiled and stabilized for later use and used to establish landscape plantings on the lot.	Clarify the practice.		
490	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Revise as follows	(5) Soil Compaction from construction equipment is reduced by distributing the weight of the equipment over a larger area (laying lightweight geogrids, mulch, chipped wood, plywood, OSB, metal plates, or other materials capable of weight distribution in the pathway of the equipment). <u>This must be done for all heavy equipment used on the lot throughout the construction process.</u>	The commentary appears to limit the need for any of the 504.3 sub-practices to areas outside of the limits of clearing and grading. If that is the intent then the sub-practices should be clarified to make this clear.		
491	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(6) Disturbed areas on the lot that are complete or to be left unworked for 21 days or more are stabilized with 14 days using methods as recommended by the EPA, or in the approved storm water pollution prevention plan, where required.	Clarify the practice.		
492	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Add new as follows	(7) Soil for at least 50% of the landscaped area (including turf) is improved with organic amendments and mulch as recommended by a local landscaper.	Clarify the practice and define the extent required.		
493	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	504.3 Soil Disturbance and Erosion Revise as follows	(8) <u>At least 75% of total length of the installed Utilities on the lot</u> are installed using one or more alternative means (e.g., tunneling instead of trenching, use of smaller equipment, use of low ground pressure equipment, use of geomats, shared utility trenches or easements).	Clarify and define the extent of the practice. How does this part of this practice relate to 504.3(5)? Should low ground pressure equipment be added to 504.3(5)?		
83	Steve Hale Build Green NM Build Green NM	504.3 Soil Disturbance and Erosion Delete without substitution	504.3 (1) Limits of clearing and grading are staked out.	Redundant Combine with similar points in 503.3 (3)		
84	Steve Hale Build Green NM Build Green NM	504.3 Soil Disturbance and Erosion Delete without substitution	504.3 (3) Sediment and erosion controls are installed and maintained in accordance with the storm water pollution prevention plan. Where required	Redundant Combine with similar points in 503.4 (2)		
85	Steve Hale Build Green NM Build Green NM	504.3 Soil Disturbance and Erosion Delete without substitution	Utilities are installed using one or more alternative means...	Redundant Combine with similar points in 503.3 (2)		
495	Robert Hill NAHB Research Center NAHB Research Center NAHB Research Center	505.1 Driveways and Parking Areas Revise as follows	Driveways or Off-street parking areas are shared or driveways are shared for at least 50% of their length. Waivers or variances from local development regulations are obtained to implement such practices, as applicable if required. In a multi-unit project, parking capacity is not to exceed the local minimum requirements.	Clarify and define the extent of the practice.		
318	Erin Ashley National Ready Mixed Concrete Association NRMCA	505.2 Heat Island Mitigation Revise as follows	<div style="border: 1px solid black; padding: 5px;"> <p>505.2 Heat Island Mitigation. Heat island mitigation. Any combination of the following strategies are provided for a minimum of 50 percent of the horizontal surface area off the hardscape:</p> <p>(1) Shading of the hardscaping: Shade is provided from existing or new vegetation (within five years) or from trellises. Shade of hardscaping is to be</p> </div>	For inclusion of pervious concrete: Pervious concrete should be included in the acceptable reflective materials sections under the heat island credit. The ASTM C1549 solar reflectance test and subsequent calculation of SRI in accordance with ASTM E1980 does not adequately capture the heat island effects of permeable pervious concrete due to their void structure. However, studies have shown that pervious concrete stores less energy, therefore less heat, when exposed to sun over an extended period of time. This heat is not reflected back to the environment resulting in lower external temperatures. Furthermore, moisture trapped within the voids allows the pavements to remain cooler via evaporation. For change in point values: The effect of increase in ambient temperatures in metropolitan areas is apparent when you compare the health of those who reside in the city versus those who reside in more rural areas.		

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action								
			<p>measured on the summer solstice at noon.</p> <p>(2) Light-colored hardscaping: Horizontal hardscaping materials are installed with a solar reflectance index of 29 or greater</p> <p>(3) <u>Pervious Concrete: Horizontal hardscaping materials are installed with pervious concrete.</u></p> <table border="1"> <tr> <td><u>(1) A minimum of 50% of the Horizontal Surface meets the strategies of 505.2</u></td> <td>4</td> </tr> <tr> <td><u>(2) 50% to 75% of the horizontal surface meets the strategies of 505.2</u></td> <td>6</td> </tr> <tr> <td><u>(3) 100% of the horizontal surface meets the strategies of 505.2</u></td> <td>8</td> </tr> </table>	<u>(1) A minimum of 50% of the Horizontal Surface meets the strategies of 505.2</u>	4	<u>(2) 50% to 75% of the horizontal surface meets the strategies of 505.2</u>	6	<u>(3) 100% of the horizontal surface meets the strategies of 505.2</u>	8	<p>Compared to rural areas, cities experience higher rates of heat related illness and death. Heat islands, or areas of dark colored roofing and pavements where ambient temperature is increased, can exacerbate hot weather events or periods, which may cause heat stroke and lead to physical discomfort, heat stroke, organ damage and even death especially in vulnerable populations such as the elderly. The Centers for Disease Control and Prevention (CDC) says that excessive heat claims more lives in the United States each year than hurricanes, lightning, tornadoes, floods and earthquakes combined. Between 1979-1998, the CDC estimates that 7,421 deaths resulted from exposure to excessive heat in the U.S. By reducing the temperature of the pavements through the use of lighter color materials, one may be able to reduce the ambient temperature of our cities, therefore reducing the temperature exposure to its residents. The intent of this code is to provide the best sustainable measures to the general public. With the options for heat island mitigation provided in this credit, it is plausible to achieve the value of 75% or 100% without incurring significant costs; however, the savings in regards to energy, health and decrease in temperature will be measurable. Therefore, additional points should be awarded for these incremental achievements. References: Source: Haselback, L., Kevern, J.T., Hot Weather Comparative Heat Balances in Pervious Concrete and Impervious Concrete Pavement Systems. 2010 Haselbach, L., and A. Gaither. Preliminary Field Testing: Urban Heat Island Impacts and Pervious Concrete. Proceedings NRMCA 2008 Concrete Technology Forum: Focus on Sustainable Development, Denver, CO, May 20-22, 2008 (CD-ROM). Kevern, J.T., Schaefer, V.R., and Wang, K. "Temperature Behavior of a Pervious Concrete System," National Transportation Research Board (TRB) Transportation Research Record 2009a edition. (accepted, publication info pending) www.eere.energy.gov/state_energy_program/project_brief_detail.cfm/pb_id=102 Accessed August 10, 2008 http://www.climate-science.gov/Library/sap/sap4-5/sap4-5prospectus-final.htm Accessed August 10, 2008.</p>				
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497	Robert Hill NAHB Research Center NAHB Research Center	505.2 Heat Island Mitigation Add new as follows	Heat Island Mitigation. Any combination of the following strategies are provided for a minimum of 50 percent of the horizontal surface area of the hardscape <u>on the lot</u> :	Clarify practice.										
286	Steven Orlowski National Association of Home Builders NAHB	505.2 Heat Island Mitigation Add new as follows	<p>505.2 Heat island mitigation. Any combination of the following strategies are provided for a minimum of 50 percent of the horizontal surface area of the hardscape:</p> <p>(1) Shading of hardscaping; Shade is provided from existing or new vegetation (within five years) or from trellises. Shade of hardscaping is to be measured on the summer solstice at noon.</p> <p>(2) Light colored hardscaping: Horizontal hardscaping materials are installed with a solar reflectance index of 29 or greater.</p> <p><u>(3) Green Roof Roof – A minimum of 50% of the roof is to be vegetated uses vegetated roof technology and shall be capable of withstanding the climate conditions of the jurisdiction and the micro climate conditions of the of the building site. Invasive plant species shall not be permitted and selected plants shall not add to the potential for fire hazard in the event of severe drought.</u></p> <p><u>(4) Landscaping Coverage, excluding all impervious surfaces and, including lawns, softscape gardens, and tree canopies:</u></p> <table border="1"> <tr> <td></td> <td>40 – 50%</td> </tr> <tr> <td></td> <td>50 – 60%</td> </tr> <tr> <td></td> <td>60 – 75%</td> </tr> <tr> <td></td> <td>Above 75%</td> </tr> </table>		40 – 50%		50 – 60%		60 – 75%		Above 75%	Points are awarded to the developer for green roof technology respective of storm water management. However, points should also be awarded for utilizing green roof technology as well as landscaping in place of "hardscape" for heat island mitigation, as the installation of horizontal "softscape" is proven to reduce the urban heat island effect, not through reflectivity, but through lower heat absorption.		
	40 – 50%													
	50 – 60%													
	60 – 75%													
	Above 75%													
208	Gary Ehrlich	Add New Section	503.10 Flood hazard areas. The development of portions of lots	An important component of sustainable building is mitigation of natural hazards.										

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action				
	NAHB NAHB	Add new as follows	<p>located within flood hazard areas is avoided as follows:</p> <table border="1"> <tr> <td>(1) Portions of lots located within a flood hazard area are avoided.</td> <td></td> </tr> <tr> <td>(2) Portions of lots located within areas subject to a 0.2% annual chance (500-year) flood are avoided.</td> <td></td> </tr> </table>	(1) Portions of lots located within a flood hazard area are avoided.		(2) Portions of lots located within areas subject to a 0.2% annual chance (500-year) flood are avoided.		This change proposes a credit for locating buildings and associated site developments outside of flood hazard areas. Two levels of credits are proposed; one for avoiding the standard Zone A, Coastal A Zones and V Zone areas, defined as those areas subject to a 1% annual flood risk (or the so-called "100-year floodplain"). An additional credit is proposed for avoiding areas subject to a 0.2% annual flood risk, or the so-called "500-year floodplain". This recognizes that flood damage often occurs outside of the standard flood hazard areas mapped by FEMA.		
(1) Portions of lots located within a flood hazard area are avoided.										
(2) Portions of lots located within areas subject to a 0.2% annual chance (500-year) flood are avoided.										
149	Randall K. Melvin Winchester Homes Inc. Winchester Homes, Inc.	Add New Section Add new as follows	<p><u>Green Space</u> A portion of the gross area of the community/subdivision in which the lot resides has been set aside as green space.</p> <p>1 pt for each 10% of the community/subdivision set aside in green space</p>	Encourages green space within community/subdivision						
288	Steven Orlowski National Association of Home Builders NAHB	Add New Section Add new as follows	<p>505.3 Lot Design for Climate Conditions and Energy Efficiency.</p> <p>(1) <u>Tree Plantings – Plant Deciduous Trees to the east and west of a lot(s) to create shade</u></p> <p>(2) <u>Plant evergreens to the north and west to block winter winds</u></p> <p>(3) <u>Avoid plantings to the south.</u></p> <p>(4) <u>Locate an alternative energy facility that would generate electricity for the home on the lot. An alternative energy facility may generate electricity using solar, wind or hydro technologies.</u></p> <p>(5) <u>The installation of energy efficient lighting located on the exterior of the home or within the lot.</u></p>	Consolidating all the criteria that relates to climate and energy into one section. Additionally, have added several criteria related to climate and energy efficiency that can be carried out on the lot or site by a builder or developer, and can also be done relatively easily and will have a credible green effect.						
159	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Water and Wastewater Infrastructure. <u>Portions of a building site dedicated in perpetuity to open space or similar conservation uses do not have to be located within water and wastewater service areas, providing the open space has no existing development.</u></p> <p><u>Water and wastewater infrastructure do not pass through such open space portions of a project to serve land beyond the project outside of the service area.</u></p> <p><u>In addition, the lot [or site] complies with one of the following requirements:</u></p> <p><input type="checkbox"/> <u>Option 1 – Existing Water & Wastewater Service: Locate the building on a site served by existing water and wastewater infrastructure; or</u></p> <p><input type="checkbox"/> <u>Option 2 – Planned Water & Wastewater Service: Locate the building within a legally adopted planned water and wastewater service area and provide new water and wastewater infrastructure for the project; or</u></p> <p><input type="checkbox"/> <u>Option 3: In Situ Water and Wastewater Service: Decentralized water or wastewater systems designed and operated so that they have no significant negative impact on ground water or surface water resources (water quality and quantity and habitat) and pose no significant risk to human health.</u></p>	Sections 501.2 and 405.6 consist of practices encouraging siting close to mass transit and other community resources. This is an important means to mitigate the detrimental transportation-related effects of urban sprawl. However, sprawl also has negative impacts from the expansion of water and wastewater infrastructure, which NAHB does not address. EPA recommends that NAHB add a practice to encourage builders to account for these impacts when siting projects and to specifically protect open space from infrastructure development.						
168	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Pollutant discharges. <u>Projects that may generate pollutant loadings that cannot be attenuated by the processes of bio-infiltration or evapotranspiration shall provide additional water quality treatment measures and practices to significantly reduce the probability of pollutants of concern entering surface or groundwaters.</u></p> <p><u>Projects that are located on brownfields, greyfields or other contaminated sites with</u></p>	The standard's existing practices, as well as the additional practices suggested above, focus specifically on stormwater flow (rates, volumes, etc.). However, NAHB's standard is silent with respect to protecting surface and groundwater quality by minimizing pollutant discharges. EPA would like to see the above requirements added to sections 403 and 503 to ensure the protection of surface and groundwater on building sites.						

ID	Name Company Entity Represented	Section Number And Requested Action	Suggested Changes	Reason	Task Group Action	Reason for TG action
			<p><u>pollution levels that do not allow for infiltration should use a combination of practices that evapotranspire and harvest and reuse stormwater. Contaminated sites shall be developed such that there is no interference with, or damage to, any response action at the site. Do not use coal tar sealants in any application exposed to stormwater.</u></p>			
176	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p>Clean diesel. Contract documents obligate contractors to:</p> <p><u>(1) Create staging areas for waiting to load or unload materials that are located 100 ft (30 m) or more from any outdoor air intakes, operable openings, and hospitals, schools, residences, hotels, daycare facilities, elderly housing, and convalescent facilities.</u></p> <p><u>(2) Enforce idle reduction policies that limit unnecessary idling to no more than 5 - 15 minutes or to a shorter time as required by local laws.</u></p> <p><u>(3) Document implementation of maintenance plan that follows engine manufacturer specifications.</u></p> <p><u>(4) Provide emissions control technologies to all equipment not meeting EPA Tier 4 standards in order to reduce particulate matter (PM) and/or nitrogen oxides (NOx) from diesel engines by a minimum of 20% for 50% of the fleet used at the site. All aftermarket emissions control technologies must be verified by EPA or California Air Resources Board (CARB).</u></p> <p><u>(5) Document that all equipment uses Ultra Low Sulfur Diesel Fuel that meets ASTM specifications with sulfur levels less than or equal to 15 ppm shall be utilized for non-road diesel engines and equipment.</u></p> <p><u>(6) Submit a summary report that includes a copy of the idling/maintenance plan and enforcement policy, and for each piece of equipment: the equipment number, type and make; engine make, horse power and/or kilowatt hour; the emission control device, make, and model; and the type and source of fuel used.</u></p>	<p>Diesel fuel combustion produces air emissions of NOx, PM, and hydrocarbons, with serious human health and environmental impacts. This is a widespread problem; air quality is significantly impaired for large segments of the U.S. due to PM and NOx pollution. EPA estimated that nonroad equipment was responsible for 24 percent of mobile source diesel NOx emissions and almost half of diesel PM2.5 in 2004. Despite the fact that construction equipment produces a substantial portion of diesel emissions, this issue is not addressed by this standard. The impact of construction activity on air quality can be significantly reduced through a series of relatively simple, low-cost steps. Thus, the standard could add an emissions reduction package with little financial or technical burden to project developers. We recommend the above set of practices, which could be implemented jointly or individually.</p>		
127	Steve Hale Build Green NM Build Green NM	Entire Chapter 5 Revise as follows	<p>See reason to adjust Table 303 Points Also see suggested change to table 303 submitted</p>	<p>There is too much variation across the country, Availability of lots goes from small bare to large vegetated and the variance of points to be gained does not correlate to how green a project is. Rather than a different point requirement for each Level there should be a threshold level set and then allow all points above the threshold to go to "Additional Points from any category" which can go up as the levels go up.</p>		
182	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Other (include section number and title below) Add new as follows	<p><u>Consider the design of the interconnection of a new structure (or complex/neighborhood of structures) with the existing municipal drinking water system such that dead-ends and low-flow situations are eliminated or minimized by the configuration of the water flow, location of isolation and flow control valves, and the sizing of the distribution mains.</u></p>	<p>To protect water quality and reduce resources needed for water treatment, add this language as an innovative practice under 505.</p>		
910	Greg Washington Courtyard Construction, Inc. self	Entire Chapter 5	<p>See Below</p>	<p>We certified a home that in most chapters achieved gold level or better...However, in Chapter 5, we were not able to collect enough points to go beyond bronze...Therefore, we only achieved a bronze level certification for the overall project... The issue was the fact we were building the home in an established subdivision...There was no slope, trees or water to protect, etc....Since the home was built on a site with little to no environmental issues at risk, we was unable to collect any points for it... It seems there may be a slight disconnect here...We obviously want homes to reach their highest potential of certification...However, the way the program is in its current state, potentially creates a possible disincentive for builders to reach for anything higher than bronze in all categories, if you are only certified to the lowest common denominator... We did the best we could for the price point we were trying to hit and are pleased with the product we put out... A lot of our homes are built in subdivisions and this issue will come up again...We would like to be able to reach a higher level of certification, but will likely be unable to with Chapter 5... Thanks for listening...</p>		

TG-3: Resource Efficiency and Indoor Environmental Quality

Chapter 2 – Definitions

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
206	Gary Ehrlich NAHB NAHB	202 Definitions Add new as follows	INSULATED CONCRETE FORM (ICF). <u>A concrete forming system using stay-in-place forms of rigid foam plastic insulation, a hybrid of cement and foam insulation, a hybrid of cement and wood chips, or other insulating material for constructing cast-in-place concrete walls.</u> STRUCTURAL INSULATED PANEL (SIP). <u>A structural sandwich panel that consists of a light-weight foam plastic core securely laminated between two thin, rigid wood structural panel facings.</u>	Adds definitions for insulated concrete forms and structural insulated panels. These definitions are connected to a proposal to revise Section 601.9 to clarify the systems that qualify for credit as "above grade wall systems".		
338	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	202 Definitions Revise as follows	Indigenous Regional Materials – Material that is originated, produced, grows naturally, or occurs naturally in a region within 500 miles (804.7 km) of the construction site.	This proposal suggests "Regional" works better in a building-related standard for describing or encouraging the use of materials from a limited geographic area.		
94	Michael Gardner Gypsum Association Gypsum Association	202 Definitions Revise as follows	INDIGENOUS MATERIAL. Material that is originated, produced, grows naturally, or occurs naturally in a region within 500 miles (804.7 km) of the construction site if transported by truck or 1500 miles (2414 km) of the construction site if transported for not less than 80% of the total transport distance by rail.	Most, if not all, other green building standards recognize the economic benefits and efficiencies of rail transport. ICC 700 should also. The percentage threshold for rail transport recognizes that most material that is shipped by rail has to be delivered by truck. The 1500 mile distance ceiling for rail transit is consistent with other green standards.		
96	Michael Gardner Gypsum Association Gypsum Association	202 Definitions Add new as follows	Cogeneration Energy Process: <u>An energy process that consecutively generates useful thermal and electric energy from the same fuel source.</u> Waste Heat. <u>Heat discharged as a byproduct of one process to provide heat needed by a second process.</u>	Definitions are submitted in conjunction with a proposal to add cogeneration energy and waste heat to Section 606. The definition for waste heat is derived from the definition for waste-heat recovery on the "Terms of Environment" web page maintained by the Environmental Protection Agency. That definition is as follows: "Waste Heat Recovery: Recovering heat discharged as a byproduct of one process to provide heat needed by a second process." www.epa.gov/glossary/wterms.html The definition for cogeneration energy process is derived from the same source and is based on the definition for cogeneration. That definition is as follows: "Cogeneration: The consecutive generation of useful thermal and electric energy from the same fuel source." www.epa.gov/OCEPAterms/cterms.html		
388	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Architectural Coatings. A coating (paint or stain <u>including primers</u>) recommended for field application to stationary structures and their appurtenances, to portable buildings, to pavements, or to curbs. The definition of architectural coating does not include adhesives and coatings recommended by the manufacturer or importer solely for shop applications.	The standard is not clear on how site applied primers should be considered. Language is needed to include primers. A technical expert will need to establish the appropriate VOC levels for primers in 901.8.		
393	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Construction Waste Management Plan. A system of measures designed to reduce, reuse, and recycle <u>a substantial portion of the waste generated during construction and to properly dispose of the remaining waste.</u>	The original wording implied that to be considered a plan that all waste had to be recycled or reused.		
396	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	INDIGENOUS MATERIAL. Construction Material (not product e.g. windows) that is originated, produced, grows naturally, or occurs naturally in a region within 500 miles (804.7 km) of the construction site	This definition needs to be clarified. Is it limited to materials (e.g. gravel, lumber, etc) or does it include products such as windows and cabinets. If products are included do the raw materials used to manufacture the products have to be from within the 500 mile radius? If the product is sold thru distribution how is that distance handled? The above suggestion is only one option. Products can also be included but the definition needs to be clear.		
403	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	See reason.	There are a wide variety of materials that might be considered permeable. A description or definition is needed to define how permeable a product should be to qualify as permeable for this standard.		
404	Robert Hill NAHB Research Center	202 Definitions Revise as follows	Post Consumer Recycled Content.	Post & Pre consumer are not referenced in the Chapter 6 practices. Should these definitions be combined?		

NAHB Research Center					
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Chapter 6 – Resource Efficiency

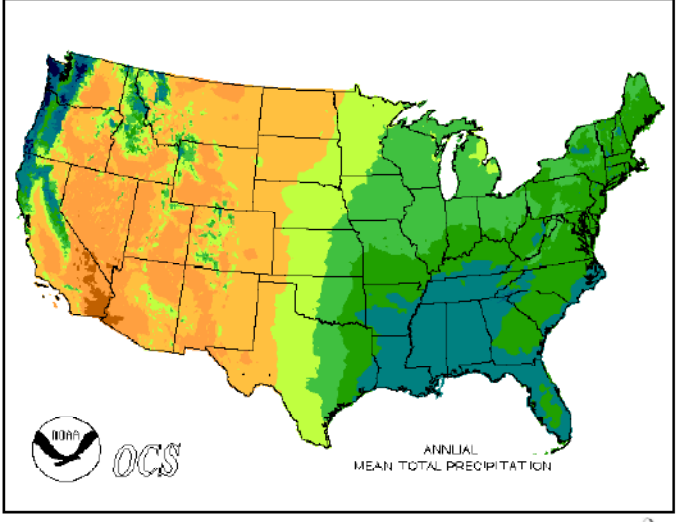
ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
353	Robert Hill NAHB Research Center NAHB Research Center	601.0 Intent (Quantity of Construction Materials and Waste) Revise as follows		The standard should provide guidance on how many times points can be obtained for the same material. For example, if points were awarded in one practice could the builder also receive points for 610 if the product was manufactured in a ISO 14000 facility?		
136	Peter Stone Pacific SBS, LLC Pacific SBS	601.1 Conditioned Floor Area Add new as follows	Exception: For homes with no mechanical system for heating or cooling as allowed by code, Conditioned Floor Area shall mean interior space used for everyday living that has finished walls to the same degree as the majority of interior living space.	For this to be a National Standard, it needs to take into account the minority as well. Hawaii homes are still often built with no mechanical cooling or heating systems because we don't need them. The IRC definition of conditioned floor area reads: "The horizontal projection of the floors associated with the conditioned space." Conditioned space is defined as: "For energy purposes, space within a building that is provided with heating and/or cooling equipment or systems capable of maintaining, through design or heat loss/gain, 50°F (10°C) during the heating season and 85°F (29°C) during the cooling season, or communicates directly with a conditioned space. For mechanical purposes, an area, room or space being heated or cooled by any equipment or appliance." These homes inherently meet the intent of the credit since they have no mechanical systems. But the mandatory condition in 601.1(5) would be hard to enforce with this definition.		
150	Randall K. Melvin Winchester Homes Inc. Winchester Homes, Inc.	601.1 Conditioned Floor Area Add new as follows	Delete section 601.1 in its entirety and replace with a exterior wall area to interior cubic volume air leakage adjustment factor in the energy chapter. .	Trying to equate floor area per person as a variable in determining how green/efficient a home should be built is inappropriate for several the followin reasons: 1. House sizes and bedroom counts do not consistently correlate with the number of people living in them and the number of people living in them at any moment is always subject to change. 2.The average number of people living in a home of any given size, or bedroom count, may vary by demographics.		
354	Robert Hill NAHB Research Center NAHB Research Center	601.1 Conditioned Floor Area Revise as follows	Conditioned floor area, as defined by ICC IRC (<u>including any passively conditioned space</u>) and calculated in accordance with NAHBRC Z765, is limited. Dwelling unit size is to be calculated in accordance with NAHBRC Z765. Only the conditioned floor area for stories above grade plane is to be included in the calculation.	There have been questions from Hawaii about living space that does not need any mechanically conditioning.		
87	Steve Hale Build Green NM Build Green NM	601.1 Conditioned Floor Area Revise as follows	601.1 Conditioned Floor Area. Conditioned floor area. As defined by ICC IRC and calculated in accordance with NAHBRC Z765 is limited. Dwelling unit size is to be calculated in accordance with NAHBRC Z765. Only the conditioned floor area for stories above grade plane is to be included in the calculation. (1) less than or equal to 1,000 sq ft 45 <u>12</u> (2) less than or equal to 1,500 sq ft 42 <u>9</u> (3) less than or equal to 2,000 sq ft 39 <u>6</u> (4) less than or equal to 2,500 sq ft 6 <u>0</u> (5) Greater than 4,000 <u>2,500</u> sq ft Mandatory (For every 100 sq ft over 4,000 <u>2,500</u> sq ft. one point is to be added in Table 303, Category 7 for each performance level)	The average floor area of a home is under 2,500 sq ft yet the ANSI awards points for oversized homes. This makes no sense for a Green Building Standard. The revised points and mandatory requirement are changed here to reflect more sustainable and resource efficient construction.		
187	Gary Ehrlich NAHB NAHB	601.2 Material Usage Revise as follows	601.2 Material usage. Building code compliant s Structural systems are designed or advanced framing construction techniques are implemented that reduce and optimize material usage.	Clarifies the credit for material usage. The main point of the credit is to promote the use of advanced framing techniques (optimum value engineering) for wood construction and to encourage "right-sizing" of structural elements. In other words, to encourage designers to select		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>(Points awarded for each system or framing technique implemented.)</p> <p>(a) Optimum value engineering is used for wood-frame construction</p> <p>(b) The minimum member, element or component size necessary for strength and stiffness in accordance with structural design standards is selected for each beam, girder, joist, header, column, and wall in the building.</p> <p>(c) Performance-based structural design is used to optimize lateral force-resisting systems.</p> <p>(d) Higher-grade or higher-strength materials than those necessary for strength and stiffness in accordance with structural design standards are used for the structural elements and components in the building.</p>	Max		
				the minimum size needed for each beam, column, stud, etc. to support the required loads. So, for example, each header would be designed for the actual tributary load it supports, instead of using one header size based on the maximum span and load condition for every header. Two additional options are provided to expand use of the credit. Performance-based structural design (PBSD) is uses a combination of advanced modeling and engineering design techniques and laboratory testing to justify that the performance of an alternative structural system meets that of a system currently recognized by the code. Use of PBSD on larger projects is becoming popular in high-hazard areas to provide innovating lateral force-resisting systems that save on erection time, material use, and project cost. Secondly, a credit is provided for reducing material usage by going to a higher strength material than is required for the design, thus reducing member sizes. For example, using 50 ksi steel studs when 33 ksi studs would normally be used, or using 5000psi concrete when 3000psi concrete would normally be used.		
355	Robert Hill NAHB Research Center NAHB Research Center	601.2 Material Usage Revise as follows	Building-code-compliant structural systems or advanced framing techniques are implemented that optimize material usage.	The standard should provide guidance to what extent of material savings is required to earn these points. Typically practices such as 2 stud corners and 24" OC framing are considered advanced framing but 24" OC save considerably more material than 2 stud corners. Also if another nonframing alternative (e.g. ICF) is suggested as meeting this practice how much of a savings in material is needed to qualify?		
911	dave porter PorterWorks self	601.3 Building Dimensions and Layouts	add points for universal design features. i.e. hall way & door width, zero or low threshold shower stalls. home design incorporating aging in place features.	smart design allows for all users. Provides access. minimizes cost to remodel to later accomodate these features.		
357	Robert Hill NAHB Research Center NAHB Research Center	601.3 Building Dimensions and Layouts Revise as follows	<p>601.3 Building dimensions and layouts. Building dimensions and layouts are designed to reduce material cuts and waste. This practice is used for a minimum of 80 percent of the following areas:</p> <p>(1) floor area (interior dimensions)</p> <p>(2) wall area (interior dimensions)</p> <p>(3) roof area (exterior dimensions)</p> <p>(4) cladding or siding area (exterior dimensions)</p> <p>(5) Window/door and trim areas (either interior or exterior dimensions)</p>	This practice need to be clarified. Very rarely can interior and exterior dimension both be such that full panels/sheets/ etc can be utilized without cutting. Providing guidance as to which dimension should control would be helpful.		
88	Steve Hale Build Green NM Build Green NM	601.3 Building Dimensions and Layouts Delete without substitution	<p>601.3 (3) roof area _____ 3 _____</p> <p>601.3 (4) Cladding or siding area _____ 3 _____</p> <p>601.3 (5) Penetrations or trim area _____ 1 _____</p>	The Wall area saves the most materials with floor area being second. The remaining 3 categories are either redundant to the 1st two or hard to verify based on the finished materials used. It would be reasonable to add to the points in (1) & (2) in this section		
358	Robert Hill NAHB Research Center NAHB Research Center	601.6 Stacked Stories Revise as follows	Stories above grade are stacked, such as in 1½-story, 2-story, or greater structures. The area of the upper story is a minimum of 50 percent of the area of the story below, based on areas with a minimum ceiling height of 7 feet (2134 mm).	The commentary implies that a ranch house with a walkout basement may comply. If this is intended it should be clarified in the practice.		
225	Matthew Dobson Vinyl Siding Institute mdobson@vinylsiding.org	601.7 Site-applied Finishing Materials Add new as follows	<p>601.X _____ 12 Points Max</p> <p>Low maintenance finish materials. Building materials or assemblies are utilized that do not require replacement or refinishing, other than cleaning, during the building service life.</p> <p>(1) 90 percent or more if the installed building material or assembly listed below: 5</p>	Reduced maintenance materials are typically prefinished products or products that don't require continuous maintenance throughout the building service life. This characteristic is considered a major aspect of sustainability by Life Cycle Analysis tools such as NIST BEES. This addition will also create consistency with other green codes currently in place including Section A5.406.1.2 of the 2010 draft California Green Building Standards Code and the ICC's National Green Building Standard. By adding this to section it will give users the ability		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>(points awarded for each material or assembly.)</p> <p>(2) <u>50 percent to less than 90 percent of the installed building material or assembly listed below:</u> <u>2</u></p> <p>(points awarded for each material or assembly)</p> <p>(a) <u>pigmented, stamped, decorative, or final finish concrete or masonry</u></p> <p>(b) <u>trim not requiring replacement or refinishing</u></p> <p>(c) <u>window, skylight, and door assemblies not requiring paint or stain on the exterior and/or interior surfaces</u></p> <p>(d) <u>wall coverings or systems not requiring replacement or refinishing</u></p>	<p>to specify products that will not only minimize site environmental impact but also help to minimize the environmental impact for both use of materials and labor during the entire building service life. An Executive Summary of a scientific based reason submitted by Sustainable Solutions Corporation is below. To review completely the report please goto: http://www.vinylsiding.org/aboutsiding/why/sustainability/VSI_-_IGCC_Supporting_Information.pdf</p> <p>(see Attachments file for a report on Life Cycle Installation and Maintenance Data)</p>		
359	Robert Hill NAHB Research Center NAHB Research Center	601.7 Site-applied Finishing Materials Revise as follows	<p>601.7 Site applied finishing materials. Building materials or assemblies listed below are utilized and that do not require additional site applied material for finishing <u>are incorporated in the building.</u></p> <p>(1) 90 percent or more of the installed building materials or assembly assemblies listed below: <u>(Points awarded for each type (a-e) of material or assembly.)</u></p> <p>(2) 50 percent to less than 90 percent of the installed building material or assembly listed below: <u>(Points awarded for each type (a-e) of material or assembly.)</u></p> <p>(a) pigmented, stamped, decorative, or final finish concrete or masonry</p> <p>(b) <u>Interior</u> trim not requiring paint or stain <u>(c) exterior trim not requiring paint or stain</u></p> <p>(ed) window, skylight, and door assemblies not requiring paint or stain on exterior and/or interior surfaces</p> <p>(de) <u>Interior</u> wall coverings or systems not requiring paint or stain or other type of finishing application <u>(f) Exterior wall coverings or systems not requiring paint or stain or other type of finishing application</u> <u>(g) pre-finished hardwood flooring</u></p>	<p>These changes are suggested to clarify how the practice should be interpreted. Also, it seems reasonable and consistent with the intent of the practice to add pre-finished hardwood to the list.</p>		
91	Steve Hale Build Green NM Build Green NM	601.7 Site-applied Finishing Materials Revise as follows	<p>Site -applied finishing materials. Building materials or assemblies are utilized that do not require additional site-applied material for finishing.</p> <p>(1) 90%..... 5pts <u>2pts</u></p> <p>(2) 50% 2-pts <u>1 pt</u></p>	<p>Questionable point value on some of these items and what qualifies. (Isn't a roof finished after installation? Isn't it common for windows to qualify for these points in 99.9% of projects) This is not really a "value added" practice.</p>		
188	Gary Ehrlich NAHB NAHB	601.8 Foundations Revise as follows	<p>601.8 Foundations. <u>A fFoundation system that minimizes soil disturbance, excavation quantities and material usage, such as frost-protected shallow foundations, isolated pier and pad foundations, deep post foundations, or helical piles and other similar foundation types, is selected, are—designed and constructed.</u></p> <p style="text-align: center;">3</p>	<p>Clarifies the credit for foundation systems. The intent is to promote the use of foundation systems that require less soil disturbance and excavation or that require fewer materials, than traditional strip and spread footings. For example, through the use of rigid insulation a frost-protected shallow foundation is placed at a shallower bearing depth than normal strip footings, thus reducing the amount of disturbed areas (including layback) and the volume of excavated soils. Deep foundation systems (timber, concrete and steel piles) require</p>		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
				minimal soil disturbance and, on a site with poor soil conditions, can be a more resource-efficient than wide strip and pad footings. Helical piles are another popular solution for lightly-loaded structures founded on poor soils.		
90	Steve Hale Build Green NM Build Green NM	601.8 Foundations Revise as follows	601.8 Foundations. Foundations. Such as frost-protected shallow foundation. Pier and pad foundations. Post- <u>Tension</u> foundations and other similar foundation types are designed and constructed. <u>as to reduce material over conventional monopour or footing, stem, slab foundations. (must be used on 50% or more of concrete slab area)</u>	Builder have claimed points here for only doing porches this way. Should only allow points if this is utilized for a substantial portion of the project		
562	Chris Schwind Schwind Communications Structural Insulated Panel Association	601.9 Above Grade Wall Systems Add new as follows	Above Grade Wall Systems: One or more of the following abovegrade wall systems that provide sufficient structural and thermal characteristics are used for a minimum of 75% of the gross exterior wall area of the building: (1) Adobe (2) Concrete and/or masonry (3) Logs (4) Rammed earth (5) <u>Structural insulated panels (SIPs)</u>	Structural insulated panels (SIPs) are consistent with the intent of the credit by providing structure and insulation in a single component that conserves resources though simplified wall assembly and reduces the amount of labor/trades on the jobsite.		
189	Gary Ehrlich NAHB NAHB	601.9 Above Grade Wall Systems Add new as follows	601.9 Above grade wall systems. One or more of the following above grade wall systems that provide sufficient structural and thermal characteristics are used for a minimum of 75 percent of the gross exterior wall area of the building: (1) adobe (2) <u>poured-in-place concrete or insulated concrete forms (ICF) and/or masonry</u> (3) logs (4) rammed earth (5) <u>load-bearing brick or concrete masonry units (CMU)</u> (6) <u>structural insulated panels (SIP)</u>	To clarify and expand the structural materials and products qualifying for the above-grade wall system credit. While ICFs and SIPs are not true "single-component systems" and do incorporate insulation, this insulation is supplied at the time of manufacture and under controlled plant conditions, as opposed to batt, rigid board, cellulose, spray-foam and other insulation that must be separately transported to and installed at the site. Thus, it makes sense for these products to be included under the above-grade wall systems. This is especially true of ICFs, which can be more economical and resource efficient than a flat, formed poured-in-place wall (since the foam is both insulation and form – a separate wood or metal form is not needed). It is noted that SIP construction would qualify for both this credit and 601.5 because it is a preassembled, panelized system.		
269	Kenneth Bland American Wood Council American Wood Council	601.9 Above Grade Wall Systems Add new as follows	(5) <u>Structural Insulated Panels</u>	Structural insulated panels are an appropriate product for this list. The manufacturing and assembly of SIP structures is compatible with other assemblies recognized in this section.		
192	Gary Ehrlich NAHB NAHB	602.1 Exterior Doors Add new as follows	Provide a list of climate zones by state, county and territory similar to Table N1101.2 of the 2009 IRC or Table 301.1 of the 2009 IECC. Also, increase the size of Figure 6(1) to fill the entire page.	Figure 6(1) is about a third to a half of the size of the equivalent figure in the IRC or IECC, making it very difficult for a user of ICC-700 to read. Therefore, we suggest not only expanding the figure, but adding a table of climate zones by state and county similar to the one in the IRC and IECC. Alternatively, delete Figure 6(1) and simply refer to the IECC or IRC, as the average user of ICC-700 does not need a separate map to apply Section 602.1.		
363	Robert Hill NAHB Research Center NAHB Research Center	602.1 Exterior Doors Revise as follows	Entries <u>into the conditioned space from the outdoors at exterior door assemblies</u> , inclusive of side lights, are covered by one of the following methods to protect the building from the effects of precipitation and solar radiation.	This change is suggested to clarify that entries into the garage (including the overhead door) are not included in this practice.		
366	Robert Hill NAHB Research Center NAHB Research Center	602.10 Ice Barrier Revise as follows	In areas where there has been a history of ice forming along the eaves causing a backup of water, an ice barrier is installed in accordance with the ICC IRC or IBC at roof eaves <u>of pitched roofs</u> and extends at a minimum of 24 inches (610 mm) inside the exterior wall line of the building.	Clarify the practice. It would also be helpful if "history of ice forming" could be qualified with a climate zone map or other criteria. In areas where this is a potential problem the common building practices may have evolved to the points where there is no longer a history of the problem.		
195	Gary Ehrlich NAHB NAHB	602.12 Flashing Revise as follows	602.12 Flashing. Flashing details are shown on plans and flashing is installed at all of the following locations, as applicable: (1) around exterior fenestrations, skylights and doors	6	Adds or revises the detailed list of flashing locations to better match IRC Section 703.8 and IBC Section 1507.8. Provides an Addition Note and a Renovation Note so these activities can qualify when an addition is constructed or a renovation is done.	

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action															
			<p>(2) at roof valleys (3) at deck, balcony, porch or stair to building intersections (4) at roof-to-wall intersections, and at roof-to-chimney intersections, and at wall-to-chimney intersections. (5) under and at ends of masonry, wood, or metal copings and sills (6) above projecting wood trim (7) at built-in roof gutters (8) a drip cap is provided above windows and doors that are not flashed or protected by covering in accordance with Section 602.1 (5)</p> <p>Addition Note: Section 602.12 applies to the new construction portion of additions. 0 Additional Points</p> <p>Renovation Note: Section 602.12 applies to renovations that involve removal and replacement of roof or wall cladding, addition or removal and replacement of windows, doors or skylights, and demolition/reconfiguration of exterior walls. 0 Additional Points</p>																		
368	Robert Hill NAHB Research Center NAHB Research Center	602.12 Flashing Revise as follows	<p>602.12 Flashing. Flashing details are shown on the plans and flashing is installed at all of the following locations, as applicable:</p> <p>(1) around exterior fenestrations, skylights and doors (2) roof valleys (3) deck/balcony to building intersections (4) at roof-to-wall intersection and at roof-to-chimney intersections (5) a drip cap is provided above windows and doors that are not flashed or protected by covering in accordance with Section 602.1</p>	(5) appears to say that some times it is appropriate to not flash windows or doors if there is a drip cap. The committee may want to re-consider this.																	
369	Robert Hill NAHB Research Center NAHB Research Center	602.14 Recycling Revise as follows	Occupant recycling is facilitated by one or more of the following methods:	Section 602 is focused on durability and maintenance. Having a recycling practice 602 seems out of place. It would be more appropriate in 604.																	
193	Gary Ehrlich NAHB NAHB	602.2 Roof Overhangs Revise as follows	<p>602.2 Roof overhangs. Roof overhangs, based on inches of rainfall in Table 602.2, are provided over a minimum of 90 percent of exterior walls to protect the building envelope.</p> <p style="text-align: center;">Table 602.2 Minimum Roof Overhang for One- & Two-Story Buildings</p> <table border="1"> <thead> <tr> <th>Inches Rainfall ⁽¹⁾</th> <th>Eave Overhang (Inches)</th> <th>Rake Overhang (Inches)</th> </tr> </thead> <tbody> <tr> <td>≤ Less than 20</td> <td>12</td> <td>12</td> </tr> <tr> <td>> 20 and ≤ 40</td> <td>12</td> <td>12</td> </tr> <tr> <td>> 41 and ≤ 70</td> <td>18</td> <td>12</td> </tr> <tr> <td>> More than 70</td> <td>24</td> <td>12</td> </tr> </tbody> </table> <p>(1) Average annual inches of rainfall are in accordance with Figure 6(2)</p> <p>For SI: 1 foot = 304.8 mm</p> <p>Also, replace Figure 6(2) with the attached map of annual mean total precipitation obtainable from the NOAA National Climatic Data Center (http://cdo.ncdc.noaa.gov/climaps/prec0113.pdf).</p>	Inches Rainfall ⁽¹⁾	Eave Overhang (Inches)	Rake Overhang (Inches)	≤ Less than 20	12	12	> 20 and ≤ 40	12	12	> 41 and ≤ 70	18	12	> More than 70	24	12	4	Figure 6(2) is too small and has too many categories to be readable by the average user of ICC-700. Even if the user goes to the source website (www.nationalatlas.gov), the source map does not contain county lines, so it is still very difficult, particularly in the Western states, to use the map to determine precipitation. Thus, we recommend replacing the existing map with the Annual Mean Total Precipitation map from the NOAA National Climatic Data Center (http://cdo.ncdc.noaa.gov/climaps/prec0113.pdf). This map is broken down into only nine zones, instead of seventeen, making it much easier to use. Also, symbols for greater than, less than, etc. are provided in Table 602.2, lest a user determine from an acceptable source that their average annual rainfall is, for example, 20.35 inches and becomes confused about which overhang length to pick.	
Inches Rainfall ⁽¹⁾	Eave Overhang (Inches)	Rake Overhang (Inches)																			
≤ Less than 20	12	12																			
> 20 and ≤ 40	12	12																			
> 41 and ≤ 70	18	12																			
> More than 70	24	12																			

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89	Steve Hale Build Green NM Build Green NM	602.2 Roof Overhangs Add new as follows	<p><u>602.2 (2) Parapets on flat roof homes. Enhanced water sealing is applied to the top of parapets on flat roof homes to seal against water leakage above and beyond standard practices. (4 points)</u></p>	on flat roof homes typical to the southwest the parapet is often the problem for water damage to the wall or exterior finish. An additional water sealant applied under the finish coat can stop or greatly reduce this problem just as an overhang can do for pitched room homes.		
340	John Woestman Kellen Company Building Enclosure Moisture Management Institute (BEMMI)	602.3 Foundation Drainage Add new as follows	<p><u>602.3 Exterior walls drainage. Where the exterior walls are constructed of materials that may be damaged by water or its freezing, the above-grade exterior walls of the building incorporate a drainage space in the wall assembly, minimum 3/16" (5 mm), designed to drain water from behind the exterior cladding.</u></p>	5		
190	Gary Ehrlich NAHB NAHB	602.4 Drip Edge Revise as follows	<p><u>602.4 Drip edge. Drip edge is installed at eaves and gable roof rake edges.</u></p>	3Mandatory		
191	Gary Ehrlich NAHB NAHB	602.6 Finished Grade Revise as follows	<p><u>602.6 Finished grade. Finish grade at all sides of a building is sloped to provide a minimum of 6 inches (150 mm) of fall within 10 feet (3048 mm) of the edge of the building. Where lot lines, walls, slopes, or other physical barriers prohibit 6 inches (152 mm) of fall within 10 feet (3048 mm), the final grade is sloped away from the edge of the building at a minimum slope of 5 percent and the water is directed to drains or swales to ensure drainage away from the structure.</u></p> <p><u>602.6.1 Finished grade at all sides of a building is sloped to provide a minimum of 6 inches (150 mm) of fall within 10 feet (3048 mm) of the edge of the building. Where lot lines, walls, slopes, or other physical barriers prohibit 6 inches (152 mm) of fall within 10 feet (3048 mm), the final grade is sloped away from the edge of the building at a minimum slope of 2 percent.</u></p>	Mandatory		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>602.6.2 The final grade is sloped away from the edge of the building at a minimum slope of 5 percent.</p> <p>602.6.3 Water is directed to drains or swales to ensure drainage away from the structure.</p> <p>Addition Note: Section 602.6 applies only to additions that increase the footprint of the building.</p> <p>Renovation Note: The additional points for Section 602.6 apply only to renovations.</p>	<p>Mandatory</p> <p>0 Additional Points</p> <p>2 Additional Points</p>		
194	Gary Ehrlich NAHB NAHB	602.7 Termite Barrier Revise as follows	Increase the size of Figure 6(3) to fill the entire page.	Figure 6(3) is about a third to a half of the size of the equivalent figure in the IRC and IBC, making it very difficult for a user of ICC-700 to read. Therefore, we suggest expanding the figure. Alternatively, delete Figure 6(3) and simply refer to the IRC or IBC. The jurisdiction is already required by the IRC to provide the climatic and geographic design criteria specified in Table R301.2(1) of the IRC, including termite damage potential. Thus a user of ICC-700 does not need a separate map to apply Section 602.7.		
365	Robert Hill NAHB Research Center NAHB Research Center	602.7 Termite Barrier Revise as follows	Continuous physical foundation termite barrier used with or without low toxicity treatment or with no chemical treatment is installed in geographical areas that have subterranean termite infestation potential determined in accordance with Figure 6(3).	This suggested change is intended to clarify the fact that points are not awarded if this is used in conjunction with a high toxicity treatment. Figure 6(3) covers most of the US. Should this practice be limited to only certain termite zones. Is it appropriate to use a termite barrier in the heavy termite zone without some type of chemical treatment?		
196	Gary Ehrlich NAHB NAHB	603.1 Reuse of Existing Building Add new as follows	<p>603.1 Reuse of existing building. Existing buildings and structures are reused, modified, or deconstructed in lieu of demolition.</p> <p>(Points awarded for every 200 square feet (18.5 m²) of floor area.)</p> <p>Renovation Note: Section 603.1 applies to renovations of existing buildings and structures.</p>	<p>1</p> <p>12 Points Max</p> <p>0 Additional Points</p>	Obviously, any renovation or remodeling of an existing building or structure, or portion thereof, would qualify for points under Section 603.1. The structure of ICC-700, however, appears to require a specific note to indicate that the credit applies for renovation projects. Thus, we propose adding the applicable Renovation Note.	
370	Robert Hill NAHB Research Center NAHB Research Center	603.1 Reuse of Existing Building Revise as follows	Existing Major elements of existing buildings and structures are reused, modified, or deconstructed for later use in lieu of demolition.	Clarify the practice.		
371	Robert Hill NAHB Research Center NAHB Research Center	603.2 Salvaged Materials Revise as follows	Reclaimed and/or salvaged materials and components are used. The total material value and labor cost of salvaged materials is equal to or exceeds 1 percent of the total construction costs.	Clarify the practice. When using reclaimed or salvaged materials the actual cost may be significantly different from the value of the materials that they are replacing. This change is intended to clarify the practice. It would also be helpful to understand how to determine total construction costs. Does this just relate to the building or does it also include materials and labor for lot work and landscaping?		
92	Steve Hale Build Green NM Build Green NM	603.2 Salvaged Materials Revise as follows	603.2 Salvaged materials. Reclaimed and or salvaged materials and components are used. The total material and labor cost of salvaged materials is equal to or exceeds 1% of the total construction cost. 3 18 points Max with 3 points per 1% cost of Salvaged materials	There is much to be earned from using existing housing where the structure may be salvaged for much of the materials. 3 points is small reward for this valuable practice. This would also be a good incentive in the remodeled projects.		
373	Robert Hill NAHB Research Center NAHB Research Center	603.3 Scrap Materials Revise as follows	Facilitation for sorting and reuse of scrap building material (e.g., provide a central storage area or dedicated bins) are provided on site and used during construction.	Clarify the practice.		
303	Nicole L. Villamizar U.S. EPA Office of	604.1 Recycled-Content	604.1 Recycled content. Building materials with recycled content are used for two minor and/or two major components of the building. Examples of minor components	NAHB does not define what is a "major" component and what is a "minor" component of a building. The proposed additions are an		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
	Resource Conservation & Recovery U.S. Environmental Protection Agency	Revise as follows	include carpet, carpet pad, cabinetry and trim. Examples of major components include exterior sheathing, roofing materials, gypsum wallboard, or insulation.	attempt to suggest what materials may qualify under each; however, NAHB should define these terms and provide different examples deemed appropriate by NAHB to clarify the intent of this section. Also, NAHB should clarify how it calculates total recycled content for each item as well as how the total percentages (25% vs. 50%) are achieved.		
312	Nicole L. Villamizar U.S. EPA Office of Resource Conservation & Recovery U.S. Environmental Protection Agency	604.1 Recycled-Content Revise as follows	604.1 Recycled content. Building materials with recycled content are used for two minor and/or two major components of the building. Selection of construction materials and products shall reflect a preference for materials and products containing recycled materials or made from recycled materials such that the recycled content shall constitute a minimum of 10%, based on cost or replacement value, of the total materials in the building project. (1) The reuse of lumber, masonry units, such as brick, tile, stone and concrete block, conforming to the requirements specified in the International Building Code shall be recognized as recycled/recovered content.	Recycled content should be considered for more than two to four components of a building. Rather, it should be calculated based on the total materials used in the project.		
374	Robert Hill NAHB Research Center NAHB Research Center	604.1 Recycled-Content Revise as follows	Building materials with recycled content are used for two minor and/or two major components of the building.	The task group is encouraged to consider revising this practice to eliminate the pairing of materials. It would be more straight forward to adjust the table of points for a specific number of materials. Also it would be helpful to clarify if this practice is intended to apply strictly to materials such as insulation or does it also apply to products such as windows.		
375	Robert Hill NAHB Research Center NAHB Research Center	605.0 Intent (Recycled Construction Waste) Revise as follows	605.0 Intent. Waste generated during construction is recycled. <u>605.05 All waste classified as hazardous shall be properly handled and disposed. Mandatory</u> (Points for 605 practices not awarded for hazardous waste removal.)	It seems like an oversight not to require the proper disposal of hazardous waste.		
298	Nicole L. Villamizar U.S. EPA Office of Resource Conservation & Recovery U.S. Environmental Protection Agency	605.1 Construction Waste Management Plan Revise as follows	605.1 Construction Waste Management Plan. A construction waste management plan is developed, posted at the jobsite, and implemented with a goal of recycling or salvaging a minimum of 50 percent (by weight) of construction and land-clearing waste. For the purpose of this section, construction waste shall not include land clearing debris, excavated soils and fill and base materials such as, but not limited to, topsoil, sand and gravel. Land-clearing debris shall include trees, stumps, rocks, and vegetation.	Excluding land-clearing debris from the construction waste diversion requirement will ensure that valuable materials such as concrete, wood, and drywall are diverted. As an alternative, NAHB could revise the practices to apply the 50 percent threshold to construction and land-clearing waste individually as well as in combination.		
299	Nicole L. Villamizar U.S. EPA Office of Resource Conservation & Recovery U.S. Environmental Protection Agency	605.1 Construction Waste Management Plan Add new as follows	605.1 Construction Waste Management Plan. A construction waste management plan is developed, posted at the jobsite, and implemented with a goal of recycling or salvaging a minimum of 50 percent (by weight) of construction and land-clearing waste. <u>The Construction Waste Management Plan shall comply with all of the following:</u> 1. <u>The on-site location where the collection, separation and storage of recyclable construction waste materials shall be indicated.</u> 2. <u>Materials to be diverted from disposal by efficient usage, recycling, reuse, manufacturer's reclamation, or salvage for future use or sale shall be specified. Identify the recycling facilities, reuse facilities, landfills and other reclamation and disposal entities to be used. Include name, location, and phone number for each. For landfills, include facility identification number.</u> 3. <u>The amount of materials to be diverted shall be specified.</u>	The proposed changes clarify the requirements of section 605.1 and establish basic mechanisms for tracking and documenting compliance with the plan. "Identifying On-Site location where the collection, separation, and storage of construction waste...." Identifying on-site location for the collection, separation and storage of construction waste materials ensures adequate space is available for meeting the diversion goal, and also ensures all parties involved in construction are aware of any separation and storage practices that may be required by local waste haulers and recyclers. "Materials to be diverted from disposal by efficient usage, recycling, reuse, manufacturer's reclamation ... " Material reuse achieves environmental benefits regardless of whether the material is reused on-site or off-site. Reuse by other building projects should therefore be recognized by the NAHB. Reclamation of used materials by manufacturers for refurbishment (if necessary) and resale represents another distinct means by which used materials can be diverted from landfills, thereby reducing reliance on virgin material and achieving other attendant environmental benefits. Reclamation by manufacturers should be recognized by NAHB along with recycling and reuse; furthermore, as with reuse by other building projects, reclamation should face the same requirement as other diverted materials of being identified in the Construction Materials and Waste Management Plan. "Identify the recycling facilities, reuse facilities, municipal solid waste landfills and other reclamation and disposal entities to be used..." EPA has found that identifying the recycling and other waste management facilities to be used before construction often leads to more effective waste diversion, by ensuring that building project managers have full information regarding available options and allowing them sufficient		

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				time to make alternative arrangements in case of unexpected complications. Furthermore, this requirement establishes a baseline mechanism that can be used for tracking and documenting material diversion. This will aid the Adopting Entity in gathering sufficient information over the course of construction to demonstrate and verify compliance with the 50 percent waste diversion goal. The amount of materials to be diverted shall be specified. This will aid in tracking and compliance.				
300	Nicole L. Villamizar U.S. EPA Office of Resource Conservation & Recovery U.S. Environmental Protection Agency	605.1 Construction Waste Management Plan Add new as follows	605.1 should be made mandatory.	The development of a construction waste management plan should be a mandatory requirement of the NAHB. Having a plan in place will encourage the Adopting Entity to consider all options for construction waste diversion to determine appropriate diversion targets.				
376	Robert Hill NAHB Research Center NAHB Research Center	605.1 Construction Waste Management Plan Revise as follows	A construction waste management plan is developed, posted at the jobsite, and implemented with a goal of recycling or salvaging a minimum of 50 percent (by weight) of construction and land-clearing waste.	This practice should be clarified. Does it make sense to have 2 separate practices - one for construction waste and one for land clearing waste. sense the amount of land clearing waste can vary significantly depending on the lot. Also, if a builder minimizes the construction waste via panelized, precut, etc., it is more difficult to achieve 50%. Should this be characterized as tons/sqft to the dump parameter?				
302	Nicole L. Villamizar U.S. EPA Office of Resource Conservation & Recovery U.S. Environmental Protection Agency	605.2 On-site Recycling Revise as follows	605.2 On-site recycling. On-site recycling measures following applicable regulations and codes are implemented, such as the following: (a) Construction and land-clearing waste materials are ground or otherwise safely applied on-site as soil amendment or fill. A minimum of 50 percent (by weight) of construction and land-clearing waste is diverted from landfill.	Clarifies the intent of the requirement and encourages flexibility in the percentage of material recycled on-site.				
377	Robert Hill NAHB Research Center NAHB Research Center	605.2 On-site Recycling Revise as follows	(a) Materials are ground or otherwise safely applied on-site as soil amendment or fill. A minimum of 50 percent (by weight) of construction and land-clearing waste is diverted from landfill through on-site recycling.	Clarify the practice.				
238	Thomas Stroud HPBA HPBA	605.2 On-site Recycling Add new as follows	605.2(c) <u>Relevant clean (untreated) biomass material (lumber, posts, beams etc.) are set aside for Solid Fuel Burning Appliance as per Section 901.2.1(2) for on-site renewable energy.</u>	Clean biomass from construction can supply a large portion of the first years energy needs.				
379	Robert Hill NAHB Research Center NAHB Research Center	606.1 Biobased Products Revise as follows	<table border="1"> <tr> <td> <p>606.1 Biobased products. The following biobased products are used:</p> <ul style="list-style-type: none"> (a) certified solid wood in accordance with Section 606.2 (b) engineered wood (c) bamboo (d) cotton (e) cork (f) straw (g) natural fiber products made from crops (soy-based, corn-based) (h) products with the minimum biobased contents of the USDA 7 CFR Part 2902 (i) other biobased materials (excluding non-certified wood) with a minimum of 50 percent biobased content (by weight or volume) </td> </tr> <tr> <td> <p>606.1(1) Two types of biobased materials are used, each for more than 0.5 percent of the project's projected building material cost.</p> </td> </tr> </table>	<p>606.1 Biobased products. The following biobased products are used:</p> <ul style="list-style-type: none"> (a) certified solid wood in accordance with Section 606.2 (b) engineered wood (c) bamboo (d) cotton (e) cork (f) straw (g) natural fiber products made from crops (soy-based, corn-based) (h) products with the minimum biobased contents of the USDA 7 CFR Part 2902 (i) other biobased materials (excluding non-certified wood) with a minimum of 50 percent biobased content (by weight or volume) 	<p>606.1(1) Two types of biobased materials are used, each for more than 0.5 percent of the project's projected building material cost.</p>	<p>Clarification is needed between "products" vs materials in this practice. Can 2 products with engineered wood (e.g. OSB and LVL) meet the practice or can products with engineered wood count as only one material? To meet the cost % threshold can multiple products of the same material be combined?</p> <p>USDA7 CFR Part 2902 has varying requirements for biobased content. The percentage for foam insulation materials is only 7%. The task group may want to consider if this is appropriate and consistent with the overall expectation of 50%.</p>		
<p>606.1 Biobased products. The following biobased products are used:</p> <ul style="list-style-type: none"> (a) certified solid wood in accordance with Section 606.2 (b) engineered wood (c) bamboo (d) cotton (e) cork (f) straw (g) natural fiber products made from crops (soy-based, corn-based) (h) products with the minimum biobased contents of the USDA 7 CFR Part 2902 (i) other biobased materials (excluding non-certified wood) with a minimum of 50 percent biobased content (by weight or volume) 								
<p>606.1(1) Two types of biobased materials are used, each for more than 0.5 percent of the project's projected building material cost.</p>								
381	Robert Hill NAHB Research Center NAHB Research Center	607.1 Resource-Efficient Materials Revise as follows	Optimized Products containing fewer raw materials but still meeting the same end-use requirements as conventional products are used for a major element of the building, including but not limited to:	Clarify the practice.				
912	Ed Whitby Burnaby Manufacturing Same	607.1 Resource-Efficient Materials	I SUGGEST YOU INCLUDE A CREDIT FOR INSTALLING A GAS PIPE TO THE PATIO AREA SO THAT HOMEOWNERS CAN HOOK-UP THEIR PATIO APPLIANCES TO THE GAS THAT IS ALREADY PIPED IN TO THE HOME. THE CREDIT SHOULD ONLY BE GIVEN IF THE PIPE IS PROPERLY FINISHED WITH A GAS OUTLET BOX AND NOT LEFT STUBBED OUT SO THAT THE OWNER KNOWS WHAT IT IS FOR AND THE REASON IT IS THERE.	THE TRANSPORTATION OF PORTABLE PROPANE BOTTLES FOR REFILLING CREATES A LARGE IMPACT ON THE CREATION OF CO2's AS WELL AS THE FACT THAT NATURAL GAS CREATES ABOUT 15% LESS CO2's WHEN BURNED WILL HAVE AN IMPACT IN METROPOLITAN AREAS ESPECIALLY ON THE CARBON FOOTPRINT. WHEREVER POSSIBLE THE USE OF NATURAL GAS				

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				WILL REDUCE CARBON FOOTPRINT THUS THE TRUE VALUE OF A GREEN PROGRAM AND IT'S BENEFIT TO EVERYONE BECOMES APPARENT. PLEASE CONTACT ME TO CLARIFY THE POINTS. THANK YOU VERY MUCH ED								
93	Steve Hale Build Green NM Build Green NM	607.1 Resource-Efficient Materials Add new as follows	607.1 (4) 2 coat synthetic stucco vs 3 coat cement stucco (3 points)	Additional resource efficient material added								
339	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	608.1 Indigenous Materials Revise as follows	608 Indigenous-Regional Materials 608.1 Indigenous-Regional materials. Indigenous-Regional materials are used for major elements of the building.	This proposal suggests "Regional" works better in a building-related standard for describing or encouraging the use of materials from a limited geographic area.								
320	Erin Ashley National Ready Mixed Concrete Association NRMCA	609.1 Life Cycle Analysis Revise as follows	<table border="1"> <tr> <td> <p>609.1 Life Cycle analysis. A more environmentally preferable product or assembly is selected for an application based upon the use of a Life Cycle Assessment (LCA) tool compliant with ISO 14044 or other recognized standards that compare the environmental impact of building materials, assemblies, or the whole building.</p> <p>(1) <u>The Life Cycle analysis shall follow the guidelines set for in ANSI/ASHRAE/USGBC/IES Standard 189.1 – 2009 Section 9.5.1.1: The building alternative chosen for the project shall have a 5% improvement over the other building alternative assessed in the LCA in a minimum of two impact categories. The impact categories are: Land use, resource use, climate change, ozone layer depletion, human health effects, ecotoxicity, smog, acidification and eutrophication.</u></p> <p>(2) <u>The service life of the buildings shall not be less than 75 years.</u></p> </td> <td> <p>15 Points Max</p> </td> </tr> <tr> <td>(1) per product/system comparison</td> <td>3</td> </tr> <tr> <td>(2) whole building LCA analysis</td> <td>15</td> </tr> </table>	<p>609.1 Life Cycle analysis. A more environmentally preferable product or assembly is selected for an application based upon the use of a Life Cycle Assessment (LCA) tool compliant with ISO 14044 or other recognized standards that compare the environmental impact of building materials, assemblies, or the whole building.</p> <p>(1) <u>The Life Cycle analysis shall follow the guidelines set for in ANSI/ASHRAE/USGBC/IES Standard 189.1 – 2009 Section 9.5.1.1: The building alternative chosen for the project shall have a 5% improvement over the other building alternative assessed in the LCA in a minimum of two impact categories. The impact categories are: Land use, resource use, climate change, ozone layer depletion, human health effects, ecotoxicity, smog, acidification and eutrophication.</u></p> <p>(2) <u>The service life of the buildings shall not be less than 75 years.</u></p>	<p>15 Points Max</p>	(1) per product/system comparison	3	(2) whole building LCA analysis	15	The LCA section as written is ambiguous at best. The ANSI/ASHRAE/USGBC/IES Standard 189.1 – 2009 sets a defined methodology for performing a life cycle assessment that is applicable to all buildings and provides information and detailed instruction on how to best perform an LCA. It is recommended that this methodology be provided in this section so that the user is provided with some guidance and a metric for performance.		
<p>609.1 Life Cycle analysis. A more environmentally preferable product or assembly is selected for an application based upon the use of a Life Cycle Assessment (LCA) tool compliant with ISO 14044 or other recognized standards that compare the environmental impact of building materials, assemblies, or the whole building.</p> <p>(1) <u>The Life Cycle analysis shall follow the guidelines set for in ANSI/ASHRAE/USGBC/IES Standard 189.1 – 2009 Section 9.5.1.1: The building alternative chosen for the project shall have a 5% improvement over the other building alternative assessed in the LCA in a minimum of two impact categories. The impact categories are: Land use, resource use, climate change, ozone layer depletion, human health effects, ecotoxicity, smog, acidification and eutrophication.</u></p> <p>(2) <u>The service life of the buildings shall not be less than 75 years.</u></p>	<p>15 Points Max</p>											
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(2) whole building LCA analysis	15											
266	Kenneth Bland American Wood Council American Wood Council	609.1 Life Cycle Analysis Revise as follows	<p>609.1 <u>Life Cycle Assessment. Points are awarded in accordance with either 609.1.1 or 609.1.2</u>Life Cycle Analysis. A more environmental preferable product or assembly is selected for an application based upon the use of a Life Cycle Assessment (LCA) tool <u>that embodies data methods</u> compliant with ISO 14044 .</p> <p>609.1.1 <u>Two products with the same intended use are compared based on life cycle assessment and the product with a 15% improvement in fossil fuel consumption and global warming potential are used. Per product/system comparison. 3 points per comparison (15 points max.)</u></p> <p>609.1.2 <u>Whole Building Assembly LCA (15 points max.)</u></p> <p><u>An assembly is selected for the project that has environmental impact measures that are better than a functionally comparable assembly. Points are awarded based on the number of assemblies that improve upon environmental impact measures by 15%. The assemblies considered shall include all structural elements, insulation, and wall coverings:</u></p>	Providing points for the selection of products or building assemblies based on ISO 14044 compliant methods is important. The current section is revised to award points for products or building assemblies that are selected based upon the criteria proposed. There are a number of LCA tools that can be used to compare products according to 609.1.1. The environmental impacts are limited to fossil fuel consumption and global warming potential, due to the limited nature of this approach. The points available are unchanged. Section 609.1.2 is introduced and is a variation of the whole building LCA approach currently recognized by the standard. The intent is for the user to rely on a tool or analysis program to quantify the cradle to grave environmental impacts of assemblies. A comparison is made between two assemblies and the assembly used must be a minimum of 15% better in 4 of the environmental impact measures. Additional points are awarded for up to 4 assembly comparisons across 6 environmental impact measures. There are tools available online that use data according to the criteria established in ISO 14044. The environmental impact measures are consistent with current practice. The 15% increase is considered a reasonable target based upon criteria in other standards.								

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			<p><u>exterior walls</u></p> <p><u>roof/ceiling</u></p> <p><u>interior wall</u></p> <p><u>intermediate floors</u></p> <p><u>The reference service life of the building shall be 60 years</u></p> <p><u>The full life cycle, from resource extraction to demolition and disposal, including but not limited to on-site construction, maintenance and replacement, and material and product embodied acquisition, process and transportation energy, shall be assessed.</u></p> <p><u>Exception: Electrical and mechanical equipment and controls, plumbing products, fire detection and alarm systems, elevators and conveying systems shall not be included in the assessment.</u></p> <table border="1"> <thead> <tr> <th><u>Item</u></th> <th><u>Environmental Impact</u></th> </tr> </thead> <tbody> <tr> <td><u>1</u></td> <td><u>Fossil fuel consumption</u></td> </tr> <tr> <td><u>2</u></td> <td><u>Global warming potential</u></td> </tr> <tr> <td><u>3</u></td> <td><u>Acidification potential</u></td> </tr> <tr> <td><u>4</u></td> <td><u>Eutrophication potential</u></td> </tr> <tr> <td><u>5</u></td> <td><u>Ozone depletion potential</u></td> </tr> <tr> <td><u>6</u></td> <td><u>Smog potential</u></td> </tr> <tr> <td><u>7</u></td> <td><u>Resource Depletion</u></td> </tr> <tr> <td><u>8</u></td> <td><u>Human Health Respiratory Effects</u></td> </tr> </tbody> </table> <p>POINTS:</p> <table border="1"> <thead> <tr> <th colspan="3"><u>Environmental Impact Measures Exceeded by 15%</u></th> </tr> <tr> <th></th> <th><u>4</u></th> <th><u>6</u></th> </tr> </thead> <tbody> <tr> <td><u>2 assemblies</u></td> <td><u>10</u></td> <td><u>15</u></td> </tr> <tr> <td><u>3 assemblies</u></td> <td><u>15</u></td> <td><u>20</u></td> </tr> <tr> <td><u>4 assemblies</u></td> <td><u>20</u></td> <td><u>25</u></td> </tr> </tbody> </table>	<u>Item</u>	<u>Environmental Impact</u>	<u>1</u>	<u>Fossil fuel consumption</u>	<u>2</u>	<u>Global warming potential</u>	<u>3</u>	<u>Acidification potential</u>	<u>4</u>	<u>Eutrophication potential</u>	<u>5</u>	<u>Ozone depletion potential</u>	<u>6</u>	<u>Smog potential</u>	<u>7</u>	<u>Resource Depletion</u>	<u>8</u>	<u>Human Health Respiratory Effects</u>	<u>Environmental Impact Measures Exceeded by 15%</u>				<u>4</u>	<u>6</u>	<u>2 assemblies</u>	<u>10</u>	<u>15</u>	<u>3 assemblies</u>	<u>15</u>	<u>20</u>	<u>4 assemblies</u>	<u>20</u>	<u>25</u>			
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95	Michael Gardner Gypsum Association Gypsum Association	609.1 Life Cycle Analysis Revise as follows	<p>609.0 Intent. A Life Cycle Analysis tool is used to select environmentally preferable products or assemblies, or a Life Cycle Analysis is conducted on the entire building. (15 Points Max.)</p> <p>609.1 Life cycle analysis for a product or assembly. A more An environmentally preferable product or assembly is selected for an application based upon the use of a Life Cycle Assessment (LCA) tool compliant with ISO 14044 or other recognized standards standard that compares the environmental impact of building materials or assemblies. , or</p>	Section 609 is confusing and needs to be split into two sections so that it can separately address individual product and whole building LCA methods. Suggested modification is intended to clarify that the user has two options: 1) use an LCA to evaluate products or assemblies or 2) analyze the entire building using an LCA. Proposed modification is not intended to effect any technical change to the section or the point scale.																																			

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			<p>the whole building— (3 points per product/system to 15 points maximum)</p> <p>609.2 Whole building life cycle analysis. A whole building life cycle analysis is performed using a a Life Cycle Assessment tool compliant with ISO 14044 or other recognized standard. (15 points)</p>			
315	Rob Pickett RobPickett & Associates Log Homes Council	609.1 Life Cycle Analysis Add new as follows	<p>609.2 Carbon sequestration. Materials are used that remove carbon from the atmosphere and contain that carbon in use.</p> <p>(1) Floor construction</p> <p>(a) Wood joist, truss, I-joist or other engineered wood framing and OSB or plywood decking – 2 pts</p> <p>(b) Steel joist and OSB or plywood decking – 1 pt</p> <p>(c) Timber or glulam joist with plank decking -- 2 pts</p> <p>(2) Exterior wall construction</p> <p>(a) Wood or engineered wood framing and OSB or plywood sheathing – 2 pts</p> <p>(b) Steel stud and OSB or plywood sheathing – 1 pt</p> <p>(c) Wood or fiber-cement siding or stucco finish – 1 pt</p> <p>(d) Solid wood walls (log walls in compliance with ICC400) – 10 pts</p> <p>(e) Timber frame or post and beam -- 5 pts</p> <p>(f) Wood based Structural Insulated Panel (SIP) – 3 pts</p> <p>(3) Interior wall construction</p> <p>(a) Wood or engineered wood framing -- 1 pt</p> <p>(b) Wood paneling -- 1 pt</p> <p>(c) Solid wood structure (e.g., log walls in compliance with ICC400) – 4 pts</p> <p>(d) Timber frame or post and beam -- 3 pts</p> <p>(4) Roof construction</p> <p>(a) Wood joist, truss, I-joist or other engineered wood framing and OSB or plywood decking – 2 pts</p> <p>(b) Steel joist and OSB or plywood decking – 1 pt</p> <p>(c) Timber or glulam joist with plank decking -- 2 pts</p> <p>(d) Wood shake/shingle roofing – 1 pt</p>	<p>This change provides recognition of the benefit of building materials relative to the CO2 emitted or stored by those materials. It does not take into account the transportation of material to the site, the construction process itself (e.g., precut, prefabricated), end of life disposal (recycling or salvage value), or on-going operation (owner education). As reported in USING WOOD PRODUCTS TO MITIGATE CLIMATE CHANGE: A REVIEW OF EVIDENCE AND KEY ISSUES FOR SUSTAINABLE DEVELOPMENT (Jan. 2004 collaborative report between the Climate Change Programme, the Environmental Economics Programme and the Forestry and Land Use Programme at the International Institute for Environment and Development (IIED), and the Edinburgh Centre for Carbon Management (ECCM). Hannah Reid, Saleemul Huq, James MacGregor, Duncan Macqueen and James Mayers work at IIED. Laurel Murray frequently works on a temporary basis at IIED. Richard Tipper and Aino Inkinen work at ECCM.), "Promotion of wood products can act as a greener alternative to more fossil-fuel intensive materials. Substituting a cubic metre of wood for other construction materials (concrete, blocks or bricks) results in the significant average of 0.75 to 1 tonne of CO2 savings."</p>		

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			(e) Full length metal roof panel – 1 pt (5) Fenestration (a) Vinyl frame – 1 pt (b) Clad wood or primed wood frame – 2 pt																					
383	Robert Hill NAHB Research Center NAHB Research Center	609.1 Life Cycle Analysis Revise as follows	A more environmentally preferable product or assembly is selected for an application based upon the use of a Life Cycle Assessment (LCA) tool compliant with ISSO 14044 or other recognized standards that compare the environmental impact of <u>at least two approaches</u> for building materials, assemblies, or the whole building.	Clarify the practice. It would be helpful if specifically acceptable LCA tools were listed.																				
384	Robert Hill NAHB Research Center NAHB Research Center	610.1 Manufacturer's Environmental Management System Concepts Revise as follows	Product manufacturer's operations and business practices include environmental management system concepts, and the production facility is <u>registered</u> to ISO 14001 certified or equivalent. The aggregate value of building products from <u>registered</u> ISO 14001 certified or equivalent production facilities is 1 percent or more of the estimated total building materials cost.	Clarify the practice.																				
558	Gary Ehrlich NAHB NAHB	Add New Section Add new as follows	<table border="1"> <tr> <td>602.15 Wind resistance.</td> <td>-</td> </tr> <tr> <td><u>602.15.1</u> Where required by the ICC IRC or IBC, impact-resistant glazing, and high-wind-resistant wall and roof coverings are installed.</td> <td>Mandatory</td> </tr> <tr> <td><u>602.15.2</u> Where not required by the ICC IRC or IBC, impact-resistant glazing is installed.</td> <td>2</td> </tr> <tr> <td><u>602.15.3</u> High-wind-resistant or impact-resistant entry doors or garage doors are installed.</td> <td>2</td> </tr> <tr> <td><u>602.15.3</u> High-wind-resistant or impact-resistant wall claddings are installed.</td> <td>2</td> </tr> <tr> <td><u>602.15.4</u> High-wind-resistant or impact-resistant roof coverings are installed.</td> <td>2</td> </tr> <tr> <td><u>602.15.5</u> The building is constructed in accordance with an approved above-code wind mitigation program (e.g. IBHS Fortified or My Safe Florida Home)</td> <td>4</td> </tr> <tr> <td>Addition Note: Section 602.15 applies to the new construction portion of additions.</td> <td>0 Additional Points</td> </tr> <tr> <td>Renovation Note: Section 602.15 applies to renovations that involve replacement of windows, doors or roof coverings.</td> <td>0 Additional Points</td> </tr> </table>	602.15 Wind resistance.	-	<u>602.15.1</u> Where required by the ICC IRC or IBC, impact-resistant glazing, and high-wind-resistant wall and roof coverings are installed.	Mandatory	<u>602.15.2</u> Where not required by the ICC IRC or IBC, impact-resistant glazing is installed.	2	<u>602.15.3</u> High-wind-resistant or impact-resistant entry doors or garage doors are installed.	2	<u>602.15.3</u> High-wind-resistant or impact-resistant wall claddings are installed.	2	<u>602.15.4</u> High-wind-resistant or impact-resistant roof coverings are installed.	2	<u>602.15.5</u> The building is constructed in accordance with an approved above-code wind mitigation program (e.g. IBHS Fortified or My Safe Florida Home)	4	Addition Note: Section 602.15 applies to the new construction portion of additions.	0 Additional Points	Renovation Note: Section 602.15 applies to renovations that involve replacement of windows, doors or roof coverings.	0 Additional Points	To provide credits for incorporating voluntary wind mitigation practices into the construction of the building. Impact-resistant doors, windows and roof coverings reduce damage caused by wind-borne debris during hurricanes and other high-wind events. Also, many roof covering and wall cladding products can be manufactured and installed to resist high winds. However, these products frequently carry a substantial initial cost, so their use is only required in certain areas of the country such as the Gulf and Atlantic coastlines where there is a demonstrated cost benefit or where insurance discounts or other incentives are available to offset the initial cost. A builder should be able to opt to enhance the durability of his building by providing these voluntary practices, in lieu of using other resource efficiency practices or other green practices which may carry a higher cost or work against mitigation. Credits are also proposed for building to a specific mitigation program (e.g. IBHS Fortified), which may limit a builder's ability to use other credits (e.g. overhangs).		
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<u>602.15.5</u> The building is constructed in accordance with an approved above-code wind mitigation program (e.g. IBHS Fortified or My Safe Florida Home)	4																							
Addition Note: Section 602.15 applies to the new construction portion of additions.	0 Additional Points																							
Renovation Note: Section 602.15 applies to renovations that involve replacement of windows, doors or roof coverings.	0 Additional Points																							
559	Gary Ehrlich NAHB NAHB	Add New Section Add new as follows	<table border="1"> <tr> <td>602.15 Seismic resistance.</td> <td></td> </tr> <tr> <td><u>602.15.1</u> Where required by the ICC IRC or IBC, seismic-resistant construction is provided.</td> <td>Mandatory</td> </tr> <tr> <td><u>602.15.2</u> Provide additional structural sheathing at exterior walls, hold-downs at ends of perforated shear walls or ends of shear wall and braced wall segments,</td> <td>2</td> </tr> <tr> <td><u>602.15.3</u> Avoid irregular building configurations (e.g. L-, T- or U-shaped plans, offset shear or braced walls, split-level floors).</td> <td>2</td> </tr> <tr> <td><u>602.15.4</u> Provide continuous reinforcing in foundations supporting light-frame walls.</td> <td>2</td> </tr> </table>	602.15 Seismic resistance.		<u>602.15.1</u> Where required by the ICC IRC or IBC, seismic-resistant construction is provided.	Mandatory	<u>602.15.2</u> Provide additional structural sheathing at exterior walls, hold-downs at ends of perforated shear walls or ends of shear wall and braced wall segments,	2	<u>602.15.3</u> Avoid irregular building configurations (e.g. L-, T- or U-shaped plans, offset shear or braced walls, split-level floors).	2	<u>602.15.4</u> Provide continuous reinforcing in foundations supporting light-frame walls.	2	To provide credits for incorporating voluntary seismic mitigation practices into the construction of the building. These practices are effective in reducing damage due to an earthquake, yet may carry a substantial up-front cost, particularly for retrofitting an existing building. A builder should be able to opt to enhance the durability of his building by providing these voluntary practices, in lieu of using other resource efficiency practices or other green practices which may carry a higher cost or work against mitigation. Credits are also proposed for building to a specific mitigation program (e.g. IBHS Fortified), which may limit a builder's ability to use other credits.										
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ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>602.15.5 Avoid construction of buildings on a steep slope or where the building will be partially supported on cut and partially supported on fill. 2</p> <p>602.15.5 The building is constructed in accordance with an approved above-code seismic mitigation program (e.g. IBHS Fortified) 4</p> <p>Addition Note: Section 602.15 applies to the new construction portion of additions. 0 Additional Points</p> <p>Renovation Note: Section 602.15 applies to renovations. Additional points shall be awarded as follows:</p> <p>(a) Anchorage of walls to foundations is provided to bring an existing building up to current code requirements. 2 Additional Points</p> <p>(b) Bracing of cripple walls is provided to bring an existing building up to current code requirements. 2 Additional Points</p> <p>(c) Existing unreinforced masonry chimneys and masonry veneer walls are reinforced and anchored to the building. 2 Additional Points</p>			
560	Gary Ehrlich NAHB NAHB	Add New Section Add new as follows	<p>602.15 Flood resistance.</p> <p>602.15.1 Where required by the ICC IRC or IBC, flood-resistant construction is provided. Mandatory</p> <p>602.15.2 The entire building is constructed using flood damage-resistant materials. 2</p> <p>602.15.3 The building is constructed with its lowest floor at least one foot above the elevation required by the building code or adopted by the jurisdiction, whichever is higher 2</p> <p>602.15.4 The building is constructed on an open foundation system (pile foundations or isolated piers). 2</p> <p>602.15.5 The building is constructed in accordance with an approved above-code flood mitigation program (e.g. IBHS Fortified) 4</p> <p>Addition Note: Section 602.15 applies to the new construction portion of additions. 0 Additional Points</p> <p>Renovation Note: Section 602.15 applies to renovations. The additional points apply only to renovations, including repairs, where the total cost does not exceed 40% of the market value of the building. 4 Additional Points</p>	To provide credits for incorporating voluntary flood mitigation practices into the construction of the building. These practices are effective in reducing damage in a flood event that exceeds the mapped base flood elevations or that extends beyond a mapped flood hazard area. In some cases, particularly for adding “freeboard” (elevation above the mapped base flood elevation) these practices can earn a homeowner discounts on their NFIP policy. Also, additional points over and above the basic mitigation practices are proposed for electing to upgrade an existing building to current requirements for flood resistance when the cost of the repair or improvement falls below the mandatory 50% of market value threshold. A builder should be able to opt to enhance the durability of his building by providing these voluntary practices, in lieu of using other resource efficiency practices or other green practices which may carry a higher cost or work against mitigation. Credits are also proposed for building to a specific mitigation program (e.g. IBHS Fortified), which may limit a builder’s ability to use other credits.		
97	Michael Gardner Gypsum Association Gypsum Association	Add New Section Add new as follows	<p>606.4 Manufacturing heat. Waste heat or heat created by a cogeneration energy process is used to generate a minimum of 25 percent of the total heat required to manufacture a major component of the building.</p> <p>2 points per product. Maximum of 6 points total.</p>	The use of waste heat recovery systems in manufacturing is increasing. To reduce overall fuel and energy use, plants using kilns, dryers, furnaces, and ovens in a manufacturing process recirculate clean exhaust heat into a separate part of the manufacturing process using specialized equipment and techniques. Waste heat can also be transferred from an adjacent facility. Similar to the recognition provided to renewable and combustible waste energy sources, the environmental benefits of waste heat recovery systems and their use in a manufacturing process should be recognized by ICC 700. The proposed language also acknowledges the benefit of using heat		

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86	Steve Hale Build Green NM Build Green NM	Entire Chapter 6 Revise as follows	See revised table 303 for changes	generated by a cogeneration energy process in manufacturing. Definitions for waste heat and cogeneration energy process have been submitted to Section 202 in a separate proposal. Resource Efficiency points vary widely based on the area of the country being built in. It would be more practical to set a threshold for this section. Then allow extra points be required that could come from any section. (see proposed changes in section 303.1 Table 303		
129	Steve Hale Build Green NM Build Green NM	Entire Chapter 6 Revise as follows	Revise table 303 to address the "reason" below See also suggested change to table 303 submitted seperately	Resource efficiency is important. This category is, however more subjective than Energy Efficiency and Water Efficiency. Rather than assign these subjective points different point requirements for each level there should be established a minimum threshold for this category and all points achieved above that level should go to the additional points category which can go up at each higher level attained. This is a suggestion for Chapters 4, 5, 6, 9 and 10.		
564	Steven Orlowski National Association of Home Builders NAHB	Entire Chapter 6 Delete and substitute as follows	See attached. Find by comment number.	The National Green Building Standard's broad applicability to a range of project types is a key strength to the document and the impact that it will have on the growth of green residential construction. In fact, by including guidance for existing buildings, the NGBS can be a good resource in addressing the issue of older buildings requiring more energy and other resources to operate (when compared to new construction.) However, the current system of using modifications to the practices and scoring for new construction can be a cumbersome and confusing process when scoring renovation and addition projects. Simplifying the document and removing extraneous information so that practitioners can more readily focus on the practices and scoring that relate to their particular project could increase the practical utility of the standard for older buildings. An example of how this approach would change the standard is provided in this proposal , where Chapter 6 has been revised by removing all of the addition and revisions notes from the chapter and a new chapter 12 has been created to consolidate all of the renovation notes into its own chapter.		
224	Craig Conner, Gary Klein Building Quality / Affiliated International Management Selves	Other (include section number and title below) Revise as follows	ICC 700 needs to incorporate or be clear on how to avoid moisture / durability problems associated with specifying higher levels of insulation, much more air tight structures, and effectively lowering the amount of air moved to meet the much reduced heating and cooling loads. This may result in specification of construction details that are prohibited or required. It may require a better specification of what makes effective ventilation, beyond simply specifying a rate. It may require separating the conditioned air delivery, ventilation, and humidity controls functions; such that they may or may not be met by the same equipment. It may include dealing with bulk moisture (usually rain), air movement, vapor movement and thermal flows.	We are about to run a massive experiment fueled by changes in the IECC and presumably pushed further by the ICC 700. Higher levels of insulation, airtight structures, and many changes in construction details will markedly change water, moisture, and heat flows in residences. The new energy and water changes can be accomplished, but likely involve new constraints and considerations. One example of a big change is "airtight" residences. Current practice in new construction often produces air tightness levels of about the 7 ACH50. The new 2012 IECC cuts the airflow by more than half by specifying a maximum of 3 ACH50 for most of the US. Intentionally or not, some residences may be much tighter as builders try to ensure the code minimum is met so they are not surprised by ACH test results. The ICC 700 also gives points for tested ACH50's even tighter than the new IECC. Other major changes could affect water, air, and thermal flows in new residences.		

NEW PROPOSED CHAPTERS ON FUNCTIONAL RESILIENCE

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316	Stephen V. Skalko, P.E. Portland Cement Association Portland Cement Association	Entire Chapter 11 Add new as follows	Renumber Chapter 11 and add new Chapter 11 as follows: <p style="text-align: center;">CHAPTER 11</p> <p style="text-align: center;">FUNCTIONAL RESILIENCE FOR ONE AND TWO FAMILY DWELLINGS AND TOWNHOMES NOT MORE THAN THREE STORIES IN HEIGHT</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">GREEN BUILDING PRACTICES</th> <th style="text-align: center;">POINTS</th> </tr> </thead> <tbody> <tr> <td style="background-color: black; color: white;">1100</td> <td></td> </tr> <tr> <td colspan="2">FUNCTIONAL RESILIENCE</td> </tr> <tr> <td colspan="2">1100.0 Intent. This Chapter applies to the design and construction of buildings or additions thereto that are one- and two-family dwellings detached dwellings or townhomes not more than three stories in height above grade plane. 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The provisions of the International Code Council (ICC) <i>International Wildland-Urban Interface Code</i> shall apply to the construction, alteration, movement, repair, maintenance, and use of any building, structure, or premises within the wildland interface areas in this jurisdiction. Fire Hazard Severity shall be based on Table 502.1, <i>Fire hazard severity</i> in the ICC <i>International Wildland-Urban Interface Code</i>.</td> <td style="text-align: center;">Mandatory</td> </tr> <tr> <td>1101.4 Radon control methods. Appendix F, <i>Radon control methods</i>, of the Code shall apply.</td> <td></td> </tr> </tbody> </table>	GREEN BUILDING PRACTICES	POINTS	1100		FUNCTIONAL RESILIENCE		1100.0 Intent. This Chapter applies to the design and construction of buildings or additions thereto that are one- and two-family dwellings detached dwellings or townhomes not more than three stories in height above grade plane. 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			<p>1101.5 Sound transmission. Appendix K, <i>Sound transmission</i> of the Code shall apply to dwellings with the following modifications:</p> <p>(1) Interior wall and floor-ceiling assemblies separating dwelling units shall have a composite sound transmission class (STC) rating of not less than 50 (45 if field tested).</p> <p>(2) Exterior wall and roof-ceiling assemblies that are part of the exterior envelope shall have a composite sound transmission class (STC) rating of not less than 50 (45 if field tested) and fenestration that is part of the exterior envelope shall have an STC rating of not less than 30 (25 if field tested).</p> <p>(3) Floor-ceiling assemblies separating dwelling units shall have an impact insulation class (IIC) rating of not less than 50 (45 if field tested).</p>			
			<p>1102 (Coordinates with Chapter 2 of the Code)</p> <p>DEFINITIONS</p>			
			<p>1102.1 Definitions. No additional definitions required.</p>			
			<p>1103 (Coordinates with Chapter 3 of the Code)</p> <p>BUILDING PLANNING</p>			
			<p>1103.1 Wind design criteria. The basic wind speed, design criteria and exposure category to apply Section 301.2.1, <i>Wind limitations</i> of the Code shall be as follows:</p> <p>(1) The basic wind speed shall be based on a design wind speed equal to the basic wind speed according to Figure 301.2(4) <i>Basic wind speeds for 50-year-mean recurrence interval</i> of the Code (or locally adopted basic wind speed in special wind zones, if higher) plus 20-mph.</p> <p>(2) The exposure category shall be assumed to be terrain Exposure C in accordance with Section 301.2.1.4, <i>Exposure category</i> of the Code regardless of the actual local exposure.</p>	Mandatory		
			<p>1103.2 Townhouse requirements. Exterior walls and common walls between townhouses shall comply with the Code and with the following.</p> <p>(1) Common townhouse separation walls - Where common walls are used to separate townhouse the fire resistance rating shall be 2-hours</p> <p>(2) Parapets - Exterior walls and common walls between townhouses shall be provided with parapets in accordance with Section R302.2.2, <i>Parapets</i>, of the Code. The exception for parapets in Item 2 of Section R302.2.2 shall not be permitted.</p>	Mandatory		
			<p>1103.3 - Two-family dwelling unit separation - The walls and/or floor-ceiling assemblies separating dwelling units in two family dwellings shall have a one hour fire resistance rating. The fire resistance shall not be permitted to be reduced in accordance with Exception 1 to Section R302.3, <i>Two-family dwellings</i> of the Code. The walls shall not be permitted to terminate at ceilings in accordance with Exception 2 to Section R302.3, <i>Two-family dwellings</i> of the Code.</p>	Mandatory		
			<p>1103.4 - Fire protection features - All dwelling units shall be provided with fire protection features in accordance with one of the following.</p> <p>(1) Automatic sprinkler protection - An automatic sprinkler protection system in accordance with NFPA 13D, 13 or 13R shall be provided throughout all dwelling units.</p> <p>(2) Automatic smoke alarm system and non-combustible construction - The dwelling unit shall be provided with a smoke alarm system in accordance with Section R314, <i>Smoke alarms</i> of the Code including smoke detectors in all rooms. In addition, the structural members of walls, floors, ceilings and roofs of the dwelling unit shall be constructed entirely of noncombustible materials.</p>	Mandatory		
			<p>1103.5 Flood resistant construction requirements. Dwellings required to be constructed in accordance with Section R322, <i>Flood resistant construction</i> of the Code, shall also comply with the following:</p> <p>(1) The floor and their lowest horizontal supporting members shall be not less than the following:</p> <p>(a) The design flood elevation</p> <p>(b) The base elevation plus 3 feet</p> <p>(c) The 500 year flood elevation, if known</p> <p>(2) Flood protective works. Dwellings designed and constructed in accordance with ASCE 24 shall not consider flood protective works for providing flood protection during the design flood.</p> <p>Exception: Dams where approved by the code official.</p>	Mandatory		
			<p>1103.6 Storm shelter construction. In addition to other applicable requirements in this Standard, all one and two family dwellings shall be provided with storm shelters constructed in accordance with ICC/NSSA-500 in the following locations:</p> <p>(1) Hurricane shelters. In <i>hurricane-prone regions</i> as defined in Section 202 of the Code, <i>Definitions</i>.</p> <p>(2) Tornado shelters. In areas where the shelter design wind speed for tornadoes in Figure 304.2 (1) of ICC/NSSA-500 is 160 mph or</p>	Mandatory		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			greater.			
			(3) Combined hurricane and tornado shelters. Storm shelters required to provide protection from both tornadoes and hurricanes shall be designed and constructed using the most restrictive requirements for each hazard applied to the entire storm shelter.			
			1104 (Coordinates with Chapter 4 of the Code)			
			FOUNDATIONS			
			1104.1 Frost protected shallow foundations. All buildings using frost protected shallow foundations constructed in accordance with Section R403.3, <i>Frost protected shallow foundations</i> of the Code or ASCE 32 shall be marked in accordance with all of the following:	Mandatory		
			(1) Label. A label shall be affixed to the inside of the main electrical panel with the following statement: "This building uses insulation materials to protect the foundation from frost heave. Do not shut off power to the building or reduce the interior temperature to the building below 45 °F without determining the impact to the foundation protection. Do not disturb any earth within 3 feet of the building without the determining the extent of the insulation protection".			
			1105 (Coordinates with Chapter 5 of the Code)			
			FLOORS			
			1105.1 Floors. Toilets, bathing rooms, showering rooms, kitchens, laundry rooms, and spa area floors shall have smooth, hard, non-absorbent surface that extends up onto the walls at least 6 inches.	Mandatory		
			1106 (Coordinates with Chapter 6 of the Code)			
			WALLS			
			1106.1 Walls. No additional requirements.			
			1107 (Coordinates with Chapter 7 of the Code)			
			WALL COVERINGS			
			1107.1 Vinyl siding. Vinyl siding wall coverings conforming to Section R703.11 of the Code shall not be permitted in the following locations:	Mandatory		
			(1) Hurricane-prone regions			
			(2) Regions of moderate and severe hail exposure determined in Figure R903.5, <i>Hail exposure map</i> of the Code			
			(3) Fire separation distance of 30 feet or less.			
			1107.2 Exterior insulation and finish systems (EIFS). Exterior insulation and finish system wall coverings conforming to Section R703.9 of the Code shall not be permitted in the following locations.	Mandatory		
			(1) Hurricane-prone regions			
			(2) Regions of moderate and severe hail exposure as determined in Figure R903.5, <i>Hail exposure map</i> of the Code			
			(3) Fire separation distance of 10 feet or less.			
			1107.3 Solar reflectance for wall coverings. All opaque portions of above grade exterior walls, other than those listed below, having an orientation measured perpendicularly to compass directions between and including SSE (157.5°) and WNW (292.5°) having a solar reflectance index (SRI) of not less than 29 as determined in accordance with <i>ASTM E1980 Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces</i> for medium wind speed. The SRI shall be based on the thermal emittance determined in accordance with ASTM E408 or C1371 and solar reflectance as determined in accordance with ASTM E1918 or C1549. The points shall not apply to the following walls:	4		
			(1) Exterior walls complying with Section 703.1.1 of this standard.			
			(2) Exterior walls complying with Section 703.1.3 of this standard.			
			(3) Exterior walls in Climate Zones 4, 5, 6, 7, and 8 of Figure 6(1).			
			(4) Exterior walls that are at least 75% shaded by plants, man-made structures,			
			existing buildings, topography, or permanent building projections.			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			1108 (Coordinated with Chapter 8 of the Code)			
			ROOF-CEILING CONSTRUCTION			
			1108.1 Roof construction. No additional requirements			
			1109 (Coordinates with Chapter 9 of the Code)			
			ROOF ASSEMBLIES			
			1109.1 Roofs in warm and dry climates. Roofs in climate zones 1, 2, 3, 4, 5B (dry), and 6B (dry) of Figure 6(1), <i>Climate zones</i> , of this Standard shall have a Class A roof covering or Class A roof assembly according to UL 790. For roof coverings where the profile allows a space between the roof covering and roof decking, the space at the eave ends shall be firestopped to preclude entry of flames or embers.	Mandatory		
			1109.2 Roof coverings subject to hail exposure. Roof coverings used in regions where hail exposure is Moderate or Severe, as determined in accordance with Section R903.5, <i>Hail exposure</i> and Figure R903.5, <i>Hail exposure map</i> of the Code shall be tested, classified, and labeled in accordance with UL 2218 or FM 4473.	Mandatory		
			1109.3 Solar reflectance for roof coverings. Roof coverings having a solar reflectance indices in accordance with Items (1) or (2) below:		4	
			1) Roof slopes < 2-1/2:12. All opaque portions of roofs having a slope less than 2-1/2 units vertical in 12 units horizontal having a solar reflectance index (SRI) of not less than 78.			
			2) Roof slopes > 2-1/2:12. All opaque portions of roofs having a slope of 2-1/2 units vertical in 12 units horizontal or greater having a solar reflectance index (SRI) of not less than 29. A default SRI value of 35 for new gray concrete without added color pigment is allowed to be used in lieu of measurements and calculations.			
			11105 (Coordinates with Chapter 44 of the Code)			
			REFERENCED DOCUMENTS			
			ASCE/SEI	American Society of Civil Engineers Structural Engineering Institute 1801 Alexander Bell Drive Reston, VA 20191-4400		
			ASCE 24	2005	<i>Flood Resistant Design and Construction</i>	1103.5(2)
			ASCE 32	2001	<i>Design and Construction of Frost Protected Shallow Foundations</i>	1104.1
			ASTM		American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428-2959	
			C1371	2004	<i>Standard Test Method for Determining the Emittance Materials Nears Room Temperature Using Portable Emmissometers</i>	1107.3
			C1549	2004	<i>Standard Test Method for Determining Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer</i>	1107.3
			E408	2008	<i>Standard test Method for Total Normal Emittance of Surfaces Using Inspector-Meter Techniques</i>	1107.3
			E1918		<i>Standard Test Method for Determining Solar Reflectance of Horizontal and Low-sloped surfaces in the Field.</i>	1107.3
			E1980		<i>Standard Practice for Calculating the Solar reflectance</i>	1107.3

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<u><i>Index of Horizontal and Low-sloped Surfaces in the Field</i></u>			
			FM Factory Mutual Global Research Standards Laboratory Department 1301 Atwood Avenue Johnson, RI 02919			
		4473	2005	<u><i>Specification Test Standard for Impact Resistance of Rigid Roof Materials by Impacting with Freezer Ice Ball</i></u>	1109.2	
			ICC International Code Council 500 New Jersey Avenue, N.W. Washington, DC 20001			
		IRC	2009	<u><i>International Residential Code</i></u>	1100.2	
		ICC/ NSSA 500	2008	<u><i>Standard on the Design and Construction of Storm Shelters</i></u>	1103.6	
		IUWIC	2009	<u><i>International Urban Wildland Interface Code</i></u>	1101.3	
			NFPA National Fire Protection Association 1 Batterymarch Park Quincy, MA 02169			
		13	2007	<u><i>Standard for the Installation of Sprinkler Systems</i></u>	1103.4(1)	
		13D	2007	<u><i>Standard for the Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes</i></u>	1103.4(1)	
		13R	2007	<u><i>Standard for the Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height</i></u>	1103.4(1)	
			UL Underwriters Laboratories, Inc. 333 Pflingsten Road Northbrook, IL 60062			
		790	2004	<u><i>Standard Test Methods for Fire Tests of Roof Coverings</i></u>	1109.1	
		2218	1996	<u><i>Standard for Safety Impact Resistance of Prepared Roof Covering Materials</i></u>	1109.2	
		<p>REASON: This reason statement has the following three segments to explain the reasons for this change: (A) The code change is explained; (B) the specific substantiation for the change is given; and (C) General background information identifying the need for enhanced property protection and functional resilience for resource minimization;</p> <p style="text-align: center;">(A)</p> <p>This proposal is to create a new Chapter in ICC 700 for one and two family dwellings and townhouses three stories in height with provisions that enhance the requirements of the International Residential Code to provide functional resilience and durability for these buildings. The new chapter is structured to identify the</p>				

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>sections in the IRC where enhanced provisions shall apply to one and two family dwellings and townhouses three stories in height constructed in accordance with ICC 700.</p> <p style="text-align: center;">(B)</p> <p>The following are reports of dollar loss to property from wind, cold weather and fire disasters.</p> <ul style="list-style-type: none"> • The American Society of Civil Engineers reported in <i>Normalized Hurricane Damage in the United States, 1900 – 2005</i>, National Hazard Review, ASCE 2008, that property damage from hurricanes was 81 billion dollars in 2005. • The National Weather Service reports that U.S. property damage due to winter storms and ice exceeded 1.5 billion dollars in 2009. • <i>Fire Losses in the United States During 2009</i> by the National Fire Protection Association, August 2010 shows that property loss due to structure fires in buildings other than one and two family dwellings was approximately 4.5 billion dollars. <p>Increasing the stringency of the design criteria of residential buildings for hazards such as wind, snow or fire results in more robust buildings. Such requirements reduce the amount of energy and resources required for repair, removal, disposal and replacement of building components and systems damaged from these disasters. A further benefit is a reduction in the amount of damaged building materials and content entering landfills.</p> <p>Additional benefits are enhanced life safety, security and occupant comfort; potentially less demand on community resources required for emergency response; and allowing facilities to be more readily adapted for re-use if there is a change of occupancy in the future.</p> <p style="text-align: center;">(C)</p> <p>Minimum building requirements whether through energy codes, plumbing codes, mechanical codes, zoning codes, or basic building codes, do not encourage truly sustainable buildings. The proposal is one of several that attempt to integrate the concepts of the <i>Whole Building Design Guide</i> (WBDG) into the minimum design and construction criteria for “green” buildings. The WBDG, developed in partnership between the National Institute of Building Sciences (NIBS) and the Sustainable Building Industries Council (SBIC), has as its key concepts: accessible, aesthetics, cost-effective, <u>functional/operational</u>, historic preservation, productive, <u>secure/safe</u>, and sustainable.</p> <p>There are numerous references about the economic, societal, and environmental benefits that result when enhanced functional resilience for <u>resource minimization</u> are integrated into building design and construction. Six examples demonstrating the importance and supporting the concepts are:</p> <ol style="list-style-type: none"> 1. Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities National Institute of Building Sciences Multi-Hazard Mitigation Council - 2005 One of the findings in this report is “The analysis of the statistically representative sample of FEMA grants awarded during the study period indicates that a dollar spent on disaster mitigation saves society an average of \$4.” The programs studied often addressed issues and strategies other than enhanced disaster resistance of buildings and other structures. However, more disaster-resistant buildings enhance life safety; reduce costs and environmental impacts associated with repair, removal, disposal, and replacement; and reduce the time and resources required for community recovery. 2. Five Years Later – Are we better prepared? Institute for Business and Home Safety - 2010 This IBHS report states: “When Hurricane Katrina made landfall on Aug. 29, 2005, it caused an estimated \$41.1 billion in insured losses across six states, and took an incalculable economic and social toll on many communities. Five years later, the recovery continues and some residents in the most severely affected states of Alabama, Louisiana and Mississippi are still struggling. There is no question that no one wants a repeat performance of this devastating event that left at least 1,300 people dead. Yet, the steps taken to improve the quality of the building stock, whether through rebuilding or new construction, call into question the commitment of some key stakeholders to ensuring that past mistakes are not repeated.” This report indicates that there is a need to implement provisions to make buildings more disaster-resistant. Clearly this suggests that functional resilience should at least be integrated into the design and construction of sustainable buildings. 3. National Weather Service Office of Climate, Water and Weather Services National Oceanic and Atmospheric Administration (NOAA) - 2010 Data provided on the NOAA website [www.weather.gov/os/hazstats.shtml] indicates that the average annual direct property loss due to natural disasters in the United States exceeds of \$35,000,000,000. This does not include indirect costs associated with loss of residences, business closures, and resources expended for emergency response and management. These direct property losses also do not reflect the direct environmental impact due to reconstruction after the disasters. Functional resilience will help alleviate the environmental impact and minimize both direct and indirect losses from natural disasters. 			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action		
			<p>4. Global Climate Change Impacts in the United States U.S. Global Change Research Program (USGCRP) - 2009 The USGCRP includes the departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Interior, State and Transportation; National Aeronautic and Space Administration; Environmental Protection Agency, USA International Development, National Science Foundation and Smithsonian Institution</p> <p>The report identifies that: "Climate changes are underway in the United States and are projected to grow. Climate-related changes are already observed in the United States and its coastal waters. These include increases in heavy downpours, rising temperature and sea level, rapidly retreating glaciers, thawing permafrost, lengthening growing seasons, lengthening ice-free seasons in the ocean and on lakes and rivers, earlier snowmelt, and alterations in river flows. These changes are projected to grow." The report further identifies that the: "Threats to human health will increase. Health impacts of climate change are related to heat stress, waterborne diseases, poor air quality, extreme weather events, and diseases transmitted by insects and rodents. Robust public health infrastructure can reduce the potential for negative impacts." Key messages in the report on societal impacts include:</p> <ul style="list-style-type: none"> • "City residents and city infrastructure have unique vulnerabilities to climate change. " • "Climate change affects communities through changes in climate-sensitive resources that occur both locally and at great distances." • "Insurance is one of the industries particularly vulnerable to increasing extreme weather events such as severe storms, but it can also help society manage the risks." <p>Sustainable building design and construction cannot be about protecting the natural environment without consideration of the projected growth in severe weather. Minimum codes primarily based on past natural events are not appropriate for truly sustainable buildings. Buildings expected to have long term positive impacts on the environment must be protected from these extreme changes in the natural environment. The provisions for improved property protections are necessary to reduce the amount of energy and resources associated with repair, removal, disposal, and replacement due to routine maintenance and damage from disasters. Further such provisions reduce the time and resources required for community disaster recovery.</p> <p>5. Sustainable Stewardship - Historic preservation plays an essential role in fighting climate change , <i>Traditional Building</i>, National Trust for Historic Preservation - 2008</p> <p>In the article <i>Richard Moe summarizes the results of a study by the Brookings Institution</i> which projects that by 2030 we will have demolished and replaced 82 billion square feet of our current building stock, or nearly 1/3 of our existing buildings, largely because the vast majority of them weren't designed and built to last any longer. Durability, as a component of functional resilience, can reduce these losses.</p> <p>6. Opportunities for Integrating Disaster Mitigation and Energy Retrofit Programs Senate Environment and Public Works Committee Room, Dirksen Senate Office Building, Washington, D.C. - 2010</p> <p>During this panel discussion a representative of the National Conference of State Historic Preservation Officers noted that more robust buildings erected prior to 1950 tend to be more adaptable for reuse and renovation. Prior to the mid-1950s most local jurisdictions developed their own building code requirements that uniquely addressed the community's needs, issues and concerns. Pre-1950 building codes typically resulted in more durable and robust construction that lasts longer.</p> <p>The total environmental impact of insulation, high efficiency equipment, components, and appliances, low-flow plumbing fixtures, and other building materials and contents are relatively insignificant when rendered irreparable or contaminated and must be disposed of in landfills after disasters. The US Army Corps of Engineers estimated that after Hurricane Katrina nearly 1.2 billion cubic feet of building materials and contents ended up in landfills. This is analogous to stacking enough refrigerators a fifth of the way to the moon or placing them end to end around the equator of the Earth twice.</p>					
319	Stephen V. Skalko, P.E. Portland Cement Association Portland Cement Association	Entire Chapter 11 Add new as follows	Renumber Chapter 11 and add a new Chapter 12 as follows. This chapter 12 will follow the proposed new Chapter 11. <p style="text-align: center;"><u>CHAPTER 12</u></p> <p style="text-align: center;"><u>FUNCTIONAL RESILIENCE OF RESIDENTIAL BUILDINGS</u></p> <p style="text-align: center;"><u>OTHER THAN ONE AND TWO FAMILY DWELLINGS AND TOWNHOMES NOT MORE THAN THREE STORIES IN HEIGHT</u></p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="text-align: center;"><u>GREEN BUILDING PRACTICES</u></td> <td style="text-align: center;"><u>POINTS</u></td> </tr> </table>	<u>GREEN BUILDING PRACTICES</u>	<u>POINTS</u>			
<u>GREEN BUILDING PRACTICES</u>	<u>POINTS</u>							

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			1200			
			FUNCTIONAL RESILIENCE			
			1200.0 Intent. This Chapter applies to the design and construction of buildings or portions thereof that are classified as Residential Group R in Section 310 of the ICC <i>International Building Code</i> . Residential construction not addressed in this Chapter is addressed in Chapter 11, <i>Functional resilience of one and two family dwellings and townhomes not more than three stories in height</i> .			
			1200.1 Design and construction. Buildings shall be designed and constructed to meet the minimum requirements of this Chapter and the applicable Code whichever is more stringent.		Mandatory	
			1200.2 Building code. For this Chapter, Code shall mean the Building Code of the jurisdiction or the referenced edition of the ICC <i>International Building Code</i> , whichever is more stringent.		Mandatory	
			1200.3 Coordination. This Chapter addresses enhanced functional resilience, therefore the requirements herein shall be coordinated with the requirements in Chapters 1 through 10 of this Standard and Chapters 1 through 18 of the Code.			
			1201 (Coordinates with Chapter 1 of the Code)			
			SUBMITTAL DOCUMENTS			
			1201.1 Design service life plan. A design service life plan (DSLPL) shall be provided to the owner for approval prior to the application for a permit. The DSLPL shall comply with the provisions of this section.		Mandatory	
			(1) Design service life. The DSLPL shall use a design service life of not less than 60 years.			
			(2) DSLPL scope. The DSLPL shall include routine repair, maintenance, replacement, and disposal cost estimates for the design service life of the building for the following components:			
			(a) Exterior wall in accordance with Chapter 14, <i>Exterior walls</i> , of the Code.			
			(b) Roof assemblies and rooftop structures in accordance with Chapter 15, <i>Roof assemblies and roof top structures</i> , of the Code.			
			(c) Concrete in accordance with Chapter 19, <i>Concrete</i> , of the Code.			
			(d) Aluminum in accordance with Chapter 20, <i>Aluminum</i> , of the Code.			
			(e) Masonry in accordance with Chapter 21, <i>Masonry</i> , of the Code.			
			(f) Steel in accordance with Chapter 22, <i>Steel</i> , of the Code.			
			(g) Wood in accordance with Chapter 23, <i>Wood</i> , of the Code.			
			(h) Glass and Glazing in accordance with Chapter 24, <i>Glass and glazing</i> , of the Code.			
			(i) Gypsum board and plaster in accordance with Chapter 25, <i>Gypsum board and plaster</i> of the Code.			
			(j) Plastics in accordance with Chapter 26, <i>Plastic</i> , of the Code.			
			(3) DSLPL criteria. The DSLPL shall include the following:			
			(a) Building components with description of materials.			
			(b) Schedule, including cost estimates, of routine maintenance, repair, replacement and disposal, for each component.			
			(4) DSLPL retention. The DSLPL shall be retained for the design service life of the building, and upon request, made available for review by the authority having jurisdiction. During the design service life of the building, the DSLPL shall be transferred to each subsequent owner.			
			1201.2 Certificate of occupancy. Buildings designed and constructed in accordance with this Standard shall include the designation (-HP) after the occupancy classification.		Mandatory	
			1201.3 Wildland fires. The provisions of the International Code Council (ICC) <i>International Wildland-Urban Interface Code</i> shall apply to the construction, alteration, movement, repair, maintenance, and use of any building, structure, or premises within the wildland interface areas in this jurisdiction. Fire Hazard Severity shall be based on Table 502.1, <i>Fire hazard severity</i> in the ICC <i>International Wildland-Urban Interface Code</i> .		Mandatory	
			1201.4 Rodentproofing. Appendix F, <i>Rodentproofing</i> , of the Code shall apply.		Mandatory	
			1201.5 Flood resistant construction. Appendix G, <i>Flood-resistant construction</i> , of the Code shall apply.		Mandatory	
			1202 (Coordinates with Chapter 2 of the Code)			
			DEFINITIONS			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action							
			1202.0 Definitions. No additional definitions required.										
			1203 (Coordinates with Chapter 3 of the Code)										
			USE AND OCCUPANCY CLASSIFICATION										
			1203.0 Classification. No additional provisions required.										
			1204 (Coordinates with Chapter 4 of the Code)										
			SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY										
			1204.1 High rise buildings. The reduction of the fire resistance rating for fire barriers for shaft enclosures in accordance with Section 403.2.1.2, <i>Shaft enclosures</i> , of the Code shall not be permitted.		Mandatory								
			1204.2 Enclosure of atriums. The substitution for fire barriers enclosing atriums in accordance with Exception 1 to Section 404.6, <i>Enclosure of atriums</i> , of the Code shall not be permitted.		Mandatory								
			1204.3 Combustible storage. The automatic sprinkler system modification of the fire resistance rating for combustible storage for attics, under-floor and concealed spaces in accordance with Exception 1 to Section 413.2, <i>Attic, underfloor, and concealed spaces</i> , of the Code shall not be permitted.		Mandatory								
			1204.4 Hazardous materials. The reduction in the fire-resistance rating for fire barriers enclosing control areas in accordance with the Exception to Section 414.2.4, <i>Fire-resistance rating requirements</i> , of the Code shall not be permitted.		Mandatory								
			1204.5 Storm shelter construction. In addition to other applicable requirements in this Standard, storm shelters constructed in accordance with ICC/NSSA-500 shall be provided for all occupants of Group R buildings in the following locations:		Mandatory								
			(1) Hurricane shelters. Hurricane shelters in hurricane-prone regions as defined in Section 1609.2, <i>Definitions</i> , of the Code shall be provided										
			(2) Tornado shelters. Tornado shelters shall be provided in areas where the shelter design wind speed for tornadoes in Figure 304.2(1) of ICC/NSSA 500 is 160 mph or greater.										
			(3) Combined hurricane and tornado shelters. Combined hurricane and tornado shelters shall comply with the more stringent requirements of ICC/NSSA-500 for both types of shelters.										
			1205 (Coordinates with Chapter 5 of the Code)										
			GENERAL HEIGHTS AND AREAS										
			1205.1 General height and area limitations. Allowable heights and areas shall be in accordance with Table 1205.1 where building height limitations are in feet above grade plane, story limitations are stories above grade plane, and area limitations are determined by the definition of "Area, building," per floor.		Mandatory								
			Table 1205.1										
			Allowable Height and Building Areas^{a,b}										
			GROUP	HGT (S)	TYPE OF CONSTRUCTION						TYPE V		
					TYPE I		TYPE II		TYPE III			TYPE IV	
					A	B	A	B	A	B	A	B	
			R-1	S	UL	11	4	NP	4	NP	4	3	NP
				A	UL	UL	24,000		24,000		20,500	12,000	
			R-2	S	UL	11	4	NP	4	NP	4	3	NP
				A	UL	UL	24,000		24,000		20,500	12,000	
			R-3	S	UL	11	4	NP	4	NP	4	3	NP
				A	UL	UL	UL		UL		UL	UL	
			R-4	S	UL	11	4	NP	4	NP	4	3	NP

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action							
			<table border="1"> <tr> <td>A</td> <td>UL</td> <td>UL</td> <td>24,000</td> <td>24,000</td> <td>20,500</td> <td>12,000</td> </tr> </table> <p>For SI: 1 foot = 304.8 mm, 1 square foot = 0.929 m²</p> <p>UL = Unlimited, NP = Not Permitted</p> <p>^a The requirements in this table take precedence over Table 503, <i>Allowable building heights and areas</i> of the Code.</p> <p>^b See the following Sections of the Code for modifications to Table 1205.1:</p> <ol style="list-style-type: none"> Section 506.2, <i>Frontage increase</i>, of the Code. Section 507, <i>Unlimited area buildings</i>, of the Code. 	A	UL	UL	24,000	24,000	20,500	12,000			
A	UL	UL	24,000	24,000	20,500	12,000							
			1205.2 Building height and area increases.		Mandatory								
			(1) Increases in building height in accordance with Section 504.2, <i>Automatic sprinkler system increase</i> , of the Code shall not be permitted										
			(2) Increases in building area in accordance with Section 506.3, <i>Automatic sprinkler system increase</i> , of the Code shall not be permitted										
			1205.3 Single occupancy buildings with more than one story. Exception 2 of Section 506.4.1, <i>Area determination</i> of the Code allowing area increases for <i>automatic sprinkler systems</i> shall not be permitted.		Mandatory								
			1205.4 Mixed use and occupancy. The incidental accessory occupancies listed in Table 1205.2 shall be separated from the remainder of the building in accordance with Table 1205.2.		Mandatory								
			Table 1205.2										
			Incidental Use Areas^a										
			Room or Area	Separation and/or Protection									
			Furnace room where any piece of equipment is over 400,000 Btu per hour input	1-hour and provide automatic sprinkler system									
			Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower.	1-hour and provide automatic sprinkler system									
			Refrigerant machinery rooms	1-hour and provide automatic sprinkler system									
			Parking garage (Section 406.2 of the Code, <i>Parking garages</i>)	2-hour and provide automatic sprinkler system									
			Hydrogen cut off rooms	2-hour and provide automatic sprinkler system									
			Incinerator rooms	2-hour and provide automatic sprinkler system									
			Laundry rooms over 100 square feet	1-hour and provide automatic sprinkler system									
			Storage rooms over 100 square feet	1-hour and provide automatic sprinkler system									
			Waste and linen collection rooms other than rooms designated for the collection of recyclables	1-hour and provide automatic sprinkler system									
			Rooms designated for the collection of recyclables	2-hour and provide automatic sprinkler system									
			Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons, or lithium ion capacity of 1,000 pounds used for facility standby power, emergency power or uninterrupted power supplies	2-hour and provide automatic sprinkler system									
			Rooms in non-high-rise buildings containing fire pumps	2-hour and provide automatic sprinkler system									
			Rooms in high-rise buildings containing fire pumps	2-hour and provide automatic sprinkler system									
			^a The requirements in this table take precedence over Table 508.2.5, <i>Incidental accessory occupancies</i> of the Code.										
			1205.5 Type IIIA construction. Height limitations for R-1 and R-2 buildings of Type IIIA construction as described in Section 509.5, <i>Group R-1 and R-2 buildings of Type IIIA construction</i> of the Code, shall not be permitted.										
			1206 (Coordinates with Chapter 6 of the Code)										

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action									
			TYPES OF CONSTRUCTION												
			<p>1206.1 Fire-resistance rating. Building elements shall have a fire resistance rating not less than that specified in Table 1206.1 and exterior walls shall have a fire resistance rating not less than that specified in Table 602. <i>Fire-Resistance Rating for Exterior Walls Based on Fire Separation Distance of the Code.</i></p>				Mandatory								
			TABLE 1206.1												
			FIRE-RESISTANCE RATING FOR BUILDING ELEMENTS (HOURS)^a												
			BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV		TYPE V			
				A	B	A	B	A	B	HT	A	B			
			Primary Structural Frame ^{g,h}	3 ^b	2 ^b	1	NP	1	NP	HT	1	NP			
			Bearing Walls												
			Exterior ^{f,g}	3	2	1	NP	2	NP	2	1	NP			
			Interior	3 ^b	2 ^b	1	NP	1	NP	1/HT	1	NP			
			Non-bearing Walls and Partitions												
			Exterior	See Table 602 of the Code											
			Non-bearing Walls and Partitions^e												
			Interior	0	0	0	NP	0	NP	See Section 602.4.6 of the Code	0	NP			
			Floor Construction and Secondary Members ^h	2	2	1	NP	1	NP	HT	1	NP			
			Roof Construction and Secondary Members ^h	1- 1/2 ^b	1 ^{c,d}	1 ^{c,d}	NP	1 ^{c,d}	NP	HT	1 ^{c,d}	NP			
			For SI: 1 foot = 304.8 mm.												
			NP = Not Permitted.												
			^a The requirements in this table take precedence over Table 601, <i>Fire resistance rating for building elements</i> of the Code.												
			^b Roof supports: Fire-resistance rating of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.												
			^c Fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire retardant wood members shall be allowed to be used for such unprotected members.												
			^d In all occupancies, heavy timber shall be allowed where 1-hour or less fire-resistance rating is required.												
			^e Not less than the fire-resistance rating required by other Sections of the Code.												
			^f Not less than the fire-resistance rating based on fire separation distance (see Table 602 of the Code)												
			^g Not less than the fire-resistance rating as referenced in Section 704.10 of the Code, <i>Exterior structural elements</i> .												
			^h See Section 202 of the Code, <i>Definitions</i> .												
			1207 (Coordinates with Chapter 7 of the Code)												
			FIRE-RESISTANCE RATED CONSTRUCTION												
			1207.1 Exterior walls. Exterior walls shall comply with this section and the ICC <i>International Wildland-Urban Interface Code</i> , whichever is more				Mandatory								

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action																																											
			stringent.																																														
			1207.2 Allowable area of openings. The maximum area of unprotected and protected openings permitted in an exterior wall in any story of the building shall not exceed the percentages specified in Table 1207.2.		Mandatory																																												
			<u>Table 1207.2</u>																																														
			Maximum Area of Exterior Wall Opening Based on Fire Separation Distance and Degree of Opening Protection^a																																														
			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Fire Separation Distance (feet)</th> <th style="width: 25%;">Degree of Opening Protection</th> <th style="width: 50%;">Allowable Areas^b</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">0 to less than 3^{c,d}</td> <td style="text-align: center;">Unprotected (UP)</td> <td style="text-align: center;">Not Permitted</td> </tr> <tr> <td style="text-align: center;">Protected (P)</td> <td style="text-align: center;">Not Permitted</td> </tr> <tr> <td rowspan="2" style="text-align: center;">3 to less than 5^e</td> <td style="text-align: center;">Unprotected (UP)</td> <td style="text-align: center;">Not Permitted</td> </tr> <tr> <td style="text-align: center;">Protected (P)</td> <td style="text-align: center;">15%</td> </tr> <tr> <td rowspan="2" style="text-align: center;">5 to less than 10^g</td> <td style="text-align: center;">Unprotected (UP)</td> <td style="text-align: center;">10%</td> </tr> <tr> <td style="text-align: center;">Protected (P)</td> <td style="text-align: center;">25%</td> </tr> <tr> <td rowspan="2" style="text-align: center;">10 to less than 15^{f,g}</td> <td style="text-align: center;">Unprotected (UP)</td> <td style="text-align: center;">15%</td> </tr> <tr> <td style="text-align: center;">Protected (P)</td> <td style="text-align: center;">45%</td> </tr> <tr> <td rowspan="2" style="text-align: center;">15 to less than 20^{f,g}</td> <td style="text-align: center;">Unprotected (UP)</td> <td style="text-align: center;">25%</td> </tr> <tr> <td style="text-align: center;">Protected (P)</td> <td style="text-align: center;">75%</td> </tr> <tr> <td rowspan="2" style="text-align: center;">20 to less than 25^{f,g}</td> <td style="text-align: center;">Unprotected (UP)</td> <td style="text-align: center;">45%</td> </tr> <tr> <td style="text-align: center;">Protected (P)</td> <td style="text-align: center;">No Limit</td> </tr> <tr> <td rowspan="2" style="text-align: center;">25 to less than 30^{f,g}</td> <td style="text-align: center;">Unprotected (UP)</td> <td style="text-align: center;">70%</td> </tr> <tr> <td style="text-align: center;">Protected (P)</td> <td style="text-align: center;">No Limit</td> </tr> <tr> <td rowspan="2" style="text-align: center;">30 or greater</td> <td style="text-align: center;">Unprotected (UP)</td> <td style="text-align: center;">No Limit</td> </tr> <tr> <td style="text-align: center;">Protected (P)</td> <td style="text-align: center;">Not Required</td> </tr> </tbody> </table>	Fire Separation Distance (feet)	Degree of Opening Protection	Allowable Areas ^b	0 to less than 3 ^{c,d}	Unprotected (UP)	Not Permitted	Protected (P)	Not Permitted	3 to less than 5 ^e	Unprotected (UP)	Not Permitted	Protected (P)	15%	5 to less than 10 ^g	Unprotected (UP)	10%	Protected (P)	25%	10 to less than 15 ^{f,g}	Unprotected (UP)	15%	Protected (P)	45%	15 to less than 20 ^{f,g}	Unprotected (UP)	25%	Protected (P)	75%	20 to less than 25 ^{f,g}	Unprotected (UP)	45%	Protected (P)	No Limit	25 to less than 30 ^{f,g}	Unprotected (UP)	70%	Protected (P)	No Limit	30 or greater	Unprotected (UP)	No Limit	Protected (P)	Not Required			
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			P = Openings protected with an opening protective assembly in accordance with section 704.8.2 of the ICC <i>International Building Code</i>																																														
			^a The requirements in this table take precedence over Table 705.8, <i>Maximum area of exterior wall openings based on fire separation distance and degree of opening protections of the Code.</i>																																														
			^b Values indicated are the percentage of the area of the exterior wall per story.																																														
			^c For the requirements for fire walls of buildings with differing heights see Section 705.6.1 of the ICC <i>International Building Code.</i>																																														
			^d For openings in a fire wall for building son the same lot, see Section 705.8 of the ICC <i>International Building Code.</i>																																														
			^e The maximum percentage of unprotected and protected openings shall be 25% for Group R-3 occupancies.																																														
			^f The area of unprotected and protected openings shall not be limited for Group R-3 occupancies with a fire separation distance of 5 feet or greater.																																														
			^g Includes buildings accessory to Group R-3.																																														

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action					
			1207.3 Protected openings. The exception for opening protectives in Section 705.8.2, <i>Protected openings</i> , shall not be permitted.		Mandatory						
			1207.4 Vertical separation of openings. Exception 2 eliminating vertical separation of openings where automatic sprinklers are present in Section 705.8.5, <i>Vertical separation of openings</i> of the Code, shall not be permitted.		Mandatory						
			1207.5 Parapets. Exception 5 in Section 705.11, <i>Parapet construction</i> of the Code eliminating exterior wall parapets shall not be permitted for Group R-2 occupancies.		Mandatory						
			1207.6 Fire walls. Fire walls shall meet the requirements of this section.		Mandatory						
			(1) Materials. Fire walls for all types of construction shall be of any approved noncombustible material permitted in NFPA 221.								
			(2) The fire-resistance ratings shall meet or exceed the ratings provided in Table 1207.6.								
			Table 1207.6								
			Fire Wall Fire Resistance Ratings^a								
			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Group</th> <th style="width: 70%;">Fire-Resistance Rating (hours)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">R-1, R-2</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">R-3, R-4</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>	Group		Fire-Resistance Rating (hours)	R-1, R-2	3	R-3, R-4	2	
Group	Fire-Resistance Rating (hours)										
R-1, R-2	3										
R-3, R-4	2										
			^a The requirements in this table take precedence over Table 706.4, <i>Fire wall fire-resistance ratings</i> of the Code.								
			(3) Exception 3 in Section 706.5, <i>Horizontal continuity</i> of the Code allowing termination of fire walls at the interior surface of noncombustible exterior sheathing where <i>automatic sprinkler systems</i> are present shall not be permitted.								
			(4) Exception 2 in Section 706.8, <i>Openings</i> of the Code allowing increased area of openings through fire walls where <i>automatic sprinkler systems</i> are present shall not be permitted.								
			1207.7 Fire barriers. Fire barriers shall comply with the provisions of this section.		Mandatory						
			(1) The fire resistance rating of the separation between individual dwelling units and sleeping units, and between dwelling units and sleeping units and other spaces in the building shall have a minimum 2-hour fire-resistance rated construction as required in Table 707.3.9, <i>Fire-Resistance Rating Requirements for Fire Barrier Assemblies or Horizontal Assemblies Between Fire Areas</i> of the Code.								
			(2) Exception 1 in Section 707.6, <i>Openings</i> of the Code allowing openings in a fire barrier to be larger than 156 square feet where <i>automatic sprinkler systems</i> are provided shall not be permitted.								
			1207.8 Shaft enclosures. Exception 5 in Section 708.14.1, <i>Elevator lobby</i> of the Code allowing smoke partitions in lieu of fire partitions to separate the elevator lobby at each floor shall not be permitted.		Mandatory						
			1207.9 Fire partitions. Fire partitions shall comply with the provisions of this section.		Mandatory						
			(1) Fire partitions in Section 709.1, <i>General</i> of the Code, shall not be permitted for walls separating dwelling units in the same building.								
			(2) Fire partitions in Section 709.1, <i>General</i> of the Code, shall not be permitted for walls separating sleeping units in the same building.								
			(3) Fire partitions in Section 709.1, <i>General</i> of the Code, shall not be permitted for corridor walls separating corridors from dwelling units or sleeping units in the same building.								
			(4) Exception 6 in Section 709.4, <i>Continuity</i> of the Code allowing elimination of fireblocking or draftstopping shall not be permitted.								
			1207.10 Horizontal assemblies. Horizontal assemblies shall comply with the requirements of this Section.		Mandatory						
			(1) Horizontal assemblies separating dwelling units in the same building and separating sleeping units in occupancies in the same building shall have a minimum 2-hour fire-resistance rated construction as required in Table 707.3.9, <i>Fire-Resistance Rating Requirements for Fire Barrier Assemblies or Horizontal Assemblies Between</i> of the Code.								
			(2) The exception in Section 712.3, <i>Fire-resistance rating</i> of the Code allowing a reduction of the fire-resistance rating of separations between dwelling unit and sleeping unit where <i>automatic sprinkler systems</i> are present shall not be permitted.								
			1207.11 Opening protectives. The provisions of this section shall apply to opening protectives.		Mandatory						
			(1) The Exception in Section 715.4.4 of the Code, <i>Doors in exit enclosures and exit passageways</i> eliminating the maximum transmitted temperature requirements shall not be permitted.								
			(2) The Exception in Section 715.4.4.1, <i>Glazing in doors</i> , of the Code eliminating the maximum transmitted temperature requirements shall not be permitted.								
			1207.12 Concealed spaces. Exceptions 1 and 2 in Section 717.3.2, <i>Groups R-1, R-2, R-3 and R-4</i> of the Code eliminating draftstopping where <i>automatic sprinkler systems</i> are present shall not be permitted for Groups R-1, R-2 or R-4 occupancies.		Mandatory						
			1208 (Coordinated with Chapter 8 of the Code)								
			INTERIOR FINISHES								

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action																				
			<p>1208.1 Wall and ceiling finishes. Wall and ceiling finishes and conform to the requirements of this Section.</p> <p>(1) Interior wall and ceiling finishes. Interior wall and ceiling finishes shall conform to the requirements in Table 1208.1.</p> <p style="text-align: center;">Table 1208.1</p> <p style="text-align: center;">INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY^a</p> <table border="1"> <thead> <tr> <th>GROUP</th> <th>EXIT ENCLOSURES AND EXIT PASSAGeways^b</th> <th>CORRIDORS</th> <th>ROOMS AND ENCLOSED SPACES</th> </tr> </thead> <tbody> <tr> <td>R-1</td> <td>A</td> <td>B</td> <td>C</td> </tr> <tr> <td>R-2</td> <td>B</td> <td>B</td> <td>C</td> </tr> <tr> <td>R-3</td> <td>A</td> <td>C</td> <td>C</td> </tr> <tr> <td>R-4</td> <td>A</td> <td>B</td> <td>C</td> </tr> </tbody> </table> <p>For SI: 1 inch = 25.4 mm, 1 square inch = 0.0929m²</p> <p>^a Class C interior finish materials shall be permitted for wainscoting or paneling of not more than 1,000 square feet of applied surface area in the grade lobby where applied directly to a noncombustible base or over furring strips applied to a noncombustible base and fire blocked as required by Section 803.11.1.</p> <p>^b Requirements for rooms and enclosed spaces shall be based upon spaces enclosed by partitions. Where a fire-resistance rating is required for structural elements, the enclosing partitions shall extend from the floor to the ceiling. Partitions that do not comply with this shall be considered enclosing spaces and rooms or spaces on both sides shall be considered as one. In determining the applicability of the requirements for rooms and enclosed spaces, the specific occupancy thereof shall be the governing factor regardless of the group classification of the building or structure.</p> <p>(2) Set-out construction. The exception in Section 803.11.2, <i>Set out construction</i> of the Code for the Class A interior finish materials where <i>automatic sprinkler systems</i> are provided shall not be permitted.</p>	GROUP	EXIT ENCLOSURES AND EXIT PASSAGeways ^b	CORRIDORS	ROOMS AND ENCLOSED SPACES	R-1	A	B	C	R-2	B	B	C	R-3	A	C	C	R-4	A	B	C			
GROUP	EXIT ENCLOSURES AND EXIT PASSAGeways ^b	CORRIDORS	ROOMS AND ENCLOSED SPACES																							
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			<p>1208.2 Interior floor finishes. The Exception in Section 804.4.1 of the Code, <i>Minimum critical radiant flux</i> which eliminates the requirement for minimum critical radiant flux for floor finishes and floor coverings in exit enclosures, exit passageways, and corridors where <i>automatic sprinkler systems</i> are provided shall not be permitted.</p>																							
			<p>1209 (Coordinates with Chapter 9 of the Code, Fire Protection Systems)</p> <p>FIRE PROTECTION SYSTEMS</p>																							
			<p>1209.1 Automatic sprinkler systems. Sprinkler systems shall be designed and installed in accordance with Section 903.3.1.1 of the Code, <i>NFPA 13 sprinkler systems</i>. Sprinkler systems designed and installed in accordance with Section 903.3.1.2 of the Code, <i>NFPA 13R sprinkler systems</i>, shall not be permitted.</p>																							
			<p>1209.2 Standpipes. Standpipes shall comply with the requirements of this Section.</p> <p>(1) The exceptions 1 and 4 of Section 905.3.1, <i>Building height</i> of the Code, allowing Class I standpipes where <i>automatic sprinkler systems</i> are provided shall not be permitted.</p> <p>(2) The exception to Section 905.3.4, <i>Stages</i> of the Code, allowing only a 1-1/2 inch hose connection for Class II or Class III standpipes where <i>automatic sprinkler systems</i> are provided shall not be permitted.</p> <p>(3) The exception to Section 905.4.1, <i>Protection</i> of the Code allowing elimination of the fire-resistance rated enclosure for laterals where <i>automatic sprinkler systems</i> are provided shall not be permitted.</p>																							
			<p>1209.3 Fire alarm and detection systems. Fire alarms and detection systems shall comply with the provisions of this Section.</p> <p>(1) Exception 2.1 of Section 907.2.8.1, <i>Manual fire alarm systems</i> of the Code eliminating fire alarm boxes for Group R-1 occupancies in accordance with, shall not be permitted.</p> <p>(2) Exception 2 of Section 907.2.9 .1 <i>Manual fire alarm systems</i> of the Code eliminating fire alarm boxes for Group R-2 occupancies shall not be permitted.</p>																							

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			1210 (Coordinates with Chapter 10 of the Code, Means of Egress)			
			MEANS OF EGRESS			
			1210.1 Accessible means of egress. Accessible means of egress shall comply with the requirements of this Section.		Mandatory	
			(1) Exception 2 of Section 1007.3, <i>Stairways</i> , of the Code reducing in the clear width between handrails shall not be permitted.			
			(2) Exception 3 of Section 1007.3, <i>Stairways</i> , of the Code eliminating of areas of refuge shall not be permitted.			
			(3) Exception 2 of Section 1007.4, <i>Elevators</i> , of the Code eliminating requirements for elevator access from areas of refuge or horizontal exit shall not be permitted.			
			1210.2 Exit access. Exception 4 of Section 1014.3, <i>Common path of egress travel</i> , of the Code increasing the length of common path of egress travel in Group R-2 occupancies shall not be permitted.		Mandatory	
			1210.3 Exits and exit access doorways. Exits and exit access doorways shall comply with the requirements of this Section.		Mandatory	
			(1) Exception in Section 1015.1, <i>Exits or exit access doorways from spaces</i> , of the Code reducing the number of means of egress shall not be permitted.			
			(2) Exception 2 of Section 1015.2.1, <i>Two exits or exit access doorways</i> , of the Code permitting scissor stairs to count as two exits shall not be permitted.			
			1210.4 Exit access travel distance. Exit access travel distance shall comply with the requirements of this Section.		Mandatory	
			(1) Maximum travel distance shall not exceed 200 feet.			
			(2) Distance limitations through atrium spaces shall conform to Section 404, <i>Atriums</i> of the Code.			
			(3) Exit access in buildings with one exit shall conform to Section 1021.2, <i>Single exits</i> of the Code.			
			1210.5 Corridors. Corridors shall comply with the requirements of this Section.		Mandatory	
			(1) The fire-resistance rating of corridor walls shall be at least 2-hours and comply with Section 1207.7.			
			(2) Exception 2 in Section 1018.4, <i>Dead ends</i> , of the Code increasing the length of dead-end corridors shall not be permitted.			
			1211 (Coordinates with Chapter 11 of the Code, Accessibility)			
			ACCESSIBILITY			
			1211.0 Accessibility. No additional provisions required.			
			1212 (Coordinates with Chapter 12 of the Code, Interior Environment)			
			INTERIOR ENVIRONMENT			
			1212.1 General. Buildings shall be provided with natural ventilation in accordance with Section 1203.4 of the Code, <i>Ventilation</i> , or mechanical ventilation in accordance with the <i>International Mechanical Code</i> . In addition, buildings shall comply with ASHRAE 62.1 <i>Ventilation for Acceptable Indoor Air Quality</i> .		Mandatory	
			1212.2 Particulate matter removal. Particulate matter filters or air cleaners shall be installed in accordance with this Section		Mandatory	
			(1) Minimum Efficiency Reporting Value (MERV). Particulate matter filters or air cleaners having a minimum efficiency reporting value (MERV) of not less than 8 when rated in accordance with ANSI/ASHRAE Standard 52.2 shall be provided upstream of all cooling coils or other devices with wetted surfaces through which air is supplied to occupiable spaces. HVAC equipment shall be designed and maintained to provide adequate pressure and air flow.			
			(2) Non-attainment areas. For buildings located in areas determined by the building official to be designated as "non-attainment" per 40CFR50, particulate filters or air cleaning devices shall be provided to clean outdoor air prior to its introduction to occupied spaces and shall have a MERV of not less than 13 when rated in accordance with ASHRAE Standard 52.2.			
			1212.3 Carbon dioxide (CO₂) detection. CO ₂ monitors shall be installed in accordance with the requirement of this section.		Mandatory	
			(1) Location. Monitors shall be installed in each occupied and ventilated space and at least one monitor shall be installed on the exterior of the building			
			(2) Installation Height. Monitors shall be installed at a height of not less than 3 feet and not more than 6 feet above the floor for interior installations and above the sill plate of an exterior entranceway for exterior installations.			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			(3) <u>Monitor Requirements.</u> Monitors shall be equipped with a direct read-out display in the occupied spaces and shall have an accuracy level of 50 parts per million (ppm).			
			1212.4 Recreational smoking. Areas for recreational smoking shall comply with the requirements in this Section.		Mandatory	
			(1) <u>Smoking Area Signage.</u> Signage for recreational smoking areas shall be provided to indicate no smoking areas at entrances, air intakes, and operable windows in all areas open to public access and for all public spaces within buildings in accordance with the following:			
			(a) <u>Entrances.</u> Signs stating: "No Smoking within 25 Feet" shall be installed at all entrances and signs stating: "No Smoking Between This Sign and the Entrance" shall be installed in the plane of the building exterior wall no less than 25 feet beyond both sides of the entrance. When entrances occur at or within 25 feet of an exterior corner, signage that would extend beyond the building exterior is not required.			
			(b) <u>Intakes.</u> Signs stating: "No Smoking within 25 Feet" shall be installed at all air intakes located in areas at the perimeter of the building and having public access.			
			(c) <u>Operable Windows.</u> Signs stating: "No Smoking within 25 Feet" shall be installed on both sides of operable windows or multiple operable windows, on ground level and having public access. When multiple windows extend more than 50 feet additional signs shall be installed so that the spacing between signs does not exceed 50 feet.			
			(d) <u>Interior Public Spaces.</u> Signs stating: "No Smoking" shall be provided at all public entrances to each floor of the building or signs stating: "No Smoking in Building" shall be installed at all entrances.			
			(2) <u>Smoking Area Ventilation.</u> Designated smoking areas within the building shall comply with the Sections (a), (b) and (d) or Sections (c) and (d).			
			(a) <u>Sealing of Designated Areas.</u> Smoking areas shall be equipped with doors and the entire space sealed to provide no more than 1.25 square inch of leakage per 100 square feet of enclosure as determined by ASTM E779			
			(b) <u>Pressure Differential.</u> The designated smoking area, with doors closed, shall operate exhaust sufficiently to create negative pressure with respect to adjacent spaces of at least 0.012 inches of water.			
			(c) <u>Doors and Sealing.</u> Doors to common areas shall be weather-stripped and each residential unit shall be sealed to provide no more than 1.25 square inch of leakage of leakage per 100 square feet of enclosure area as determined by ASTM E779.			
			(d) <u>Ventilation.</u> Ventilation shall be exhausted with no recirculation of air from the designated smoking area to the non-smoking areas of the building.			
			1212.5 Temperature control. Thermal controls shall be programmable in accordance with this Section.		Mandatory	
			(1) <u>Program time periods</u> shall be at least two periods per day and seven days per week.			
			(2) <u>Programmable temperature controls</u> shall have a range of at least 20°F below interior design temperature during mechanical heating cycles.			
			(3) <u>Programmable temperature controls</u> shall have a range of at least 10°F above interior design temperature during mechanical cooling cycles.			
			1212.6 Lighting. The angle of maximum candela from each interior luminaire as located in the building shall intersect with opaque interior surfaces.		Mandatory	
			1212.7 Sound transmission. In addition to the requirements in Section 1207, <i>Sound transmission</i> of the code, the following additional exterior air-borne sound transmission requirements shall apply to the exterior envelope of the building.		Mandatory	
			(1) <u>Exterior opaque wall and roof/ceiling assemblies</u> shall have a composite STC rating of not less than 50 (45 if field tested).			
			(2) <u>Fenestration that is part of the exterior wall or roof/ceiling assemblies</u> shall have an STC of at least 30 (25 if field tested).			
			1212.8 Surrounding materials. Toilet, bathing and shower rooms, kitchens, laundry rooms, and spa area floors shall have smooth, hard, non-absorbent surface that extends up onto the walls at least 6 inches.		Mandatory	
			1212.9 Building entrance mats. All building entrances, except those directly into individual dwelling units, shall employ an entry mat system that shall have a scraper surface, an absorptive surface, and a finishing surface in accordance with this Section. Each surface shall be a minimum of the width of the entry opening, and the minimum length is measured in the primary direction of travel.		Mandatory	
			(1) <u>Scraper Surface.</u> The scraper surface shall be the first surface stepped on when entering the building and shall be located immediately outside or inside the entrance. Scraper surfaces shall be at least 3 feet long and shall be either mounted grates or removable mats with knobby or squeegee-like projections.			
			(2) <u>Absorptive Surface.</u> The absorptive surface shall be the second surface stepped on when entering the building and shall be at least 3 feet long and made form a materials that can perform both scraping and moisture wicking actions.			
			(3) <u>Finishing Surface.</u> The finishing surface shall be the third surface stepped on when entering the building and shall be at least 4 feet long and made of materials with coarse fibers that both capture and hold any remaining particles or moisture.			
			1212.10 Thermal comfort. The building shall be designed in accordance with Section 6.1 of ASHRAE Standard 55.		Mandatory	
			1213 (Coordinates with Chapter 13 of the Code, Energy Efficiency)			
			ENERGY EFFICIENCY			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>1213.0 General. Provisions in Chapter 7, <i>Energy efficiency</i> of this Standard shall apply.</p>			
			<p>1214 (Coordinates with Chapter 14 of the Code, Exterior Walls)</p> <p>EXTERIOR WALLS</p>			
			<p>1214.1 Installation of wall coverings.</p> <p>(1) Vinyl siding. Vinyl siding conforming to the requirements of this Section and complying with ASTM D3679 shall not be permitted in the following locations:</p> <p>a) Hurricane-prone regions</p> <p>b) Regions of moderate and severe hail exposure determined in 1215.2 (1) and Figure 12 (1), <i>Hail exposure map</i>.</p> <p>c) Fire separation distance of 30 feet or less.</p> <p>(2) Exterior insulation and finish system. Exterior insulation and finish systems (EIFS) conforming to the requirements of Chapter 26, <i>Plastics</i>, of the Code shall not be permitted in the following locations.</p> <p>a) Hurricane-prone regions</p> <p>b) Regions of moderate and severe hail exposure as determined in 1215.2 (1) and Figure 12 (1) <i>Hail exposure map</i>.</p> <p>c) Fire separation distance of 10 feet or less.</p>		Mandatory	
			<p>1214.2 Combustible materials on the exterior side of exterior walls. Combustible exterior wall coverings shall comply with both of the following.</p> <p>1) Shall not be located on exterior walls having a fire separation distance of 5 feet or less.</p> <p>2) Shall be permitted on buildings complying with the requirements in Section 1201.2, <i>Wildland fires</i>.</p>		Mandatory	
			<p>1214.3 Solar reflectance index. All opaque portions of above grade walls, other than those listed below, having an orientation measured perpendicularly to compass directions between and including SSE (157.5°) and WNW (292.5°) shall have a solar reflectance index (SRI) of not less than 29 as determined in accordance with ASTM E1980 for medium wind speed. The SRI shall be based on the thermal emittance determined in accordance with ASTM E408 or C1371 and the solar reflectance shall be determined in accordance with ASTM E1918 or C1549.</p> <p>(1) Exterior walls having a heat capacity greater than or equal to 5 Btu/lb°F.</p> <p>(2) Exterior walls having an overall thermal resistance greater than or equal to 25 (hr°F/ft²)/Btu.</p> <p>(3) Architectural trim that covers less than 10% of the exterior wall surface area.</p> <p>(4) Exterior walls in climate zones 4,5,6,7 and 8 as determined by Section 301, <i>Climate zones of the International Energy Conservation Code (IECC)</i>.</p> <p>(5) Exterior walls that are at least 75% shaded by building projections, man-made structures, existing buildings, topography, or plantings. Shade coverage shall be calculated on the summer solstice at noon for the SSE to SW walls and 3 p.m. for the SW to WNW walls.</p>		Mandatory	
			<p>1215 (Coordinates with Chapter 15 of the Code, Roof Assemblies and Rooftop Structures)</p> <p>ROOF ASSEMBLIES AND ROOFTOP STRUCTURES</p>			
			<p>1215.1 Minimum roof covering classification. Minimum roof covering classification shall comply with all of the following.</p> <p>(1) Shall be a minimum of Class B</p> <p>(2) Shall comply with Section 1201.2, <i>Wildland fires</i></p> <p>(3) Where the building is within a fire district, shall comply with Appendix D, <i>Fire districts</i> of the Code.</p> <p>(4) Roofs in warm and dry climates defined as climate zones 1, 2, 3, 4, 5B (dry), and 6B (dry) of the 2009 <i>International Energy Conservation Code (IECC)</i> shall have a Class A roof covering or Class A roof assembly according to UL 790. For roof coverings where the profile allows a space between the roof covering and the roof decking, the space at the eave ends shall be firestopped to preclude entry of flame or embers.</p>		Mandatory	
			<p>1215.2 Requirements for roof coverings.</p> <p>(1) Roof coverings subject to hail exposure. Roof coverings used in regions where hail exposure is Moderate or Severe, as determined in accordance with Items (a) or (b) and Figure 12(1) shall be tested, classified, and labeled in accordance with UL 2218 or FM 4473.</p> <p>a) Moderate - One or more hail days with hail diameters greater than 1.5 in (38 mm) in a twenty (20) year period.</p> <p>b) Severe - One or more hail days with hail diameters greater than 2.0 in (50 mm) in a twenty (20) year period.</p> <p>(2) Roof gardens and landscaped roofs. Roof gardens and landscape roofs shall comply with one of the following requirements:</p> <p>a) Sections 1607.11.2.2 of the Code, <i>Special-purpose roofs</i>, and 1607.11.3 of the Code, <i>Landscaped roofs</i>.</p> <p>b) Loads for the design of vegetated (green) roofs shall be permitted to be determined in accordance with ASTM E2397.</p> <p>(3) Roof solar reflectance index (SRI). Roof coverings, other than those listed below, shall be provided with solar reflectance indices in accordance with the requirements of this Section. The solar reflectance index shall be determined using ASTM E1980 based on medium wind</p>		Mandatory	

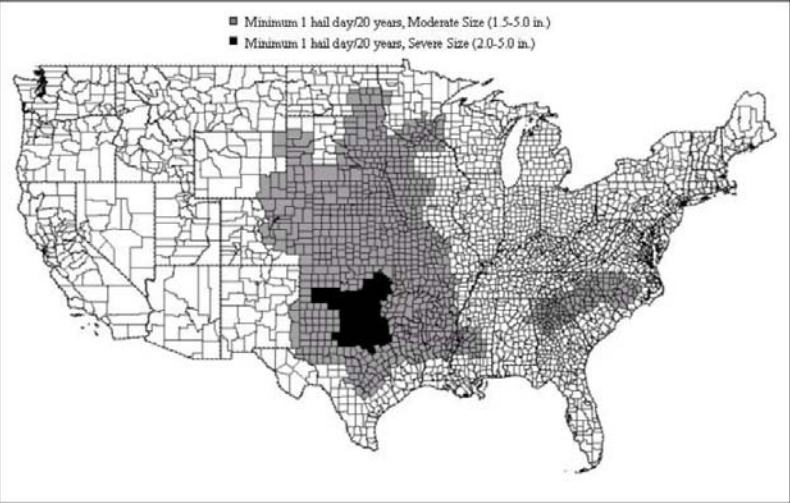
ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>conditions. Thermal emittance determined in accordance with ASTM E408 or C1371 and the solar reflectance determined in accordance with ASTM E1918 or C1549 shall be used to calculate the SRI.</p> <ol style="list-style-type: none"> 1. Portions of roofs classified as vegetated (green). 2. Portions of roofs covered by on-site renewable power generation systems. 3. Portions of roofs designed with heat capturing building technologies. 4. Portions of roofs covered by rooftop decks or walkways. 5. Up to 10% of the opaque roof area used for architectural and serviceability features. 6. Roofs in Climate Zones 6, 7 and 8 as determined by Section 301, <i>Climate zones of the International Energy Conservation Code (IECC)</i>. 7. A default SRI value of 35 for new gray concrete without added color pigment is allowed to be used in lieu of measurements and calculations. <p>(a) Roof Slopes Less Than 2-1/2 to 12. All opaque portions of roofs having a slope of less than 2-1/2 units vertical in 12 units horizontal shall have a SRI of not less than 78.</p> <p>Exception. Roofs with a minimum initial SRI of 29 that shade or cover parking.</p> <p>(b) Roof Slopes Equal to or Greater than 2-1/2 to 12. All opaque portions of roofs having a slope of 2-1/2 units vertical in 12 units horizontal or greater shall have a SRI of not less than 29.</p>			
			<p>1215.3 Rainwater management. Install a vegetative (green) roof or rainwater harvesting system for at least 25% of the roof area. The rainwater harvesting system shall be design to reuse water for landscape irrigation or other water on-site needs. The storage system shall be sized to hold a minimum of all the water striking the roof area used for capture during a 1-in. rainfall event, equivalent to 0.62 gallons per square foot of roof area used for capture.</p>	Mandatory		
			<p>1216 (Coordinates with Chapter 16 of the Code)</p> <p>STRUCTURAL DESIGN</p>			
			<p>1216.1 Wind Loads. Wind loads shall be determined in accordance with Section 1609.1.1, <i>Determination of wind loads</i> of the Code with the following modification: Wind loads on every building or structure shall be determined in accordance with Chapter 6 of ASCE 7 or alternate all-heights method in Section 1609.6. The type of opening protection required, the basic wind speed and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. The design wind pressure, <i>p</i>, and design wind force, <i>F</i>, determined in accordance with ASCE 7 or 1609.6 shall be based on a design wind speed equal to the basic wind speed (or locally adopted basic wind speed in special wind zones, if higher) plus 20-mph. Component and cladding loads shall be determined for the design wind speed defined assuming terrain Exposure C, regardless of the actual local exposure. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.</p>	Mandatory		
			<p>1216.2 Flood loads. Buildings designed and constructed in flood hazard areas defined in Section 1612.1 of the Code shall comply with the following.</p> <p>(1) Floors required by ASCE 24 to be built above base flood elevations shall have the floor and their lowest horizontal supporting member not less than the higher of the following:</p> <ol style="list-style-type: none"> (a) Design flood elevation. (b) Base flood elevation plus 3 feet, or (c) 500-year flood, if known <p>(2) Flood protective works. Buildings designed and constructed in accordance with ASCE 24 shall not consider flood protective works for providing flood protection during the design flood.</p> <p>Exception: Dams where approved by the code official.</p>	Mandatory		
			<p>1217 (Coordinates with Chapter 17 of the Code)</p> <p>STRUCTURAL TESTS AND SPECIAL INSPECTIONS</p>			
			<p>1217.0 General. No additional provisions required.</p>			
			<p>1218 (Coordinates with Chapter 18 of the Code)</p> <p>Soils and Foundations</p>			
			<p>1218.1 Shallow foundations. All buildings using foundation walls, piers and other permanent supports in accordance with Section 1809.5, <i>Frost protection Method No. 2</i> shall be marked in accordance with all of the following.</p> <p>(1) Label. A label shall be affixed to the main electrical panel with the following statement: "This building uses insulation materials to protect the foundation from frost heave. Do not shut off power to the building or reduce the interior temperature of the building below 45°F without</p>	Mandatory		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			determining the impact to the foundation protection". Do not disturb any earth within 3 feet of the building without the determining the extent of the insulation protection".			
			1219 (Coordinates with Chapter 19 of the Code)			
			CONCRETE			
			1219.0 General. No additional provisions required.			
			1220 (Coordinates with Chapter 20 of the Code)			
			ALUMINUM			
			1220.0 General. No additional provisions required.			
			1221 (Coordinates with Chapter 21 of the Code)			
			MASONRY			
			1221.0 General. No additional provisions required.			
			1222 (Coordinates with Chapter 22 of the Code)			
			STEEL			
			1222.0 General. No additional provisions required.			
			1223 (Coordinates with Chapter 23 of the Code)			
			WOOD			
			1223.0 General. Provisions in Section 606.2, <i>Wood-based products</i> of this Standard shall apply.		Mandatory	
			1224 (Coordinates with Chapter 24 of the Code)			
			GLASS AND GLAZING			
			1224.0 General. No additional provisions required.			
			1225 (Coordinates with Chapter 25 of the Code)			
			GYPSUM BOARD AND PLASTER			
			1225.0 General. No additional provisions required.			
			1226 (Coordinates with Chapter 26 of the Code)			
			PLASTIC			
			1226.0 General. No additional provisions required.			
			1227 (Coordinates with Chapter 27 of the Code)			
			ELECTRICAL			
			1227.0 General. No additional provisions required.			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			1228 (Coordinates with Chapter 28 of the Code)			
			MECHANICAL			
			1228.0 General. Provisions in Section 902.2, <i>Building ventilation systems</i> of this Standard shall apply.		Mandatory	
			1229 (Coordinates with Chapter 29 of the Code)			
			PLUMBING			
			1229.0 General. Provisions in Chapter 8, <i>Water efficiency</i> of this Standard shall apply.		Mandatory	
			1230 (Coordinates with Chapter 30 of the Code)			
			ELEVATORS AND CONVEYING SYSTEMS			
			1230.0 General. No additional provisions required			
			1231 (Coordinates with Chapter 31 of the Code)			
			SPECIAL CONSTRUCTION			
			1231.0 General. No additional provisions required.			
			1232 (Coordinates with Chapter 32 of the Code)			
			ENCROACHMENT INTO PUBLIC RIGHT-OF-WAY			
			1232.0 General. No additional provisions required.			
			1233 (Coordinates with Chapter 33 of the Code)			
			SAFEGUARDS DURING CONSTRUCTION			
			1233.0 General. Provisions in Section 903.4, <i>Moisture control measures</i> of this Standard shall apply.		Mandatory	
			1234 (Coordinates with Chapter 34 of the Code)			
			EXISTING BUILDINGS			
			1234.0 General. No additional provisions required.			
			1235 (Coordinates with Chapter 35 of the Code)			
			REFERENCED DOCUMENTS			
			ASCE/SEI	American Society of Civil Engineers Structural Engineering Institute 1801 Alexander Bell Drive Reston, VA 20191-4400		
			ASCE 7	2005	<i>Minimum Design Loads for Buildings and Other Structures</i>	1216.1

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			ASCE 24 2005 <i>Flood Resistant Design and Construction</i> 1216.2			
			ASHRAE American Society for Heating, Refrigerating, and Air-Conditioning Engineers, Inc. 1791 Tullie Circle, N.E. Atlanta, GA 30329			
			Std 52.2 2007 <i>Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size</i> 1212.2(1)			
			Std 55 2004 <i>Thermal Environmental Conditions for Human Occupancy</i> 1212.10			
			Std 62.1 2007 <i>Ventilation for Acceptable Indoor Air Quality</i> 1212.1			
			ASTM American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428-2959			
			C1371 2004 <i>Standard Test Method for Determining the Emittance Materials Nears Room Temperature Using Portable Emmissometers</i> 1214.3, 1215.2(3)			
			C1549 2004 <i>Standard Test Method for Determining Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer</i> 1214.3, 1215.2(3)			
			D3679 1214.1			
			E408 2008 <i>Standard test Method for Total Normal Emittance of Surfaces Using Inspector-Meter Techniques</i> 1214.3, 1215.2(3)			
			E779 <i>Standard Test Method for Determining Air Leakage Rate by Fan Pressurization</i> 1214.4(2)			
			E1918 <i>Standard Test Method for Determining Solar Reflectance of Horizontal and Low-sloped surfaces in the Field.</i> 1214.3, 1215.2(3)			
			E1980 <i>Standard Practice for Calculating the Solar reflectance Index of Horizontal and Low-sloped Surfaces in the Field</i> 1214.3, 1215.2(3)			
			E2347 1215.2(2)			
			EPA 40CFR50 National Primary and Secondary Ambient Air Quality Standards 1212.2(2)			
			FM Factory Mutual Global Research Standards Laboratory Department 1301 Atwood Avenue Johnson, RI 02919			
			4473 2005 <i>Specification Test Standard for Impact Resistance of Rigid Roof Materials by Impacting with Freezer Ice Ball</i> 1215.2			
			ICC International Code Council 500 New Jersey Avenue, N.W. Washington, DC 20001			
			IBC 2009 <i>International Building Code</i> 1200.0, 1200.2			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action	
			ICC/ 2008 <u>Standard on the Design and Construction of Storm Shelters</u>	1204.5, 1207.1			
			NSSA 500				
			IECC 2009 <u>International Energy Conservation Code</u>	1214.3(4), 1215.1(4), 1215.2(3)			
			IMC 2009 <u>International Mechanical Code</u>	1212.1			
			IUWIC 2009 <u>International Urban Wildland Interface Code</u>	1201.3, 1207.1			
			NFPA National Fire Protection Association 1 Batterymarch Park Quincy, MA 02169				
			13 2007 <u>Standard for the Installation of Sprinkler Systems</u>	1209.1			
			13R 2007 <u>Standard for the Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height</u>	1209.1			
			221 2009 <u>Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls</u>	1207.6			
			UL Underwriters Laboratories, Inc. 333 Pfingsten Road Northbrook, IL 60062				
			790 2004 <u>Standard Test Methods for Fire Tests of Roof Coverings</u>	1215.1(4)			
			2218 1996 <u>Standard for Safety Impact Resistance of Prepared Roof Covering Materials</u>	1215.2			
			1236 (Coordinates with Appendix F of the Code)				
			RODENTPROOFING				
			1236.1 Rodentproofing. The provisions of Appendix F, <i>Rodent-proofing</i> of the Code shall apply.				Mandatory
			1237 (Coordinates with Appendix G of the Code)				
			FLOOD-RESISTANT CONSTRUCTION				
			1237.1 Flood-resistant construction. The provisions of Section 1216.2, <i>Flood loads</i> of this Standard and Appendix G, <i>Flood-resistant construction</i> of the Code shall apply.				Mandatory
			END				
			FIGURE 12 (1) - HAIL EXPOSURE MAP				

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
						
			<p>REASON: This reason statement has the following three segments to explain the reasons for this change: (A) The code change is explained; (B) the specific substantiation for the change is given; and (C) General background information identifying the need for enhanced property protection and functional resilience for resource minimization;</p> <p style="text-align: center;">(A)</p> <p>This proposal is to create a new Chapter in ICC 700 for all residential buildings except one and two family dwellings and townhouses three stories in height with provisions that enhance the requirements of the International Building Code (IBC) to provide functional resilience and durability for these buildings. The new chapter is structured to identify the sections in the IBC where enhanced provisions shall apply to all residential buildings except one and two family dwellings and townhouses three stories in height constructed in accordance with ICC 700.</p> <p style="text-align: center;">(B)</p> <p>The following are reports of dollar loss to property from wind, cold weather and fire disasters.</p> <ul style="list-style-type: none"> • The American Society of Civil Engineers reported in <i>Normalized Hurricane Damage in the United States, 1900 – 2005</i>, National Hazard Review, ASCE 2008, that property damage from hurricanes was 81 billion dollars in 2005. • The National Weather Service reports that U.S. property damage due to winter storms and ice exceeded 1.5 billion dollars in 2009. • <i>Fire Losses in the United States During 2009</i> by the National Fire Protection Association, August 2010 shows that property loss due to structure fires in buildings other than one and two family dwellings was approximately 4.5 billion dollars. <p>Increasing the stringency of the design criteria of residential buildings for hazards such as wind, snow or fire results in more robust buildings. Such requirements reduce the amount of energy and resources required for repair, removal, disposal and replacement of building components and systems damaged from these disasters. A further benefit is a reduction in the amount of damaged building materials and content entering landfills.</p> <p>Additional benefits are enhanced life safety, security and occupant comfort; potentially less demand on community resources required for emergency response; and allowing facilities to be more readily adapted for re-use if there is a change of occupancy in the future.</p> <p style="text-align: center;">(C)</p> <p>Minimum building requirements whether through energy codes, plumbing codes, mechanical codes, zoning codes, or basic building codes, do not encourage truly sustainable buildings. The proposal is one of several that attempt to integrate the concepts of the <i>Whole Building Design Guide</i> (WBDG) into the minimum design and construction criteria for “green” buildings. The WBDG, developed in partnership between the National Institute of Building Sciences (NIBS) and the Sustainable Building Industries Council (SBIC), has as its key concepts: accessible, aesthetics, cost-effective, <u>functional/operational</u>, historic preservation, productive, <u>secure/safe</u>, and sustainable.</p> <p>There are numerous references about the economic, societal, and environmental benefits that result when enhanced functional resilience for <u>resource minimization</u> are integrated into building design and construction. Six examples demonstrating the importance and supporting the concepts are:</p> <ol style="list-style-type: none"> 1. Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities National Institute of Building Sciences Multi-Hazard Mitigation Council - 2005 <p>One of the findings in this report is “The analysis of the statistically representative sample of FEMA grants awarded during the study period</p>			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>indicates that a dollar spent on disaster mitigation saves society an average of \$4." The programs studied often addressed issues and strategies other than enhanced disaster resistance of buildings and other structures. However, more disaster-resistant buildings enhance life safety; reduce costs and environmental impacts associated with repair, removal, disposal, and replacement; and reduce the time and resources required for community recovery.</p> <p>2. Five Years Later – Are we better prepared? Institute for Business and Home Safety - 2010</p> <p>This IBHS report states: "When Hurricane Katrina made landfall on Aug. 29, 2005, it caused an estimated \$41.1 billion in insured losses across six states, and took an incalculable economic and social toll on many communities. Five years later, the recovery continues and some residents in the most severely affected states of Alabama, Louisiana and Mississippi are still struggling. There is no question that no one wants a repeat performance of this devastating event that left at least 1,300 people dead. Yet, the steps taken to improve the quality of the building stock, whether through rebuilding or new construction, call into question the commitment of some key stakeholders to ensuring that past mistakes are not repeated." This report indicates that there is a need to implement provisions to make buildings more disaster-resistant. Clearly this suggests that functional resilience should at least be integrated into the design and construction of sustainable buildings.</p> <p>3. National Weather Service Office of Climate, Water and Weather Services National Oceanic and Atmospheric Administration (NOAA) - 2010</p> <p>Data provided on the NOAA website [www.weather.gov/os/hazstats.shtml] indicates that the average annual direct property loss due to natural disasters in the United States exceeds of \$35,000,000,000. This does not include indirect costs associated with loss of residences, business closures, and resources expended for emergency response and management. These direct property losses also do not reflect the direct environmental impact due to reconstruction after the disasters. Functional resilience will help alleviate the environmental impact and minimize both direct and indirect losses from natural disasters.</p> <p>4. Global Climate Change Impacts in the United States U.S. Global Change Research Program (USGCRP) - 2009 The USGCRP includes the departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Interior, State and Transportation; National Aeronautic and Space Administration; Environmental Protection Agency, USA International Development, National Science Foundation and Smithsonian Institution</p> <p>The report identifies that: "Climate changes are underway in the United States and are projected to grow. Climate-related changes are already observed in the United States and its coastal waters. These include increases in heavy downpours, rising temperature and sea level, rapidly retreating glaciers, thawing permafrost, lengthening growing seasons, lengthening ice-free seasons in the ocean and on lakes and rivers, earlier snowmelt, and alterations in river flows. These changes are projected to grow." The report further identifies that the: "Threats to human health will increase. Health impacts of climate change are related to heat stress, waterborne diseases, poor air quality, extreme weather events, and diseases transmitted by insects and rodents. Robust public health infrastructure can reduce the potential for negative impacts." Key messages in the report on societal impacts include:</p> <ul style="list-style-type: none"> • "City residents and city infrastructure have unique vulnerabilities to climate change. " • "Climate change affects communities through changes in climate-sensitive resources that occur both locally and at great distances." • "Insurance is one of the industries particularly vulnerable to increasing extreme weather events such as severe storms, but it can also help society manage the risks." <p>Sustainable building design and construction cannot be about protecting the natural environment without consideration of the projected growth in severe weather. Minimum codes primarily based on past natural events are not appropriate for truly sustainable buildings. Buildings expected to have long term positive impacts on the environment must be protected from these extreme changes in the natural environment. The provisions for improved property protections are necessary to reduce the amount of energy and resources associated with repair, removal, disposal, and replacement due to routine maintenance and damage from disasters. Further such provisions reduce the time and resources required for community disaster recovery.</p> <p>5. Sustainable Stewardship - Historic preservation plays an essential role in fighting climate change , <i>Traditional Building</i>, National Trust for Historic Preservation - 2008</p> <p>In the article <i>Richard Moe summarizes the results of a study by the Brookings Institution</i> which projects that by 2030 we will have demolished and replaced 82 billion square feet of our current building stock, or nearly 1/3 of our existing buildings, largely because the vast majority of them weren't designed and built to last any longer. Durability, as a component of functional resilience, can reduce these losses.</p>			

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			<p>6. Opportunities for Integrating Disaster Mitigation and Energy Retrofit Programs Senate Environment and Public Works Committee Room, Dirksen Senate Office Building, Washington, D.C. - 2010</p> <p>During this panel discussion a representative of the National Conference of State Historic Preservation Officers noted that more robust buildings erected prior to 1950 tend to be more adaptable for reuse and renovation. Prior to the mid-1950s most local jurisdictions developed their own building code requirements that uniquely addressed the community's needs, issues and concerns. Pre-1950 building codes typically resulted in more durable and robust construction that lasts longer.</p> <p>The total environmental impact of insulation, high efficiency equipment, components, and appliances, low-flow plumbing fixtures, and other building materials and contents are relatively insignificant when rendered irreparable or contaminated and must be disposed of in landfills after disasters. The US Army Corps of Engineers estimated that after Hurricane Katrina nearly 1.2 billion cubic feet of building materials and contents ended up in landfills. This is analogous to stacking enough refrigerators a fifth of the way to the moon or placing them end to end around the equator of the Earth twice.</p> <p>(see Attachments file for the hail exposure map)</p>			

Chapter 9 – Indoor Environmental Quality

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action								
532	Robert Hill NAHB Research Center NAHB Research Center	901.1.1 Natural Draft Heating Equipment Revise as follows	Any natural draft space heating or water heating equipment, <u>if installed</u> , is not located in conditioned spaces, including conditioned crawlspaces. Natural draft equipment is permitted to be installed within the conditioned spaces if located in a mechanical room that has an outdoor air source, and is otherwise sealed and insulated to separate it from the conditioned space(s). <u>These points not available if there is no natural draft equipment installed.</u>	Clarify the practice.										
241	Thomas Stroud HPBA HPBA	901.1.1 Natural Draft Heating Equipment Add new as follows	901.1.3(3) direct vent heater rated gas (ANSI Z21.88) fireplace 5 points	ANSI Z21.88 are heater rated products and should be allowed as part of this standard.										
533	Robert Hill NAHB Research Center NAHB Research Center	901.1.2 Air Handling Equipment/Ducts not in Garage Revise as follows	Air handling equipment or return ducts are not located in the garage, unless placed in isolated, air-sealed mechanical rooms with an outside air source. <u>Points only available if an HVAC system with ducts is installed.</u>	Clarify the practice.										
137	Terry Zinn KCMA Kitchen Cabinet Manufacturers	901.10 Kitchen and Bath Vanity Cabinets Revise as follows	<table border="1"> <tr> <td>901.10 Cabinets. A minimum of 85 percent of kitchen and bath vanity cabinets are in accordance with one of the following: (Where more than one of the following practices is used, the practice with the fewer number of points is awarded.)</td> <td></td> </tr> <tr> <td>(1) Kitchen and bath vanity cabinets in accordance with KCMA ESP 04, or equivalent, are installed.</td> <td>2</td> </tr> <tr> <td>(2) (1) Kitchen and bath vanity cabinets in accordance with KCMA ESP 04, or equivalent, or CARB Composite Wood Air Toxic Contaminant Measure Standard are installed.</td> <td>3</td> </tr> <tr> <td>(3) (2) Kitchen and bath vanity cabinets are installed that contain no added urea formaldehyde or are in accordance with GGPS.EC.010.R0, ASTM D6670, or equivalent.</td> <td>5</td> </tr> </table>	901.10 Cabinets. A minimum of 85 percent of kitchen and bath vanity cabinets are in accordance with one of the following: (Where more than one of the following practices is used, the practice with the fewer number of points is awarded.)		(1) Kitchen and bath vanity cabinets in accordance with KCMA ESP 04, or equivalent, are installed.	2	(2) (1) Kitchen and bath vanity cabinets in accordance with KCMA ESP 04, or equivalent, or CARB Composite Wood Air Toxic Contaminant Measure Standard are installed.	3	(3) (2) Kitchen and bath vanity cabinets are installed that contain no added urea formaldehyde or are in accordance with GGPS.EC.010.R0, ASTM D6670, or equivalent.	5	<p>The most recent Kitchen Cabinet Manufacturers Association ESP 04-11 Standard and CARB Composites Wood Air Toxic requirements are now the same. KCMA has revised these KCMA ESP Specifications three times since this reference was included in this original document, each time making the requirements more restrictive. The latest revision, KCMA ESP 04-11 requires the use of CARB compliant particleboard, MDF and hardwood plywood panel products. Previous versions left CARB compliant products as optional points that could be claimed if earned. These two identical items now need to be linked together because participants in the KCMA ESP program must renew their applications on an annual basis and furnish a spreadsheet and invoices which prove they purchased CARB compliant panel products from their suppliers. There is no other cabinet organization set up to provide this necessary "paper trail" proof of such compliance or a seal on the cabinets which quickly assures builders and homeowners of the compliance of the product. In addition, Architectural Testing, Inc., an ANSI accredited certification organization, audits the KCMA certification process on an annual basis.</p> <p>(see Attachments file for KCMA Environmental Stewardship Program ESP 04-11)</p>		
901.10 Cabinets. A minimum of 85 percent of kitchen and bath vanity cabinets are in accordance with one of the following: (Where more than one of the following practices is used, the practice with the fewer number of points is awarded.)														
(1) Kitchen and bath vanity cabinets in accordance with KCMA ESP 04, or equivalent, are installed.	2													
(2) (1) Kitchen and bath vanity cabinets in accordance with KCMA ESP 04, or equivalent, or CARB Composite Wood Air Toxic Contaminant Measure Standard are installed.	3													
(3) (2) Kitchen and bath vanity cabinets are installed that contain no added urea formaldehyde or are in accordance with GGPS.EC.010.R0, ASTM D6670, or equivalent.	5													
322	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	901.11 Insulation Revise as follows	901.11 Insulation. Insulation is in accordance with the following: <u>Exception: Insulation manufactured without formaldehyde.</u>	Some types of insulation are manufactured without formaldehyde and would be incapable of formaldehyde emissions. Exempting insulation manufactured without formaldehyde eliminates an unnecessary certification requirement currently required by this standard.										
65	Michael Chandler Chandler Design-Build Inc self	901.11 Insulation Add new as follows	901.11 (C) <u>Environmentally preferable flame retardant used in foam board and spray foam insulation products. Less environmentally persistent, bio-accumulative and neuro-toxic flame retardant additives are specified and implemented in carpet and pad such as non-halogenated, bio-degradable Triethyl phosphate (TEP) or persistent, and halogenated but less toxic Tris (1-chloro-2-propyl) phosphate (TCPP).</u>	Many of the Halogenated flame retardants currently in use have been linked to endocrine disruption and birth defects. Their absorption in to the system through dust can be very rapid, long lasting, and can be associated with birth defects such as reduced birth weight and delayed secondary sexual development especially in male infants. At this point there is no incentive for flame retardant manufacturers to disclose which of the allowable chemicals they use in their products so builders cannot choose preferable products as the MSDS sheets list flame retardant composition as "trade secret." Offering point credit for products that can verify that preferable chemicals were used could lead to a premium class of flame retardants in foam insulation panels and in spray foam both open and closed cell and could help ensure the health of future generations as well as the children born in these cleaner homes.										
124	Steve Hale Build Green NM Build Green NM	901.12 CO Alarms Revise as follows	901.12 CO Alarms Change points to <u>MANDATORY</u>	This is now mandatory in several states and is an inexpensive safety feature that should be in all homes with gas appliances.										
177	Susan Gitlin	901.14 Non-Smoking	901.14 Non-smoking areas. 1) All interior common areas of a multi-unit building are	EPA supports the standard's inclusion of a practice on non-smoking										

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	US Environmental Protection Agency US Environmental Protection Agency	Common Areas Add new as follows	designated as non-smoking areas with posted signage. <u>Designated outdoor smoking areas are located a minimum of 25 ft. from entries, outdoor air intakes, and operable windows.</u> <u>OR,</u> 2) <u>Pathways for second hand smoke transfer between units are air-sealed by sealing penetrations in the walls, ceilings, and floors of dwelling units, sealing vertical chases adjacent to dwelling units, and applying weather stripping to all doors in dwelling units leading to common hallways.</u>	areas in 901.14. However, as written, the practice does not offer sufficient protection for occupants. We recommend the above additional language.		
178	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	901.14 Non-Smoking Common Areas Revise as follows	Compliance with 901.14 should be mandatory.	Environmental tobacco smoke control is a major component of indoor environmental quality.		
293	Kelly Wedell US EPA US EPA	901.15 Lead-Safe Work Practices Revise as follows	<p><u>Ban of Lead within new facilities:</u> <u>Final products (articles) to be installed in new residential buildings shall not contain lead, with the exception of brass, solder, and other metal amalgams containing up to 5% lead.</u></p> <p><u>Addition and Renovation Note:</u> <u>1) All buildings must meet EPA lead hazard standards for paint, dust, and soil.</u> <u>(a) A paint-lead hazard is any of the following:</u> <u>(1) Any lead-based paint on a friction surface that is subject to abrasion and where the lead dust levels on the nearest horizontal surface underneath the friction surface (e.g., the window sill, or floor) are equal to or greater than the dust-lead hazard levels identified in paragraph (b) of this section.</u> <u>(2) Any damaged or otherwise deteriorated lead-based paint on an impact surface that is caused by impact from a related building component (such as a door knob that knocks into a wall or a door that knocks against its door frame.</u> <u>(3) Any chewable lead-based painted surface on which there is evidence of teeth marks.</u> <u>(4) Any other deteriorated lead-based paint in any residential building or child-occupied facility or on the exterior of any residential building or child-occupied facility.</u> <u>(b) A dust-lead hazard is surface dust in a residential dwelling or child-occupied facility that is above the regulatory hazard standards currently defined as containing a mass-per-area concentration of lead equal to or exceeding 40 ug/ft2 on floors or 250 ug/ft2 on interior window sills based on wipe samples.</u> <u>(c) A soil-lead hazard is bare soil on residential real property or on the property of a child-occupied facility that contains total lead equal to or exceeding the regulatory hazard standards currently defined as 400 parts per million (mg/g) in a play area or average of 1,200 parts per million of bare soil in the rest of the yard based on soil samples.</u></p> <p>Notes: The above language is from 40 CFR 745, Identification of Dangerous Levels of Lead ("Section 43 Rule"), published 1/5/01. It is used as a benchmark to identify where lead hazards are present and to trigger various actions, but is not independently enforceable by EPA. Cost and benefit information can be found in the preamble to the rule (http://www.epa.gov/fedrgstr/EPA-TOX/2001/January/Day-05/t84.pdf) and in the Economic Analysis for the rule (http://epa.gov/lead/pubs/403_ea_d21.pdf). Because the rule is subject to periodic updating, references should be made to the regulation as opposed to the current benchmarks, if possible.</p> <p><u>2) All buildings must be maintained according to benchmark standards:</u> <u>(a) Essential maintenance practices</u> <u>(1) All work must be done by trained and certified maintenance</u></p>	Given that the standard has requirements intended for renovations and additions to existing buildings, many of which contain legacy chemicals of concern, EPA would like to see the renovation process trigger verification that lead is addressed as suggested above. While NAHB's requirement in 901.15 for 'lead-safe work practices' is a step in the right direction, it is too vague to ensure any real impact. In addition, it does not explicitly require mitigation of the underlying lead hazard. We recommend the language above to replace the present requirement in 901.15		

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			<p><u>workers or contractors and use lead-safe work practices as described in the Renovation Repair, and Painting Program regulation, published 4/22/08.</u></p> <p><u>(2) Perform visual examinations for deteriorating paint (unless the paint is found not to be LBP) at unit turnover and every 12 months (unless the tenant refuses entry).</u></p> <p><u>(3) Promptly and safely repair deteriorated paint and the cause of the deterioration. If more than a de minimis amount of paint has deteriorated (unless the paint is found not to be LBP):</u></p> <ul style="list-style-type: none"> <u>• Make the surface intact by paint stabilization, enclosure, encapsulation, or removal.</u> <u>• Diagnose and correct any physical conditions causing the paint deterioration (for example, structural and moisture problems causing substrate failure or conditions causing painted surfaces to be crushed).</u> <p><u>(4) Post written notice to tenants asking tenants to report deteriorating paint and informing them whom to contact. Promptly respond to tenants' reports and correct deteriorating paint, with accelerated response in units occupied by a child under age six or a pregnant woman - and in no case longer than 30 days. Do not retaliate against tenants who report deteriorating paint.</u></p> <p><u>(b) Actions in response to a lead-poisoned child</u></p> <p><u>(1) Cooperate with local health officials, including providing information promptly, providing access, and implementing protective measures</u></p> <p><u>(2) Obtain a lead risk assessment and control all hazards identified as a result.</u></p> <p><u>(3) Notify all tenants of risk assessment and actions taken in response.</u></p> <p><u>(4) Relocate tenant if LBP hazards are not promptly controlled. Do not retaliate against tenants.</u></p> <p><u>(c) Control of identified LBP hazards</u></p> <p><u>(1) In pre-1978 housing with a child under 6 or a pregnant woman, or in a child-occupied facility, control hazards as soon as possible but in no case longer than 30 days.</u></p> <p><u>(2) In pre-1978 housing without a child under 6 or a pregnant woman, or not used as a child-occupied facility, control hazards no later than unit turnover.</u></p> <p><u>(d) Additional standard treatments for pre-1950 housing or child-occupied facilities (all work to be performed in accordance with RRP requirements)</u></p> <p><u>(1) Provide smooth and cleanable horizontal surfaces. Rough, pitted, and porous surfaces trap lead dust and make it difficult to thoroughly clean these surfaces. Smooth horizontal surfaces will make it possible for tenants' regular housekeeping to reduce exposure to lead dust (for example, recoating hardwood floors with polyurethane, replacing or recovering worn out linoleum floors, treating interior window sills). During treatment of an occupied unit, occupants and their possessions must be protected from lead exposure, but only surfaces that are accessible need to be treated.</u></p> <p><u>(2) Correct conditions in which painted surfaces are rubbing, binding, or being crushed that can produce lead dust (unless the paint is found not to be LBP) to protect the integrity of the paint and reduce the generation of lead dust (for example, rehanging binding doors, installing door stops to prevent doors from damaging painted surfaces, reworking windows).</u></p> <p><u>(3) Cover or restrict access to bare residential soil (unless it is found not to be lead-contaminated). Owners shall visually check for bare soil when performing treatments on a unit and implement controls to prevent occupant exposure (for example, replacing soil; covering bare soil with gravel, mulch, or sod; physically restricting access to bare soil).</u></p>			

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			<p align="center"><u>(4) Regularly repeat as needed after visual inspections in (a)(2).</u></p> <p>Notes: The above benchmark standards are adapted from "Putting the Pieces Together: Controlling Lead Hazards in the Nation's Housing", the final report of the HUD Section 1015 Task Force on Lead-Based Paint Hazard Reduction and Financing, published 7/11/95, mandated by Title X of the Housing and Community Development Act of 1992. They have been updated according to current regulatory requirements. Cost information can be found in the appendix to the report. Partial benefit information can be found in the preamble and economic analysis of the RRP rule, http://www.epa.gov/fedrgstr/EPA-TOX/2008/April/Day-22/t8141.htm.</p> <p><u>3) Buildings must be maintained and repaired in compliance with all EPA lead regulations, inclusive of Renovation, Repair, and Painting Rule.</u></p>			
301	Gregg Achman Hearth & Home Technologies Hearth & Home Technologies	901.2 Fireplaces and Fuel-Burning Appliances Revise as follows	Natural gas and propane fireplaces that are power vented or direct vented, are equipped with permanently fixed glass fronts or gasketed doors, and comply with CSA <u>ANSI Z21.88a</u> / CSA 2.33a or GSA <u>ANSI Z21.50a</u> / CSA 2.22.	Z21.88 and Z21.50 are ANSI documents. The "a" attached to each document number represents a revision, the code is referencing the standard, not a specific revision.		
535	Robert Hill NAHB Research Center NAHB Research Center	901.2 Fireplaces and Fuel-Burning Appliances Revise as follows	<p>901.2 Fireplaces and fuel burning appliances. <u>All Fireplaces (except site built masonry fireplaces) and fuel burning appliances (except cooking appliances, clothes dryers, water heaters, and furnaces) located in conditioned space are code compliant, vented to the outdoors, and have adequate combustion and ventilation air provided to minimize spillage or back-drafting and are in accordance with one the following:</u></p> <p align="center">(section 901.2.1(2)(a) is not mandatory) <u>7 points maximum</u></p> <p>(1) Natural gas and propane fireplaces that are power vented or direct vented, are equipped with permanently fixed glass fronts or gasketed doors, and comply with CSA <u>Z21.88a/CSA 2.33a</u> or CSA Z21.50/CSA 2.22.</p> <p>(2) Solid fuel burning appliances are in accordance with the following requirements:</p> <p>(a) Wood-burning fireplaces are equipped with gasketed doors designed to operate with the doors closed, outside combustion air, and a means is provided for sealing the flue to minimize interior air (heat) loss when not in operation.</p> <p>(b) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are EPA certified.</p> <p>(c) Wood stove and fireplace inserts, as defined in UL 1482, Section 3.8 are in accordance with the certification requirements of UL 1482 and are in accordance with the emission requirements of the EPA Certification and the State of Washington <u>WAC 173-433-100(3)</u>.</p> <p>(d) Pellet (biomass) stoves and furnaces are in accordance with the requirements of ASTM E1509 or are EPA certified.</p>	It would be less confusing to separate the mandatory and non mandatory parts of this practice. A new practice is being suggested to reward adding gasketed doors to the wood burning fireplace. All fireplaces should be required to meets this but there should be a maximum number of points defined.		

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			(e) Masonry heaters are in accordance with the definitions in ASTM E1602 and ICC IBC, Section 2112.1.			
126	Steve Hale Build Green NM Build Green NM	901.2 Fireplaces and Fuel-Burning Appliances Revise as follows	901.2 Fireplaces and fuel-burning appliances (except cooking appliances, clothes dryers, water heaters, and furnaces) located in conditioned space are in accordance with the following: [Section 901.2 (2) (a) is not mandatory.] Mandatory	I think this is mandatory in the new IECC code		
570	Don Denton Vent-Free Gas Products Alliance Section Vent-Free Gas Products Alliance Section	901.2.1 Fireplaces/Natural Draft Fuel-Burning Appl Add new as follows	Add the following new subsection under 901.2.1: (3) <u>Natural gas and propane fireplaces that are unvented, have adequate combustion and ventilation air provided as required by the International Fuel Gas Code (IFGC), and comply with ANSI Z21.11.2.</u>	Unvented gas heating products are green as a result of high efficiency and clean combustion. No other gas product permitted by the NGBS has as high an efficiency. Numerous independent, peer-reviewed, research projects have documented that national indoor air quality guidelines for carbon monoxide, carbon dioxide, nitrogen dioxide, oxygen, and water vapor are met. The products' safety record is outstanding and without peer, with 20 million units installed in American homes over the last 30 years. No technical justification exists for excluding them. The products are accepted by the major applicable codes.		
243	Thomas Stroud HPBA HPBA	901.2.1 Fireplaces/Natural Draft Fuel-Burning Appl Revise as follows	901.2.1(1) Natural gas and propane fireplaces that are power vented or direct vented, are equipped with permanently fixed glass fronts or gasketed doors, and comply with CSA ANSI Z21.88a/CSA 2.33a or CSA-ANSI Z21.50/CSA 2.22 . <u>In addition, electric fireplaces are available for full (7) points.</u>	Using the ANSI designation is the correct reference. Electric fireplaces do not negatively impact the indoor air quality, so should be allowed the same points as no fireplace (7 points).		
247	Thomas Stroud HPBA HPBA	901.2.1 Fireplaces/Natural Draft Fuel-Burning Appl Revise as follows	901.2.1(2a) Wood-burning fireplaces are equipped with gasketed doors designed to operate with the doors closed , outside combustion air, and a means is provided for sealing the flue to minimize interior air (heat) loss when not in operation. <u>Fireplaces that are qualified under the EPA Fireplace Voluntary Program also meet this requirement.</u>	The purpose for removing the gasketed doors is that particularly with UL 127 Fireplaces gasketed doors invalidate the safety listing and cause an unsafe condition. Regarding the EPA Fireplace Program, these will be the cleanest fireplace option available. There was discussion of adding this on Version 1, but the program was not finalized at that time.		
82	Ashley Pontes Dimplex North America Limited Dimplex	901.2.2 Fireplaces, Woodstoves, Pellet Stoves, or Masonry Heaters Revise as follows	(2) <u>No fireplace or wood stove is installed in the home or an electric fireplace is the only fireplace type installed. 7 points.</u>	Because electric fireplaces are not mentioned in the existing National Green Building Standard for Indoor Environmental Quality it is assumed that they fall under the general fireplace category. An electric fireplace is equal to having no fireplace, therefore homes with electric fireplaces should be granted 7 points. Electric fireplaces contribute to a safe, healthy indoor environment in the following ways: •Preserve the building envelope – no exit point for heated/cooled air. Houses lose heat up the chimney due to the "stack effect". The stack effect is the movement of air due to convection currents within your house's building envelope. Heated air leaks out any exit it can find, and when heated air is drawn out of the home, cold outside air is drawn in to make up for it. The fireplace accelerates the normal stack effect. The greater the difference between the outside and indoor air temperature, the greater the air movement due to the stack effect. •Contribute no particulates or emissions to the indoor environment. •Produce no carbon monoxide because there is no combustion or vent to become blocked. •Reduce the potential for mold growth in the indoor environment by contributing no moisture. 1)Because no vent, chimney or gas supply is required, the integrity of the building envelope is maintained, reducing the number of places for water to migrate into the house. 2)Because there is no combustion, no water vapor is added to the indoor environment. •Present no opportunity for gas leaks caused by mechanical failure, improper installation or natural disaster. •Generating zero local emissions in neighborhoods where it can affect the health of the community. Since houses "breathe" there is always seepage of outside air into the house. •Filtering particulates and allergens as small as one micron from the air when fitted with air purification filters. •Convert 100% of the input energy into heat. •Eliminate the need for a standing pilot and therefore do not consume energy when not in use. •The amount of electricity used by an electric fireplace operating with the aesthetic flame only is equal to the energy consumed when operating a		

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				standard lamp. (see Attachments file for a report on Dimplex electric fireplaces)		
539	Robert Hill NAHB Research Center NAHB Research Center	901.2.2 Fireplaces, Woodstoves, Pellet Stoves, or Masonry Heaters Add new as follows	901.2.2 Site built masonry wood-burning fireplaces are equipped with gasketed doors designed to operate with the doors closed, outside combustion air, and a means is provided for sealing the flue to minimize interior air (heat) loss when not in operation.	Separating the non-mandatory practice from the mandatory part will clarify the intent and implementation. existing practice 901.2.2 should also be renumbered as 901.2.3 if this addition is approved.		
250	Thomas Stroud HPBA HPBA	901.2.2 Fireplaces, Woodstoves, Pellet Stoves, or Masonry Heaters Add new as follows	<u>901.2.1(2f) Hydronic Heaters qualified under the EPA Hydronic Heater Voluntary Program.</u>	Hydronic heaters qualified under the EPA Hydronic Heater Voluntary Program are very clean-burning biomass burners and should be allowed as an available option.		
276	JAMES LYONS NEWPORT PARTNERS SELF	901.3 Garages Revise as follows	901.1 Garages Points for Item (c) should be 10, not 4.	901.3.1 (c) is a logical building science measure for controlling garage air contaminants which will have real IAQ benefits for homeowners. The only other optional measure for dealing with garage contaminants in the standard - removing attached garages from a home's design - is excessively expensive, involves more land area for a home (which runs counter to green building), is not a marketplace option in many locations, and is a decision which realistically will never be made based on a green building program. No garage can also mean more contaminant sources are stored directly in the living space (e.g. paints, pest control products). Yet this measure is worth 10 point in the standard - even though its application will be mostly random, and not a strategic design decision made in the interest of IAQ. On the other hand, 901.3 (c) is the 1 credible optional measure for dealing with garage contaminants in this standard, and builders must be more incentivized to employ exhaust systems to remove garage contaminants and exhaust them to outdoors.		
936	John Bradfield Composite Panel Association Composite Panel Association	901.4 Wood Materials	...is certified by a third party as complying with EPP Specification CPA 2-06 <u>3-08</u> .	The EPP Specification CPA 2-06 has been superceded by CPA 3-08, which contains lower formaldehyde emission limits. Encouraging lower emissions is the subject of this section. A copy of CPA 3-08 was emailed to standards @nahbrc.org (See Attachments file for CPA 3-08)		
64	Michael Chandler Chandler Design-Build Inc self	901.5 Carpets Add new as follows	<u>901.5 (3) Environmentally preferable flame retardant used in carpet and pad. Less environmentally persistent, bio-accumulative and neuro-toxic flame retardant additives are specified and implemented in carpet and pad such as non-halogenated, bio-degradable Triethyl phosphate (TEP) or persistent, and halogenated but less toxic Tris (1-chloro-2-propyl) phosphate (TCPP).</u>	Many of the Halogenated flame retardants currently in use have been linked to endocrine disruption and birth defects. Their absorption in to the system through dust can be very rapid, long lasting, and can be associated with birth defects such as reduced birth weight and delayed secondary sexual development especially in male infants. At this point there is no incentive for flame retardant manufacturers to disclose which of the allowable chemicals they use in their products so builders cannot choose preferable products as the MSDS sheets list flame retardant composition as "trade secret." Offering point credit for products that can verify that preferable chemicals were used could lead to a premium class of flame retardants in carpet, padding, foam, and could help ensure the health of future generations as well as the children born in these cleaner homes.		
122	Steve Hale Build Green NM Build Green NM	901.5 Carpets Add new as follows	901.5 (2) Carpets	In a home with all hard surface flooring (which is better than "Green" carpeting). Points should be allowed for eliminating carpeting all together. To address this issue from a different perspective. A home with hard surface flooring and carpeting can get more points than a home with just hard surface flooring.		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>Carpets. (2) A minimum of 85 Percent of installed carpet area, Carpet cushion (Padding). And carper adhesives are in accordance with the emmission levels of DCPH 01360, as certified by a third- party program, such as the Carpet and Rug Instutute's (CRI) Green Label Plus Indoor Air Quality Program (a) carpet 6pts, (b) Carpet Cushion 2pts (c) carpet adhesives 2 Pts (d) <u>sustainable hard surface flooring in lieu of all carpeting 10 Pts.</u></p>			
144	<p>Bill Freeman Resilient Floor Covering Institute Resilient Floor Covering Institute</p>	<p>901.6 Hard-Surface Flooring Delete and substitute as follows</p>	<p>A minimum of 85 percent of installed hard-surface flooring is in accordance with the emission concentration limits of CDPH 01350 <u>in CDPH/EHLB/Standard Method V1.1 (February 2010)</u> using the office scenario, as certified by a third-party program, such as the Resilient Floor Covering Institute's FloorScore Indoor Air Certification Program or the GREENGUARD Environmental Institute's Children and Schools Certification Program.</p> <p>This same change is applicable to Sections 901.5, 901.7, 901.8.2, 901.9.2, 901.11</p>	<p>California Section 1350 requirements have been updated in the latest version published in 2010</p>		
231	<p>Bill Griese Tile Council of North America Tile Council of North America</p>	<p>901.6 Hard-Surface Flooring Revise as follows</p>	<p>901.6 Hard-surface flooring. A minimum of 85 percent of installed hard-surface flooring is in accordance with the following emission requirements: concentration limits of CDPH 01350 (using the office scenario), as certified by a third-party program, such as the Resilient Floor Covering Institute's FloorScore Indoor Air Certification Program or the GREENGUARD Environmental Institute's Children and Schools Certification Program.</p> <ul style="list-style-type: none"> <input type="checkbox"/> <u>Individual VOCs: ≤ ½ CA chronic REL (CA Chronic Reference Exposure Level – CREL)</u> <input type="checkbox"/> <u>Formaldehyde: ≤ 16.5 ug/m³ or ≤ 13.5 ppb</u> <p><u>Where hard-surface flooring with more than one distinct product layer is installed, the emissions from each layer shall comply with these requirements. The test methodology used to determine compliance shall be from CDPH/EHLB/STANDARD METHOD V.1.1 "Standard Method For The Testing And Evaluation Of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers Version 1.1" dated February 2010. The emissions testing shall be performed by a laboratory that has the CDPH/EHLB/STANDARD METHOD V 1.1 test methodology in the scope of its ISO 17025 Accreditation.</u></p> <p><u>Where post manufacture coatings or surface applications have not been applied, the following hard surface flooring shall be deemed to comply with the emission requirements of this section:</u></p> <ul style="list-style-type: none"> <input type="checkbox"/> <u>Ceramic tile flooring</u> <input type="checkbox"/> <u>Organic-free, mineral-based flooring</u> <input type="checkbox"/> <u>Clay masonry flooring</u> <input type="checkbox"/> <u>Concrete masonry flooring</u> <input type="checkbox"/> <u>Concrete flooring</u> <input type="checkbox"/> <u>Metal flooring</u> 	<p>The proposed revision allows products in compliance with well-known emission thresholds, as verified by a 3rd party testing laboratory, to contribute to these credits. There are many more testing laboratories available than those acknowledged by the previously mentioned certification agencies, and products tested by these laboratories are equally conducive to improved indoor air quality. Wherever possible, specification of 3rd party certifying entities should be avoided to avoid unnecessary costs to all users of the standard. Also, there are several hard surface flooring products which are inherently non-emitting. It is not scientifically feasible that these materials could emit VOCs. Therefore, VOC emission testing for these materials would be redundant, cost incurring, and scientifically impractical. By listing these exact materials, it is clear to all users that, by default, they are in compliance with the specified emission limits. The proposed revision is representative of steps already taken by most other green building standards, including LEED, the IGCC, and CHPS.</p>		
542	<p>Robert Hill NAHB Research</p>	<p>901.6 Hard-Surface Flooring</p>	<p>A minimum of 10% of the conditioned floor space has pre-finished hard-surface flooring installed and at least of 85 percent of <u>all prefinished</u> installed hard-surface flooring is in</p>	<p>It seems reasonable to define a minimum amount of flooring required to get these points. Limiting the practice to pre-finished materials clarifies</p>		

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	Center NAHB Research Center	Revise as follows	accordance with the emission concentration limits of CDPH 01350 (using the office scenario), as certified by a third-party program, such as the Resilient Floor Covering Institute's <i>FloorScore Indoor Air Certification Program</i> or the GREENGUARD Environmental Institute's <i>Children and Schools Certification Program</i> .	that site finished is included in 901.8. The task group may want to give consideration to products that are adhesively applied as to any requirements for the adhesive.		
543	Robert Hill NAHB Research Center NAHB Research Center	901.7 Wall Coverings Revise as follows	When at least 20% of the interior wall surfaces are covered rather than painted, a A minimum of 85 percent of wall coverings are in accordance with the emission concentration limits of CDPH 01350, as certified by a third-party program, such as the Scientific Certification Systems (SCS) Indoor Advantage Gold Program or the GREENGUARD Environmental Institute's Children and Schools Certification Program.	It seems reasonable to require some minimum amount of wall coverings before awarding points for this practice.		
123	Steve Hale Build Green NM Build Green NM	901.7 Wall Coverings Revise as follows	901.7 Wall Coverings. A minimum of 85% of wall coverings are in accordance with the emission concentration limits of CDPH 01350, as certified by a third-party program. Such as the Scientific Certification Systems (SCS) Indoor Advantage Gold Program or the Greenguard Environmental Institute's Children and Schools Certification Program 4 Pts (b) <u>Low or no Voc paint or finishes are used in lieu of all wall covering 4 pts.</u>	If a home uses low or no VOC paint thruout it is awarded less points than a home that uses both Low VOC paint and a "Green" wall paper. There is no added value of one over the other so equal points should be awarded.		
544	Robert Hill NAHB Research Center NAHB Research Center	901.8 Architectural Coatings Revise as follows	<p>901.8.1 Site-applied interior products (including floor finishes) are in accordance with one or more of the following standards:</p> <p>(1) Zero VOC as determined by EPA Method 24 (VOC content below the detection limit for the method)</p> <p>(2) CARB <i>Suggested Control Measure for Architectural Coatings</i></p> <p>(3) GS-11</p> <p>(4) VOC limits in accordance with:</p> <p>(a) 50 grams/liter flat paint & primers</p> <p>(b) 100 grams/liter non flat paint</p> <p>(c) 350 grams/liter clear wood varnish</p> <p>(d) 550 grams/liter clear wood lacquer</p> <p>(e) xxx grams/liter for oil based stains</p>	The practice should be clarified to make it clear that floor finishes should also be included. There have been a number of questions regarding where do primers fit in this practice. There also have been questions about oil based stains. Also both CARB and GS-11 allow higher VOC limits than listed in (4). The task group should consider making the VOC limits consistent.		
937	Rick Watson Sherwin-Williams Sherwin-Williams	901.8 Architectural Coatings	Have interior and exterior VOC limits that are consistent within each standard.	The standards have different VOC limits and does not address exterior.		
142	Michael Cudahy PPFA PPFA	901.9 Adhesive and Sealants Revise as follows	901.9.2 Interior low-VOC adhesives and sealants. A minimum of 85 percent of site-applied products used within the interior of the building are in accordance with one of the following, as applicable. 1) CDPH 01350, as certified by a third party program, such as the GREENGUARD Environmental Institute Children and Schools Certification Program or the Scientific Certifications Systems Indoor Advantage Gold Program. 2) <u>GreenSeal GS-36 or other similar recognized program</u> 3) <u>SCAQMD Rule 1168</u>	There are still some issues with GS-36 that have not been addressed and alternative VOC programs should be included. The source of GS-36 should be spelled out as "GreenSeal" both here, and anywhere other "GS" documents are called out. Rule 1168 should cover many existing products and should be included to ensure market availability.		
143	Michael Cudahy PPFA PPFA	901.9 Adhesive and Sealants Revise as follows	901.9 Adhesives and sealants. A minimum of 85 percent of site-applied adhesives and sealants are in accordance with Section 901.9.1 and/or Section 901.9.2 <middle section not edited>	85% is already mentioned in sections 901.9.1 and 901.9.2 - it should not ALSO be in the charging statement 901.9 In fairness, an alternative to GreenSeal should be permitted, and GreenSeal spelled out here and else ware in the document. Rule 1168 covers many existing products and should also be included.		

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			(2) <u>GreenSeal GS-36 or similar recognized program</u> (3) SCAQMD Rule 1168			
546	Robert Hill NAHB Research Center NAHB Research Center	901.9 Adhesive and Sealants Revise as follows	Exterior low-VOC adhesives	901.8 focuses only on interior coatings but 901.9 covers both exterior (.1) and interior (.2). Are exterior sealants pertinent to IEQ and if so should exterior coatings be included in 901.8?		
273	JAMES LYONS NEWPORT PARTNERS SELF	902.1.1 Spot Ventilation Revise as follows	(3) Kitchen exhaust units and/or range hoods are ducted to the outdoors and have a minimum ventilation rate of 100 cfm (47.2 L/s) for intermittent operation or 25 cfm (11.8 L/s) for continuous operation. § <u>Mandatory</u>	Code-mandated envelope and duct tightness levels will make homes markedly tighter as the 2009 and 2012 IECC versions are adopted throughout the country. This shift in turn requires that all homes also exhaust kitchen ranges to outdoors. The moisture and odors generated by the range will be the most significant point source of pollutants in many households, so capturing and venting these pollutants to outdoor should be mandatory and not optional.		
280	JAMES LYONS NEWPORT PARTNERS SELF	902.1.2 Bathroom and/or Laundry Exhaust Timer Revise as follows	9 <u>11</u> points max remainder of provision to remain as-is	This provision correctly recognizes the benefits of enhanced controls for bath and/or laundry exhaust fans. To incentivize the use of this effective IAQ technology in all new US homes, the requirement should account for 4 bathrooms (or 3 bathrooms + 1 laundry fan) – which equates to 11 maximum points using the scoring established in the standard. NAHB data indicates an average new home will often have 3 bathrooms while a home with a basement bathroom or an in-law suite may have 4 - so the provision should reflect this and not put an artificially low ceiling on the available points.		
242	JAMES LYONS NEWPORT PARTNERS SELF	902.1.3 Kitchen/Bath/Laundry Exhaust Specifications Revise as follows	Kitchen range, bathroom, and laundry exhaust are verified to specification. Ventilation airflow at the point of exhaust is tested to a minimum of 100 cfm (47.2 L/s) intermittent or 25 cfm (11.8 L/s) continuous for kitchens and 50 cfm (23.6 L/s) intermittent or 20 cfm (9.4 L/s) continuous for bathrooms and/or laundry. <u>As an alternative to field verifying the exhaust airflow for bathroom exhaust fans, exhaust fans with 6" exhaust ports and 6" ducts to outside are used.</u>	Bath exhaust fans with 6" ports and 6" ducts are highly capable of providing exhaust flow rates at or near the nominal rating of the fan without restrictions on effective duct length. As evidence of this, ASHRAE 62.2-2010 includes prescriptive duct sizing guidance (Table 5.3) which can be used as an alternative way to meet this Standard's field verification requirements for local exhaust airflow. The data in this table shows that the effective length of smooth 6" duct has no limit for the exhaust system to be able to provide a fan's rated flow for fans sized at 50, 80, or 100 cfm at 0.25" WC. The same is true of 6" flex duct exhaust systems for 50 and 80 cfm bath fans, while 100 cfm fans using 6" flex duct will still deliver the rated flow of 100 cfm with 6" flex duct systems of up to 125 feet in effective length. In other words, the use of 6" fan outlets and 6" ducts provides assurance that rated flow will match the actual flow. This prescriptive alternative to the field measurement of airflows, which can be inaccurate, provides the builder with flexibility while still assuring adequate bath exhaust airflow.		
284	JAMES LYONS NEWPORT PARTNERS SELF	902.1.4 Energy Star Exhaust Fans Revise as follows	6 <u>12</u> points max all other text to remain as-is	This provision correctly recognizes the benefits of energy efficiency and quietly operating exhaust fans. To incentivize the use of this effective IAQ technology in all new US homes, the requirement should account for up to 4 bathroom fans (or 3 bathrooms + 1 laundry fan) – which equates to 12 maximum points using the scoring established in the standard. NAHB data indicates an average new home will often have 3 bathrooms; while a home with a basement bathroom or an in-law suite may have 4 - so the provision should reflect this and not put an artificially low ceiling on the available points.		
260	JAMES LYONS NEWPORT PARTNERS SELF	902.2.1 Building Ventilation Systems Revise as follows	One of the following whole building <u>mechanical</u> ventilation systems is implemented and is in accordance with the specifications of Appendix B. <u>Whole building mechanical ventilation system fans operating intermittently or continuously shall have a sound rating ≤ 1 sone. Mandatory</u> (1) Exhaust or supply fan(s) ready for continuous operation and with appropriately labeled controls. <u>Local exhaust fans, including range hoods, shall be permitted to be part of the whole building mechanical ventilation system. Fan efficacy shall be: ≥ 1.4 cfm/Watt for bathroom exhaust fans < 90 cfm. Fan efficacy shall be ≥ 2.8 cfm/Watt for bathroom exhaust fans ≥ 90 cfm, range hood fans, and inline fans. Where whole-house mechanical ventilation fans are integral to tested and listed HVAC equipment, they shall be powered by</u>	Proposed changes will keep the requirement for WBMV consistent with 2012 IRC/IECC. The changes 1) make WBMV Mandatory, which will be the case in the 2012 IECC/IRC; 2) incorporate efficiency requirements for fans used in WBMVs consistent with 2012 IECC levels; and 3) keep sound levels for WBMV fans in line with ASHRAE 62.2.		

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			<p>an electronically commutated motor.</p> <p>(2) Balanced exhaust and supply fans with supply intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building. <u>Local exhaust fans, including range hoods, shall be permitted to be part of the whole building mechanical ventilation system. Fan efficacy shall be: ≥ 1.4 cfm/Watt for bathroom exhaust fans < 90 cfm. Fan efficacy shall be ≥ 2.8 cfm/Watt for bathroom exhaust fans ≥ 90 cfm, range hood fans, and inline fans. Where whole-house mechanical ventilation fans are integral to tested and listed HVAC equipment, they shall be powered by an electronically commutated motor.</u></p>									
133	Steve Hale Build Green NM Build Green NM	902.2.1 Building Ventilation Systems Add new as follows	<p>902.2.1 One of the following whole building ventilation systems is implemented and is in accordance with the specifications of Appendix B. <u>The ventilation system shall comply with the requirements of Energy Star</u></p> <p>Mandatory</p>	This section should become mandatory and comply with the new requirements of Energy Star. The ventilation can be turned off when "natural" ventilation is used.								
132	Steve Hale Build Green NM Build Green NM	902.2.2 Ventilation Airflow Add new as follows	902.2.2 (B) <u>System is certified thru Energy Star Version 2.5</u>	Brings NGBS up to revised Energy Star Standards								
938	Michael Grothe NAHB Research Center NAHB Research Center	902.2.3 MERV Filters	MERV filters 8 or greater are installed on central air systems.	Does this also apply to stand alone fresh air systems such as heat recovery or energy recovery ventilators, where no forced air heating or cooling system exists? May want to clarify.								
939	Stephanie Thomas-Rees FSEC self	902.2.3 MERV Filters	"MERV filters 8 or greater are installed on central air system and must be accessible"	so many times filters are not accessible and it is pointless to have a high efficeincy filter if it cannot be changed due to a condensation line or other obstruction in the way.								
291	JAMES LYONS NEWPORT PARTNERS SELF	902.3 Radon Control Revise as follows	<p>902.3 Radon Control. Radon control measures are in accordance with ICC IRC Appendix F. Zones are defined in Figure 9(1).</p> <p>(1) Buildings located in Zone 1 (a) a passive radon system is installed: Mandatory, 10 points (b) an active radon system is installed, 4 <u>18</u> points</p> <p>(2) Buildings located in Zone 2 (a) a passive radon system is installed: 10 points</p>	In EPA Radon Zone 1 homes with a passive radon system in place may still have a radon exposure level beyond EPA limits. Further many new houses will not be tested for radon, so an IAQ hazard may exist. To incentivize builders to make this additional investment in an active system during initial construction (when it is most cost-effective), the incremental points for an active system (e.g., points above the 10 awarded for a passive system) should be greater – to a level of 18 points. This additional 8 points above a passive system requires roughly the same amount of time/resources as several other IAQ-related measures, such as low-emission indoor products (Section 901.8) and ventilation flow testing (Section 902.1.3).								
550	Robert Hill NAHB Research Center NAHB Research Center	902.3 Radon Control Revise as follows	<table border="1"> <tr> <td>902.3 Radon control. Radon control measures are in accordance with ICC IRC Appendix F. Zones are defined in Figure 9(1).</td> </tr> <tr> <td>(1) Buildings located in Zone 1</td> </tr> <tr> <td> (a) a passive radon system is installed</td> </tr> <tr> <td> (b) an active radon system is installed</td> </tr> <tr> <td>(2) Buildings located in Zone 2 <u>or Zone 3</u></td> </tr> <tr> <td> (a) a passive <u>or active</u> radon system is installed</td> </tr> </table>	902.3 Radon control. Radon control measures are in accordance with ICC IRC Appendix F. Zones are defined in Figure 9(1).	(1) Buildings located in Zone 1	(a) a passive radon system is installed	(b) an active radon system is installed	(2) Buildings located in Zone 2 <u>or Zone 3</u>	(a) a passive <u>or active</u> radon system is installed	Since radon may occur just about anywhere, it seems reasonable to award points to any building that incorporates mitigation measures regardless of where it is located.		
902.3 Radon control. Radon control measures are in accordance with ICC IRC Appendix F. Zones are defined in Figure 9(1).												
(1) Buildings located in Zone 1												
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(2) Buildings located in Zone 2 <u>or Zone 3</u>												
(a) a passive <u>or active</u> radon system is installed												
551	Robert Hill NAHB Research Center NAHB Research Center	902.3 Radon Control Revise as follows	(1) Buildings located in Zone 1	Does it make sense not to give points to buildings that incorporate a radon system regardless of which zone it is in? Should an active system in Zone 2 get no points?								
940	Michael "Mick" Dalrymple Green Environmental Building Supplies self	904.2 Kitchen Exhaust	<p>A kitchen exhaust unit(s) that equals or exceeds 400 cfm (189 L/s) <u>is installed</u>, and makeup air is provided.</p> <p>or</p> <p>If a kitchen exhaust unit(s) that equals or exceeds 400 cfm (189 L/s) <u>is installed</u>, and makeup air is provided.</p>	It is not clear if the intent is to encourage builders to install a kitchen exhaust of this magnitude, or if the intent is for builders to include make-up air if they so choose to go this big. I recall the original conversations being centered around the energy penalty caused by huge vent hood exhaust systems, but I may have missed part of the conversation. In either case, make-up air is important here because of the potential IAQ issues caused by a negative pressure situation								

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295	JAMES LYONS NEWPORT PARTNERS SELF	902.5 Central Vacuum Systems Revise as follows	902.5 Central vacuum systems. Central vacuum system is installed and vented to the outside. § 10 points.	sucking dirty air out of the attic, walls and crawl spaces. Central vacuum systems exhausted to outdoors are a proven IAQ value to homeowners which will be used and will be effective at directly removing dirt, particulates, and other pollutants directly from the indoor living environment. Scientific research has shown that individuals sensitive to indoor dust benefit from central vacuum systems. In fact, in a controlled scientific study of 25 individuals with hypersensitivity to house dust which compared reactions and other symptoms of the individuals when central vacuum systems or traditional vacuums were used, "use of the central vacuum proved to be superior." Source: "The Influence of a Central Vacuum System on Quality of Life in Patients with House Dust-Associated Allergic Rhinitis." Stanley M. Naguwa and M. Eric Gershwin, University of CA at Davis, School of Medicine. J Invest Allergol Clin Immunol 2001; Vol. 11(4): 290–294 By comparison, even the most basic ventilation system is awarded at least 8 points under the NGBS. Such systems introduce fresh air but may or may not be used, as compared to a central vac system which is an enhancement which home owners will consistently use to clean the indoor environment. Therefore a central vacuum system should be credited with at least 10 points under the standard.														
99	Josh Jacobs GREENGUARD Environmental Institute GREENGUARD Environmental Institute	902.6 Living Space Contaminants Add new as follows	<p>902.6 Living Space Contaminants</p> <p><u>(3) Post-Construction, Pre-Occupancy Baseline IAQ Monitoring: Baseline IAQ testing shall be conducted after construction ends and prior to occupancy. The ventilation system(s) shall be operated continuously at the designated outdoor air flow rate for a minimum of 24 hours prior to monitoring starts. Testing shall be done using protocols consistent with the USEPA Compendium of Methods for the Determination of Toxic Organic Pollutants in Ambient Air, TO-1, TO-11, TO-17 and ASTM Standard Method D 5197. The testing shall demonstrate that the contaminant maximum concentrations listed below are not exceeded in the larger of the following number of locations: (a) no less than one location per HVAC zone; or (b) in each contiguous floor area. An outdoor air concentration needs to be taken at the same time for comparison to TVOC and Carbon Monoxide. For each sampling point where the maximum concentration limits are exceeded conduct additional flush-out with outside air and retest the specific parameter(s) exceeded to demonstrate the requirements are achieved. Repeat procedure until all requirements have been met. When retesting non-complying building areas, take samples from the same locations as in the first test.</u></p> <table border="1"> <thead> <tr> <th>Maximum Concentration of Air Pollutants Relevant to IAQ</th> <th>Maximum Concentration, ug/m³ (unless otherwise noted)</th> </tr> </thead> <tbody> <tr> <td>Formaldehyde</td> <td>27 ppb</td> </tr> <tr> <td>4-Phenylcyclohexene (4-PCH)^a</td> <td>6.5</td> </tr> <tr> <td>Total Volatile Organic Compounds (TVOC)</td> <td>500 over outdoor air concentrations</td> </tr> <tr> <td>Particulates (PM 2.5)</td> <td>50</td> </tr> <tr> <td>Carbon Monoxide</td> <td>9 ppm and no greater than 2 ppm above outdoor levels</td> </tr> </tbody> </table> <p>15 Points</p>	Maximum Concentration of Air Pollutants Relevant to IAQ	Maximum Concentration, ug/m ³ (unless otherwise noted)	Formaldehyde	27 ppb	4-Phenylcyclohexene (4-PCH) ^a	6.5	Total Volatile Organic Compounds (TVOC)	500 over outdoor air concentrations	Particulates (PM 2.5)	50	Carbon Monoxide	9 ppm and no greater than 2 ppm above outdoor levels	Reasoning: Some rating systems have taken to prescribing a building flush-out to ensure that all potential pollutants are removed from the building. Building flush out can help to ensure good IAQ, but it goes against other tenants of sustainable building by increasing the amount of energy used by the building and can lead to moisture problems, which can result in mold problems later in the buildings life. Demanding that fenestration points are sealed will also only do so much. The only true solution for ensuring that good indoor air quality has been achieved that doesn't impact other areas of sustainability is through indoor air testing. This should be utilized as at least an alternative within 902.6. The testing procedures laid out in the above have been utilized in the sustainable building market for a number of years now. This would also start to allow these sustainable buildings to show that they are performing when it comes to human health as opposed to just having another prescriptive measure.		
Maximum Concentration of Air Pollutants Relevant to IAQ	Maximum Concentration, ug/m ³ (unless otherwise noted)																	
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Carbon Monoxide	9 ppm and no greater than 2 ppm above outdoor levels																	
552	Robert Hill NAHB Research Center	903.1 Tile Backing Materials Revise as follows	Tile backing materials in accordance with ASTM C1178, C1278, C1288, or C1325 or approved water proof membrane materials are installed under tiled surfaces in wet areas are in accordance with ASTM C1178, C1278, C1288, or C1325.	There are some effective membrane materials that can be installed instead of typical backer board. The task group should specify any appropriate ASTM criteria for membranes.														

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	NAHB Research Center					
553	Robert Hill NAHB Research Center NAHB Research Center	903.2.1 Capillary Break/Vapor Retard. Conc. Slabs Revise as follows	A capillary break and vapor retarder are installed at all concrete slabs <u>adjoining living space</u> in accordance with Sections 903.2.1(1) or 903.2.1(2) as modified by Section 903.2.1(3):	This clarification allows slabs that are not part of living space to not require a vapor barrier. E.g., slabs in underground parking garages.		
125	Steve Hale Build Green NM Build Green NM	903.2.1 Capillary Break/Vapor Retard. Conc. Slabs Delete without substitution	903.2.1 3 (b) in dry climate locations, as defined by Figure 6(!) Polyethylene sheeting is not required unless required for radon resistance	Current building science suggests that a capillary break should be included in all climate zones. See BSI-003: Concrete Floor Problems by Joe Listebrok		
554	Robert Hill NAHB Research Center NAHB Research Center	903.4.1 Moisture Control Measures Revise as follows	(2) Insulation in wall cavities is dry before walls are not enclosed (e.g., with drywall) if the insulation has a high moisture content. Wet insulation products are dry before enclosing.	There is confusion regarding if this practice only applies to wet applied insulation or any insulation product. Since some builders install insulation before the house is weathertight there is a chance that insulation could become wet after installation.		
555	Robert Hill NAHB Research Center NAHB Research Center	903.5.1 Plumbing in Exterior Wall Cavities Revise as follows	Plumbing distribution lines (including sprinkler lines) are not installed in exterior wall cavities.	Clarify the practice.		
268	JAMES LYONS NEWPORT PARTNERS SELF	904.2 Kitchen Exhaust Delete and substitute as follows	<u>904.2 Kitchen Exhaust. Exhaust hood systems capable of exhausting in excess of 400 cubic feet per minutes (0.19 m3/s) shall be provided with makeup air at a rate approximately equal to the exhaust air rate. Makeup air systems may provide makeup air with active, fan-powered systems; passive systems which are ducted and interlocked with a central fan; or a combination of the two. Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to operate simultaneously with the exhaust system. Alternate makeup air rates and passive systems which are not interlocked with a central fan are permitted when specified by a registered design professional or sized and installed in accordance with manufacturer's instructions to prevent hazardous depressurization levels in the building.</u>	Make-up air for high capacity range hoods is a complicated topic which intermingles the need to replace exhausted house air, the need to maintain safe pressure levels in the home, and the need to condition and distribute the incoming air stream. The proposed language offers some design flexibility in terms of incorporating passive (non fan-powered) make-up systems like an inter-locked fresh air damper which opens when the range hood operates. This type of design flexibility is necessary and helpful to builders and mechanical contractors.		
100	Josh Jacobs GREENGUARD Environmental Institute GREENGUARD Environmental Institute	Add New Section Add new as follows	<u>901.12 Total VOC Limit. A minimum of 50 percent of all products addressed in Sections 901.6, 901.7, 901.8, 901.9, and 901.11 shall have a Total Volatile Organic Compounds (TVOCs) emission limit of less than or equal to 500 ug/m³. The test methodology used to determine compliance shall be from CDPH/EHLB/Standard Method v1.1 "Standard Method for The Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.1" dated February 2010. The emissions testing shall be performed by a laboratory that has the CDPH/EHLB/Standard Method v1.1 in the scope of its ISO 17025 accreditation.</u> 10 Points	Within sections 901.6 – 901.9 and 901.11 there are emission requirements that state some form of, 'Emissions shall be determined according to CDPH 01350. While we agree that CA 01350 is a good starting point to determine the potential harmful emissions from products utilized in the indoor space, it is not adequate in determining the complete picture of what could be emitted. Limiting the assessment of volatile organic compounds (VOC) emissions levels to a limited set of data on individual chemicals - fewer than 35 compounds – could lead to a false sense of security. With products capable of emitting more than 10,000 different chemicals, this approach does not account for the thousands of chemicals that have not undergone a thorough risk assessment. The chemicals that are assessed are those from California's Office of Environmental Health Hazard Assessment (OEHHA) Chronic Reference Exposure Levels (CRELs) list. This list of chemicals is being considered in lieu of a total volatile organic compound (TVOC) criteria, when it should be considered in conjunction. In fact of the top 100 chemicals most commonly found emitting from man-made products only 11 of them have a CREL. This leaves 89 of the most common chemicals emitting from man-made products as not being limited by this standard. Thus, referencing the CREL list only may miss many potentially harmful indoor air pollutants. There are many countries around the world that use a TVOC measurement along with individual chemical levels as a pass/fail criterion for new buildings. In fact, the European Union's European Commission Joint Research Centre, Report No 27: Harmonisation framework for indoor material labeling schemes in the EU, states in part: "TVOC should not be used alone as an indicator for evaluating health effects from indoor material emissions. A common approach for TVOC definition along with an upper limit for TVOC should be established, while it is known that TVOC per se is not linked with health		

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				<p>outcomes, a low limit value for TVOC of e.g. 0.2 mg/m3 indicates that the risk for any harmful emissions is presumably low." The standard should include a Total Volatile Organic Compound (TVOC) limit on the emissions from the relevant products, in addition to the California CRELs. While it is recognized that TVOC should not be used as an indicator of health effects, it is a useful tool in estimating and potentially reducing the indoor pollutant load. Many of the products that are commonly used in our indoor environments meet CREL limit criteria, yet still emit high total levels of VOCs (which may include potentially harmful chemicals). Limiting the amount of TVOCs in a given product follows the precautionary principle, which implies that there is a responsibility to intervene and protect the public from exposure to harm where scientific investigation discovers a plausible risk in the course of having screened for other suspected causes. Only a small percentage of the chemicals observed indoors and emitting from building materials, finishes and furnishings have been evaluated for their health effects, thus combining the use of TVOC and individual chemicals measurement (where the individual chemicals have been assessed for their health effects) will accomplish the goal of being as protective as reasonably possible. By making 809.2.4 a requirement within section 901, you would be able to help ensure that at least 50% of all products within sections the named sections are having their total chemical load minimized. Additionally the referenced test method - CDPH/EHLB/Standard Method V1.1 – already requires the listing of TVOC emissions so this would not be detrimental to any products currently undergoing this test.</p>		
277	Kelly Wedell US EPA US EPA	Add New Section Add new as follows	<p><u>Building product chemical inventory.</u> For all new homes, the builder should be required to provide the inventory of building product chemicals to the new home owner so they have access to this information (beyond the builder just collecting the information for credit purposes only)</p> <p>Chemical constituents shall be inventoried as follows:</p> <p><u>(a) Life-cycle Inventory for the manufacture of an article: all chemical constituents intentionally added, to the extent known or reasonably ascertainable, in the manufacture of an article. An article is a manufactured item that is formed to a specific shape or design and the products final end-use function is dependent on the shape or design, with the exception of cutting; and, there is no change in chemical composition upon end use of the article or only those changes that has no commercial purpose separate from that of the article. The inventory shall identify, to the extent known or reasonably ascertainable, intermediate chemicals that may be wholly or partially consumed in the manufacture of an article and/or, process chemicals that may end up in manufacturing effluent or otherwise released if not intended to remain incorporated as part of the final product for the intended life of the product; and,</u></p> <p><u>(b) Final Product Inventory: all chemical constituents intentionally added or otherwise known or anticipated to be present at 100 ppm (0.01% w/w) or greater in a finished article. Or,</u></p> <p><u>(c) Life-cycle Inventory for the formulated product or mixture: all chemical constituents intentionally added, to the extent known or reasonably ascertainable, in the manufacture of a formulated product or mixture. A formulated product or mixture is one that is anticipated to further chemically react upon end use, such as paints, caulk, adhesives etc. The inventory shall identify, to the extent known or reasonably ascertainable, intermediate chemicals that may be wholly or partially consumed in the manufacture of an article and/or, process chemicals that may end up in manufacturing effluent or otherwise released; and,</u></p> <p><u>(d) Final Product Inventory for the formulated product or mixture: all chemical constituents intentionally added or otherwise known or anticipated to be present at 100 ppm (0.01% w/w) or greater in a formulated product; with the exception that there is no inventory limit on chemical constituents present, including impurities</u></p>	<p>Exposure to toxic chemicals is an important environmental issue that to date has not been given the attention it deserves by the green building community. This is in part due to the complexity of the issues involved and the relative lack of scientific data on, and commercial substitutes for, certain specific chemicals widely in use. Nonetheless, EPA's position is that there is a sufficient scientific basis for NAHB to include several toxics-related practices. We suggest that NAHB add several practices to minimize chemical and other life-cycle risks to human health and the environment.</p>		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p><u>and byproducts, which have been determined to be health hazards if there is evidence that the constituent(s) could be released from a product or released from use of a product in concentrations which could present a health risk to building occupants, as well as employees. See also OSHA MSDS listing requirements for workers at 1910.1200(g)(2)(i)(C).</u></p> <p><u>Each constituent included in an inventory of an article or a chemical formulation or mixture shall be identified by its unique Chemical Abstract Service (CAS) number and CAS nomenclature.</u></p> <p><u>Alternatively, address chemical content as follows:</u></p> <p><u>Determination of chemical content shall be based upon chemicals that are intentionally added to the product and/or known to occur in the product as a result of chemical reactions during manufacture. Determination of chemical content shall not be based upon chemicals that are acknowledged trace containments or those present at environmental background levels, as consistent with the Occupational Health and Safety Administration's regulations.</u></p> <p><u>Determination of chemical content shall be based upon one or more of the following:</u></p> <ol style="list-style-type: none"> <u>1. Data provided by a manufacturer, including a Material Safety Data Sheet (MSDS) and/or its corresponding labels and directions.</u> <u>2. Data provided by a related professional or trade organization.</u> <u>3. Data provided by independent testing laboratory or academic review.</u> <u>4. Data provided by State or local health or research authorities</u> <u>5. On-site testing, sampling or evaluation</u> <p><u>For materials consisting of recycled content, a range of possible content levels for polymers, composites, and metals should be provided.</u></p>			
278	Kelly Wedell US EPA US EPA	Add New Section Add new as follows	<p>Chapter 9- Proposed language is as follows:</p> <p><u>Carcinogens.</u> <u>Final products (articles) shall not contain intentionally added constituents that are deemed to be known or probable carcinogens. Furthermore, the use of a known carcinogen in any manufacturing or processing stages, that is not otherwise intended to become part of the final product, shall be evaluated and safer alternatives considered using EPA's OncoLogic Tool or another.</u></p> <p><u>PBTs.</u> <u>Final product s (articles) shall not contain intentionally added constituents that are deemed to be persistent, bioaccumulative, and toxic compounds. Furthermore, the use of a known PBT in any manufacturing or processing stages, that is not otherwise intended to become part of the final product, shall be evaluated and safer alternatives considered using EPA's PBT Profiler Tool or another.</u></p> <p><u>Reproductive toxicants.</u> <u>Final product (articles) shall not contain intentionally added constituents that are known reproductive or developmental toxicants as defined by either the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Prop 65) or EU Risk Phrases (R60: May impair fertility or R61: May cause harm to the unborn child). Furthermore, the use of a known reproductive or developmental toxicant in any manufacturing or processing stages, that is not otherwise intended to become part of the final product, shall be evaluated and safer alternatives considered using EPA's forthcoming AIM Tool.</u></p> <p><u>Certifier should provide certification has met the conditions of this practice and have documentation indicating evaluation and use of alternatives.</u></p> <p>Carcinogen references include the following:</p> <p>Annual Report on Carcinogens, National Toxicology Program (NTP): http://ehis.niehs.nih.gov/roc/toc10.html A – Known to be Human Carcinogens B – Reasonably Anticipated to be Human Carcinogens</p>	<p>Exposure to toxic chemicals is an important environmental issue that to date has not been given the attention it deserves by the green building community. This is in part due to the complexity of the issues involved and the relative lack of scientific data on, and commercial substitutes for, certain specific chemicals widely in use. Nonetheless, EPA's position is that there is a sufficient scientific basis for NAHB to include several toxics-related practices. We suggest that NAHB add several practices to minimize chemical and other life-cycle risks to human health and the environment. Specifically, EPA suggests adding several practices to encourage safer, less persistent, less bioaccumulative, and less toxic chemical substances in products and processes as a new section in Chapter 9.</p>		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>EPA Integrated Risk Information System (IRIS): Carcinogens List http://www.epa.gov/iris "Carcinogenic to Humans" "Likely to Be Carcinogenic to Humans"</p> <p>International Agency for Research on Cancer(IARC): Group 1(Carcinogenic to Humans), Group 2A (Probably Carcinogenic to Humans), and Group 2B (Possibly Carcinogenic to Humans) chemicals. http://monographs.iarc.fr/ENG/Classification/index.php</p> <p>PBT Chemicals can be taken from the Stockholm Convention (POPs) and U.S.–Canada Bi-National List, TRI PBT list, Waste Minimization Priority Chemicals; evaluate other chemicals through tools such as the PBT Profiler and avoid "high concern" chemicals.</p>			
289	Kelly Wedell US EPA US EPA	Add New Section Add new as follows	<p><u>Ban of Asbestos within new facilities:</u> <u>Final products (articles) to be installed in new residential buildings shall not contain asbestos</u></p> <p><u>Addition and Renovation Note:</u> <u>Inspect building for asbestos-containing building material on an ongoing basis, and prepare a management plan to prevent or reduce asbestos hazards. The building inspection and management plan shall satisfy the requirements under the implementing rules of the Asbestos Hazard Emergency Response Act (AHERA) for schools, as published in the Code of Federal Regulations, Chapter 40, Part 763, Subpart E. All buildings, regardless of building type, shall meet these requirements.</u></p> <p><u>Before undertaking demolishing or renovating activities, notify the appropriate authorities as required by the Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP), found at 40 CFR Part 61, Subpart M. Dispose of any asbestos waste in accordance with the regulations. If minimum amounts of regulated asbestos will be removed or disturbed, such that the demolition or renovation activity does not trigger the requirements of the regulation, the owner/operator must adequately wet and carefully remove the asbestos components, keeping them wet until collected for disposal.</u></p> <p><u>Reporting: Provide a copy of inspection results and all documentation required under AHERA regulations. Provide documentation of all disposal measures, including disposal companies used and final destination of waste materials.</u></p>	<p>Given that the standard has requirements intended for renovations and additions to existing buildings, many of which contain legacy chemicals of concern, EPA would like to see the renovation process trigger verification that asbestos is addressed as suggested as additions to Chapter 9.</p> <p><i>(NAHB RC Note: This proposed change is also provided to TG-7 to approve the remodeling portion)</i></p>		
179	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p><u>Indoor Environmental quality protection during construction. Building is ventilated with outside air during and shortly after installing products that are known sources of contaminants (e.g., cabinets, carpet padding, and painting), meeting EPA's Indoor airPLUS ventilation requirements for outdoor air flow and humidity control described in Specs 4.5 and 4.8.</u></p>	<p>Indoor environmental quality protection during construction. NAHB's practices on pollutant source control in section 901 are generally strong in terms of setting appropriate emission limits for various materials. However, even when relatively low-emitting materials are used, it is important to take further steps to protect occupants' health, specifically by providing adequate ventilation to flush out contaminants prior to occupancy. We recommend the above language, which should be added to section 901 as a new MANDATORY practice. For reference, EPA's Indoor airPLUS Specifications can be viewed at http://www.epa.gov/indoorairplus/construction_specifications.html.</p>		
180	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	Add New Section Add new as follows	<p><u>902.7. Pest barriers.</u> Pest barriers are created compliant with the following pest barrier requirements of the Indoor airPLUS Construction Specifications:</p> <p><u>(1) Minimize pathways for pest entry by sealing penetrations and joints in and between the foundation and exterior wall assemblies with blocking materials, foam, and polyurethane caulk or the equivalent (Spec 3.1).</u></p>	<p>Pest barriers. In addition to the integrated pest management plan set forth in 503.5.8, the standard should establish practices to encourage structural efforts at pest control. EPA recommends the above language, to be added as a new practice in Section 902.</p>		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p><u>(2) Provide corrosion-proof rodent/bird screens (e.g., copper or stainless steel mesh) for all building openings that cannot be fully sealed and caulked, including ventilation system intake/exhaust outlets and attic vent openings (Spec 3.2).</u></p>			

TG-4: Water Efficiency

Chapter 3 – Compliance Method

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
903	Steve Williams Buildinggreener LLC Self	303.1 Green buildings	In Table 303 Water Efficiency the points should be doubled from 60 to <u>120</u>	All of the other categories except for operations are 120 or above. This could help water get more respect on a psychological level. Water efficiency as little in the way of incentives except at the municipal level with the price most people pay for it.		

Chapter 8 – Water Efficiency

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
924	Bill Klapproth Next Level Glenronics, Inc.	801.0 Intent (Indoor and Outdoor Water Use)	Water-Powered Sump Pumps – water-powered sump pumps or any other device that involves a cross connection between potable water systems, to pump out storm water from a basement sump pit, is prohibited from installation.	during rainstorms, stormwater beneath people’s basements build up, and is funneled into basins called “sump pits.” From there, a sump pump, pumps this dirty stormwater outside the house. The problem occurs when the power goes out and the primary sump pump (that’s plugged into the wall) no longer works. That’s when people turn to their water- powered sump pump to get the rising water out of their sump pit before it overflows – flooding a homeowner’s basement. Water-powered sump pumps connect directly to the fresh drinking water supply line of a house, or in some circumstances, homeowners connect the pump with a rubber garden hose to a nearby faucet. When the pump is activated, approximately 600 gallons of fresh drinking water per hour is released in the sump pit. Most of these models then pull up 1 gallon of contaminated storm water, for each gallon of fresh water used, and deposits the water outside, right down the sewer. Depending on how often a water-powered sump pump is activated to pump rainwater out of a basement sump pit, it can waste between 10,000 and 32,000 gallons of our precious fresh drinking water per year! There are no official records on how many of these water-powered pumps are in operation in the United States, estimates range from 20,000 to 100,000 units. If we split the difference and say 60,000, and on average each one wastes 15,000 gallons per year, that’s 90 million gallons of water wasted: 90 million gallons! The EPA says that the average person must consume 2.5 quarts of water per day to maintain health, which equals 228 gallons per year. If you take 90 million gallons of water wasted, divided by 228, that equals 394,736 people. That’s enough fresh drinking water to supply the entire city of Minneapolis with clean drinking water every year!! Not only do they waste precious drinking water, they pose a serious health risk to the homeowner. Since all water-powered pumps must be connected directly to the water supply, they must have backflow protection - unfortunately, many are installed without this. In times of heavy demand, when there’s a low pressure situation, contaminated water may be sucked back into the fresh water drinking supply, causing a health risk! In the December 2008 edition of the PHCC (plumbing- heating-cooling contractors) Connection, PHCC president Joe Schmitt alerted contractors to this fact - and explained how backflow and RPZ devices are critical to public health. "A mistake (in installing backflow devices) could take a life, a family, or the whole neighborhood." That’s why we feel these pumps MUST not be allowed to be installed – just by the nature of using fresh drinking water to pump out storm water is not smart. These pumps are NOT GREEN they waste water and pose a potential health risk to the homeowner and should be banned.		
509	Robert Hill NAHB Research Center	801.1 Indoor Hot Water Usage Add new as follows	801.1.1 Indoor hot water usage is reduced by one of the following practices: (points only awarded for one of the items.)	Clarify the practice		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
	NAHB Research Center		<p>(1) All hot water piping that runs to the plumbing fixtures in both <u>all</u> the kitchens and bathrooms is 40 feet (12192 mm) or less in length from the water heater and is sized in accordance with the code for the specified application.</p> <p>(2) All hot water piping that runs to the plumbing fixtures in both <u>all</u> the kitchens and bathrooms is 30 feet (9144 mm) or less from the water heater and is sized in accordance with the code for the specified application.</p> <p>(3) One of the following piping system designs is implemented:</p> <p>(a) use of structured-type plumbing with demand controlled hot water loops, in which the volume of water contained in the pipe and fixture fittings downstream of the recirculating trunk line is a maximum of 4 cups (0.95 liters) (57.75 cubic inches) (0.25 gallons), or</p> <p>(b) engineered parallel piping system (i.e. manifold system) in which the hot water line distance from the water heater to the parallel piping system is less than 15 feet (4570 mm) and the parallel piping to the <u>any</u> fixture fittings contains a maximum of 8 cups (1.89 liters) (115.50 cubic inches) (0.50 gallons), or</p> <p>(c) central core plumbing system with all plumbing fixture fittings (e.g., faucets, showerheads) located such that the volume of water contained in each pipe run between the water heater and <u>any</u> fixture fitting is a maximum of 6 cups (1.42 liters) (86.63 cubic inches) (0.38 gallons).</p>			
510	Robert Hill NAHB Research Center NAHB Research Center	801.1 Indoor Hot Water Usage Revise as follows	(1) All hot water piping that runs to the plumbing fixtures in both <u>all</u> the kitchen and bathrooms is 40 feet (12192 mm) or less in length from the water heater and is sized in accordance with the code for the specified application.	clarify the practice.		
511	Robert Hill NAHB Research Center NAHB Research Center	801.1 Indoor Hot Water Usage Revise as follows	(2) all hot water piping that runs to the plumbing fixtures in both <u>all</u> the kitchen and bathrooms is 30 feet (9144 m) or less from the water heater and is sized in accordance with the code for the specified application.	Bob to complete.		
512	Robert Hill NAHB Research Center NAHB Research Center	801.1 Indoor Hot Water Usage Revise as follows	(3)(b) engineered parallel piping system (i.e. manifold system) in which the hot water line distance from the water heater to the parallel piping system is less than 15 feet (4570 mm) and the parallel piping to the <u>any</u> fixture fittings contains a maximum of 8 cups (1.89 liters) (115.50 cubic inches)(0.50 gallons),	Bob to complete.		
513	Robert Hill NAHB Research Center NAHB Research Center	801.1 Indoor Hot Water Usage Revise as follows	(3)(c) central core plumbing system with all plumbing fixture fittings (e.g., faucets, showerheads) located such that the volume of water contained in each pipe run between the water heater and <u>any</u> fixture fitting is a maximum of 6 cups (1.42 liters) (86.63 cubic inches) (0.38 gallons).	Bob to complete.		
101	Steve Hale Build Green NM Build Green NM	801.1 Indoor Hot Water Usage Revise as follows	801.1.1 (1)	Run length doesn't work in the field. Distance is better. Plumbers don't usually waste material and take extra long routes but need to coordinate with other trades on the job which sometimes adds a bend or 2 that wasn't forseen on the plan set. Also, reducing the number by 8 feet accounts for the up and downs and the difficulty in being able to do B-lines between the two. (Also, grammatically, "is" should be "are" as the subject is plural).		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>All hot water piping that runs to the plumbing fixtures in both the kitchen and bathrooms is are 40-32 feet (12,192 9,754 mm) or less in length from the water heater and is sized in accordance with the code for the specified application</p>			
102	Steve Hale Build Green NM Build Green NM	801.1 Indoor Hot Water Usage Revise as follows	801.1.1 (2) All hot water piping that runs to the plumbing fixtures in both the kitchen and bathrooms is are 30-24 feet (9144 7,315 mm) or less from the water heater and is sized in accordance with the code for the specified application.	Run length doesn't work in the field. Distance is better. Plumbers don't usually waste material and take extra long routes but need to coordinate with other trades on the job which sometimes adds a bend or 2 that wasn't forseen on the plan set. Also, reducing the number by 8 feet accounts for the up and downs and the difficulty in being able to do B-lines between the two. (Also, grammatically, "is" should be "are" as the subject is plural).		
103	Steve Hale Build Green NM Build Green NM	801.1 Indoor Hot Water Usage Revise as follows	801.1.1 (3) (a)use of structured-type plumbing with demand-controlled hot water loops, in which the distance to all plumbing fixtures receiving the hot water is not more than 40 feet from the recirculating trunk line and the smallest diameter pipe allowed by code is used. volume of water contained in the pipe and fixture fittings downstream of the recirculating trunk line is a maximum of 4 cups (0.95 liters) (67.75 cubic inches) (0.25 gallons), or	The cup measure has proven diffult, somewhat for the same reason above and somewhat 'cause the industry isn't used to it. The industry not being used to it is not so much of a reason as they can get used to it but given the realities of what happens in the field, I would again use a distance from equipment to fixture lenght for these.		
104	Steve Hale Build Green NM Build Green NM	801.1 Indoor Hot Water Usage Revise as follows	<p>801.1.1 (3) (b)</p> <p>engineered parallel piping system (i.e., manifold system) in which the hot water line distance from the water heater to the parallel piping system is less than 15 feet (4570 mm) and the distance to all plumbing fixtures receiving the hot water is not more than feet from the beginning of the parallel piping system and uses the smallest diameter piping allowed by code and the parallel piping to the fixture fittings contains a maximum of 8 cups (1.89 liters) (115.50 cubic inches) (0.50 gallons), or</p>	The cup measure has proven diffult, somewhat for the same reason above and somewhat 'cause the industry isn't used to it. The industry not being used to it is not so much of a reason as they can get used to it but given the realities of what happens in the field, I would again use a distance from equipment to fixture lenght for these.		
105	Steve Hale Build Green NM Build Green NM	801.1 Indoor Hot Water Usage Revise as follows	<p>801.1.1 (3) (c)</p> <p>central core plumbing system with all plumbing fixture fittings (e.g., faucets, showerheads) located such that the distance between the central core plumbing system and all fixtures receiving hot water is no greater than feet and that the smallest diameter pipe allowed by code is used. volume of water contained in each pipe run between the water heater and fixture fitting is a maximum of 6 cups (1.42 liters) (86.63 cubic inches) (0.38 gallons).</p>	The cup measure has proven diffult, somewhat for the same reason above and somewhat 'cause the industry isn't used to it. The industry not being used to it is not so much of a reason as they can get used to it but given the realities of what happens in the field, I would again use a distance from equipment to fixture lenght for these.		
106	Steve Hale	801.1 Indoor Hot	801.1.1 (4)	Run length doesn't work in the field. Distance is better. Plumbers don't		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
	Build Green NM Build Green NM	Water Usage Revise as follows	Pipe runs distances between heating equipment and fixtures exceeding 40 32 feet (42,492 9,754 mm) from the water heater to fixture locations are aided by one of the following:	usually waste material and take extra long routes but need to coordinate with other trades on the job which sometimes adds a bend or 2 that wasn't forseen on the plan set. Also, reducing the number by 8 feet accounts for the up and downs and the difficulty in being able to do B-lines between the two.		
107	Steve Hale Build Green NM Build Green NM	801.1 Indoor Hot Water Usage Revise as follows	801.1.1 (4) (b) on-demand hot water recirculation system is installed with a water temperature sensor turn-off.	On-demand can be interpreted as on a timer where it goes on whether or not the hot water is needed. On-demand needs to be defined as with a manual switch of some sort and then it should shut off as soon as the water at the fixture meets a certain temperature.		
108	Steve Hale Build Green NM Build Green NM	801.1 Indoor Hot Water Usage Revise as follows	801.1.1 (4) (b) Points for Addition Note: Mandatory 0 Additional Points	It doesn't make sense that this items is optional for new construction but mandatory for additions.		
926	Jeremy Williams Timber Products Inspection Timber Products Inspection	801.2 ENERGY STAR Water Conserving Appliances	Multi-family - Laundry facilities are provided on-site where Energy Star or equivalent water conserving appliances are installed.	Points should be awarded to multi family builders who do not provide washing machines in each unit, but who do provide laundry facilities for the entire complex which contain Energy Star washing machines.		
109	Steve Hale Build Green NM Build Green NM	801.2 Water Conserving Appliances Revise as follows	801.2 (2) washing machine <u>OR</u>	Suggest making this that you can take points for either this item (2) or the next, (3), but not both so someone with a water factor less than 6.0 can't claim 20 points.		
110	Steve Hale Build Green NM Build Green NM	801.2 Water Conserving Appliances Revise as follows	801.2 (2) Addition and Renovation Note: replace existing washing machine <u>OR</u>	Suggest making this that you can take points for either this item (2) or the next, (3), but not both so someone with a water factor less than 6.0 can't claim 2 additional points.		
927	Jeannie Sikora Jeannie Leggett Sikora self	801.3 Food Waste Disposal	801.3 Food waste disposer at primary kitchen sink. — 4 4	I do not understand how a food waste disposal system contributes to minimizing water use in a home. In fact, because water needs to be run while the disposal is operating, it contributes to unnecessary water use. Further, food in disposals increases the biological oxygen demand on a water treatment plant and, hence, does not seem to merit environmental sustainability points.		
308	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	801.3 Food Waste Disposers Delete without substitution	Delete 801.3	This device should not be in the standard unless it can be shown that it actually uses less water than other methods of food waste disposal. Other options, like composting, are preferable.		
112	Steve Hale Build Green NM	801.3 Food Waste Disposers	801.3	This does not save water as you have to run the water while the food waste dispenser is operating. Also, it is not recommended for septic		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action																						
	Build Green NM	Delete without substitution	<p>Food Waste Disposers. A minimum of one food waste dispenser is installed at the primary kitchen sink.</p>	systems as it interferes with their breakdown process.																								
342	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	801.4 Showerheads Add new as follows	<p>Replace section 801.4 to 801.6 with text below and add appropriate points. <u>Fixture and fitting flow rates. Fixtures and fitting shall comply with the maximum flow rates as applicable in Table.</u></p> <table border="1"> <thead> <tr> <th colspan="2">TABLE: MAXIMUM FIXTURE AND FITTING FLOW RATES</th> </tr> <tr> <th>FIXTURE OR FIXTURE FITTING TYPE</th> <th>MAXIMUM FLOW RATE</th> </tr> </thead> <tbody> <tr> <td>Showerhead^e</td> <td>2.0 gpm</td> </tr> <tr> <td>Lavatory faucet and bar sink - private</td> <td>1.25 gpm</td> </tr> <tr> <td>Lavatory faucet-public (metering)</td> <td>0.25 gpc^d</td> </tr> <tr> <td>Lavatory faucet-public (nonmetering)</td> <td>0.5 gpm^e</td> </tr> <tr> <td>Kitchen faucet-private</td> <td>2.2 gpm^e</td> </tr> <tr> <td>Kitchen and bar sink faucets in other than dwelling units and guest rooms</td> <td>2.2 gpm^e</td> </tr> <tr> <td>Urinal</td> <td>0.5 gpf or nonwater urinal</td> </tr> <tr> <td>Water closet</td> <td>1.6 gallons per flush^a</td> </tr> <tr> <td>Water closet-private</td> <td>1.28 gpf</td> </tr> </tbody> </table> <p>a. The effective flush volume of a dual-flush watercloset is defined as the composite average flush volume of two reduced flushes and one full flush. d. Gallons per cycle e. Includes hand showers, body sprays, rainfall panels and jets. Showerhead(s) shall be supplied by automatic compensating valves that comply with ASSE 1016 or ASMEA112.18.1/CSA B125.1 and that are specifically designed to function at the flow rate of the showerheads being used. Reduction prohibited. The flow rates for emergency and decontamination fixtures and fittings shall not be reduced below the specifications of ANSI/ISEA Z358.1. Showerhead performance. Showerheads shall have a manufacturer's designation as complying with EPA8**R100**. Watercloset performance. Water closets shall have a manufacturer's designation as complying with EPA 800R07010. EPA EPA-800R07010 Water Sense Tank-Type High-Efficiency Toilet Specification, Appendix A: HET Fixture Performance Testing Protocol, Section 4.0 Flush Performance Criteria, Version 1, January 24, 2007. EPA-8**R10*** Water Sense Specification for Showerheads Version 1, March 4, 2010, Appendix A: Spray Force Procedure and Appendix B: Spray Coverage Procedure.</p>	TABLE: MAXIMUM FIXTURE AND FITTING FLOW RATES		FIXTURE OR FIXTURE FITTING TYPE	MAXIMUM FLOW RATE	Showerhead ^e	2.0 gpm	Lavatory faucet and bar sink - private	1.25 gpm	Lavatory faucet-public (metering)	0.25 gpc ^d	Lavatory faucet-public (nonmetering)	0.5 gpm ^e	Kitchen faucet-private	2.2 gpm ^e	Kitchen and bar sink faucets in other than dwelling units and guest rooms	2.2 gpm ^e	Urinal	0.5 gpf or nonwater urinal	Water closet	1.6 gallons per flush ^a	Water closet-private	1.28 gpf	This expands the fixture and faucet items. Points will need to be assigned. Performance requirements are added for shower heads and toilets. Key specifications for WaterSense are extracted and put directly into the table. This table presumes ICC 700 applies to multifamily.		
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186	Dan Buuck NAHB NAHB	801.4 Showerheads Revise as follows	<p>801.4 Showerheads. Showerheads are in accordance with the following:</p> <table border="1"> <tbody> <tr> <td>(1) The total showerhead flow rate at any point in time in each shower compartment is 1.6 to less than 2.5 gpm. The total flow rate is tested at 80 psi (552 kPa) in accordance with ASME A112.18.1. Showers are equipped with an automatic compensating valve that complies with ASSE 1016 or ASME A112.18.1 and specifically designed to provide thermal shock and scald protection at the flow rate of the showerhead. (Points awarded per showerhead.)</td> <td>1 3 Points Max</td> </tr> <tr> <td>(2) All showerheads meet the requirements of 801.4(1). In addition, all showerheads are in compliance with either</td> <td></td> </tr> </tbody> </table>	(1) The total showerhead flow rate at any point in time in each shower compartment is 1.6 to less than 2.5 gpm. The total flow rate is tested at 80 psi (552 kPa) in accordance with ASME A112.18.1. Showers are equipped with an automatic compensating valve that complies with ASSE 1016 or ASME A112.18.1 and specifically designed to provide thermal shock and scald protection at the flow rate of the showerhead. (Points awarded per showerhead.)	1 3 Points Max	(2) All showerheads meet the requirements of 801.4(1). In addition, all showerheads are in compliance with either		Editorial change to the section number referred to in the Addition and Renovation Note.																				
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(2) All showerheads meet the requirements of 801.4(1). In addition, all showerheads are in compliance with either																												

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			<table border="1"> <tr> <td>801.4(2)(a) or 801.4(2)(b).</td> <td></td> </tr> <tr> <td>(a) 2.0 to less than 2.5 gpm</td> <td>1 Additional Point</td> </tr> <tr> <td>(b) 1.6 to less than 2.0 gpm</td> <td>2 Additional Points</td> </tr> <tr> <td>For SI: 1 gallon per minute = 3.785 L/m</td> <td></td> </tr> <tr> <td>Addition Note: Section 801.4 applies only to additions that include a minimum of one bath or shower.</td> <td>0 Additional Points</td> </tr> <tr> <td>Renovation Note: Section 801.4 applies only to renovations that include one or more bathrooms with a bath or shower. (Points awarded per fixture.)</td> <td>1 Additional Point</td> </tr> <tr> <td>Addition and Renovation Note: Existing showerhead is replaced with a showerhead that has a flow rate in accordance with Section 801.4. (Points awarded per additional showerhead.)</td> <td>1 Additional Point</td> </tr> </table>	801.4(2)(a) or 801.4(2)(b).		(a) 2.0 to less than 2.5 gpm	1 Additional Point	(b) 1.6 to less than 2.0 gpm	2 Additional Points	For SI: 1 gallon per minute = 3.785 L/m		Addition Note: Section 801.4 applies only to additions that include a minimum of one bath or shower.	0 Additional Points	Renovation Note: Section 801.4 applies only to renovations that include one or more bathrooms with a bath or shower. (Points awarded per fixture.)	1 Additional Point	Addition and Renovation Note: Existing showerhead is replaced with a showerhead that has a flow rate in accordance with Section 801.4. (Points awarded per additional showerhead.)	1 Additional Point			
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516	Robert Hill NAHB Research Center NAHB Research Center	801.4 Showerheads Revise as follows	<p>801.4 Showerheads. The maximum total showerhead flow rate at any point in time in each a shower compartment is in accordance with Section 801.4(1) or 801.4(2). The total flow rate is tested at 80 psi (552 kPa) in accordance with ASME A112.18.1. Showers are equipped with an automatic compensating valve that complies with ASSE 1016 or ASME A112.18.1 and specifically designed to provide thermal shock and scald protection at the flow rate of the showerhead.</p> <table border="1"> <tr> <td>(1) 2.0 to less than 2.5 gpm (Points awarded per showerhead shower compartment.)</td> </tr> <tr> <td>(2) 1.6 to less than 2.0 gpm (Points awarded per showerhead shower compartment.)</td> </tr> <tr> <td>(3) All showerheads shower compartments in the dwelling unit are 2.0 to less than 2.5 gpm</td> </tr> <tr> <td>(4) All showerheads shower compartments in the dwelling unit are 1.6 to less than 2.0 gpm</td> </tr> </table>	(1) 2.0 to less than 2.5 gpm (Points awarded per showerhead shower compartment.)	(2) 1.6 to less than 2.0 gpm (Points awarded per showerhead shower compartment.)	(3) All showerheads shower compartments in the dwelling unit are 2.0 to less than 2.5 gpm	(4) All showerheads shower compartments in the dwelling unit are 1.6 to less than 2.0 gpm	Clarify the practice.												
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113	Steve Hale Build Green NM Build Green NM	801.4 Showerheads Add new as follows	<p>804.1 (2)</p> <table border="1"> <tr> <td>Manual shower shutoff (2 points per shutoff)</td> </tr> </table>	Manual shower shutoff (2 points per shutoff)	Suggest new point to encourage "military showers". This keeps the water valves at the desired setting for temperature and just shuts off the flow.															
Manual shower shutoff (2 points per shutoff)																				
521	Robert Hill NAHB Research Center NAHB Research Center	801.5 Faucets Revise as follows	<p>(1) a bathroom (all faucets in a bathroom must comply) (2) all lavatory faucets in the dwelling unit</p>	Clarify the practice.																
181	Susan Gitlin US Environmental Protection Agency US Environmental Protection Agency	801.5 Faucets Add new as follows	<p>-- All faucets (kitchen and lavatory) must be certified under NSF/ANSI 61 and other applicable health-based regulations.</p> <p>All in-line plumbing components not considered an "end point device" must meet at a minimum, certification under NSF/ANSI 61 and other applicable state and national standards.</p> <p>All plumbing components located within the last 1-L water volume from the tap must be certified under the appropriate sections of NSF/ANSI 61.</p> <p>All pipe/tubing must meet NSF/ANSI 61 within and leading to the structure.</p> <p>If copper tubing is to be used, influent water quality should not permit copper levels to</p>	This chapter - the entire standard, in fact -- shows no integration of water quality concerns, and the relationship between water conservation and the impact on water contamination brought about by the potential leaching of metals from plumbing components and piping materials in general, and the enhancement of the potential degradation and the increased potential for unhealthy microbial growth brought about by the prolonged contact of the drinking water with the plumbing materials created by the use of water conservation devices. These issues could be incorporated it into the existing chapter and as added sections under a new chapter title of "Water Quality and Efficiency." The water quality implications of the plumbing material specifications and the operational concerns relate equally to new construction as well as renovations. All of the language that is suggested above should be mandatory practices.																

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			<p>exceed 2 mg/L (acute health effects limit, need to get exact reference, possibly from Joyce Donohue) under operational conditions. (Note from author: If you need an approximate guideline, I would offer pH > 7 and alkalinity < 200 mg/L as CaCO₃.)</p> <p>Operational conditions should not allow the loss of disinfection or the growth of unhealthy biofilms.</p>			
522	Robert Hill NAHB Research Center NAHB Research Center	801.6 Water Closets/Urinals Revise as follows	(For water closets, Total points awarded for either both Section 801.6 or 802.2 not both cannot exceed 24 points.)	Clarify the practice and allow a combination of composting and low gpf units.		
523	Robert Hill NAHB Research Center NAHB Research Center	801.6 Water Closets/Urinals Revise as follows	(2) A water closet installed with an effective flush volume of 1.28 gallons (4.85 L) or less when tested in accordance with ASME A112.19.2 (all water closets) and or when tested in accordance with ASME A112.19.14 (all dual flush water closets), and is in accordance with EPA WaterSense Tank-Type High-Efficiency Toilet <u>or equivalent</u> .	Clarify the practice.		
524	Robert Hill NAHB Research Center NAHB Research Center	801.6 Water Closets/Urinals Revise as follows	(4) All water closets and all urinals <u>in the dwelling unit</u> are in accordance with Section 801.6(2) or Section 801.6(3), as applicable <u>or are composting or waterless units</u> .	Clarify the practice with respect to multi-unit buildings and to allow a combination of composting and low gpf units.		
114	Steve Hale Build Green NM Build Green NM	801.7 Irrigation Systems Revise as follows	<p>801.7.3</p> <p><u>Group plants with similar watering needs together (hydrozone) and install irrigation system is zoned separately for turf and bedding areas. areas with different watering needs.</u></p>	This should be more specific and not assume that there is any turf area. You should not have turf in arid climates but you should always hydrozone.		
115	Steve Hale Build Green NM Build Green NM	801.7.4 Irrigation System Smart Controller Revise as follows	<p>801.7.4 (1)</p> <p>Evapotranspiration (ET) based irrigation controller with a rain sensor <u>OR</u></p>	Suggest making this that you can take points for either this item (1) or the next two (2) and (3), but not so someone could put in both systems described in (1) and (2) and take 8 points.		
116	Steve Hale Build Green NM Build Green NM	801.7.4 Irrigation System Smart Controller Revise as follows	801.7.4 (2) Soil moisture sensor based irrigation controller <u>OR</u>	Suggest making this that you can take points for either this item (1) or the next two (2) and (3), but not so someone could put in both systems described in (1) and (2) and take 8 points.		
117	Steve Hale Build Green NM Build Green NM	801.7.4 Irrigation System Smart Controller Revise as follows	801.7.4 (3) "CHANGE POINTS" 45 <u>2</u>	This shouldn't be so encouraged as this usually means that people hand water or use sprinklers which are typically less efficient than a system that is designed.		
525	Robert Hill NAHB Research Center NAHB Research Center	801.8 Rainwater Collection and Distribution Revise as follows	Rainwater collection and distribution is provided.	Additional guidance is needed to define the minimum amount/capacity of collection is required to earn these points (e.g. one rain barrel, one barrel at each downspout, x ft3 per ft2 of roof, etc)		
118	Steve Hale Build Green NM Build Green NM	801.8 Rainwater Collection and Distribution Revise as follows	<p>801.8</p> <p>Rainwater Collection and Distribution. Rainwater collection and distribution is provided <u>that has a minimum storage capacity of 500 gallons.</u></p>	There should be a minimum size of storage here so a 2 gallon bucket at the end of the downspout doesn't count.		
119	Steve Hale Build Green NM Build Green NM	801.8 Rainwater Collection and Distribution Add new as follows	801.8 (1) Rainwater is collected and used <u>as follows: (a) 1 gallon per square foot for 100% of the roofed area (12 points) or (b) 1 gallon per square foot for 75% of the roofed area (9 points) or (c) 1 gallon per square foot for 50% of the roofed area (6 points)</u>	Suggest having a graduated point system for larger systems in proportion to the roofed area to encourage greater investment. This is already important for arid areas of the US and is predicted to become more universally important as weather patterns become more extreme and		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action			
				areas that have rarely seen drought conditions experience them more frequently.					
929	Brian Gregson Rainwater Services self	801.8 Rainwater Collection and Distribution	Capture of at least one-inch rainfall for max points. Pro-rate points based on percentage of municipal water usage mitigated by captured rainwater, calculated on a per annum basis.	Currently minimal parameters for this section. The above are suggested items to be discussed and improved upon for future inclusion.					
930	Steve Williams Buildinggreener LLC Self	801.8 Rainwater Collection and Distribution	<i>Please add this Addition and Renovation</i> <u>Rainwater is collected and used - 6 points</u>	Rainwater is a much better form of water for irrigation than gray water. Anytime it can be used for irrigation to make up for the impervious surface it is running off of, it should be collected and used.					
931	Steve Williams Buildinggreener LLC Self	801.8 Rainwater Collection and Distribution	Rainwater is collected and used <u>for outdoor use allowing 6 points for 100% rainwater use and 3 points for 50% rainwater use for all outdoor water usage in systems 300 gallons or larger using The American Rainwater Catchment Systems Association RAINWATER CATCHMENT DESIGN AND INSTALLATION STANDARDS or similar state guide for guidance. 1 point for rainbarrels up to 300 gallons. Tanks cannot be connected to municipal water for back up. Quantities decided by water bill summer and winter usage difference or by irrigation or landscape designer.</u>	By having a parameter based on percentage will allow different size users be fairly rewarded. People will make up the rules when there are none. Municipalities and non profits in GA only promote rainbarrels and most have bad and potentially hazardous designs. When designed and installed properly rainwater harvesting (RH) the water is clean and clear. It allows better plant growth and when used for washing especially cars RH leaves no spotting. If irrigation is installed in new construction then the developer/owner should support the excessive use of water to maintain it. With out some parameters many people will put in small undersized or faulty systems,					
932	Steve Williams Buildinggreener LLC Self	801.8 Rainwater Collection and Distribution	(1) Rainwater is collected and used. (A) Rainwater harvesting system is used to replace 25% of municipal or groundwater 2 points (B) Rainwater harvesting system is used to replace 50% of municipal or groundwater 4 points	Some parameters are need so points will truly earned. By using a percentage then this gives builder wide options as to how to use water to receive points.					
933	Mark Harris LifeSource Water Systems LifeSource Water Systems	801.9 Water Filters	801.9.1 Whole building or whole dwelling water filter unit that has 100% efficiency (does not waste water in production, backwash or regeneration). 2 additional points	The following are the negative environmental facts about these systems: 1. Water softeners waste water. Older technology wastes on average 6000 gallons/year. New technology wastes on average 2500 gallons/year. 2. Water softeners dump chlorides into the waste stream. They have been banned by many communities in California for this reason. See http://www.lacsd.org/info/industrial_waste/chloride_in_santa_clarita/introduction.asp for more info. 3. Since softened water is not safe to drink, reverse osmosis systems are used. These systems waste 3-8 gallons of water for every gallon produced. LifeSource produces an whole house alternative to water softeners, and delivers the following environmental benefits: 1. No salts are chlorides are used. 2. No water is wasted, as the backwash water is potable and directed back into irrigation. 3. Eliminates the need for bottled water, a product which is extremely bad for the environment due to the production and transportation of the plastic bottles, and the fact that over 70% of bottles are not recycled and end up in landfills or the oceans. 4. Our sustainable design is tested and certified to last at least 1.6M gallon, about 16 years for a family of 4. There is no maintenance and no changing and disposing of filter media.					
526	Robert Hill NAHB Research Center NAHB Research Center	802.1 Gray Water Revise as follows	<table border="1"> <tr> <td>802.1 Gray water. Gray water, as specified in ICC IRC, Appendix O is separated and reused, as permitted by local building code. (Points awarded for either 802.1(1) or 802.1(2), not both.)</td> </tr> <tr> <td>(1) each water closet flushed by reclaimed or recycled water (Points awarded per fixture. Max 12 points)</td> </tr> <tr> <td>(2) irrigation from reclaimed or recycled <u>gray</u> water on-site</td> </tr> </table>	802.1 Gray water. Gray water, as specified in ICC IRC, Appendix O is separated and reused, as permitted by local building code. (Points awarded for either 802.1(1) or 802.1(2), not both.)	(1) each water closet flushed by reclaimed or recycled water (Points awarded per fixture. Max 12 points)	(2) irrigation from reclaimed or recycled <u>gray</u> water on-site	Clarify the practice is limited to recycling gray water and not rain water. A maximum point value should be added to (1) since (2) only allows 10 points and this is an either or practice.		
802.1 Gray water. Gray water, as specified in ICC IRC, Appendix O is separated and reused, as permitted by local building code. (Points awarded for either 802.1(1) or 802.1(2), not both.)									
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(2) irrigation from reclaimed or recycled <u>gray</u> water on-site									
934	Steve Williams Buildinggreener LLC Self	802.1 Gray Water	Irrigation from reclaimed or recycled water on-site 40 point 6 points <i>Addition and Renovation</i> <i>Irrigation from reclaimed or recycled water on-site 5 point 3 points</i>	Gray water should not be of anymore importance then rainwater for irrigation. I find gray water to be an environmental liability and should not be used for irrigation unless treated to a non-toxic substance. Bleach is used in some systems and what is put into the systems could contaminate ground water which could contaminate drinking water. The human factor is the concern.					
530	Robert Hill NAHB Research Center	802.2 Composting or Waterless Toilets/Urinals	Composting or waterless toilets and/or urinals are in accordance with the following installed:	Clarify the practice.					

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
	NAHB Research Center	Revise as follows	(For water closets, Total points awarded for either both Section 802.2 or 801.6, not both shall not exceed 24 points.			
120	Steve Hale Build Green NM Build Green NM	802.2 Composting or Waterless Toilets/Urinals Revise as follows	802.3 (Change Points" 2 6	Based on the amount of water that could potentially be saved, this should have more points.		
531	Robert Hill NAHB Research Center NAHB Research Center	802.3 Automatic Shutoff Water Devices Revise as follows	(1) excess water flow <u>automatic shutoff</u> (2) leak detection system <u>with automatic shutoff</u>	Clarify the practice.		
341	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	Add New Section Add new as follows	Rainwater, gray water, and reclaimed water restrictions proposed by Gary Klein and Craig Conner for the IGCC should also be included in ICC 700.	Rainwater, gray water, and reclaimed water represent the "new" sources of water which can work with increase water use efficiency already in the ICC 700.		
147	Randall K. Melvin Winchester Homes Inc. Winchester Homes, Inc.	Add New Section Add new as follows	Recirculation Humidifier Recirculating humidifier used in lieu of traditional "flow through type. 2 points.	Recirculating humidifies can save up several gallons of water per hour inwhen compared to traditional flow through models. to encourage use of less water and energy efficient humidifier types.		
236	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	Entire Chapter 8 Revise as follows	Points for water items should be reassigned based on the estimated water impact.	We are aware that the points for energy were scaled to roughly reflect their overall energy impact. This same principle should be applied to the water points. We understand that this is difficult and requires assumptions. There are many cases in the current language where the points allocated to water related improvements are clearly not related to their impact. A specific example: "801.1 Indoor hot water usage." This assigns points based on the volume of water in the piping between the water heater and the fixtures, which is the key to actually getting the benefits. One method, structured plumbing, allows 4 cups to the fixtures and gets 6 points. Central core plumbing, allows 6 cups, but gets 8 points. Engineered parallel piping, allows 17.5 cups to each fixture, but also gets 6 points. Points are not proportional to their impact on water waste. If they were, engineered parallel piping would get say 3 points, central core plumbing would get 9 points and structured plumbing would get 13 points.		
935	Jennifer Cisneros Bio-Microbics, Inc. self	Other (include section number and title below)	This section does not talk about the use of an advanced wastewater (aerobic) treatment system.	The system produces a high quality secondary effluent at competitive capital and operating costs, which can be sterilized and used for surface irrigation. This allows much greater flexibility in the placement of the leach field (better use of land), as well as cutting the required size of the leach field by as much as half. Other green advantages are energy savings, water savings, and other water re-use options, as well as, nitrogen and phosphorus reduction before this water is reintroduced into the environment.		

TG-5: Energy Efficiency

Chapter 2 – Definitions

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
399	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Mass Walls. Walls constructed of concrete block, concrete, insulated concrete form (ICF), masonry cavity, brick, earth (adobe, compressed earth block, rammed earth), and/or solid timber/logs, with a minimum of 50 percent of the required R-value on the exterior <u>side</u> of the wall's <u>centerline</u> .	Some of the examples cited in the original definition technically do not meet the definition. This change allows those examples to meet the definition.		
259	Thomas Stroud HPBA HPBA	202 Definitions Add new as follows	Hydronic heater — an indoor or outdoor appliance intended to supply hot water or steam for space heating, process heating, or power. (CSA B415) Note: <i>Hydronic heaters can have a pressurized or atmospherically vented vessel containing a liquid heat transfer medium.</i>	It is essential for biomass hydronic heaters to allowed in this standard and this definition specifically will allow pressurized or atmospherically vented appliances.		

Chapter 3 – Compliance Method

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
223	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	303.1 Green buildings Revise as follows	Adjust the bronze, silver, gold, emerald points such that when combined with the changes in Chapter 7 the levels are roughly 10%, 20%, 30% and 40% respectively above the 2012 IECC. The silver level should be about 50% more energy efficient than the 2006 IECC.	This is part of adapting ICC 700 to be an improvement relative to the newest version of the most commonly used model energy code (IECC). ICC 700 includes end uses outside the IECC, for example efficient appliances, which should be taken as a contribution to energy efficiency. HVAC and water heater efficiency should be included in the savings. Contributions from renewables and energy recaptured from waste should be included in the savings. If would be useful if one level, presumably silver, was about 50% more energy efficient than the 2006 IECC, as that level represents a target for a variety of uses.		
412	Robert Hill NAHB Research Center NAHB Research Center	303.1 Green buildings Revise as follows	(3) In addition to Section 701, either Section 702 (Performance Path) or Section 703 (Prescriptive Path) shall be used to establish the threshold Performance Level under Category 3 (Energy Efficiency).	It is not clear between this section and section 701.1.1 and 701.1.2 if the threshold level in Table 303 for Chapter 7 must be met only using points from 702 or 703 and not counting any points from 704. If the intent is to require the achievement level threshold points to come only from 702 or 703 then that should be part of 701.1.1 or 701.1.2. The current wording also ignores the alternate bronze path.		
67	Steve Hale Build Green NM Build Green NM	303.1 Green buildings Add new as follows	In addition to Section 701 either Section 702 (Performance Path) or Section 703 (Prescriptive Path) shall be used to establish the threshold performance level under Category 3 (Energy Efficiency). <u>Section 704 Points shall go to Category 7 (Additional Points). Section 704 Points shall not raise the level in section 7 established by either 702 (Performance Path) or 703 (Prescriptive Path)</u>	The Energy Section of the NGBS should be set by the actual energy efficiency of the project. Additional testing and the other items in section 704 while beneficial to quality control do not in themselves raise the energy efficiency of the project. I believe this was the original intent of the 2009 NGBS		

Chapter 7 – Energy Efficiency

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
209	Brian Ng US EPA EPA	701.1 Mandatory Requirements Revise as follows	For NAHB's consideration: ENERGY STAR Qualified New Homes should be the minimum threshold for any home	As stated above, given the importance of energy efficiency in labeling homes 'green', it would be a major shortcoming for any green label that did not ensure homes met this minimum level already used on nearly		

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			complying with the NAHB Green Building Standard (e.g., same as in USGBC's LEED for Homes and EarthCraft) . Given the importance of energy efficiency in labeling homes 'green', it would be a major shortcoming for any green label that did not ensure homes met this minimum level already used on nearly 25% of new homes constructed in the U.S.	25% of new homes constructed in the U.S.		
304	Eric Lacey RECA RECA	701.1 Mandatory Requirements Revise as follows	701.1 Mandatory requirements. The building shall comply with either Section 702 (Performance Path) or Section 703 (Prescriptive Path). Items listed as "mandatory" in Section 701.4 apply to both the Performance and Prescriptive Paths. <u>The building shall also be required to comply with the 2012 IECC.</u>	The IECC is the national model energy code for residential construction, and is developed by one of NAHB's partners in the NGBS process. Any green home, at a minimum, should also be required to meet the most recent version of the IECC. The NGBS Committee should ensure that the NGBS requirements do not conflict with IECC requirements in jurisdictions that adopt both the latest IECC and the NGBS. The 2012 IECC is expected to be published sometime in the middle of 2011, and it will be the relevant model energy code for residential construction when the NGBS update is published.		
305	Eric Lacey RECA RECA	701.1.1 Minimum Performance Path Requirements Revise as follows	701.1.1 Minimum Performance Path requirements. A building complying with Section 702 shall be required to meet all of the following: (a) <u>the building shall comply with all of the requirements of the 2012 IECC;</u> (b) <u>the building thermal envelope shall be required to meet or exceed the requirements of section 402 of the IECC;</u> (c) <u>the building shall exceed the baseline minimum performance required by the 2012 IECC by 15 percent, and (d) the building shall include a minimum of two practices from Section 704.</u>	This proposal requires that when the performance path is selected, the building must comply with the 2012 IECC in general as well as specifically meet or exceed the thermal envelope criteria of the 2012 IECC. This approach will ensure that a green home has at least a reasonable level of energy performance from the thermal envelope. Since thermal envelope measures like insulation typically have a long useful life and directly affect comfort and other building performance issues, it is important that green homes have a reasonable minimum level of thermal envelope performance. This approach also echoes the requirements of Energy Star Homes Version 3.0. Homes built to the performance path of Energy Star 3.0 are required to meet or exceed the prescriptive thermal envelope requirements of the 2009 IECC, which was the most recent version of the IECC published at the time. The 2012 IECC is expected to be published sometime in the middle of 2011, and it will be the relevant model energy code for residential construction when the NGBS update is published.		
329	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	701.1.1 Minimum Performance Path Requirements Revise as follows	701.1.1 Minimum Performance Path requirements. A building complying with Section 702 shall exceed the baseline minimum performance required by the ICC IECC <u>by 15-at least 10</u> percent, and shall include a minimum of two practices from Section 704.	In order to maintain credibility as the residential "green" standard and consistency with the commercial green code (IgCC) this standard should aim to be more efficient than the most recent edition of the National Model Energy Code (2012 IECC). This proposal assumes the reference to the IECC in this standard is updated to the 2012 IECC. In that light, a 10% improvement over the IECC is consistent with the revisions recently approved for the Green code for buildings outside the scope of this standard (the International Green Construction Code). In the event the reference to the IECC is updated to the 2009 IECC in this standard, then this section should require a 25% improvement over the 2009 IECC.		
498	Robert Hill NAHB Research Center NAHB Research Center	701.1.1 Minimum Performance Path Requirements Revise as follows	A building complying with Section 702 shall exceed the baseline minimum performance required by the ICC IECC by 15 percent, and shall include a minimum of two practices from Section 704.	This practice seems inconsistent with 303.1(3). Was it intended that to achieve Emerald that the home had to exceed the IECC by 60% or is 15% acceptable as long as 120 points are achieved in Chapter 7?		
306	Eric Lacey RECA RECA	701.1.2 Minimum Prescriptive Path Requirements Revise as follows	701.1.2 Minimum Prescriptive Path requirements. A building complying with Section 703 shall <u>also be required to exceed the prescriptive requirements of the 2012 IECC, including sections 402, 403 and 404 of the IECC, and shall obtain a minimum of 30 points from Section 703, and shall include a minimum of two practices from Section 704.</u>	This proposal clarifies that when the prescriptive path for the NGBS is selected, the building must meet or exceed the requirements of the prescriptive path of the 2012 IECC as well. This approach will provide consistency with compliance under NGBS and the IECC. This approach will ensure that a green home has at least a reasonable level of energy performance from the thermal envelope. Since thermal envelope measures like insulation typically have a long useful life and directly affect comfort and other building performance issues, it is important that green homes have a reasonable minimum level of thermal envelope performance. It also echoes similar requirements contained in Energy Star Homes Version 3.0. For example, homes built to the prescriptive path of Energy Star 3.0 are required to meet or exceed the prescriptive insulation requirements of the 2009 IECC, which was the most recent version of the IECC published at the time. The 2012 IECC is expected to be published sometime in the middle of 2011. As a result, the 2012 IECC will be the relevant model energy code for residential construction when the NGBS update is published.		

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330	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	701.1.2 Minimum Prescriptive Path Requirements Revise as follows	701.1.2 Minimum Prescriptive Path requirements. A building complying with Section 703 shall obtain a minimum of 20 30 points from Section 703, and shall include a minimum of two practices from Section 704, and comply with the ICC IECC.	In order to maintain credibility as the residential "green" standard and consistency with the commercial green code (IgCC) this standard should aim to be more efficient than the most recent edition of the National Model Energy Code (2012 IECC). This proposal assumes the reference to the IECC in this standard is updated to the 2012 IECC. In that light, a minimum of 20 points from Section 703 appears to be consistent with the performance path revisions recently approved for the Green code for buildings outside the scope of this standard (the International Green Construction Code), and appears to be consistent with other proposed revisions to the minimum performance path requirements. Also, this prescriptive path should require compliance to the IECC as a baseline for energy performance. In the event the reference to the IECC is updated to the 2009 IECC in this standard, then this section should require 40 points over the 2009 IECC.												
232	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	701.1.3 Alternative Bronze Level Compliance Revise as follows	The new Energy Star requirements need to be compared with the new 2012 IECC and what will become the new ICC 700 to see if the assumption that Energy Star exceeds code by 10%(?) is still correct such that Energy Star can be deemed to be at least bronze.	This optional section was conceived as a convenience for those who had done the work to get an Energy Star approval, and were only targeting the lowest level of ICC 700 for energy. Energy Star and the IECC have both been upgraded significantly. It is not clear how Energy Star will compare to the new levels in the ICC 700.												
331	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	701.1.3 Alternative Bronze Level Compliance Delete without substitution	701.1.3 Alternative bronze level compliance. As an alternative, any building that qualifies as an ENERGY STAR Qualified Home or equivalent achieves the bronze level for Chapter 7.	Revisions to the ENERGY STAR for Homes 3.0 are still being finalized. Until finalized and analyzed for energy saving equivalency it is not appropriate to include this option. Once the ENERGY STAR for Homes equivalency is determined, this section could be re-introduced into this standard with appropriate requirements for equivalent performance.												
499	Robert Hill NAHB Research Center NAHB Research Center	701.1.3 Alternative Bronze Level Compliance Revise as follows	As an alternative, any building that qualifies as an ENERGY STAR Qualified Home or equivalent achieves the Bronze Level for Chapter 7.	Does ES require ES light fixtures/bulbs? If so, should points for these also be awarded in 704?												
81	Rich Backus Timber Ridge Craftsmen, Inc. Self	701.2 Emerald Level Points Add new as follows	Incorporate Passive House energy standard, as outlined in my email.	Please review my email on this topic. See Attachments file for supporting documents.												
134	Li Ling Young Vermont Energy Investment Corp self	701.4 Mandatory Practices Revise as follows	In the way that ENERGY STAR labeling can be used to show compliance for Mandatory measures in chapter 7 if the building is pursuing the Alternative Bronze-level Compliance, have ENERGY STAR labeling be an alternate compliance path for the mandatory measures for all buildings, even if they are pursuing a level higher than Bronze.	Performance testing involved in showing ENERGY STAR compliance is a better indicator of successful air sealing than the mandatory measures. Energy modeling (in the performance path)and prescriptive insulation requirements (in the prescriptive path) in ENEGY STAR version 3 ensure whole-building performance at the level of IECC 2009. Verification for ENERGY STAR labeling is duplicative of the mandatory measures in chapter 7. Allowing ENERGY STAR labeling to substitute for the mandatory measures in chapter 7 will not result in a lower performing building.												
184	Dan Buuck NAHB NAHB	701.4.1.1 Heating And Cooling Load Calculations Add new as follows	<table border="1"> <tr> <td>701.4.1.1 Space heating and cooling system/equipment is sized according to heating and cooling loads calculated using ACCA Manual J, or equivalent.</td> <td>Mandatory</td> </tr> <tr> <td><i>Addition and Renovation Note: Section 701.4.1.1 is mandatory for both additions and renovations where new HVAC equipment is installed.</i></td> <td>Mandatory</td> </tr> <tr> <td></td> <td>0 Additional Points</td> </tr> <tr> <td><i>Addition and Renovation Note: The additional points for Section 701.4.1.1 apply to additions or renovations that include one or both of the following:</i></td> <td>2 Additional Points</td> </tr> <tr> <td>(1) a change to heating and cooling loads</td> <td></td> </tr> </table>	701.4.1.1 Space heating and cooling system/equipment is sized according to heating and cooling loads calculated using ACCA Manual J, or equivalent.	Mandatory	<i>Addition and Renovation Note: Section 701.4.1.1 is mandatory for both additions and renovations where new HVAC equipment is installed.</i>	Mandatory		0 Additional Points	<i>Addition and Renovation Note: The additional points for Section 701.4.1.1 apply to additions or renovations that include one or both of the following:</i>	2 Additional Points	(1) a change to heating and cooling loads		Editorial change to item (1).		
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(1) a change to heating and cooling loads																
239	Thomas Stroud HPBA HPBA	701.4.1.2 Radiant or Hydronic Load Calculations Add new as follows	701.4.1.2 Where installed as a primary heat source in the building, radiant or hydronic space heating system is designed using industry-approved guidelines (e.g. ACCA Manual J, GAMA H-22, EPA Hydronic Heater Voluntary Program, or an accredited design professional's and manufacturer's recommendations).	It is essential to have a certification program for biomass hydronic heaters to allow for clean-burning alternative systems.												

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500	Robert Hill NAHB Research Center NAHB Research Center	701.4.2.1 Ducts are Sealed Revise as follows	Ducts are sealed with tape complying with UL 181, mastic, gaskets, or an approved system as required by the ICC IRC, Section M1601.3.1, or ICC IMC, Section 603.9 to reduce leakage.	The code only requires UL 181 on duct board. Is the intent to require either UL 181 or mastic on all types of duct work?		
913	JOHN STAPLETON NANO GREEN INSULATING PAINT SELF	701.4.3 Insulation and Air Sealing	Change "R" factor reference to WmK. "R" not changed since 1960's WmK would accomodate new NANO TECHNOLOGY PAINT INSULATION.	THREE COATS OF PAINT EQUALS R -30 BUT IS NOT ALLOWED UNDER THE IRS CODE FOR A TAX CREDIT. SAVINGS OF 20% TO 40% ARE RECORDED BY HOMEOWNERS		
332	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	701.4.3.1 Insulation and Air Sealing - General Revise as follows	701.4.3.1 General. Insulation and air sealing is in accordance with the following: Insulation. Insulation is installed in accordance with the manufacturer's instructions <u>and</u> or local code, as applicable. Air sealing. Shafts (duct shaft, piping shaft/penetrations, flue shaft). The building thermal envelope shall be sealed to comply with ICC IECC, Section 402.4. Openings to unconditioned space are fully sealed with solid blocking or flashing and any remaining gaps are sealed with caulk or foam. Fire-rated sealing materials collars and caulking are installed where required.	In order to maintain credibility as the residential "green" standard and consistency with the commercial green code (IgCC) this standard should, minimally, be at least as efficient as than the most recent edition of the National Model Energy Code (2012 IECC). In this "general" section for mandatory requirements for this standard, much more than shafts should be sealed. The 2012 IECC addresses air sealing requirements of the building envelope. This proposal would ensure this vital energy savings practice would be mandatory in both the performance path and prescriptive path. If desired the air sealing requirements in the IECC could be added to this section.		
333	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	701.4.3.2 Floors, Foundations, Crawlspace Revise as follows	701.4.3.2 Floors, foundations, and crawlspaces Floors. (including insulated floors above garages and cantilevered floors) Insulation is installed to maintain permanent contact with the underside of the subfloor decking, enveloping any attached ductwork <u>and plumbing</u> within the thermal envelope without compression or air gaps in the insulation. This practice does not apply to ducts or other mechanical equipment that is adjacent to the underside of the subfloor. Batt and loose-fill insulation is held in place by permanent attachments or systems in accordance with the manufacturer's instructions <u>and shall not be compressed or create air gaps.</u> Crawlspace. Where insulated, crawlspace wall insulation is permanently attached to the walls. Exposed earth in unvented crawlspaces is covered with continuous vapor retarder with overlapping joints that are taped <u>or otherwise sealed masticed.</u>	Proposed revisions in (1) are to include requirements to enclose plumbing in floor insulation requirements, and editorially revising the language for improved understanding. The proposed revisions in (2) adds the requirement for overlapping joints in the vapor retarder and allowing sealing of the joints by methods other than tape.		
334	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	701.4.3.3 Walls Revise as follows	701.4.3.3 Walls (1) Windows and doors. Windows and doors are sealed to comply with Section 701.4.3.1(2). Caulking, gasketing, adhesive flashing tape, foam sealant, or weatherstripping is installed forming a complete air barrier. Renovation Note: Existing windows and doors are <u>sealed to comply with Section 701.4.3.1(2), weather stripped and sealed.</u> (2) Band joist and rim joists. Band and rim joists <u>shall comply with above grade exterior wall insulation and air sealing requirements in ICC IECC</u> are insulated and air sealed. Renovation Note: Existing uninsulated rim and/or band joists are insulated <u>to comply with above grade exterior wall requirements in ICC IECC.</u> (3) Between foundation and sill plate bottom plate. (a) Sill sealer or other material that will expand and contract is installed between foundation and sill plate. (b) Caulk, <u>foam sealant</u> , or the equivalent is installed to seal the bottom plate of exterior walls. Renovation Note: Existing perimeter sill plates <u>and bottom plates</u> are sealed. (4) Skylights and knee walls. Skylight shafts and knee walls are insulated <u>to comply with above grade exterior wall requirements in ICC IECC.</u> the same level as the exterior walls. Renovation Note: Existing skylight shafts and knee walls are insulated <u>to comply with above grade exterior wall requirements in ICC IECC.</u>	In order to maintain credibility as the residential "green" standard and consistency with the commercial green code (IgCC) this standard should, minimally, aim to be at least as efficient as the most recent edition of the National Model Energy Code – the 2012 IECC. The proposed revisions in (1) refer back to the General requirements of sealing the building thermal envelope per the requirements of the IECC, as otherwise proposed by XPSA. The requirements for band joints and rim joists in (2) are proposed to be revised to reduce ambiguity by explicitly requiring insulation and sealing to comply with the IECC. The proposed revisions in (3) include foam sealant as an alternative for sealing the bottom plate and adds bottom plates to the renovation note. The proposed revisions in (4) clarify these walls are required to be insulated to the same requirements of other exterior walls. To reduce ambiguity, the IECC is proposed to be explicitly referenced in (5). <i>(NAHB RC Note: the proposed change is also provided to TG-7 to review the remodeling language)</i>		

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			(5) Exterior architectural features. ICC IECC Code required building envelope insulation and air sealing are not disrupted at exterior architectural features such as stairs and decks.																																																																			
502	Robert Hill NAHB Research Center NAHB Research Center	701.4.3.3 Walls Add new as follows	(4) Skylight and knee walls are insulated to the same level as the exterior walls. <u>Knee wall insulation has air barrier on all 6 sides.</u>	Knee wall insulation with out something to prevent air movement on the back side loses significant R-value.																																																																		
344	Steve Vollstedt HERS-NM, LLC Self	701.4.3.3 Walls Delete and substitute as follows	Skylight shaft walls. Skylight shaft walls are to be air sealed and insulated to at least the minimum R-values specified for walls in Table 402.1.1 in IECC 2006. Knee walls. Knee walls are to be air sealed and insulated to at least the same R-value as the conditioned to ambient exterior wall with the least R-value.	Because skylight shaft walls are a small area relative to other wall areas, the shafts are generally between conditioned spaces and at least partially insulated attic areas, and it is difficult to insulate skylight shaft walls the same as exterior walls, I believe a little more leniency should be allowed. With respect to specifying the insulation level of knee walls, because there may be numerous exterior wall configurations, I believe saying the least insulated value provides more clarity.																																																																		
307	Eric Lacey RECA RECA	701.4.4.1 Fenestration Specifications Revise as follows	<p>701.4.4.1 NFRC-certified U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in shall not exceed the values listed in accordance with ENERGY STAR, or equivalent, or Table 701.4.4.1. Decorative fenestration elements with a <u>combined total</u> maximum area of 15 square feet (1.39 m²) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice.</p> <p style="text-align: center;">Table 701.4.4.1 Fenestration Specifications</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Climate Zones</th> <th colspan="2">U-Factor</th> <th colspan="2">SHGC</th> </tr> <tr> <th colspan="4">Windows and Exterior Doors (maximum certified ratings)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.50</td> <td></td> <td>0.25</td> <td></td> </tr> <tr> <td>1 and 2</td> <td>0.65</td> <td>0.40</td> <td>0.40</td> <td>0.25</td> </tr> <tr> <td>3</td> <td>0.40</td> <td>0.35</td> <td>0.40</td> <td>0.25</td> </tr> <tr> <td>4 to 8</td> <td>0.35</td> <td>0.32</td> <td>Any</td> <td>0.40</td> </tr> <tr> <td>5 to 8</td> <td>0.30</td> <td></td> <td>Any</td> <td></td> </tr> <tr> <td colspan="5" style="text-align: center;">Skylights and TDDs (maximum certified ratings)</td> </tr> <tr> <td>1 to 3</td> <td>0.75</td> <td>0.70</td> <td>0.40</td> <td>0.30</td> </tr> <tr> <td>2</td> <td>0.65</td> <td></td> <td>0.30</td> <td></td> </tr> <tr> <td>3 4 to 8</td> <td>0.60</td> <td>0.55</td> <td>Any</td> <td>0.30</td> </tr> <tr> <td>4</td> <td>0.55</td> <td></td> <td>0.40</td> <td></td> </tr> <tr> <td>5 to 8</td> <td>0.55</td> <td></td> <td>Any</td> <td></td> </tr> </tbody> </table> <p>Addition and Renovation Note: Section 701.4.4.1 is mandatory for both additions and renovations where new windows are installed.</p>	Climate Zones	U-Factor		SHGC		Windows and Exterior Doors (maximum certified ratings)				1	0.50		0.25		1 and 2	0.65	0.40	0.40	0.25	3	0.40	0.35	0.40	0.25	4 to 8	0.35	0.32	Any	0.40	5 to 8	0.30		Any		Skylights and TDDs (maximum certified ratings)					1 to 3	0.75	0.70	0.40	0.30	2	0.65		0.30		3 4 to 8	0.60	0.55	Any	0.30	4	0.55		0.40		5 to 8	0.55		Any		<p>First, this proposal corrects an omission in the fenestration requirements for additions and renovations. Although nearly every mandatory practice under Section 701.4 of the 2008 NGBS applies to additions and renovations, Section 701.4.4 is silent on window requirements for additions and renovations. Where an addition or renovation includes the installation or replacement of windows, it is reasonable to require that these windows meet the same mandatory requirements as in new construction. Second, this proposal updates the window efficiency requirements to Energy Star Version 5.0 or the 2012 IECC, whichever is more efficient. This proposal will ensure that the window requirements of the NGBS will not conflict with the 2012 IECC. The approach is consistent with the approach taken in the last version of the NGBS and will also continue to ensure that energy efficient fenestration is required for green homes.</p> <p><i>(NAHB RC Note: the proposed change is also provided to TG-7 to review the remodeling language)</i></p>		
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138	Nils Petermann Alliance to Save Energy Alliance to Save Energy	701.4.4.1 Fenestration Specifications Revise as follows	<p>701.4.4.1 NFRC-certified U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in accordance with ENERGY STAR, or equivalent, or Table 701.4.4.1. Decorative fenestration elements with a maximum area of 15 square feet (1.39 m²) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice.</p> <p style="text-align: center;">Table 701.4.6 Fenestration Specifications</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Climate Zones</th> <th colspan="2">U-Factor</th> <th colspan="2">SHGC</th> </tr> <tr> <th colspan="4">Windows and Exterior Doors (maximum certified ratings)</th> </tr> </thead> <tbody> <tr> <td>1 and 2</td> <td>0.65</td> <td>0.60</td> <td>0.40</td> <td>0.27</td> </tr> <tr> <td>3</td> <td>0.40</td> <td>0.35</td> <td>0.40</td> <td>0.30</td> </tr> <tr> <td>4 to 8</td> <td>0.35</td> <td>0.32</td> <td>Any</td> <td>0.40</td> </tr> <tr> <td>5 to 8</td> <td>0.30</td> <td></td> <td>Any</td> <td></td> </tr> <tr> <td colspan="5" style="text-align: center;">Skylights and TDDs</td> </tr> </tbody> </table>	Climate Zones	U-Factor		SHGC		Windows and Exterior Doors (maximum certified ratings)				1 and 2	0.65	0.60	0.40	0.27	3	0.40	0.35	0.40	0.30	4 to 8	0.35	0.32	Any	0.40	5 to 8	0.30		Any		Skylights and TDDs					In 2010, new ENERGY STAR for Windows, Doors and Skylights criteria came into effect. My proposed revision of Table 701.4.4.1 would ensure equivalence with these new criteria, which can be viewed at http://www.energystar.gov/index.cfm?c=windows_doors.pr_anat_window .																																
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345	Steve Vollstedt HERS-NM, LLC Self	701.4.4.1 Fenestration Specifications Add new as follows	ADD AT END OF NARRATIVE, BEFORE THE TABLE: Alternatively, evidence that the overall UA (weighted average U-factor based on total fenestration area) for the fenestration is not greater than the U-factors shown in Table 701.4.4.1 may be submitted to demonstrate compliance with this section.	Homeowners and builders often prefer, for example, to use a custom-built front entry door for their homes. This fenestration may not comply but if the overall fenestration performance is very good, then we should allow this kind of exception.																	
346	Steve Vollstedt HERS-NM, LLC Self	701.4.4.1 Fenestration Specifications Delete without substitution	SEE COMMENT IN NEXT SECTION.	Consider moving this fenestration requirement to Section 703, the Prescriptive Path section. If a project can achieve acceptable energy reductions and a sufficiently low HERS index by applying other energy reduction practices, then these fenestration requirements should not be required for a project which is following the Performance Path.																	
213	Thomas Culp Birch Point Consulting LLC Aluminum Extruders Council	701.4.4.1 Fenestration Specifications Revise as follows	Add: <u>Exception: Fenestration in residential buildings four stories or more in height above grade, hotels, and motels shall meet the requirements of Chapter 5 of the IECC.</u>	The IBC, IRC, IECC, ASHRAE 90.1, ASHRAE 90.2, and ASHRAE 189 standards all draw a consistent line between residential building types, with detached homes and apartment buildings three stories or less on one side, and highrise residential buildings, hotels, and motels on the other side. This is because each group has very significant differences in construction and energy performance. It would be prudent for the NGBS to also be consistent with this dividing line. Nevertheless, I understand the committee would like the NGBS to apply as widely as possible, and do not wish to limit the NGBS scope. However, if this is the case, the committee must at least recognize and account for the very different construction methods and materials used in highrise residential buildings, hotels, and motels as compared to detached homes and lower apartment buildings. In this particular section, the draft NGBS is making a mandatory requirement for fenestration to meet the current Energy Star criteria. As specifically stated in the program requirements from the U.S. DOE and EPA, the Energy Star Windows program only applies to residential buildings "that are three stories or less in height", and specifically does not apply to highrise residential buildings, hotels, or motels. [see attached ENERGY STAR® Program Requirements for Residential Windows, Doors, and Skylights – Version 5.0] The design loads, durability requirements, and resulting heavy commercial and architectural grade products are significantly different. This is clearly recognized by different prescriptive criteria in Chapter 4 and Chapter 5 of the IECC, ASHRAE 90.1, and ASHRAE 90.2. Applying a mandatory requirement in conflict with Energy Star program requirements is not appropriate, and in the worst case, could cause significant specification and construction problems. To fix this problem, the mandatory requirement has been modified to specify that as a baseline, fenestration in these building types must meet the requirements of chapter 5 of the IECC. These criteria were significantly advanced for the 2012 IECC, and are very stringent yet accounts for heavy commercial and architectural grade products. Furthermore, credit for even better performance will be encouraged through section 702 or 703. (see Attachments file for ENERGY STAR® Program Requirements for Residential Windows, Doors, and Skylights – Version 5.0)																	
914	Tom Werst GDS Associates, Inc Self	702.2 Energy Cost Performance Levels	Remove the current discrete levels (1), (2), (3), and (4) and replace with the following: <u>Points earned are determined by multiplying by 4 the percentage that the building exceeds the designated ICC IECC. (A specific IECC should be referenced)</u> If it is decided to eliminate the prescriptive path, then wording such as the following could be added to section 702: "The Adopting Entity will designate the ICC IECC to be used based on a periodic review of those that are then available and how widely they have been adopted among the states."	The current discrete steps and cap at 120 points are arbitrary and limit the ability of a builder to achieve additional points toward the "Additional Points from any category" requirement. This change would allow someone that is above one threshold, but not up to the next to still gain credit that can be applied to the additional point requirements. For example, someone with a home that is 45% better than the IECC and qualifies for Silver in all other areas, will have 60 points toward Silver in Energy Efficiency plus another 30 points toward the additional 100 required. The current system instead of saying – "great job, you went significantly beyond silver so here are some extra points" says "too bad,																	

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				<p>you didn't make it to 50% better, so you are only getting 60 points". There are no such discrete steps or caps for the prescriptive path, why have them for the performance path? Increasing the ratio of points to % above ICC IECC is an attempt to equalize the points that can be achieved via the performance path with those that can be achieved with the prescriptive path. The Energy Efficiency section of the NGBS currently has a gross bias in favor of the prescriptive path over the performance path. Prescriptive rating systems for energy efficiency are notoriously poor predictors of actual performance. It is currently A LOT easier to gain points using the prescriptive path than the performance path under the NGBS. This is the exact opposite to the way many building performance experts say it should be. A house is a system, and if you do a lot of things right, but fail miserably on others, your home is not going to be energy efficient. For example, you can use all kinds of advanced framing techniques, lots of insulation, great windows and doors, efficient appliances, super efficient furnace & DHW, insulate foundation and slab, but do a bad job air sealing or have very leaky duct work, and building performance will be poor. Or as above and also do a great job on air sealing and duct sealing, but undersize and poorly install a geothermal system and your electric bills will be through the roof due to electric resistance back-up kicking in. For example, for a building that I am performing both HERS Rating and Green Building Verification, which is well built with a well insulated and air sealed envelope, high efficiency mechanical equipment and no duct work: • HERS Rating of 62 = 38% better = Silver (if accepted) • IECC 2006 = 17.3% better = Bronze • Prescriptive Path = 138 points = Emerald + 18 points toward additional Given the above choices, what builder wouldn't go the prescriptive path?? Besides being a poor predictor of true performance, the prescriptive path also requires more effort to verify, driving up verification costs. The current Section 702 is mute on which version ICC IECC to use, and provides no guidance on which one to select. It appears that the NGBS was written so that the current IECC(now, or soon to be 2009 in most states because IECC 2009 adoption is required to receive American Recovery and Reinvestment Act funding) is to be used for the performance path, so as the bar is raised with subsequent IECCs, buildings will need to be more energy efficient in order to achieve the same certification levels, which seems makes sense, at first blush. However, there is no such automatic raising of the bar for the prescriptive path. So as it gets more difficult to achieve a given level with the performance path, the few builders who might have chosen the performance path will quickly switch to the prescriptive path. If there are provisions for raising the bar on the performance path, there should be similar provisions for the prescriptive path. Since this would require significant review of the new IECC vs the prescriptive practices, this is best left to a revision of the NGBS. Since only raising the bar on the performance path will simply result in builders switching to the prescriptive path, doing so is at best futile, and at worst, counterproductive if the goal is to have more efficient homes built. Also, changing the basis of scoring under a particular version of the standard, rather than waiting until the next revision of ICC 700, will make it more difficult to compare buildings that have been measured against the standard – i.e. a newer Silver rated building under ICC700-2008 could perform better than a gold rated building under ICC700-2008 that was evaluated against an older IECC, creating confusion in the market. If it is decided to eliminate the prescriptive path, and allow the IECC that is being used to change without updating the version of the NGBS, then wording such as the following should be added to section 702 to provide guidance around which IECC to use: "The Adopting Entity will designate the ICC IECC to be used based on a periodic review of those that are then available and how widely they have been adopted among the states."</p>		
335	John Woestman Kellen Company	702.2 Energy Cost Performance	702.2 Energy cost performance levels. Energy efficiency features are implemented to achieve energy cost performance that exceeds the ICC IECC by the following. A	In order to maintain credibility as the residential "green" standard and consistency with the commercial green code (IgCC) this standard should		

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	Extruded Polystyrene Foam Association (XPSA)	Levels Revise as follows	documented analysis using software in accordance with ICC IECC, Section 404, or ICC IECC Section 506.2 through 506.5, applied as defined in the ICC IECC, is required. (1) 10-45 percent (2) 20-30 percent (3) 30-50 percent (4) 40-60 percent	aim to be more efficient than the most recent edition of the National Model Energy Code (2012 IECC). Assuming this standard updates the IECC reference to the 2012 IECC, these improvement targets should be revised in recognition of the significantly increased performance requirements of the 2012 IECC over the 2006 IECC.		
45	Steve Hale Build Green NM Build Green NM	702.2 Energy Cost Performance Levels Revise as follows	702.2 Energy cost performance levels. Energy efficiency features are implemented to achieve a HERS index prior to adding alternative energy sources (such as PV) as follows. HERS 80 30 pts HERS 70 40 pts HERS 60 60 pts HERS 50 85 pts add 3 points to 85 for each point below HERS 50 (These are suggested point ranges and could be modified by committee)	This could replace or be a supplement to 702.2. The HERS index is tied to a standard reference. The IECC is a floating value such that is it hard to compare homes based on this differing reference. As an alternative the HERS index requirement could become more stringent in subsequent revisions based on a more stringent IECC. As program director for Build Green NM, I have certified well over 100 homes at the Silver and Gold levels yet most score in the 20% to 30% improvement based on the 2006 IECC. The HERS Index for these homes ranges from HERS 60 to HERS 49. Related to this, Section 704 should not count to raise the level of energy efficiency beyond level achieved in either 702 or 703. These points should go to the "extra" points needed.		
347	Steve Vollstedt HERS-NM, LLC Self	702.2 Energy Cost Performance Levels Delete and substitute as follows	SEE FOLLOWING COMMENT.	Consider simplifying this requirement by awarding points based on energy performance improvements compared to the HERS index rather than energy cost performance improvements measured against the IECC. Many builders and homeowners can now at least generally understand the HERS index system, so why complicate it with the IECC stuff when the HERS index does substantially the same thing?		
309	Eric Lacey RECA RECA	703.1.1 Total Building Thermal Envelope UA Revise as follows	703.1.1 Where the total building thermal envelope UA is less than required by ICC the 2012 IECC, Section 402.1.4, the total building thermal envelope UA is in accordance with Table 703.1.1. Where insulation is used to achieve these percentages, a third-party grading of the installation as achieving Grade 1 is required. A documented analysis is performed using a version of REScheck version 4.0.1 or later that is based on the 2012 IECC, or equivalent compliance software, based on a comparison to the ICC IECC, IRC, or IBC.	This proposal updates the requirement to use the appropriate version of REScheck (or equivalent software) when calculating the Total UA improvement in the proposed design. While REScheck typically offers the option to calculate compliance according to earlier versions of the IECC, the NGBS should ensure that the program is keyed to the 2012 IECC to show compliance.		
336	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	703.1.1 Total Building Thermal Envelope UA Revise as follows	703.1.1 Where the total building thermal envelope UA is less than required by ICC IECC, Section 402.1.4, points may be awarded the total building thermal envelope UA is in accordance with Table 703.1.1. Percentage of UA improvement over the ICC IECC shall be verified with a compliance report generated using the most recent version of REScheck. Where insulation is used to achieve these percentages, insulation must achieve a Grade 1 installation as verified by a third-party grading of the installation as achieving Grade 1 is required. A documented analysis is performed using REScheck version 4.0.1 or later, or equivalent, based on a comparison to the ICC IECC, IRC, or IBC. Renovation Note: The existing whole building thermal envelope UA is evaluated. One of the following is selected based on the evaluation. If the overall thermal performance meets or exceeds the requirements of ICC IECC, Section 401.1.4, Section 703.1.1 applies to the renovation. If the existing overall thermal performance is below the requirements of ICC IECC, Section 402.1.4, the overall thermal performance of the whole building thermal envelope UA is improved a minimum of the following: 15 percent 30 percent 45 percent, or meets the requirements of ICC IECC, Section 402.1.4	This proposal editorially revises the first section for ease of use and understanding. The proposed revision in (2) c. recommends deleting language that conflicts with the statement in (2). (NAHB RC Note: the proposed change is also provided to TG-7 to review the remodeling language)		
348	Steve Vollstedt HERS-NM, LLC Self	703.1.1 Total Building Thermal Envelope UA Revise as follows	SEE COMMENT BELOW.	There is too much of a jump in points from achieving a 10% reduction to a 20% reduction. The table should be expanded to provide points for 11%, 12%, 13%, etc.		
915	Raymond Fiehler Retired self	703.1.1 Total Building Thermal Envelope UA	Revise frame/foundation connection for low rise residential construction. Supporting documents sent to standards@nahbr.com Frame/Foundation Change for Low Rise Residential For more than 100 years the template for low rise residential construction has been	Improve energy efficiency in residential homes See Attachments file for supporting documents.		

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			<p>PLATFORM FRAMING. Platform framing is a building system dating back to the 19th century and still used today for most low rise commercial and residential construction. This system is intrinsically flawed and restrictive to innovation and is mostly responsible for the fragmentation endemic to residential construction. Basic elements of this system are shown in figure 1. The assembly order for walls in platform framing is such that services hardware and insulation can be added only after an open sided wall is installed, thus restricting innovative approaches. Additionally, please note the vulnerability for unwanted air infiltration. Seismic activity and distortions of the wooden components in the frame/foundation connection from temperature and humidity variations cause openings to develop around the building perimeter to allow unwanted air infiltration. Engineering design considerations to correct this basic flaw have never been addressed. For "net zero energy" to succeed, it is imperative that a flexible insulating gasket becomes part of this junction. Attaching a wooden component directly to a concrete foundation is simply bad engineering. Good engineering always requires an appropriate interface when dealing with dissimilar materials.</p> <p>Consider instead a revised system illustrated in figures 2 and 3. Modifying the frame/foundation connection, not only stop all unwanted air infiltration it also leads to true panelized construction. By adopting this simplified connection, all envelope components including walls, roof and floor are factory produced and delivered to the job site for assembly by a trained work crew. Sprinkler plumbing, insulation and other service hardware are all pre-installed before delivery. Inter-connection of the various utilities imbedded in the panels is done after the envelope is complete and the assembly crew is gone (See figure 3)</p> <p>Advantages include:</p> <ol style="list-style-type: none"> 1. Simplifies and strengthens the load path between the roof and foundation 2. Provides a convenient electric wiring chase for all wiring. In addition to basic wiring, modern homes require high speed internet cables to connect the home to the outside world. This also includes wiring for heating control, surveillance cameras, computers, printers, music and home theater systems. 3. The closed cell, insecticide laced insulating gasket shown in the frame/foundation connection also provides an insect barrier. 4. Forms the basis for true panelized construction where all envelope components are factory produced in a factory controlled environment and assembled on the job site by a trained work crew. 5. Insulation: Study after study has shown cellulose insulation to be a far better than fiberglass. "On site" builders continue to use fiberglass for convenience. 6. Energy conservation. The new frame/foundation connection stops all unwanted air infiltration in the frame/foundation connection. 7. Moisture control: Controlling air infiltration also controls damaging moisture accumulation. 8. Load bearing strength. In this new configuration, loading is transferred away from framing studs to the panel skins. This reduces framing lumber requirements and increases load strength. 9. Quality. All components for this structure are factory produced in a controlled environment before they are delivered to the job site for assembly. 10. Resale value. Quality design and low energy usage will enhance the resale value of structures using this design. 11. Lower insurance rates. Time will show that these structures are less vulnerable to damage from natural forces. 			

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			<p>12. Home comfort. This construction method results in reduced noise levels, and provides for homogeneous temperature distribution.</p> <p>13. Blower door test. With proper fenestration management, this structure will comfortably pass all blower door tests throughout its' lifetime</p>			
229	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	703.1.2 Insulation Installation Grades Revise as follows	Delete descriptions of grade 2 and 3 insulation. Require grade 1 insulation as mandatory without points. Retain the inspection requirement. Add specifications for correctly installed foundation insulation.	The insulation and air sealing requirements of the 2012 IECC are strong enough that it is unlikely some grade 2 and 3 homes would even meet code, much less qualify as an exemplary residence. Insulation needs to be installed completely and correctly, otherwise the high levels of insulation being specified in new homes is compromised.		
337	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	703.1.2 Insulation Installation Grades Revise as follows	<p>703.1.2 The insulation installation is graded by a third party and <u>must achieve a Grade 1 or Grade 2 installation</u> in accordance with Sections 703.1.2.1, 703.1.2.2, 703.1.2.3, and/or 703.1.2.4, as applicable. <u>(Grade 3 installations shall not be permitted.)</u> (Points not awarded in this section if already awarded under Section 703.1.1)</p> <p>Delete Grade 3 from table 703.1.2.</p> <p>703.1.2.1 Both Grade 1 and Grade 2 installations are in accordance with the following:</p> <p>Grading applies to Grades apply to cavity fill insulation, continuous rigid insulation, and any other field-installed insulation products.</p> <p>Grading applies to ceilings, walls, <u>floors, band joists</u>, rim joists, conditioned <u>attics</u>, basements and crawlspaces, except as specifically noted. Inspection is conducted before insulation is covered.</p> <p>(2) Insulation is installed in accordance with manufacturer's installation instructions and/or industry standards.</p> <p>(3) (4) Any air permeable wall cavity <u>Air permeable</u> insulation is enclosed on all six sides and is in substantial contact with the sheathing material on one or more sides (interior or exterior) of the cavity. <u>Air permeable insulation in ceilings is not required to be enclosed when the insulation is installed in substantial contact with the surfaces it is intended to insulate.</u></p> <p>703.1.2.2 Grade 1 installation is in accordance with the following:</p> <p>(1) <u>Cavity</u> insulation uniformly fills each cavity side-to-side and top-to-bottom, without substantial gaps or voids around obstructions (such as blocking or bridging).</p> <p>(2) Cavity insulation, cCompression or incomplete fill amounts to 2 percent or less, presuming the <u>compressed or incomplete areas</u> are compression or fill is a minimum of 70 percent of the intended fill thickness; occasional small gaps are acceptable.</p> <p>(3) Exterior rigid insulation has substantial contact with the structural framing members or sheathing materials and is tightly fitted at joints.</p> <p>(4) Cavity insulation is split, installed and/or fitted tightly around wiring and other services.</p> <p>(5) Exterior sheathing is not visible from the interior through gaps in the cavity insulation.</p> <p>(6) Faced batt insulation is permitted to have side-stapled tabs, provided the tabs are stapled neatly with no buckling, and provided the batt is compressed only at the edges of each cavity to the depth of the tab itself.</p> <p>(7) Where properly installed <u>and undamaged</u>, ICFs, SIPs, and other wall systems that provide integral insulation are deemed in compliance with the Grade 1 insulation installation requirements.</p> <p>(8) Grade 1 insulation meets or exceeds all requirements for Grade 2 insulation.</p>	The proposal suggests deleting Grade 3 insulation text from this standard as the language / requirements do not add incremental value to the standard. Changes also add clarity to the type of insulation to which the requirements apply.		

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			<p>703.1.2.3 Grade 2 installation is in accordance with the following:</p> <p>(1) A maximum of 2 percent of the surface area of insulation is missing. Compression or incomplete fill amounts to 10 percent or less, presuming the compressed or incomplete areas are compression or fill is a minimum of 70 percent of the intended fill thickness.</p> <p>(2) In conditioned basements or crawlspaces the following apply: Insulation is installed in complete contact with the subfloor surfaces. Floor insulation over vented or ambient conditions is enclosed on all six sides.</p> <p>Floor insulation over unconditioned basements is not required to be enclosed on six sides. Ceiling insulation is not required to be enclosed when the insulation is installed in complete contact with the drywall or plywood surfaces it is intended to insulate.</p> <p>(4) Eave baffles or equivalent construction is installed to prevent wind washing.</p> <p>(5) Installation with occasional installation defects is permitted: gaps around wiring, electrical outlets, plumbing and other intrusions; rounded edges or shoulders.</p> <p>703.1.2.4 Grade 3 installation is in accordance with the following: Standard insulation installation not in accordance with Grade 1 or Grade 2 criteria.</p>			
214	Amy Schmidt The Dow Chemical Company Dow Building Solutions	703.2.1.1 General Revise as follows	703.2.1.1.3 Narrow cavities. Narrow cavities filled and with foam or batts are cut to fit.	The existing language is limiting to other solutions. It should be made clear that there are other applications that are available and that meet this requirement.		
323	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	703.2.1.1 General Revise as follows	<p>703.2.1.1.1.</p> <p>(1) Thermal insulation is installed in substantial contact with interior and exterior the air barrier to provide continuous alignment of the insulation with the air barrier. The following are deemed to be their own air barrier:</p> <p>(a) Any spray or rigid foam insulation with an air permeance of 0.02 L/s·m² or less at 75 Pa. Insulation with an air permeability no greater than 0.02 L/s·m² (0.004 cfm/ft²) under a pressure differential of 75 Pa (0.3 in. water) when tested in accordance with ASTM E2178.</p> <p>(b) ICFs , SIPS, and other wall systems that provide their own air barrier, except at interfaces with other materials or assemblies, or penetrations.</p> <p>(c) Spray foam that complies with all of the following: (i) continuously attached to the top, bottom and both sides of the cavity. (ii) continuous in the cavity without any unrepaired breaks. (iii) air impermeable, installed at a minimum thickness that meets the requirements of 703.2.1.1.1(a)</p> <p>(d) Air impermeable insulation.</p>	<p>For the first proposed revision, the exterior envelope may have only an air barrier (may not have interior and exterior air barriers). The second proposed revision adds the appropriate test requirement of ASTM E2178, and editorially revises the language. The proposed revisions in (c) revise the undefined term of "air impermeable" in favor of the performance requirement of 703.2.1.1.1(a). The last proposed revision in this section deletes (d) as this language is unneeded in lieu of the performance requirements of (a). Also, "air impermeable" is undefined in this standard. An alternative to the revisions proposed here would be to incorporate into this section of this standard revisions approved for the 2012 IECC for requirements for insulation and air barriers.</p>		
324	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	703.2.1.1 General Revise as follows	<p>703.2.1.1.1</p> <p><i>Unchanged sections not shown.</i></p> <p>(4) Any exterior rigid insulation is tightly fitted or interlocking at the joints that are sealed in accordance with the manufacturer's instructions for an air barrier.</p>	Joints in the rigid insulation should be sealed to ensure the insulation performs as an air and thermal barrier. And, it is already stated in Section 701.4.3 that insulation is installed per manufacturer's instructions; to repeat it here is redundant.		
325	John Woestman Kellen Company Extruded	703.2.1.2 Air Barriers Revise as follows	703.2.1.2 Interior Air barriers. Interior Air barrier is installed at any exterior edge of insulation at floors, foundations, and crawlspaces including insulated floors above garages and cantilevered floors.	This language is vague. This requirement may be appropriate for an interior air barrier, and would be inappropriate for an exterior air barrier. This proposed change is suggested in that light. However, if our		

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	Polystyrene Foam Association (XPSA)			assumption is incorrect, we suggest deleting this language as it is too vague as to what is required and where.																																																																																																								
326	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	703.2.1.3 Walls Revise as follows	703.2.1.3 <i>Unchanged sections not shown.</i> (5) Fireplace walls: <u>Insulated to the same requirements as other exterior walls and with an air barrier that is aligned in contact with insulation; with any gaps are sealed with caulk or foam and -</u>	This proposal clarifies fireplace walls should be insulated to the same requirements of other exterior walls, and the air barrier is to be in contact with the insulation with the gaps sealed. These areas of the exterior envelope should provide performance consistent with exterior envelope requirements.																																																																																																								
327	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	703.2.1.4 Ceilings / Attics Revise as follows	703.2.1.4 Ceilings and attics (1) At dropped ceilings and soffits, the air barrier is substantially <u>aligned in contact with the insulation and any gaps are sealed with caulk, foam, or tape.</u>	This proposal revises the language to require the air barrier to be in contact with the insulation, and deletes the prescriptive requirement of sealing with caulk, foam, or tape. The performance requirement for air barrier gaps to be sealed adequately describes enforceable requirements.																																																																																																								
141	Nils Petermann Alliance to Save Energy Alliance to Save Energy	703.3.1 Fenestration Specifications Revise as follows	703.3.1 The NFRC-certified (or equivalent) U-factor and SHGC for windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in accordance with Table 703.3.2(a) or (b). Decorative fenestration elements with a maximum area of 15 square feet (1.39 m2) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice. Enhanced Fenestration Specifications Table 703.3.1(a) <table border="1"> <thead> <tr> <th rowspan="2">Climate Zones</th> <th colspan="2">U-Factor</th> <th>SHGC</th> </tr> <tr> <th colspan="3">Windows and Exterior Doors (maximum certified ratings)</th> </tr> </thead> <tbody> <tr> <td>1 and 2</td> <td>0.45</td> <td>0.30</td> <td><u>0.25</u></td> </tr> <tr> <td>3</td> <td>0.35</td> <td>0.30</td> <td>0.30</td> </tr> <tr> <td>4 to 8</td> <td>0.30</td> <td><u>0.27</u></td> <td><u>Any 0.40</u></td> </tr> <tr> <td>5 to 8</td> <td><u>0.27</u></td> <td colspan="2"><u>Any</u></td> </tr> <tr> <td colspan="4">Skylights and TDDs (maximum certified ratings)</td> </tr> <tr> <td>1 and 2 to 3</td> <td>0.55</td> <td>0.35</td> <td>0.30</td> </tr> <tr> <td>3 4 to 8</td> <td>0.55</td> <td><u>0.50</u></td> <td><u>Any 0.30</u></td> </tr> <tr> <td>4</td> <td>0.50</td> <td colspan="2">0.35</td> </tr> <tr> <td>5 to 8</td> <td>0.50</td> <td colspan="2">Any</td> </tr> <tr> <td colspan="4">Points</td> </tr> <tr> <td colspan="2">Zones 1-3</td> <td colspan="2">8</td> </tr> <tr> <td colspan="2">Zones 4-5</td> <td colspan="2">5</td> </tr> <tr> <td colspan="2">Zones 6-8</td> <td colspan="2">6</td> </tr> </tbody> </table> Enhanced Fenestration Specifications Table 703.3.1(b) <table border="1"> <thead> <tr> <th rowspan="2">Climate Zones</th> <th colspan="2">U-Factor</th> <th>SHGC</th> </tr> <tr> <th colspan="3">Windows and Exterior Doors (maximum certified ratings)</th> </tr> </thead> <tbody> <tr> <td>1 and 2</td> <td>0.45</td> <td>0.35</td> <td>0.25</td> </tr> <tr> <td>3</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> </tr> <tr> <td>4 to 8</td> <td>0.25</td> <td><u>0.22</u></td> <td><u>Any 0.40</u></td> </tr> <tr> <td>5 to 8</td> <td><u>0.22</u></td> <td colspan="2"><u>Any</u></td> </tr> <tr> <td colspan="4">Skylights and TDDs (maximum certified ratings)</td> </tr> <tr> <td>1 and 2 to 3</td> <td>0.50</td> <td>0.35</td> <td><u>0.25</u></td> </tr> <tr> <td>3 4 to 8</td> <td>0.50</td> <td>0.45</td> <td><u>Any 0.30</u></td> </tr> <tr> <td>4</td> <td>0.45</td> <td colspan="2">0.35</td> </tr> <tr> <td>5 to 8</td> <td>0.45</td> <td colspan="2">Any</td> </tr> </tbody> </table>	Climate Zones	U-Factor		SHGC	Windows and Exterior Doors (maximum certified ratings)			1 and 2	0.45	0.30	<u>0.25</u>	3	0.35	0.30	0.30	4 to 8	0.30	<u>0.27</u>	<u>Any 0.40</u>	5 to 8	<u>0.27</u>	<u>Any</u>		Skylights and TDDs (maximum certified ratings)				1 and 2 to 3	0.55	0.35	0.30	3 4 to 8	0.55	<u>0.50</u>	<u>Any 0.30</u>	4	0.50	0.35		5 to 8	0.50	Any		Points				Zones 1-3		8		Zones 4-5		5		Zones 6-8		6		Climate Zones	U-Factor		SHGC	Windows and Exterior Doors (maximum certified ratings)			1 and 2	0.45	0.35	0.25	3	0.35	0.30	0.25	4 to 8	0.25	<u>0.22</u>	<u>Any 0.40</u>	5 to 8	<u>0.22</u>	<u>Any</u>		Skylights and TDDs (maximum certified ratings)				1 and 2 to 3	0.50	0.35	<u>0.25</u>	3 4 to 8	0.50	0.45	<u>Any 0.30</u>	4	0.45	0.35		5 to 8	0.45	Any		The mandatory criteria for fenestration in Section 701.4.4.1 form the baseline for fenestration performance based on Energy Star. The ENERGY STAR for Windows, Doors and Skylights criteria have changed in 2010. My proposed changes would ensure that the improved fenestration criteria in section 703.3.1 remain more stringent than Energy Star. The most stringent proposed criteria are feasible and can be met by many existing products, including the products that are part of DOE's High-performance Windows Volume Purchase Program (includes on U-factor 0.22 limit) and windows with low-solar-gain low-E coatings that can meet the 0.25 SHGC limit set by the 2012 IECC for Southern climates.		
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1 and 2	0.45	0.35	0.25																																																																																																									
3	0.35	0.30	0.25																																																																																																									
4 to 8	0.25	<u>0.22</u>	<u>Any 0.40</u>																																																																																																									
5 to 8	<u>0.22</u>	<u>Any</u>																																																																																																										
Skylights and TDDs (maximum certified ratings)																																																																																																												
1 and 2 to 3	0.50	0.35	<u>0.25</u>																																																																																																									
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			<table border="1"> <thead> <tr> <th colspan="2">Points</th> </tr> </thead> <tbody> <tr> <td>Zones 1-3</td> <td>10</td> </tr> <tr> <td>Zones 4-5</td> <td>10</td> </tr> <tr> <td>Zones 6-8</td> <td>12</td> </tr> </tbody> </table>	Points		Zones 1-3	10	Zones 4-5	10	Zones 6-8	12			
Points														
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Zones 4-5	10													
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212	Thomas Culp Birch Point Consulting LLC Aluminum Extruders Council	703.3.1 Fenestration Specifications Revise as follows	<p>703.3.1 For fenestration in detached homes and apartment buildings three stories or less above grade. The NFRC-certified U-factor and SHGC for windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in accordance with Table 703.3.2(a) or (b).</p> <p>Exception: Decorative fenestration elements up to 15 square feet or 10% of the total glazing area, whichever is less.</p> <p>Enhanced Fenestration Specifications</p> <p>Table 703.3.1(a) <i>(unchanged)</i></p> <p>Table 703.3.1(b) <i>(unchanged)</i></p> <p>For fenestration in residential buildings four stories or more in height above grade, hotels, and motels, the U-factor and SHGC shall meet the requirements of Chapter 7 of ASHRAE 189.1.</p> <p>Points:</p> <p>8 in Zones 1-3</p> <p>5 in Zones 4-5</p> <p>6 in Zones 6-8</p>	Although the NGBS is focused on residential housing and apartments, the NGBS scope has not been limited, and can be interpreted as including highrise residential buildings, hotels, and motels. These buildings have very significant differences in construction and energy performance. Heavy commercial and architectural grade windows are simply not the same as lightweight residential windows, because of the requirements for higher structural performance and durability. This is clearly recognized by different prescriptive criteria in Chapter 4 vs. Chapter 5 of the IECC, ASHRAE 90.1 or 189.1 vs. ASHRAE 90.2, etc. The values in Tables 703.3.1(a) and (b) are simply not appropriate for heavy commercial and architectural grade windows. Therefore, this modification awards points for these products by meeting the values in the ASHRAE 189.1, the green construction standard for commercial buildings including highrise residential, hotels, and motels. ASHRAE 189.1 sets similarly aggressive values while also accounting for heavy commercial products, and is currently being updated at the same time as the NGBS. Alternately, the IgCC could also be referenced, but is still in 2nd draft form, and not yet complete.										
503	Robert Hill NAHB Research Center NAHB Research Center	703.4.1 Combo System Revise as follows	HVAC equipment efficiency	A number of homes have two or more HVAC systems serving separate zones. Additional guidance is needed on how are points awarded when there are two or more HVAC systems in a home? Should points be based on the efficiency of the system servicing the largest portion of the home or should it be based on the lowest efficiency system or should it be a weighted average?										
916	Steve Rosenstock Edison Electric Institute self	703.4.6 Ground Source Heat Pump	<p>(1) Open Loop: ≥ 16.2 EER / ≥ 3.6 COP 20 <u>30</u></p> <p>(2) Closed Loop: ≥ 14.1 EER / ≥ 3.3 COP 20 <u>30</u></p> <p>(3) Direct Expansion: ≥ 15.0 EER / ≥ 3.5 COP 20 <u>30</u></p> <p>(4) Any type: ≥ 24 EER, / ≥ 4.3 COP 30 <u>40</u></p> <p>(5) Any type (open, closed, direct expansion): > 28 EER / > 4.8 COP <u>50</u></p>	Geothermal energy systems save much more energy than fossil fuel systems, and higher efficiency systems should receive more points. There are multiple systems that are rated at over 30 EER and 5.0 COP, and they should receive more points.										
504	Robert Hill NAHB Research Center NAHB Research Center	703.5.1 Water Heater Energy Factor Revise as follows	Water heating design, equipment and installation	Some homes have two or more water heaters. Additional guidance is needed on how are points awarded when there are two or more in a home? Should points be based on the efficiency of the system servicing the largest portion of the home or should it be based on the lowest efficiency system or should it be a weighted average?										

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130	Steve Hale Build Green NM Build Green NM	704.1 Additional Practice Points Revise as follows	704.1 Application of additional practice points. Points from Section 704 can be added to points earned in section 702 (Performance Path), Section 703 (Prescriptive Path), or Section 701.1.3 (Alternative bronze level compliance) All points earned in section 704 shall go toward points earned in Category 7; additional points from any category.	Section 702 the performance path or 703 the prescriptive path are measurable. Section 704 is most quality control of the practices earned in 702 or 703 but do not in them selves raise the energy efficiency of the project. See also suggested changes to Chapter 3 303.1 (3) and changes to table 303 submitted seperately.								
917	Steve Rosenstock Edison Electric Institute self	703.5.1 Water Heater Energy Factor	Add a new line in Table 703.5.1(4): <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>Energy Factor</td> <td>Points</td> </tr> <tr> <td>Heat Pump</td> <td>1.2</td> <td>5</td> </tr> </table>		Energy Factor	Points	Heat Pump	1.2	5	This will increase water heating efficiency by over 25%, and should earn points in this system. Also, this type of system could have lower initial costs to builders and homeowners.		
	Energy Factor	Points										
Heat Pump	1.2	5										
918	Steve Williams Buildinggreener LLC Self	703.5.1 Water Heater Energy Factor	Remove Solar Water Heating from 704.3.2.4 and add it to Water Heating <u>703.5.1 (5)</u> .	The scope and points are great, but this type of heating needs to be in the same category as the other types of water heating to show its benefits by making it easy to compare and give the impression that it is becoming the norm and is a legitimate form of water heating.								
920	Don Carr NAHB Research Center	704.2.1 Hard Wired Lighting	Add points value for (3) A min of 80% ext ltg wattage has efficiency of 40 lumens per watt min or be a solar powered light fixture.	Current copy of std has no point value assigned and thus the scoring tool has ignored this practice and so there is nop encouragement of this good green practice.								
296	Roger L. LeBrun VELUX America Inc. VELUX America Inc.	704.2.4 Skylights Add new as follows	704.2.4.x Daylighting Analysis Perform analysis that compares the substitution of toplighting for planned compliant sidelighting for providing sufficient midroom daylight. 1 point if kitchen and other rooms in living areas are analyzed 2 points if all rooms with windows and attic space above are analyzed 1 additional point per room where the glazed area is reduced by at least 15%, based on the results of the analysis, without increasing the base whole building energy performance.	New studies from Europe indicate that highly efficient skylights (and probably tubular daylighting devices as well) can improve the energy performance and livability of homes by reducing the direct lighting energy and heating energy losses. The indirect benefit of reducing losses is realized by the reduction of glazing areas that can be achieved. This is particularly promising as a new way to save significant year-round energy, particularly in the upper two-thirds of the U.S. (see Attachments for substantiating documents).								
310	Eric Lacey RECA RECA	704.3.1.1 Sun-Tempered Design Revise as follows	704.3.1.1 Sun-tempered design. Building orientation, sizing of glazing, and design of overhangs are in accordance with all of the following: (1) The long side (or one side if of equal length) of the building faces within 20 degrees of true south. (2) Vertical glazing area is between 5 and 7 percent of the gross conditioned floor area on the south face [also see Section 704.3.1.1(8)]. (3) Vertical glazing area is less than 2 percent of the gross conditioned floor area on the west face, and glazing is ENERGY STAR compliant or equivalent <u>meets the requirements of Section 701.4.4.1</u> . (4) Vertical glazing area is less than 4 percent of the gross conditioned floor area on the east face, and glazing is ENERGY STAR compliant or equivalent <u>meets the requirements of Section 701.4.4.1</u> . (5) Vertical glazing area is less than 8 percent of the gross conditioned floor area on the north face, and glazing is ENERGY STAR compliant or equivalent <u>meets the requirements of Section 701.4.4.1</u> . (6) Skylights, where installed, are in accordance with the following: (a) shades and insulated wells are used, and all glazing is ENERGY STAR compliant or equivalent <u>meets the requirements of Section 701.4.4.1</u> . (No change to remainder of Section 704.3.1.1)	This proposal clarifies that the under the sun-tempered design approach, the glazing requirements for all windows (other than those subject to the exception for south-facing glazing) will meet or exceed the minimum requirements set out in the NGBS, specifically Table 701.4.4.1. The proposal does not affect the exception for south-facing glazing, which must still meet a minimum 0.40 SHGC.								
921	Steve Williams Buildinggreener LLC Self	704.3.2.1 Solar Water Heater	No Mention of <u>Solar Water Radiant Heating</u> Please add. 704.4.2 could be used, but no specific details. Suggestions would be nice.	This form of radiant heating is not very much talked about, but popular with the people I have heard use it.								

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567	Robert Hill NAHB Research Center NAHB Research Center	704.3.3.1 Photovoltaic Panels Revise as follows	(Points awarded per 1/10 kW <u>per dwelling unit</u>)	Clarify that for multi-unit buildings that the points are based on a per dwelling unit energy generation rather than per building.		
234	JAMES LYONS NEWPORT PARTNERS SELF	704.3.3.2 Other Renewable Energy Add new as follows	Add new subsection to Section 704.3: "Solar Powered Attic Ventilators: Any motorized attic ventilator fan shall be powered exclusively by solar energy." This requirement would also apply to Additions and Renovations.	Solar PAVs are highly effective in providing attic ventilation at times when it is needed. Product designs allow for their use regardless of roof orientation or style. As an example, the State of Georgia amended the 2009 IECC to include this same provision.		
568	Robert Hill NAHB Research Center NAHB Research Center	704.3.3.2 Other Renewable Energy Revise as follows	(Points awarded per 1/10 kW <u>per dwelling unit</u>)	Clarify that for multi-unit buildings that the points are based on a per dwelling unit energy generation rather than per building.		
240	Thomas Stroud HPBA HPBA	704.3.3.2 Other Renewable Energy Add new as follows	704.3.3.2 Other on-site energy source is installed (e.g. wind energy, on-site micro-hydro power, active solar space heating <u>and biomass space heating systems</u>).	It is essential to allow for biomass as an on-site renewable energy source. Wood burning is a valid alternative and has more products in usage currently than all other renewable energy sources.		
506	Robert Hill NAHB Research Center NAHB Research Center	704.4.1 Duct System Revise as follows	Ducts	How should buildings that have a combination of ductless systems and a system with ducts be treated? Can they get points for both or should just the major system get points? Does this include ventilation duct work for bath/kitchen fans or building ventilation if the HVAC is ductless?		
349	Steve Vollstedt HERS-NM, LLC Self	704.4.1 Duct System Revise as follows	CEE COMMENT BELOW.	There is way too many points allowed throughout the NGBS if ducted HVAC systems are used as compared to the points allowed if an HVAC system with no ducting is used. This needs to be evened-up a bit. Practices providing points for HVAC ducting include: 704.4.1 (5 points), 704.4.4 (12 points), 704.4.5 (5 points), 704.5.5 (4 points), 704.6.2.2 (15 points), 704.6.2.3 (8 points), 901.1.2 (5 points), 902.2.3 (3 points), 902.4 (3 points) and 903.6 (2 points). This is a total of 62 points that can be earned for using ducted HVAC systems. Practices providing points for HVAC systems with no ducting include: 704.4.2 (15 points) and 704.4.3 (15 points). This is a total of 30 points that can be earned for using HVAC systems with no ducts.		
314	Gregg Achman Hearth & Home Technologies Hearth & Home Technologies	704.4.2 Space Heating Without Ducts Add new as follows	Space heating is provided by a system that does not include air ducts. <u>Addition note: natural gas and propane fireplace heaters that are direct vented or powervented, are equipped with permanently fixed glass fronts or gasketed doors and comply with ANSI Z21.88/CSA 2.33 are included space heating equipment.</u>	Fireplace heaters provide space heating without the use of air ducts.		
507	Robert Hill NAHB Research Center NAHB Research Center	704.5.4 HCFCs Delete without substitution	704.5.4 HVAC equipment operates using an alternate refrigerant containing no HCFCs (Hydrochlorofluorocarbons). Points are awarded only until January 20, 2010	Awarded only until January 20, 2010.		
215	Amy Schmidt The Dow Chemical Company Dow Building Solutions	704.6.2.1 Third Party Testing - Building Envelope Leakage Revise as follows	704.6.2 Third party testing is conducted to verify performance. 704.6.2.1 Building envelope leakage rate is demonstrated by blower door test. In addition to the test, the following practices are required: (1) Whole building ventilation is provided in accordance with Section 902.2. (2) Fossil fuel furnace and water heater is sealed combustion or power vented in accordance with Section 901.1. (3) Fireplaces and fuel-burning appliances are in accordance with Section 901.2.	IECC reference should be updated to the 2012 version. This will keep ICC 700 in line with other green code development (IgCC). With this update air leakage testing is required for all residential buildings (3 ACH50 requirement). The additional requirements in this section are an added improvement and there for should be encouraged. However the level of air leakage rate needs to be updated.		

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			(4) The maximum leakage rate is in accordance with: a. 35 ACH50 b. 24 ACH50 c. 13 ACH50 d. 2 ACH50 e. 1 ACH50			
233	JAMES LYONS NEWPORT PARTNERS SELF	704.6.2.1 Third Party Testing - Building Envelope Leakage Revise as follows	Update the building envelope air leakage limits in this section to match or exceed the 2012 IECC required levels. Points should only be awarded for going beyond the 2012 IECC-mandated ACH50 levels: 5 ACH50 for CZ1-2 and 3 ACH50 for CZ 3-8. 2012 IECC-maximum envelope leakage levels must be Mandatory items, not optional. Whole building mechanical ventilation (WBMV) must be required < 5.0 ACH50, consistent with 2012 IRC.	This currently optional provision awards points for a tighter building shell and simultaneously kicks in a requirement for WBMV. It needs to be changed to reflect new envelope leakage limits in the 2012 IECC. WBMV must be made mandatory as well, as the max allowable leakage under the 2012 IECC will trigger a requirement for WBMV in the 2012 IRC. Baseline for NGBS should at least be 2012 I-Codes.		
66	Michael Chandler Chandler Design-Build Inc self	704.6.2.1 Third Party Testing - Building Envelope Leakage Revise as follows	<p>704.6.2.1 Building envelope leakage rate is demonstrated by blower door test. In addition to the test, the following practices are required: 1. Mechanical ventilation is provided in accordance with 902.5. 2. Fossil fuel furnace and water heater is sealed combustion or power vented in accordance with 801.1. 3. Fireplaces and Fuel Burning Appliances are in accordance with 901.2</p> <p>The maximum leakage rate is in accordance with: MANDATORY 7 ACH50 (a) 5 ACH50 (b) 4 ACH50 (c) 3 ACH50 (d) 2 ACH50 (e) 1 ACH50</p> <p>702.6.2.1</p>	As Energy Star becomes more stringent it seems likely that builders will elect to opt out and participate in NGBS exclusively. Builders who choose the prescriptive path should not be permitted to avoid doing a third party blower door confirmation of their draft stopping practices.		
508	Robert Hill NAHB Research Center NAHB Research Center	704.6.2.1 Third Party Testing - Building Envelope Leakage Revise as follows	(3) Fireplaces and fuel burning appliances are in accordance with <u>the mandatory practices of</u> Section 901.2.	Clarify the practice.		
321	Lorraine Ross L Ross Consulting Inc The Dow Chemical Company	Add New Section Add new as follows	<p>Part 1: Chapter 2 Definitions</p> <p>Add new Chapter 2 Definitions</p> <p><u>BUILDING INTEGRATED PHOTOVOLTAIC (BIPV) SYSTEM.</u> A system that incorporates photovoltaic modules, which covert solar radiation into energy, into the building envelope.</p> <p><u>PHOTOVOLTAIC PANEL SYSTEM.</u> A system that incorporates photovoltaic modules,</p>	Renewable Energy Systems are crucial to our goal for net zero energy buildings. This proposal adds a new separate section regarding Building Renewable Energy Systems in order to bring clarity and enforceability to the use of renewable energy on buildings and building sites. Companion changes to this new section rewrite requires changes for Chapter 2 Definitions and Table 303, which are submitted as part of this proposal. The following is a breakdown of the reasons for this proposed change: Section 701.6 1. The charging paragraph clearly states that there is a minimum of 2% of the buildings energy use to be provided by renewable energy systems, along with a requirement for metering of these systems. 2. Instructions for demonstrating compliance are given for both performance and compliance paths. This section describes the various types of renewable energy systems that may be used individually or in combination to satisfy the 2% minimum set forth in Section 701.6. Photovoltaic systems and wind energy systems are the two major types of renewable energy systems proposed for inclusion in the NGBS. Photovoltaic systems are further broken down into three types, each with "pointers" to applicable installation requirements in the International		

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			<p><u>which covert solar radiation into energy, into discrete panels that are installed on a building site or mounted on a building.</u></p> <p>WIND ENERGY SYSTEM. A system installed on the building site or on the building that converts wind into energy.</p> <p>Part 2: Table 303</p> <p>Add new provision to Table 303</p> <p>Table 303 Renewable Energy. Where renewable energy is utilized in accordance with Section 701.5, the rating of the building shall be increased to the next level.</p> <p>Part 3: Add new Section to Chapter 7</p> <p>701.6 Renewable energy systems requirements. Each building or building site shall be equipped with one or more renewable energy systems in accordance with Section 701.6.3 that have the capacity to provide at least two percent of the annual energy use of the building. These systems shall be metered.</p> <p>701.6.1 Building performance-based compliance. Performance-based compliance shall be based on building annual energy use calculations.</p> <p>701.6.2 Building prescriptive compliance. Prescriptive compliance, shall be based on building annual energy use calculations or demonstrate that the renewable energy system provides not less than 1.75 Btu/hr or not less than 0.50 watts per square foot of conditioned floor area.</p> <p>701.6.3 Renewable energy systems. Renewable energy systems shall meet the requirements of Section 701.6.3.1 roof-mounted solar photovoltaic panel systems, Section 701.6.3.2 site located photovoltaic panel system, Section 701.6.3.3 building integrated solar photovoltaic systems, or Section 701.6.3.4 wind energy systems.</p> <p>701.6.3.1 Roof-mounted photovoltaic panel systems. Roof-mounted photovoltaic panel systems shall be designed, constructed, and installed in accordance with the International Residential Code and NFPA 70.</p> <p>701.6.3.2 Site located photovoltaic panel systems. Site located photovoltaic panel</p>	<p>Residential Code. Definitions for each type of PV system are proposed for Chapter 2. Photovoltaic Panels are PV modules incorporated into discrete panels that are installed either on the building or on the building site. In the case of roof top mounted systems, installation details are listed in the IRC. Panels located on the building site are installed in accordance with the manufacturer's installation instructions. Building integrated photovoltaic systems (BIPV) are PV modules incorporated into the building envelope such that, in the case of roof BIPV, the system not only generates electricity but also forms the roof covering. Because these products provide dual function, BIPV installation must also meet roof covering requirements found in the IRC. Wind energy systems are recognized as another renewable energy source and must be placed in accordance with the manufacturer's installation instructions. Chapter 2: Definitions are added to Chapter 2 to clearly distinguish between the different types of renewable energy systems that have entered the marketplace. Table 303 The revision to Table 303 is submitted to provide incentive for the use of renewable energy by increasing one level for those projects that utilize these systems in accordance with Section 701.5. It is important to will ensure that the energy efficiency of the building will not be degraded because of the use of renewable energy.</p>		

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			<p><u>systems shall be designed, constructed, and installed in accordance with manufacturer's instructions.</u></p> <p>701.6.3.3 Building integrated solar photovoltaic systems. <i>Building integrated solar photovoltaic systems shall be designed, constructed and installed in accordance with the International Residential Code and NFPA 70.</i></p> <p>701.6.3.4 Wind energy systems. <i>Wind energy systems shall be designed, constructed and installed in accordance with manufacturer's instructions.</i></p>			
922	Bill Klaproth Next Level Glentronics, Inc.	Other (include section number and title below)	705.3 Basement Sump Pump	<p>The United States Green Building Council says in the United States alone, buildings account for 72% of electricity consumption, so it makes sense that our biggest opportunity to save energy comes with energy efficient homes. And the consumer/builder should be alerted to the most energy efficient products available - including sump pumps! Compared to ordinary sump pumps, pumps that use energy efficient PSC motors offer enhanced energy efficiency - resulting in lower utility costs for the homeowner and lower demand on fossil fuels which pollute our air, without sacrificing performance. The key to this is highly efficient PCS (permanent split capacitor) motors that use substantially fewer amps compared with other pumps. That means they are considerably less expensive for a homeowner to operate. For example the average cost savings earned when using a sump pump with a PSC motor varies between \$50 and \$75 per year depending on model - in essence these pumps pay for themselves. As you know less amps mean less kWh reducing CO2 emissions as well. To give you an example, to date, Glentronics pumps (maker of the PHCC Pro Series that use PSC motors) have saved 25.1 million kWh or enough energy to power 2,369 homes for one year, in addition to ridding the environment of 17,887 metric tons of carbon. That's just one manufacturer - many others use PSC motors as well: Little Giant (several systems) http://www.lgpc.com/ Zoeller (M, N or D264) http://www.zoeller.com/zcopump/Products/zcoproducts.htm Hydromatic (B75-M1 or -V1) http://www.hydromatic.com/sump/sump_effluent.html Barnes/Crane (SP BP and EP Series) http://www.cranepumps.com/index.php Gould (SP02, SP03, LSP03, LSP07) http://www.goulds.com/ Grundfos/Paco http://www.grundfos.us/web/HOMEus.NSF http://www.pacopumps.com/HomePages/PacoHome.asp Imagine if all new construction and retrofit projects in the U.S. employed sump pumps with energy efficient PSC motors, the energy savings would be hard to ignore. For that reason we feel energy efficient sump pumps that use PSC motors should be included in the NGBS. Thank you very much for your time!</p>		
923	Tom Werst GDS Associates, Inc Self	Other (include section number and title below)	Either completely remove section 703 - Prescriptive Path(Preferred) or reduce all points assigned by at least a factor of 4	<p>Prescriptive rating systems for energy efficiency are notoriously poor predictors of actual performance. It is currently A LOT easier to gain points using the prescriptive path than the performance path under the NGBS. This is the exact opposite to the way many building performance experts say it should be. A house is a system, and if you do a lot of things right, but fail miserably on others, your home is not going to be energy efficient. For example, you can use all kinds of advanced framing techniques, lots of insulation, great windows and doors, efficient appliances, super efficient furnace & DHW, insulate foundation and slab, but do a bad job air sealing or have very leaky duct work, and building performance will be poor. Or as above and also do a great job on air sealing and duct sealing, but undersize and poorly install a geothermal system and your electric bills will be through the roof due to electric resistance back-up kicking in. The bottom line is that a prescriptive scoring system for energy efficiency is a poor predictor of true performance. For example, for a building that I am performing both HERS Rating and Green Building Verification: • HERS Rating of 62 = 38% better = Silver (if accepted) • IECC 2006 = 17.3% better = Bronze(NGBS) • Prescriptive Path = 138 points = Gold + 38 points toward additional Given the above choices, what builder wouldn't go the</p>		

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				prescriptive path?? Besides being a poor predictor of true performance, the prescriptive path also requires more effort to verify. Some states, for example New Hampshire, only allow performance based ratings for their ENERGY STAR programs specifically because the prescriptive based ratings are such notoriously poor predictors of actual building performance. In addition, it appears that the NGBS was written so that the current IECC(now, or soon to be 2009 in most states because IECC 2009 adoption is required to receive American Recovery and Reinvestment Act funding) is to be used for the performance path, so as the bar is raised with subsequent IECCs buildings will need to be more energy efficient in order to achieve the same certification levels, which makes sense. However, there is no such automatic raising of the bar for the prescriptive path. So as it gets more difficult to achieve a given level with the performance path, the few builders who might have chosen the performance path will quickly switch to the prescriptive path. In summary, the prescriptive path should be done away with – it is a poor indicator of true performance and will eventually give NGBS a bad name, just like USGBC has gotten a black eye recently over poor energy performance of LEED rated buildings.		
222	Craig Conner, Gary Klein Building Quality / Affiliated International Management Selves	Entire Chapter 7 Revise as follows	Revise the energy portion of ICC 700 to be based on exceeding the most current version of the IECC, the 2012 IECC. Points should be adjusted such that there are points for exceeding the levels in the 2012 IECC, but not for levels at or below the 2012 IECC. Some of the new items in the 2012 IECC would become mandatory without points. The concept of tradeoffs should be retained, such that it is possible to put in elements of the building that are below the ICC 700, or even the 2012 IECC, provided the overall building meets the energy goal.	The energy levels in the ICC 700 were based on exceeding the efficiency required by the 2006 IECC. Since the ICC 700 was written there have been major changes leading to the 2012 IECC. The new basis for the ICC 700 should be the 2012 IECC.		

Chapter 11 – Referenced Documents

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action																								
311	Eric Lacey RECA RECA	1102 Referenced Documents Revise as follows	<p>Chapter 11</p> <p>Referenced Documents</p> <table border="1"> <tr> <td>IBC</td> <td>2006 2012</td> <td>International Building Code</td> <td>202, 602.3.1, 602.9, 602.10, 703.1.1, 901.2.1(2)(e), 1001.1(10)</td> </tr> <tr> <td>IECC</td> <td>2004</td> <td>International Energy Conservation Code</td> <td>B201.1</td> </tr> <tr> <td>IECC</td> <td>2006 2012</td> <td>International Energy Conservation Code</td> <td>701.1, 701.1.1, 701.1.2, 702.2, 703.1.1</td> </tr> <tr> <td>IMC</td> <td>2006 2012</td> <td>International Mechanical Code</td> <td>701.4.2.1, 704.6.1(1)</td> </tr> <tr> <td>IPC</td> <td>2006 2012</td> <td>International Plumbing Code</td> <td>903.5.3</td> </tr> <tr> <td>IRC</td> <td>2006 2012</td> <td>International Residential Code</td> <td>202, 3035.1, 601.1, 602.3.1, 602.9, 602.10, 701.4.2.1, 703.1.1, 704.6.1(1), 802.1, 902.3, 903.2.1(3), 1001.1(10)</td> </tr> </table>	IBC	2006 2012	International Building Code	202, 602.3.1, 602.9, 602.10, 703.1.1, 901.2.1(2)(e), 1001.1(10)	IECC	2004	International Energy Conservation Code	B201.1	IECC	2006 2012	International Energy Conservation Code	701.1, 701.1.1, 701.1.2, 702.2, 703.1.1	IMC	2006 2012	International Mechanical Code	701.4.2.1, 704.6.1(1)	IPC	2006 2012	International Plumbing Code	903.5.3	IRC	2006 2012	International Residential Code	202, 3035.1, 601.1, 602.3.1, 602.9, 602.10, 701.4.2.1, 703.1.1, 704.6.1(1), 802.1, 902.3, 903.2.1(3), 1001.1(10)	The National Green Building Standard should reference only the latest versions of the International Codes wherever possible. Because the 2012 generation of International Codes will be available prior to publication of the updated NGBS, the updated NGBS should reference the 2012 versions.		
IBC	2006 2012	International Building Code	202, 602.3.1, 602.9, 602.10, 703.1.1, 901.2.1(2)(e), 1001.1(10)																											
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328	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	1102 Referenced Documents Revise as follows	<p>ICC</p> <p>IECC 2006 2012 International Energy Conservation Code</p> <p>ICC</p> <p>IECC 2006 2012 International Energy Conservation Code</p>	Updating this reference code to the latest edition of the IECC In order to maintain credibility as the residential “green” standard and consistency with the commercial green code (IgCC) this standard should reference the most recent edition of the National Model Energy Code – the 2012 IECC																										

TG-6: Multifamily

Chapter 2 – Definitions

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
400	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Multi-Unit Building. A building containing multiple dwelling units <u>and permitted as a multi-unit or multi-family building and not covered under the IRC.</u>	There has been a lot of confusion regarding townhouses and do they qualify as multi-unit buildings. The situation is further compounded because some municipalities permit townhouses as multi-unit buildings. The suggested changes are an attempt to clarify the situation.		
407	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Add new as follows	Residential Portion of a Muti-unit or Mixed Development building. The portion of the building that contains the elements of the dwelling unit.	Need definition of this as it relates to multi-unit and mixed use buildings. There are practices that apply to a building (e.g. foundation) that may not be part of the "residential portion" of the building. The intent should be clarified.		

Chapter 3 – Compliance Method

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
413	Robert Hill NAHB Research Center NAHB Research Center	303.1 Green buildings Add new as follows	<u>(5) The non-residential portions of mixed use or multi-family buildings are not required to comply with the practices that the residential portion complies with except for practices that apply to the entire building such as foundation practices.</u>	The original Standard was not clear on how non-residential portions of buildings are addressed. The committee should decide how non-residential portions of a multi-unit or a mixed use building should be treated.		
414	Robert Hill NAHB Research Center NAHB Research Center	304.1 Multi-unit buildings Revise as follows	For multi-unit buildings, points for the green building practices that apply to multiple units shall be credited once for the entire building. Where points are credited, practices shall be implemented in all units, as applicable. Where application of a prescribed practice allows for a different number of points for different units in a multi-unit building, the fewer number of points shall be awarded. <u>When non-mandatory practices are only applicable to certain units (e.g., only the top floor units are likely to have can lights penetrating the thermal envelope) points should not be awarded to the building for those practices. When mandatory practices are only applicable to certain units (e.g., only the ground floor units may have an attached garage) the mandatory practice is considered in compliance if all those units comply. Practices that apply to the building (e.g., landscaping) may be awarded independently of the units.</u> <u>Common areas of the building must meet all mandatory requirements but practices for points are not applicable to the common areas unless specifically noted in the practice.</u>	The original standard was not clear on how to handle some issues in multi-unit buildings. The committee is free to decide how to handle these issues but they need to be addressed.		
904	Howard Fortunato LandmarkJCM LandmarkJCM	304.1 Multi-unit buildings	Individual units (aka condos) in multi-unit building should be eligible to alternately obtain individual certifications for each unit. As it stands now all condos in a building can only earn the same certification level, and only obtain that certification once the entire building is completed. This is inflexible as the first buyer in a building must wait till the last unit is completed, thus a marketing disincentive for the buyer for green built home. Also, not being able to obtain different certification levels within the same building removes the marketing ability to differentiate units in the building. After all, presumably not all units in Trump Tower are the same level of fit / finish / price. Being able to differentiate will assist in generating more condo green certifications	My reasoning is within the above. thank you for this opportunity to comment.		

TG-7: Renovations and Additions

Chapter 2 – Definitions

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
391	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Building, Existing. Building completed and occupied prior to any renovation considered under this standard. the adoption of this Standard or one for which a legal building permit has been issued.	The inclusion of buildings for which permits have been issued would allow a building that had not yet been constructed to be certified as a renovation. The original wording also would have been confusing as time goes on implying that a building built after the standard was originally introduced could not be remodeled to meet the standard.		
401	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	<u>New Construction - Construction of a new building or construction that completely replaces more than 75% of an existing building.</u>	There have been a number of situations where it was not clear if the construction should be considered as new construction or a renovation. Examples would include completely demolishing the buildign but rebuilding on the same basement foundation or a gut rehab were everything is removed except the structure. Teh task group should determine the actual percentage to be used but the impact on the mandatory requirements should be considered. There are some mandatory new construction practices related to the foundaton that will require substantial effort to meet if the building must follow the new construction guidelines.		
406	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Renovation. the process of restoring or improving an existing building or dwelling unit that may include changes to the landscape and hardscape. <u>A renovation may also include an addition.</u>	There have been questions regarding additions as part of a renovation.		

Chapter 3 – Compliance Method

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
140	Steve Hale Build Green NM Build Green NM	305.1 Applicability (Green Renovations & Additions) Delete without substitution	305.1 Applicability	There should be a seperate "green remodeling" guide the Standard is not workable for renovations (other than "gut" rehabs).		
906	Michael "Mick" Dalrymple Green Environmental Building Supplies self	305.5 Green Remodel Path	305.5.4(2) Water consumption: Water consumption shall be based on the estimated annual use. Reduction in water consumption shall be evaluated based on improvements to water using fixtures and alterations to landscaping, employing consistent and reasonable pre- and post-remodel occupant activity assumptions.	(Format icons are not present) Existing language of "based on points in Chapter 8" does not have enforceable or useful meaning in this case.		
907	Michael "Mick" Dalrymple Green Environmental Building Supplies self	305.5 Green Remodel Path	305.5.4(1) Energy consumption: Energy consumption shall be based on the estimated annual energy use due to heating, cooling, water heating, lights/appliances and renewable energy as determined by a third party energy audit.	(Formatting icons are not working) In order to mainstream this as much as possible, it is most useful to include the standard elements of an energy audit, which includes lights/appliances and renewable energy. This reduces the work of creating a non-standard energy audit, or making calculations based upon portions of an energy audit. I believe standard energy audits are being used in practice, anyway.		
908	Michael "Mick" Dalrymple Green Environmental Building Supplies self	305.5 Green Remodel Path	305.5.5: (Add) The post-remodel building or dwelling unit must achieve a minimum 99 HERS score. To achieve Silver certification, the building or dwelling unit must achieve a minimum 85 HERS score.	(Formatting icons not working) I am in the process of finishing a certification on a single family home with a post-remodel HERS score of 188. Not only is it embarassing to call this a certified green remodel, it severely dilutes the brand value of a certified new green home. I was recently interviewed by a national publication regarding an Emerald remodel that I verified, asking why there are not more Emerald certified homes. It took careful wording to explain that an Emerald remodel is not equivalent to an Emerald new build and that the two should not be confused. While the achievement of improving the existing building stock is possibly more important in the big picture than building new homes significantly more green than new codes, it is important in the marketplace that energy performance be meaningful across the board if		

				the homes are going labeled as "green". If I was a builder of new green certified homes, I would also see it as a matter of competitive fairness.		
909	Michael Grothe NAHB Research Center NAHB Research Center	305.5 Green Remodel Path	Include language to state that only the requirements in sections 305.5.3 and 305.5.4 and 305.5.5 have to be met for certification.	The language in section 305.5 doesn't make it clear that no other sections or requirements outside of the ones mentioned in 305.5 are required. One can assume that you have to comply with other chapters as well.		
566	Robert Hill NAHB Research Center NAHB Research Center	305.5 Green Remodel Path Delete and substitute as follows	Completely restructure how remodeling, renovations, and additions are handled. See separate document after all proposed changes.	See separate document after the table.		
230	Craig Conner, Gary Klein Building Quality / Affiliated International Management selves	Other (include section number and title below) Revise as follows	All sections on renovations and additions need to be reviewed and most revised.	The renovations and additions sections are often confusing as to what is required and the assigned points don't always make sense. Would it help to make these a separate section of ICC 700? Maybe or maybe not.		

Entire Document

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action								
564	Steven Orłowski National Association of Home Builders NAHB	Entire Chapter 6	The National Green Building Standard's broad applicability to a range of project types is a key strength to the document and the impact that it will have on the growth of green residential construction. In fact, by including guidance for existing buildings, the NGBS can be a good resource in addressing the issue of older buildings requiring more energy and other resources to operate (when compared to new construction.) However, the current system of using modifications to the practices and scoring for new construction can be a cumbersome and confusing process when scoring renovation and addition projects. Simplifying the document and removing extraneous information so that practitioners can more readily focus on the practices and scoring that relate to their particular project could increase the practical utility of the standard for older buildings. An example of how this approach would change the standard is provided in this proposal , where Chapter 6 has been revised by removing all of the addition and revisions notes from the chapter and a new chapter 12 has been created to consolidate all of the renovation notes into its own chapter.											
			<p style="text-align: center;">CHAPTER 6</p> <p style="text-align: center;">RESOURCE EFFICIENCY</p> <p style="text-align: center;">NEW CONSTRUCTION PROJECTS</p> <p>Remove all construction and renovation notes</p> <p style="text-align: center;">CHAPTER 12</p> <p style="text-align: center;">RESOURCE EFFICIENCY</p> <p style="text-align: center;">RENOVATION PROJECTS</p> <p>Renovation notes are updated as follows.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%; text-align: center;">GREEN BUILDING PRACTICES</th> <th style="width: 20%; text-align: center;">POINTS</th> </tr> </thead> <tbody> <tr> <td style="background-color: black; color: white;">1201</td> <td></td> </tr> <tr> <td style="background-color: black; color: white;">QUALITY OF CONSTRUCTION MATERIALS AND WASTE</td> <td></td> </tr> <tr> <td>1201.0 Intent. Design and construction practices that minimize the environmental impact of the building materials are incorporated, environmentally efficient building systems and materials are incorporated, and waste generated during construction is reduced.</td> <td></td> </tr> </tbody> </table>	GREEN BUILDING PRACTICES	POINTS	1201		QUALITY OF CONSTRUCTION MATERIALS AND WASTE		1201.0 Intent. Design and construction practices that minimize the environmental impact of the building materials are incorporated, environmentally efficient building systems and materials are incorporated, and waste generated during construction is reduced.				
GREEN BUILDING PRACTICES	POINTS													
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1201.0 Intent. Design and construction practices that minimize the environmental impact of the building materials are incorporated, environmentally efficient building systems and materials are incorporated, and waste generated during construction is reduced.														

1201.1 Conditioned floor area. Conditioned floor area, as defined by ICC IRC and calculated in accordance with NAHBRC Z765, is limited. Dwelling unit size is to be calculated in accordance with NAHBRC Z765. Only the conditioned floor area for stories above grade plane is to be included in the calculation.	
(1) less than or equal to 1,000 square feet (93 m ²)	15
(2) less than or equal to 1,500 square feet (139 m ²)	12
(3) less than or equal to 2,000 square feet (186 m ²)	9
(4) less than or equal to 2,500 square feet (232 m ²)	6
(5) greater than 4,000 square feet (372 m ²) (For every 100 square feet (9.29 m ²) over 4,000 square feet (372 m ²), one point is to be added in Table 303, Category 7 for each performance level.)	Mandatory
When renovations increase the total existing building or dwelling unit area by 1 percent or less, points are awarded as follows:	
(a) The total area of the existing building or dwelling unit is less than or equal to 2500 square feet (232 m ²).	6 Additional Points
(b) The total area of the existing building or dwelling unit is greater than 2500 square feet (232 m ²).	1 Additional Point
Multi-Unit Building Note: For a multi-unit building, use a weighted average of the individual unit sizes in qualifying for available points.	

1201.2 Material usage. Building-code-compliant structural systems or advanced framing techniques are implemented that optimize material usage. (Points awarded for each system or framing technique implemented.)	3 9 Points Max
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1201.3 Building dimensions and layouts. Building dimensions and layouts are designed to reduce material cuts and waste. This practice is used for a minimum of 80 percent of the following areas:	
(1) floor area	3
(2) wall area	3
(3) roof area	3
(4) cladding or siding area	3
(5) penetrations or trim area	1

601.4 Framing and structural plans. Detailed framing or structural plans, material quantity lists and on-site cut lists for framing, structural materials, and sheathing materials are provided.	4
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1201.5 Prefabricated components. Precut or preassembled components, or panelized or precast assemblies are utilized for a minimum of 90 percent for the following system or building:	
(1) floor system	4
(2) wall system	4
(3) roof system	4
(4) modular construction for the entire building located above grade	13

(5) manufactured home construction for the entire building located above grade	13
1201.6 Stacked stories. Stories above grade are stacked, such as in 1½-story, 2-story, or greater structures. The area of the upper story is a minimum of 50 percent of the area of the story below, based on areas with a minimum ceiling height of 7 feet (2134 mm).	8 Points Max
(1) first stacked story	4
(2) for each additional stacked story	2
1201.7 Site applied finishing materials. Building materials or assemblies are utilized that do not require additional site applied material for finishing.	12 Points Max
(1) 90 percent or more of the installed building material or assembly listed below: (Points awarded for each material or assembly.)	5
(2) 50 percent to less than 90 percent of the installed building material or assembly listed below: (Points awarded for each material or assembly.)	2
(a) pigmented, stamped, decorative, or final finish concrete or masonry (b) trim not requiring paint or stain (c) window, skylight, and door assemblies not requiring paint or stain on exterior and/or interior surfaces (d) wall coverings or systems not requiring paint or stain or other type of finishing application	
1201.8 Foundations. Foundations, such as frost-protected shallow foundations, pier and pad foundations, post foundations and other similar foundation types, are designed and constructed.	3
1201.9 Above grade wall systems. One or more of the following above grade wall systems that provide sufficient structural and thermal characteristics are used for a minimum of 75 percent of the gross exterior wall area of the building:	4
(1) adobe (2) concrete and/or masonry (3) logs (4) rammed earth	
1202	
ENHANCED DURABILITY AND REDUCED MAINTENANCE	
1202.0 Intent. Design and construction practices are implemented that enhance the durability of materials and reduce in-service maintenance.	
1202.1 Exterior doors. Entries at exterior door assemblies, inclusive of side lights, are covered by one of the following methods to protect the building from the effects of precipitation and solar radiation. A projection factor of 0.375 minimum is provided. Eastern and western facing entries in Climate Zones 1, 2, and 3, as determined in accordance with Figure 6(1), have a projection factor of 1.0 minimum, unless otherwise protected from direct solar radiation by other means (e.g., screen wall, vegetation).	5 Points Max
(a) installing a porch roof or awning (b) extending the roof overhang (c) recessing the exterior door	
(1) main entrance door	3
(2) additional covered door assembly	1
1202.2 Roof overhangs. If a renovation alters the existing roof, then roof overhangs, based on	5

inches rainfall in Table 602.2, are provided over a minimum of 90 percent of exterior walls to protect the building envelope.

**Table 602.2
Minimum Roof Overhang for One- & Two-Story Buildings**

Inches Rainfall ⁽¹⁾	Eave Overhang (Inches)	Rake Overhang (Inches)
Less than 20	12	12
21 to 40	12	12
41 to 70	18	12
More than 70	24	12

(1) Average annual inches of rainfall are in accordance with Figure 6(2)

For SI: 1 foot = 304.8 mm

1202.3 Foundation drainage.	
1202.3.1 Where required by the ICC IRC or IBC for habitable and usable spaces below grade, exterior drain tile is installed.	Mandatory
1202.3.2 If a renovation involves the demolition/reconfiguration of exterior walls and/or modification of the existing foundation drainage system, then interior and exterior foundation perimeter drains are installed and sloped to discharge to daylight, dry well, or sump pit.	6
1202.4 Drip edge. Drip edge is installed at eaves and gable roof edges.	3
1202.5 Roof water discharge. A gutter and downspout system or splash blocks and effective grading are provided to carry water a minimum of 5 feet (1524 mm) away from perimeter foundation walls.	5
1202.6 Finished grade. Finish grade at all sides of building is sloped to provide a minimum of 6 inches (150 mm) of fall within 10 feet (3048 mm) of the edge of the building. Where lot lines, walls, slopes, or other physical barriers prohibit 6 inches (152 mm) of fall within 10 feet (3048 mm), the final grade is sloped away from the edge of the building at a minimum slope of 5 percent and the water is directed to drains or swales to ensure drainage away from the structure.	2
1202.7 Termite barrier. Continuous physical foundation termite barrier used with or without low toxicity treatment is installed in geographical areas that have subterranean termite infestation potential determined in accordance with Figure 6(3).	4
(1) new non-chemical termite barrier is provided	1 Additional Point
(2) existing chemical barrier is removed and replaced with a non-chemical barrier	3 Additional Points
1202.8 Termite-resistant materials. Termite-resistant materials are used as follows: _	
(1) In areas of slight to moderate termite infestation probability (as defined by Figure 6(3)) for the foundation, all structural walls, floors, concealed roof spaces not accessible for inspection, exterior decks, and exterior claddings within the first 2 feet (610 mm) above the top of the foundation.	2
(2) In areas of moderate to heavy termite infestation probability (as defined by Figure 6(3)) for the foundation, all structural walls, floors, concealed roof spaces not accessible for inspection, exterior decks, and exterior claddings within the first 3 feet (914 mm) above the top of the foundation.	4

<p>(3) In areas of very heavy termite infestation probability (as defined by Figure 6(3)) for the foundation, all structural walls, floors, concealed roof spaces not accessible for inspection, exterior decks, and exterior claddings.</p>	<p>6</p>
<p>1202.9 Water-resistive barrier. If a renovation includes exterior veneer and/or siding replacement, then where required by the ICC IRC or IBC, a water-resistive barrier and/or drainage plane system is installed behind exterior veneer and/or siding.</p>	<p>Mandatory</p>
<p>1202.10 Ice barrier. In areas where there has been a history of ice forming along the eaves causing a backup of water, an ice barrier is installed in accordance with the ICC IRC or IBC at roof eaves and extends at a minimum of 24 inches (610 mm) inside the exterior wall line of the building.</p>	<p>Mandatory</p>
<p>1202.11 Foundation waterproofing. If a renovation involves the demolition/reconfiguration of exterior walls, modification of the foundation wall, or an effort to improve foundation waterproofing, then enhanced foundation waterproofing is installed:</p> <p>(1) rubberized coating, or (2) drainage mat</p>	<p>6</p>
<p>1202.12 Flashing. Flashing details are shown on plans and flashing is installed at all of the following locations, as applicable:</p> <p>(1) around exterior fenestrations, skylights and doors (2) roof valleys (3) deck/balcony to building intersections (4) at roof-to-wall intersection and at roof-to-chimney intersections (5) a drip cap is provided above windows and doors that are not flashed or protected by covering in accordance with Section 602.1</p>	<p>6</p>
<p>1202.13 Roof surfaces. If a renovation includes roof replacement, then a minimum of 90 percent of roof surfaces are constructed of one or both of the following:</p> <p>(1) products that are in accordance with the ENERGY STAR® cool roof certification or equivalent (2) a green (landscaped) roof system</p>	<p>3</p>
<p>1202.14 Recycling. Occupant recycling is facilitated by one or more of the following methods:</p>	
<p>(1) A built-in collection space in each kitchen and an aggregation/pick-up space in a garage, covered outdoor space, or other area for recycling containers</p>	<p>3</p>
<p>(2) Compost facility provided on-site</p>	<p>3</p>
<p>1203 REUSED OR SALVAGED MATERIALS</p>	
<p>1203.0 Intent. Practices that reuse or modify existing structures, salvage materials for other uses, or use salvaged materials in the building's construction are implemented.</p>	
<p>1203.1 Reuse of existing building. Existing buildings and structures are reused, modified, or deconstructed in lieu of demolition.</p> <p style="text-align: center;">(Points awarded for every 200 square feet (18.5 m²) of floor area.)</p>	<p>1 12 Points Max</p>

1203.2 Salvaged materials. Reclaimed and/or salvaged materials and components are used. The total material and labor cost of salvaged materials is equal to or exceeds 1 percent of the total construction cost. **3**

1203.3 Scrap materials. Facilitation for sorting and reuse of scrap building material (e.g., provide a central storage area or dedicated bins). **4**

1204
RECYCLED-CONTENT BUILDING MATERIALS

1204.1 Recycled content. Building materials with recycled content are used for two minor and/or two major components of the building. **Points per Table 604.1**

Table 604.1
Recycled Content

Material Percentage Recycled Content	Points Per 2 Minor	Points Per 2 Major
25% to less than 50%	1	2
50% to less than 75%	2	4
more than 75%	3	6

1205
RECYCLED CONSTRUCTION WASTE

1205.0 Intent. Waste generated during construction is recycled. All waste classified as hazardous shall be properly handled and disposed. **(Points not awarded for hazardous waste removal.)**

1205.1 Construction waste management plan. A construction waste management plan including information on the proper handling and disposal of hazardous waste is developed, posted at the jobsite, and implemented. **Mandatory**
2 Points

The posted and implemented construction waste management plan includes a goal of recycling or salvaging a minimum of 50 percent (by weight) of construction and land-clearing waste. **6 Additional Points**

1205.2 On-site recycling. All waste classified as hazardous waste is properly handled and disposed of. The weight of this material is exempted from landfill diversion when Section 605.2 is applied to existing buildings. **Mandatory**

On-site recycling measures following applicable regulations and codes are implemented, such as the following: **7**

(a) Materials are ground or otherwise safely applied on-site as soil amendment or fill. A minimum of 50 percent (by weight) of construction and land-clearing waste is diverted from landfill.

(b) Alternative compliance methods approved by the Adopting Entity

1205.3 Recycled construction materials. Construction materials (e.g., wood, cardboard, metals, **6 Points Max**

	drywall, plastic, asphalt roofing shingles, or concrete) are recycled offsite.			
	(1) a minimum of two types of materials are recycled	3		
	(2) for each additional recycled material	1		
	1206			
	RENEWABLE MATERIALS			
	1206.0 Intent. Building materials derived from renewable resources are used.			
	1206.1 Biobased products. The following biobased products are used:	8 Points Max		
	(a) certified solid wood in accordance with Section 606.2 (b) engineered wood (c) bamboo (d) cotton (e) cork (f) straw (g) natural fiber products made from crops (soy-based, corn-based) (h) products with the minimum biobased contents of the USDA 7 CFR Part 2902 (i) other biobased materials with a minimum of 50 percent biobased content (by weight or volume)			
	1206.1(1) Two types of biobased materials are used, each for more than 0.5 percent of the project's projected building material cost.	3		
	1206.1(2) Two types of biobased materials are used, each for more than 1 percent of the project's projected building material cost.	6		
	1206.1(3) For each additional biobased material used for more than 0.5 percent of the project's projected building material cost.	1		
		2 Points Max		
	1206.2 Wood-based products. Wood or wood-based products are certified to the requirements of one of the following recognized product programs:- (a) <i>AFF American Tree Farm System®</i> (b) Canadian Standards Association's <i>Sustainable Forest Management System Standards (CSA Z809)</i> (c) <i>Forest Stewardship Council (FSC)</i> (d) <i>Program for Endorsement of Forest Certification Systems (PEFC)</i> (e) <i>Sustainable Forestry Initiative® Program (SFI)</i> (f) other product programs mutually recognized by PEFC			
	1206.2(1) Where a minimum of two certified wood-based products are used for minor elements of the building, such as all trim, cabinetry, or millwork.	3		
	1206.2(2) Where a minimum of two certified wood-based products are used in major elements of the building, such as walls, floors, or roof.	4		
	1206.3 Manufacturing energy. Materials are used for major components of the building that are manufactured using a minimum of 33 percent of the primary manufacturing process energy derived from renewable sources, combustible waste sources, or renewable energy credits (RECs). (2 points awarded per material.)	6 Points Max		
	1207			
	RESOURCE-EFFICIENT MATERIALS			
	1207.1 Products containing fewer materials are used to achieve the same end-use requirements as conventional products, including but not limited to: (3 points awarded for each material.)	9 Points Max		

			<p>(1) lighter, thinner brick with bed depth less than 3 inches and/or brick with coring of more that 25 percent</p> <p>(2) engineered wood or engineered steel products</p> <p>(3) roof or floor trusses</p>				
			<p>1208</p> <p>INDIGENOUS MATERIALS</p>				
			<p>1208.1 Indigenous materials are used for major elements of the building.</p>	10 Points Max			
			(1) one type of material	2			
			(2) for each additional material	2			
			<p>1209</p> <p>LIFE CYCLE ANALYSIS</p>				
			<p>1209.1 A more environmentally preferable product or assembly is selected for an application based upon the use of a Life Cycle Assessment (LCA) tool compliant with ISO 14044 or other recognized standards that compare the environmental impact of building materials, assemblies, or the whole building.</p>	15 Points Max			
			(1) per product/system comparison	3			
			(2) whole building LCA analysis	15			
			<p>1210</p> <p>INNOVATIVE PRACTICES</p>				
			<p>1210.1 Manufacturer's environmental management system concepts. Product manufacturer's operations and business practices include environmental management system concepts, and the production facility is ISO 14001 certified or equivalent. The aggregate value of building products from ISO 14001 certified or equivalent production facilities is 1 percent or more of the estimated total building materials cost.</p>	10 points Max			
			(1 point awarded per percent.)				

Chapter 7 – Energy Efficiency

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
334	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	701.4.3.3 Walls Revise as follows	<p>701.4.3.3 Walls</p> <p>(1) Windows and doors. <u>Windows and doors are sealed to comply with Section 701.4.3.1(2). Caulking, gasketing, adhesive flashing tape, foam sealant, or weatherstripping is installed forming a complete air barrier.</u></p> <p>Renovation Note: Existing windows and doors are <u>sealed to comply with Section 701.4.3.1(2). weather-stripped and sealed.</u></p> <p>(2) Band joist and rim joists. Band and rim joists <u>shall comply with above grade exterior wall insulation and air sealing requirements in ICC IECC are insulated and air sealed.</u></p> <p>Renovation Note: Existing uninsulated rim and/or band joists are insulated <u>to comply with above grade exterior wall requirements in ICC IECC.</u></p>	<p>In order to maintain credibility as the residential "green" standard and consistency with the commercial green code (IgCC) this standard should, minimally, aim to be at least as efficient as the most recent edition of the National Model Energy Code – the 2012 IECC. The proposed revisions in (1) refer back to the General requirements of sealing the building thermal envelope per the requirements of the IECC, as otherwise proposed by XPSA. The requirements for band joints and rim joists in (2) are proposed to be revised to reduce ambiguity by explicitly requiring insulation and sealing to comply with the IECC. The proposed revisions in (3) include foam sealant as an alternative for sealing the bottom plate and adds bottom plates to the renovation note. The proposed revisions in (4) clarify these walls are required to be insulated to the same requirements of other exterior walls. To reduce ambiguity, the IECC is proposed to be explicitly referenced in (5).</p>		

			<p>(3) Between foundation and sill plate bottom plate.</p> <p>(a) Sill sealer or other material that will expand and contract is installed between foundation and sill plate.</p> <p>(b) Caulk, <u>foam sealant</u>, or the equivalent is installed to seal the bottom plate of exterior walls.</p> <p>Renovation Note: Existing perimeter sill plates <u>and bottom plates</u> are sealed.</p> <p>(4) Skylights and knee walls. Skylight shafts and knee walls are insulated to <u>comply with above grade exterior wall requirements in ICC IECC.</u> the same level as the exterior walls.</p> <p>Renovation Note: Existing skylight shafts and knee walls are insulated <u>to comply with above grade exterior wall requirements in ICC IECC.</u></p> <p>(5) Exterior architectural features. ICC IECC Code-required building envelope insulation and air sealing are not disrupted at exterior architectural features such as stairs and decks.</p>	<p>(NAHB RC Note: the proposed change is also provided to TG-5 to review the new construction language)</p>																																								
307	Eric Lacey RECA RECA	701.4.4.1 Fenestration Specifications Revise as follows	<p>701.4.4.1 NFRC-certified U-factor and SHGC of windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in shall not exceed the values listed in accordance with ENERGY STAR, or equivalent, or Table 701.4.4.1. Decorative fenestration elements with a <u>combined total</u> maximum area of 15 square feet (1.39 m²) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice.</p> <p style="text-align: center;">Table 701.4.4.1 Fenestration Specifications</p> <table border="1"> <thead> <tr> <th rowspan="2">Climate Zones</th> <th>U-Factor</th> <th>SHGC</th> </tr> <tr> <th colspan="2">Windows and Exterior Doors (maximum certified ratings)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.50</td> <td>0.25</td> </tr> <tr> <td>1 and 2</td> <td>0.65 0.40</td> <td>0.40 0.25</td> </tr> <tr> <td>3</td> <td>0.40 0.35</td> <td>0.40 0.25</td> </tr> <tr> <td>4 to 8</td> <td>0.35 0.32</td> <td>Any 0.40</td> </tr> <tr> <td>5 to 8</td> <td>0.30</td> <td>Any</td> </tr> <tr> <td colspan="3" style="text-align: center;">Skylights and TDDs (maximum certified ratings)</td> </tr> <tr> <td>1 to 3</td> <td>0.75 0.70</td> <td>0.40 0.30</td> </tr> <tr> <td>2</td> <td>0.65</td> <td>0.30</td> </tr> <tr> <td>3 4 to 8</td> <td>0.60 0.55</td> <td>Any 0.30</td> </tr> <tr> <td>4</td> <td>0.55</td> <td>0.40</td> </tr> <tr> <td>5 to 8</td> <td>0.55</td> <td>Any</td> </tr> </tbody> </table> <p>Addition and Renovation Note: Section 701.4.4.1 is mandatory for both additions and renovations where new windows are installed.</p>	Climate Zones	U-Factor	SHGC	Windows and Exterior Doors (maximum certified ratings)		1	0.50	0.25	1 and 2	0.65 0.40	0.40 0.25	3	0.40 0.35	0.40 0.25	4 to 8	0.35 0.32	Any 0.40	5 to 8	0.30	Any	Skylights and TDDs (maximum certified ratings)			1 to 3	0.75 0.70	0.40 0.30	2	0.65	0.30	3 4 to 8	0.60 0.55	Any 0.30	4	0.55	0.40	5 to 8	0.55	Any	<p>First, this proposal corrects an omission in the fenestration requirements for additions and renovations. Although nearly every mandatory practice under Section 701.4 of the 2008 NGBS applies to additions and renovations, Section 701.4.4 is silent on window requirements for additions and renovations. Where an addition or renovation includes the installation or replacement of windows, it is reasonable to require that these windows meet the same mandatory requirements as in new construction. Second, this proposal updates the window efficiency requirements to Energy Star Version 5.0 or the 2012 IECC, whichever is more efficient. This proposal will ensure that the window requirements of the NGBS will not conflict with the 2012 IECC. The approach is consistent with the approach taken in the last version of the NGBS and will also continue to ensure that energy efficient fenestration is required for green homes.</p> <p>(NAHB RC Note: the proposed change is also provided to TG-5 to review the new construction language)</p>		
Climate Zones	U-Factor	SHGC																																										
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336	John Woestman Kellen Company Extruded Polystyrene Foam Association (XPSA)	703.1.1 Total Building Thermal Envelope UA Revise as follows	<p>703.1.1 Where the total building thermal envelope UA is less than required by ICC IECC, Section 402.1.4, points may be awarded the total building thermal envelope UA is in accordance with Table 703.1.1. <u>Percentage of UA improvement over the ICC IECC shall be verified with a compliance report generated using the most recent version of REScheck.</u> Where insulation is used to achieve these percentages, <u>insulation must achieve a Grade 1 installation as verified by a third-party grading of the installation as achieving Grade 1 is required.</u> A documented analysis is performed using REScheck version 4.0.1 or later, or equivalent, based on a comparison to the ICC IECC, IRC, or IBC.</p> <p>Renovation Note: The existing whole building thermal envelope UA is evaluated. One of the following is selected based on the evaluation.</p> <p>If the overall thermal performance meets or exceeds the requirements of ICC IECC, Section 401.1.4, Section 703.1.1 applies to the renovation.</p> <p>If the existing overall thermal performance is below the requirements of ICC IECC, Section 402.1.4, the overall thermal performance of the whole building thermal envelope UA is improved a minimum of the following:</p>	<p>This proposal editorially revises the first section for ease of use and understanding. The proposed revision in (2) c. recommends deleting language that conflicts with the statement in (2).</p> <p>(NAHB RC Note: the proposed change is also provided to TG-5 to review the new construction language)</p>																																								

			15 percent 30 percent 45 percent, or meets the requirements of ICC IECC, Section 402.1.4			
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Chapter 8 – Water Efficiency

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
928	Michael Grothe NAHB Research Center NAHB Research Center	801.4 Showerheads	Addition and Renovation Note: Existing showerhead is replaced with a showerhead that has a flow rate in accordance with Section 804.1.1	Section 804.1.1 does not exist in the NGBS		
121	Steve Hale Build Green NM Build Green NM	Add New Section Add new as follows	Retrofit Toilets within the limits of the local jurisdiction 4 points per toilet limit 12 points	Suggest adding offsetting existing water use within the jurisdiction or water service area like retrofitting existing high water use toilets, faucets, or adding cisterns off site. The City of Santa Fe has been requiring this for about 8 years and the water savings has been amazing.		

Chapter 9 – Indoor Air Quality

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action						
197	Steven Orlowski National Association of Home Builders NAHB	901.0 Intent (Pollutant Source Control) Delete and substitute as follows	<table border="1"> <tr> <td>901.15 Renovation Note: For buildings constructed prior to 1978, all contractors must adhere to the EPA regulations for lead-safe work practices are used during renovation, remodeling, painting, and demolition.</td> <td>Mandatory 0 Additional Points</td> </tr> </table>	901.15 Renovation Note: For buildings constructed prior to 1978, all contractors must adhere to the EPA regulations for lead-safe work practices are used during renovation, remodeling, painting, and demolition.	Mandatory 0 Additional Points	Proposed language will clarify that all lead-safe work is in accordance with the EPA regulations and guidelines. It is important that all contractors and subcontractors are aware that the federal guidelines supersede any local jurisdictional requirements or methods outlined in this standard.						
901.15 Renovation Note: For buildings constructed prior to 1978, all contractors must adhere to the EPA regulations for lead-safe work practices are used during renovation, remodeling, painting, and demolition.	Mandatory 0 Additional Points											
198	Steven Orlowski National Association of Home Builders NAHB	902.2.3 MERV Filters Delete and substitute as follows	<table border="1"> <tr> <td>902.2.3 MERV filters 8 or greater are installed on central air systems. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of MERV 8 filters.</td> <td>3</td> </tr> <tr> <td>Addition Note: Section 902.2.3 applies only to additions that include a new HVAC system.</td> <td>0 Additional Points</td> </tr> <tr> <td>Renovation Note: Section 902.2.3 applies only to renovations that replace an continue to use the existing HVAC system.</td> <td>1 Additional Point</td> </tr> </table>	902.2.3 MERV filters 8 or greater are installed on central air systems. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of MERV 8 filters.	3	Addition Note: Section 902.2.3 applies only to additions that include a new HVAC system.	0 Additional Points	Renovation Note: Section 902.2.3 applies only to renovations that replace an continue to use the existing HVAC system.	1 Additional Point	Many HVAC systems can be dramatically improved by upgrading the air filters, without having to replace the entire HVAC system. The current renovation note for section 902.2.3 seems to conflict with the base language. Section 902.2.3 allows designers to replace the filter with a MERV filter 8 or greater, after they verify that the HVAC system can handle the pressure drop with the more restrictive filter. The renovation note only permits the additional credit when the HVAC system is replaced.		
902.2.3 MERV filters 8 or greater are installed on central air systems. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of MERV 8 filters.	3											
Addition Note: Section 902.2.3 applies only to additions that include a new HVAC system.	0 Additional Points											
Renovation Note: Section 902.2.3 applies only to renovations that replace an continue to use the existing HVAC system.	1 Additional Point											
289	Kelly Wedell US EPA US EPA	Add New Section Add new as follows	<p>Ban of Asbestos within new facilities: <u>Final products (articles) to be installed in new residential buildings shall not contain asbestos</u></p> <p>Addition and Renovation Note: <u>Inspect building for asbestos-containing building material on an ongoing basis, and prepare a management plan to prevent or reduce asbestos hazards. The building inspection and management plan shall satisfy the requirements under the implementing rules of the Asbestos Hazard Emergency Response Act (AHERA) for schools, as published in the Code of Federal Regulations, Chapter 40, Part 763, Subpart E. All buildings, regardless of building type, shall meet these requirements.</u></p> <p><u>Before undertaking demolishing or renovating activities, notify the appropriate</u></p>	Given that the standard has requirements intended for renovations and additions to existing buildings, many of which contain legacy chemicals of concern, EPA would like to see the renovation process trigger verification that asbestos is addressed as suggested as additions to Chapter 9. (NAHB RC Note: This proposed change is also provided to TG-3 to approve the new construction portion)								

			<p>authorities as required by the Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP), found at 40 CFR Part 61, Subpart M. Dispose of any asbestos waste in accordance with the regulations. If minimum amounts of regulated asbestos will be removed or disturbed, such that the demolition or renovation activity does not trigger the requirements of the regulation, the owner/operator must adequately wet and carefully remove the asbestos components, keeping them wet until collected for disposal.</p> <p>Reporting: Provide a copy of inspection results and all documentation required under AHERA regulations. Provide documentation of all disposal measures, including disposal companies used and final destination of waste materials.</p>			
294	Kelly Wedell US EPA US EPA	Add New Section Add new as follows	<p>PCBs in Caulk: Addition and Renovation Note: For all buildings constructed prior to 1978, conduct an indoor air quality test for PCBs, following EPA's Compendium Method TO-4A (high air volume) or Compendium Method TO-10A (low air volume). In addition to or in place of the air quality test, test caulking for PCBs as well if it is peeling or visibly deteriorating. Testing of caulk should follow the procedures outlined in EPA's Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846.</p> <p>If PCBs are present in indoor air in concentrations above background levels or are present in caulk in concentrations greater than or equal to 50 ppm, take steps to minimize exposure and remove and replace the caulking as soon as practicable. Interim steps to reduce exposure should follow EPA best practices, as found at http://www.epa.gov/pcbsincaulk/caulkinterim.htm. Disposal of caulk or other building products contaminated by PCB-bearing caulk must follow regulatory guidelines for PCB bulk product waste, as defined at 40 CFR 761.62.</p> <p>Reporting: provide copies of all testing results. Provide documentation of all disposal measures, including disposal companies used and final destination of waste materials.</p>	Given that the standard has requirements intended for renovations and additions to existing buildings, many of which contain legacy chemicals of concern, EPA would like to see the renovation process trigger verification that PCBs are addressed as suggested above as additions to Chapter 9.		

Chapter 10 – Operation, Maintenance, and Building Owner Education

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
199	Steven Orlowski National Association of Home Builders NAHB	1001.1 Homeowner's Manual Delete and substitute as follows	<p>Renovations Note: A building owners' manual that includes the following:</p> <p>(1) all mandatory items listed in Section 1001.1 (2) a minimum of six of the non-mandatory items listed in Section 1001.1 (3) the EPA approved consumer pamphlets on lead renovation publications: "Reducing Lead Hazards When Remodeling Your Home" and "Asbestos in Your Home: A Homeowner's Guide"</p>	<p>Mandatory</p> <p>0 Additional Points</p>	To ensure that the standard does not reference specific EPA documents that may be outdated or discontinued, the standard should simple reference that the homeowner should receive a copy of an EPA approved document applicable to home renovations.	
204	Steven Orlowski National Association of Home Builders NAHB	1003.2 Operations Manuals Revise as follows	<p>1003.2 Operations manual. Operations manuals are created and distributed to the responsible parties in accordance with Section 1003.0. Between all of the operation manuals, five or more of the following options are included.</p> <p>Addition and Renovation Note: An operations manual that includes the following:</p> <p>(1) all mandatory items listed in Section 1003.2 (2) a minimum of three of the non-mandatory items listed in Section 1003.2</p>	<p>1</p> <p>0-1 Additional Points</p>	Points should be accredited to renovators and remodelers that provide all of the mandatory items and two of the non-mandatory items to the owner as listed in section 1003.2. There is no reason that renovation projects should be required to provide the documentation and not receive the same points that new construction projects receive for providing the same documentation.	
203	Steven Orlowski National Association of Home Builders	1003.3 Maintenance Manuals	1003.3 Maintenance manual. Maintenance manuals are created and distributed to the responsible parties in accordance with Section 1003.0. Between all of the maintenance manuals, five or	1	Points should be accredited to renovators and remodelers that provide all of the mandatory items and three of the non-mandatory items to the owner as listed in section 1003.3. There is no reason that renovation	

	NAHB	Revise as follows	<p>more of the following options are included.</p> <p>Addition and Renovation Note: A maintenance manual that includes the following:</p> <p>(1) <i>all mandatory items listed in Section 1003.3.</i></p> <p>(2) <i>a minimum of three of the non-mandatory items listed in Section 1003.3.</i></p>	<p>0 1 Additional Points</p>	<p>projects should be required to provide the documentation and not receive the same points that new construction projects receive for providing the same documentation.</p>		
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Proposed Change 566 by Robert Hill - NAHB Research Center. Section 305.5 Green Remodel Path: Completely restructure how remodeling, renovations, and additions are handled.

Proposed Changes to the National Green Building Standard for Remodeling

Background

The 2008 original version of the Standard provided two paths for renovations and addition projects to comply with the Standard. The Green Building Path (section 305.4) required that buildings follow essentially the same path as required for new construction except that a number of the practices (and point values) were modified with Renovation Notes and/or Addition Notes. The alternate path, the Green Remodel path, was available only to homes built prior to 1980 and was a much more streamlined process that required only showing threshold levels of reduction in energy and water usage and compliance with 5 indoor environment quality practices.

While there was significant interest in having remodeling projects certified to the Standard, only 1.3 percent of the certified buildings used the Green Building path. And only 2.6 percent followed the Green Remodel path. There was significant confusion among remodelers about the pathway choices and how to follow them. There was also significant confusion regarding how to read and interpret the Addition Notes and Renovation Notes if one was considering the Green Building path. The proper interpretation was especially confusing when there was both a renovation and an addition. Also the mandatory requirements of the Green Building path often appeared to require destroying and rebuilding parts of the structure (e.g. to install foundation drainage) regardless if there was a problem with the existing structure. This did not seem to be the “green” thing to do. Because the Green Remodel path only focused on energy, water and just touched upon IEQ there was some concern that this was not a truly green path. The Green Remodel path also had some significant holes such as no requirement for the proper handling of hazardous waste.

The existing housing market offers a significant potential for significant environmental impact but a clearer approach is needed to make it effective for the remodelers.

The following proposal is for the task group’s and committee’s consideration. This proposal would eliminate the Green Building Path but allow all buildings to be remodeled following an approach similar to the existing Green Remodel path. This path would be broadened and strengthened with the addition of mandatory requirements in chapters 6,7,9, and 10. A new chapter 11 has been added to define the mandatory requirements and to clearly distinguish the application between new and existing construction. The threshold levels for improvement in energy and water would remain the same and would be the determining factor in establishing the level (Bronze, Silver Gold, and Emerald) of compliance. All the current Renovation Notes and Addition Notes would be deleted from the Standard.

Buildings post 1980 would be eligible for in this new version but they would have a greater challenge in meeting the energy and water thresholds since those buildings likely would have been built to more stringent codes. Additions would also be included in the green building path but those as well would have a greater challenge in meeting the energy and water thresholds since the enlarged building would normally require more energy and water. Minimal renovations (e.g. a kitchen remodel) would not likely meet the standard due to the energy and water thresholds.

The current section 305 is deleted and replaced with new section 305

305 Green Remodeling

305.1 Applicability. This section shall apply to any existing building where improvements are made via renovation and/or addition. Existing buildings that are essentially torn down and rebuilt (e.g. only the foundation is saved) must follow the new construction path of section 303 or 304 including all appropriate mandatory requirements.

305.2 Mandatory Practices. The building shall comply with all applicable mandatory practices in Chapter 11[new].

305.3 Consumption for both energy and water shall be estimated for both before and after the remodeling. The occupancy and life style assumed and the method of making the consumption comparison should be the same for both estimates.

- (1) **Energy consumption:** Energy consumption shall be based on the estimated annual energy use due to heating, cooling, and water heating as determined by a third-party energy audit or analysis.
- (2) **Water consumption:** Water consumption shall be based on the estimated annual use as determined by audit or analysis.

305.4 Consumption in both categories of Section 305.3(1) and (2) shall be reduced to achieve the desired performance level of Table 305.4.

Table 305.4 Threshold Ratings for Green Remodels				
Green Remodel Practice	Performance Level			
	BRONZE	SILVER	GOLD	EMERALD
Reduction in energy and water consumption in accordance with Section 305.3	20%	34%	43%	50%

GREEN REMODELING PRACTICES (Renovations and/or Additions)	POINTS
<p>11.0 Intent This chapter sets the mandatory green practices for any remodeling project done pursuant to this standard. A remodeling project can consist of renovating an existing building, constructing an addition to an existing building, or both. Most practices have slightly different requirements depending on if the construction is new or if it is part of renovating existing structure. Practices identified as New Construction apply to work that is part of an addition or any work that involves a substantial rebuilding of the structure of an existing building. Practices identified as Existing Construction apply to renovation activities on an existing building.</p>	
<p>11.1 Foundation drainage. (Ref. 602.3.1)</p>	
<p>11.1.1 New Construction. Habitable or usable new space below grade has exterior drain tile is installed where required by the ICC IRC or IBC..</p>	Mandatory
<p>11.1.2 Existing Construction. Habitable or usable existing space below grade has exterior drain tile is installed where required by the ICC IRC or IBC if there is evidence of moisture issues in the space.</p>	
<p>11.2 Finished grade. (Ref. 602.6)</p>	
<p>11.2.1 New and Existing Construction. Finish grade at all sides of the construction is sloped to provide a minimum of 6 inches (150 mm) of fall within 10 feet (3048 mm) of the edge of the building. Where lot lines, walls, slopes, or other physical barriers prohibit 6 inches (152 mm) of fall within 10 feet (3048 mm), the final grade is sloped away from the edge of the building at a minimum slope of 5 percent and the water is directed to drains or swales to ensure drainage away from the structure.</p>	Mandatory
<p>11.3 Water-resistive barrier. (Ref. 602.9)</p>	
<p>11.3.1 New Construction. Where required by the ICC IRC or IBC, a water-resistive barrier and/or drainage plane system is installed behind exterior veneer and/or siding.</p>	Mandatory
<p>11.3.2 Existing Construction. Where required by the ICC IRC or IBC, a water-resistive barrier and/or drainage plane system is installed behind all newly installed exterior veneer and/or siding..</p>	
<p>11.4 Ice barrier. (Ref. 602.10)</p>	
<p>11.4.1 New Construction. In areas where there has been a history of ice forming along the eaves causing a backup of water, an ice barrier is installed in accordance with the ICC IRC or IBC at roof eaves and extends at a minimum of 24 inches (610 mm) inside the exterior wall line of the building.</p>	Mandatory
<p>11.4.2 Existing Construction. . When the existing building has a history of ice forming along the eaves causing a backup of water, an ice barrier is installed in accordance with the ICC IRC or IBC at roof eaves and extends at a minimum of 24 inches (610 mm) inside the exterior wall line of the building.</p>	
<p>11.5 Construction waste management plan. (Ref. 605.1)</p>	
<p>11.5.1 New Construction and Existing Construction. A construction waste management plan is developed, posted at the jobsite, and implemented that includes provisions for proper handling and disposal of hazardous wastes.</p>	Mandatory
<p>11.7 HVAC systems. (Ref. 701.4.1)</p>	
Mandatory	

<p>11.7.1 New Construction. Space heating and cooling system/equipment is sized according to heating and cooling loads calculated using ACCA Manual J, or equivalent.</p>	Mandatory
<p>11.7.2 Existing Construction. When the HVAC system is modified, space heating and cooling system/equipment is sized according to heating and cooling loads calculated using ACCA Manual J, or equivalent.</p>	
<p>11.8 HVAC Systems (Ref. 701.4.1.2)</p>	
<p>11.8.1 New Construction. Where installed as a primary heat source in the building, radiant or hydronic space heating system is designed using industry-approved guidelines (e.g., ACCA Manual J, GAMA H-22, or an accredited design professional's and manufacturer's recommendations).</p>	Mandatory
<p>11.8.2 Existing Construction. Where an existing radiant or hydronic space heating system serves as the primary heat source in the existing portion of the building and it is modified, the modified system is designed using industry-approved guidelines (e.g., ACCA Manual J, GAMA H-22, or an accredited design professional's and manufacturer's recommendations).</p>	
<p>11.9 Duct systems. (Ref. 701.4.2.1)</p>	
<p>11.9.1 New Construction. Ducts are sealed with tape complying with UL 181, mastic, gaskets, or an approved system as required by the ICC IRC, Section M1601.3.1, or ICC IMC, Section 603.9, to reduce leakage.</p>	Mandatory
<p>11.9.2 Existing Construction. Ducts that are modified as part of the remodel are sealed with tape complying with UL 181, mastic, gaskets, or an approved system as required by the ICC IRC, Section M1601.3.1, or ICC IMC, Section 603.9, to reduce leakage.</p>	
<p>11.10 Supply Duct Systems. (Ref. 701.4.2.2)</p>	
<p>11.10.1 New Construction. Building cavities are not used as supply ducts.</p>	Mandatory
<p>11.10.2 Existing Construction. No additional building cavities are not used as supply ducts.</p>	
<p>11.11 Insulation and air sealing. (Ref. 701.4.3.1(1))</p>	
<p>11.11.1 New Construction. General. Insulation and air sealing is in accordance with the following:</p> <p>(1) Insulation. Insulation is installed in accordance with the manufacturer's instructions or local code, as applicable.</p>	Mandatory
<p>11.11.2 Existing Construction. General. Insulation and air sealing is in accordance with the following:</p> <p>(1) Insulation. Newly installed Insulation is installed in accordance with the manufacturer's instructions or local code, as applicable.</p>	
<p>11.12 Shafts (duct shaft, piping shaft/penetrations, flue shaft). (Ref. 701.4.3.1(2))</p>	
<p>11.12.1 New Construction. Openings to unconditioned space are fully sealed with solid blocking or flashing and any remaining gaps are sealed with caulk or foam. Fire-rated collars and caulking are installed where required.</p>	Mandatory
<p>11.12.2 Existing Construction. Openings to unconditioned space that become accessible during the remodeling are fully sealed with solid blocking or flashing and any remaining gaps are sealed with caulk or foam. Fire-rated collars and caulking are installed where required.</p>	
<p>11.13 Floors, foundations, and crawlspaces (Ref. 701.4.3.2 (1))</p>	
<p>11.13.1 New Construction. (including insulated floors above garages and cantilevered floors)</p> <p>(a) Insulation is installed to maintain permanent contact with the underside of the subfloor decking, enveloping any attached ductwork</p>	Mandatory

<p>within the thermal envelope without compression or air gaps in the insulation. This practice does not apply to ducts or other mechanical equipment that is adjacent to the underside of the subfloor.</p> <p>(b) Batt and loose-fill insulation is held in place by permanent attachments or systems in accordance with the manufacturer's instructions.</p>	
11.13.2	
(1) Existing Construction. (including insulated floors above garages and cantilevered floors)	
(a) Newly installed Insulation is installed to maintain permanent contact with the underside of the subfloor decking, enveloping any attached ductwork within the thermal envelope without compression or air gaps in the insulation. This practice does not apply to ducts or other mechanical equipment that is adjacent to the underside of the subfloor.	
(b) Newly installed Batt and loose-fill insulation is held in place by permanent attachments or systems in accordance with the manufacturer's instructions.	
11.14.1 Crawlspace. (Ref. 701.4.3.2 (2))	
(2) New and Existing Construction. Where insulated, crawlspace wall insulation is permanently attached to the walls. Exposed earth in unvented crawlspaces is covered with continuous vapor retarder with overlapping joints that are taped or masticed.	Mandatory
11.15 Windows and doors. (Ref. 701.4.3.3(1))	
11.15.1	
(1) New Construction. Caulking, gasketing, adhesive flashing tape, foam sealant, or weatherstripping is installed forming a complete air barrier.	Mandatory
11.15.2	
(1) Existing Construction. Newly installed doors and windows have caulking, gasketing, adhesive flashing tape, foam sealant, or weather stripping installed forming a complete air barrier. Existing windows and doors are inspected and any air barrier weaknesses are corrected.	Mandatory
11.16 Band joist and rim joists. (Ref. 701.4.3.3(2))	
11.16.1	
(2) New Construction. Band and rim joists are insulated and air sealed.	Mandatory
11.16.2	
(2) Existing Construction. Band and rim joists which become accessible during the remodeling are insulated and air sealed.	
11.17 Between foundation and sill plate bottom plate. (Ref. 701.4.3.3(3))	
11.17.1	
(3) New Construction.	
(a) Sill sealer or other material that will expand and contract is installed between foundation and sill plate and	
(b) Caulk or the equivalent is installed to seal the bottom plate of exterior walls.	Mandatory
11.17.2	
(3) Existing Construction.	
(a) When the bottom plate of exterior walls is exposed during the remodeling caulk or the equivalent is installed to seal the bottom plate of exterior walls.	
11.18 Skylights and knee walls. (Ref. 701.4.3.3(4))	
11.18.1	
(4) New Construction. Skylight shafts and knee walls are insulated to the same level as the exterior walls.	Mandatory

11.18.2																								
(4) Existing Construction. Newly installed skylight shafts and knee walls are insulated to the same level as the exterior walls.																								
11.19 Exterior architectural features. (Ref. 701.4.3.3(5))																								
11.19.1																								
(5) New Construction. Code required building envelope insulation and air sealing are not disrupted at exterior architectural features such as stairs and decks.	Mandatory																							
11.20 Ceilings and attics. Attic access (except unvented attics). (Ref. 701.4.3.4(1))																								
11.20.1																								
(1) New and Existing Construction. Attic access, knee wall door, or drop-down stair is covered with insulation and gasketed. Knee wall door is an insulated unit or is covered with insulation.	Mandatory																							
11.21 Ceilings and attics. Recessed lighting. (Ref. 701.4.3.4(2))																								
11.21.1																								
(2) New Construction. Recessed light fixtures that penetrate the thermal envelope are airtight, IC-rated, and sealed with gasket, caulk, or foam.	Mandatory																							
11.21.2																								
(2) Existing Construction. Recessed light fixtures that penetrate the thermal envelope that can be accessed during the remodeling are airtight, IC-rated, and sealed with gasket, caulk, or foam.																								
11.22 Ceilings and attics. Eave vents. (Ref. 701.4.3.4(3))																								
11.22.1																								
(3) New Construction. Where ceiling/attic assemblies or designs have eave vents, baffles or other means are implemented to minimize air movement into or under the insulation.	Mandatory																							
11.23 Fenestration (Ref. 701.4.4.1)																								
11.23.1 New Construction. NFRC-certified U-factor and SHGC windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in accordance with ENERGY STAR, or equivalent, or Table 701.4.4.1. Decorative fenestration elements with a maximum area of 15 square feet (1.39 m ²) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice.																								
<p>Table 701.4.4.1 Fenestration Specifications</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Climate Zones</th> <th>U-Factor</th> <th>SHGC</th> </tr> <tr> <th colspan="2">Windows and Exterior Doors (maximum certified ratings)</th> </tr> </thead> <tbody> <tr> <td>1 and 2</td> <td>0.65</td> <td>0.40</td> </tr> <tr> <td>3</td> <td>0.40</td> <td>0.40</td> </tr> <tr> <td>4 to 8</td> <td>0.35</td> <td>Any</td> </tr> <tr> <td></td> <th colspan="2">Skylights and TDDs (maximum certified ratings)</th> </tr> <tr> <td>1 to 3</td> <td>0.75</td> <td>0.40</td> </tr> <tr> <td>4 to 8</td> <td>0.60</td> <td>Any</td> </tr> </tbody> </table>		Climate Zones	U-Factor	SHGC	Windows and Exterior Doors (maximum certified ratings)		1 and 2	0.65	0.40	3	0.40	0.40	4 to 8	0.35	Any		Skylights and TDDs (maximum certified ratings)		1 to 3	0.75	0.40	4 to 8	0.60	Any
Climate Zones	U-Factor		SHGC																					
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	Skylights and TDDs (maximum certified ratings)																							
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4 to 8	0.60	Any																						
11.23.2 Existing Construction. Newly installed windows, doors and TDDs are NFRC-certified U-factor and SHGC are in accordance with ENERGY STAR, or equivalent, or Table 701.4.4.1. Decorative fenestration elements with a maximum area of 15 square feet (1.39 m ²) or 10 percent of the total glazing area, whichever is less, are not required to comply with this practice.	Mandatory																							
<p>Table 701.4.4.1 Fenestration Specifications</p>																								

Climate Zones	U-Factor	SHGC
	Windows and Exterior Doors (maximum certified ratings)	
1 and 2	0.65	0.40
3	0.40	0.40
4 to 8	0.35	Any
Skylights and TDDs (maximum certified ratings)		
1 to 3	0.75	0.40
4 to 8	0.60	Any

11.24 Lighting and Appliances. (Ref. 704.2.2)	
11.24.1 New Construction. The number of recessed light fixtures that penetrate the thermal envelope are less than 1 per 400 square feet (37.16 m ²) of total conditioned floor area and are in accordance with Section 701.4.3.4(2).	Mandatory

11.25 Ducts (Ref. 704.4.1)	
11.25.1 New Construction. Duct system is sized, designed, and installed in accordance with ACCA Manual D or equivalent.	Mandatory
11.25.2 Existing Construction. Modifications to the existing duct system are sized, designed, and installed in accordance with ACCA Manual D or equivalent.	

11.26 Space and water heating options (Ref. 901.1.1)	
11.26.1 New Construction. Natural draft space heating or water heating equipment is not located in conditioned spaces, including conditioned crawlspaces. Natural draft equipment is permitted to be installed within the conditioned spaces if located in a mechanical room that has an outdoor air source, and is otherwise sealed and insulated to separate it from the conditioned space(s).	Mandatory

11.27 Fireplaces and fuel-burning appliances. Fireplaces and fuel-burning appliances (except cooking appliances, clothes dryers, water heaters, and furnaces) located in conditioned space are in accordance with the following: (Ref. 901.2)		Mandatory
[Section 901.2.1(2)(a) is not mandatory.]		
11.27.1 New Construction. Fireplaces and natural draft fuel-burning appliances are code compliant, vented to the outdoors, and have adequate combustion and ventilation air provided to minimize spillage or back-drafting, in accordance with the following, as applicable. (Ref. 901.2.1)		
(1) Natural gas and propane fireplaces that are power vented or direct vented, are equipped with permanently fixed glass fronts or gasketed doors, and comply with CSA Z21.88a/CSA 2.33a or CSA Z21.50/CSA 2.22.		Mandatory
(2) Solid fuel-burning appliances are in accordance with the following requirements:		
(a) Wood-burning fireplaces are equipped with gasketed doors designed to operate with the doors closed, outside combustion air, and a means is provided for sealing the flue to minimize interior air (heat) loss when not in operation.		Mandatory
(b) Factory-built, wood-burning fireplaces are in accordance with the certification		Mandatory

requirements of UL 127 and are EPA certified.		
(c) Wood stove and fireplace inserts, as defined in UL 1482 Section 3.8, are in accordance with the certification requirements of UL 1482 and are in accordance with the emission requirements of the EPA Certification and the State of Washington WAC 173-433-100(3) .		Mandatory
(d) Pellet (biomass) stoves and furnaces are in accordance with the requirements of ASTM E1509 or are EPA certified.		Mandatory
(e) Masonry heaters are in accordance with the definitions in ASTM E1602 and ICC IBC, Section 2112.1.		Mandatory

11.28 Garages. (Ref. 901.3)	
11.28 .1 New Construction. Garages are in accordance with the following:	
(1) Attached garage	
(a) Where installed in the common wall between the attached garage and conditioned space, the door is tightly sealed and gasketed.	Mandatory
(b) A continuous air barrier is provided between walls and ceilings separating the garage space from the conditioned living spaces.	Mandatory
11.28 .2 Existing Construction. Garages are in accordance with the following:	
(1) Attached garage	
(a) Where installed in the common wall between the attached garage and conditioned space, the door is tightly sealed and gasketed.	Mandatory

11.29 Wood materials. (Ref. 901.4)	
11.29.1 New Construction. Structural plywood used for floor, wall, and/or roof sheathing is compliant with DOC PS 1 and/or DOC PS 2. OSB used for floor, wall, and/or roof sheathing is compliant with DOC PS 2. The panels are made with moisture-resistant adhesives. The trademark indicates these adhesives as follows: Exposure 1 or Exterior for plywood, and Exposure 1 for OSB.	Mandatory
11.29.2 Existing Construction. Newly installed structural plywood used for floor, wall, and/or roof sheathing is compliant with DOC PS 1 and/or DOC PS 2. OSB used for floor, wall, and/or roof sheathing is compliant with DOC PS 2. The panels are made with moisture-resistant adhesives. The trademark indicates these adhesives as follows: Exposure 1 or Exterior for plywood, and Exposure 1 for OSB.	

11.30 Carpets. (Ref. 901.5)	
11.30.1 New and Existing Construction. Wall-to-wall carpeting is not installed adjacent to water closets and bathing fixtures.	

11.31 Architectural coatings. (Ref. 901.8.1)	
11.31.1 New and Existing Construction. When the building is occupied during the remodeling, a minimum of 85 percent of the newly applied site applied architectural coatings are in accordance with one or more of the following standards:	
(1) Zero VOC as determined by EPA Method 24 (VOC content below the detection limit for the method)	

(2) CARB Suggested Control Measure for Architectural Coatings	
(3) GS-11	
(4) VOC limits in accordance with: (a) 50 grams/liter flat (b) 100 grams/liter non flat (c) 350 grams/liter clear wood varnish (d) 550 grams/liter clear wood lacquer	

11.33 Spot ventilation. (Ref. 902.1.1)	
11.33.1 New Construction. Spot ventilation is in accordance with the following:	
(1) Bathrooms are vented to the outdoors. The minimum ventilation rate is 50 cfm (23.6 L/s) for intermittent operation or 20 cfm (9.4 L/s) for continuous operation in bathrooms.	Mandatory
(2) Clothes dryers are vented to the outdoors.	Mandatory
11.33.2 Existing Construction. Spot ventilation is in accordance with the following:	
(2) Clothes dryers are vented to the outdoors.	Mandatory

11.34 Radon control. (Ref. 902.3)	
11.34.1 New Construction. Passive or active radon control measures are in accordance with ICC IRC Appendix F for buildings in Zone 1. Zones are defined in Figure 9(1).	Mandatory
11.34.2 Existing Construction. Buildings in zone 1 are tested and buildings exceeding the EPA acceptable limit have radon control measures in accordance with ICC IRC Appendix F implemented. Zones are defined in Figure 9(1).	

11.35 HVAC system protection. (Ref. 902.4)	
11.35.1 New and Existing Construction. When the building is occupied during remodeling, measures are taken to prevent contaminants from the construction process from entering the HVAC system.	Mandatory

11.36 Tile backing materials. (Ref. 903.1)	
11.36.1 New Construction. Tile backing materials installed under tiled surfaces in wet areas are in accordance with ASTM C1178, C1278, C1288, or C1325.	Mandatory
11.36.2 Existing Construction. Existing tiled surfaces in wet areas are inspected and any areas with evidence of moisture damaged are repaired with tile backing materials installed under tiled surfaces are in accordance with ASTM C1178, C1278, C1288, or C1325.	

11.37 Capillary breaks (Ref. 903.2.1)	
11.37.1 New Construction. A capillary break and vapor retarder are installed at all concrete slabs in accordance with Sections 903.2.1(1) or 903.2.1(2), as modified by Section 903.2.1(3):	
(1) A minimum 4-inch-thick (102 mm) bed of ½-inch (13 mm) diameter or greater clean aggregate, covered with polyethylene or polystyrene sheeting in direct contact with the concrete slab, with the sheeting joints lapped in accordance with Section 903.3.	Mandatory
(2) A minimum 4-inch-thick (102 mm) uniform layer of sand, overlain with a layer or	

strips of geotextile drainage matting, covered with polyethylene sheeting, with the sheeting joints lapped in accordance with Section 903.3.	
(3) Modification: (a) In areas with free-draining soils, identified as Group 1 in the ICC IRC by a certified hydrologist, soil scientist, or engineer through a site visit, a gravel bed or geotextile matting is not required. (b) In Dry climate locations, as defined by Figure 6(1), polyethylene sheeting is not required unless required for radon resistance (Section 902.3).	
11.37.2 Existing Construction. A capillary break and vapor retarder are installed at newly installed concrete slabs in accordance with Sections 903.2.1(1) or 903.2.1(2), as modified by Section 903.2.1(3):	
(1) A minimum 4-inch-thick (102 mm) bed of ½-inch (13 mm) diameter or greater clean aggregate, covered with polyethylene or polystyrene sheeting in direct contact with the concrete slab, with the sheeting joints lapped in accordance with Section 903.3.	Mandatory
(2) A minimum 4-inch-thick (102 mm) uniform layer of sand, overlain with a layer or strips of geotextile drainage matting, covered with polyethylene sheeting, with the sheeting joints lapped in accordance with Section 903.3.	
(3) Modification: (a) In areas with free-draining soils, identified as Group 1 in the ICC IRC by a certified hydrologist, soil scientist, or engineer through a site visit, a gravel bed or geotextile matting is not required. (b) In Dry climate locations, as defined by Figure 6(1), polyethylene sheeting is not required unless required for radon resistance (Section 902.3).	

11.38 Crawlspaces (Ref. 903.3.1)	
11.38.1 New Construction. Crawlspace vapor retarder is in accordance with the following, as applicable. Joints of vapor retarder overlap a minimum of 6 inches (152 mm) and are taped. Walls. Damp-proof walls are provided below finished grade.	Mandatory
11.38.2 Existing Construction. Existing crawlspace is inspected and when there is evidence of a moisture problem a crawlspace vapor retarder is installed in accordance with the following, as applicable. Joints of vapor retarder overlap a minimum of 6 inches (152 mm) and are taped. Damp-proof walls are provided below finished grade.	

11.39 Moisture control measures (Ref. 903.4.1.)	
11.39.1 New and Existing Construction. Walls are not enclosed (e.g., with drywall) if the insulation has a high moisture content. Wet insulation products are dry before enclosing.	Mandatory

11.40 Moisture control measures. (Ref. 903.4.2)	
11.40.1 New Construction. Moisture content of subfloor, substrate, or concrete slabs is in accordance with the appropriate industry standard for the finish flooring to be applied.	Mandatory

11.42 Duct insulation. (Ref. 903.6)	
11.42.1 New Construction. All HVAC ducts, plenums, and trunks in unconditioned attics, basements, and crawl spaces are insulated to a minimum of R-6. Outdoor air supplies to ventilation systems are insulated to a minimum of R-6.	Mandatory
11.42.2 Existing Construction. All HVAC ducts, plenums, and trunks in unconditioned attics, basements, and crawl spaces that become accessible during the remodeling are insulated to a minimum of R-6. Outdoor air supplies to ventilation systems are insulated	

to a minimum of R-6.	
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11.43 (Ref. 904.3)	
11.43.1 New and Existing Construction. All gas dryer vents are sealed and vented outdoors.	Mandatory

11.46 Training of Building Owners (Ref. 1002.1)	
11.46.1 Building owners/occupants are familiarized with the green building goals and strategies implemented and the impacts of the occupants' practices on the costs of operating the building. Training is provided to the responsible party(ies) regarding all newly installed equipment operation and control systems. Systems include, but are not limited to, the following: HVAC filters, thermostat, appliances, water heater, and fan controls.	Mandatory

11.47 Multi-unit Building Operations	
11.47.1 Maintenance and operations Manuals: The operations and maintenance manuals for multi-family buildings are updated to reflect the remodeling changes and are provided to the responsible parties.	Mandatory