



2012 Update - National Green Building Standard™ Proposed changes to 2008 NGBS February 2011

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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

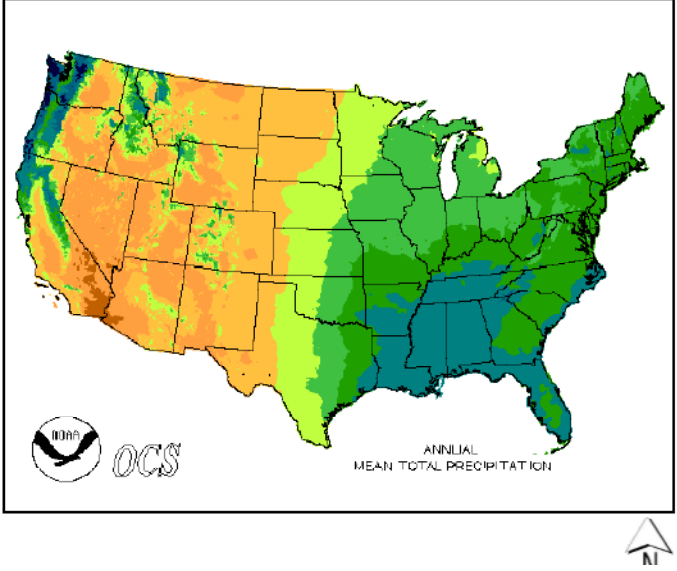
ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
353	Robert Hill NAHB Research Center NAHB Research Center	601.0 Intent (Quantity of Construction Materials and Waste) Revise as follows		The standard should provide guidance 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.	3 9 Points		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

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			<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		

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			<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> 2</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: (Points awarded for each type (a-e) of material or assembly.)</p> <p>(2) 50 percent to less than 90 percent of the installed building material or assembly listed below: (Points awarded for each type (a-e) of material or assembly.)</p> <p>(a) pigmented, stamped, decorative, or final finish concrete or masonry</p> <p>(b) <u>Interior</u> trim not requiring paint or stain (c) <u>exterior</u> trim not requiring paint or stain</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 (f) <u>Exterior</u> wall coverings or systems not requiring paint or stain or other type of finishing application (g) <u>pre-finished</u> hardwood flooring</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>		

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				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.	

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			<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" style="margin-left: auto; margin-right: auto;"> <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																			

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
						
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	Constructing exterior walls with a designed drainage space enhances the durability of the building. While various minimum "gap" values have been specified in published documents, 3/16" may be considered the minimum gap necessary for a water capillary break in the wall assembly. Five (5) points is suggested for this construction option in light of three (3) points offered for a roof drip edge, four (4) points offered for foundation drainage, and four (4) points offered for foundation waterproofing.	
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	The 2012 IRC introduces a requirement for drip edges when asphalt shingle roofing is provided. A similar requirement has been part of the IBC since 2000. One should not be able to get credits just for simply complying with the code minimum. This change also corrects terminology.	
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	The requirements for finished grade are revised to coordinate with the 2009 IRC. The 5% requirement for drainage on constrained sites was reduced to 2% and the requirement to direct water to drains or swales was deleted. This was done because the higher drainage requirements were deemed unnecessary for areas of low annual rainfall and because on some sites the combination of a 5% slope coupled with a sloped drain or swale (which the IRC provisions required) would create an excessively steep slope which would be difficult to maintain and possibly create unsafe conditions. The 5% slope and the drain/swale requirement are proposed here as additional credits which can be selected in areas of high rainfall or questionable drainage where the practices make sense.	

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			<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 included 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		

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	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>		
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<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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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" data-bbox="612 816 1473 1286"> <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" data-bbox="612 1387 1473 1580"> <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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<u>4 assemblies</u>	<u>20</u>	<u>25</u>																																					
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>602.15.1 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>602.15.2 Where not required by the ICC IRC or IBC, impact-resistant glazing is installed.</td> <td>2</td> </tr> <tr> <td>602.15.3 High-wind-resistant or impact-resistant entry doors or garage doors are installed.</td> <td>2</td> </tr> <tr> <td>602.15.3 High-wind-resistant or impact-resistant wall claddings are installed.</td> <td>2</td> </tr> <tr> <td>602.15.4 High-wind-resistant or impact-resistant roof coverings are installed.</td> <td>2</td> </tr> <tr> <td>602.15.5 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.	-	602.15.1 Where required by the ICC IRC or IBC, impact-resistant glazing, and high-wind-resistant wall and roof coverings are installed.	Mandatory	602.15.2 Where not required by the ICC IRC or IBC, impact-resistant glazing is installed.	2	602.15.3 High-wind-resistant or impact-resistant entry doors or garage doors are installed.	2	602.15.3 High-wind-resistant or impact-resistant wall claddings are installed.	2	602.15.4 High-wind-resistant or impact-resistant roof coverings are installed.	2	602.15.5 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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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 avoidmoisture / durability problems associated with specifying higher levels ofinsulation, much more air tight structures, and effectively lowering the amountof air moved to meet the much reduced heating and cooling loads. This may result in specification ofconstruction details that are prohibited or required. It may require a better specification of what makeseffective ventilation, beyond simply specifying a rate. It may require separating theconditioned air delivery, ventilation, and humidity controls functions; suchthat 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. Residential construction outside the scope of this Chapter shall comply with Chapter 12, <i>Functional resistance of residential buildings other than one and two family dwellings and townhomes not more than three stories in height.</i></td> </tr> <tr> <td>1100.1 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.</td> <td style="text-align: center;">Mandatory</td> </tr> <tr> <td>1100.2 Building code. For this Chapter, Code shall mean the Building Code of the jurisdiction or the referenced edition of the ICC <i>International Residential Code</i>, whichever is more stringent.</td> <td style="text-align: center;">Mandatory</td> </tr> <tr> <td>1100.3 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 9 of the Code.</td> <td style="text-align: center;">Mandatory</td> </tr> <tr> <td style="background-color: black; color: white;">1101 (Coordinates with Chapter 1 of the Code, Administration)</td> <td></td> </tr> <tr> <td colspan="2">SUBMITTAL DOCUMENTS</td> </tr> <tr> <td>1101.1 Design serviced 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.</td> <td rowspan="10" style="text-align: center; vertical-align: middle;">Mandatory</td> </tr> <tr> <td>(1) Design service life. The DSLPL shall use a design service life of not less than 60 years.</td> </tr> <tr> <td>(2) DSLPL scope. 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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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(e) Roof assemblies and rooftop structures in accordance with Chapter 8, <i>Roof-ceiling Construction</i> and Chapter 9, <i>Roof Assemblies</i> of the Code	(f) Chimneys and Fireplaces in accordance with Chapter 10, <i>Chimneys and Fireplaces</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. During the design service life of the building, the DSLPL shall be transferred to each subsequent owner.	1101.2 Certificate of occupancy. Buildings designed and constructed in accordance with this Standard shall include the designation (-HP) after the occupancy classification.	Mandatory	1101.3 Wildland fires. 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(4) DSLPL retention. The DSLPL shall be retained for the design service life of the building. During the design service life of the building, the DSLPL shall be transferred to each subsequent owner.																																												
1101.2 Certificate of occupancy. Buildings designed and constructed in accordance with this Standard shall include the designation (-HP) after the occupancy classification.	Mandatory																																											
1101.3 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																																											
1101.4 Radon control methods. Appendix F, <i>Radon control methods</i> , of the Code shall apply.																																												

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<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 Pfingsten 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;">CHAPTER 12</p> <p style="text-align: center;">FUNCTIONAL RESILIENCE OF RESIDENTIAL BUILDINGS</p> <p style="text-align: center;">OTHER THAN ONE AND TWO FAMILY DWELLINGS AND TOWNHOMES NOT MORE THAN THREE STORIES IN HEIGHT</p>		
GREEN BUILDING PRACTICES				POINTS		

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) DSLP 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) DSLP 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) DSLP 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	HT	A	B	
			Primary Structural Frame ^{g,h}	3 ^b	2 ^b	1	NP	1	NP	
			Bearing Walls							
			Exterior ^{f,g}	3	2	1	NP	2	NP	
			Interior	3 ^b	2 ^b	1	NP	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	
			Floor Construction and Secondary Members ^h	2	2	1	NP	1	NP	
			Roof Construction and Secondary Members ^h	1- 1/2 ^b	1 ^{c,d}	1 ^{c,d}	NP	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 of the Code.</i>							
			^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							
			<p>1207.1 Exterior walls. Exterior walls shall comply with this section and the ICC <i>International Wildland-Urban Interface Code</i>, whichever is more</p>			Mandatory				

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action	
			stringent.				
			<p>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.</p>		Mandatory		
			<p><u>Table 1207.2</u></p>				
			<p>Maximum Area of Exterior Wall Opening Based on Fire Separation Distance and Degree of Opening Protection^a</p>				
			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	
			<p>For SI: 1 foot = 304.8 mm</p>				
			<p>UP = Unprotected openings in buildings</p>				
			<p>P = Openings protected with an opening protective assembly in accordance with section 704.8.2 of the ICC <i>International Building Code</i></p>				
			<p>^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></p>				
			<p>^b Values indicated are the percentage of the area of the exterior wall per story.</p>				
			<p>^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></p>				
			<p>^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></p>				
			<p>^e The maximum percentage of unprotected and protected openings shall be 25% for Group R-3 occupancies.</p>				
			<p>^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.</p>				
			<p>^g Includes buildings accessory to Group R-3.</p>				

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" data-bbox="568 393 2076 564"> <thead> <tr> <th data-bbox="568 393 708 443">GROUP</th> <th data-bbox="708 393 1019 443">EXIT ENCLOSURES AND EXIT PASSAGeways^b</th> <th data-bbox="1019 393 1299 443">CORRIDORS</th> <th data-bbox="1299 393 2076 443">ROOMS AND ENCLOSED SPACES</th> </tr> </thead> <tbody> <tr> <td data-bbox="568 443 708 473">R-1</td> <td data-bbox="708 443 1019 473">A</td> <td data-bbox="1019 443 1299 473">B</td> <td data-bbox="1299 443 2076 473">C</td> </tr> <tr> <td data-bbox="568 473 708 504">R-2</td> <td data-bbox="708 473 1019 504">B</td> <td data-bbox="1019 473 1299 504">B</td> <td data-bbox="1299 473 2076 504">C</td> </tr> <tr> <td data-bbox="568 504 708 534">R-3</td> <td data-bbox="708 504 1019 534">A</td> <td data-bbox="1019 504 1299 534">C</td> <td data-bbox="1299 504 2076 534">C</td> </tr> <tr> <td data-bbox="568 534 708 564">R-4</td> <td data-bbox="708 534 1019 564">A</td> <td data-bbox="1019 534 1299 564">B</td> <td data-bbox="1299 534 2076 564">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																							
R-1	A	B	C																							
R-2	B	B	C																							
R-3	A	C	C																							
R-4	A	B	C																							
			<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	

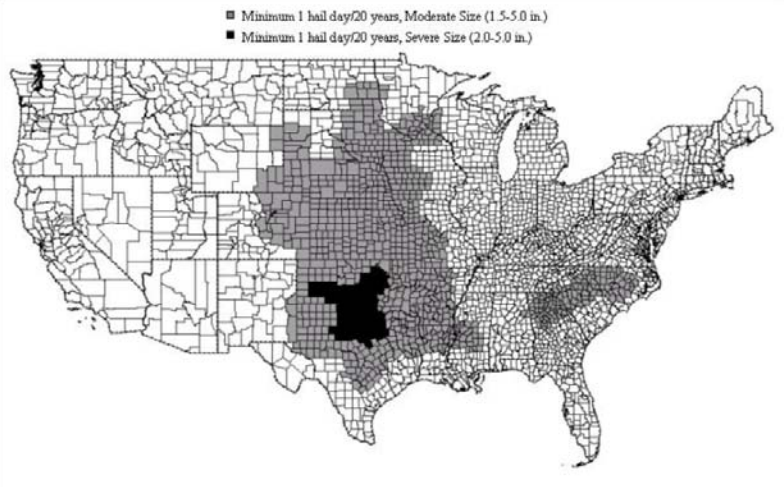
ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
			<p>conditions. Thermal emittance determined in accordance with ASTM E408 or C1371 and the solar reflectance determined in accordance with ASTM E1918 or C1549 shall be 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 of the Code with the following modification:</i> 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		

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			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.			

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			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	

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			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 1214.4(2)			
			E1918 1214.3, 1215.2(3)			
			E1980 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			

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			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				

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			<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>		
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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										

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
	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)</p> <p align="center"><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		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
				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 all prefinished 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>		

ID	Name Company Entity Represented	Section Number And Requested Action	Proposed Change	Reason	Task Group Action	Reason for TG action
	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												
(a) a passive radon system is installed												
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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" data-bbox="571 1215 1361 1679"> <thead> <tr> <th data-bbox="571 1215 1128 1387">Maximum Concentration of Air Pollutants Relevant to IAQ</th> <th data-bbox="1137 1215 1361 1387">Maximum Concentration, ug/m³ (unless otherwise noted)</th> </tr> </thead> <tbody> <tr> <td data-bbox="571 1387 1128 1427">Formaldehyde</td> <td data-bbox="1137 1387 1361 1427">27 ppb</td> </tr> <tr> <td data-bbox="571 1427 1128 1467">4-Phenylcyclohexene (4-PCH) ^a</td> <td data-bbox="1137 1427 1361 1467">6.5</td> </tr> <tr> <td data-bbox="571 1467 1128 1528">Total Volatile Organic Compounds (TVOC)</td> <td data-bbox="1137 1467 1361 1528">500 over outdoor air concentrations</td> </tr> <tr> <td data-bbox="571 1528 1128 1568">Particulates (PM 2.5)</td> <td data-bbox="1137 1528 1361 1568">50</td> </tr> <tr> <td data-bbox="571 1568 1128 1679">Carbon Monoxide</td> <td data-bbox="1137 1568 1361 1679">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>		

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			<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>		

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			<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>		

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			<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>			