Task Group 3

Chapter 2 Definitions

PC #	Log ID	Full Name Company Jurisdiction Entity Represented	Section Number Requested Action	Comment	Proposed Resolution	TG Action	Reason
PC 032	644	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Primers should be explicitly included since VOC guidelines for primers are provided in chapter 9	ARCHITECTURAL COATINGS. A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, primers, paints, varnishes, sealers, and stains. An architectural coating is a material applied to stationary structures or their appurtenances at the site of installation. Coatings applied in shop applications, sealants and adhesives are not considered architectural coatings.		
PC 033	731	Howard Fortunato LandmarkJCM self	201.2 Interchangeability Delete and substitute as follows	a homebuilder client (that builds with ICF's) drew exception to the proposed definition with regard to the wood chips and has proposed this definition, below all of which is intended to replace the existing definition.	ICF: would define ICF as, “Insulating Concrete Form (ICF) is a system of formwork for concrete that stays in place as permanent building insulation for energy-efficient, cast-in-place, reinforced concrete walls, floors, and roofs. The forms are interlocking modular units that are dry-stacked (without mortar) and filled with concrete. The forms lock together somewhat like Lego bricks and serve to create a form for the structural walls or floors of a building. Concrete is pumped into the cavity to form the structural element of the walls. Usually reinforcing steel (rebar) is added before concrete placement to give the concrete flexural strength, similar to bridges and high-rise buildings made of concrete (see Reinforced concrete). After the concrete has cured, the forms are left in place permanently, for the following reasons: (1) Thermal and acoustic insulation; (2) Space to run electrical conduit and plumbing. The form material on either side of the walls can easily accommodate electrical and plumbing installations. (3) Backing for gypsum boards on the interior and stucco, brick, or other siding on the exterior.”		
PC 034	647	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	Some minimum amount of material needs to be specified or else some builder will claim credit for using miniscule amounts of material. The 3% number seems appropriate as it would typically allow trim to be considered a minor material.	MINOR COMPONENT. Building materials or systems that are not considered major. Building materials or systems that are typically applied as a part of at least 3% of the surface area of the foundation, wall, floor, ceiling, or roof assemblies.		
PC 035	648	Robert Hill NAHB Research Center NAHB Research Center	202 Definitions Revise as follows	There is some confusion about how to deal with manufactured products produced from raw materials that are not necessarily local. If the practice is intended to only apply to materials (e.g. lumber, stone, etc) then this definition should be explicit. If the practice can apply to manufactured products (e.g. windows, carpet, tile, etc) then the definition needs to define how to account for the source of raw materials.	REGIONAL MATERIAL. Material that is originated, produced, grows naturally, or occurs naturally 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 or water. Products that are assembled or produced from multiple raw materials are considered regional materials if the weighted average of the raw materials and distance transported in the product meet the criteria.		

Chapter 6 Resource Efficiency

PC #	Log ID	Full Name Company Jurisdiction Entity Represented	Section Number Requested Action	Comment	Proposed Resolution	TG Action	Reason
PC 036	799	Amy Schmidt The Dow Chemical Company Dow Building Solutions	601.1 Conditioned Floor Area Revise as follows	Materials in the building that are not part of the finished floor area still have an impact on the building.	**601.1 Conditioned floor area.** Conditioned ~~Finished~~ floor area, as defined by ICC IRC ~~and calculated in accordance with NAHBRC Z765~~, of a dwelling unit is limited. Dwelling unit size ~~Finished floor area~~ is calculated in accordance with NAHBRC Z765. Only the conditioned ~~finished~~ floor area for stories above grade plane is included in the calculation.		
PC 037	903	Eric DeVito Brickfield, Burchette, Ritts & Stone, P.C.	601.7 Site-applied finishing materials	This proposal clarifies the intent of Section 601.7 to award credit for window, doors, and skylight assemblies that do not require site-applied finishes on at least one surface (interior or exterior). The 2008 NGBS recognizes the value of popular fenestration products that may be pre-finished or metal-clad on the exterior side, while still preserving the design flexibility offered by an unfinished interior surface. Fenestration is distinct from other categories in the list of materials because each component actually has two surfaces – interior and exterior – which could require site-applied finishes. The latest NGBS public review draft revises the language in an attempt to clarify the application of this credit, but we believe code enforcers would benefit from some additional clarification on the subject. The modification below clarifies that credit is available for products that do not require site-applied finish on one of the two surfaces – interior or exterior.	**601.7 Site-applied finishing materials.** Building materials or assemblies listed below that do not require additional site-applied material for finishing are incorporated in the building. (1) 90 percent or more of the installed building materials or assemblies listed below: (Points awarded for each type (a-g) of material or assembly.) (2) 50 percent to less than 90 percent of the installed building material or assembly listed below: (Points awarded for each type (a-g) of material or assembly.) (3) 35 percent to less than 50 percent of the installed building material or assembly listed below: (Points awarded for each type (a-g) of material or assembly.) (a) pigmented, stamped, decorative, or final finish concrete or masonry		

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					(b) interior trim not requiring paint or stain (c) exterior trim not requiring paint or stain (d) window, skylight, and door assemblies not requiring paint or stain on <u>one of the following surfaces:</u> <u>1.</u> exterior <u>surfaces</u> ~~or~~ <u>2.</u> interior surfaces (e) interior wall coverings or systems not requiring paint or stain or other type of finishing application (f) exterior wall coverings or systems not requiring paint or stain or other type of finishing application (g) pre-finished hardwood flooring		
PC 038	734	Howard Fortunato LandmarkJCM self	601.2 Material Usage Revise as follows	601.2 (1) (2) (3) these seem to be non-specific requirements, is sizes necessary for "strength and stiffness". As a verifier I am not clear how a builder would determine how to comply with this requirement and how as a verifier I would verify it	see above.		
PC 039	813	Bridget Herring Mathis Consulting Company Mathis Consulting Company	601.2 Material Usage Delete without substitution	Inadequate language to reliably ensure intent.	~~601.2 Material usage. Building code compliant Structural systems are designed or advanced framing construction techniques are implemented that reduce and optimize material usage. (Points awarded for each system or framing technique implemented.)~~ ~~(1) Minimum structural member or element sizes necessary for strength and stiffness in accordance with advanced framing techniques or structural design standards are selected.~~ ~~(2) Higher-grade or higher-strength of the same materials than commonly specified for structural elements and components in the building are used and element or component sizes are reduced accordingly.~~ ~~(3) Performance-based structural design is used to optimize lateral force-resisting systems~~		
PC 040	740	Matthew Dobson Vinyl Siding Institute mdobson@vinylsiding.org	602.1 Moisture Management - Building Envelope Revise as follows	This additional provision will allow for recognized options of rainscreening techniques from the 2012 International Residential Code.	602.1.9 (5) <u>OR (c) Utilize a vented cladding system as defined by Section R702.7 of the International Residential Code.</u>		
PC 041	671	Robert Hill NAHB Research Center NAHB Research Center	602.1.1 Capillary breaks Revise as follows	The original text is not clear regarding basements. An unfinished basement might not qualify as living space but it could be finished later and then it would be too late to install a capillary break. If the intent is to exempt unfinished basements then the original text is OK.	**602.1.1.1** A capillary break and vapor retarder are installed at all concrete slabs adjoining ~~living~~ <u>habitable and usable</u> space in accordance with Sections 602.1.1.1(1) or 602.1.1.1(2), as modified by Section 602.1.1.1(3):		
PC 042	696	Donn Thompson Portland Cement Association Portland Cement Association	602.1.1 Capillary breaks Revise as follows	Based on the recommendations of the American Concrete Institute, the minimum thickness of a vapor retarder should be at least 10 mils (25mm) to enable the retarder to maintain its integrity under construction loads.	602.1.1 Capillary breaks 602.1.1.1 A capillary break and vapor retarder are installed at all concrete slabs adjoining living space in accordance with Sections 602.1.1.1(1) or 602.1.1.1(2), as modified by Section 602.1.1.1(3): Mandatory (1) A minimum 4-inch-thick (102 mm) bed of ½-inch (13 mm) diameter or greater clean aggregate, covered with polyethylene or polystyrene sheeting, <u>minimum thickness 10 mil (25mm),</u> in direct contact with the concrete slab, with the sheeting joints lapped in accordance with Section 602.1.4. (2) A minimum 4-inch-thick (102 mm) uniform layer of sand, overlain with a layer or strips of geotextile drainage matting, covered with polyethylene sheeting, <u>minimum thickness 10 mil (25mm),</u> with the sheeting joints lapped in accordance with Section 602.1.4. (3) Modification: In areas with free-draining soils, identified as Group 1 in the ICC IRC by a certified hydrologist, soil scientist, or engineer through a site visit, a gravel bed or geotextile matting is not required.		
PC 043	674	Robert Hill NAHB Research Center NAHB Research Center	602.1.13 Drip Edge Delete without substitution	This practice should be deleted since it is already mandated in 602.1.9(1)(h).	**602.~~1.13~~Drip edge.** ~~Drip edge is installed at eaves and gable roof edges.~~		

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PC 044	605	Chris Allison City of Longmont City of Longmont	602.1.14 Ice barrier Revise as follows	Refer to IRC Figure R301.2(1) for the areas required to have ice barriers by this standard to avoid confusion.	Add or refer to the IRC Figure R301.2(1) to indicate areas required to have ice barriers.		
PC 045	672	Robert Hill NAHB Research Center NAHB Research Center	602.1.4 Crawlspaces Revise as follows	Is the intent here just to leave enough material available that the vapor barrier could be attached with furring strips or is the intent that the vapor barrier is actually attached with glue and furring strips?	**602.1.4.1** Crawlspace vapor retarder is in accordance with the following, as applicable. Joints of vapor retarder overlap a minimum of 6 inches (152 mm) and are taped. **(1)** Floors. Minimum 6 mil vapor retarder installed on the crawlspace floor and extended up the wall ~~sufficient to allow~~ and the material ~~to be~~ is affixed with glue and furring strips		
PC 046	697	Donn Thompson Portland Cement Association Portland Cement Association	602.1.4 Crawlspaces Revise as follows	Based on the recommendations of the American Concrete Institute, the minimum thickness of membranes placed below concrete slabs should be at least 10 mils (25mm) to enable the retarder to maintain its integrity under construction loads. ACI also provides recommendations for the minimum lapping and tapping of seams.	602.1.4.2 Crawlspace that is built as a conditioned area is sealed to prevent outside air infiltration and provided with conditioned air at a rate not less than 0.02 cfm (.009 L/s) per square foot of horizontal area and one of the following is implemented: (1) a concrete slab over lapped ~~6~~ 10 mil (25mm) polyethylene or polystyrene sheeting, lapped a minimum of 6 inches (152mm) and taped at the seams.		
PC 047	798	Ray Tonjes Ray Tonjes Builder, Inc. Self	602.1.5 Termite barrier Revise as follows	As there is no current definition of what constitutes a "continuous physical foundation termite barrier" there needs to be validation of the products and methods used to provide the termite infestation protection intended.	**Termite barrier.** Continuous physical foundation termite barrier used with 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). Material and installation methods to be validated by the State's pest control authority or ICC-ES Evaluation Report.		
PC 048	673	Robert Hill NAHB Research Center NAHB Research Center	602.1.9 Flashing Revise as follows	Since (1)(a) is a mandatory requirement for flashing at all exteriors fenestrations it seems inconsistent to allow and exception to this mandatory requirement in (6) and also award 2 points for it.	**602.1.9 Flashing.** Flashing is provided to minimize water entry into wall and roof assemblies and to direct water to exterior surfaces or exterior water-resistive barriers for drainage. Flashing details are provided in the construction documents and are in accordance with the fenestration manufacturer's instructions, the flashing manufacturer's instructions, or as detailed by a registered design professional. **(1)** Flashing are installed at all of the following locations, as applicable: **Mandatory** **(a)** around exterior fenestrations, skylights and doors ~~**(6)** A drip cap is provided above windows and doors that are not flashed or protected by covering in accordance with Section 602.1~~		
PC 049	706	Gladys Quinto Marrone BIA Hawaii BIA Hawaii	602.4 Finished Grade Revise as follows	Builders should not be rewarded for building to code.	602.4 – Points for a drip edge are superfluous; that is all code now.		
PC 050	633	Kathleen Petrie City of Seattle, Department of Planning and Development City of Seattle, Department of Planning and Development	603.1 Reuse of Existing Building Revise as follows	Demolition is an act of nonsystematic structure removal; it does not address what happens to a material after the structure has been removed, so its inclusion in this section adds confusion to the intent. Demolition may yield fewer recycled or salvaged materials than a structure that has been deconstructed; it does not guarantee that there isn't some success, so this term has been removed.	**603.1 Reuse of existing building.** Existing Major elements or components of existing buildings and structures are reused, modified, or deconstructed for later use ~~in lieu of demolition~~.		
PC 051	675	Robert Hill NAHB Research Center NAHB Research Center	603.1 Reuse of Existing Building Revise as follows	603.1 and 603.2 can easily be confused. If the intent is this practice be limited to that existing buildings on the lot then the additional text will make it clear.	**603.1 Reuse of existing building.** Existing Major elements or components of existing buildings and structures on the lot are reused, modified, or deconstructed for later use in lieu of demolition.		
PC 052	676	Robert Hill NAHB Research Center NAHB Research Center	603.2 Salvaged Materials Revise as follows	603.1 and 603.2 are often confused. Unless these practices are clarified a builder might try to claim points for both of these practices when an on-site building is deconstructed.	**603.2 Salvaged materials.** Reclaimed and/or salvaged materials and components obtained off site are used. The total material value and labor cost of salvaged materials is equal to or exceeds 1 percent of the total construction cost.		
PC 053	707	Gladys Quinto Marrone BIA Hawaii BIA Hawaii	604.1 Recycled Content Revise as follows	Better definitions as to what are 'minor and major' building components are needed.	604--A list format would be better.		

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PC 054	632	Kathleen Petrie City of Seattle, Department of Planning and Development City of Seattle, Department of Planning and Development	605.2 On-site Recycling Revise as follows	The intent of this section is unclear. Section 605.1 already addresses 50% construction waste diversion, and because the make-up of waste is so different, construction and land-clearing debris should not be included in the same diversion calculation; therefor, construction has been removed from this section. The encouragement of incineration does not meet the environmental intent of this standard.	**605.2 On-site recycling.** ~~On-site recycling measures following applicable regulations and codes are implemented, such as the following:~~ ~~**(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~~ nonhazardous land-clearing waste is diverted from landfill. ~~**(b)** Alternative compliance methods approved by the Adopting Entity.~~ ~~**(c)** Compatible untreated biomass material (lumber, posts, beams etc.) are set aside for combustion if a Solid Fuel Burning Appliance as per Section 901.2.1(2) will be available for on-site renewable energy.~~		
PC 055	677	Robert Hill NAHB Research Center NAHB Research Center	609.1 Regional materials Revise as follows	A major element is not defined. The current definition of a major component is limited to the building itself. Is the intent for regional materials only to get points for use in the building or should points also be appropriate for major use on site (e.g. driveway construction)?	**609.1 Regional materials.** Regional materials are used for major ~~elements or~~ components of the ~~building~~ construction.		
PC 056	834	Craig Conner Building Quality self	609.1 Regional materials Delete without substitution	This is “free be” for concrete, since ready mix will always be very much closer than 500 miles, using local rocks and sand. Concrete always gets it. Will any use of local rock and sand get this? At 1500 miles I can take sand off the beach of very southern California and maybe northern Mexico and ship it to my city in inland Washington, almost Idaho, and call it indigenous. Ridiculous. Delete the whole item.	Delete all sections concerning "regional materials". Including: ~~REGIONAL MATERIAL. Material that is originated, produced, growsnaturally, or occurs naturally within 500 miles (804.7 km) of the constructionsite if transported by truck or 1500 miles (2414 km) of the construction siteif transported for not less than 80% of the total transport distance by rail orwater.~~		
PC 057	698	Donn Thompson Portland Cement Association Portland Cement Association	610.1 Life Cycle Analysis Revise as follows	1) Delete individual product or assembly based comparative Life cycle assessment (LCA). LCA is intended to offer a comprehensive approach to evaluating and improving the environmental impacts of buildings. A project’s environmental life cycle performance is dependent upon the whole project design with its individual components acting together as a system. A project’s environmental life cycle performance should not be separated into the assessment of the individual components and assemblies. Conducting such a limited assessment will lead to conclusions and actions that are poorly informed. For example, looking at a comparison of wall assemblies, the differences in embodied energy, the energy associated with the extraction, manufacturing, and delivery of a product to the construction site, will likely be the primary consideration for selection. There would be no means of accurate assessment of in-place performance within the overall project. Only rough estimates of operational energy performance would be possible. A recent LCA study by MIT has demonstrated that the environmental impacts of the operational phase of a buildings life cycle is responsible for at least 88% of total emissions. Operational impacts can only be accurately assessed through a whole building LCA. Using component based LCA to superficially compare individual impacts is simplistic, inaccurate, and will often lead to decisions that result in greater environmental impacts over the full service life of the project. 2) Broaden the scope of the environmental impacts to be assessed: A complete cradle to grave LCA carried out according to the guidelines in "International Standard ISO 14044, Environmental Management – Life Cycle Assessment – Requirements and Guidelines" should not be limited to only a few impacts. At a minimum, the following life cycle impacts should be assessed: Human toxicity, Global warming potential, ozone depletion, acidification, eutrophication, photochemical smog, ecotoxicity of water, ecotoxicity of soil, bulk waste, hazardous waste, radioactive waste, human health respiratory effects potential from particulates and land use. The impact of fossil fuel consumption is addressed through analysis of global warming potential and need not be listed separately. 3) Suggest 15 points awarded for conducting a whole building life cycle analysis	610.1 Whole-building ~~L~~life cycle analysis. A whole building life cycle analysis (LCA) ~~tool is used to select environmentally preferable products or assemblies, or an LCA~~ using a life cycle assessment process and data compliant with ISO 14044 or other equivalent standards is conducted on the entire building. ~~Points are awarded in accordance with 6010.1.1, 610.1.2(1), or 610.1.2(2). Only one method of analysis may be utilized.~~ A reference service life for the building ~~is to be~~ of 60 years shall be used. ~~for any life cycle analysis tool.~~ Results of the LCA are reported in the manual required in Section 1003.1(1) of this standard in terms of the environmental impacts listed in this practice. ~~and it states if operating energy was included in its preparation.610.1.1 Whole-building life cycle analysis. A whole building LCA is performed using a life cycle assessment and data compliant with ISO 14044 or other recognized standards.~~ ~~609.1 610.1.2 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 an Life Cycle Assessment (LCA) tool that incorporates data methods compliant with ISO 14044 or other recognized standards that compare the environmental impact of building materials,products or assemblies, or the whole building.~~ ~~(1) per product/system comparison~~ ~~(2) whole building LCA analysis~~ ~~(1) Two products with the same intended use are compared based on LCA and the product with a 15% improvement in fossil fuel consumption and global warming potential is used.~~ ~~(Points awarded per product/system comparison.)~~ ~~(2) An assembly is selected for the project that has environmental impact measures that are better than a functionally comparable assembly. The full life cycle, from resource extraction to demolition and disposal (including but not limited to on-site construction, maintenance and replacement, material and product embodied acquisition, and process and transportation energy), is assessed. The assemblies considered include all structural elements, insulation, and wall coverings:~~ ~~(a) exterior walls~~ ~~(b) roof/ceiling~~ ~~(c) interior walls or ceilings~~ ~~(d) intermediate floors~~ ~~Exception: Electrical and mechanical equipment and controls, plumbing products, fire~~		

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					~~detection and alarm systems, elevators, and conveying systems are not included in the assessment.~~ At a minimum, the following ~~The~~ environmental impacts shall be assessed: ~~measures to be considered are chosen from the following:~~ ~~(a) Fossil fuel consumption~~ (~~b~~ a) Global warming potential (~~c~~ b) Acidification potential (~~d~~ c) Eutrophication potential (~~e~~ d) Ozone depletion potential (~~f~~ e) Human health respiratory effects potential from particulates (f) Human toxicity (g) Photochemical smog (h)ecotoxicity of water (i) ecotoxicity of soil (j) bulk waste (k) hazardous waste (l) radioactive waste (m)land use ~~(Points are awarded based on the number of assemblies that improve upon environmental impact measures by 15%.)~~ ~~Table 610.1.2(2)~~ ~~Assembly LCA~~		
PC 058	750	Matthew Dobson Vinyl Siding Institute mdobson@vinylsiding.org	610.1 Life Cycle Analysis Revise as follows	610.1.2 (1) The focus on global warming impact and fossil fuels use (which are usually very closely related) is far too narrow a focus for an LCA credit. It also seems very strange that only those two impacts are considered here while acidification, eutrophication, ozone depletion, and human health respiratory effects are also considered in 609.2.2. It makes far more sense to be consistent across all these credits. For both 609.2.1 and 609.2.2 something such as the list below should be provided: • Global Warming Potential - measured in kg of CO2 equivalents • Acidification Potential – measured in H+ moles equivalents • Eutrophication Potential – measured in kg N equivalents • Ozone Depletion Potential – measured in kg CFC-11 equivalents • Smog Potential – measured in g of NOX equivalents	and the product with a 15% improvement in overall average in the following areas is used. ~~fossil fuel consumption and global warming potential is used.~~ (a) Fossil fuel consumption **(b)** Global warming potential **(c)** Acidification potential **(d)** Eutrophication potential **(e)** Ozone depletion potential **(f)** Human health respiratory effects potential from particulates		

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PC 059	833	Craig Conner Building Quality self	610.1 Life Cycle Analysis Delete without substitution	Delete this item until it is made more usable. LCA is poorly defined. 15% of the whole building's energy used? Very few things can do that. 15% of the energy use from the product? Can I save 15% of the heat that flows through the door knob? It is trivial. To compare two products I just copy the manufacturer's analysis of their impacts and call it completed? What is the base case, what is the minimum? A politically correct concept, but not a criteria that is defined enough to used in the green standard. Energy savings is already covered in the energy chapter. Save considerable energy, as specified in the energy chapter, and the greenhouse gases will take care of themselves.	~~610.1.2 Life cycleanalysis for a product or assembly. An environmentally~~ ~~preferable product orassembly is selected for an application based upon the use of an Life CycleAssessment (LCA) tool that incorporates data methods compliant with ISO 14044or other recognized standards that compare the environmental impact of building~~ ~~materials,products orassemblies, or the whole building.~~ ~~10 Points Max~~ ~~15 Points Max~~ ~~(1) per product/system comparison 3~~ ~~(2) whole building LCA analysis 15~~ ~~(1) Two products with thesame intended use are compared based on LCA and the product with a 15%improvement in fossil fuel consumption and global warming potential is used. 210 Points Max (Points awarded perproduct/system comparison.)~~		
PC 060	730	Josh Jacobs GREENGUARD Environmental Institute GREENGUARD Environmental Institute	611.1 Manufacturer's Environmental Management System Concepts Revise as follows	The proposed standard is aligned with the overall tenants of the existing 610.1. The standard touches on the following areas of sustainability for a product manufacturer: • Sustainability Governance: including sustainability strategic planning, board oversight, internal stakeholder engagement, ethics policies, and creating the infrastructure and fostering the behaviors that create a culture of sustainability • Environment: including product stewardship, sustainable resource use, environmental management systems, energy efficiency and carbon management, materials optimization, facilities and land use, habitat restoration, and waste prevention • Work Force: including professional development, workplace integrity, employee satisfaction and retention, workplace safety, and employee health and well-being • Customers and Suppliers: including fair marketing practices, product safety, customer support and complaint resolution, and sustainable supply chain management, monitoring and improvement • Community Engagement and Human Rights: including community impact assessment, community investment, and human rights issues Each domain includes prerequisites, core indicators, and leadership indicators, for a total of 1,003 possible points across all domains. The standard was put out for public comment and changed due to that public comment. It can be found here: www.comm-2000.com	**610.1 Manufacturer's environmental management system concepts.** (a) Product manufacturer's operations and business practices include environmental management system concepts, and the production facility is ISO 14001 certified or equivalent. The aggregate value of building products from ISO 14001 certified or equivalent production facilities is 1 percent or more of the estimated total building materials cost. (1 point awarded per percent.) (b) The aggregate value of building products used in the building that is from UL 880 certified manufacturers is 1 percent or more of the estimated total building materials cost. (1 point awarded per percent)		
PC 061	724	Josh Jacobs GREENGUARD Environmental Institute GREENGUARD Environmental Institute	611.2 Sustainable Products Revise as follows	The standards named in this section focus on the sustainability of a product the same way that this document looks at the sustainability of a building – in total. To give individual attributes, such as biobased, recycled content, or certified wood more than triple the amount of points (at the minimum) is misunderstanding the focus of sustainability in building. Should sustainable buildings not also be built with the most sustainable products? Looking at the sustainable aspects of a product, in total, as these standards do, is a much better way of ensuring sustainable products are being used to build these homes, than attributes done on a case by case basis.	**611.2 Sustainable Products.** One or more of the following products are used for at least 30% of the floor or wall area of the entire dwelling unit, as applicable. Certification third-party agency is ISO Guide 65 accredited. **4 10 Points Max** **(1)** 50% or more of carpet installed (by square feet) is third-party certified to NSF/ANSI 140. ~~**15**~~ **15** **(2)** 50% or more of resilient flooring installed (by square feet) is third-party certified to NSF/ANSI 332. ~~**15**~~ **15** **(3)** 50% or more of the insulation installed (by square feet) is third-party certified to EcoLogo CCD-016. ~~**15**~~ **15** **(4)** 50% or more of interior wall coverings installed (by square feet) is third-party certified to NSF/ANSI 342 ~~**15**~~ **15**		

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PC 062	725	Josh Jacobs GREENGUARD Environmental Institute GREENGUARD Environmental Institute	611.2 Sustainable Products Revise as follows	Single attribute traits allow us to see valuable snapshots of a products impact on certain areas of the environment and they bring value to a building standard such as this one, but many product manufacturers and sustainability purchasers/experts are looking to multi-attribute standards as a way to show that a product, in total, addresses the triple bottom line of sustainability. Referencing these standards and awarding points would allow the homes built to this standard to show that some of the products chosen to build the building have been looked at in terms of their overall sustainable impact. As the document is written now, we only have standards for carpet, flooring, insulation, and wall coverings. I am proposing that we include references for standards that are being utilized and certified to in the marketplace for gypsum/wall board and door leafs. This would allow us to give more options to home builders/developers when trying to build these sustainable homes with more sustainable products.	**611.2 Sustainable Products.** One or more of the following products are used for at least 30% of the floor or wall area of the entire dwelling unit, as applicable. Certification third-party agency is ISO Guide 65 accredited. **4 Points Max** **(1)** 50% or more of carpet installed (by square feet) is third-party certified to NSF/ANSI 140. **1** **(2)** 50% or more of resilient flooring installed (by square feet) is third-party certified to NSF/ANSI 332. **1** **(3)** 50% or more of the insulation installed (by square feet) is third-party certified to EcoLogo CCD-016. **1** **(4)** 50% or more of interior wall coverings installed (by square feet) is third-party certified to NSF/ANSI 342 **1** **(5)** 50% or more of the gypsum board installed (by square feet) is third-party certified to ULE ISR 100 **1** **(6)** 50% or more of the door leafs installed (by number of door leafs) is third-party certified to ULE ISR 102 **1**		
PC 063	805	Amy Schmidt The Dow Chemical Company Dow Building Solutions	611.2 Sustainable Products Revise as follows	I believe EcoLogo would be considered a proprietary program. We should not be picking winners and losers.	**611.2 Sustainable Products.** One or more of the following products are used for at least 30% of the floor or wall area of the entire dwelling unit, as applicable. Certification third-party agency is ISO Guide 65 accredited. **4 Points Max** **(1)** 50% or more of carpet installed (by square feet) is third-party certified to NSF/ANSI 140. **1** **(2)** 50% or more of resilient flooring installed (by square feet) is third-party certified to NSF/ANSI 332. **1** **(3)** 50% or more of the insulation installed (by square feet) is third-party certified ~~to EcoLogo CCD-016~~. **1** **(4)** 50% or more of interior wall coverings installed (by square feet) is third-party certified to NSF/ANSI 342 **1**		
PC 064		Curtis L Biggar Biggar Dev Ltd self	611.3 Universal Design Elements	I WOULD RECOMMEND THAT IN ADDITION TO THE RECOGNITION GIVEN TO AGING- IN -PLACE A POINT SHOULD BE GIVEN FOR EACH EXTERIOR ACCESSIBLE EXTERIOR THRESHOLD; AND EACH ACCESSIBLE ROOM. THAT WOULD AMOUNT TO LESS THAN 10 POINTS & ENSURE LONGEVITY; SUSTAINABILITY & HIGH FUTURE RESALE WITHOUT REMODELING. IT WOULD ALSO REDUCE THE HIGH COST OF PREMATURELY LEAVING ONES HOME FOR COSTLY PRIVATE OR GOVERNMENT CARE			
PC 065	809	Bridget Herring Mathis Consulting Company Mathis Consulting Company	611.4 Food waste disposers Delete without substitution	Food waste disposers do are not the clear green option for food waste disposal. Although they can sometimes reduce landfill waste, they add Biological Oxygen Demand to sewer systems, requiring additional treatment.	~~**611.4 Food waste disposers.** A minimum of one food waste disposer is installed at the primary kitchen sink. (1 point)~~		
PC 066	832	Craig Conner Building Quality self	611.4 Food waste disposers Delete without substitution	This is green washing. A garbage disposal is not as good as composting. I thought the committee had voted this out of the document.	~~611.4 Food waste disposers. A minimum of one food waste disposer isinstalled at the primary kitchensink. 1~~		

Chapter 9 Indoor Environmental Quality

PC #	Log ID	Full Name Company Jurisdiction Entity Represented	Section Number Requested Action	Comment	Proposed Resolution	TG Action	Reason
PC 067	609	Chris Allison City of Longmont City of Longmont	901.1 Space and Water Heating Options Revise as follows	This item should reference the International Fuel Gas Code (IFGC) to avoid confusion.	This item should reference the International Fuel Gas Code (IFGC).		
PC 068	688	Robert Hill NAHB Research Center NAHB Research Center	901.1.1 Natural draft furnaces, boilers, or water heaters Delete and substitute as follows	Suggest deleting 901.1.1 and incorporating the idea in 901.1.3. There is often confusion with both builders and verifiers trying to claim points for 901.1.1 for not having natural draft equipment in conditioned space when they do not have any natural draft equipment. Often times they also claim points for not having natural draft equipment and also points for having a heat pump. The old 901.1.1 and 901.1.4 should be combined into one practice that awards points for the appropriate system but does not allow for this confusion.	**901.1.3** The following ~~combustion~~ space heating and or water heating equipment is installed ~~within conditioned space~~:as follows: (points awarded for only 1 practice for heating systems and for water heaters). **(1)** all ~~direct vent~~ furnaces or all boilers **5** **(a)** power vent furnace(s) or boiler(s) are in conditioned space **TBD** **(b)** direct vent furnace(s) or boiler(s) are in conditioned space **5** **(c)** Natural draft furnaces and boilers are not located in conditioned spaces, including conditioned crawlspaces. Natural draft furnaces, boilers and water heaters are 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). **(2)** all water heaters **(a)** power vent water heater(s) are in conditioned space **3** **(b)** direct vent water heater(s) are in conditioned space **(c)** Natural draft water heaters are not located in conditioned spaces, including conditioned crawlspaces. Natural draft water heaters are 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). (3) all heat pump air handlers are installed in (a) unconditioned space (b) conditioned space		
PC 069	763	Bridget Herring Mathis Consulting Company Mathis Consulting Company	901.1.1 Natural draft furnaces, boilers, or water heaters Revise as follows	The above provisions are recommended to be mandatory for life safety reasons. As we build to tighter standards that are encouraged in this document, combustion safety needs to be prioritized. Tying these particular provisions to points implies that they are optional and not as critical as other mandatory practices. The same life-safety recommendation applies to 901.1.3, 901.1.4, 901.1.5, and 901.2.1. These should be mandatory practices where these appliances are used.	**901.1.1** Naturaldraft ~~space heating or water heatingequipment~~ furnaces, boilers orwater heaters are~~is~~ not located in conditioned spaces, including conditioned crawlspaces. Natural draft furnaces, boilers and water heaters are ~~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). ~~5~~ Mandatory		
PC 070	651	Don Denton Vent-Free Gas Products Alliance Section Vent-Free Gas Products Alliance Section	901.1.4 Gas fireplaces and direct heating equipment vented outdoors Revise as follows	Section should be revised to allow unvented gas-fired fireplaces. They 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.	**901.1.4** Gas-fired fireplaces and direct heating equipment is listed and is installed in accordance with the National Fuel Gas Code or the applicable local gas appliance installation code. ~~Gas-fired fireplaces and direct heating equipment are vented to the outdoors.~~		
PC 071	694	kenneth belding empire comfort systems empire comfort systems	901.1.4 Gas fireplaces and direct heating equipment vented outdoors Delete and substitute as follows	Section 901.1.4; delete, "Gas fired fireplaces and direct heating equipment are vented to the outdoors." Substitute with, "Gas fired unvented direct heating equipment must comply with ANSI Standard Z.21.11.2." My company manufactures and markets vented and vent free direct heating products. We have manufactured vented direct heating products for almost 80 years and the first company to certify vent free products almost 30 years ago. Empire has many competing companies manufacturing and marketing vented and vent free as well. The track record for vent free products, relative to emissions, is outstanding. Twenty-one million units have been installed in American homes over the past 30 years with proven performance and safety record. Of those, we have been fortunate enough to sell about 1 million units. I have been in charge of Empire's product liability department for 25 years and have not had a reported death or substantiated illness attributed to our vent free products due to emissions. All vent free products sold in the United States have been certified by agencies such as UL and CSA to an ANSI National Standard which includes the requirements for safety, performance, and construction. It is astounding the products approved to or by the National Center for Disease Control, World Health Organization,	901.1.4 Gas-fired fireplaces and direct heating equipment is listed and is installed in accordance with the National Fuel Gas Code or the applicable local gas appliance installation code. ~~Gas-fired fireplaces and direct heating equipment are vented to the outdoors.~~ Gas-fired unvented direct heating equipment must comply with ANSI Standard Z.21.11.2.		

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				DOE, OSHA, EPA, and the CPSC are threatened by a code without any substantiated evidence which, in the end, keeps consumers from making the ultimate green choice. We would ask that you support this code proposal. Two primary criteria for being green: energy efficiency and indoor air quality Enery efficiency: Vent free is more energy efficient than any gas or wood product allowed by the code; on a source basis, vent free is more energy efficient than any electric product allowed by the code. Indoor air quality: vent free complies with Federal IAQ guidelines as confirmed by independent scientific groups. The IGCC IAQ working group has never claimed that Federal IAQ guidelines are inadequate or defined what alternative IAQ guidelines would be acceptable. The code's current disallowance is based upon subjective impressions rather than objective analysis. CPSC staff has confirmed that no emissions related fatalities have ever occurred involving a vent free product. CSA, the Secretariat of the vent free national product standard, has acknowledged that vent free is arguably the safest gas product in existence. Since the beginning of the I-codes, vent free has always been accepted. Vent free performs better relative to IAQ as structures become tighter as confirmed by independent peer-reviewed research--both a unique and important attribute for green construction.			
PC 072	773	Frank A. Stanonik AHRI AHRI	901.1.4 Gas fireplaces and direct heating equipment vented outdoors Revise as follows	This sentence precludes the installation of a gas-fired vent free fireplace or heater in a "Green" home. This prohibition is unjustified and not technically supported. Green buildings include a variety of design and component features. Some of those features affect the ventilation rate of the house. There are several provisions that address the actual measurement of the air change rate of the home. Given that information, other parameters and the information found in the applicable installation code, a determination can be made as to what design features or components, if any, should be added to accommodate the installation of a gas-fired vent free heaters. As an example, if the natural air change rate is .35 per hour, then a properly sized, listed gas-fired vent free heater can be installed per the referenced installation code without any adverse effect on the indoor air quality. The deletion of this sentence does not promote the installation gas-fired vent-free heaters. It merely reflects the fact that millions of such products are being safely used in homes today. If a builder has chosen to include a gas-fired vent-free heaters in a "Green" home and has taken the steps to ensure that it is installed properly and will have an adequate supply of combustion air, there is no rational reason to dictate that such a home is automatically disqualified from carrying any level of “Green” designation. The choice should be left up to the builder. The standard does not limit the size, number or type of bathtubs and showers that can be provided in a Greeen home because of moisture concerns. Rather, it requires ventilation to address that moisture concern. The same approach should be applied to gas-fired vent-free heaters.	Gas-fired fireplaces and direct heating equipment is listed and is installed in accordance with the National Fuel Gas Code or the applicable local gas appliance installation code. ~~Gas-fired fireplaces and direct heating equipment are vented to the outdoors.~~		
PC 073	778	Gregg Achman Hearth & Home Technologies Hearth & Home Technologies	901.1.5 Gas fireplaces power vented or direct vent vented Revise as follows	Section 901.1.4 refers to gas fired fireplaces and direct heating equipment, therefore, in section 901.1.5 where it is defining requirements and certification standards it should also address the certification standard used by direct heating equipment (ANSI Z21.86/CSA 2.32). Also, the wording for power venting and direct venting for gas fired fireplaces and direct heating equipment is consistent with requirements of section 901.1.3 for heating equipment installed within a conditioned space. The point scale for gas fireplaces and direct heating should be consistent with power vented and direct vented furnaces/boilers/water heaters in how they affect the indoor environmental quality.	**901.1.5** Natural gas and propane fireplaces and direct heating equipment ~~that are~~ shall be power vented or direct vented and have permanently fixed glass fronts or gasketed doors, and comply with ANSI Z21.88/CSA 2.33, ~~or~~ ANSI Z21.50/CSA 2.22~~,~~, or ANSI Z21.86/CSA2.32.		
PC 074	653	Naveen Berry SCAQMD SCAQMD	901.10 Adhesives and sealants Delete and substitute as follows	Clarification regarding reference to SCAQMD Rule 1168. Certain adhesives and sealants sold in 16 ounce containers or less, e.g. PVC solvent cement, are not regulated by CARB and, therefore, fall under SCAQMD R1168 requirements.	**(3)** SCAQMD Rule 1168 (see Table 901.10.2), excluding products that are ~~purchased in containers that are less than 16 ounces~~ sold in 16 ounce containers or less and are regulated by the California Air Resources Board (CARB) Consumer Products Regulation.		
PC 075	780	Gregg Achman Hearth & Home Technologies Hearth & Home Technologies	901.2.1 Fireplaces, inserts, stoves, and heaters Revise as follows	Add another category for factory built wood-burning fireplaces that are UL 127 certified but not EPA certified, but have outside air and a means of sealing the flue so as to minimize interior air (heat) loss when not in operation just like a site built masonry wood burning fireplace [901.2.1(1)]. There is no reason to allow one and not the other when outiffited properly they perform the same. This product would have the same point scale as the site built masonry wood burning fireplace of 4 points.	901.2.1 (6) Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are ~~EPA certified.~~ equipped with outside combustion air and a means of sealing the flue and the combustion air outlets to minimize interior air (heat) loss when not in operation. Points = 4.		

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PC 076	713	Gladys Quinto Marrone BIA Hawaii BIA Hawaii	901.2.2 Not installed Revise as follows	This requirement ignores the mild climate of Hawaii.	Point for not having fireplaces or woodstoves or equivalent in Hawaii.		
PC 077	723	Josh Jacobs GREENGUARD Environmental Institute GREENGUARD Environmental Institute	901.5 Cabinets Delete and substitute as follows	As the KCMA is a certification program that has added features on the base standard (CARB), it should be placed in appendix D with the other programs of the product emission section.	**901.5 Cabinets.** A minimum of 85 percent of installed kitchen and bath vanity cabinets are in accordance with ~~KCMA ESP 04 (or equivalent) or~~ CARB *Composite Wood Air Toxic Contaminant Measure Standard* or certified by a program such as but not limited to, those in Appendix D. **3** Appendix D 901.5 Cabinets KCMA ESP 04		
PC 078	689	Robert Hill NAHB Research Center NAHB Research Center	901.6 Carpets Revise as follows	This change requires a minimum amount of carpet in order to receive the points and is consistent with how hard surface flooring in now treated in the draft.	**901. 6 Carpets.** Carpets are in accordance with the following: **(1)** Wall-to-wall carpeting is not installed adjacent to water closets and bathing fixtures. **Mandatory** **(2)** A minimum of 10% of the conditioned floor space has carpet and at least 85 percent of installed carpet area, carpet cushion (padding), and carpet adhesives are in accordance with the emission levels of CDPH/EHLB Standard Method v1.1 when tested by a laboratory with the CDPH/EHLB Standard Method v1.1 within the laboratory scope of accreditation to ISO/IEC 17025 and certified by a third party program accredited to ISO Guide 65, such as, but not limited to, those in Appendix D.		
PC 079	656	Naveen Berry SCAQMD SCAQMD	901.9 Architectural Coatings Revise as follows	Include a section on VOC limitations for colorants. Earlier this year, the SCAQMD Board adopted VOC limits for colorants added at the point of sale, since the addition of conventional colorants can add a significant amount of VOCs to a low-VOC coating. SCAQMD Rule 1113 section (c)(2), stipulates that the addition of colorants must not exceed the VOC limit of the corresponding coatings. At the point of manufacture, any colorant added is considered part of the overall VOC content of the coating. However, once the product reaches the retail or wholesale market, any colorant added at that point of sale is not considered as part of the total VOC of the product. Therefore, colorants are subject to their own VOC limits.	<table><tr><th>COLORANT</th><th>Limit</th></tr><tr><td>Architectural Coatings, excluding IM Coatings</td><td>50</td></tr><tr><td>Solvent-Based IM</td><td>600</td></tr><tr><td>Waterborne IM</td><td>50</td></tr></table>		
PC 080	722	Josh Jacobs GREENGUARD Environmental Institute GREENGUARD Environmental Institute	901.9 Architectural Coatings Revise as follows	As we are referencing numerous different standards and compliance pathways for architectural coatings VOC content minimization, we should give manufacturers and builders options. The EcoLogo's CCD-047 is a consensus developed standard, which is internationally recognized through the Global EcoLabelling Network's membership and has around 2,000 products certified to it. Similar to the currently referenced Green Seal-11, CCD-047 is a multi-attribute standard for architectural coatings which focuses on performance, minimization of harmful chemicals (both to humans and to the environment), and VOC content minimization. Finally you will find the VOC content requirements equal to or below the requirements already called-out in the document.	**(1)** Zero VOC as determined by EPA Method 24 (VOC content below the detection limit for the method) **(2)** GreenSeal GS-11 Standard for Paints and Coatings **(3)** EcoLogo CCD-047 Architectural Surface Coatings ~~**(3)**~~ (4) CARB *Suggested Control Measure for Architectural Coatings* (see Table 901.9.1).		
PC 081	821	Amy Schmidt The Dow Chemical Company Dow Building Solutions	901.10 Architectural Coatings Delete without substitution	901.10 should be deleted. It is impractical and costly to test products that do not have hazardous VOCs.	Delete		
PC 082	823	Amy Schmidt The Dow Chemical Company Dow Building Solutions	901.11 Architectural Coatings Delete without substitution	901.11 should be deleted. Insulation is encapsulated in the wall and many types do not have hazardous emissions levels. Manufacturers should not be required to perform expensive testing and certification when their products do not have hazardous emissions.	delete section		

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PC 083	652	Naveen Berry SCAQMD SCAQMD	901.9.1 Site applied interior architectural coatings Delete and substitute as follows	Disagree with various VOC content limits for architectural coating categories. AQMD's Rule 1113 Architectural Coatings was recently amended on June 3, 2011. The following changes should be made to reflect the current R1113 VOC limits.	Table 901.9.1 VOC Content Limits For Architectural Coatings, Non-Flats Coatings – ~~100~~ 50 Non-Flat High Gloss Coatings – ~~150~~ 50 Aluminum Roof Coatings – ~~400~~ 100 Concrete Curing Compounds – ~~350~~ 100 Floor Coatings – ~~100~~ 50 Industrial Maintenance Coatings – ~~250~~ 100 Rust Preventative Coatings – ~~250~~ 100 Tub and Tile Refinish Coatings – ~~420~~ 250 Waterproofing Membranes – ~~250~~ 100 Zinc-Rich Primers – ~~340~~ 100		
PC 084	818	Amy Schmidt The Dow Chemical Company Dow Building Solutions	901.9.1 Site applied interior architectural coatings Delete without substitution	This section is supposed to be related to site-applied architectural coatings however the requirements especially the table list many other items that are not architectural coatings. Also not all VOC's are hazardous. This section needs a lot of work. For now it should be deleted until better guidance can be developed.	Delete section		
PC 085	613	Kathleen Petrie City of Seattle, Department of Planning and Development City of Seattle, Department of Planning and Development	901.9.2 Site applied interior products Revise as follows	Replace with the term "products" in order to make the language consistent with 901.9.1 and to distinguish architectural coatings from adhesives and sealants.	**901.9.2** Site-applied interior ~~products~~ architectural coatings, which are inside the water proofing envelope, are in accordance with the emission levels of CDPH/EHLB Standard Method v1.1 01350, as certified by a third party program such as the GREENGUARD Environmental Institute's *Children and Schools Certification Program* or the Scientific Certification Systems *Indoor Advantage Gold Program* when tested by a laboratory with the CDPH/EHLB Standard Method v1.1 within the laboratory scope of accreditation to ISO/IEC 17025 and certified by a third-party program accredited to ISO Guide 65, such as, but not limited to, those found in Appendix D.		
PC 086	820	Amy Schmidt The Dow Chemical Company Dow Building Solutions	901.9.2 Site applied interior products Delete without substitution	Manufacturer's should not be forced to test if they do not have emissions. It adds unnecessary cost.	Delete section		
PC 087	715	Gladys Quinto Marrone BIA Hawaii BIA Hawaii	902.2.1 Building Ventilation Systems Revise as follows	This requirement should take into consideration Hawaii's warm climate and how many of our homes are passively cooled by our tradewinds.	Many points given here for systems that are not available to passively cooled homes.		
PC 088	610	Chris Allison City of Longmont City of Longmont	903.1 Plumbing Revise as follows	P535 Section 903.5.1 should clarify which sprinkler lines are not allowed in wall cavities (lawn irrigation or fire suppression) or state that all water lines are not allowed in wall cavities.	Clarify which sprinkler lines are not allowed in wall cavities (lawn irrigation or fire suppression) or state that all water lines are not allowed in wall cavities to avoid confusion.		
PC 089	729	Josh Jacobs GREENGUARD Environmental Institute GREENGUARD Environmental Institute	Appendix D Examples of third-party programs for Chapter 9 Revise as follows	As we are referencing numerous different standards and compliance pathways for architectural coatings VOC content minimization, we should give manufacturers and builders options. The EcoLogo's certification program to their CCD -047 is a internationally recognized through the Global EcoLabelling Network's membership and has around 2,000 products certified through it from large and small paint manufacturers. Similar to the currently referenced Green Seal, EcoLogo certifications looks at multiple areas for architectural coatings including performance, minimization of harmful chemicals (both to humans and to the environment), and VOC content minimization. Finally you will find the VOC content requirements equal to or below the requirements already called-out in the document.	901.8 Architectural coatings GREENGUARD Environmental Institute Children & Schools Certification Program Scientific Certification Systems (SCS) Indoor Advantage Gold Program Green Seal EcoLogo		