

## GG212-14

### 202 (New), 505.1, 505.3 (New), 505.3.1 (New), 505.3.2 (New)

**Proponent:** Bill Griese, Tile Council of North America (bgriese@tileusa.com); Alison Kinn-Bennett, US Environmental Protection Agency (kinn.alison@epa.gov); Don Horn, US GSA's Office of Federal High-Performance Green Buildings (donald.horn@gsa.gov); Jessica Slomka, NSF International (jslomka@nsf.org); Jane Rohde, JSR Associates, Inc (jane@jsrassociates.net), Wes Sullens, Stopwaste.org (wsullens@stopwaste.org), Bill Freeman, Resilient Floor Covering Institute (RFCI) (williamfreeman@roadrunner.com), Jeff Carrier, Carpet & Rug Institute (jcarrier@carpet-rug.org)

**Add new definition as follows:**

#### SECTION 202 DEFINITIONS

**PROGRAM OPERATOR.** Body or bodies that conduct a Type III environmental declaration program. A program operator can be a company or a group of companies, industrial sector or trade association, public authorities or agencies, or an independent scientific body or other organization.

**TYPE III ENVIRONMENTAL PRODUCT DECLARATION.** A product declaration that provides quantified environmental data using predetermined parameters and, where relevant, additional environmental information. For either brand-specific or industry-wide environmental product declaration.

**Revise as follows:**

**505.1 Material selection and properties.** Building materials shall conform to Section 505.2 or Section 505.3.

#### **Exceptions:**

1. Electrical, mechanical, plumbing, security and fire detection, and alarm equipment and controls, automatic fire sprinkler systems, elevators and conveying systems shall not be required to comply with Section 505.2.
2. Where a whole building life cycle assessment is performed in accordance with Section 303.1, compliance with Section 505.2 shall not be required.

**Add new text as follows:**

**505.3 Multi-attribute material declaration and certification.** Not less than 55 percent of the total building materials used in the project, based on mass, volume or cost, shall comply with Section 505.3.1 or 505.3.2. Where a material complies with both 505.3.1 and 505.3.2 the material value shall be multiplied by two.

**505.3.1 Environmental Product Declaration.** A building material with a *Type III environmental product declaration* that is verified by a *program operator*. The environmental product shall comply with the provisions of ISO 14025 and ISO 21930 externally.

**505.3.2 Multi-attribute Standard.** A material specific assessment that is verified by an *approved agency* shall be submitted for each product in accordance with the following items, as applicable. The assessment shall be verified as meeting the minimum performance level specified in each standard, which focuses on the life-cycle stages from development to end of life. These stages shall include material selection, energy and water use during development, performance, human and environmental impact, and end of life.

1. NSF/ANSI 140 for carpet

2. NSF/ANSI 332 for resilient floor coverings
3. NSF/ANSI 336 for commercial furnishings fabric
4. NSF/ANSI 342 for wall coverings
5. NSF/ANSI 347 for single ply roofing membranes
6. NSC 373 for natural dimension stone
7. TCNA ANSI/A138.1 or ceramic tiles, glass tiles, and tile installation materials
8. UL 100 for gypsum boards and panels
9. UL 102 for door leafs

**Add new standard(s) as follows:**

**ISO:**

ISO 14025 – 2006 Environmental labels and declarations – Type III environmental declarations – Principles and procedures

ISO 21930 – 2007 Sustainability in building construction – Environmental declaration of building products

**NSF:**

NSF/ANSI 140-2013 Sustainability Assessment for Carpet

NSF/ANSI 332-2012 Sustainability Assessment for Resilient Floor Coverings

NSF/ANSI 336-2011 Sustainability Assessment for Commercial Furnishings Fabric

NSF/ANSI 342-2012 Sustainability Assessment for Wall coverings

NSF/ANSI 347-2012 Sustainability Assessment for Single Ply Roofing Membranes

**UL:**

UL 100-2012 Sustainability for Gypsum Boards and Panels

UL 102-2012 Sustainability for Door Leafs

Natural Stone Council,

P.O. Box 539, Hollis, New Hampshire 03049

NSC 373-2013 Sustainability Assessment for Natural Dimension Stone

Tile Council of North America,

100 Clemson Research Boulevard, Anderson, SC 29625

TCNA ANSI/A138.1-2012 Standard Specification for Sustainable Ceramic Tiles, Glass Tiles, and Tile Installation Materials

**Reason:**

**Stopwaste.org (Alameda County, California):**

The current section 505.2 is comprised of single attribute sustainability concepts (such as recycled content, regional, or bio-based). These single attribute environmental characteristics have benefits that are widely known and have been core components of worldwide codes, standards and green building programs to date. Specifically, the single attribute of "recycled-content" in materials is among the most valued and widely recognized environmental criteria for consumers and the construction industry. Therefore, single attribute indicators still have a large role to play in green building codes, standards, and programs, and are vital to include in future versions of IgCC.

The process of utilizing recycled content feedstock in new building materials nearly always results in reduced environmental impacts when compared to the use of virgin feedstock, though this is only part of the story. Using recycled-content as the primary indicator of sustainability - especially for interior products - is no longer adequate given the full life cycle of product production, manufacturing, and use.

During the manufacturing process, the impacts of materials harvesting and extraction can be reduced by making use of local, bio-based or recycled content products. However, other the components added during the manufacturing process may result is less preferable environmental outcomes, may compromise occupant health, or can dwarf the lifecycle savings of using some other feedstock. For example, using recycled tire flooring may be environmentally preferable because it is recycled, but when these products are used indoors, there may be exposure to odors and VOCs that make another non-recycled product preferable for the occupant type. Therefore, the need for more systematic evaluation of products that takes into account the multi-dimensional attributes of products is needed for the commercial building industry.

**NOTE: This version of the code change proposal has been updated to include all reported errata.**

Multi-attribute sustainable product standards and environmental product declarations (EPDs) are a way to start accomplishing this. These two tools added as options of compliance will allow the most current thinking about material selection, multi-attribute assessments, and life-cycle transparency to be introduced to the code. The addition of EPDs and multi-attribute product standards will still allow the existing methodology to be utilized, but will also capture the momentum in the commercial green building market around product life-cycle impacts and supply chain transparency. In addition, adding these additional compliance options will allow for non-structural materials to play a greater role in green building recognition. We feel that these new tools as options for compliance along with the traditional single attribute approach is a good transitional methodology towards the long-term goal of true multi-attribute product transparency and performance.

**Resilient Floor Covering Institute (RFCI):**

RFCI represents all of the major manufacturers of resilient floor covering that produce linoleum, vinyl, rubber and cork flooring. The IgCC has taken a major step forward in addressing the environmental impacts of buildings by introducing the International Green Construction Code. Since the code was introduced manufacturers of building materials, including resilient flooring, have made great strides in reducing the environmental impact of their products by analyzing the entire life cycle of these products.

Today there are standards available and being used to determine the environmental impacts of individual building materials. The changes being proposed as Section 505.3 *Multi-attribute material declaration and certification* which includes Environmental Product Declarations and Multi-attribute Standards reflect the type of standards being adopted by many environmental rating systems including the National Green Building Standard IgCC 700. These standards are either developed using a consensus-based process or developed in accordance with established ISO Standards. The inclusion of Section 505.3 in the IgCC requirements will enhance the standard in a very meaningful way by determining the environmental impacts of materials used in a building.

Because of the manner in which the programs proposed for Section 505.3 are certified it will not be difficult for the user of the IgCC standard including code officials to quickly determine if a building material meets the requirements of the proposed section.

RFCI strongly encourages the IgCC to adopt the proposed Section 505.3 as a positive step forward in making the International Green Construction Code a more meaningful standard in reducing the environmental impacts of the materials used in a building.

**U.S. General Services Administration's Office of Federal High-Performance Green Buildings:**

GSA's Office of Federal High-Performance Green Buildings supports the introduction of Environmental Product Declarations and multi-attribute environmental standards into the International Green Construction Code (IgCC). Material selection is an important part of creating high-performance green buildings that is not always given the attention that it deserves. The single attribute material requirements currently in the code have played an important role in transforming the construction materials market to include recycled content and biobased content, both of which are supported by federal procurement initiatives. Among its sustainability strategies, Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, seeks to foster markets for sustainable technologies and environmentally preferable materials, products, and services. The Order also encourages federal purchasing considerations to include products manufactured using processes that minimize greenhouse gas emissions. Multi-attribute standards are a logical tool to help move toward this goal. Environmental Product Declarations will encourage manufacturers to examine the impacts of their processes and can lead to informed decision-making for improvement. Adding these measures as a means of compliance for material selection in the IgCC is a positive step toward creating high-performance green buildings.

**NSF International:**

The current language in section 505.2 of the International Green Construction Code, version 2012, is comprised of the traditional single attribute approach (such as recycled content, regional, or bio-based) of addressing environmental requirements for material selections in codes and sustainable rating systems. Focusing on a single environmental attribute of a product inadvertently excludes important impacts and does not present a holistic perspective of the product's environmental footprint. In addition, a single attribute approach does not always recognize the highest environmental performance. It is an important next step to advance the standard by providing opportunities to recognize high performance building materials, including both structural and non-structural materials. Multi-attribute sustainable product standards and environmental product declarations (EPDs) are a way to accomplish this advancement. The addition of these two compliance paths provides a more innovative way of thinking about material selection. The multi-attribute sustainable product standards guarantee that a product meets a certain environmental performance across several areas of its life-cycle. Additionally, EPDs are allowing manufacturers to transparently disclose the impact that products and their manufacturing have on the environment, which promotes more informed decision-making. The addition of these transparency tools, along with the traditional single attribute approach, is a good transitional methodology towards the long-term goal of true multi-attribute product transparency and performance.

**JSR Associates, Inc.:**

We support the inclusion of these new material selection pathways.

**US Environmental Protection Agency (USEPA):**

USEPA supports the proposal as it encourages multi-attribute, lifecycle-based approaches (via standards) and transparency (via EPDs). As the IgCC evolves, we would like to see 1) greater emphasis on multi-attribute environmental performance (rather than the other options) and 2) a focus on typically environmentally problematic

product categories (rather than leaving it so open ended); however, we appreciate that this proposal is an important step in the right direction for environmental and human health protection.

**Tile Council of North America (TCNA):**

For over a decade, many manufacturers were promoting single environmental attributes (recycled content, regional materials, etc.) represented by different labels across different industries, all of which were important but resulted in an unorganized, confusing, and often misleading marketplace. As a result, many industries started to recognize the need to establish a lifecycle based multi-attribute approach to the assessment and specification of sustainable products, turning to broadly recognized lifecycle based international standards in the ISO 14000 series.

It is encouraging to report that a plethora of multi-attribute product sustainability assessment standards are available today for use by architects, specifiers, and consumers. These standards were developed in accordance with the lifecycle based, multi-attribute framework specified by ISO 14024 and treat products similarly to the way that sustainable building rating systems treat buildings. While there are some differences in point systems, naming, and individual criteria, the standards have very similar impact assessment areas. Product criteria are defined by all of these standards within the key areas of sustainability: material usage, energy used to make the product, the manufacturing and operational programs that the manufacturer has in place, water usage, the impact on human health and the environment, end of life management, and product performance. Furthermore, more manufacturers today have released or are engaged in efforts to release EPDs. This allows manufacturers to transparently disclose the environmental impact of their products in a standardized reporting framework

When the IgCC was originally developed, the Chapter 5 working group strived to develop and embed similar multi-attribute and lifecycle based criteria within the Code. At the time, many of these industry specifications and EPD initiatives were still in development and not yet available for simple reference. However, since that time, progress has been made which has led to today's proposed revision that encompasses approximately 10 product industries and can be applicable to over 1,000 domestic manufacturers and many more worldwide. Similar to regular industry specifications for strength and performance referenced throughout the IBC, these industry specifications for sustainability would allow for IgCC product selection based on consensus criteria. Additionally, many of these standards and EPD criteria are already in use in our built environment. ICC 700-2012 references some of these standards, as does the most recent version of ASHRAE 189.1. Also, the US GSA and the California DGS utilize some of these standards in the purchasing requirements for products.

The time to begin including multi-attribute specifications and EPD criteria into the IgCC is now. These tools serve as a valuable strategy in achieving sustainable product optimization, are well-known throughout product industries, and are already incorporated or in the process of being incorporated into several other green building standards and rating systems. The proposed approach salvages original single-attribute criteria, which can still be utilized if needed, and incorporates a more up-to-date way of thinking about sustainable material selection which is consistent with the original intent of Chapter 5.

**Carpet & Rug Institute (CRI):**

Recognition and reliance upon multi-attribute standards is the most reliable and efficient means for a building operator, general contractor, or designer to recognize products with a full range of environmentally preferable characteristics. Rather than selecting components and finishes in a "piece meal" manner based upon single subjective attributes, multi-attribute standards provide the desired assurance of rigor, breadth, and depth. Further, the simplified identification process makes the selection and specification of these products much simpler and more likely to be employed.

While non-structural components such as interior finishes may be a small section of the total building impacts (in both volume and cost), their impacts should not be ignored and the efforts of manufacturers to produce the most preferable product possible should be recognized. Recognition of multi-attribute standards places the burden upon the manufacturer to concentrate upon total impacts of the product rather than picking and choosing a couple of "highlight" features.

For these reasons, we support the addition of 505.3 Multi-Attribute material declaration and certification as a pathway for achievement of this requirement.

**Cost Impact:** Will increase the cost of construction. This code change proposal *may* increase the cost of construction because of the cost involved in generating the EPD or complying with the multi-attribute standard for the building product manufacturer. However, EPDs and multi-attribute assessment frequently identify cost reduction measures that pay for the cost of the assessment and verification, and may not increase the cost of product production.

**Analysis:** A review of the standard proposed for inclusion in the code, ISO 14025:2006, 21930:2007, NSC 373-2013, 140-2013, 332-2012, 336-2011, 342-2012, 347-2012, TCNA A138.1-2012, UL 100-2012 and UL 102-2012 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28), will be posted on the ICC website on or before April 1, 2014.