

This is a guidance document with sample specification language intended to be inserted into project specifications on this subject as appropriate to the agency's environmental goals. Certain provisions, where indicated, are required for U.S. federal agency projects. Sample specification language is numbered to clearly distinguish it from advisory or discussion material. Each sample is preceded by identification of the typical location in a specification section where it would appear using the SectionFormat™ of the Construction Specifications Institute; the six digit section number cited is per CSI Masterformat™ 2004 and the five digit section number cited parenthetically is per CSI Masterformat™ 1995..

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**SECTION 12 48 13 (SECTION 12482) – ENTRANCE FLOOR MATS & FRAMES**

**SPECIFIER NOTE:**

*resource management:* Refer to Division 09 (9) for information on resilient flooring and carpeting. Refer to Division 05 (5) for information on metals. Refer to Division 06 (6) for information on plastics.

General purpose rubbers are the most widely used rubbers, largely because of their uptake in pneumatic tires, and account for about 80 percent of total rubber consumption. They comprise the following: natural rubber (chemically cis-1,4-polyisoprene and produced mainly from the botanical source, *Hevea brasiliensis*); butadiene rubber; styrene-butadiene rubber (SBR), by far the most widely consumed synthetic rubber; and isoprene rubber (the synthetic rubber equivalent of natural rubber).

*toxicity/IEQ:* Refer to Division 09 (9) for information on resilient flooring and carpeting. Refer to Division 05 (5) for information on metals.

*performance:* Performance is comparable for green methods and standard methods.

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Surface mounted floor mats.
  - 2. Recessed installed floor mats.

**1.2 SUBMITTALS**

- A. Product data. Unless otherwise indicated, submit the following for each type of product provided under work of this Section:

**SPECIFIER NOTE:**

Green building rating systems often include credit for materials of recycled content. USGBC-LEED™ v3, for example, includes credit for materials with recycled content, calculated on the basis of pre-consumer and post-consumer percentage content, and it includes credit for use of salvaged/recovered materials.

Green Globes US also provides points for reused building materials and components and for building materials with recycled content.

- 1. Recycled Content:
  - a. Indicate recycled content; indicate percentage of pre-consumer and post-consumer recycled content per unit of product.
  - b. Indicate relative dollar value of recycled content product to total dollar value of product included in project.
  - c. If recycled content product is part of an assembly, indicate the percentage of recycled content product in the assembly by weight.
  - d. If recycled content product is part of an assembly, indicate relative dollar value of recycled content product to total dollar value of assembly.

**SPECIFIER NOTE:**

Specifying local materials may help minimize transportation impacts; however it may not have a significant impact on reducing the overall embodied energy of a building material because of efficiencies of scale in some modes of transportation.

Green building rating systems frequently include credit for local materials. Transportation impacts include: fossil fuel consumption, air pollution, and labor.

USGBC-LEED™ v3 includes credits for materials extracted/harvested and manufactured within a 500 mile radius from the project site. Green Globes US also provides points for materials that are locally manufactured.

2. Local/Regional Materials:

- a. Sourcing location(s): Indicate location of extraction, harvesting, and recovery; indicate distance between extraction, harvesting, and recovery and the project site.
- b. Manufacturing location(s): Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site.
- c. Product Value: Indicate dollar value of product containing local/regional materials; include materials cost only.
- d. Product Component(s) Value: Where product components are sourced or manufactured in separate locations, provide location information for each component. Indicate the percentage by weight of each component per unit of product.

SPECIFIER NOTE:

Green building rating systems may include credit for low emitting materials. USGBC-LEED™ v3, for example, includes credits for low-emitting materials, including: adhesives and sealants, paints and coatings, carpets, and composite wood and agrifiber products. Under LEED™ v3, adhesives and sealants are to comply with California's South Coast Air Quality Management District (SCAQMD) #1168; aerosol adhesives are to comply with Green Seal GS-36; interior architectural paints are to comply with Green Seal GS-11; anti-corrosive paints are to comply with Green Seal GS-03 (note – Green Seal has withdrawn GS-03; as of November 2008, anti-corrosive paints are included in a revised GS-11); clear wood finishes are to comply with SCAQMD #1113; carpet with the Carpet and Rug Institute (CRI) Green Label Plus; carpet cushion with CRI Green Label program; and, composite wood and agrifiber products are to contain no added urea-formaldehyde.

As per USGBC published Credit Interpretations, the credits for low-emitting materials are directed towards interior, site-installed (i.e. not prefabricated) products. Verify project requirements for low VOC roofing products.

Both the Adhesive and Sealant Council (ASC) and the SCAQMD have indicated that low VOC adhesives may have performance difficulties in extreme temperature and humidity conditions.

Green Seal, an independent, non-profit organization, certifies low-emitting products using internationally recognized methods and procedures. Green Seal certification meets the criteria of ISO 14020 and 14024, the environmental standards for ecolabeling set by the International Organization for Standardization (ISO); the U.S. Environmental Protection Agency's criteria for third-party certifiers of environmentally preferable products; and the criteria for bona fide ecolabeling bodies of the Global Ecolabeling Network.

3. VOC data:

- a. Adhesives:
  - 1) Submit manufacturer's product data for adhesives. Indicate VOC limits of the product. Submit MSDS highlighting VOC limits.
  - 2) Submit Green Seal Certification to GS-36 and description of the basis for certification.
  - 3) **[Submit manufacturer's certification that products comply with SCAQMD #1168.] [Submit manufacturer's certification that products comply with SCAQMD Rule 1168 in areas where exposure to freeze/thaw conditions and direct exposure to moisture will not occur. In areas where freeze/thaw conditions do exist or direct exposure to moisture can occur, submit manufacturer's certification that products comply with Bay Area AQMD Reg. 8, Rule 51 for containers larger than 16 oz and with California Air Resources Board (CARB) for containers 16 oz or less.]**
- B. Submit environmental data in accordance with Table 1 of ASTM E2129 for products provided under work of this Section.
- C. Operating And Maintenance Manuals Submittals:

**SPECIFIER NOTE:**

The marking system indicated below is intended to provide assistance in identification of products for making subsequent decisions as to handling, recycling, or disposal.

Society of Plastic Inc. resin codes are easily recognized by the consumer. These are the numerical designations within chasing arrows. At the present time there is not a separate resin code for PLA (bio-resins). PLA (bio-resins) are classified as #7 (Other). Nor are there specific indications for additives or blends. The Society of Plastics resin code symbols are common for plastic packaging materials; for example:



ASTM D1972 standard specifies a resin code that provides substantially more information regarding the plastic resin, including blends and additives. ASTM D1972 labeling protocols are not common for packaging materials; however, they are recognized and utilized in the construction industry and other industry sectors. Many construction products are labeled according to ASTM D1972. Such detailed information is anticipated to be necessary data for future deconstruction (and recycling) efforts. Therefore, plastic construction products and plastic components of assemblies should be labeled in accordance with ASTM D1972. Example for a polypropylene containing 30 mass percentage of mineral powder use:

>PP-MD30<

- a. Verify that plastic products, including plastic components in assemblies, to be incorporated into the Project are labeled in accordance with ASTM D1972. Where products are not labeled, provide product data indicating polymeric information in Operation and Maintenance Manual.
  - 1) Products made from compositions containing a single filler, reinforcing, or other modifying material in a concentration of more than one percent by mass shall be marked with the abbreviated term for the polymer, followed by a dash, then the abbreviated term or symbol for the additive, with its percentage by mass, arranged as shown in the example and set off with brackets. For example, a polypropylene containing 30 mass percentage of mineral powder use would be labeled: >PP-MD30<

**PART 2 PRODUCTS**

**SPECIFIER NOTE:**

EO 13423 includes requirements for Federal Agencies to use “sustainable environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products”

Specifically, under the Sustainable Building requirements per Guiding Principle #5 Reduce Environmental Impact of Materials, EO13423 directs Federal agencies to “use products meeting or exceeding EPA’s recycled content recommendations” for EPA-designated products and for other products to “use materials with recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% (based on cost) of the total value of the materials in the project.”

And, under the Sustainable Building requirements per Guiding Principle #4 Enhance Indoor Environmental Quality, EO13423 directs Federal agencies to use “materials and products with low pollutant emissions, including adhesives, sealants, paints, carpet systems, and furnishings.”

Executive Order 13514; *Federal Leadership in Environmental, Energy, and Economic Performance*; was signed on October 5, 2009. <http://www.ofee.gov/execorders.asp> It expands upon the environmental performance requirements of EO 13423. [http://www1.eere.energy.gov/femp/regulations/printable\\_versions/eo13423.html](http://www1.eere.energy.gov/femp/regulations/printable_versions/eo13423.html)

EO 13514 sets numerous federal requirements in several areas, including sustainable buildings and communities. Federal agencies must implement high performance sustainable federal building design, construction, operation and management, maintenance, and deconstruction, including:

- Ensuring all new Federal buildings, entering the design phase in 2020 or later, are designed to achieve zero net energy by 2030.
- Ensuring all new construction, major renovations, or repair or alteration of Federal buildings comply with the Guiding Principles of Federal Leadership in High Performance and Sustainable Buildings <http://www1.eere.energy.gov/femp/pdfs/mouhighperfsustainedfacs.pdf>
- Ensuring at least 15% of existing agency buildings and leases (above 5,000 gross square feet) meet the Guiding Principles by fiscal year 2015 and that the agency makes annual progress towards 100% compliance across its building inventory.

## 2.1 MATERIALS

### A. Rubber-Tire Mats: Units of edge-grain-laminated and chenille-buffed rubber-tire wall cuts.

#### SPECIFIER NOTE:

US-EPA Comprehensive Procurement Guidelines (CPG) 2002 recommends 75-100 percent post-consumer content for rubber mats.

Green building rating systems often include credit for materials of recycled content and may distinguish allowable credit for post-consumer and post-industrial (or pre-consumer) recycled content. USGBC-LEED™ v3, for example, factors 100 percent of post-consumer recycled content but only 50 percent of pre-consumer (post-industrial) recycled content into calculations for its recycled content materials credit. LEED v3 grants one credit to a project for using materials with recycled content such that the sum of post-consumer recycled content plus one-half of the post-industrial content constitutes at least 10 percent of the total value of the materials in the project; 10% (post-consumer + 1/2 post-industrial). It grants an additional point for 20% (post-consumer + 1/2 post-industrial).

Green Globes US also provides points for reused building materials and components and for building materials with recycled content.

Recycled content is typically determined by calculating the weight of the recycled material divided by the total weight of the product and expressed as a percentage by weight. (The recycled content “value” of a product as assessed under LEED is determined by multiplying the recycled content percentage and the cost of the product.) Verify with manufacturer for product availability and recycled content.

1. Recycled Content: Minimum **[75]** **[100]** **[xxxx]** percent post-consumer recycled content.

### B. Vulcanizate Particulate Rubber Mats: Recycled tire treads in accordance with ASTM D5603; fine mesh size particulate, **[Grade 1, 2, or 3]**, **[Grade 4]**, **[Grade 5]**, **[Grade 6]**.

#### SPECIFIER NOTE:

Classification of recycled vulcanizate particulate rubber is based on two major characteristics: particle size distribution and the polymer type found in the parent rubber form which the recycled rubber was derived. Refer to ATM D5603.

1. Recycled Content: Minimum **[5]** **[10]** **[xxxx]** percent post-consumer recycled content, or minimum **[20]** **[40]** **[xxxx]** percent pre-consumer recycled content at contractor's option.

## 2.2 ACCESSORIES

### A. Adhesive:

1. Toxicity/IEQ: Comply with applicable regulations regarding toxic and hazardous materials, GS-36 for Commercial Adhesive, **[South Coast Air Quality Management District Rule 1168]** **[Bay Area AQMD Reg. 8, Rule 51 for containers larger than 16 oz and with California Air Resources Board (CARB) for containers 16 oz or less]**, and as specified.

## PART 3 EXECUTION

### 3.X SITE ENVIRONMENTAL PROCEDURES

#### A. Indoor Air Quality:

1. Temporary ventilation: Provide temporary ventilation as specified in Section 01 57 19.11 (01352) – Indoor Air Quality (IAQ) Management, and as follows:
  - a. Ventilate products prior to installation. Remove from packaging and ventilate in a secure, dry, well-ventilated space free from strong contaminant sources and residues. Provide a temperature range of 60 degrees F minimum to 90 degree F maximum continuously for minimum 72 hours. Do not ventilate within limits of Work unless otherwise approved by Architect.
2. Final cleaning: As specified in Section 01 74 13 (01740) – Progress Cleaning.

END OF SECTION