

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 10 14 00 (SECTION 10400) - SIGNAGE

SPECIFIER NOTE:

resource management: Refer to Section 06 60 00 (06600) - Plastic Fabrications and Section 05 05 00 (05050) – Common Work Results for Metals.

toxicity/IEQ: Refer to Section 06 60 00 (06600) - Plastic Fabrications and Section 05 05 00 (05050) – Common Work Results for Metals.

performance: Performance is comparable for green methods and standard methods. Specify low power LED illuminated signage for exit signs and lit directional signage; refer to Section 26 50 00 (16500) - Lighting. Consider photovoltaic power for illuminated signage removed from a building electrical panel by distance or obstructions; refer to Section 48 14 00 (13600) – Solar Energy Electrical Power Generation.

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes:
 - 1. Plastic Signage.
 - 2. Metal Signage.
- B. Related Sections:
 - 1. 09 90 00 (09900) – Painting & Coating: Painted graphics and signage.

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.
- 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

2.1 MATERIALS

- A. Plastic Signs and supports: Plastic fabrications as specified in Section 06 60 00 (06600)
– Plastic Fabrications, and as follows:

SPECIFIER NOTE:

US-EPA Comprehensive Procurement Guidelines (CPG) recommend 80-100 percent post-consumer recycled content for plastic signage (including both the signs and the supports); 25 percent post-consumer content for aluminum signage; and 16-67 percent post-consumer recycled content for steel sign posts and supports.

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 **[80] [xxxx]** percent post-consumer recycled content.
- B. Aluminum Signs:
 1. Recycled Content: Minimum **[25] [xxxx]** percent post-consumer recycled content.
- C. Steel posts and supports:
 1. Recycled Content: Minimum **[16] [xxxx]** percent post-consumer recycled content.

PART 3 - EXECUTION

END OF SECTION