

Carpet Technical Specification for Construction Documents (CSI Format)

Introduction

Carpet is an important part of the look, feel and performance of our indoor environment. But manufacturing carpet has a large environmental impact, and the product and installation can affect the quality of the indoor air. Fortunately, there are many ways we can reduce these impacts through our purchasing and operational decisions. In fact, Alameda County has successfully installed carpets meeting the environmental performance specifications provided herein for at least the last 5 years.

Extend Carpet Life – Carpet’s greatest environmental impact happens in production. Explore opportunities that minimize carpet purchases or future replacement.

- Specify durable carpet tiles which can be replaced individually in high use areas.
- Implement preventative maintenance strategies, such as installing walk-off grates or mats, to minimize dirt tracked into the building and extend the life of the carpet.

Purchase Environmentally Preferable Carpet – Carpet made from recycled content and with minimal off-gassing emissions (VOCs) have reduced environmental and health impacts.

- Specify recycled content carpets, which have lower lifecycle environmental impacts than those made from virgin petroleum.
- Specify carpet products and installation methods (such as tape-down) that minimize or eliminate off-gassing emissions, known as VOCs to improve the indoor air quality.

Recycle Used Carpet – Carpet is one of the top ten items by volume in California landfills, comprising 3.2% by volume in 2008 (CalRecycle). A 2010 study conducted for the State of Washington determined that the recycling of carpet (regardless of the transportation distance to recycling markets) emits by far the fewest greenhouse gas emissions when compared to other end-of-life options for carpet such as landfilling, incineration, or waste-to-energy (Morris 1).

- Recycling should be specified whenever carpet removal is part of the project scope.
- Consider take-back or lease agreements that ensure the manufacturer will recycle carpet being installed.

How to Use this Document

This CSI formatted environmental performance specification is intended to be provided by the Project Manager to the project architectural team early in the design phase of a project to ensure the final carpet specification meets the County’s environmental goals. Note that this specification is limited in scope to environmental performance and should be integrated with all other performance requirements to form a complete specification.

Alameda County’s General Service Agency developed these minimum environmental performance standards through extensive research and stakeholder input to ensure many high performance products are available at multiple price points. Specifier notes are provided to inform project teams of the intent of the various specifications. Sections identified as “Going Greener” indicate options that are not required as they may limit product availability. Project teams are encouraged to evaluate whether these specifications can be included within the project budget to increase the environmental performance of the project.

These specifications are consistent with the County's Environmentally Preferable Purchasing policy (2011) and the County's Green Building Ordinance (2003) which requires projects to achieve a silver LEED rating under the US Green Building Council program.

Additional Resources

- CalRecycle: Carpet Materials Management, <http://www.calrecycle.ca.gov/carpet/>
- Federal Green Construction Guide for Specifiers: <http://www.wbdg.org/design/greenspec.php>
- King County Linkup: <http://your.kingcounty.gov/solidwaste/linkup/carpet/index.asp>
- Seattle US Communities Contract: <https://webapps.sanantonio.gov/RFPListings/Content.aspx?id=1311>
- "Environmental Impacts from Carpet Discards Management Methods: Preliminary Results (Corrected)" (2010), Dr. Jeffrey Morris, Sound Resource Management, <http://your.kingcounty.gov/solidwaste/linkup/documents/CarpetDiscardMgmt-Jeff-Morris.pdf>

***** See Next Page for Specification *****

Environmental Performance Specification for Carpet

SPECIFIER NOTE:

Specifying tile carpet can reduce waste and minimize lifecycle impacts of carpet. It is recommended that tile is used wherever feasible. However, broadloom carpet specifications are included in the event it is necessary to specify broadloom carpet. Delete these specifications if no broadloom carpet is specified in the project.

SECTION 09 68 [XX] – CARPET TILE

PART 1 – GENERAL

X.X SUBMITTALS

SPECIFIER NOTE:

LEED Credit EQ 4.3 specifies indoor air quality limits for carpet, adhesive, and cushion. Compliance with this credit is required regardless of whether LEED certification will be sought in a building project. LEED Credit EQ 4.3 requires compliance with CRI's Green Label and Green Label Plus Programs, as well as SCAQMD Rule #1168 for adhesives. The Carpet and Rug Institute (CRI) Green Label test methodology was developed by consensus during an official dialogue with the EPA. Green Label Plus, an enhancement to the CRI Green Label, incorporates additional requirements to meet California's Collaborative for High Performance Schools (CHPS) low-emitting materials criteria.

X. Indoor Air Quality Submittals (Required for LEED and non-LEED projects):

Provide documentation verifying compliance with LEED Credit EQ 4.3

1. Product Data for Credit EQ 4.3

a. For carpet tile, documentation indicating compliance with testing and product requirements of CRI's "Green Label Plus" program.

b. For installation adhesive, documentation including printed statement of VOC content of 50 g/L or less, as per SCAQMD Rule #1168.

[For broadloom carpet with cushion]

c. For carpet cushion, documentation indicating compliance with testing and product requirements of CRI's "Green Label" program.

2. Alternative compliance path for LEED Credit EQ 4.3: Laboratory test reports for carpet [, cushion,] and installation adhesives, documentation indicating that products comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

X. NSF/ANSI-140 Submittals:

1. Submit proof of independent third-party NSF/ANSI-140 Platinum certification.

X. Recycled Content Percentage Submittals

1. Submit a statement signed by the manufacturer's Executive Officer or independent certification third-party that the provided carpet materials have the specified recycled material percentage.

SPECIFIER NOTE:

Take-back programs refer to programs in which the product manufacturer takes back carpet for recycling at the end of its useful life. Determining a carpet's potential recyclability can be difficult, so specifying a take-back program when purchasing new carpet is an excellent way to ensure that the carpet purchased will be recycled when it needs to be removed.

X. Submit documentation of manufacturer's take-back program for carpet. Include:

1. Confirmation that the new carpet being installed will be accepted (at the point of future replacement) through a manufacturer's operated program for recycling or reuse
2. Written description of such a process for the recycling and/or recovery of used/worn products
3. Contact information for the take-back program

SPECIFIER NOTE:

In 2010, California passed the Carpet Stewardship law and designated the Carpet America Recovery Efforts (CARE) as its carpet stewardship program operator. California is interested in increasing carpet recycling because it is one of the top ten items by volume in California landfills, comprising 3.2% of total California landfill space (as of 2008). Studies have also shown that reusing and recycling carpet rather than extracting virgin materials is by far the most energy efficient end-of-life option for disposing of old carpet (Morris, 2010).

X. Existing Carpet Recycling Plan and Recycling Certification

- x. Submit documentation describing the reclamation plan for existing carpet. Include appropriate contact information, overview of procedures, and limitations and conditions applicable to the project Carpet recycling options consist of:
 - i. Repurposing - reusing the product in another application such as facilitating the donation of used carpeting to charities and other nonprofit organizations.
 - ii. Closed Loop Recycling - turning waste materials into new materials of the same value, such as vinyl backing into vinyl backing and nylon yarn into nylon carpet yarn.
 - iii. Open Loop Recycling – creating other product types from reclaimed carpet. For example, turning nylon face fiber into automotive parts or carpet padding, including nylon face fiber in recycled backings.

- iv. Waste-to-Energy - using carpet for waste-to-energy. In the case of waste-to-energy, manufacturer shall justify why carpet cannot be recycled as this method should be a last resort.
 - v. Landfill or incineration – are not approved disposal methods
- x. At the completion of the project, a certificate shall be furnished verifying the reclamation of the carpet and the pounds of material diverted from the landfill.

PART 2 – PRODUCTS

SPECIFIER NOTE:

The NSF/ANSI-140 Sustainability Assessment for Carpet Standard has been developed through a multi-stakeholder process to document and improve the sustainability of carpet and rug products. Using the standard enables organizations throughout the carpet supply chain to achieve sustainable features and demonstrate compliance. As of July 2013, there are 10 manufacturers offering a total of 23 different product platforms at the Platinum level of NSF/ANSI-140.

- X. NSF/ANSI-140 Platinum: All carpet products installed shall be certified to meet the NSF/ANSI-140 standard at the Platinum certification level.

SPECIFIER NOTE:

Nylon fiber is typically abrasion resistant and durable in all pile configurations using filament fiber, has good stain removal characteristics, and is recommended for the majority of commercial installations. Polyethylene terephthalate (PET) recycled polyester fiber is stain resistant, but is not recommended for commercial installations as it is less durable than nylon. PET is also not currently recyclable, so although it is often made from recycled content, its end-of-life options are unsustainable in comparison to nylon, which can be recycled over and over again.

- X. Fiber Content: 100% commercial grade nylon type 6 or type 6,6

SPECIFIER NOTE:

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. NSF/ANSI-140 Platinum requires that carpet products be 10% post-consumer recycled content by weight. Market survey shows that a number of manufacturers offer carpet with recycled content above the NSF standard, and several offer 100% recycled content backing and face fiber options.

Post-consumer recycled content is preferred over post-industrial because it integrates use of product materials after they've actually been used. LEED distinguishes allowable credit for post-consumer and post-industrial (or

pre-consumer) recycled content, offering more credit for post-consumer recycled content than for post-industrial.

X. Fiber Recycled Content: Minimum [10] [25] percent [post-consumer] recycled content

SPECIFIER NOTE:

Virgin PVC production is associated with the release of dioxin, a persistent bioaccumulative toxin (PBT). For this reason, backing with recycled PVC is highly recommended, not only to reduce the production of virgin PVC, but also to divert used PVC from landfills, where it poses the risk of burning and releasing more dioxin. Alternatively, several manufacturers offer backing that avoids PVC use entirely, though finding such backing with recycled content is more difficult. Thus, it is recommended to specify either a minimum 40% recycled content PVC or non-PVC backing, with no specification as to recycled content.

X. Primary Backing/Backcoating: Select one of the following two options:

1. PVC containing backing: Minimum 40% recycled content
2. Non-PVC material: no minimum recycled content

SPECIFIER NOTE:

The EPA Comprehensive Procurement Guidelines are intended to describe the highest levels of recycled-content practicable for purchasing a number of products. They set requirements for executive branch agencies, but are frequently used by other agencies around the US. These specifications should only be included when specifying broadloom carpet with cushion.

X. Secondary Backing/Cushion: Must meet the current U.S. EPA Comprehensive Procurement Guidelines for Carpet Cushion:

- Bonded polyurethane: 15-50% postconsumer content
- Jute: 40% postconsumer content
- Synthetic fibers: 100% total recovered materials content
- Rubber: 60-90% postconsumer content

SPECIFIER NOTE:

Solution-dyed carpet has superior colorfastness, and uses less water and produces less waste in the manufacturing process.

X. Color System: 100% solution dye

SPECIFIER NOTE:

Synthetic carpet fiber, backing, pad, adhesive, seam sealants, and floor preparation chemicals are all potential sources of volatile organic compounds (VOCs) in indoor air. Carpet treatment for natural and synthetic carpet fibers (mothproofing, anti-microbial, etc.) are potential sources of VOCs in indoor air. Tape installation or pre-applied adhesives that require no additional on-site adhesive application tend to have lower VOC contents than wet adhesives.

X. Indoor Air Quality: VOC Emissions

Carpet products must meet one of the following:

- x. Provide carpet tile that complies with testing and product requirements of CRI's "Green Label Plus" program; or
- A. Provide carpet tile that complies with the product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers"
[For broadloom carpet with cushion]
- x. Provide carpet cushion that complies with testing and product requirements of CRI's "Green Label" program.

X.X INSTALLATION ACCESSORIES

X. Adhesives: Water-resistant, mildew-resistant, non-staining, pressure-sensitive type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet tile and is recommended by carpet tile manufacturer for releasable installation. Alternatively, dry adhesives with virtually no-VOCs can be used.

- x. Adhesives shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24); or
- x. Adhesives shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 3 – Execution

X. Removal and Recycling of Existing Carpet: Remove existing carpet for recycling in accordance with manufacturer recommendations and as follows:

- A. Consult with the County Project Manager before removing any flooring products where the installer suspects or detects there is asbestos. Old carpet contaminated with any controlled hazardous substances must be abated by a properly qualified hazardous waste management company.
- B. Carpet Removal Procedures

- i. TILE:
 - i. Remove used carpet tile and stack neatly on pallets. Neatly stack carpet tiles or repack in cardboard boxes prior to placing in container. Do not stack higher than 6 feet on pallets. Include carpet scrap and waste from new installation. Immediately remove used carpet from Site.
 - ii. Deposit only clean, dry used carpets in containers. Clean shall be defined as carpet free from demolition debris or asbestos contamination, garbage, and tack strips.
- ii. BROADLOOM:
 - i. Remove used carpet in large pieces, roll tightly, and pack neatly in container. Include carpet scrap and waste from new installation. Immediately remove used carpet from Site.
 - ii. Deposit only clean, dry used carpets in containers. Clean shall be defined as carpet free from demolition debris or asbestos contamination, garbage, and tack strips.
- C. Remove adhesive according to recommendations of the Carpet and Rug Institute (CRI).
 - i. Adhesive Removal Solvents: Comply with Carpet and Rug Institute Publication 104.
- D. Use a carpet recycling agency for all used carpet waste. Carpet scraps from the carpet installation must also be recycled.
 - i. If there are no markets available to recycle existing carpet products and/or carpet is severely contaminated, vendor shall provide documentation to project manager as to why such products cannot be recycled.
 - ii. Notify project manager in writing which carpet recycling company is used and total tons of carpet recycled.
- E. If the carpet is destined to be recycled or refurbished by the manufacturer (i.e. if a take-back program was decided upon purchase of existing carpet), the manufacturer's handling guidelines shall be followed.
- F. Comply with all applicable hauling and disposal regulations.

X. Installation

- x. Ensure that installation scraps are recovered at the time of the carpet installation; these scraps must be collected and entered into a recycling or reuse program complying with all governing, hauling, and disposal regulations of the authorities having jurisdiction.