WHY SPECIFY?

Construction specifications are used to achieve the desired performance, budget and aesthetic goals of a project. They delineate the requirements regarding materials, products, installation procedures and quality assurance in order to execute work and fulfill the contract. Specifying the right flooring and installation products for the appropriate application can be challenging. Whether specifying tile, hardwood, carpet, or resilient flooring, there are basic specification considerations that encompass the very broad category of flooring. From flooring type and auxiliary products to surface preparation, installation, maintenance and accessibility, specifiers and architects have many decisions to make that they then must clearly convey in a specification. Function, performance, application, cost, environmental impacts and aesthetics can all guide a flooring specification.

When considering performance criteria, structural serviceability, fire safety, habitability, durability, practicability, compatibility, maintainability and environmental impact may all be taken into account, but the importance of each will be different for each product and project. Cost considerations will include both installed cost and maintenance cost, while aesthetics will determine the desired visual impact, customization, color, pattern and texture.

According to the American Institute of Architects Document A201-2007 General Conditions of the Contract for Construction, the contract documents for a construction project are an integral part of the prime owner-contractor agreement. They set forth the responsibilities of the owner, contractor and architect during construction, bringing order to an otherwise disjointed process. Construction specifications become a part of the legal documents of the contractual agreement and form a cornerstone of the project design. In fact, in most cases, the construction specifications override the project drawings in the event of conflicting information.

As The Project Resource Manual—CSI Manual of Practice (PRM) states, “Both the drawings and specifications are needed to fully describe
a construction project. The drawings show size, form, quantity, relationship, generic type and graphic representation of construction materials. Specifications define the qualitative requirements for products, materials and workmanship upon which the construction contract is based. The specifications also describe administrative procedures that relate to both drawings and specifications.”

**TYPES OF CONSTRUCTION SPECIFICATIONS**

Specifications can be divided into four primary categories: performance, prescriptive, proprietary and reference. The first three can be used to specify the essential qualities of materials for a project and are usually customized by the specifier to meet the needs of a certain product and/or project. Reference standard specifications, on the other hand, are published by standards organizations such as the American Society for Testing and Materials (ASTM) or industry organizations that represent manufacturers of specific building elements, such as the National Wood Flooring Association, and are typically referenced without customization. The Project Resource Manual—CSI Manual of Practice notes that more than one specifying method is used in most projects, although PRM cautions that “the A/E should be careful about combining methods in the specification of a single product.”

**Prescriptive Specifications**

Prescriptive specifications, on the other hand, precisely state how the work is to be performed, describing in detail the flooring materials that the contractor must use and the means of installing those materials. This type of specification will typically have three sections, General, Products and Execution.

The General section contains references to national and international standards, design requirements, a list of required submittals from the contractor to the architect or engineer, quality control requirements and product handling requirements.

The Products section will describe the various products required for the task covered by the specification along with the individual structural and performance requirements of each product.

The Execution section will explain how to prepare the flooring materials and conduct the installation, including the testing requirements to be followed.

This type of specification provides more certainty regarding the final product composition than the performance specification, and is frequently used for highly complex portions of a project. Prescriptive specifications shift more of the project design control onto the shoulders of the architect or engineer and away from the contractor by establishing a set of rules that should be followed for each project component. There is no flexibility allowed for a contractor’s approach and the contractor does not warrant that the system will perform in any certain way.

**Proprietary Specifications**

Proprietary specifications require the use of a single approved product type for a flooring installation. Proprietary specifications are sometimes used when there is existing equipment or installations already on site, in order to maintain consistency of materials or because the owner prefers a specific type of product. Also, in highly complex installations where there is only one specific piece of equipment that will accomplish a specified task, a proprietary specification is required.

There are two types of proprietary specifications, open and closed. Closed proprietary specifications do not allow substitutions. Open proprietary specifications provide for requested alternates, often proposed by the contractor.

Architects and engineers typically avoid using closed proprietary specifications except when absolutely necessary, and will usually allow the contractor to select from a list of approved suppliers. Requiring the use of one specific product type gives the perception of favoritism
towards a certain manufacturer and may eliminate competition during the bid phase, which could increase the project cost.

**SPECIFYING FLOORING SURFACES, SURFACE PREP AND INSTALLATION MATERIALS**

There will most likely be a combination of surfaces used throughout a project, so it is important to plan appropriately for surface preparation, installation and maintenance for each individual product. Let’s discuss the different types of flooring surfaces you may come across on any given project, and typical materials used for the prep and installation of each surface.

- Suitable sub-floors for thick-set tile installations include concrete slabs and properly installed wood. Photo Credit: Bostik, Inc.

**SPECIFYING TILE INSTALLATIONS**

Ceramic tile is a fired clay tile that can be glazed or unglazed and is available in a wide variety of shapes and sizes. A thin-set tile installation is one in which the tiles are adhered to a substrate with a 3/16 inch thick layer of mortar. The mortar can be a cement, latex, or epoxy mortar, organic adhesives are also available. Thin-set tile installations are only acceptable for use on stable and uniform substrates since the thinness of the mortar does not allow for imperfections.

Proper installation of the framing and substrate are critical to a quality tile installation.

A thick-set or mud-set tile installation consists of finish tiles set over a 1-1/4 inches to 2 inches thick portland cement mortar bed. The mortar bed sits over the sub-floor and provides a smooth and stable base for the tile installation. Suitable sub-floors for thick-set tile installations include concrete slabs and properly installed wood. In a floating mortar bed system, a cleavage membrane is installed over the sub-floor. This membrane allows the tile system to move independently of the sub-floor. Otherwise, the mortar bed is laid directly over the sub-floor to create a bonded mortar bed installation.

There are a few advantages to using a thick-set mortar bed application. First, the mortar bed can be used to adjust uneven sub-floors and it also creates an ideal surface for tile adhesion. The thickness of the mortar bed allows the floors to be sloped, as would be used to slope a shower to a drain. The mortar bed can also conceal other items such as tubes for heated floors. An advantage specific to thick-set installations with a cleavage membrane is that cracks or defects in the sub-floor are not transferred to the mortar bed or finish tile layer.

**SPECIFYING HARDWOOD FLOORING**

Solid hardwood floors are available in a myriad of traditional wood species such as maple, pine and oak, as well as specialty species such as bamboo and cork. Engineered flooring, acoustic flooring and floor warming systems are other specialty products that may be specified.

When specifying hardwood flooring, shop drawings should indicate the wood floor layout, patterns, color, perimeter conditions, junctions with dissimilar materials, thresholds, and underlayment details. Photo Credit: Bostik, Inc.
documented experience with work comparable to that required for the project.

The surface prep and installation materials for hardwood flooring systems will include flooring adhesives, subfloor moisture vapor barriers, noise reduction membranes, self-leveling cement underlayment or portland cement patch, surface primer, sealant and grab adhesives.

**SPECIFYING CARPET INSTALLATION**

Carpet is available in carpet tile and broadloom carpet. Carpet tiles come in a standard 18 inch x 18 inch square and the yarn is adhered to a backing, which is generally vinyl. After the installer lays out the grid with chalk lines, the tiles are glued to the sub-floor with an adhesive. Some carpet tiles come in a self-adhesive form, which is essentially a peel-and-stick product. Carpet tiles are not stitched together, so the 18 inch grid is visible. However, this also serves as a design element, as tiles are typically laid out in a pattern.

Carpet is also manufactured in 12-foot wide rolls, which are then seamed together on-site to create a monolithic appearance, which is called broadloom carpet. Broadloom carpet installation is more labor intensive because of the seaming required and the challenge in moving large rolls of carpet. Carpet padding is used most often in residential applications and is available for both broadloom and tiles. In institutional and commercial applications, the padding is typically a rubber backing that is permanently adhered to the tile. Installation materials for carpet will include adhesive that is used to rapidly seal the seams of recently cut carpet, as well as adhesives to bond carpet padding to sub floors prior to carpet installation.

Categories to include in carpet specifications are the performance of fibers, carpet construction, carpet color, carpet backing, as well as carpet sustainability, recycling, reclamation and indoor air quality. There is more to convey in a carpet specification than how these individual elements work; a specifier must also understand their compatibility. For example, the yarn size needs to correlate with the gauge; the backing systems should be appropriate for the desired performance; and the dye technique has to be consistent with the end use. For example, if the carpet is going to be installed in a health care facility where stains are a major issue and solutions with water and bleach might be used to clean difficult stains, then the product specified should be a solution dyed product, not a beck dyed product.

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**QUICK**

True or False: In most cases, the construction specifications override the project drawings in the event of conflicting information.

Which of the following types of construction specifications precisely states how the work is to be performed?
- Performance
- Prescriptive
- Proprietary
- Reference

True or False: Architects and engineers typically avoid using closed proprietary specifications except when absolutely necessary.

True or False: A thick-set tile installation is one in which the tiles are adhered to a substrate with a 3/16 inch thick layer of mortar.

Which of the following not a material that needs to be specified for hardwood flooring installation?
- Mortar
- Surface primer
- Moisture barrier
- Sealant

Which of the following should be included in a carpet specification?
- Fiber type
- Carpet construction
- All of the above

True or False: Resilient flooring refers to flooring materials that are relatively firm and stiff, yet will flex to provide a comfortable walking and standing surface.

True or False: Hardened materials such as concrete, asphalt, tile, and wood are sufficiently firm and stable for accessibility.

Which of the following is a third party certification specifically for tile flooring?
- GREENGUARD
- Green Squared®
- FloorScore®

True or False: SCS Global Services scores the environmental, economic and social aspects of commercial building interior products based on the ASTM family of multi-attribute certification standards.

Carpeting is sometimes customized for a project during manufacturing, so the specification should be specific enough to meet the project needs. For example, a specifier may require stain resistance and a warranty for certain stains; it is then up to the manufacturer to determine which type of yarn and which types of treatments to use to provide that stain resistance.

Visit http://go.hw.net/AR415Course2 to read more and complete the quiz for credit.

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**SPONSOR INFORMATION**

Bostik is a leading global adhesive specialist in industrial manufacturing, construction and consumer markets. For more than a century, they have been developing innovative adhesive solutions that are smarter and more adaptive to the forces that shape people's daily lives. From cradle to grave, from home to office, Bostik's smart adhesives can be found everywhere. With annual sales in excess of $2 billion, the company employs 4,800 people and has a presence in more than 50 countries.
CONTINUING EDUCATION

Almost every type of floor covering can be warmed with a radiant heat system, including engineered hardwood, ceramic and porcelain tile, stone, laminate, vinyl or carpet. Photo Credit: Bostik, Inc.

Resilient floors are typically resistant to staining, easy to clean, very durable, and are therefore widely used in institutional and commercial applications. Photo Credit: Bostik, Inc.

SPECIFYING RESILIENT FLOORING

Resilient flooring refers to flooring materials that are relatively firm and stiff, yet will flex to provide a comfortable walking and standing surface. These surfaces will also return to form after being weighted. Resilient floors are typically resistant to staining, easy to clean, very durable, and are therefore widely used in institutional and commercial applications. The resilient flooring materials we will discuss here are vinyl, rubber, cork and linoleum.

Resilient flooring is available in various types and sizes, including sheet flooring and tile flooring. Sheets come in a variety of widths; they provide a more homogeneous flooring appearance and can be butt-laid or welded to avoid penetration of liquids. Resilient flooring tiles come in a variety of shapes and sizes as well. Due to their size, tiles tend to be easier to move and install, but they are prone to moisture intrusion under the floor because of the number of joints.

Vinyl is durable and stain resistant synthetic flooring that is manufactured in sheet and tile goods. Vinyl floors are often used because they can be manufactured to look like many natural surfaces including ceramic tile and stone. Vinyl has some staining issues and requires continuous buffing and finishing to maintain its shine and prevent yellowing. Recently, vinyl has been criticized because it is not considered an environmentally friendly product, as vinyl chloride is released from the product during manufacturing and after installation.

Rubber is durable and stain resistant natural flooring usually available in tiles, with sheet products becoming more readily available. Rubber provides a color-through product and is becoming the standard flooring material used in commercial and institutional environments because it maintains its appearance without having to be resealed regularly. Natural rubber products are rapidly renewable and rubber flooring can be made from recycled rubber.

Cork is another natural flooring material that is considered a renewable resource and provides an appealing aesthetic. Although it is more costly, properly installed and coated cork is as durable as other resilient floors. Cork is available in tiles or in pre-manufactured panels. A big benefit of cork is its compressive quality, which makes it very comfortable to walk on.

Linoleum is also a durable natural flooring material made from linseed oil, a rapidly renewable product. Sold primarily as a sheet good, linoleum tiles are available but are prone to corners lifting. A proper top-coat is required to protect linoleum and provide a durable, stain-resistant product. Linoleum is a very long-lasting product, but requires occasional refinishing. Note that vinyl and linoleum have historically been used interchangeably, but a linoleum product that contains vinyl chloride is not a natural product.

The flooring manufacturer’s recommended adhesives should always be specified. Most manufacturers are providing low-VOC products to prevent fumes from off-gassing into the building and environment, but unfortunately these low-VOC products can be less “sticky” than traditional adhesives so it is very important to use the manufacturer’s recommendations for preparation of the substrate.

Moisture vapor emission control is very important for all floor covering installations. Moisture mitigation coatings are used to minimize the harmful effects of sub floor moisture vapor emissions prior to the installation of cementitious repair materials and adhesives for all floor covering installations.

For subfloor repair, leveling and surface preparation cementitious materials are used prior to the installation of adhesives and floor coverings.

There are then several types of adhesives that may be specified, depending on the application. Water-based adhesives are used to install a complete range of sheet good floor coverings to subfloors, and there are specific adhesives used to bond the vast array of rubber flooring materials to subfloors. There are also adhesives used to install the wide range of commercially available cove base products on the market today. Finally, adhesives can be used in stair tread installation to permanently bond stair tread materials for years of high traffic wear resistance.

SPECIFYING FLOOR WARMING PRODUCTS

Warm, luxurious floors are popular in bathrooms, shower floors, kitchens, entries or any room with cold floors. Consider specifying a safe, comfortable and cost-efficient electric radiant heat system that can be used on concrete slab or plywood substrates. Almost every type of floor covering can be warmed with a radiant heat system, including engineered hardwood, ceramic and porcelain tile, stone, laminate, vinyl or carpet.

Mat or wire systems are available. The mat is faster to install, typically uses 120V supply and works well for rectangular spaces up to 150 square feet. The wire costs less per square foot, typically uses 240V supply, and is easier to fit non-rectangular or large spaces.

For installation of floor warming products over plywood substrate a second layer of plywood or cement board must be added to the subfloor. A polymer modified portland cement must be used to encapsulate heating wires. Installing insulation in the floor joists below the heated flooring will greatly improve efficiency. Plywood must be clean and free of nails, staples or other projections.

If the substrate is concrete, either relative humidity (RH) or moisture vapor emission rate (MVER) testing must be performed. If moisture levels are above the flooring manufacturer’s warranty requirements a moisture vapor barrier should be used.

An anti-fracture and insulation membrane...
may be installed to improve efficiency. Concrete must be open and absorptive, clean and free of debris and projections.

When specifying floor warming products for hardwood, only engineered hardwood flooring should be installed because it is more dimensionally stable than most solids. Bamboo flooring is not recommended in conjunction with floor warming products, nor is hardwood flooring thicker than a ½ inch, as it may have high insulation values and result in poor heating performance.

**HANDLING SPECIFICATIONS**

- **GENERAL DELIVERY, STORAGE AND HANDLING SPECIFICATIONS**
  
  Deliver materials in the manufacturer’s unopened containers, identified with name, brand, type, and grade. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer’s printed recommendations. Do not begin installation until the building is completely enclosed and the HVAC system is operating and maintaining temperature and humidity conditions consistent with “after occupancy” conditions for a minimum of two weeks.
  
  Ventilate spaces receiving flooring in accordance with the material manufacturers’ instructions.
  
  Protect materials from contamination, dampness, freezing or overheating in accordance with the manufacturer’s instructions. Protect mortar and grout materials against moisture, soiling or staining. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with the requirements of local authorities having jurisdiction.
  
  For wood, deliver and store packaged materials on site for at least 24 hours before commencement of work in a temperature controlled environment between 50˚F and 100˚F. Acclimate all wood and bamboo flooring per the flooring manufacturer’s recommendations.

**SURFACE PREPARATION, INSTALLATION AND MAINTENANCE**

To prepare surfaces for flooring installation they must be clean, dry to the touch, flat, free of voids, projections, loose materials, oil, grease, sealers and all other surface contaminates. Photo Credit: Bostik, Inc.

It is crucial that flooring is installed correctly, which is why many specifiers choose to specify the installation too. Because the manufacturer has a great interest in the flooring being installed correctly, they may provide installation or require a certified installer. They want their customers to be totally satisfied and if the flooring is installed wrong it can have a variety of appearance and performance problems such as bowing and skewing, wrinkles and delaminating.

Because the manufacturer has a great interest in the flooring being installed correctly, they may provide installation or require a certified installer. Photo Credit: Bostik, Inc.

Just like installation, maintenance is crucial to continued satisfaction with the flooring. A planned and regularly scheduled maintenance program should be specified. These are often suggested by the manufacturer or even required for the warranty to be valid. Proper cleaning methods include preventive measures, interim cleaning and deep cleaning. Depending on the floor type these may include steam cleaning, wet-vac cleaning, polishing, buffing and refinishing.

You can get all the information you need about maintenance from the manufacturer or industry associations. When planning for maintenance, consider the building layout and traffic flow. High traffic areas like entryways and corridors will see heavy traffic and will need more maintenance, prompting specification of the most durable material. Consider what activities will occur in certain areas, such as eating and drinking or people walking in right off the street.

**ACCESSIBLE FLOORING**

Now we will discuss requirements of ADA Standards for floor and ground surfaces. Specifications for floor and ground surfaces address surface characteristics, carpeting, openings and changes in level. They apply to:

- Interior and exterior accessible routes, including walking surfaces, ramps, elevators and lifts.
- Stairways that are part of a means of egress.
- Required clearances, including clear floor space, wheelchair seating spaces, turning space and door maneuvering clearances.
- Accessible parking spaces, access aisles and accessible passenger loading zones.

**Firmness, Stability and Slip Resistance**

Accessible floor and ground surfaces must be stable, firm, and slip resistant. Stable surfaces resist movement, while firm surfaces resist deformation by applied forces. Accessible surfaces remain unchanged by external forces, objects, or materials. Hardened materials such as concrete, asphalt, tile, and wood are sufficiently firm and stable for accessibility.

Accessible surfaces must be slip resistant to minimize hazards to people with disabilities, especially those who are ambulatory or semi-ambulatory or who use canes, crutches and other walking aids. The standards require ground and floor surfaces to be slip resistant, but they do not specify a minimum level of slip resistance or coefficient of friction. This value varies according to the measurement method and protocols used.

Some products are labeled with a slip resistance rating based on a laboratory test procedure, but in the absence of a consensus test procedure, the standards do not set a minimum value. Compliance with the standards requires specifying surface materials, textures or finishes that prevent or minimize slipperiness under the conditions likely to be found on the surface.
Standard practices for minimizing floor or ground slipperiness will likely satisfy compliance with the standards as slip resistance is important not just for accessibility but for general safety as well. Applications and finishes used to increase a surface material’s slip resistance may require continued maintenance or re-application.

**Carpet Requirements**

Carpet that is thick, cushiony, or loose impairs accessibility, particularly wheelchair maneuvering. The standards specify the maximum pile height (1/2 inch measured to the backing, cushion, or pad) and texture (level or textured loop, level cut pile, or level cut/uncut pile) and require firm backing. Cushions or pads also must be firm or can be avoided to ensure greater firmness.

Carpeting must be securely attached so that it does not shift or buckle against wheeled traffic. Cushions or pads, if used, also must be properly secured to resist movement. Rolling or buckling occurs when carpet is not properly secured and makes wheelchair maneuvering very difficult.

Exposed edges must have trim on the entire length of the exposed edge and be fastened to the floor to prevent curling. Trim must meet specifications for changes in level, including requirements for beveled edges when the height exceeds a 1/4 inch. The maximum height is a 1/2 inch.

**Changes in Level**

Changes in level can be up to a 1/4 inch without treatment or a 1/2 inch if beveled with a slope no steeper than 1:2. Changes in level above a 1/2 inch must be treated as a ramp or curb ramp (or a walkway if a slope no steeper than 1:2 can be achieved). Ramps and curb ramps must have level landings and clearances at the tops and bottoms of each run to provide adequate separation and resting intervals between sloping surfaces. These specifications apply to all portions of accessible routes, including thresholds and carpet trim.

**Third-Party Certifications**

For both marketing and health, safety and welfare reasons, it will probably be important to the building owner to specify products that have been certified as sustainable by a third-party organization such as SCS Global Services. Such products will have a lesser or reduced effect on health and the environment when compared with competing products that serve the same purpose. GREENGUARD, FloorScore® and Green Square® and three material and flooring certifications administered by SCS Global Services. In addition, you can specify products certified through NSF/ANSI 140 or 332.

SCS certification provides third-party assurance that a manufacturer has implemented innovative, industry-leading practices throughout the product life cycle. SCS Global Services scores the environmental, economic and social aspects of commercial building interior products based on the NSF/ANSI family of multi-attribute certification standards. Certification signals a manufacturer's commitment to issues across the product life cycle such as material safety and sourcing, recycling practices and indoor air quality, water and energy conservation in manufacturing, social accountability and end-of-life management. Manufacturers of commercial flooring materials for offices, schools, hospitals and hotels recognize the SCS Kingfisher certification mark of social and environmental excellence, as do specifiers and building owners.

**NSF/ANSI 140 Certification Standards for Sustainable Carpet**

Designers, agencies and institutions who care about the social and environmental sustainability of carpets and rugs now specify products certified to the NSF/ANSI 140 standard. NSF 140 is the Sustainable Carpet Assessment Standard and is the first industry-wide unified standard for green carpet in the United States. It is ANSI-accredited and applies to carpets for all types of buildings in the U.S., including commercial, office, education, government, healthcare and hospitality. Architects, designers and end users can use NSF/ANSI 140 to identify carpets certified to have a reduced environmental impact.

NSF/ANSI 140 is applicable to any carpet product, although the standard does not apply to the packaging of sustainable carpets or to the adhesive or padding products used in the installation of carpet products. Qualification for the SCS Certified mark under the NSF/ANSI 140 standard for carpet involves assessment of conformance with criteria under the following categories:

- Manufacturing processes.
- Reclamation and end-of-life management.
- Energy usage and energy efficiency.
- Use of bio-based, recycled or environmentally preferable materials.
- Steps to minimize adverse public health, environment and community impacts.

Successful applicants achieve one of three levels of certification, depending on the number of points achieved:

- **Silver**—Entry level certification tier
- **Gold**—Middle tier certification
- **Platinum**—Highest level of performance recognized

**NSF/ANSI 332 Certification Standards for Sustainable Resilient Flooring**

Resilient flooring customers who are interested in the social, environmental and economic sustainability of their purchases are now specifying products certified to the NSF/ANSI 332 standard. SCS Global Services provides NSF/ANSI 332 certification as an adjunct service to a RFCI FloorScore® indoor air quality certification.

Products eligible for certification include vinyl tile, vinyl composition tile (VCT), sheet vinyl, rubber, poly-olefin or ethylene, and linoleum flooring products in which the wearing surface is non-textile. Also included are flooring accessories such as wall base, moldings and stair treads. The standard is applicable to products manufactured in one facility or multiple facilities, and in one country or multiple countries.
Qualification for the SCS Certified mark under the NSF/ANSI 332 standard for resilient flooring involves assessment of conformance with criteria under six specific categories:

- Product design
- Product manufacturing
- Long-term value
- End-of-life management
- Corporate governance
- Innovation

**GREENGUARD Certification**

GREENGUARD Certification ensures that a product has met some of the world’s most rigorous and comprehensive standards for low emissions of volatile organic compounds (VOCs) into indoor air. GREENGUARD Certification provides the market with solutions and resources to identify products with lower chemical emissions, and provides manufacturers with credible tools to legitimate and promote their sustainability efforts. GREENGUARD Certification has been widely adopted as a trusted standard for low-emitting products. SCS is the certification body for the GREENGUARD program.

**FloorScore® Certification**

Specifiers can be assured that the hard surface flooring and flooring adhesive products they are specifying meet the strict indoor air quality (IAQ) requirements of FloorScore®, the cost-effective certification program developed by Resilient Floor Covering Institute (RFCI) with SCS. SCS is the exclusive certification body for the FloorScore® program.

Products bearing the FloorScore® label meet the indoor air quality emissions criteria of LEED, CHPS, the Green Guide for Health Care, and are recognized by a long list of healthy building programs. FloorScore® certification is also a valuable stepping stone to sustainability certification under NSF/ANSI 332.

Eligible products are hard surface flooring materials and flooring adhesives such as:

- Vinyl sheet flooring
- Vinyl composition tile (VCT)
- Solid vinyl tile (SVT) and luxury vinyl tile (LVT)
- Linoleum
- Rubber flooring
- Cork flooring
- Hardwood, engineered and bamboo flooring
- Laminate flooring
- Polymeric flooring
- Wall base and related products
- Flooring adhesives

**Green Squared® Certification**

Consider specifying tile products certified to the Green Squared® standard, established by the Tile Council of North America (TCNA) under ANSI A138.1. This certification is available to manufacturers of ceramic and glass tiles and a wide range of tile installation materials, and demonstrates that a manufacturer is committed to exceptional environmental performance. SCS Global Services provides this tile certification under the Green Squared® program.

Products that may qualify for certification include ceramic tile, glass tile, dry powder installation goods, liquid and paste installation goods, rolled sheet installation goods and panel installation goods.

Under the Green Squared® certification standard, products are evaluated based on successful compliance with indicators listed under five basic criteria:

- Product characteristics
- Manufacturing and raw material extraction
- End of product life management
- Progressive corporate governance
- Innovation

**SUMMARY**

As we’ve demonstrated, there are many factors that must be considered before specifying flooring, and each is dependent on the application, budget and desired aesthetics of a project. Not only is it important to clearly convey the materials to be used, but it is also important to specify surface preparation, installation and maintenance considerations to ensure the longevity of each flooring installation. In addition, accessibility is sometimes required, and sustainability is often desired by today’s building owners, not only for the health, safety and welfare of occupants but for a building’s marketability.

**RESOURCES**

http://www.bostik-us.com/
http://www.access-board.gov
http://www.archtoolbox.com
http://apps.americanbar.org/litigation-committees/construction
http://www.nwfa.org/
http://www.tcnatile.com/
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