

# starlog

A SERIES OF FLOORCOVERING BULLETINS

## CERAMIC TILE

COOL-TO-THE-TOUCH, IT'S ONE OF THE HOTTEST FLOORS FOR COMMERCIAL INSTALLATIONS

### *A Floor For The Ages*

Visit ancient Rome and you'll see ceramic tile in ruins ranging from servant homes to noble estates. Natural ceramic tile was the flooring medium used for the ordinary to the extraordinary. For centuries, ceramic tile floors played the dual roles of design and durability. Amazingly, many of these floors still retain their color and designs, even though the rest of the building has deteriorated. Today, aesthetics and functional benefits are still the key reasons behind ceramic's popularity. Ceramic tile is the floor for you if you're looking for style that never goes out of fashion, versatile colors and designs, installation pattern options, unsurpassed durability and easy maintenance.

### *Global Growth*

In the 1980's, most commercial ceramic tile floors were used in commercial kitchens and industrial spaces. Twenty years later, improvements in production efficiencies, upgrades in design, and a desire to cater to commercial applications are redefining the product and the market. Ceramic tile is enjoying unprecedented popularity in residential and commercial markets. In fact, ceramic has seen double-digit growth for the past three years. Growth exceeding the flooring industry norm, at approximately 8% for 2002, is expected well into 2004.

Today's ceramic tile combines the product's natural charm with improved performance made possible by modern technology. The result is a virtual explosion of commercial styles, sizes, shapes and structures. New firing techniques create tiles that can stand up to heavy foot traffic and tough industrial installations. New glazing methods create surfaces that are impervious to stains and scratches. The new focus on glazing is also giving rise to products with colors and textures suitable for commercial applications that range from expansive airport corridors to executive conference rooms. Manufacturers have also increased their offer of slip-retardant products that comply with the Americans with Disabilities Act (ADA) recommendations. Porcelain tile in particular, is the rising star for commercial applications. It is much stronger and denser than other ceramic materials, so it can stand up to commercial duty. It is more water resistant than softer ceramics and resists the effects of freeze and thaw cycles on exterior applications. Porcelain shares the ceramic family hallmarks of good looks that last and maintenance that's practically worry free.

### *Naturally Popular*

Ceramic has a lot in common with other natural materials that are popular today, including wood, stone and marble. Ceramic is made with natural non-endangered raw materials. It is an environmentally friendly product in that it is highly sustainable and has low lifecycle costs. Broken tile can be ground up and reused in the manufacturing process. It is naturally hygienic, having moisture resistance that makes it impervious to mold, mildew and bacteria growth. It is cool-to-the-touch, which is an asset in warmer climates. Ceramic is a true natural in its composition, its good looks and its increasing popularity with environmentalists.





### ***Physical Guidelines***

The expression “you can’t judge a good book by its cover” doesn’t necessarily apply to ceramic tile. Glazes applied to the tile surface completely change the performance, including improved moisture and stain resistance, added strength against impact damage, increased resistance to traffic and easier maintenance. Glazes also add decorative value. And thicker is not necessarily better. Ironically, porcelain tile, which has a relatively thin gauge, is stronger and more durable than thicker glazed or unglazed ceramic tile.

The important thing to remember is to select a tile that meets the physical needs of the application. An industrial area needs tiles that can resist heavy loads such as tow motors. Commercial kitchens need tiles that resist grease and stains, plus can stand up to thorough and frequent maintenance. Vestibules and entryways need floors that resist abrasion as well as provide increased slip and fall protection. Your StarNet member understands the objective and subjective tests used to evaluate the appropriateness of the tile for the space. The following table shows the characteristics you should consider before selecting a product:

<b>Physical Performance</b>	<b>Test Method</b>	<b>Interpreting Results</b>
<b>Water Absorption</b>	<b>ASTM C373</b>	<b>The lower the value, the better. There are four categories:</b> <b>Impervious: 0.5% or less</b> <b>Vitreous: more than 0.5%, but not more than 3.0%</b> <b>Semi-Vitreous: more than 3.0%, but not more than 7.0%</b> <b>Non-Vitreous: more than 7.0%</b>
<b>Breaking Strength</b>	<b>ASTM C648</b>	<b>The higher, the better. Recorded as pounds of force needed to break a tile.</b> <b>Commercial strength should be 335 pounds or higher.</b>
<b>Scratch Hardness</b>	<b>MOH's</b>	<b>The higher, the better. Commercial ratings should be 7 or higher.</b>
<b>Chemical Resistance</b>	<b>ASTM C650</b>	<b>Subjective rating. Commercial should be resistive.</b>
<b>Abrasion Resistance</b>	<b>ISO 10545-7</b>	<b>The higher the class, the better.</b> <b>Class three = light commercial use</b> <b>Class four = heavy commercial use</b>
<b>Slip Resistance*</b>	<b>ASTM C1028</b>	<b>The higher the value, the better. Measured wet and dry.</b>

\* Products that are promoted as slip resistant should meet the requirements of the American National Standard Specification for Ceramic Tile (ANSI A137.1) for slip resistant surfaces, as tested by ASTM C1028, the standard test method for evaluating the static coefficient of friction of ceramic tile. You want to specify a floor that has a high enough COF for slip resistance without being so high that the surface itself becomes a safety hazard or difficult to clean thoroughly.

### ***From Desert Sand To Bananas***

Solid colors. Decorative effects. Multi-hued highlights. Dimensional textures. Small patterned mosaics. Animal, mineral and vegetable motifs. Squares, octagons and stripes. The colors, sizes, shapes and patterns available in ceramic tile are seemingly endless. Add to that the versatility of different patterns and configurations on the floor and the design options are almost overwhelming.

The modular tile format looks classic in one-color installations. But, coordinating colors and shapes lend themselves to mix and match custom design ideas. Borders, area designations and wayfinding can be designed by using alternate colors and/or alternate pattern layouts. Smaller mosaic tiles allow for imaginative and decorative insets, logos, and detailed designs on the floor.

For truly intricate custom designs, you can work with tile manufacturers who offer waterjet technology as part of their design service. Waterjets employ high-pressure water to cut or etch any size, thickness, weight or depth of line imaginable. The lines can be straight or curved and may be used alone as a design element or filled with other materials including metals. Some manufacturers offer custom colors and custom silk screening as part of their design service. Ask your StarNet member for a recommendation.

With ceramic tile, the grout itself becomes part of the design. Tiles and grout can be installed in a myriad of patterns to create interesting design effects in one color or more. Basic tile layouts use a standard checkerboard, stacked or diamond pattern. Altering the tile placement in a brickwork, basketweave or herringbone pattern adds more sophistication to the design. You can heighten the design potential with patterns that are random, circular, or use different sizes and shapes of tiles together. To help designers and facility managers think through layout possibilities, many manufacturers offer a pattern guide to help jump-start creative installation ideas.

### ***The Perfect Mixer***

Ceramic tile looks beautiful when used as a full floor installation. But it works easily well when paired with other flooring finishes. Ceramic’s naturally good looks transition well to other natural materials. Combining the different finishes together seems to maximize the beauty of both. Restaurants, high-end retail stores, executive office areas and hotels often use the easier-maintaining ceramic in high traffic areas, and transition to higher-maintenance wood in less trafficked spaces. Ceramic looks great with carpet. It also makes an attractive backdrop for decorative floor treatments such as area rugs and inset gardens. Using temporary floor coverings and accents over ceramic are a great way to delineate interiors and refresh spaces without ripping out the basic floorcovering.

Unlike other flooring that basically stops where the floor transitions to a vertical surface, ceramic tile offers the ability to continue the color, design and pattern to other surfaces. It's the perfect floor-to-wall bridge in both design and composition. In most cases, the physical needs of ceramic for vertical surfaces is less demanding than for the floor, and is therefore less expensive than the floor tile. So, more and more manufacturers are making coordinating tile especially for walls, columns and fixtures.

### ***Installation—Work With Established Professionals***

Contractors are anxious to acquire the skilled labor necessary to meet the increased demand for ceramic installations nationwide. All the more reason to work with established industry professionals, such as your StarNet member contractor. This is not a job for an amateur. Ceramic is truly a floor installation that you (or the building it is going into) will live with for a very, very long time. The good news is, when selected and installed correctly, ceramic floors will look beautiful and probably outlast the building they're in. The bad news is, errors are expensive to correct and can be permanent reminders of a poor product choice, a bad installation, or a great product choice paired with a bad installation. The bottom line is this: your StarNet member contractor has the expertise you need to help select the right product from reliable sources as well as install it correctly.

Your StarNet member will conduct a thorough site evaluation before beginning the job. He'll organize all job operations, including estimating how much additional tile is needed to accommodate cuts or waste. At the same time, he'll suggest where imperfect tiles could still be used in less visible areas of the installation, to maximize the job lot. He'll conduct a visual examination to ensure the tiles don't have objectionable color variances or gloss level. Installations will be quoted to you in terms of square feet, not by the tile. The variables in professional tile installation quotes include the tile, the adhesives that stick the tile to the subfloor, the grout that surrounds all joints, plus any necessary finishing and transition pieces.

Getting back to grout – it's what turns ceramic tile into a ceramic floor. Its function is to fill joints to protect tile edges from damage caused by normal expansion, contraction and collision. Beyond that, it is a decorative component. Grout is typically made with Portland cement. Silica sand is sometimes incorporated into the grouting mix if the grout line is greater than 1/8th inch wide. Colorants can be added for aesthetics and to help hide dirt and stains. Colored grout should be tested with tiles before installation to ensure that the grout does not permanently stain the tile color. This is an issue primarily with unglazed tiles and polished porcelain. Sealing grout with a penetrating or impregnating sealer helps protect against staining, but all grout eventually ages and darkens over time. This is a natural, unavoidable process.



### ***Cost/Value Relationship***

Ceramic is much more expensive upon initial purchase and installation than vinyl, wood or carpet. Your StarNet member can show you how an investment in ceramic tile floors adds up to a lifetime of value. Installations are expensive, but you should steer away from very inexpensive tile to save costs. The size and thickness control for lower end products is simply not as good as for higher end tile. This makes the tile more difficult and expensive to install. It also means that more grouting may be needed to accommodate the size differences, resulting in a less sophisticated look and increasing the potential for tile damage. So, you'll simply be spending good money after bad trying to economize with the tile itself. Established contractors, such as StarNet members, know the reputable suppliers and those known for their inconsistent materials.

### ***Easy Maintenance***

When it comes to easy care, you couldn't ask for anything simpler than ceramic tile. Maintenance procedures for new floors are the same as routine maintenance over time. Here is a typical maintenance procedure:

- Sweep or vacuum surface.
- Mix water with a neutral tile and grout cleaner per manufacturer's instructions.
- Apply cleaning solution to surface with a mop. Allow to sit for three to five minutes.
- Mop up solution, using extra agitation over dirtier or stained areas.
- Rinse floor thoroughly with clean water and mop up excess fluid with a clean mop or wet-vac.
- Allow floor to dry before resuming foot traffic.

You should also monitor and mop any spills as they occur to reduce the risk of staining and to reduce slip possibilities. A mild acid, such as sulfamic, may be needed occasionally to remove inorganic deposits or staining. Conversely, a stronger alkaline detergent may be used to remove organic staining. Floors with coarse, textured or abrasive surface characteristics, and floors in high traffic areas will need more frequent maintenance than smooth-surfaced floors or floors in lower traffic rooms.

### ***What's Next***

Today, approximately half of our ceramic tile is imported. The major foreign producers include Italy, Spain, Mexico, Brazil and Germany. In response to the growth trend, U.S. manufacturers are gearing up for more domestic production. Although the European producers have an historic edge on design and technology, domestic manufacturers have quickly become world class in both venues.

Much of this new production is porcelain. Manufacturers are introducing residential and commercial porcelain offerings to the market at an accelerated rate. Products at the low, medium and high end are burgeoning. All the more reason to have a StarNet member help you sort through the elaborate array of options.

The styles and formats are coming up to speed for commercial customers. Pre-coordinated collections for commercial interiors including floor tile, wall tile, and decorative mosaics, finishing and trim pieces are making the specification process easier. Metal is a hot look across all interior finishes, and ceramic tile manufacturers are incorporating metallic accents into their commercial lines as well.

StarNet members stay on top of industry trends by exhibiting and/or attending major floorcovering events. They will be well represented at the upcoming Coverings tradeshow this May, the largest ceramic tile and natural stone exhibition in the U.S.

As the nation's largest network of independent commercial flooring contractors, only StarNet members can provide customers with the best of both worlds. Independent ownership means you'll always receive unbiased recommendations and personal service from a local name you trust. Strength of our nationwide network assures the best product selection at the industry's most competitive prices. When you do business with a StarNet member, you can be sure we'll do whatever it takes to satisfy you now, and for the long-term.



The nice thing about being local is that we're always here when you need us.

When you choose a local StarNet member for your commercial flooring needs, you get the outstanding craftsmanship that's the bread and butter of an independent contractor. Plus you get the peace of mind that comes from knowing that this is someone who's able to anticipate and solve problems that are unique to your region. Add to that, purchasing power and an unlimited choice of product, and you're assured of perfectly integrated project management - from bringing your design to life to post-installation follow-up. Because not only will we make sure you get a great finished product. We'll never leave you swinging without a net.

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