

INSTALLATION

The following basic steps are usually part of any tiling project:

- Surface preparation. Ceramic tile needs a flat, rigid, clean backing. Any required slope on floors should be achieved at this point.
- Layout planning. Careful layout and measurements will ensure an aesthetic arrangement and limit unnecessary cuts.
- Verification and inspection of all materials. The shipment should be inspected to verify quantity (including about 10% extra to compensate for waste and cuts, and the recommended reserve); tone (dye-lot); and caliber (dimensional size) on all cartons to confirm consistency. Note: up to 5% of first choice tile might have minor appearance defects, a reasonable tolerance under European norms. Any unacceptable differences and claims (including shipment of the wrong tile: must be reported before installation begins.
- Bonding tile to the substrate. Membranes such as waterproofing or crack isolation systems should be installed prior to setting the tile.
- Filling the spaces between tiles with grout, installing expansion joints and caulking. Expansion joints are critical for large tiled areas in both interior and exterior installations. The recommended spacing and sizes for these joints are as follows:

Interior. Every 24 to 36' in each direction with a minimum width of 1/4"

Exterior. Every 12 to 16' in each direction with a minimum 3/8" for 12' and 1/2" for 16' joints.

In areas of extreme temperature variations, additional expansion joints or increased joint width may be required. Caulking is required wherever tile work abuts restraining surfaces such as perimeter walls, dissimilar floors, curbs, columns, pipes, ceilings and where changes occur in backing materials - places where traditional Portland cement grout may crack or deteriorate.

- Curing, sealing (if required) and final clean up. The setting material and grout are usually Portland cement products and require proper curing for optimal performance. Notes: cement takes 28 days, after installation, to achieve total hardness or a full cure. Cement grout may require damp curing for several days and newly tiled areas should be protected from other ongoing construction activities. A penetrating or silicon type sealer may be specified for the tile, grout, or both. Upon completion, the tile setter should present a completely clean installation free from grout haze or other surface residue.

Modern advances in bonding and grouting materials and structural systems allows ceramic tile and porcelain tile to be installed in an ever-expanding array of unique situations. Technical and decorative innovations ensure performance and design concepts that are unparalleled by any other finish material.

This product is manufactured in batch production quantities by shade and caliber. Variation of shade is an inherent characteristic of all high fired clay tiles. Please verify the tile grade, shade and caliber numbers assuring that they are the same on all cartons prior to installation. (Before laying the tiles we recommend the spread several pieces of different boxes on the floor, in order to verify the aesthetic results). Allow a fixing joint of at least 3 mm=1/8".

Location

- The substrate must be suitable for the intended use of the tile flooring especially in high-traffic areas, or areas which will be subject to heavy loads.
- It is essential to allow for the use of expansion joints, especially for large areas, which should be in relation to the structural joints of the building.

Preparation

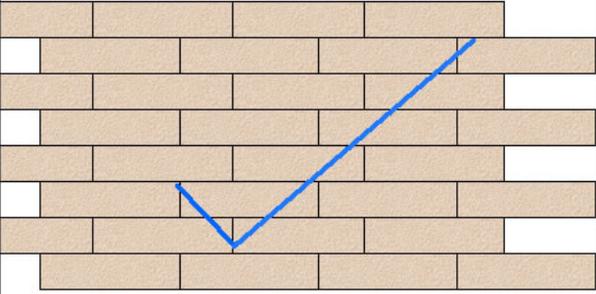
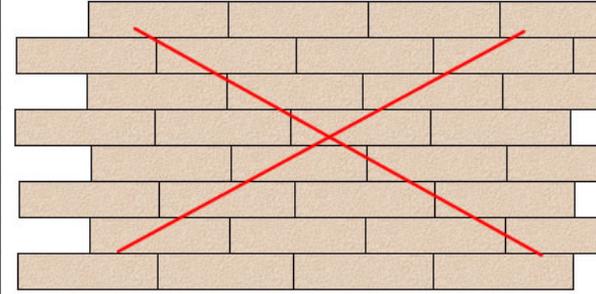
- We recommend protecting the floor, which should be perfectly clean and dry, using sheets of PVC and AIRBALLS to prevent damage to the floor during the completion of any work on-site.

Laying the tile

- We recommend that an adequate joint is always left between the tiles (minimum 3 mm=1/8"), and that spacers are used
- The tiles can be laid with either adhesives or cement-based mortar.

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- If adhesives are to be used, the surface must be perfectly level and clean to ensure the tiles will be anchored well.
- Follow the manufacturer's recommendations regarding the application of your choice of adhesive.
- Do not use marker pens to mark where tiles are to be cut, especially if they are permanent markers.

Ceramic and Porcelain Tile Recommended Installation Scheme	
YES	NO
<p>*Staggered joints are recommended. (1/3 of the tile size)</p> 	<p>*1/2 broken joints are NOT recommended (50% of the tile size)</p> 

Grouting

- Should you intend to apply a colored grout, only use pre-packed products; it is important to carefully follow the manufacturer's instructions.
- We always recommend paying particular attention when using a contrasting grout color to the tile (e.g.: pale tiles and dark colored grout such as black, dark blue or red). In this case, it is advisable to test it on some loose tiles first before using it.
- We are not liable for tiles that have been stained by colored grout, as this problem only occurs if the grout has not been applied correctly.

Clean-up

- After the tiles have been applied and grouted, the floor must be cleaned with care to remove any calcium-cement residue from grouting. Only clean a small area of square footage at a time, using a phosphoric-hydrochloric acid buffer or scale-removing detergent, which should be diluted in water. Rinse with clean water several times and remove the residual water with a vacuum.

Installation Notes

Successful installations consider every element from the tile (surfacing) down to the structural framing. Ceramic tile, like other finishes, requires appropriate substrate and backing materials, setting methods, and finishing in order to ensure a durable result. A qualified professional tile installer will perform the work according to the American National Standard Institute (ANSI) standards, using current technologies and recommended industry practices.

When properly specified, ceramic tile can be set on almost any substrate in vertical or horizontal, interior or exterior, residential or commercial applications. The ANSI "Specification for the Installation of Ceramic Tile, ANSI A 108.1" and the TCA "Handbook for Ceramic Tile Installation" define the correct system for each application. Although ceramic tile and porcelain tile can be installed without professional assistance, it requires a thorough understanding of the material, the engineered structure, and any environmental stresses.

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A contract should always be developed for the services of a trade professional. The contract should state that all work will be performed by experienced contractors, according to ANSI A108.1 and the TCA installation handbook. This document should include:

- A complete description of the job and scope of work.
- A start and completion date.
- An agreed payment schedule (may be based on percentage of work completed),
- A description of any required preparation work prior to tiling.
- A precise material specification listing including any backing, setting, tile and trims.
- A layout or design plan including grout colors and grout width.

Upon satisfactory completion of the project, the contractor should provide a written lien release covering all materials (including tile and setting materials) and reserve tile (5-10%) matching the tone, caliber and production run of the project.