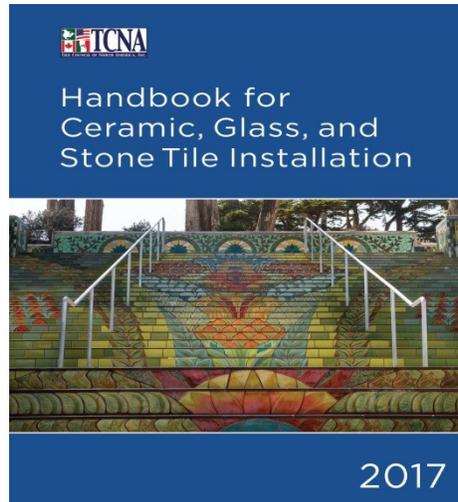




## **Elysium Porcelain /Ceramic Field Tile Installation Guide**



**We strongly recommend customers to use a licensed tile contractor to do the tile installation and always use TCNA tile installation handbook as the installation guidance**

Installing ceramic tiles involves a process in which you must select the right fitting technique based on all the factors involved in the system. Below are some general recommendations to take into account to correctly fit ceramic tiles. You should always read the manufacturer's recommendations and the data sheets for all of the products and materials you use. It is important to have qualified professional tilers carry out the work to ensure each project is performed with the necessary quality and best end result in terms of technical features and appearance.

**1. SELECTING THE TILE AND DESIGNING THE TILING SYSTEM.** Select the right type of tile for the project based on the technical and functional requirements of the surface to be tiled. The manufacturer states what each tile is intended to be used for based on its characteristics. Take the following into account when selecting the tile: mechanical requirements, slip resistance, frost resistance, chemical resistance and dimensional characteristics. It is important to choose the right tile based on different factors related to its use and purpose: whether it is to be used on

floors or walls, indoors or outdoors, for residential or public use, as well as any other additional requirements or adverse environmental conditions. After you have selected the right tile for each project, examine the base it will be fitted to and select the adhesive and grout. All of these criteria together will determine the most appropriate tiling technique for each project.

**2. MARKING OUT THE AREA** after general cleaning but before you stack the materials and organize the work area, you first need to mark out the area to be tiled. Marking out includes the following stages: - Check all of the measurements of the area to be tiled: mark out the levels, check whether the walls are plumb and the surfaces are flat, check for any hollow areas and mark out the joints. - Depending on how you marked out the joints and the dimensions, you should have a layout that meets the following objectives: no narrow strips and/or small points (diagonally laid tiles) and as little cutting of tiles as possible. - Inspection, cleaning and protection of pre-existing structural joints. Marking out the movement joints and planning the work to make those joints.

**3. SURFACE PREPARATION.** The surfaces to be tiled must comply with technological parameters that make them compatible with the materials and tiling techniques used. To correctly fit tiles you must first examine the surface you are going to tile and take the following into account: - The stability or dimensional variations expected in the base or structural element. - The compressibility of intermediate layers used as insulation. - The flatness, cohesion, water absorption, texture, chemical compatibility and condition of the surface the adhesive will stick to. It is very important to adhere to adequate setting times and to allow enough time for the surfaces to cure so they can properly bear the loads and prevent possible stress and structural movement that could be transmitted to the outer layers. Depending on the result of your examination of the surfaces, you will have to do different things or add layers to adapt the surface so it is suitable for fitting tiles, such as: floor screeds or concrete jackets, forming a regular surface, load disbursement, decoupling layers, waterproofing, drainage, vapor barrier, etc. Generally speaking, a surface is considered suitable for fitting using direct bonding with a fine layer of ceramic adhesives when there is a flatness deviation of less than 1/8" over 2 meters. The flatness required must be even stricter for very large tiles.

**4. INSTALLATION AND MOVEMENT JOINTS. INSTALLATION JOINTS.** A physical separation between adjoining tiles required to offset sizing deviations in ceramic tiles and to absorb stress and disperse vapor from strata beneath. All ceramic tiling must be designed with installation joints suited to the characteristics of the tiles. **MOVEMENT JOINTS.** Movement joints are a fundamental element in ensuring the correct functioning of ceramic systems. The construction management must state whether to use such joints, where, and their design in terms of width and depth in the construction project. Their main function is to absorb movement and stress from the structure, the surfaces and the tiles, respectively, and help to keep the appearance and functionality of the ceramic system in perfect condition. Although they can be made manually with different compressible sealants, prefabricated movement joints are most commonly used. **STRUCTURAL JOINTS.** These are movement joints in buildings that divide the structure to allow the parts to move. The entire length and breadth of structural joints must be adhered to. All layers in the tiling system should be included. If they are made manually, the sealant should have a minimum permanent deformability rating of 15%. **PERIMETER JOINTS.** These are movement joints that separate the tiles from structural members, the envelope and partitions.

They must always be used for paving with a surface area greater than 100 sq.ft. They must reach right down to the support base, or, at the very least, the decoupling layer. They must be at least 5/16" wide. **INTERMEDIATE JOINTS.** These are movement joints that are fitted in the ceramic tiling to subdivide it into standardized sections of smaller surface areas to avoid a build-up of stress when the tiles dilate and contract. For indoor spaces it is advisable to divide the total surface area with intermediate joints in standardized areas of less than 430 sq.ft for floors and 172 sq.ft for walls. Divide outdoor paving into areas measuring no more than 172 sq.ft.

**5. FITTING PROCESS: GENERAL REQUIREMENTS:** - Select the right kind of adhesive for the tile's intended use, base, size and water absorption capacity. - The adhesive layer should be even with uniform thickness and flatness. - A notched trowel should be used to ensure a homogenous layer. Make sure the adhesive is sufficiently deformable for unstable bases. - Depending on the texture and absorption/suction, it may be necessary to apply a primer coat to the base. - The adhesive must be protected from quick drying and damp. - The surface to be covered must be flat, dry and free of grease, oil or dust and be suitably stable. - Do not moisten tiles with low water absorption capacity. - It should be applied when the room temperature and the temperature of the surface and materials is between 41°F and 86°F. Do not fit tiles outdoors when it is raining or there is a strong wind. **PREPARING ADHESIVES:** - They should be prepared in accordance with the manufacturer's instructions. - Suitable tools and clean water should be used. - Mix the adhesive with a mixer at low speed until you have a lump-free, smooth, creamy and even paste. Let it stand for 5 minutes if the manufacturer says to do so. - Use it for the duration of its working life and do not mix it again with additional water. - Only prepare as much product as you are going to use based on the tiling speed and environmental conditions. - Dispersion adhesives tend to be sold as a paste ready for immediate use. **SINGLE GLUING METHOD:** - The trowel you select depends on factors such as the installation type, flatness of the fitting surface, tile dimensions and the type of adhesive to be used. - Spread the adhesive over the surface and then comb the right amount on with the specified trowel. - It is important to make sure you finish the tiling before the adhesive starts to dry to prevent a dry film from forming that could hinder proper bonding.

- Place the ceramic tile on the adhesive layer with a sliding motion until all the bumps are flattened down to make sure it is uniformly smooth and correctly bonds to the entire surface. You can also apply pressure with a rubber mallet. **DOUBLE GLUING METHOD:** Use double gluing for the following: exterior tiling, tiles larger than N 14x14 inch or equivalent surface areas, interior floors subject to heavy dynamic and static loads, tiling above underfloor heating, using ceramic tile levelling systems, and whenever the project plans expressly specify it. This method improves the moistness of the tiles and makes contact more homogenous throughout the entire surface area on the rear of the tiles to create optimal, long-lasting bonding. Apply it as follows: - First spread the adhesive over the base surface with a notched trowel. Then spread the adhesive over the rear of the tile with a float or the smooth side of the trowel. The adhesive's final thickness must not exceed the maximum recommended thickness. Fit the ceramic tiles before a dry film forms on the surface of the adhesive. **TILING PROCEDURE:** - Before you start tiling, take several tiles out of different boxes and make sure they are the same shade, grade and size. - Tiles should be fitted with straight, even joints. The width of the joint depends on the tiles' format, as well as the use and the foreseeable stress to which they will be subjected. - Never fit tiles without joints between them. - The use of installation joints less than 1/16" wide is not recommended. - Use

joints 1/16" - 1/8" wide when fitting tiles outdoors, on stable bases and floors without underfloor heating underneath or with other mechanical requirements. In other cases, use an open joint 1/8" - 3/16" wide. - While the tiles are setting, it is advisable to lift a tile up to check whether the required contact is being made with the surface. - Remove any excess adhesive from the joints before it hardens to allow for correct grouting. Protect the surface of recently fitted tiles from inclement weather, frost and premature drying. It is also necessary to protect the tiles from being damaged by subsequent work.

**USE OF LEVELLING SYSTEMS:** There are different levelling system variants specially designed for large-format and thin laminate tiles. These are devices designed to be used during the installation process to help make the end result flatter by exerting pressure on adjacent ceramic tiles. Levelling systems are not meant to rectify insufficiently flat base surfaces or the tiles own dimensional tolerances. Since they exert force on tiles that are already fitted, certain precautions should be taken into account when using and removing them to prevent them from having a negative effect on bonding with the tiles, as the process is carried out while the ceramic adhesive is still setting. Follow the levelling system manufacturer's instructions to use it correctly, as well as any instructions the manufacturer may give regarding ceramic adhesives.

**6. GROUTING:** Grouting is extremely important for the end result of ceramic tiling in terms of both technical aspects and how well it looks. Grouting must be performed using materials specifically developed for that purpose, as defined and classified in the UNE EN 13888 standard. - Apply grout 24 hours after the ceramic tiles have been fitted. - Apply grout in accordance with the manufacturer's instructions. - Class CG2 grout should generally be used. - In cases that require a high level of mechanical resistance, water-tightness and chemical resistance, use class RG1 grout. - Spread the grout with a suitable rubber float. Fill in the joints to their full depth with diagonal motions.

**7. CLEANING:** Final cleaning of the work area is necessary so the tiles are correctly finished. So remove any leftover bits of cement, sealant and any other residue. Use mildly acidic descaling detergents to do this. It is a good idea to impregnate the surface with clean water before any chemical treatment to prevent the cleaning agents used from being absorbed by the grout. After tiles are installed they must be thoroughly cleaned using acid solutions diluted in water to remove residues of grouting and general site dirt. We recommend the use of DETERDEK detergent with a slightly acid action, which does not release harmful fumes or harm the grouting, material or operator.

DETERDEK detergent Youtube video link: [https://youtu.be/gT\\_4XdPS84s](https://youtu.be/gT_4XdPS84s)