PORCELANOSA®

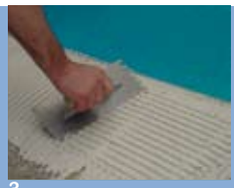
INSTALLATION INSTRUCTIONS

junio 2005

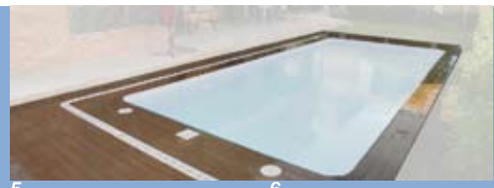
OUTDOOR CERAMIC TILES


1-


2-


3-


4-


5- 6-

1- When installing tiles, it is extremely important that you choose suitable **tools and instruments** (notched trowel, rubber mallet, tile spacers, rubber trowel, and sponge for optimum results when grouting).

2- It is essential that you design and **create suitable drainage slopes** to avoid stagnation problems and **prevent the build-up** of surface water.

3- Make sure that the ground is **properly waterproofed** to **prevent ground moisture** from filtering through and to protect against the formation of bloom, moss, etc.

4-The **substrate must be compact** throughout in terms of thickness and surface finish, and any parts that are brittle or that could become easily detached should be removed.
The substrate must also be **free of dust**, fat, or any other substances that could interfere with adhesion. Finally, make sure that the **surface is completely even**. All drainage slopes that you have previously created must be maintained when preparing the substrate.

5- The installation substrate must be stable in terms of dimension and structure, and sufficient time left for drying and setting shrinkage to occur. We recommend leaving one week for each centimetre of adhesive applied. If the surface needs to be used sooner, you might consider using a quick-setting compound.

6- Correctly **plan the layout of the area** to be tiled in advance. When planning the layout, decide where to place **perimeter and intermediate expansion joints**, maintain **structural joints,** and do not install any tiles on these to prevent any breakage or cracking after installation.


7-


8-


9-


10-


11-


12-

7- In outdoor areas prone to frost, the crack must be covered well and y **class C2** cement-based adhesives as per European standard EN 12004 (Adhesives for Ceramic Tiles) to install outdoor ceramic tiles. **Follow** the **manufacturer's instructions** at all times to enjoy the full benefits offered by the adhesive's properties.

8- Apply all adhesives with a notched trowel using the **thin-bed** method. Make sure that the size of your trowel is suited to the size of the tiles you are installing. For outdoor or large-format tiles, always use the **floating and buttering method**, i.e. spread the adhesive over both the substrate and the underside of the tile.

9- Ensure that you seal tile joints properly by **using a grouting mortar suited to outdoor use** (Class CG2 cement-based grouting mortars as per EN 13888 - Grouting Material for Ceramic Tiles).
For applications requiring greater elasticity, adhesion, and mechanical resistance, we recommend mixing your cement-based mortar with a **special latex additive.**

10- The correct sealing of joints is a very important part of the tiling process. Outdoor tiles should **never be butted together**. A **joint of a least 5 mm** should be left between tiles although this can be increased in areas subject to sharp temperature changes. Make sure that all joints are clean before grouting them.

11- Make sure that you follow the manufacturer's instructions when applying the grouting material. If you are using anti-slip tiles or a latex-based grout, make sure you clean away all traces of grout before it has time to dry.

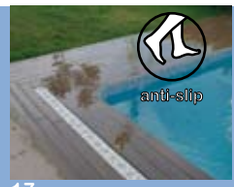
12- In all cases, consider the creation of **perimeter joints.** These should be created at all transitions between floor tiles and vertical elements such as walls, pillars, foundation blocks, or other types of flooring. Perimeter joints should have a **minimum width of 8 mm**.


13-


14-


15-


16-



17-


18-

13- The width and depth of all **floor structural joints** must be **strictly observed**.
Movement joints are critical to protecting ceramic tiles against damage caused by movements – both normal building movements and movements caused by changes in temperature, moisture, etc.

14- When **filling movement joints**, do not use absorbent, closed-cell, high-compression, or **temperature-resistant grouting materials**.
Seal joints with a **highly elastic**, **waterproof** material that is suited to the width of the joint. This sealant must also offer sufficient mechanical and thermal resistance.

15- Intermediate expansion joints must be created in areas measuring between 9 and 25m^2. These joints should form a square with each side measuring no more than 5 m. A joint width of at least 8 mm should be left although this

16- Porcelain tiles should always be used in outdoor areas prone to frost
(these tiles have a water-absorption rate of under 0.5%).
Do not allow water to accumulate in ungrouted joints during frost periods as freezing-thawing cycles could damage the tiles. When **installing steps, strictly follow all instructions provided by PORCELANOSA.**

17- You can increase safety levels in **wet areas** where there is a risk of slippage by choosing a tile with **anti-slip** properties. Bear in mind, however, that these tiles are more difficult to clean (they are more susceptible to the build-up of dirt, and dirt, in general, tends to be more difficult to remove).

18- When finished tiling, make sure that you **remove all traces of grout and adhesive** promptly as the longer that these are in contact with the tiled surface, the more difficult they are to remove. Do not use cleaning agents containing **fluorhydric acid** or any other aggressive materials.

Ceramic tiles are generally exposed to inclement weather, and as such, are subject to considerable mechanical and chemical aggressions. Damage is most frequently caused by two factors, which are generally unkind to outdoor constructions: the presence of water and/or moisture and thermal aggressions caused by sharp changes in temperature and freezing cycles. Porcelain tiles should always be used in these cases to avoid these problems.