



Ardex Technical Note 4.3:

Common Tiling Backgrounds & Preparation in Swimming Pools & Leisure Areas

This technical note aims to provide guidance on common backgrounds and their preparation for tiling in swimming pools and leisure areas.

British Standards

Useful information can be found in BS 8000 – Workmanship on Building Sites on:

- drying times of backgrounds
- surface regularity of backgrounds and the installed tiling
- differences in height either side of tile joints

Common Backgrounds

Portland Cement and Sand Screeds - After 7 days curing allow at least 2 weeks drying time under good site conditions (20°C and 65% relative humidity) before fixing ceramic tiles or natural stones.

Gypsum based Screeds - Allow one week per 10mm thickness drying time up to 40mm at a relative humidity of 65% and a temperature of 20°C.

Note: Drying times can be considerably extended where the above conditions do not prevail and/or the gypsum based screed thickness exceeds 40mm.

Cement and Sand renders – allow at least 2 weeks drying time under good conditions after 1 to 2 days curing before fixing ceramic tiles or natural stones, for swimming pools allow 3 weeks drying.

Concrete - allow at least 6 weeks drying time under good conditions - mass concrete structures e.g. swimming pool tanks may take longer to dry. In northern Europe the statutory drying time is 6 months.

Concrete blockwork (including aerated) or brickwork - allow at least 6 weeks drying time under good conditions before rendering or direct fixing the tiles.

Note: If rendered, the above drying times for render or plaster then apply, giving a total of at least 6 to 8 weeks.

Plaster - Check the masonry background is dry before plastering (min 6 weeks). Plastering should be done in accordance with BS5492 and modified in BS5385-1 section 3.4. Then allow at least 4 weeks for gypsum based plaster to dry. Don't forget

plaster is not a satisfactory base for tiling in wet locations, in these cases a waterproof coating should be applied. Some plaster walls may be painted. Check that the paint is firmly adhered - generally a hard gloss paint will be able to be tiled over if firmly adhered to its background; emulsion paints should be mechanically removed.

If timber is present, direct fixing should be avoided due to possible problems with moisture and dimensional stability. Timber should be oversheathed with a moisture tolerant tile backer board or sheet system, (eg Wedi, HardieBacker or Schluter).

ARDEX Rapid Drying and Hardening Systems

In addition to the standard recommendations, it's worth noting that ARDEX have a range of rapid drying and hardening screeds and renders which can cut down the curing and drying time considerably. For instance...

ARDEX AM 100 Rapid Hardening One Coat Tiling Render is used as a wall render prior to tiling. ARDEX AM 100 can be applied from 2-20mm thick, and tiling can commence after just 2 hours at 20°C.

ARDEX S 21 Rapid Hardening Flooring Tile Bedding Mortar can be applied neat to the floor at up to 10mm. Tiling can commence after 3 hours at 20°C.

ARDEX S 21 Rapid Hardening Flooring Tile Bedding Mortar, filled with screeding sand, can be applied to the floor to produce 10-30mm base. Tiling can commence after 3 hours at 20°C.





ARDEX A 38 Rapid Hardening and Drying Cement for Floor Screeds can make up a concrete base for a 15-50mm bonded screed. Tiling can commence after 3 hours at 20°C.

Note - If the background is new and still shrinking then a rapid hardening render will be of no benefit. In some cases a rapid hardening and rapid drying render can be installed on proprietary mesh reinforcement systems over new backgrounds so that the tiles can be installed 24 hours later. This procedure allows the background to continue to dry and shrink without affecting the applied materials.

Recommended Tile Weight for Backgrounds

The ideal substrate for tiling in leisure installations is render, concrete or concrete blockwork. Gypsum plaster, plasterboard and gypsum fibre boards are not suitable in wet locations. However, some of these backgrounds may be found in dry areas of a leisure complex; in such cases it's always important to remember the guidance for tiling weight limits as follows:

The maximum weight of tiling which can be supported by a dry, well-adhered gypsum plaster background is 20kg/m², i.e. equivalent to ceramic tiles with a maximum thickness of 8mm plus tile adhesive, or, natural stone tiles with a maximum thickness of 7mm plus tile adhesive.

The weight of tiling direct to a plasterboard background should not exceed 32kg/m², i.e. equivalent to ceramic tile and adhesive with a maximum thickness of 12.5mm or natural stone and adhesive with a maximum thickness of 10mm. Hence, in general, it is always best not to skim plaster that will be tiled.

It is important to emphasise that the weights quoted include both the tile and adhesive.

Waterproofing Backgrounds

In wet locations the backgrounds should be water-resistant, i.e. they should retain their strength in wet and in dry conditions, so that the adhesion of the ceramic tiles and mosaics will not be affected under all conditions of exposure. For this reason wood and plaster based backgrounds are not generally used in wet areas, however if a water sensitive background has been specified, then one solution may be to apply a waterproofing tanking membrane.

Note - All communal showers must have a tanking membrane specified.

In shower areas, the recent trend to wet rooms and power showers has also led to a greater need for waterproofing systems prior to tiling. The majority of wall backgrounds are moisture sensitive, such as plaster and plasterboard. This coupled with high levels of water from today's power showers and complete wet room systems, with the water no longer contained in a pre-formed shower tray, places yet more challenges on the tiling specification.

There is a difference between water resistant and waterproof. Waterproof stops the transfer of water. Water resistant means that water can pass through but that it won't break the material down. Tile adhesives with enhanced properties tend to fall into the latter category and are water resistant. Therefore on their own and when used with cement based grouts, they will not halt the transfer of water to the background. Water penetration effects can be damaging to the background and lead to failures.

BS5385 Part 4 recommends tanking backgrounds in shower areas. To produce a watertight specification, always add in a waterproof coating. **ARDEX S 7** Flexible Waterproof Coating guarantees to stop the transfer of water to the background; it's easy to apply and can be tiled on within 2 hours.

