TECHNICAL BULLETIN – TB181

TREATMENT AND TILING OVER EXISTING TILES OF SWIMMING POOL INTERNALS

15th January 2025

INTRODUCTION & SCOPE

This information sheet is designed to detail the necessary surface preparation procedures for the application of a waterproof membrane to an existing tiled swimming pool prior to re-tiling.

Several aspects of the construction and coating schedule are covered in each of the following sections.

Application of a coating to a swimming pool is a critical process – please read all information carefully before proceeding. Any inquiries or doubts should be directed to your nearest Ardex technical representative before carrying out any work.

STRUCTURAL CONSIDERATIONS

This bulletin incorporates a flexible membrane suitable for waterproofing over existing tiled surfaces in swimming pools that are structurally sound and having all existing tiles firmly bonded and not likely to develop excessive cracks or structural relative movement between the walls and base or other locations over time.

Suspended pools over habitable areas must be accompanied by a structural engineer's report confirming the structural integrity of the pool.

STRUCTURAL CONSIDERATIONS

Major problems can be experienced because of climatic conditions during application of a swimming pool membrane coating.

No membrane coating application should take place while the SURFACE TEMPERATURE is below 10°C or greater than 35°C.

While the Ardex membrane coating system is very tolerant to early rain or showers, exposure to early rain or showers will result in deterioration, or worse, of the integrity of the membrane. Exposure to rain or showers prior to curing (within 4-5 hours of application) may result in membrane coating discolouration.

TIME SCALE BETWEEN STAGES

Minimum time intervals should be allowed to elapse between the successive stages, as recommended by AS3958.1 - 2007, and Ardex technical information. In each case, the more conservative time span has been selected. They are:

1. between completion of waterproofing membrane application and fixing of tiles: 24 hours @ 23°C/50% R.H.
2. between completion of tile fixing and the commencement of grouting: 7days.
3. between completion of the grouting and sealing of expansion joints and the filling of the pool: 14 days for cement-based grout systems; 7 days for the ARDEX epoxy systems.

Note: The above are minimum time intervals that should be allowed to elapse between the successive stages. Wet weather typically requires longer intervals.

SURFACE PREPARATION

EXISTING TILES

All existing tiles shall be structurally sound, firmly bonded and not likely to develop excessive cracks or structural relative movement between the walls and base or other locations over time. Existing tiles shall be washed down with a solution of liquid sugar soap and rinsed thoroughly. Tiles should be allowed to dry thoroughly prior to the installation of the waterproofing membrane.

Cracked or broken tiles shall be removed. The underlying concrete substrate shall be cleaned from any contaminants such as old adhesives, membranes, etc., by mechanical methods (diamond grinding). The voids are to be filled with a repair mortar. Allow the repair mortar to dry overnight before the commencement of waterproofing.

EXISTING GROUT

All existing grout between tiles shall be structurally sound. Any loose grout shall be raked clean from the joint and filled with a repair mortar. Allow the repair mortar to dry overnight prior to the commencement of waterproofing.

WATERPROOF MEMBRANE APPLICATION

TREATMENT OF JOINTS

INTERNAL CORNERS

All internal corners shall be coved with a bead of neutral cure silicone sealant suitable for pool installations. Apply a generous bead (16mm) of neutral cure silicone sealant in coving areas and corners. Smooth over the silicone so that it extends 8mm on either side of the internal corner and allow it to touch dry. Stripe coat the internal corners to at least 150mm on either side with a liberal coat of ARDEX WPM 002. While the ARDEX WPM 002 remains wet and fluid lay ARDEX Deckweb reinforcement mat equidistantly across the internal corner and knead the exposed reinforcement mat into the coating so as to wet the cloth through and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

MOVEMENT JOINTS (<6MM)

Expansion and construction joints shall be raked clear of old sealant and re-sealed using an appropriate sealant suitable for pool installations. Always use a reputable sealant manufacturer and the sealant must be installed strictly in accordance with the manufacturers' recommendations. Polyurethane sealants shall be allowed to cure for a minimum of 48 hours prior to the commencement of waterproofing.

All sealed joints shall be stripe coated along the joint and to at least 150mm on either side of the joint with a liberal coat of ARDEX WPM 002. While the ARDEX WPM 002 remains wet and fluid lay ARDEX Deckweb reinforcement mat equidistantly across the joint and knead the exposed cloth into the coating so as to wet the cloth through. Ensure the exposed cloth is fully wetted out and all creases or air pockets are removed. Care must be taken that each area coated is limited so that the ARDEX Deckweb can be laid while the coating remains wet or tacky. Immediately following the treatment of all joints, the first coat of membrane can be applied over the remainder of the surface.

CONSTRUCTION JOINTS (>6MM)

All construction and cold joints shall be stripe coated along the joint and to at least 150mm on either side of the joint with a liberal coat of ARDEX WPM 002. While the ARDEX WPM 002 remains wet and fluid lay ARDEX Coving Band into the coating. Ensure the ARDEX Coving Band is fully wetted out and all creases or air pockets are removed. Care must be taken that each area coated is limited so that the ARDEX Coving Band can be laid while the coating remains wet or tacky. Immediately following the treatment of all joints, the first coat of membrane can be applied over the remainder of the surface.

MEMBRANE APPLICATION

FIRST COAT

After all joints have been treated apply one coat of ARDEX WPM 002 membrane at a coverage rate of not greater than one (1) square metre per litre (wet film thickness of 1mm).

FINISH COAT

Allow the previous coating(s) to dry thoroughly, particularly over reinforced areas, (at least 16 hours) and apply to all surfaces a further coat of ARDEX WPM 002 at a coverage rate of not greater than 1 square metre per litre (wet film thickness of 1.0mm).
Allow the membrane to fully dry particularly over reinforcement for a period of not less than 24 hours before proceeding with the tiling

TILING INSTALLATION

Note: Time scale between stages before proceeding.Tile adhesives must comply the AS4992.1 ratings Types C2S1 or R1.

MATERIALS FOR FIXING TILES

Suitable Ardex adhesives for fixing tiles in swimming pools are:

1. ARDEX OPTIMA adhesive.
2. ARDEX X77 adhesive recommended to be used with ARDEX E90 for improved performance.

MATERIALS FOR GROUTING

Suitable Ardex tile grouts in swimming pools are:

3. ARDEX EG15 epoxy grout
4. ARDEX FSDD grout (colour Ultra white) plus ARDEX GROUT BOOSTER
5. ARDEX FG8 grout (colour White) plus ARDEX GROUT BOOSTER

INSTALLING TILES BY THIN SET METHOD

Substrate must be solid, compact, and free from loose particles, grease, wax, oil, form release agents and other bond breakers.

1. ARDEX Optima - Mix in strict accordance with the Product Data Sheet.
2. ARDEX X77 - Mix in strict accordance with the Product Data Sheet. Where increased performance to S2 classification is required, or resistance to salt water is required, ARDEX E90 should be added to the gauging water. For 15kg of ARDEX X77 powder, mix 2.5kg of ARDEX E90 with up to 5.5L of clean water and then mix with a mechanical stirrer to give a smooth paste.

Apply the selected adhesive with a notched trowel to achieve 100% bed coverage and a dry bed thickness of not less than 2 - 3mm. Back buttering of tiles may be required when the tile is deeply keyed or for placement on curved surfaces to gain the required back coverage.

Careful checks must be made to ensure that a skin does not form on the adhesive surface. Should a skin form on the adhesive do not wet spread the adhesive and do not add water to the mix.

Allow the adhesive to air cure for a minimum of 7 days before proceeding with grouting.

Note: Refer to Ardex Technical Paper TP002 for information about mesh backed mosaics in swimming pools. “Stack stone” tiles are not recommended for swimming pool installations.

GROUTING

ARDEX EG15

Work the grout into the joints using a rubber backed trowel/squeegee. Compact the grout firmly into the joints ensuring they are completely filled, minimising the amount left on the tile surface. Allow the grout to firm up in the joint before clean-up. The use of a good rubber backed trowel/squeegee removes virtually all excess mortar from the surface of the tiles.

Ensure all cleaning off is completed before the grout fully dries on the tile face, otherwise difficulties cleaning off later will be experienced.

Allow the ARDEX EG15 epoxy grout to air cure for a minimum of 7 days prior to commencement of filling the pool.

ARDEX FG8 AND FSDD GROUT WITH GROUT BOOSTER

Mix 4 volumes of ARDEX Grout Booster with 1 volume of fresh clean water and blend with the ARDEX FG8 grout to achieve a firm, smooth medium slump paste.

Dampen joints, especially in hot weather or with porous tiles and fill joints using a rubber squeegee. Wipe off excess material taking care not to remove excessive material from the joints. Allow to touch dry and polish with a clean lint free cloth to remove residual scum.

Allow the ARDEX FG8 and FSDD grout to dry for 14 days prior to filling the pool with water.

MOVEMENT JOINTS

Existing expansion or construction joints in the substrate must be carried through to the tiled surface and shall conform to architectural details and Australian Standard 3958.1 - 2007.

Expansion joints and movement joints shall be sealed with a sealant specifically designed and recommended by the manufacturer as being suitable for pool installations. Always use a reputable sealant manufacturer. The sealant must be installed strictly in accordance with the manufacturers' recommendations.

PROTECTION

The Tiling Contractor shall take all precautions to protect the finished tiled work from damage by other trades.

Do not allow traffic on fresh tiled work and freshly grouted joints for at least 8 hours.

Tiled work must not be washed or exposed to rain and must be protected from direct sun, and drying winds for at least 24 hours after laying.

The tiled work shall be allowed to air dry for the nominated period after grouting and prior to filling the pool.

IMPORTANT
This Technical Bulletin provides guideline information only and is not intended to be interpreted as a general specification for the application/installation of the products described. Since each project potentially differs in exposure/condition specific recommendations may vary from the information contained herein. For recommendations for specific applications/installations contact your nearest Ardex Australia Office.

DISCLAIMER
The information presented in this Technical Bulletin is to the best of our knowledge true and accurate. No warranty is implied or given as to its completeness or accuracy in describing the performance or suitability of a product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

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Australia: 1300 788 780
New Zealand: 643 384 3029

Web: www.ardexaustralia.com
email: technical.services@ardexaustralia.com
Address: 2 Buda Way, Kemps Creek NSW 2178