CERTIFICATE OF TEST

Ref: TSD914
Date of issue: 04/05/2018

EXAMINATION OF A NATURAL OR SYNTHETIC STONE TILE

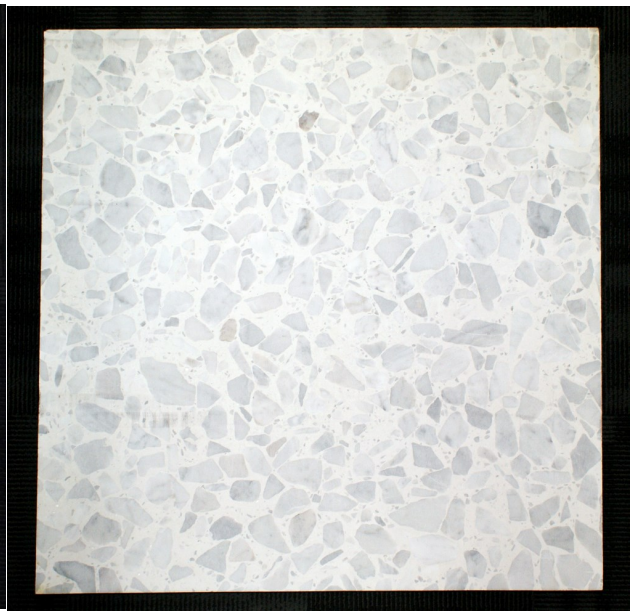
Examples of terrazzo slabs were received from Vulcano for examination to determine adhesive recommendations.

Sample Description
Bianco Neve Terrazzo Tiles — 600 x 600 x 20mm composed of white cement matrix and pebble to cobble sized off-white to pale anhedral microcrystalline limestone pieces to form a clast supported faux conglomerate. The surface finish was fine and the rear face not obviously contaminated with dust or laitance.

Sample weights and densities

Dry weight in	17.5	kg	Wet weight in	NT	kg
Dry density in	2435	kg/m^3	Dry dead load	49	kg/m^2

Front face

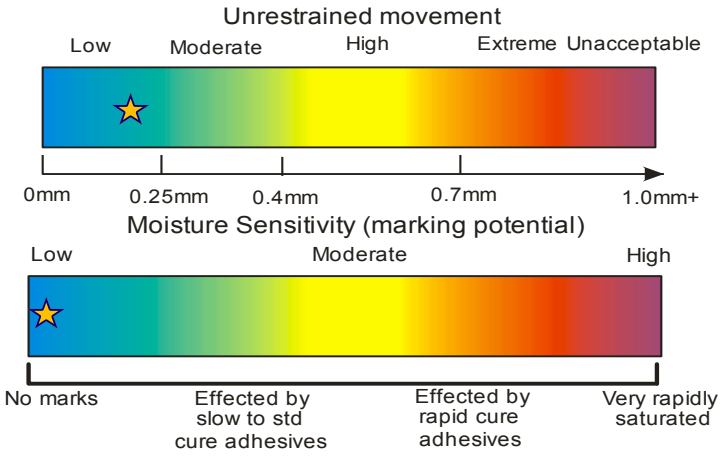


Rear face

Test method
The sample was tested for moisture stability to Ardex test method TMRD45 which is derived from BS/EN 14617-12.2005.

Results
The tile was found to be of low dimensional instability, recognising that it was measured across the centre rather than the diagonal as is normally done (600mm vs 849mm) which makes an estimated variation of around 0.07mm.

Moisture related marking was not observed, even with the use of green stained test solution.



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Product Application	Aba Powerstik Plus Dunlop Universal	ARDEX X78±E90	ARDEX Quickbond ± Abalastic	ARDEX X10 ± E90 X7 ± E90	ARDEX X18 ± E90	ARDEX X77±E90	ARDEX X56 Aba Floorflex Dunlop Wall & Floor	ARDEX S28±E90	ARDEX WA100
Dry area floors on concrete, smoothing cements and screeds	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dry area floors on compressed sheet (not Scyon)	✓	✓	✓	+ E90	✓	✓	✓	✓	✓
Dry area floors on fibre-cement underlay sheeted plywood or particleboard**	☝	☝ + E90	✘	✘	☝ + E90	☝ + E90	✓	✓	✓
Wet area floors with Ardex/Aba/ Dunlop membranes on masonry substrates	✓	✓	✓	✓	✓	✓	✋	✘	✓
Wet area floors on fibre-cement underlay sheeted plywood or particleboard** or compressed sheeting (not Scyon)	☝	☝ + E90	✘	✘	☝ + E90	☝ + E90	✋	✘	✓
External covered masonry verandahs and decks ± an Ardex/Aba/ Dunlop waterproof membrane	✓	✓	✓	✓	✓	✓	✘	✘	✓

Notes

Adhesives shown in blue text are preferred options.

☝ - requires that the vertical deflection in the subfloor must not exceed 1/700th of the floor joist spacing in mm (0.9mm at 600mm centres, 0.6mm at 400mm centres).

+E90 - indicates that ARDEX E90 is required,

✋ - requires correct falls to waste and no ponding. This applies to **all** wet areas, however rubber modified adhesives require this to be precise.

The rubber modified flexibles ARDEX X56, Aba Floorflex and Dunlop Wall & Floor are less slump resistant and this needs to be taken into account when laying heavy large format tiles.

Scyon Secura and the BGC and CSR equivalent floor sheets have special requirements.

Any magnesia board floor sheet or synthetic polymer floor panels also have special requirements.

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Accessories

The recommended grouts and sealants for these tiles are any of the following depending on the application.

ARDEX FG8 ± Grout Booster

ARDEX FS-DD ± Grout Booster

ARDEX WJ50 ± Grout Booster

ARDEX EG15 epoxy

ARDEX EG800F (grindable epoxy for commercial applications where the floor is reground after tiling and grouting)

ARDEX ST neutral cure silicone

Primers and membranes—obtain specific advice from ARDEX.

Primers—ARDEX Multiprime, ARDEX P9 or ARDEX P82 depending on the surface and conditions.

Membranes-ARDEX WPM001, ARDEX WPM002, ARDEX WPM155R, ARDEX WPM750 or ARDEX WPM1000 depending on the application and requirements.

Comments

These tiles are large format and therefore require more care with installation to achieve sound coverage. It is recommended that the tiles are back buttered with a 2-3mm skim coat and that the adhesive is notched with a 12mm minimum notch trowel. The adhesive must be trowel in parallel lines and not fanned, and be at 90 degrees to the falls where present. The tiles must be sheared backwards and forwards across the notch lines to bed them and drop and tap with a mallet is not acceptable.
Failure to achieve full coverage in areas subject to moisture encourages the development of efflorescence by trapping water under the tiles. ARDEX X78 is a flow bed adhesive and is ideal for large format tiles.

All tiles must be at least 28 days old before fixing to allow for cement matrix shrinkage. This applies to cement based terrazzo tiles in general.

The size and dead load of these tiles are significant and the stiffness requirements for flexible subfloors are increased as a consequence. Deflection is measured between the floor joists and should not exceed the 1/700th figure suggested. The larger the tile, the more critical this measure becomes to avoid flexural cracking and lipping problems.

Large format tiles also require more planar subfloors, and hence it is recommended that flatness not exceed a difference of 3mm in 3m across a floor when measured with a straight edge. This is equivalent to a Class A floor to AS3600. Non-planar floors may require the use of an appropriate smoothing cement such as ARDEX K120, or a height adjusted engineered screed such as ARDEX A38-A48.

The use of sound deadening matting may require revision of recommendations depending on the material in question.

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Date of issue: 04/05/18

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2) **All third party products tested as part of a system, shall be installed in accordance with the product manufacturers recommendations.**
3) **All constructions and installations shall comply with the relevant sections of the most recent edition of the Construction Code of Australia (formerly the 'BCA').**
4) **All ceramic tile related installations shall be made in accordance with the most recent edition of the Australian Standard AS3958 and ISO13007 (AS4992).**
5) **All waterproofing related installations or products shall comply the relevant sections of the most recent editions of the Australian Standards AS/NZS4858 (performance), AS3740 (internal) or AS4654 (external).**
6) **All flooring installations shall be performed in accordance with the relevant sections of the most recent edition of AS1884 (resilient) or AS/NZS2455 (textile).**
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