TECHNICAL BULLETIN

INSTALLATION OF SELF-SUPPORTING SAND & CEMENT SCREEDS FOR THE INSTALLATION OF CERAMIC TILING

INTRODUCTION & SCOPE

There are many situations where the use of a self-supporting (unbonded) screed is required to support new tiling installations. These include reinforced Sand & Cement screeds or the so called 'Granolithic' screed. This bulletin describes the process of installation of a self-supporting unbonded screed.

Typical application would be as follows:

- On timber subfloors with excessive movement/vibration and where a rigid subfloor is required to avoid cracking of large format tiles.

- On external balconies/decks constructed of timber or steel framing where a torsionally rigid subfloor is required and falls to floor waste are specified.

- Over light weight subfloors

- Over hi-density foam (thermal insolation and sound insulation) where a sand-cement screed is required prior to tiling.

- Over waterproof membranes that are incompatible with tile adhesives or barrier coatings such as bitumen and polyurethane membranes.

INSTALLATION RECOMMENDATIONS:

Lay two layers of PVC or polythene sheeting (200 to 300 micron or 0.2-0.3mm thick each layer) as a slip sheet between the substrate and the applied sand & cement screed.

The second layer of plastic sheeting to be installed at 90º to the previous layer and the layers must be independent of each other.

The individual layers of plastic sheeting should be joined with duct tape or similar. Do not fix the first layer to the top layer and do not fix either layer to substrate.

A self supporting screed must be *at least* 40 mm thick to avoid the risk of cracking. Reinforced sand & cement screeds from 40mm to about 60mm shall be polymer improved using either DUNLOP PRIMER AND ADDITIVE liquid additive and may be prepared using a sand & cement mortar blend. Screeds over 60mm may be prepared using a sand & cement blend bulk filled with equal volumes of 5-8mm aggregate ('granolithic').

To prepare a sand & cement screed (for 40-60mm thickness) blend 3 volumes of sand with 1 volume of Portland cement. Prepare a gauging solution by mixing 3 volumes of water with 1 volume of DUNLOP PRIMER AND ADDITIVE and blend with the sand & cement mix to form a stiff flowing mortar.

To prepare a bulk filled sand & cement mortar (also known as a granolithic screed) , blend 3 volumes of sand with 1 volume of Portland cement. Blend the sand cement mix with 4 volumes of 5-8mm aggregate. Fresh water may be used as the gauging solution however the recommended solution includes the liquid polymer additives.

Improved results will be obtained by using the DUNLOP PRIMER AND ADDITIVE gauging solution described in 4 above.

The sand & cement screed must be reinforced using a galvanised steel mesh as recommended in AS3958. For screeds up to 60mm a minimum 1.2mm diameter mesh of 25mm spacing is recommended while with thicker screeds a 3-5mm diameter mesh is recommended.

Lay the sand & cement mortar or bulk fill to half the thickness finally required. Place the reinforcing mesh over the laid screed. Finally lay the remaining mortar or bulk fill over and through the reinforcing steel and finish using a wood float. Ensure the mortar is fully compacted as any voids around the mesh reduce the integrity of the screed.

Expansion and movement joints should be installed in a grid pattern of not greater than 4 metres externally and over all movement joints in the substrates and in accordance with the recommendations of AS3958.1-2007.

Sand & cement screeds of 40mm thickness must be allowed to cure/dry for 7 days before applying membranes or adhesives. Thicker screeds should be allowed to cure for longer (for example 100 mm requires 21 days).

Where necessary to work on "green" sand & cement screeds before the recommended curing time has completed, apply DUNLOP DAMP

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PROOF at a coverage rate of not greater than 3 square metres per litre per coat (0.3mm wet film thickness) as a barrier coating and allowing curing to a scratch hard finish. Two coats may be required to ensure a continuous moisture barrier although prolonged drying may occur.

If the DUNLOP DAMP PROOF moisture barrier coating is not used, the sand & cement screed should be kept moist for at least 48 hours after installation to minimise cracking due to rapid drying.

The self-supporting unbonded sand & cement screed shall be cured in accordance with AS1303-4 and allowed a minimum 7 days drying at 20ºC and 50% R.H. prior to tile work commencing.

Notes:

Always refer to the product data sheets for specific usage details.

The information contained herein 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 the product application.

Users are asked to check that the literature in their possession is the latest issue.

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GLOSSARY

AS1303-4 –1991, Steel reinforcing wire for concrete.

AS3958.1-2007, Guide to installation of Ceramics Tiles.

Polythene sheet—commonly called ‘Forticon’ in the trade.