

## TECHNICAL BULLETIN

### LEVELLING OVER CERAMIC TILES & TERRAZZO DUNLOP TIMBER FLOOR LEVELLER AND DUNLOP ARDIT RAPID SET REPAIR MORTAR

#### INTRODUCTION & SCOPE

This application only applies to internal tiled floors and is not suitable for external tiled areas and decks. It also does not apply to applications in 'wet areas' such as bathrooms and kitchens with floor wastes.

Successful topping systems over ceramic tiles or terrazzo rely on the integrity and bond of the original tiles to the substrate.

Any loose or drummy tiles must be removed, the surface cleaned, and then filled with a levelling cement plus aggregate mixture, or DUNLOP ARDIT RAPIDSET REPAIR MORTAR or DUNLOP REPAIRER RAPID PATCH.

*When there is a moisture problem, typically rising damp due to problems with the under slab membrane, or moisture travelling sideways through the slab, the tile system may become unstable when moisture is trapped under an impervious floor covering such as sheet vinyl. This needs to be considered as it can cause the floor covering to de-bond or blister. For the same reason, DUNLOP does not offer a recommendation for a moisture barrier system was part of this application.*

Certain types of tiles such as slates are problematic as they are intrinsically weak due to their laminated structure, and some types contain graphite which reduces topping adhesion. Slates also commonly have sealers applied.

#### THE IMPORTANCE OF CLEANING

***The success of this system relies on the tiles being perfectly clean and free of all grease oil, sealers, wax etc., and cleaned back to a squeaky clean surface.***

Always seek professional advice to obtain a suitable commercial grade detergent or degreaser applied by means of an automatic scrubbing machine that will hold all dirt, soil, grease etc., in suspension until removal. It is essential to avoid dirt, grease, oil migration via foot traffic from soiled areas back onto cleaned areas.

It will be necessary also to mechanically prepare the tile face surface to obtain a more porous and clean surface. The primers in the DUNLOP range are not recommended for use over un-prepared ceramic tiles.

*Where there are any doubts about either the types of tiles or their integrity, it is best to remove the tiles and mechanically prepare the surface.*

*Mechanical preparation may not work for glassy bodied porcelain tiles, since the tile body underneath the surface glaze is non-porous.*

#### SURFACE PREPARATION

Ensure ceramic tiles are firmly bonded.

Remove all grease, oil, polish and any other contaminant by means of film less commercial grade detergents/degreaser, applied by means of an automatic scrubbing machine. Flush away all residue with copious amounts of clean water.

Allow to dry completely.

Prepare the surface of the ceramic tile/terrazzo to provide a mechanical key for the DUNLOP primers.

#### OPTION 1 - Residential

Grind the tile surface using diamond shaving/grinding equipment or heavily sand using a 40 grit carborundum paper. The glaze must be removed

over more than 80% of the tile surface.

#### OPTION 2 - Light Commercial

Profile or remove the glazing by captive shotblasting.

Vacuum to remove all dust from the tiles. A damp sponge roller can assist in scavenging dust.

Prime ceramic tile/terrazzo with the appropriate DUNLOP primer for the product to be used. Make sure that excess primer does not accumulate in the tile grout lines.

Allow primer to dry.

The smoothing cements are mixed and applied directly to the primed surface.

#### SYSTEMS

The following products can be used for smoothing internal tiled areas.

- 1) DUNLOP Timber Floor Leveller used with the DUNLOP primer supplied in the kit. Minimum installation thickness is 1.5mm over dense surfaces – but the recommended installation thickness is 3 – 4mm. The thicker layer provides a porous surface for subsequent floor coverings.
- 2) DUNLOP ARDIT RAPIDSET REPAIR MORTAR used with DUNLOP PRIMER AND ADDITIVE. This can be directly applied to the tiles with a metal trowel. *A coating sufficiently thick must be applied to fill the grout lines.* Note that thin scratch coats do not provide a porous surface and this needs to be considered when using water based vinyl adhesives.

DUNLOP does not recommend application of smoothing cements over tiled surfaces where the smoothing

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cement is to be used as a 'feature floor' or wear surface. This results in a patchwork or chequerboard effect due to surface porosity variations between the tiles and the grout.

Drying times over tiled surfaces are normally delayed compared to concrete surfaces. This needs to be taken into account when assessing the duration of a job.

### 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 OF TERMS

**Ceramic Tile**—A tile is a manufactured piece of hard-wearing material such as ceramic or stone generally used for covering roofs, floors, walls, showers, or other objects. Ceramics for tiles include earthenware (terracotta), stoneware or porcelain. Stoneware is harder and more durable than earthenware, and so more suitable for floors, but there is a slight difference between porcelain and ceramic tiles. Terracotta is traditionally used for roof tiles, but other manufactured materials including types of concrete may now be used.

**Diamond Grinders**—The most commonly known type of floor preparation equipment is the diamond grinder. These range from small angle grinders fitted with abrasive discs right up to large self propelled machines with multiple heads. Grinding can really be done on any surface and floors, walls and ceilings are all candidates.

The basic mode of operation is a disc coated with abrasive (carborundum or diamonds) is spun at speed and under pressure onto the surface. This mechanically abrades the surface removing the top several millimeters. The final surface profile is between CSP1 and 3, with an open matrix.

**Drummy**—Tiles that sound hollow when tapped or are found to be physically loose.

**Impervious**—Not permitting penetration or passage of moisture; impenetrable.

**Light Commercial**—Small shops and offices. This does not refer to high traffic areas such as shopping centres, malls or large institutions and government departments.

**Residential**—Domestic residences including houses and units.

**Shotblasting**—Involves the propulsion of steel shot at high speed by centrifugal force onto the subfloor surface. The housing of the blaster machine constrains the treated area to the machines footprint. The steel shot pulverizes or spalls the surface off.

A magnetic separator reclaims the shot for re-use, and a vacuum-dust extractor removes the debris and rubbish.

This process is probably one of the most versatile preparation process as it can deal with many types of floor contaminants, and the throw velocity,

size of the shot (0.4-1.5mm) and travel speed are highly adjustable. Typically blasting is used to remove contaminants such as hard coatings or sealers and some adhesives, but will remove things such as laitance and weak surfaces. It is designed for profiling and is the preferred method prior to the use of epoxy based damp proof membranes. It is not as effective for soft resins, resilient coatings, soft adhesives and bituminous materials.

A pass is typically up to 6mm and CSP profiles between 2 and 8 are possible.

**Self levelling**—This means that the leveller self heals trowel marks, it does not mean finds its own water line level or flows to the low spots.

**Slate**—A type of metamorphic rock composed of mineral grains with a strongly developed plane or cleavage or rock fabric. This type of rock has been used for flooring purposes for thousands of years.

**Terrazzo**—A type of man made rock used for flooring, and typically composed of cement and sand for the binder matrix and rock grains (usually limestone) to provide the appearance. For the purposes of this bulletin, we NOT include any 'terrazzo' made from polymer or non-cement binders in this recommendation.