







# RAPID PORCELAIN AND STONE S1 TILE ADHESIVE

## Rapid Setting Polymer Modified Cementitious Tile Adhesive with Reinforced Polymer Technology

-  Increased Flexural Strength
-  Extended Open Time
-  Improved Bed Thickness of 2-10mm
-  Crack Bridging
-  Improved Coverage
-  Underfloor Heating & Plywood



### Product Information

Norcros Rapid Porcelain and Stone S1 Tile Adhesive is a highly polymer modified fast setting grey cement-based powder adhesive designed with increased flexural strength and extended open time for fixing all types of tiles to a variety of building surfaces in internal, external and total immersion locations. The increased polymer level combined with fibres gives reinforced flexural and bond strength in addition to giving the adhesive crack bridging properties up to 3mm and also an extended pot life to improve workability. The adhesive has excellent thermal ageing properties and is particularly suitable for heated floors and strengthened timber floors. A further benefit of the adhesive is its anti-shrinkage properties, making it suitable for a bed thickness up to 10mm.

DOP REF: 039CPR-NXRWS

### Restrictions: NOT Suitable for

- (1) Metal, paint, glass/metal tiles with water sensitive coating on the back, Plywood walls, (existing glazed tiles only with\*\*)
  - (2) Application in temperatures below 5oc in line with recommendations contained in British Standard 5385 part 3 : 2014, the code of practice for the design and installation of floor tiles.
- \*\*a slurry bonding coat made of 1 part Prime Bond: 2 parts Norcros Rapid Porcelain Flexible Tile Adhesive should be brushed onto the surface and allowed to dry. This will provide a key onto which the adhesive layer can bond.

Approximate usage @ 20oC

Bed Thickness	Open Time	Pot Life	Setting Time
Max 6mm	Approx 30 Mins	60 Mins	3 Hours

Note: Pot life/setting times will vary dependent upon temperature on site. Higher temperatures = shorter pot life/set time; lower temperature = longer pot life/set time.

### Areas of use / Coverage

Area	Trowel	Coverage^^
Dry Wall	4mm Notched	0.6m <sup>2</sup> /kg
Dry Wall	6mm Notched	0.5m <sup>2</sup> /kg
Wet Wall	6mm Notched (solid bed)	0.4m <sup>2</sup> /kg
Exteriors / Floors	10mm Notched (solid bed)	0.25m <sup>2</sup> /kg
Exteriors / Floors	20mm Notched (solid bed)	0.125m <sup>2</sup> /kg

^^ May vary dependent on nature and flatness of surface, and on trowel used.

## SURFACE PREPARATION

### General

All surfaces should be flat, dry, clean, free from any contaminants and all barriers to adhesion and strong enough to support the tiles to be fixed.

Tiling substrates should be true and flat to permit fixing without visible lipping of tile edges. BS 5385 advises that that the surface regularity should be SR1. Surface regularity is defined as the deviation in height over a 2m, localised area.

Class	Maximum permissible deviation - 2m straight edge (mm)	Application
SR1	3mm	Recommended for direct fixing of tiles with tile adhesive

*Note: When fixing larger format tiles, the substrate may need to improve on the requirements of SR1 to avoid excessive bedding out of the tile adhesive.*

On floors, any gaps exceeding 3mm under a 2 metre straight edge should be corrected using a suitable Norcross Levelling Compound. This will be particularly appropriate where larger tiles or those with rectified edges are being installed.

In areas subject to constant wetting, tank using Norcross Wet Seal Tanking Kit – *Refer to product data sheet.*

When tiling externally, the installation should be protected against inclement weather during fixing and grouting for as long as possible. BS 5385 recommends that all subfloors laid direct to earth include a suitable DPM or, a surface DPM can be used prior to tiling – *See Norcross One Part Waterproofing Sealing Slurry for further details.*

### Concrete/ Cement:Sand Screed

New concrete floors must be allowed to dry for a minimum of 6 weeks\*.

Before tiling commences, ensure that the substrate is flat (SR1), residual traces of laitance and curing agents should be mechanically removed. Cement:Sand screeds should be a minimum of 21 days old\*. Prime using Norcross Prime Bond – *see product data sheet for instructions.*

*\*If Norcross Permlayer is used, this may be reduced to 48hrs providing the screed is sufficiently strong enough to take foot traffic. – See Norcross Permlayer data sheet for further details.*

### Cement:Sand Render

Before tiling commences, ensure that the substrate is flat (SR1). Must be at least 14 days old. New render should not be applied to new masonry walls until 6 weeks after the brick or blockwork has been completed. This allows for drying shrinkage to have taken place. In cold conditions these times will be extended. Prime using Norcross Prime Bond – *see product data sheet for instructions.*

### Anhydrite & Hemihydrate (Gypsum) Screeds

These must be cured to their respective manufacturers directions before tiling can begin.

Before tiling commences, ensure that the substrate is flat (SR1). Generally, anhydrite screeds should be allowed to dry at a minimum rate of 1 day per mm of screed thickness for screeds of up to 40mm thickness and 2 days per mm for any additional thickness over 40mm to achieve a moisture content of no greater than 0.5% w/w or 75% Relative Humidity (RH), however the screed manufacturer should be consulted for their recommendations).

The surface must be free from laitance and any other surface contamination (the surface should be lightly sanded and vacuumed), prime using progressively stronger coats of Norcross Prime Bond as follows: Diluted 1:4 parts water. Allow to dry. Diluted 1:3 parts water. Allow to dry. If still porous a third coat diluted 1:2 parts water should be applied. Allow to dry.

*Note: For screeds of 95%RH and below, Norcross Pro Gyp Base Fast Track Sealer may be used. Refer to Pro Gyp Base product data sheet.*

### Heated Floors (Dense Construction)

Rapid Porcelain and Stone S1 Tile Adhesive is suitable for use with underfloor and undertile heating systems. On solid floor structures after tiling, the heating should not be switched on for at least 14 days and then brought up to operating temperature gradually during the initial heating of the floor (Refer to Norcross How to sheet 'Commissioning of Underfloor/Undertile Heating Systems'). Undertile heating cables and mats should ideally be encapsulated in a layer of a suitable Norcross Levelling Compound prior to tiles being fixed. This method prevents damage to the heating elements during the laying process.

### Thermoplastic Floor Tile/ Vinyl Sheet

Before tiling commences, ensure that the substrate is flat (SR1). If well stuck down and in good condition the vinyl should be thoroughly cleaned and degreased to remove surface dirt using warm water and suitable detergent. Remove all detergent residues using clean water. Seal using a neat coat of Norcross Prime Bond.

### Asphalt (Flooring Grade Only)

Before tiling commences, ensure that the substrate is flat (SR1). Must be clean, sound (*not soft or brittle*) and with sufficient cohesive strength to support the tiled finish. It should be thoroughly cleaned and degreased to remove surface dirt using war water and suitable detergent. Remove all detergent residues using clean water. seal using a neat coat of Norcross Prime Bond.

### Gypsum Plasterboard\*

The board should be dry, securely fixed and rigid. Seal with undiluted Norcross Prime Bond prior to tiling. Before tiling commences, ensure that the substrate is flat (SR1). If the plasterboard has been dot and dabbed at 300mm centres and around the perimeter, leave to dry prior to tiling. Plasterboard has a maximum weight restriction of 32kg/m<sup>2</sup>, which includes approximately 3kg/m<sup>2</sup> of adhesive and grout. For installation that exceed these weight tolerances, a suitable tile backer board should be used – *See Norcross Pro Board data sheet for further details.*

### Gypsum Plaster (finish coat only)\*

Must be at least 4 weeks old before tiling. Before tiling commences, ensure that the substrate is flat (SR1). The plaster should be free from dust, laitance and any weak or friable materials. For plaster which has a shiny or polished finish, brush thoroughly with a stiff bristled brush. seal with undiluted Norcross Prime Bond before tiling

### Dense Blockwork (Internal only)

Allow new blockwork and mortar to dry for 6 weeks. Before tiling commences, ensure that the substrate is flat (SR1). Prime using Norcross Prime Bond – see Prime Bond product data sheet for instructions.  
*Note: direct fixing is not recommended for wet area installations.*

### Glazed Surfaces

Tiles must be well fixed and the underlying substrate sufficiently strong enough to support the additional weight of the new tiling in addition to the exiting tiled installation. Before tiling commences, ensure that the substrate is flat (SR1). Tiles should be thoroughly cleaned and degreased to remove surface dirt using warm water and suitable detergent. Remove all detergent residues using clean water. A slurry bonding coat made of 1 part Prime Bond: 2 parts Norcross Rapid Porcelain Flexible Tile Adhesive should be brushed onto the surface and allowed to dry. This will provide a key onto which the adhesive layer can bond.

### Plywood Overlay onto Existing Timber Floors\*

(BS EN 636-3 WBP/Marine Grade Plywood) Internal Tiling Only

The timber floor should be constructed to ensure that it is sufficiently rigid and stable to receive not only the additional weight of the tiled installation but any additional static and dynamic load without excessive deflection. All sheets should be a minimum of 15mm to 18mm thick and be screwed down to existing boards and joists with staggered joints at 300mm centres and 150mm centres along board edges. The sheets must be sealed on the back, face and edges with undiluted Prime Bond. All timber constructions must be adequately ventilated behind to prevent atmospheric moisture distortion and warpage of the boards themselves.

Beware of some grades of Eastern European and Far Eastern Plywood which may be susceptible to disintegration when wet. Plywood which has been treated/coated may not be suitable to receive a tiled finish as the coating may inhibit adhesion to the board.

*NB: British Standard 5385:part 1: 2018, the code of practice for the design and installation of wall tiling advises that plywood walls are not a suitable substrate to receive a tiled finish.*

*\*In wet areas or those of intermittent wetting such as shower areas, moisture sensitive backgrounds such as plaster, Plasterboard and plywood floors should be waterproofed using Norcross Wet Seal Tanking Membrane – refer to wet seal product data sheet.*

### 10mm Norcross Pro Board onto Existing Timber Floors\*

The timber floor should be constructed to ensure that it is sufficiently rigid and stable to receive not only the additional weight of the tiled installation but any additional static and dynamic load without excessive deflection. All sheets should be a minimum of 15mm to 18mm thick and be screwed down to existing boards and joists with staggered joints at 300mm centres and 150mm centres along board edges using Norcross Pro Board Washers.

\*In wet areas such as wet rooms or commercial showers, all board joints should be waterproofed using Norcross Wet Seal Tanking Membrane – refer to wet seal product data sheet.

### MIXING

Into a clean mixing bucket add 4.4L of cold, fresh water and gradually introduce the contents of the 20kg bag of adhesive. Never use more than the recommended quantity of water as this could lead to excessive shrinkage in the adhesive and a weakened bond to the tiles.

Mix the contents until a smooth, lump free consistency is achieved.

Allow the adhesive to stand for 2 minutes before remixing for 30 seconds. If using an electric mixer, blend at a slow speed (i.e. under 300rpm).

### APPLICATION/USAGE

Do NOT use in temperatures below 5oC or in damp conditions.

### TROWEL RECOMMENDATIONS - ROUND NOTCH TROWELS

#### UNIVERSAL

- Edge Profile: 20mm round notches, 10mm deep at 28mm centres
- Coverage: 100% achievable at 3 to 4mm bed depth
- Use for: Solid bed fixing
- Tiles: Suitable for most wall/floor tiles with keyed backs, fixing large format wall tiles and 300mm floor tiles

#### LARGE FORMAT

- Edge Profile: 20mm round notches, 13mm deep at 28mm centres
- Coverage: Approx. 100%
- Use for: Large format tiles
- Tiles: Floor tiles over 300mm x 300mm

### TROWEL RECOMMENDATIONS - SQUARE NOTCH TROWELS

#### THIN BED

- Edge Profile: 10mm tapering notches, 5mm deep, at 12.5mm centres.
- Coverage: Approx. 100% at 2 to 3mm depth
- Use for: Solid bed fixing on all wall surfaces
- Tiles: Most ceramics, marble, natural stone wall tiles 300mm and smaller

#### SOLID BED

- Edge Profile: 5mm notches at 6mm centres -with 3mm protruding tips above notches to ensure 4mm solid bed.
- Coverage: Approx. 100%
- Tiles: Most floor tiles

#### MOSAICS

- Edge Profile: 4mm square notches at 8mm centres
- Coverage: Approx. 90% to 100%
- Use for: Thin bed fixing
- Tiles: Mosaics and wall/floor tiles up to 100mm x 100mm

*NOTE: BS 5385 part 3, the code of practice for the design and installation of floor tiles states "Tiles should be thoroughly bedded into the adhesive so that as far as possible no voids remain beneath the tiles, i.e. solid bed fixed".*

*Note: follow BS guidance on grout joint widths (minimum 2mm joints for walls and 3mm joints for floors, size can change depending on tile size and environment) contact Norcross Technical Services for further advice.*

*Note that when fixing large format tiles, it is essential that the substrate level is better than SR1 to avoid excessive bedding out of the adhesive and reduce installation time.*

## APPLICATION

Using a suitably notched trowel spread the adhesive onto the fixing surface to form parallel ribs into which the tiles should be applied with a firm twisting action. Spread only enough material that remains workable and as such fully wets out on the tile backing. Solid-bed void-free fixing will be necessary on floors and in wet areas.

Tiles with deeply keyed back profiles may need to be back buttered. The adhesive is designed for thin bed fixing up to 6mm although in isolated areas it can be bedded out up to 12mm in thickness.

For mosaics: using a rubber tile float, press mosaics into adhesive and beat into required position.

Occasionally lift a tile to check solid bed fixing, leave no voids behind tiles. Leave adequate joints between individual tiles. Install movement joints to BS 5385, Parts 1-5.

Fix mosaics/tiles before adhesive forms skin (typically 30 minutes at 20°C, depending on surface porosity /atmospheric conditions). If the adhesive has begun to skin over, remove adhesive, and apply fresh layer). Discard any adhesive that has begun to set. Do not add further water.

Clean off surplus adhesive from tile face and between tile joints before the adhesive has dried.

Tiles may be grouted as soon as the adhesive bed is set. Under normal conditions this will be around 3 hours after fixing although this will be extended in cold conditions.

## Grouting

Wait a minimum 3 hours (at 20°C) after tile fixing.

Select a Norcross cementitious grout such as Norcross Stop Mould Tile Grout or Norcross 4 into 1 Flexible Wall and Floor Tile Grout or if an epoxy grout is required, Norcross Super Epoxy should be used.

If using paper-faced mosaics: Pre-grout sheet and remove surplus. Place in position and tap down to achieve full contact with adhesive. Ensure joints between sheets match joints between mosaic tesserae (i.e. staggered). Wet paper and carefully remove before adhesive fully hardens. Clean off surplus adhesive and grout from mosaic face.

Fill movement joints with suitable sealant.

For intermediate movement joints on floors, a more durable hard-wearing material may be needed e.g. an epoxy polysulphide sealant or a suitable pre-formed movement joint strip.

NOTE: If completing a swimming pool, do NOT fill pool for at least 3 weeks after grouting (contact Norcross Adhesives Technical Services for further advice).

If completing a shower, do NOT use shower for at least 2 weeks after the completion of grouting (as required by BS 5385: Part 4 2015 clause 7.2.1).

## STORAGE

Store in dry internal conditions away from direct sunlight between 5°C to 25°C. The product has a 12 month shelf life from date of manufacture.

## TECHNICAL ADVICE

For advice on tile installation products call Norcross Technical Helpline on 01782 524140.

Further information may also be obtained from the Norcross' How to sheets' available on the Norcross Adhesives website. [www.nxadh.com](http://www.nxadh.com)

## QUALITY AND ENVIRONMENTAL STANDARDS

Manufacturing quality assurance standards conform to BS EN ISO 9001. Satisfies the environmental management requirements and operational scope of ISO 14001.

### HEALTH AND SAFETY

For detailed health and safety guidance, please refer to the product material safety data sheet (MSDS) available on the Norcross Adhesives website. [www.nxadh.com](http://www.nxadh.com)

### LIFETIME GUARANTEE

All Norcross Adhesive products are supplied with a lifetime product guarantee to be free from manufacturing defects and to be fit for purpose. The guarantee covers materials replacement costs.

This guarantee is subject to use of product in accordance with

Norcross Adhesives instructions and technical data, and standard working practice.

No liability can be accepted for any loss or damage arising from incorrect use of products or poor workmanship, over which Norcross Adhesives have no control. available on the Norcross Adhesives website. [www.nxadh.com](http://www.nxadh.com)

### NBS M40 TILING SPECIFICATIONS

Norcross Adhesives are licenced by RIBA to prepare NBS M40 Tiling Specifications. If you would like to prepare a specification for your upcoming projects, simply fill out our online request form at [www.nxadh.com](http://www.nxadh.com) or email our dedicated technical team at [technical@norcross-adhesives.com](mailto:technical@norcross-adhesives.com).

*NOTE: Norcross Adhesives reserves the right to update instructions, technical data and other information at any time without notice.*