



# STONE-FLEX

## SINGLE PART FLEXIBLE THICK BED FLOOR & WALL TILE ADHESIVE

CONFORMS TO BS EN 12004 : C2TE



Composition:	Polymer modified cement powder
Colour:	White
Coverage:	Approx. 1.8 kg/m <sup>2</sup> per mm thickness of adhesive
Working Temperature:	5°C to 25°C
Mixing Ratio:	Approx. 4.8 litres of water to 20 kg bag
Open Time:	Approx. 20 minutes @ 20°C
Pot Life:	Approx. 3 hours @ 20°C
Set Time:	Approx. 24 hours @ 20°C
Underfloor Heating:	Yes
Storage & Shelf Life:	Can be stored in dry conditions for a maximum of 12 months
Packaging:	20 kg Polylined paper sacks

### FEATURES

- Exceptional flexibility
- Sets in 24 hours
- White thick bed up to 25 mm
- Non slump
- White polymer modified for use with lighter coloured non porous tiles and stone
- Excellent flexibility
- Compatible with most underfloor heating systems
- Interior & Exterior use
- Water and frost resistant

### METHOD OF USE:

**IMPORTANT:** Before embarking on any work involving Bostik Stone Flex the separate Material Safety Data Sheet, available online at [www.bostik.co.uk](http://www.bostik.co.uk), must be studied carefully by those carrying out the work. Tiling and grouting should be carried out in accordance with the relevant British Standards Codes of Practice.

### RECOMMENDED USE

Bostik Stone-Flex is a white, standard setting, thick bed, fibre reinforced, highly flexible wall and floor tile adhesive which only requires the addition of water for use.

Bostik Stone-Flex is formulated for fixing large format natural stone tiles, porcelain, ceramic and, mosaic, quarry and terrazzo to most standard interior and exterior installations. It is also suitable in more demanding installations such as swimming pools, plywood overlay, underfloor heating and areas subject to limited vibration. It will bond to correctly prepared calcium sulphate screeds, concrete, gypsum plaster and plasterboard, sand/cement render and screeds, glazed surfaces, vinyl tiles etc.

### PREPARATION

Before starting any work ensure that the bases are:

- Sufficiently flat to permit the specified flatness of finished tiling, bearing in mind the permissible minimum and maximum thickness of the bedding material.
- Suitable for tiling in the service conditions to which it will be exposed.
- Sufficiently strong and rigid to support the tile finish.
- Free from efflorescence, oil, grease laitance, dirt and other loose material.
- Clean and dry.

For surfaces not covered by this technical sheet or for further technical advice please call the Bostik Professional Technical Helpline on 01785 272727.

### MIXING INSTRUCTIONS

Bostik Stone-Flex should be added to clean water in a clean container and mixed thoroughly to give a creamy lump-free mortar. The mix proportions are approx:

Mix ratio: Approx 4.8 litres of water to 20 kg bag.

The mortar will have a working time of approx. 3 hours at 20°C. Do not mix more than can be used within this time. Setting time and strength development will vary with temperature, being retarded at lower, and accelerated at higher temperatures. Product performance will be significantly enhanced when mixed using a mechanical stirrer, otherwise mix for at least 5 minutes using as little water as possible to achieve a workable consistency.



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## APPLICATION

**THIN BED** – For thin bed application, in situations where dry conditions will prevail, Bostik Stone-Flex should be applied by the notched trowel method. The adhesive should be applied to the surface as a thin floated coat at a uniform thickness of approx. 3 mm and then ribbed with a suitable notched trowel. The tiles should be pressed firmly onto the ribbed adhesive with a slight twisting action within the open time of the adhesive.

**THICK BED SOLID BED** – For thick bed application in the case of surfaces that are subjected to movement or not sufficiently true and flat to permit thin bed fixing, Bostik Stone-Flex may be applied as a floated 3 mm – 6 mm thickness not exceeding 12 mm. Deep lugs, keys or uneven tiles should be buttered with the adhesive before they are fixed. Apply at a temperature above 5°C.

## GROUTING

Grouting of the tiles may be carried out as soon as the tile bed is firm, usually 24 hours at 20°C.

## MOVEMENT JOINTS

Any movement joints visible in the screed should be followed through the tiling to the surface. Failure to do this may result in excessive movements within the structure being transferred to the tiles with the likelihood of resultant failure of the system. Movement joints should be provided in accordance with BS 5385 Part 1:20 or BS 5385 Part 2:20 and their location should be decided at design stage.

## CLEANING

Surplus adhesive should be removed immediately from the surface of the tiles and grout lines. Tools should be cleaned immediately with water.

## COVERAGE

Approx. 1.8 m<sup>2</sup>/kg per millimetre thickness.

## PACKAGING

Bostik Stone-Flex is available in white and grey and is supplied in 20 kg bags.

## STORAGE

Store in unopened bags clear of ground and in cool dry conditions. Protect from excessive draught and use within 12 months.

## SURFACE CONSIDERATIONS

### FLOORS

#### New Concrete

Before covering and after curing, concrete should be left to dry out by exposure to air for at least 6 weeks. Any falls required in the system should be formed in the new concrete and not the tiling layer.

#### New Sand/Cement Screeds

Before covering and after curing, screeds should be left to dry out by exposure to air for at least 3 weeks. It is recommended that screeds should have a relative humidity level of 75% as tested by an air hygrometer.

#### Existing Concrete/Screed Bases

Existing cementitious substrates should be sound and dry. Any unsound areas should be removed, replaced and treated as a new screed or concrete.

#### Extruded Polystyrene Tile Backerboards/Waterproof Insulation Boards

This type of tile backerboard is particularly suitable where any exposure to moisture is expected e.g. wetrooms, splashbacks and around showers,

baths etc. on walls and floors. Generally when fixing to timber frames or batons, 12 mm board should be specified as a minimum thickness and ring nails or screws must be used to positively fix the boards over the complete area. The weight of the tiling should not exceed 60 kg/m<sup>2</sup>. Do not seal or prime the surface. Where tiling exceeds a height of 2.4 m, reference should be made to the board supplier/manufacturer. Floors require a minimum thickness of 10 mm. Ensure that the boards are rigid and the fixings do not protrude. All recommendations given by the board manufacturer should be followed.

#### Cement Tile Backerboards/Waterproof Insulation Boards

Tested in conjunction with:



**JamesHardie**

[www.jameshardie.co.uk](http://www.jameshardie.co.uk)

Cement boards are suitable particularly where any exposure to moisture is expected e.g. wetrooms, splashbacks, baths and in around showers etc. on walls and floors. In general, when fixing to timber frames or batons, 12 mm board should be specified as a minimum thickness and ring nails or screws must be used to positively fix the boards over the complete area. The weight of the tiling should not exceed 50 kg/m<sup>2</sup>. Floors require a minimum of 6 mm. Ensure that the boards are fixed with a 3 mm gap from walls, vanities and baths etc. They must be rigid and the fixings do not protrude. Where tiling exceeds a height of 2.4 m, reference should be made to the board supplier/manufacturer. Do not seal or prime the surface. All recommendations given by the board manufacturer should be followed.

#### Calcium Sulphate/Gypsum Based Screeds

Tested in conjunction with:



[www.gyvlon.co.uk](http://www.gyvlon.co.uk)

If the cement based adhesive is applied directly to this type of screed the cement can react with the gypsum resulting in the formation of a crystal structure called Ettringite. This will result in expansion which will break the bond at this interface resulting in a separation of the two. Therefore it is necessary to apply an isolating barrier between the adhesive and the screed. Where necessary the screeding contractor will usually remove any surface laitance (a shiny, hard crust) prior to any further works being carried out. If laitance is still present this must be resolved first before continuing. The screed should then be vacuumed to remove all dust and friable material so that the surface is clean, dry and sound. This type of screed usually takes approximately 1 mm/day up to 40 mm thick and you should add 2 days/mm above 40 mm (based on a sealed site with controlled environment). The tiling work should not be undertaken on a screed with a moisture content above 0.5% (or an RH of 75% or below when tested with a Surface Hygrometer). The screed should be sealed with a primer that will provide a barrier to prevent any contact with the cementitious adhesive and the gypsum screed. We recommend Bostik Screedmaster Epoxy primer diluted with water. This is a two part Epoxy primer and must be allowed to dry before subsequent work is undertaken (6 - 12 hrs) to a translucent, tacky film. Subsequent work should be undertaken within 2 days and the surface should be protected from dust and other contaminants. For further technical advice please call the Bostik Professional Technical Helpline on 01785 272727.

#### Plywood Overlay

Plywood should be of WPB external or marine grade. The minimum recommendation thickness is 15 - 18 mm. Plywood sheets must be dry, securely fixed and rigid. They should be screwed to the supporting joists at maximum 300 mm centres. It is imperative that the joints between



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## FLOORS CONTINUED

boards are supported by either a joist or a noggin. Extra noggins may need to be inserted for this reason. The back and edges should be sealed with diluted Bostik Flexibond pre-diluted 1:2 with water to prevent the ingress of ambient moisture. Check suitability of sheets for the intended application with the manufacturer. This type of substrate is sensitive to water; care should be made to prevent water ingress. In this situation we would recommend tanking out the installation with Bostik Watertite Tanking & Wetroom Kit. The method of fixing must be solid bed using the appropriate notched trowel. No voids should exist between the tile and substrate, minimum bed thickness 3 mm.

### Uncoupling Membranes

Tested in conjunction with Schlüter®-Ditra:



[www.schluter.co.uk](http://www.schluter.co.uk)

A polyethylene membrane with a grid structure of square cavities, each cut back in a dovetail configuration, and an anchoring fleece laminated to its underside. This type of membrane is bonded to the substrate using Bostik Stone-Flex as a thin-set mortar. The anchoring fleece on the underside is then fully engaged in the mortar to provide a mechanical bond to the substrate. Tiles are then installed over the matting again using a solid bed of Bostik Stone-Flex which becomes mechanically anchored in the grid cavities of the matting. Designed specifically for tiles and stone installations they serve as an uncoupling layer, waterproofing membrane, and vapour management layer that accommodates moisture from beneath the tile covering. They further perform all these functions while still providing adequate support/load distribution for the tile covering.

### Existing Floor Tiles

All loose tiles should be removed and hollows filled before tiling. Existing tiles should be thoroughly cleaned and degreased before tiling to remove all contaminants. Consideration should be given to mechanically abrading the tile surface, particularly with quarry tiles, to ensure a good bond can be formed.

### Vinyl Tile/Sheet

Vinyl tiles should only be tiled if they are rigid and firmly fixed to their base. Any loose areas should be removed and the whole area thoroughly degreased before fixing. The surface must be sufficiently regular to receive an even bed thickness of adhesive. Prime with Bostik Flexibond. Cushioned, soft types of flooring are not suitable and must be completely removed prior to tiling.

### Mastic Asphalt

Asphalt must be rigid and solidly fixed. Only internal, flooring grade asphalt should be tiled. Never tile onto external roofing grade asphalt as this will be too soft to acceptably receive tiles. Prime with Bostik Flexibond pre-diluted 1:2 with water.

### Underfloor Heating Systems

Tested in conjunction with:



All loose tiles should be removed and hollows filled before tiling. Existing tiles should be thoroughly cleaned and degreased before tiling to remove all contaminants. Consideration should be given to mechanically abrading the tile surface, particularly with quarry tiles, to ensure a good bond can be formed.

### Heated Screeds

With any new screed, time must be allowed for curing and drying. Screeds should be kept covered with waterproof sheeting for at least 7 days after laying to prevent drying out. During this period strength is gained and drying shrinkage delayed, enabling the screed to better resist shrinkage stresses. After this period, screeds should be subjected to continuous air drying for at least a further 2 weeks before tiling is started. Where screeds are greater than 50 mm thick they should be laid in layers of no more than 50 mm thickness. This is in order to facilitate good compaction. Information regarding drying times of screeds greater than 50 mm and any other aspects can be obtained in BS 8204. Ensure that the heating is turned off at least 24 hours before any tiling work is carried out and not turned on until at least 24 hours after the work has been completed. After tiling, when the heating is turned on, ensure that the temperature is increased by no more than 5°C per 24 hours to a temperature of 25°C and maintained at that level for 3 days before being allowed to cool to room temperature. This is to prevent delamination and cracking caused by thermal shock. The method of fixing must be solid bed using the appropriate notched trowel. No voids should exist between the tile and substrate, minimum bed thickness 3 mm. For further technical advice please call the Bostik Professional Technical Helpline on 01785 272727.

### Matting and Cable Systems

Underfloor heating systems which consist of heating elements held together with a matting matrix are proving to be an efficient, low cost alternative to the traditional method of heated pipes laid into a screed. They have the benefit of being easily installed in a number of different situations and being only a few millimetres thick, are ideal for installations incorporating floor tiles. It is important that the substrate to be tiled is rigid. Concrete and screeds are, therefore, usually ideal and will provide a good solid background. It is stated in the British Standards BS 5385 Part 3, Section 14.2.3 that new structural concrete should be exposed to air drying after the end of curing for at least 6 weeks before a screed or directly bedded materials are applied. Timber floors should have noggins between the joists at 300 mm centres and overlaid with either a tile backerboard (minimum 10 mm thickness) or plywood (minimum 15 mm thickness) screwed to both joists and noggins at maximum 300 mm intervals. A flexible screed such as Bostik FA600 can be used to cover the matting or cable before the adhesive is applied. The method of fixing must be solid bed using the appropriate notched trowel. No voids should exist between the tile and substrate, minimum bed thickness 3 mm. The system should be set to ensure the temperature on a timber-based floor does not exceed 27°C and 40°C on a concrete base. For further technical advice please call the Bostik Professional Technical Helpline on 01785 272727.

### Impact Sound Deadening Insulation

Due to the complexity of this subject please call the Bostik Professional Technical Helpline on 01785 272727.

**Chipboard, MDF, OSB, GRP Fibre Glass, Magnasite, Cork, External Asphalt, Wall Paper, Varnish, Plastics, Metals, PVC Melamine, Formica Shuttering Plywood and Hardboard**  
Not suitable for direct fixing. Due to the complexity of this subject please call the Bostik Professional Technical Helpline on 01785 272727.

### WALLS

#### New Concrete/Masonry

Before covering and after curing, concrete and masonry should be left to dry out by exposure to air for at least 6 weeks.

#### New Sand/Cement Render

Before tiling, allow to dry out by exposure to air for at least 2 weeks.



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### New Gypsum plaster

Before tiling, the plaster must be left for at least 4 weeks and be thoroughly dry. Never tile onto a soft backing plaster. Remove any defective areas, including badly cracked plaster, to straight horizontal and vertical edges. Smooth plaster should be mechanically roughened to supply a suitable key. All plaster must be primed with Bostik Flexibond pre-diluted 1:2 with water. This type of substrate is sensitive to water; care should be made to prevent water ingress. In this situation we would recommend tanking out the installation with Bostik Watertite Tanking & Wetroom Kit.

### Plasterboard

Ensure that boards are dry, securely fixed and rigid and the face intended to receive the decorative finish is exposed. Plasterboard should be screwed into the supporting joists at maximum 300 mm centres. This type of substrate is sensitive to water; care should be made to prevent water ingress. In this situation we would recommend tanking out the installation with Bostik Watertite Tanking & Wetroom Kit.

### Plywood

Sheets must be dry, securely fixed and rigid. They should be screwed to the supporting joists at maximum 300 mm centres vertically and horizontally. Only moisture resistant or exterior grade boards should be used. The back and edges should be sealed with Bostik Flexibond pre-diluted 1:2 with water to prevent the ingress of ambient moisture. Check suitability of sheets for the intended application with the manufacturer. This type of substrate is sensitive to water; care should be made to prevent water ingress. In this situation we would recommend tanking out the installation with Bostik Watertite Tanking & Wetroom Kit.

### Chipboard

Chipboard is highly susceptible to dimensional instability through changes in ambient moisture levels. Chipboard should not be used to receive tiling unless the environment can be guaranteed to remain dry and stable over the life of the tiling. If considered satisfactory boards should be screwed to the supporting joists at maximum 300 mm centres vertically and horizontally. Only moisture resistant or exterior grade boards should be used. The back and edges should be sealed with Bostik Flexibond pre-diluted 1:2 with water to prevent the ingress of ambient moisture. Do not seal or prime surfaces to be tiled. Check suitability of sheets for the intended application with the manufacturer. This type of substrate is sensitive to water; care should be made to prevent water ingress. In this situation we would recommend tanking out the installation with Bostik Watertite Tanking & Wetroom Kit.

### Glazed Tiles

Existing tiles must be firmly fixed to their bed and the bed and original substrate must be sufficiently strong to support the weight of new tiling. Tiles should be thoroughly cleaned to remove any oils or greases that may prevent good adhesion. Any loose or hollow sounding areas must be removed and made good before tiling.

### Painted Walls

Ensure that paint is in a sound condition. Emulsion paints are generally insufficiently strong to hold tiles and adhesive and should be removed mechanically prior to tiling. Firmly fixed gloss paints may be suitable but removal is always recommended. Paint strippers should not be used as they can leave a de-bonding layer that reduces the bond strength of the adhesive.

### Tile Backerboards

Please see Surface Considerations - Floors.

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