

flex one

Enhanced flexible standard setting S1 wall & floor tile adhesive

DESCRIPTION

Standard-setting, highly polymer-modified, thixotropic, fully wettability, fluid with shape memory, water/frost-resistant cementitious tile adhesive for walls and floors.

- Fixing Ceramic, porcelain and vitrified tiles, mosaics, most natural stones (excluding moisture sensitive/translucent stone), terrazzo, rigid foam insulating materials and brick slips in dry or wet interior and exterior environments.
- Uncalibrated Stone (Floors)
- Recommended for large format wall tiles, areas of total immersion in water e.g. swimming pools and showers.
- Installations subject to limited movement and vibration.
- Heated screeds.

Restrictions: NOT suitable for

- Metal, painted, Glass/metal tiles with water-sensitive coating on back, plywood walls and tiling to existing glazed tiles*. Moisture sensitive natural stone.

*Further applications possible by adding BAL ADMIX AD1 to provide flexibility, increased adhesion and reduce water permeability. This enables use onto glazed surfaces

PRODUCT INFORMATION

Composition: Standard-setting highly polymer-modified cement-based powder with gel rheology (maintains structure)

Colours: White.

Type/Classification: Exceeds BS EN 12004 C2TES1 – Cementitious Adhesive with Improved / Additional Characteristics, Extended Open Time, Non-Slip Properties and Deformable.

Pack sizes: 20kg

Key Features:

- Extended open time of up to 45 minutes.
- Extended working time up to 2½ hours, to avoid waste
- Full wettability; thixotropic and fluid with shape memory
- Suitability for use up to 15mm thick (in limited areas).
- Highly polymer-modified with S1 deformability.
- Use on walls and floors.

Grout after 6-8 hours (at 20°C)

USAGE & SERVICE CONDITIONS

Walls	✓	Floor	✓
Interior	✓	Exterior	✓
Dry	✓	Wet	✓
Worktops (1)	✓	Showers	✓
		(a)(5)	
Swimming Pools (b)	✓	Heated Screeds	✓
		(9)(11)	
Hydrotherapy Pools (b)(1)	✓	Limited Movement / Vibration	✓
		(11)	

- (1) Tiles must be grouted using BAL EASYPOXY AG.
- (2) Provided the surface is sufficiently flat.
- (3) Prime with BAL PRIME APD.
- (4) Direct fixing in dry conditions only.
- (5) In wet conditions tank out with BAL TANK-IT or BAL WATERPROOFING KIT FOR SHOWERS.
- (6) Seal back face and edges with undiluted BAL BOND SBR.
- (7) Check suitability of the grade of asphalt (flooring grade only).
- (8) Prime with BAL PRIME APD, first coat 1:1 with water, second coat undiluted 90°C to the first.
- (9) Check suitability for the intended purpose with the manufacturer.
- (10) When used with BAL RAPID-MAT or BAL FLEXBONE Products.
- (11) May be used in conjunction with BAL RAPID-MAT.
- (12) When modified with BAL ADMIX AD1, Pre-diluted 1:3 with water.
- (13) Apply a cement: sand render e.g. BAL Quickset Render or a suitable tile backing board prior to tiling. Not recommended for use on paint, metal or existing glazed tiles.

Note:

- (a) Do not use shower for at least 2 weeks after completion of grouting – BS 5385:Part 4
- (b) Do not fill pool for at least 3 weeks after completion of grouting – BS 5385:Part 4 BAL Rapid Flex One is sulphate resistant.

BACKGROUNDS / BASES

Brick/Concrete (2)	✓
Rendering	✓
Lightweight Blockwork (13)	✓
Cement:Sand Screed (11)	✓
Plaster (3)(5)	✓
Plasterboard (5)	✓
BAL BOARD/Tile Backer/Fibre Cement Boards (3) (5)(9)	✓
Glazed Ceramic Tiles / Hard Natural Stone (11)(12)	✓
Timber Floors (10)	✓
Overlaid Timber Floors – 15mm min. (6)(11)	✓
Vinyl Tiles/Sheets	✓
Mastic Asphalt (7)	✓
Anhydrite/Calcium Sulfate Screeds (8)(11)	✓

USAGE: Bed Thickness / Time at 20°C

Bed Thickness ^	Open Time	Pot Life	Setting Time**
2-15mm	>45mins	150 mins	6-8 hours

** Open time/setting time will be extended in colder temperatures, when fixing to impervious backgrounds or when fixing tiles of low porosity.

^ Use minimum 3mm for floor tiling.

^ Typical application 2-8mm, use up to 15mm in isolated areas only

COVERAGE

Area	Trowel	Coverage ^^
Dry Wall	Mosaic	0.6m ² /kg
Dry Wall	Round Notched	0.5m ² /kg
Wet Wall	Thin Bed Solid Bed	0.4m ² /kg
Exteriors / Floors	Thick Bed Solid Bed	0.26m ² /kg

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

TEMPERATURE RESISTANCE***

-30°C to 100°C

*** Cured adhesive.

SURFACE PREPARATION

General

Ensure surfaces to be tiled are flat, clean, dry, sound and free from contamination.

Surface regularity:

Surface Regularity is defined as the deviation in height of the surface of a flooring layer over short distances in a local area. In simpler terms, it is the 'flatness' or 'measure of unevenness' of the screeded surface.

Class	MAXIMUM PERMISSABLE DEVIATION FROM a 2M STRAIGHT EDGE (MM)	APPLICATION
SR1	3mm	Recommended for direct fixing of tiles and slabs with a tile adhesive
SR2	5mm	For tiles & slabs bedded in a cement: sand mortar or a suitable tile adhesive (see the manufacturer's recommendations)
SR3	10mm	For tiles & slabs bedded in a cement:sand semi-dry mix.

NB When using larger format tiles, it is essential that the substrate is as level as possible, ideally to better than SR1, as this will avoid excessive bedding out of adhesive.

In shower areas: waterproof background with BAL TANK-IT, BAL WATERPROOFING KIT FOR SHOWERS or BAL WP1 TANKING SYSTEM.

SUITABLE SURFACES include:

Asphalt (suitable grade e.g. flooring)

Must be of a suitable grade, be clean, in sound condition (without brittleness, softening, etc.) and have adequate cohesive strength, a natural float finish and laid on a firm rigid base.

Ensure that surface is sufficiently regular to suit bedding depths of adhesive.

Clean thoroughly to remove surface dirt using warm water and a suitable detergent. Remove all detergent residues with clean water.

Concrete; cement:sand screeds and rendering

Before tiling, ensure that the substrate is flat (SR1), free from efflorescence, laitance, dirt, polished concrete and other loose materials. Remove using suitable mechanical methods (see BAL TECHNICAL DATA SHEET on BAL BOND SBR or BAL PRIME APD for priming information).

Allow the following minimum drying times:

- Concrete/concrete block walls/clay brickwork: 6 weeks
- Cement:sand screed: 3 weeks*
- Cement:sand rendering: 2 weeks (3 weeks for swimming pools)

**If BAL Rapid-ma/ BAL FLEXBONE is used, this may be fixed when the screed is sufficiently strong enough to receive foot traffic*

BAL QUICKSET CEMENT:sand screeds and rendering

- Bonded screeds: 4 hours**
- Unbonded/floating screeds: 48 hours
- Rendering (bonded): 4 hours**

BAL BOND SBR SLURRY

***1 part sand to 1 part BAL QUICKSET CEMENT by weight, mixed with appropriate amount of BAL BOND SBR pre-diluted 1:1 with clean cold water to achieve desired consistency.*

BAL QUICKSET RENDER: 2 hours

Overlaid timber floors (min. 15mm)

Ensure timber floor (i) is sufficiently rigid and stable to receive tiles; (ii) can carry the additional static and dynamic load without excessive deflection; and (iii) has adequate ventilation under the timber.

Overlay existing timber floor with e.g. a suitable water-resistant grade e.g. marine plywood, min. 15mm thick, screwed (not nailed) at 300mm centres.

Seal timber surface on the underside and edges with undiluted BAL BOND SBR. Allow to dry. *NOTE: Timber is not a suitable base for floor tiling in wet, frequently damp, or high humidity areas, unless appropriate precautions are taken (see BS 5385-4). BS 5385 -3: 2014*

Tongued and grooved floorboards with BAL RAPID-MAT

Ensure boards are flat (SR1) dry, rigid and securely fixed (screwed to joints at 300mm centres, including any cross-noggins, if necessary). Sand (abrade) surface and ensure any surface coatings removed, e.g. varnish, lacquers, etc.

Before priming with 2 coats of (second coat applied at 90° to the first):

- BAL PRIME APD (undiluted) or
 - BAL BOND SBR (diluted 1:2 by volume with clean water)
- Allow each coat of primer to dry.

If necessary, the floor may require levelling using BAL LEVEL MAX and allow to dry before installing BAL RAPID-MAT. See BAL TECHNICAL DATA SHEET for further information on suitable surfaces and application.

Anhydrite/calcium sulfate and hemi-hydrate screed

Allow the screed to dry out in accordance with manufacturer's instruction example: moisture contact below 0.5% w/w or 75% RH (Relative Humidity). Mechanically remove top surface to remove weak/dusty surface layer(s) as per the screed manufacturer's recommendations. Remove all dust and loose material e.g. by vacuum etc. before priming with 2 coats of (second coat applied at 90° to the first):

- BAL PRIME APD diluted 1:1 with clean water and second coat undiluted or
- BAL BOND SBR diluted 1:4 with clean water and second coat diluted 1:2 with clean water.

Allow each coat of primer to dry.

NOTE: For further information on other backgrounds and preparation, contact BAL TECHNICAL ADVISORY AND SPECIFICATION SERVICE.

Plaster (finish coat only)

Must be at least 4 weeks old before tiling. Ensure that the plaster is free from dust, laitance and friable material. If *plaster is shiny or polished*, brush thoroughly with a stiff bristled brush.

The plaster must always be primed with 2 coats of (second coat applied at 90° to the first):

- BAL PRIME APD (undiluted) or
 - BAL BOND SBR (diluted 1:2 by volume with clean water)
- Allow each coat of primer to dry.

Weight restrictions for tiling onto plaster i.e. a maximum weight of 20kg/m².

Dense concrete/blockwork walling

Allow new block mortar to dry for minimum 6 weeks before rendering /plastering. If direct fixing tiles, wall must be smooth-faced and sufficiently flat (SR1).

Plasterboard (If required)

Ensure boards are dry, securely fixed and rigid and suitable thickness used.

NOTE if the plasterboard is dot and dabbed at 300mm centres and around the perimeter, leave to dry before fixing tiles.

Weight restrictions for tiling onto plaster i.e. a maximum weight of 32kg/m².

Lightweight blockwork/walling

Allow new block mortar to dry for minimum 6 weeks before rendering /plastering.

Existing unglazed ceramic tiles, quarry tiles, terrazzo and natural stone

For wall ensure existing tiles/stone are soundly bonded to a stable background that is sufficiently strong enough to support the weight of the new tiling.

For floors ensure that the existing finish is firmly adhered to the base.

If areas are loose or hollow-sounding, remove and make good with BAL QUICKSET RENDER or 1:3 cement:sand mortar over a slurry bonding coat (1 part sand to 1 part cement by weight, mixed with appropriate amount of BAL BOND SBR pre-diluted 1:1 with clean cold water to achieve desired consistency).

N.B. Suitable for existing glazed tiles/brickwork when adhesive has been modified with BAL ADMIX AD1 (pre-diluted 1:3 by volume with clean cold water).

Existing vinyl tiles

Ensure these are in good sound condition and securely bonded to their base.

Remove loose or damaged tiles/areas of sheet along with any loose or soft adhesive.

Remove any polishes, wax, grease etc. with a suitable proprietary cleaner.

NOTE: Cushioned types of flooring are not suitable and must be completely removed along with the adhesive residue prior to tiling.

Fibre reinforced cement boards and lightweight tile backer boards

Install boards to BS 5385 – i.e. moisture-resistant boards such as BAL BOARD and screwed to seasoned timber or suitable proprietary framework at maximum 300mm centres vertically and horizontally or as per the board manufacturer's recommendations (see BAL TECHNICAL DATA SHEET on BAL BOARD for further information).

Ensure no fixings protrude.

Some boards may require priming, prior to tiling with a cementitious based tile adhesive. Use a suitable primer from the BAL range. Please refer to the relevant BAL Technical Data Sheets for further information.

Metal

Suitable for use with metal when primed with BAL DPM
See BAL Technical Sheet for further detail

Undertile electrical heating systems

Can be used onto electrical undertile heating systems encased within an appropriate BAL leveller. Over suitable boards/exterior grade plywood overlays (minimum 15mm thickness) use BAL LEVEL MAX.

BAL LEVELLER	THICKNESS*	SETTING TIME
BAL LEVEL MAX	2mm – 80mm	3 – 4 hours
BAL ACRYBASE	Up to 20mm	3 – 4 hours

See BAL TECHNICAL DATA SHEET for further information on suitable surfaces and application *Up to 80mm in localised areas only. Thick layers must also be tiled within 48 hours.

Heated Screeds

Suitable for sand/cement screeds with water fed underfloor heating encased within.

NOTE: For further information on other backgrounds and preparation, contact BAL TECHNICAL ADVISORY AND SPECIFICATION SERVICE.

BAL RAPID-MAT/BAL FLEXBONE Varied/BAL FLEXBONE 2Easy

Uncoupling matting onto problematic floors

– Protecting floor tiling against reflective cracks, fractures and other damage caused by stresses and lateral movement in the substrate.

– Suitable for most problematic floor substrates including timber floors, new screeds and floors with under-tile heating systems.

– Suitable for most tile types including natural stone and mosaics.

See BAL TECHNICAL DATA SHEET for further information on suitable surfaces and application.

MIXING

Use a BAL MIXING BUCKET or other suitable bucket.

1. Add approximately 3.5-4 parts powder to 1 part clean cold water by weight. A 20kg bag requires approx. 5.4 litres of water

2. Mix until lump-free mortar achieved.

3. Allow mixed adhesive to stand for 2 minutes before re-mixing for 30 seconds.

NOTE: If using electric drill mixer, blend at slow speed (i.e. under 300rpm).

Pot life at 20°C: approx. 2½ hours.

NOTE: Pot life/setting time will vary slightly with temperature: higher temperatures = shorter; lower temperatures = longer.

APPLICATION/USAGE

Do NOT use in temperatures below 5°C or in damp conditions.

Trowel recommendations

Area	Trowel
Internal Dry Wall Area (up to 300x300mm tiles)	ROUND NOTCHED
Internal Wet Wall Area (up to 300x300mm tiles)	THIN BED SOLID BED
External Walls and Floors	THICK BED SOLID BED
Mosaics (up to 100x100mm tiles) including when used with BAL RAPID-MAT)	MOSAIC TROWEL

NOTE: ensure you achieve the correct contact of adhesive to both the background and tile in line with BS 5385, Parts 1-5.

BAL FLEX ONE tile adhesive may be applied on walls and floors using a suitable notched trowel (up to 20mm x 20mm notch, which provides a circa 7mm bed depth).

N.B For larger format tiles, the reverse of the tile should be back buttered with a thin layer of adhesive to ensure solid bedding.

NOTE: For thick applications the mixing water should be reduced to achieve the necessary slump resistance. Do not use thicker beds of adhesive with porous or soft bodied tiles. **Note that when fixing large format tiles, it is essential that the substrate is level to better than SR1 to avoid excessive bedding-out of the adhesive and reduce installation time.**

Fixing procedure

1. Apply adhesive to wall or floor surface and comb to required bed thickness ensuring the ribs of adhesive all run in one direction. The adhesive may be applied in a bed thickness of 2 - 8mm or up to 15mm in limited, localised areas. (i.e. max 0.5m²)

If fixing large/heavily-patterned tiles, apply additional adhesive to tile reverse.

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

For tiles: press tile firmly into the ribs of the adhesive and into position, with slight twisting/sliding action to ensure optimum adhesive contact.

3. Fix mosaics/tiles before adhesive forms skin (typically up to 45 minutes at 20°C, depending on surface porosity /atmospheric conditions). If skin has formed, remove adhesive and apply fresh layer). Discard any adhesive that has begun to set. Do not add further water.

4. Occasionally lift a mosaic/tile to check adhesive contact area. When solid-bed fixing, leave no voids behind tiles.

5. Leave adequate joints between individual tiles. Install movement joints to BS 5385, Parts 1-5.

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

Grouting

1. Wait minimum 6 hours (at 20°C) after tile fixing. Select a BAL cementitious or Epoxy grout such as BAL MICROMAX2 GROUT or BAL EASYPOXY AG GROUT.

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. Finish grouting.

2. Fill movement joints with suitable sealant i.e. BAL MICROMAX SILICONE SEALANT. *However, do NOT use on sensitive surfaces that could react to acetic acids released during cure.*

For intermediate movement joints, 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 BAL TECHNICAL ADVISORY AND SPECIFICATION SERVICE for further advice).

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

HEALTH & SAFETY INFORMATION / GOOD PRACTICE ADVICE

For detailed information and safety guidance, please refer to Product Material Safety Data Sheet [MSDS].

TECHNICAL ADVISORY SERVICE

For free expert guidance on use of this product, or any aspect of tiling, contact the BAL TECHNICAL ADVISORY AND SPECIFICATION SERVICE on Tel: 01782 591120 or 0845 600 1 222 or Fax: 01782 591121.

POWERSPEC

A unique computerised online specification system for the design and installation of ceramic, mosaic and natural stone tiling.

Visit www.powerspeconline.com

SHELF LIFE

12 months under normal dry conditions. Protect from frost and damp.

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.

25 YEAR GUARANTEE

All BAL products are supplied with a 25-year product guarantee to be free from manufacturing defects and to be fit for purpose. The guarantee covers materials replacement costs and labour.

This guarantee is subject to use of product in accordance with BAL's instructions and technical data, and good working practice. No liability can be accepted for any loss or damage arising from incorrect use of products or poor workmanship, over which BAL has no control.

Contact BAL Marketing Department for full details.

CONDITIONS OF SALE

Sold subject to the Company's Conditions of Sale. *Available on request.*

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

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