

Product Data Sheet No. 14

S C R E E D

TARMAC SBR POLYMER SCREED

Identification

INTRODUCTION

Tarmac SBR Polymer Levelling Screed was developed by Tarmac to meet the demand for factory mixed cement: sand levelling screeds with the inclusion of a synthetic polymer resin to give increased toughness and bond properties.

For new work, normal minimum screed thicknesses should be specified, but where this is not possible, e.g. in refurbishment work, where levels must be maintained, there is often a need for a thinner screed which must be well bonded to the base

Advantages

Tarmac SBR Polymer Levelling Screed has the following advantages over traditional site mixed cement: sand levelling screeds:

- Factory mixed to give accurate dispersion of cement and polymer.
- Conforms to the compressive strength requirements of BS EN 13813
- Minimises shrinkage/cracking
- Improves flexural strength
- Reduced permeability
- Better impact/abrasion resistance against site traffic
- Improved performance for thinner, bonded screeds where normal minimum thicknesses cannot be achieved

PRODUCT CONFORMITY

Use in accordance with the recommendations in Code of practice BS 8204-1. The British Standard listing traditional proportions of materials for ready-to-use cement sand screeds was BS 4721 which was withdrawn in February 2005. Tarmac factory produced screed materials conform to the requirements of BS EN 13813.

Tarmac SBR Polymer Levelling Screed should be used in accordance with the recommendations of Codes of Practice BS 8000:Part 9 and BS 8204:Part 1.

Description

COMPOSITION AND MANUFACTURE

Tarmac SBR Polymer Levelling Screed is a thoroughly mixed, accurately controlled blend of the following materials:

- Well graded, washed fine aggregates (sand) conforming to BS EN 12620 / BS EN 13139
- Portland cement conforming to BS EN 197-1
- Styrene butadiene resin polymer emulsion
- Retarding/water reducing admixture conforming to BS EN 934-2/3 giving the correct working time, normally usable for 8 -12 hours from the time of mixing
- Water conforming to BS EN 1008 to give the correct semi-dry consistency for easy laying and thorough compaction

Density

Typical test results:

Fresh wet uncompacted	1850 - 2000 kg/m ³
Compacted set and air dried	2000 - 2200 kg/m ³

Performance

COMPRESSIVE STRENGTH

Results based on prisms made, cured and tested in accordance with the requirements of BS EN 13892-2.

Table 1 - Screed material strength classes and traditional designations

Traditional Screed Designation	BS EN 13813 Compressive Strength Class	BS EN 13813 Flexural Strength Class
1:3 (a)	C30	F4.0
1:4 (b)	C20	F3.0
1:5 (c)	C16	F2.0

These results are indicative and may be subject to change.

TYPICAL HARDENING TIMES

Light foot traffic - 4 days. Site traffic - 7 days.

TYPICAL DRYING TIMES

Allow approximately one month per 25 mm of thickness. Where the screed is above 50 mm, any thickness above 50 mm should allowed to dry for two months per 25 mm of thickness. Where the concrete base has an excessive moisture content these times should be increased. High humidity or low temperature will also delay the drying out process. As the drying times indicated apply from the completion of any curing operations, the flooring contractor must check the moisture content of the screed prior to laying the final floor finish.

FIRE PROTECTION

Tarmac Truscreed F contains less than 1.0% organic material and is classified in accordance with BS EN 13501-1 as Class A1 without testing (Commission Directive 96/603/EC).

EFFECT OF FREEZE THAW

In cold conditions adequate precautions must be taken against freeze thaw. No antifreeze admixtures should be added to the mix.

COMPATIBILITY

Tarmac ready-to-use SBR Polymer Levelling Screed is compatible with all normal building materials, but wet cementitious materials may attack certain metals e.g. aluminium.

DURABILITY

No problems should occur if the correct screed designation has been specified but Tarmac SBR Polymer Levelling Screed is not designed as a wearing surface and should be covered with a flooring material.

Health & Safety

There is a real danger of contact dermatitis or serious burns if skin comes into contact with wet cement mixes such as fresh concrete, mortar or screed. Wear suitable protective clothing and eye protection. Where skin contact occurs either directly or through saturated clothing wash immediately with soap and water. For eye contact, immediately wash out eyes thoroughly with clean water. If swallowed wash out mouth and drink plenty of water.

For further information refer to Tarmac Safety Data Sheet No. 17.

Applications

USES

Suitable for use on the following bases:

1. Refurbishment work and for thinner, well-bonded levelling screeds over suitable prepared concrete where it is impossible to achieve normal minimum thicknesses.
2. Solid concrete ground floor slabs:
 - a) directly in contact with the slab (unbonded or bonded)
 - b) with suitable damp proof membrane between slab and screed (unbonded)
 - c) over an insulating layer to isolate the screed from the base (floating).
3. Pre-cast concrete units or beams with reinforcement.
4. In-situ suspended floors.

The above applications are subject to the minimum thicknesses given in the section on **Construction/Sitework**.

ECONOMICS

Volume yield - when correctly compacted, 1 tonne will yield 0.43 to 0.48 m³

THICKNESS mm	COVERAGE AREA m ² /tonne (approx)	THICKNESS mm	COVERAGE AREA m ² /tonne (approx)
10	45.0	45	10.0
15	30.0	50	9.0
20	22.5	55	8.2
25	18.0	60	7.5
30	15.0	65	7.0
35	13.0	70	6.5
40	11.0	75	6.0

Table 3: Approximate coverage area of screed material

Note: Slight variations in sub base levels will affect the coverage.

Construction/Sitework

SITE STORAGE

Tarmac SBR Polymer Levelling Screed should be tipped onto a clean banker board with a sealed base and protected from the elements. Do not tip new deliveries on to the remains of a previous load.

PREPARATION

The base concrete must be clean, and in particular free from lime, gypsum, plaster, dust, dirt, oil or grease. The base concrete should be swept to remove all loose material and wetted with cold water if the screed is to be placed in direct contact with the base. Just before laying the screed, a thin cement grout should be brushed into the surface, care being taken that the grout neither forms deep pools nor sets before the screed is placed.

APPLICATION

Bonded Construction (Minimum thickness - 25 mm)

The bond between the base and levelling screed will depend on the thoroughness with which the base has been prepared. Scabbling to remove any weak surface layer and to expose the aggregate is strongly recommended. A bonding agent such as Tarmac SB Admixture must be used to obtain a good bond. The admixture should be used in a slurry with cement in place of the normal cement/water slurry (3 volumes cement: 2 volumes Tarmac SB Admixture) and the screed laid before the slurry dries or sets.

Where Tarmac SB Admixture:cement slurry is used with Tarmac SBR Polymer Levelling Screed, thicknesses may be reduced where necessary to a minimum average of 25 mm (not less than 15 mm at any point).

Unbonded Construction (Minimum thickness - 50 mm)

When no bond is possible between the base and levelling screed it is necessary that the screed should be at least 50 mm thick, or, if it contains heating pipes, a minimum of 65 mm thick.

Floating Screed (Minimum thickness - 75 mm / 65 mm for light loading)

A levelling screed laid on a compressible layer such as thermal or sound insulating material, should be at least 65 mm thick, or, if containing heating pipes, a minimum of 75 mm thick. All conduits should be firmly fixed, covered with a suitable crack control mesh and given a minimum cover of 25 mm. BS 8204-1 recommends that where possible pipes and conduits should not be laid within the thickness of a levelling screed.

Where Tarmac SBR Polymer Levelling Screed is laid on thermal or sound insulation boards, which are sufficiently rigid to enable the screed to be properly compacted, the minimum thickness of the Tarmac SBR Polymer Levelling Screed may be reduced to 55 mm.

Use of Tarmac SBR Polymer Levelling Screed for floating screeds helps to minimise the occurrence of cracking.

NOTE:

Levelling screeds should be divided into bays only if they are to contain underfloor warming cables/pipes or are intended to receive an in-situ floor finish.

LAYING

Reference should be made to Code of Practice BS 8204-1.

The material should be spread on the prepared base with adequate surcharge. It is important to compact the screed thoroughly and evenly over the whole area, either by tamping or by mechanical means and then level with a screed board. For many floor finishes, the screed must be finished with a steel trowel to give it a smooth dense surface. For such a finish, the screed should be allowed to stiffen slightly and then worked with the trowel, which will make a ringing sound when the correct action is being used. Excessive trowelling should be avoided as this brings cement to the surface where it may craze and dust.

To aid compaction of thicker cement:sand levelling screeds, i.e. over 50 mm thickness, the screed may be laid in two layers. Both layers should be of approximately equal thickness and the same mix and water content.

The first layer should be thoroughly compacted using heavy tamping or a weighted roller. The second layer should be laid as soon as possible, i.e. within 2 hours, after compaction of the lower layer (monolithically).

The most common cause of screed failure is poor compaction.

CURING

Screeds should be protected from damage after laying. To achieve the full performance of Tarmac SBR Polymer Levelling Screed adequate curing is essential and the screed should be covered with plastic sheeting or other suitable material to retain moisture for at least five days. Whilst damping down of the surface before covering is acceptable, saturation of the screed, e.g. by prolonged hosing is not recommended.

NOTE:

Do not use hot-air blowers, underfloor heating, or other means of accelerating drying in the early life of the screed.

Technical Support

Tarmac provides a comprehensive sales and technical advisory service to specifiers and customers.

A quality system has been implemented throughout the company since 1975 and quality procedures are in conformity with BS EN ISO 9001:2000. All Tarmac factories hold third party certification from the British Standards Institution. Details of the certification status of individual factories may be obtained from the technical helpdesk.

PRICES AND CONDITIONS OF SALE

Prices vary according to mix proportion, quantity and delivery location. For specific quotations contact your nearest Tarmac Office or - see heading Further Information.

All quotations given, orders placed and materials supplied are subject to the Conditions of Sale available via download from the Tarmac website www.tarmac.co.uk or upon request from your nearest Tarmac Office.

SUPPLY

Tarmac SBR Polymer Levelling Screed is available direct from Tarmac factories located strategically throughout mainland United Kingdom: contact your nearest Sales Office for further details - see heading Further Information.

ORDERING

When ordering, state, product designation, quantity, date and time of delivery. 24 hours should normally be allowed for delivery.

Delivery

Bulk loads in tipper road trucks generally up to 10/20 tonnes or 7-8 tonne steel skips (where available). The skips reduce wastage, and prevent contamination.

References

BRITISH STANDARDS INSTITUTION

BS EN 197-1	Cement - Part 1: Composition, specifications & conformity criteria for common cements.
BS EN 1008	Mixing water for concrete - Specification for sampling, testing & assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete.
BS EN 12620	Aggregates for concrete
BS EN 13139	Aggregates for mortar
BS EN 934	Admixtures for concrete, mortar and grout:
Part 2: 2001	Concrete admixtures - Definitions, requirements, conformity, marking and labelling.
Part 3: 2003	Admixtures for masonry mortar - Definitions, requirements, conformity, marking and labelling
BS 8204:	Screeds bases and in situ floorings.
Part 1: 2003	Concrete bases and cement sand levelling screeds to receive floorings - Code of practice.
BS EN 13501-1 : 2002	Fire classification of construction products and building elements Part 1: Classification using test data from fire reaction tests
BS EN 13813: 2002	Screed material and floor screeds - Screed material - Properties and requirements.
BS EN 13892	Method of test for screed materials (A multipart standard). Part 2: 2002 Determination of flexural and compressive strength.

BRITISH CEMENT ASSOCIATION

Publication 48.046 Construction Guide: Laying Floor Screeds.

TARMAC

Mortar Product Data Sheet No 11	Tarmac Ready-to-Use Cement Sand levelling Screeds.
Mortar Product Data Sheet No 12	Tarmac Truscreed and Truscreed HD
Mortar Product Data Sheet No.22	Tarmac SB Admixture - for Masonry, Screed and Rendering Applications.
Site Guide No.2	Tarmac Screeds, Truscreed and Truscreed HD

Insert Product safety datasheet No.17 Mortar Screeds and renders

Tarmac General Mortar and Mix Design Manual.

Further Information:

For further technical information please call: **08701 116 116.**

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