

Technical data sheet

TECHNICAL DATA SHEET

PRODUCT DATA SHEET NO. 110/15

TRUSCREED ULTRA PRO

Tarmac Truscreed Ultra Pro was developed to fulfil the need for factory produced high-performance cement sand levelling screeds suitable for all common floor finishes.

ADVANTAGES

Tarmac Truscreed Ultra Pro has the following advantages over traditional cement sand levelling screeds:

- Significantly reduced drying times (to accept final flooring).
- Better working properties providing easier and more reliable compaction.
- Quicker early strength development.
- Reduced drying shrinkage resulting from low water/cement ratio so shrinkage cracks are minimal or even avoided completely.
- Polypropylene fibres may be used if required.
- Good resistance to construction traffic and dusting.
- Greater final strength.
- Factory mixing provides better cement dispersion gives greater and more uniform compressive strength throughout the floor area.
- Factory mixing takes quality control away from the site and into the factory, providing consistent quality materials and accurate proportioning.

PRODUCT CONFORMITY

Tarmac factory produced screed materials conform to the requirements of BS EN 13813.

Truscreed Ultra Pro should be used in accordance with the recommendations of Codes of Practice BS 8000:Part 0/9 and BS 8204:Part 1.

COMPOSITION AND MANUFACTURE

Tarmac Truscreed Ultra Pro is a thoroughly mixed accurately controlled blend of the following materials:

- Well-graded fine aggregate (sand) conforming to BS EN 12620/BS EN 13139
- Portland cement conforming to BS EN 197-1.
- Retarding/water reducing admixture conforming to BS EN 934-2/3 giving the optimum working time, normally usable for up to 8 hours from the time of mixing.
- Water conforming to BS EN 1008, to give the optimum semi-dry consistency for easy laying and thorough compaction.

DENSITY

Typical test results:

Typical Test Results	Density kg/m ³
Fresh wet un-compacted	1,850 - 2,000
Compacted set and air dried	2,000 - 2,200

PERFORMANCE Strength

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

Screed Description	BS EN 13813 Compressive Strength Class	BS EN 13813 Flexural Strength Class
Truscreed Ultra Pro	C40	F6.0

Table 1: Truscreed Ultra Pro strength classes and minimum strength. These results are indicative and may be subject to change.

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Tarmac Truscreed Ultra Pro is ultimately designed for use where high point loading or heavy trafficking is expected.

Typical Hardening Times

Light foot traffic 1 day*. Site traffic 3 days*.

In ideal conditions it can achieve up to 80% of the final strength after 5 days.

*Where site trafficking is anticipated from following trades before flooring is laid, protection must be provided. Levelling screeds are not wearing surfaces, therefore the surface should be given adequate protection against damage or wear during subsequent building operations and until the flooring is laid, this protection would be in the form of plywood boards.

Typical Drying Times

Allow approximately 3-4 days per 25mm of thickness⁽¹⁾.

If the screed is very thick, or the concrete base has an excessive moisture content, this time should be increased. High humidity or low temperatures will also delay the drying out process. As the drying time indicated applies from completion of the curing operation, the flooring contractor must check the moisture content of the screed before laying the floor finish. Following the curing period then the room should be ventilated, this should be no earlier than the third day after installation. To provide the necessary air exchange and support the drying process, then all windows and doors must be opened for 15 to 20 mins two or three times per day**.

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

Typical drying times:

Thickness (mm)	Drying times (days) (1)
25	3
50	7
75	10

(1) At 20°C and 50% relative humidity. All moisture testing completed using carbide method.

Fire Protection

Tarmac Truscreed Ultra Pro contain less than 1.0% organic material and are 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 to protect from freeze thaw attack. No antifreeze or accelerating admixtures should be added to the screed material.

Compatibility

Tarmac Truscreed Ultra Pro 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 material has been specified, however Tarmac Truscreed Ultra Pro is not designed as a wearing surface and should be covered with a suitable 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 eye thoroughly with clean water. If swallowed wash out mouth and drink plenty of water. For further information refer to Tarmac Safety Data Sheet - Screed.

USES

Suitable for use on the following bases:

- Solid concrete ground floor slabs:
 - Directly in contact with the slab (bonded).
 - With suitable damp proof membrane between slab and screed (unbonded)
 - Over insulation layer to isolate the screed from the base (floating).
- Precast concrete units or beams with reinforcement.
- In situ suspended floors.
- As a topping to lightweight screeds based on perlite or other lightweight aggregates.

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5. Certain other situations – refer to your nearest Local Tarmac Building Products Sales Office.

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

Economics

One tonne of screed material will have an approximate volume of 0.43 – 0.48 m³. Table 3 shows the coverage area per tonne for a range of thicknesses.

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

Type of Specification	Recommended Minimum Average Thickness (mm)	Minimum Thickness at any Point (mm)	Requirements
Monolithic (i.e. applied within 3 hours of placing concrete)		Ideally 12 -15 Not greater than 25	Thicknesses greater than 25mm should be avoided to minimise shrinkage stresses
Grouted to precast concrete slab cement: water slurry	25**	15**	Brushing of green concrete or mechanical treatment to expose aggregate recommended where thicknesses are reduced the use of an epoxy system** is recommended.
Grouted to concrete planks with cement: water slurry	55	15**	Screed should be reinforced if structural movement is expected. Cement: SB Admixture slurry* may be used to ensure a better bond, where thicknesses are reduced the use of an epoxy system** is recommended. Surface of units must be roughened to form a key.
Unbonded		35	
Applied to concrete Stairs Treads Risers	25**	15**	Aggregate must be exposed by mechanical treatment
Pipes and Conduits		30 Cover	Pipes and conduits
Trunking		30 cover	Reinforced with wire mesh over and bonded to trunking with cement::Tarmac SB Admixture slurry*. Trunkings must be securely bedded and fixed.
Floating screed for sound insulation on 5mm polyethylene foam	55	35	Reinforced with D49 or similar unless over 55mm, slurry grout to foam insulation

*Used according to Tarmac Product Data Sheet No. 22

**The use of an epoxy based priming system

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CONSTRUCTION/SITE WORK

Site storage

Tarmac Truscreed Ultra Pro should be tipped on to a clean banker board with a sealed base and sheeted to protect it from the elements, ensuring this remains covered throughout the installation process in order to reduce any moisture loss. Do not tip new deliveries onto the remains of the 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 clean water, where the levelling screed is to be placed in direct contact with the base. Just before laying the screed an appropriate bonding material should be brushed into the surface, care being taken that this neither forms deep pools nor dries before the screed is placed.

APPLICATION

Bonded Construction

(Minimum thickness 25mm)

The bond between the base and levelling screed will depend on the thoroughness with which the base has been prepared. A bonding agent such as an epoxy based priming system must be used to obtain a good bond and the screed laid before the primer dries or sets.

Unbonded Construction

(Minimum thickness 35mm)

When no bond is possible between levelling screed and base, the screed should be a least 35mm thick, or, if containing heating pipes, a minimum cover of 30mm must be maintained.

Floating Screed

(Minimum thickness 35mm)

A levelling screed laid on a compressible layer such as thermal or sound insulating material, should be at least 55mm thick, or if containing heating pipes, a minimum of 30mm cover. All conduits should be firmly fixed covered with suitable crack control mesh and given a minimum cover of 30mm.

Where Tarmac Truscreed Ultra Pro is laid on thermal or sound insulation boards, which are sufficiently rigid to enable the screed to be properly compacted, the minimum thickness of Tarmac Truscreed Ultra Pro may be reduced to 35mm.

Topping to Lightweight Screeds

A smooth surface can be given to lightweight screeds, which will enable point loadings to be carried. The normal thickness will be of the order of 10 - 15mm and, if necessary, the suction of the lightweight screed should be controlled by wetting with clean water. Tarmac recommends Limelite Lightweight Screed.

Laying

Careful consideration to the daily temperature should be made, Tarmac Ultra Pro has an application temperature range of +5°C to +28°C (ambient and substrate temperature). To ensure this is achieved and maintained, then during application the screed must be protected from draught, direct sunlight, excessive heat (including uncontrolled heating in cold weather). It may be necessary to darken large window fronts and floor-level glass façade as this can cause rapid and premature drying.

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 material 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 correction action is being used. Excessive trowelling should be avoided as this brings a layer of cement laitance to the surface where it may craze and dust. To aid compaction of thicker cement:sand levelling screeds, i.e. over 50mm 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

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should be laid as soon as possible, i.e. within 2 hours, after compaction of the lower layer (monolithically). The common cause of screed failure is poor compaction.

Application temperature of +5°C to +28°C (ambient and substrate temperature). To ensure this is achieved then during application the screed must be protected from draught, direct sunlight, excessive heat (including uncontrolled heating in cold weather). It may be necessary to darken large window fronts and floor-level glass façade.

Curing

There is no specific curing requirements, however Tarmac Truscreed Ultra Pro should be protected from damage immediately after laying.

Due to the initial retardation period, then to achieve the full performance of Tarmac Truscreed Ultra Pro a degree of initial protection is essential and the screed must be protected from draughts, direct sunlight and excessive heat especially in the first 24 hours, helping to retain moisture by ensuring doors and windows are sealed and the building is weathertight.

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: 2015. 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 quantity and delivery point. For specific quotations contact the nearest Sales Office.

All quotations given, orders placed and materials supplied are subject to the Conditions of Sale available via download from the Tarmac website

www.tarmac.com or upon request from your nearest Tarmac Sales Office.

SUPPLY

Tarmac Truscreed Ultra Pro is available direct from Tarmac factories located strategically throughout mainland United Kingdom. Contact your nearest Tarmac Office for further details.

ORDERING

When ordering, state the product designation, quantity, date and time of delivery. 48 hours should normally be allowed for delivery. Consideration should also be given to reduce load size based on contract installation method in order to fulfil the installation requirements – see heading Laying for further information .

DELIVERY

Bulk loads in tipper trucks generally up to 10-20 tonnes.



REFERENCES: British Standards Institute	
BS EN 197-1:2011	Cement Part 1: Composition, specifications and conformity criteria for common cements
BS 7979 : 2016	Specification for limestone fines for use with Portland cement
BS EN 1008:2002	Mixing water for concrete – specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete
BS EN 12620:2002+A1 2008	Aggregates for concrete
BS EN 13139:2002	Aggregates for mortar
BS EN 934	Part 1: 2008 Admixtures for concrete, mortar and grout Part 2: 2009+A1:2012 Concrete admixtures – definitions, requirements, conformity, marking and labelling
BS 8000-0: 2014	Workmanship on construction site. Introduction and general principles
BS 8000-9: 2003	Workmanship on building sites. Cementitious levelling screeds and wearing screeds. Code Of Practice.
BS 8204	Screeds bases and in situ floorings. Part 1: 2003+A1:2009 Concrete bases and cement sand levelling screeds to receive floorings – Code of Practice.
BS EN 13501	Fire classification of construction products and building elements Part 1: 2007+A1:2009 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 48.46	Construction Guide: Laying floor screeds
Tarmac*	
Site Guide No. 2	Tarmac Screeds, Cemscreed, Truscreed 5, Truscreed, Truscreed HD and Truscreed Ultra Pro
Tarmac Safety Data Sheet	Screeds

*Current version applicable to all references

FOR FURTHER INFORMATION
mortar.internalsales@tarmacbp.co.uk
CUSTOMER SERVICE
03701 116 116

The information given in this technical data sheet is based on our current knowledge and is intended to provide general notes on our products and their uses. Tarmac endeavour to ensure that the information given is accurate, but accept no liability for its use or its suitability for particular application because of the product being used by the third party without our supervision. Any existing intellectual property right must be observed.