

Product Data Sheet No. 6

M O R T A R

TARMAC DRY SILO MORTAR

Identification

INTRODUCTION

Tarmac dry silo mortars are a range of factory produced mortars, manufactured under computer controlled conditions. The constituents are dried fine aggregate (sand), cementitious materials and admixtures, together with pigments, if required.

Tarmac dry silo mortar is delivered direct to site in state-of-the-art silos, each complete with an integral mixing unit. Once power and water have been connected, mortar can be produced at the touch of a button. The mix consistency can easily be adjusted by the site operative in order to cater for the many and varied types of masonry units, from dense concrete blocks to high suction bricks, as well as to suit prevailing weather conditions.

Product Conformity

Tarmac dry silo mortars are manufactured from constituent materials conforming to the following British/European Standard specifications:

Cementitious materials:
BS EN 197-1, BS EN 197-4
Fine aggregate (sand): BS EN 13139
Hydrated Lime: BS EN 459-1
Admixtures: BS EN 934
Pigments: BS EN 12878

Physical Properties

MIX PROPORTIONS AND STRENGTH

The mix proportions of Tarmac dry silo mortar conforms with the values specified in the following table when tested by the methods prescribed in BS EN 1015 and BS 4551.

Performance of Tarmac dry silo Mortars

Introduced in February 2005 the new European Standard for mortars mean that mortar mixes are performance based rather than the traditional recipe type. We would recommend you consider the following strength designations when specifying mortar mixes.

BS EN 998-2 ¹ MORTAR CLASS	TRADITIONAL MORTAR DESIGNATION
M10	i
M5	ii
M2.5	iii
M1	iv

¹) BS EN 998-2: 2003 Specification for mortar for masonry - Part 2 Masonry mortar

²) BS 4721 compressive strengths made using cubes. BS EN 998-2 compressive strengths made using prisms

DURABILITY

Tarmac dry silo mortar is air entrained which makes it less susceptible to freeze thaw attack. The admixture used to entrain air is chloride-free and therefore not aggressive towards embedded metals.

COLOUR

Tarmac dry silo mortar is available in a full range of colours.

FIRE PROTECTION

Tarmac dry silo mortars contain less than 1.0% organic material and are classified in accordance with BS EN 13501-1 as Class A1 without test (Commission Directive 96/603/EC).

Quality

The mixing process is fully computer controlled with all constituent materials being carefully weigh batched. This ensures that the inconsistencies prevalent with site-mixed mortars are eliminated.

Tarmac dry silo technical staff rigorously enforce quality control procedures and all tests undertaken comply with the relevant British/European Standards.

The Tarmac dry silo system ensures that wastage of mortar is virtually eliminated. In addition a much cleaner site environment is achieved since stockpiling of materials is no longer necessary.

Applications

Tarmac dry silo mortar is suitable for all types of construction, providing that the mortar type and strength class chosen for a particular application is suitable for its prescribed purpose. Advice on the appropriate mortar for a given application is detailed in BS 5628, Part 3.

Yield

One tonne of Tarmac dry silo mortar (Designation iii) will produce approximately 0.70 cubic metres.

One cubic metre of Tarmac dry silo mortar is sufficient to lay approximately 1700 bricks (the actual number may, however, vary between 1300 and 2100 dependent upon the size of brick, depth of frog, perforations, site practice etc.) and approximately 1200 blocks of nominal size 450 x 225 x 100 mm.

A silo on delivery holds approximately 14 tonnes of dry material. The silo can then be refilled by tanker to hold up to 33 tonnes.

Site Requirements

The Tarmac dry silo system requires supplies of mains water (at standard pressure) together with a single phase 230 volt power supply. In addition it is the contractors responsibility to ensure that the silo is positioned on a level concrete base, prepared in accordance with Tarmac dry silo recommendations for use.

Health and 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.

Further Information:

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

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Product Data Sheet No. 2

M O R T A R

TRUSPREAD AND CSM READY-TO-USE MORTARS

Identification

INTRODUCTION

Truspread mortars are factory produced, ready-to-use cement: lime: sand mixes and are eminently suitable for use in all types of masonry construction, both above and below damp-proof course. The exact specification will depend on the properties of the masonry unit, the type of construction and the exposure conditions.

The introduction of the European mortar Standard BS EN 998 Parts 1 and 2 has led to a change in the descriptions historically used for these products. Mortars should be specified using the appropriate strength class.

CSM mortars are factory produced, ready-to-use cement; sand mixes which may be specified for work below ground level or free standing and retaining walls. Although M10 or M5 are the most commonly specified of the cement:sand mixes, other CSM mixes can be supplied where required. The controlled mix design of Truspread and CSM mortars ensures maximum resistance to frost attack and excellent long term durability.

PRODUCT CONFORMITY

Truspread and CSM ready-to-use mortars conform to BS EN 998 - 1/2 as appropriate and should be tested by the methods given in BS EN 1015 and BS 4551. Where coloured mortars are supplied, the pigments used by Tarmac not only conform to BS EN 12878, but consist exclusively of synthetic iron oxides which are guaranteed against fading by the manufacturers.

Site usage should be in accordance with the recommendations in BS 5628 Code of practice for use of masonry. BS 5492 for internal plastering and BS 5262 for external rendering.

Description

COMPOSITION AND MANUFACTURE

Truspread and CSM are factory produced mortars which are normally retarded for 36 - 72 hours and require no further machine mixing. Well graded fine aggregate (sand), high quality lime and cement are accurately proportioned with special admixtures to ensure that the appropriate working time and strength are achieved.

DENSITY

TYPE OF MORTAR	Typical Density kg/m ³	
	FRESH WET	SET AND AIR DRIED
TRUSPREAD AND CSM	1700 - 1900	1550 - 1750

Performance

Introduced in February 2005 the new European Standard for mortars mean that mortar mixes are performance based rather than the traditional recipe type. We would

recommend you consider the following strength designations when specifying mortar mixes.

Based on strength results of prisms made from typical production material cured and tested in accordance with the requirements of BS EN 1015 part II.

STRENGTH

The rendering mortar Standard BS EN 998-1 uses a

BS EN 998-2 MORTAR CLASS	TRADITIONAL MORTAR DESIGNATION
M10	i
M5	ii
M2.5	iii
M1	iv

1) BS 4721 compressive strengths made using cubes. BS EN 998-2 compressive strengths made using prisms.

different strength classification. Specifiers should select a suitable mortar for the particular application.

FIRE PROTECTION

BS EN 998-1 MORTAR CLASS	RANGE OF STRENGTH CLASSES RENDERING MORTAR N/mm ²
CS i	0.4 - 2.5
CS ii	1.5 - 5.0
CS iii	3.5 - 7.5
CS iv	> 6.0

Tarmac Truspread and CSM mortars 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 DAMAGE

The mix design of Truspread and CSM mortars is such that they are ideally suited for use in winter conditions. When used according to Tarmac Site Guides No. 3 and No. 6, the controlled cement and air contents greatly reduce the probability of freeze thaw damage.

COMPATIBILITY

Tarmac Truspread and CSM mortars are compatible with all normal building materials.

DURABILITY

Tarmac Truspread and CSM mortars offer excellent long term durability due to the controlled composition and quality of aggregates used. Truspread, in particular, is designed to give durable weather-resistant masonry, subject to the normal requirements of good workmanship e.g. well filled joints. These mortars will also absorb a degree of structural movement above damp-proof course.

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

Truspread and CSM mortars may be used in any application where the reliability and convenience of ready-to-use mortar is required for masonry, rendering or plastering.

ECONOMICS

Truspread and CSM mortars are sold by volume and one cubic metre will lay:

Solid bricks:

Typically 2000 per cubic metre i.e. 0.030 m³/m² of brickwork

(Range 1700 - 2400)

Frogged or perforated bricks: Typically 1700 per cubic metre (150 cm³ frog) i.e. 0.035 m³/m² of brickwork

(Range 1300-1800)

The above figures apply to single skin stretcher bond only and mortar usage will obviously be higher for double or triple thickness work.

THICKNESS mm	COVERAGE AREA m ² /tonne (approx)
5	100 - 120
10	54 - 63
13	42 - 49
18	31 - 36

These figures are intended as a guide only and may vary widely from one site to another according to exact size of units, depth of frog, size of perforations, wastage and other factors.

For plastering and rendering approximate coverages are shown in the table:

Construction/Sitework

DELIVERY STORAGE AND USE

Tarmac ready-to-use mortars are delivered by specialist vehicles which discharge into clean site containers of 0.30 m³ capacity. The material is normally retarded for 36 - 72 hours. The containers, which may be hired or purchased, have polythene liners supplied with each delivery to protect the material during storage. The liners are colour coded or printed to identify the day of delivery.

In hot or windy conditions extra protection should be added to prevent evaporation of water leading to loss of workability. Any slight loss of consistency may be restored by addition of small quantities of water either on the spot board or in the site container (up to 5 litres per 0.30 m³ tub) during the specified working time.

Bins of mortar which are not required for immediate use (especially if to be kept overnight) should be treated by adding a maximum of five litres (one gallon) of water onto the surface per full bin of 0.30 m³ of mortar before covering. Apart from turning over the mortar before use, no other mixing should normally be required.

Addition of water within the working period will have no adverse effect on the strength or durability of the masonry. In fact, the full properties will be restored as a better bond will be achieved when mortar is used at the correct consistency.

In winter, protection from freezing should be provided as necessary, by means of an insulating cover or storage under cover.

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 design, quantity and delivery location. For specific quotations contact your nearest Tarmac Office - 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

Truspread and CSM are available direct from mortar factories located strategically throughout mainland United Kingdom: contact your nearest Tarmac Office or for further details - see heading Further Information.

ORDERING

When ordering, please state mortar type and strength class, quantity, date and preferred time of delivery. 24 hours should normally be allowed for delivery. Orders should be for full tubs i.e. in multiples of 0.30 m³.

REFERENCES

British Standards Institution

BS EN 197-1 : 2000	Cement - Part 1 : Composition, specification and conformity criteria for common cements
BS EN 459 : Part 1 : 2001	Building lime. Definitions, specification and conformity criteria
BS EN 12878 : 1999	Pigments for the colouring of building materials based on cement and/or lime Specification and methods of test
BS EN 13139 : 2002	Aggregates for mortar
PD 6682 - 3 : 2003	Aggregates - Part 3 : Aggregates for mortar - Guidance on the use of BS EN 13139
BS EN 13501 - 1 : 2002	Fire classification of construction products and building elements Part 1: Classification using test data from reaction to fire tests
BS 4551 : 2005	Mortar - Methods of test for mortar - Chemical analysis and physical testing
BS 5262 : 1991	Code of practice for external rendering
BS 5390 : 1976	Code of practice for stone masonry
BS 5492 : 1990	Code of practice for internal plastering
BS 5628 :	Code of practice for use of masonry
BS 5628 : Part 1 : 2005	Structural use of unreinforced masonry.
BS 5628 : Part 2 : 2005	Structural use of reinforced and prestressed masonry
BS 5628 : Part 3 : 2005	Materials and components, design and workmanship
BS EN 998	Specification for mortar for masonry
BS EN 998 Part 1 : 2003	Rendering and plastering mortar
BS EN 998 Part 2 : 2003	Masonry mortar
PD 6678 : 2005	Guide to the selection and specification of masonry mortar
BS EN 1015	Methods of test for mortar for masonry (A multi part Standard)

BUILDING RESEARCH ESTABLISHMENT

Digest 361	Why do buildings crack?
Digest 362	Building mortar

TARMAC

Product Data Sheet No. 23	Tarmac Masonry Cleanser
Product Data Sheet No. 3	Rendering and Plastering
Site Guide No. 3	Truspread and CSM mortars
Site Guide No. 6	Winter working recommendations for mortars
Site Guide No. 7	Summer working recommendations for mortars

Tarmac General Mortar and Mix Design Manual

Further Information:

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