

# Marshalls Mortars & Screeds Mason Mix

## General Information

Marshalls Mason Mix is a factory blend of sand and air entrainer accurately weighed, batched and composed of quality assured constituents to which cement is added on site to produce a masonry mortar.

## Composition and Manufacture

Marshalls Mortars & Screeds Mason Mix is manufactured from carefully selected clean sand (now known as fine aggregate) conforming to BS EN 13139 and air entrainer conforming to BS EN 459-1.

Mortar mixes conform to BS EN 998-2, when tested by the methods given in BS EN 1015 and BS 4551. If required, pigments conforming to BS EN 12878 can be accurately added at the factory to produce an extensive range of colours and shades. The mortar is generally delivered in bulk bags. The table below shows mix designation, the compressive strength and the amount of cement to be added on site.

When ordering, make sure that the designation of the mortar is correct for the type of work and that if coloured mortar is being used, it is the agreed shade. With coloured mortars, it is recommended that a small trial panel be constructed to ensure that the interaction of the texture and colour of the bricks on the mortar will produce the effect required.

Traditional Mortar Designation	BS EN 998-2 Mortar Class	Site Mixing	
		By Volume	By weight cement, kg: tonne dry mortar
i	12	1:3	210
ii	6	1:4 1/2	150
iii	4	1:6	120
iv	2	1:9	80

Brickwork and blockwork constructed with these mortars should have adequate strength with a substantial safety factor, yet retain a degree of elasticity so that the inevitable movement of buildings during and after construction can be accommodated without cracking, which is both unsightly and a cause of high remedial costs. These mortars are suitable for all types of masonry applications, particularly housing and other medium and low rise structures.

For low rise buildings, a traditional designation iv mortar has adequate strength. In general, the mortar strength should not be greater than the strength of the units used. With some types of materials e.g. calcium silicate, aerated concrete and dense concrete, it is generally advisable to use a weaker mortar in order to reduce the effect of shrinkage stresses.

Bulk density of factory produced Mason Mix for mortar 1700 - 1850 kg/m<sup>3</sup>.

Volume yield 1 tonne of factory produced Mason Mix for mortar when mixed with Portland cement on site will yield 0.65 to 0.75 m<sup>3</sup>.

Coverage 1 tonne of cement: Mason Mix mortar will lay approximately 1000 bricks or 600 blocks of nominal size 450 x 225 x 100mm..

## Durability

Factory produced Mason Mix bricklaying mortars help to produce a permanent weatherproof and frost resistant joint through which rain will not easily penetrate. Design detail and workmanship is critical in masonry construction. For example, parapets, overhangs, capping, joint types and finishes affect the constructions ability to shed water and therefore water penetration.

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### Working Characteristics

Factory produced Mason Mix mortars have good working characteristics. They can completely fill the vertical as well as the horizontal joints in masonry assisting with the attainment of good quality workmanship. The mortars possess a good degree of cohesiveness, spread easily under the trowel thus increasing productivity and minimising wastage due to droppings. Mason Mix mortars have high enough water retentivity enabling the mortar to resist the suction of the bricks and blocks and remain workable. This helps to ensure good bond and reduces the need to re-temper. Retentivity is also kept low enough to guard against 'swimming' of masonry that affect masonry line and level.

Sheeting is most important when colour is a requirement, as rain and weathering may otherwise cause separation of some of the fine material. To obtain the required mortar, considerable care should be taken on site to add the correct amount and type of cement. Gauge boxes or other accurate measuring vessels should be used when proportioning is by volume. When using coloured mortars, it is strongly advised that the same brand, type and source of cement is used throughout the contract. If possible, gauge by weight. For the quantity of cement for the various designations of mortar, see the Table on the previous page.

Only clean water should be used for obtaining the correct consistency.

Stacked bricks and blocks should be protected. Never use either when saturated with water as this can cause disfiguration of the building and in winter, attack on the masonry by frost.

New work should be protected from rain at the end of the working day or when rained off. Scaffold planks placed along the top of walls give at least some protection from saturation by rain. Ideally, the tops of unfinished walls should be properly covered; this is especially important with cavity walls and where perforated bricks are used.

Although it is recommended to use cement: Mason Mix mortars within 2-3 hours, most cement: Mason Mix mortars will remain fairly soft for a working day, making cleaning up at the end of each shift reasonably easy. All mixers, spot boards and trowels, etc., should be cleaned at the end of each shift or when changing the colour of the mortar.

### Coloured Mason Mix

For a little additional cost coloured mortars can help you realise significant aesthetic improvements to your project. Coloured mortars can be used in individual areas to create elegant effects.

We are able to offer our full range of mortars in a large variety of colours and provide a colour matching service and samples to assist in making your decision.

Please see our colour chart for an indication of the range of colours available.

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### Recommended Mortar Mixes for Conditions

Reference should be made to British Standard BS EN 998-2 National Annex, having regard to the requirements for strength durability and appearances.

### References

- BS EN 197-1 Cement composition, specification and conformity criteria for common cements
- BS EN 998-2 Specification for mortar for masonry - Part 2: Masonry mortar
- BS EN 1015 Methods of test for mortar for masonry
- BS EN 12878 Pigments for the colouring of building materials based on cement and/or lime. Specifications and methods of test
- BS EN 13139 Aggregates for mortar
- BS 4551 Methods of testing mortars, screeds and plasters
- BS EN1996-2 2006 Eurocode 6 Design of Masonry Structures
- Mortar Industry Association miadata01 January 2003
- PD 6682-3 Aggregates for mortar - Guidance on the use of BS EN 13139

