

# HIGHWAY QSM

## Product Codes

DH16, DH17, DH18 Packaging listed overleaf.

## Description

QSM is a pre-mixed Portland cement based mortar designed to give ultra rapid high strength properties for the support of highway furniture. The mixed mortar, when placed, will harden in approximately 10 minutes. The compressive strength gain will reach 22 N/mm<sup>2</sup> in  $\frac{3}{4}$  hour allowing road opening to vehicular traffic within  $\frac{3}{4}$  hour at ambient temperatures of 20°C or above.

The self contained product only needs to be mixed with water on site providing rapid setting and strength gain enabling prompt setting of manhole frames and the re bedding of new frame systems. The product is chloride free and can be safely used with cast and steel units. The application speed provides early opportunity for completion of the works, surface topping and opening of roads to vehicular traffic. The mortar can be placed in sections of 15mm to 50mm in thickness and greater thicknesses can be built up in layers. After placement no special curing is required in moderate conditions.

QSM is a British Board of Agreement Assured Data Sheet Product.

**Uses include:** Re-bedding of raised manhole frames.  
Support of road furniture.  
Bedding of frames in new roads.  
Setting sewer rings and gully grates.

## Typical Mortar Properties @ 20°C

### Compressive strength

Water addition: 2.5 Litres per 25 kg bag QSM.

$\frac{3}{4}$ Hour	1 Day	7 Days	28 Days
22 N/mm <sup>2</sup>	43 N/mm <sup>2</sup>	48 N/mm <sup>2</sup>	51 N/mm <sup>2</sup>

Variations in water content for particular applications may alter mortar consistency and compressive strength achieved.

Density 2200 kg/m<sup>3</sup>.

Coefficient of Thermal Expansion  $11 \times 10^{-6}/^{\circ}\text{C}$

## Specification Outline

Bedding and levelling shall be carried out using QSM as manufactured by TecRoc Products Ltd. The product must be stored, handled and placed strictly in accordance with the manufacturer's instructions.

## Quality Assurance

TecRoc Products Ltd is a firm of Assessed Capability. The Company's quality system conforms to BS EN ISO 9002:1994 and is assessed by SGS Yarsley International Certification Services Ltd.

## Standards

QSM has been tested in accordance with appropriate parts of the following standard : B.S.1881.

The product conforms to DTp: HD 27/94.

Design Manual for Roads and Bridges V7 Sec2

3.11 Mortars for bedding ironwork such as manhole cover frames during repairs may be trafficked when the strength is expected to be 20N/mm<sup>2</sup>. For rapid construction, this strength should be achieved within 2 hours.

QSM will achieve the required strength of 20N/mm<sup>2</sup> within  $\frac{3}{4}$  hour at a temperature of 20°C.

## Instructions For Use

### Preparation

Laitance and all loose material including dust, oil and grease should be removed in order to produce a sound substrate. The work area should be pre-wetted taking care to remove any standing water before placing the QSM mortar.

### Mixing

To achieve the most consistent mortar mix, mechanical mixing is recommended. Hand mixing is suitable but care should be taken to ensure that the mix is fully wetted out without the use of excess water. Mechanical mixing may be carried out in a suitable vessel using a slow speed high torque drill and Mortar Stirrer. Hand mixing may be carried out using a clean spot board or wheelbarrow.

Each 25kg bag of QSM requires 2.5 to 3 litres of water to give a mortar consistency. Excess water should not be added. Once setting of the mortar has commenced, further mixing should not be used to re-work the mix. The mortar should be placed within approximately 10 minutes of mixing. The working time may be extended in cold ambient conditions and may be slightly shortened in hot ambient conditions. A retarded grade is available.

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## Instructions For Use

### Placing

Set suitable levelling shims onto the working surface ready to receive the frame or unit. Place the mixed mortar onto the prepared surface and lower the frame or unit onto the mortar and knock down onto the pre-set shims to line and level. The bed thickness applied in a single application should be between 15mm to 50mm. Thicker support beds can be achieved by applying further material as soon as the lower bed has hardened sufficiently not to distort under the additional work.

The placed mortar will have hardened sufficiently to carry out further work, such as haunching, within some 45 minutes depending on the surrounding ambient conditions.

### Curing

No special curing is required at temperatures between 5°C and 35°C. For placing temperatures outside this range contact the Technical Service Department.

## Precautions

### Health and Safety

QSM is alkaline when mixed with water and should not come into contact with skin or eyes. Avoid inhalation of dust during mixing and wear safety glasses, dust mask and gloves. If skin contact occurs wash thoroughly with clean water. Should eye contact occur rinse immediately with plenty of clean water and seek medical advice.

Full health and safety details are given in Product Safety Data Sheet.

### Fire

QSM is non-flammable

### Yield

Each 25kg bag of QSM will enable a manhole frame 600mm x 600mm to be raised approximately 25mm. The volume yield of each 25kg bag of QSM is approximately 12<sup>3</sup>/<sub>4</sub> litres.

### Storage And Shelf Life

QSM will have a shelf life of 6 months when kept in dry conditions at a temperature of 5°C to 45°C. Storage at higher temperatures and high humidity may reduce the shelf life.

### Packaging And Ordering

QSM is supplied in 25kg valve sack bags and 25kg pails.

25kg valve sack bags	Product Code DH16
25kg valve sack bags, retarded	Product Code DH17
25kg pails	Product Code DH18

For further information and sales please contact your local Tecroc Products Office as listed below.

Tecroc Products Ltd products are guaranteed against defective materials and manufacture. Products are sold subject to the Tecroc Products Ltd Terms and Conditions of Sale, copies of which are forwarded on invoice and are available on request. Tecroc Products Ltd endeavours to ensure that the above data and any further advice is correct, however, it cannot accept any direct or indirect liability for the use of its products as such usage is beyond its control.

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