

## Mulsifix Repair Mortar

Preblended Polymer Modified  
cementitious mortar

mf. Repair Mortar

### About this product

Mulsifix Repair Mortar is pre-blended, polymer modified, cementitious mixes requiring only the addition of clean water to produce a range of water resistant mixes including bonding slurry, adhesive, grout and mortars.

Mulsifix Keycoat and Mulsifix Latex-bondcoat mix are bonding slurry for the Repair Mortar and other Mulsifix products and for bonding new concrete to old.

Mulsifix Repair Mortar is a general purpose mortar for the repair of concrete, to both horizontal and vertical surfaces. It can also be used as a render.

### Features and benefits

- Factory pre-blended products eliminate on site mixing errors.
- No problems of quality, availability and grading of local cements and aggregates.
- Improved chemical resistance.
- Resistant to water penetration.
- Non toxic - can be used in contact with potable water.
- Suitable for internal and external application - improved freeze/thaw resistance.
- Excellent adhesion.
- Early high strengths.
- Agreement approved as part of the Mulsifix Concrete Repair System.

### Limitations of use

Typical thickness of application is from 6mm to 30mm. For larger areas > 1m<sup>2</sup>, provide movement joints.

### Typical Properties

25kg Mulsifix Repair Mortar with 2.5 litres of water cured at 20°C and 50-60% RH.

	3 days	7 days	28 days
Compressive strength (BS 6319: Part 2: 1983)	28N/mm <sup>2</sup>	35N/mm <sup>2</sup>	45N/mm <sup>2</sup>
Tensile strength (BS 6319: Part 7: 1985)	-	3.3N/mm <sup>2</sup>	4.4N/mm <sup>2</sup>
Flexural strength (BS 6319: Part 3: 1983)	-	6.7N/mm <sup>2</sup>	9.2N/mm <sup>2</sup>
Plastic density	2200kg/m <sup>3</sup>		

### Permeability

Tests carried out by Queens University Belfast using CLAM test. Samples soaked for 24 hours prior to test (permeability coefficient only).

	Permeability Coefficient (m/sec)	Initial Absorption (m/sec)
Mulsifix Repair Mortar with 2.5 litres of water per 25kg	1.35x10 <sup>-14</sup>	12.2x10 <sup>-14</sup>
OPC Concrete mix with water/cement ratio 0.6	48x10 <sup>-14</sup>	211x10 <sup>-14</sup>
OPC Concrete with water/cement ratio 0.4	2.3x10 <sup>-14</sup>	19.6x10 <sup>-14</sup>

Air permeability by Figg Permeability Method - 570 seconds  
Ref: Magazine of Concrete Research Vol 36, N<sup>o</sup> 129, Dec. '84

### Chemical resistance

Mulsifix Repair Mortar has greater chemical resistance to mild acid attack than normal sand/cement mixes, but in situations liable to chemical spillage the epoxy resin based systems are

### Application

#### Surface preparation

#### a) Concrete

Concrete substrates must be adequately prepared either by use of a suitable mechanical method such as scabbling, grit blasting, needle gunning, or other appropriate means.

Old concrete surfaces contaminated with oil or grease require suitable preparation such as steam cleaning in conjunction with a suitable detergent. Care must be taken to ensure that the oil or grease is removed from the surface and not simply spread over a large area. New concrete should be cured for at least 14 days using an approved curing technique e.g. polythene film. Spray-on curing membranes are unsuitable for use on substrates where Mulsifix mixes are to be applied.

Where repairs are carried out, feather edging is not recommended; therefore, the perimeter of area to be repaired should be cut back to provide a square edge.

Prior to the application of bonding slurry, the concrete should be thoroughly wetted but all surface water must be removed.

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### b) Steel substrates

Steel substrates should be degreased with a suitable solvent followed by a grit blasting treatment to Swedish Standard Spec. Sa2 1/2, immediately prior to bonding.

However, in many instances where chloride ion induced corrosion is absent, wire brushing to a clean bright surface may be adequate.

Where reinforcement is exposed, the concrete should be cut back behind the steel to enable cleaning around the whole circumference of the bar.

### Mixing

Repair Mortar must be mixed in a forced action mixer such as a Mixal or Creteangle. Full bags of Mulsifix Keycoat should also be machine mixed but small quantities can be mixed by hand.

### Mulsifix Keycoat bonding slurry

Slowly add contents of a 25kg bag of Mulsifix Keycoat to 9 litres of water mixing continuously to a smooth creamy consistency. This is sufficient to cover an area of 25m<sup>2</sup>. For small quantities mix in the ratio of 2 volumes of Keycoat to 1 volume of clean water.

### Mulsifix Latex-Slurry Boadcoat

Using approximately 2 volumes of cement and 1 volume of Mulsifix Latex, mix to a smooth, creamy consistency, adding extra water if required (up to 1 volume). The mixed material has a workable life of 1-2 hours in the bucket depending on temperature and type of cement.

Apply the slurry by a stiff brush and scrub well in. The slurry must be tacky when applying the Mulsifix Repair Mortar or other Mulsifix products.

In hot weather the slurry dries quickly and, therefore, it is advisable that the Repair Mortar is mixed ready for application before the bonding slurry is applied. If the bonding slurry does dry it must be removed mechanically and a further coat applied.

### Mulsifix Repair Mortar

Slowly add the contents of a 25kg bag of Mulsifix Repair Mortar to 2.5 litre of clean water until a uniform colour and consistency is attained. Apply to the tacky Mulsifix Keycoat, compact into position and finish with a steel float.

For vertical or soffit repairs carefully tamp the mortar into position in layers of 15 to 20mm, and allow to reach initial set (approx. 3 hours at 15°C) before applying the next layers of bonding slurry and Repair Mortar.

When replacing cover on steel reinforcement the minimum cover should be 12mm. However, where this is not practical, for long item re-inforcement protection where low cover replacement is undertaken (this must be a minimum of 6mm thickness) we would recommend that all repairs are over coated with a protective coating appropriate for the service conditions: please contact our Technical Department.

On small floor repairs cut out the damaged concrete to ensure the repair is tied into the surrounding concrete. Use Mulsifix Latex-Heavy duty floor topping mix for large repairs.

After effecting repairs, it is recommended that the surrounding concrete is sealed with Hardac Acrylic Sealer, which is a low viscosity in-surface sealer, to reduce the problems of degradation of concrete adjacent to the repair. Alternatively on vertical and soffit repairs, clean the surface, apply one coat of Sealercoat to stabilise and the two coats of an anti-carbonation coating Weber. Cote clear, smooth or EC.

### Curing

Good curing is essential. Immediately after the finishing operation, apply Cure-Rite by spray. Do not use Cure-Rite between layers or where a finishing coat is to be applied, but spray with Sealercoat and cover with close contact polythene sheet.

### Packaging and coverage

Mulsifix Repair Mortar is supplied in 25kg bag which yield 12.5 litres when mixed with 2.5 litres clean water.

Coverage is approximately 1m<sup>2</sup> at 12.5mm thick.

Mulsifix Keycoat is also supplied in 25kg polythene lined bag which when mixed with 9 litres clean water will cover an area of 25m<sup>2</sup> approximately.

Mulsifix Latex is supplied in 1, 5, 25 and 200 litres non-returnable container. Coverage for slurry bondcoat mix is approximately 3.3 m<sup>2</sup> per litre.

NB: Actual coverage must be checked by the contractor prior to ordering.

### Storage

Store in cool, dry conditions. Do not store above 40°C. Shelf life in undamaged bags, in correct storage conditions is approximately 12 months.

### Precautions

Do not add water above quoted recommendations.

Use only clean water; do not use water which has a dissolved salt content.

Do not place when substrate temperature is below 4°C or when ambient temperature is below 4°C on a falling thermometer.

Protect from frost.

When fully cured Mulsifix Repair and bonding are stable to freeze thaw conditions but should not be applied when conditions are not

### Health and safety

Mulsifix mixes contain cement which is alkaline and may cause skin irritation. We, therefore, recommend the use of protective clothing and gloves. Mixing should be carried out in well ventilated conditions and breathing of dust must be avoided. Any powder contacting the skin should be washed off as soon as possible and any contamination of the eyes should be treated by irrigating with copious amounts of clean water. If irritation persists, obtain immediate medical advice. For further information on safe handling,

please refer to the Material Safe Handling Guide, which also contains all data and information relating to the Control of Substances Hazardous to

### Technical service

We can provide technical service at the specification stage and/or during application through our Technical Department or Laboratory. Detail specification or further information can be provided for specific projects or more general works. Site visits and on-site demonstrations can be arranged on request.



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