

# MAXTREAT<sup>®</sup> EHS

Epoxy Based High Strength Repair Mortar



Maxtreat<sup>®</sup> EHS is based on a high quality solvent-free epoxy resin system. The special silica aggregates provide high strength and excellent abrasion resistance. Maxtreat<sup>®</sup> EHS is a three - component material supplied in pre-weighed quantities ready for on-site mixing and use.

## Uses

- Maxtreat<sup>®</sup> EHS is used for the fast and permanent reinstatement of concrete, particularly where high strength, abrasion-resistance and resistance to chemicals is required.
- The product is designed for horizontal use but can be applied vertically, although generally in thinner sections.
- It is ideally suited for acid tanks, sea walls, industrial floors and for use as a bedding mortar.
- Maxtreat<sup>®</sup> EHS can be used for emergency repairs where fast strength gain is important. When properly compacted, the mortar is highly impermeable.
- In certain instances, Maxtreat<sup>®</sup> EHS can be used on metal substrates.

Contact the local Thermax office for advice in respect.

## Benefits

- **High ultimate strength-** Suitable for structural use.
- Early development of strength minimises disruption time.
- **Abrasion resistance-** Suitable for heavy traffic areas.
- **Chemical resistance-** Resistant to a wide range of chemicals.
- **Curable under damp conditions-** Cured product is highly impermeable to water.
- Typically twice as strong as good quality concrete.
- Pre-weighed components ensure consistency.

## Technical Support

Thermax offers a comprehensive range of high performance, high quality concrete repair and construction products. In addition, Thermax offers a technical support package to specifiers, end-users and contractors, as well as on-site technical assistance in locations all over the country.

## Design Criteria

Maxtreat<sup>®</sup> EHS can be applied in sections up to 50mm thickness in horizontal locations and 12mm in vertical locations in a single application and without the use of formwork. The material should not be applied at less than 5mm thickness. Greater thicknesses than those specified above can be achieved by the application of subsequent layers. Larger areas should be applied in a 'checker board' fashion. Local Thermax office shall be contacted for advice.

## Properties

The following results were obtained at a temperature of 300°C unless otherwise specified.

Test Method	Typical Result
<b>Compressive Strength (BS 6319 Part 2)</b>	80N/mm <sup>2</sup> at 7 days
<b>Flexural Strength (BS 6319 Part 3)</b>	14N/mm <sup>2</sup> at 7 days
<b>Tensile Strength (ASTM C 307)</b>	5N/mm <sup>2</sup> at 7 days
<b>Pot Life</b>	45 minutes at 30°C
<b>Initial Hardness</b>	24 hours
<b>Full Cure</b>	7 days
<b>Mix Density</b>	2.0-2.2 gm/cc
<b>Chemical Resistance</b>	The low permeability of Maxtreat <sup>®</sup> EHS retards chemical attack in aggressive environments.

Performance of Maxtreat<sup>®</sup> EHS blocks continually immersed at 20°C:

Citric Acid	10%	Resistant
Tartaric Acid	10%	Resistant
Hydrochloric Acid	18%	Resistant
Sodium Hydroxide	50%	Resistant
Diesel/ Petrol	100%	Resistant
Sulphuric Acid	10%	Resistant
Sugar Solutions	Saturated	Resistant
Lactic Acid	10%	Resistant
Hydrocarbons	100%	Resistant
Phosphoric Acid	50%	Resistant
Nitric Acid	10%	Resistant
Acetic Acid	5%	Resistant

## Specification Clauses

### High Strength Epoxy Repair Mortar

The high strength repair mortar shall be Maxtreat<sup>®</sup> EHS, a three component epoxy resin with a density of around 2000kg/m<sup>3</sup>. The cured mortar shall achieve a compressive strength of 60 N/mm<sup>2</sup>, a flexural strength of 10N/mm<sup>2</sup> and a tensile strength of 5 N/mm<sup>2</sup> when tested at 7 days.

## Instructions for Use

### Preparation

Clean the surface and remove any dust, unsound material, plaster, oil, paint, grease, corrosion deposits or algae. Roughen the surface and remove any laitance by light scabbling or grit blasting. Saw cut or cut back the extremities of the repair locations to a depth of at least 5mm to avoid feather edging and to provide a square edge. Break out the complete repair area to a minimum depth of 5mm up to the sawn edge. Oil and grease deposits should be removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. The effectiveness of decontamination should then be assessed by a pull-off test.

Expose fully any corroded steel in the repair area and remove all loose scale and corrosion deposits. Steel should be cleaned to a bright condition paying particular attention to the back of exposed steel bars. Grit blasting is recommended for this purpose.

### Reinforcing Steel Priming

The cleaned steel should be coated within 3 hours. Apply one full coat of Teczinc Primer and allow to dry before continuing. If any doubt exists about having achieved an unbroken coating, a second application should be made and, again allowed to dry before continuing.

### Substrate Priming

The substrate should be primed using Tecfloor PR. The primer should be mixed in the proportions supplied, adding the entire contents of the 'hardener' tin to the 'base' tin. The two components should be thoroughly mixed together, for 3 minutes. The mixed primer should be scrubbed well into the prepared substrate, taking care that all imperfections in the surface are properly coated and avoiding 'puddling' in depressions. If the primer is absorbed within 30 minutes, a second coat should be applied before continuing. Maxtreat<sup>®</sup> EHS can be applied as soon as the primer has started to gel but still has surface 'tack'. This is normally

between 30 minutes and 4 hours dependent on the ambient and substrate temperatures. If the primer cures hard, a second application must be made before application of Maxtreat<sup>®</sup> EHS. The usable life of the mixed primer is approximately 60 minutes at 20°C or 30 minutes at 35°C.

### Mixing

Care should be taken to ensure that Maxtreat<sup>®</sup> EHS is thoroughly mixed to produce a fully homogenous, trowellable mortar. The 'hardener' and 'base' components should be stirred thoroughly in order to disperse any settlement before mixing them together. The entire contents of the 'hardener' container should then be emptied into the 'base' container and thoroughly mixed for 3 minutes, then emptied into a forced action mixer of adequate capacity. Add the aggregate slowly with the mixer running and continue for 2 to 3 minutes until all the components are thoroughly blended. Under no circumstances should part packs be used.

### Application

Apply the mixed Maxtreat<sup>®</sup> EHS to the prepared substrate by wood float, pressing firmly into place to ensure positive adhesion and full compaction. Thoroughly compact the mortar around any exposed reinforcement. In restricted locations, or where exposed reinforcing steel is present, application by gloved hands is an acceptable alternative but, in all cases, the product must be finished to a tight surface with a steel trowel. Maxtreat<sup>®</sup> EHS mortar can be applied in sections up to 50mm thickness in horizontal locations or up to 12mm thickness in vertical locations in a single application and without the use of formwork.

Thicker vertical sections may sometimes be possible depending on the profile of the substrate and the volume of exposed reinforcing steel but should generally be built up in layers, when larger areas are being rendered, a checkerboard application technique is recommended.

**Note:** The minimum application thickness of Maxtreat<sup>®</sup> EHS is 5mm.

## Buildup

If sagging occurs during application, the Maxtreat<sup>®</sup> EHS should be completely removed and reapplied at a reduced thickness on to the correctly reprimed substrate.

## Finishing

Maxtreat<sup>®</sup> EHS is finished by the use of a wood float and closed with a steel trowel. The completed surface should not be overworked.

## Over Coating with Protective / Decorative Finishes

Maxtreat<sup>®</sup> EHS is extremely durable and resistant to a wide range of acids, alkalis and industrial chemicals and will provide excellent protection to the concrete and embedded steel reinforcement within the repaired locations. The surrounding parts of the structure may benefit from the application of a protective coating, thus bringing them up to the same protective standard as the repair itself. Thermax recommend the use of the T-Guard<sup>®</sup> range of epoxy resin, chemical resistant, protective coatings.

For surrounding areas not subjected to chemical attack or physical wear, Thermax recommend the use of T-Guard<sup>®</sup> range of anti-carbonation, anti-chloride protective coatings. These products provide a decorative and uniform appearance as well as protecting areas of the structure which might otherwise be at risk from the environment.

T-Guard<sup>®</sup> epoxy resin protective coatings should be applied within 24 hours. T-Guard<sup>®</sup> products should not be applied until the Maxtreat<sup>®</sup> EHS is at least 3 days old. For further advice, consult the local Thermax office.

## Cleaning

Teczinrich, Tecfloor<sup>®</sup> PR and Maxtreat<sup>®</sup> EHS should be removed from tools and equipment with Cleaning Sol immediately after use.

## Health and Safety Instructions

Teczinc Primer, Tecfloor<sup>®</sup> PR, Maxtreat<sup>®</sup> EHS and Cleaning Sol should not come in contact with skin or eyes, or be swallowed. Adequate ventilation shall be provided and inhalation of vapours shall be avoided. Some people are sensitive to resins, hardeners and solvents. Suitable protective clothing, gloves and eye protection shall be worn. If working in confined areas, suitable respiratory protective equipment must be used.

## Storage

### Shelf life

All products have a shelf life of 12 months at 30° C if kept in a dry store in the original, unopened bags or packs.

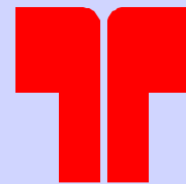
## Storage Conditions

Store in dry conditions in the original, unopened bags or packs. If stored at high temperatures, the shelf life may be reduced to 4 to 6 months.

## Packing

Product	Packaging	Coverage
Maxtreat <sup>®</sup> EHS	10 litre pack	2m <sup>2</sup> @ 5mm thickness
Tecfloor PR	1 & 4 litre packs	5.5-6.5m <sup>2</sup> /litre
Cleaning Sol	5 & 20 litre tins	-

**Note:** The coverage figures given above are theoretical due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.



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