

# MasterStrength™ ER 1406

## (Concresive® 1406)

Epoxy Based, Repair and Anchorage Mortar

### Material Description

**MasterStrength™ ER 1406** is epoxy based repair, anchorage and adhesive mortar with two parts.

Complies with EN 1504-4 and EN 1504-6

### Areas of Application


- Chemical anchoring in concrete and brick walls
- Repair and insulating of wide cracks
- Bonding of various types of construction materials such as steel, concrete, brick to each other
- Cap seal and entry ports installation in epoxy polyurethane injection works

- Fixing the guard bars and seismic isolators to the bridges and viaducts
- Anchoring the rods and deformed bars to the concrete, stone or brick

### Characteristics and Benefits

- Pasty consistency, easy to apply and non-sag properties in over-head applications
- Perfect adhesion to the concrete and steel
- Resists to chemicals
- Water and gas impermeable
- Perfect adhesion to the damp surfaces on concrete
- Solvent free

### Technical Properties

Structure of the Material	Epoxy Resin Epoxy Hardener	
<b>MasterStrength™ ER 1406</b> Part A <b>MasterStrength™ ER 1406</b> Part B		
Color	Grey	
Mixed Density	1,70 ± 0,05 kg/liter	
Compressive Strength TS EN 196	(1 day) (7 days)	30 N/mm <sup>2</sup> 60 N/mm <sup>2</sup>
Flexural Strength TS EN 196	(1 day) (7 days)	17 N/mm <sup>2</sup> 25 N/mm <sup>2</sup>
Bonding Strength (7 days)	To concrete To steel	>3,0 N/mm <sup>2</sup> >3,5 N/mm <sup>2</sup>
Application Thickness	Min. 2 mm Max. 30 mm	FM
Application Temperature	+5°C + 30°C	
Pot Life	40 minutes	
Recoat After	18-24 hours	
Walkability Time (+20°C)	24 hours	
Service Temperature	-15°C + 90°C	
Fully Cured at 20°C	7 days	

Typical values are obtained from the test results in 23°C and 50% relative humidity conditions. High temperatures shorten the curing and working time, lower temperatures extends the durations.

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### Processing Method

#### (A) Preparation of Substrate

The concrete surfaces must be sound, clean and dry. It shouldn't be weakened by over-troweling and lack of curing. The concrete should be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material and dust. If there is a water leakage it must be drained or properly plugged. Steel surfaces should be cleaned from rust by sand blasting and if needed new reinforcement should be installed. The edges of the broken surfaces should be saw cut.

#### (B) Mixing

**MasterStrength™ ER 1406** has two parts in pails, produced according to right mixing ratio. Material temperature should be between 15 - 25°C before mixing. Part B should be added into the Part A without any remaining material in the pail. It should be mixed with using a proper mixer (~300rpm) for polymer mixing. Mix the parts at least 3 minutes to have a homogenous mixture.

#### Mixing Ratio

MasterStrength™ ER 1406	Part A	Part B
Quantity	3,75 kg	1,25 kg
Mixed Density	1,70 kg/liter	

#### (C) Processing

**MasterStrength™ ER 1406** should be applied to the prepared surface by using a steel spatula or steel trowel. Application thickness should be between 2-30 mm. For anchoring the anchor holes should be drilled 6 mm wide than anchor bar's diameter and in designed depth. The holes should be cleaned by using steel brush and air guns. Mixed material should be put in a mortar gun with a proper nozzle and start to fill the holes into half depth. Install the anchor bar

into the hole slowly by screwing and do not drive the bars.

### Consumption

1.70 kg/m<sup>2</sup> for obtaining 1 mm thick layer.

### Point to Consider

- During the application the substrate and ambient temperature should be between 5°C - 30°C.
- Resinous materials' pot life and curing times vary depending on the relative humidity, substrate and ambient temperature. Reaction gets slow in low temperatures and it causes to extension on pot life and working time. On the other hand high temperatures speed up the reaction, which results to short pot life and working time. For full curing of material, both the substrate and ambient temperature shouldn't be under allowed application temperature.
- MasterStrength™ ER 1406** is provided in ready to mix pails. Do not add any solvent etc. Into the mixture during the application.
- Mixing should be made with proper mixers and do not allow mixing by hand.

### Cleaning of Tools

After the application all tools should be cleaned with a proper detergent or solvent such as thinner. **MasterStrength™ ER 1406** can be cleaned with only mechanical abrasion after hardening.

### Packaging

5 kg set

**MasterStrength™ ER 1406 Part A:** 3.75 kg pail

**MasterStrength™ ER 1406 Part B:** 1.25 kg pail

### Shelf Life

18 months after the production date under appropriate storing conditions. Opened packages

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have to be stored by tightly sealing the bag/cover and must be used in one week.

### Storage

Must be stored in unopened original packing, and in cool (+5°C - +25°C) and dry environment protected from freezing. In short-term storing, maximum 3 palletes can be stowed on top of each other and delivery has to be according to first in first out system. In long-term storing, the palletes must not be stowed on top of each other.

### Health and Safety

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

### Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

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