



# **KEM MORTAR HS**

**POLYMER-MODIFIED, FIBER-REINFORCED, STRUCTURAL  
REPAIR MORTAR**

**DESCRIPTION:**

Kem Mortar HS is single component, cement-based, microsilica and polymer-modified, fiber- reinforced restoration mortar. It is specially designed for high performance structural concrete repair exposed to an aggressive environmental ambient and provides an additional protection of the steel reinforcements. Its long open time and thixotropy allow the repair of new and old concrete in a simple way, without the need for using any form work, applied manually or by mechanical means.

**PRODUCT SPECIFICATION / COMPLIANCES:**

- ◆ Nature: Grey Powder
- ◆ Mixing water (% weight w/ prod ) : 16 + 1
- ◆ Consistency after mixing: Thixotropic Mortar
- ◆ Pot life at 30°C: 30 – 45 minutes
- ◆ Flexural strength : > 7 Mpa - 28 days.

Age (days)	Compressive Strength Mpa
1	20
3	30
7	40
28	60

**PRIMARY APPLICATIONS:**

- ◆ Structural concrete repair affected by corrosion of reinforcements in marine environment, bridges, harbours, dams, etc.
- ◆ Concrete repair affected by repeated loads.



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- ◆ Repair of pre-fabricated concrete elements.
- ◆ Repair of concrete structures with carbonation process.
- ◆ Repair of damaged concrete by deicing-salts, freeze/thaw cycles, mechanical impacts, etc.
- ◆ Repair of pre-fabricated concrete elements.
- ◆ Maintenance of industrial areas damaged by aggressive environment, acid rain, atmospheric pollution, etc.

### **PRODUCT FEATURES:**

- ◆ High adhesion to concrete and reinforcements. Does not require special primers. Loads are transmitted onto the repaired structure.
- ◆ High impact and mechanical strength. Long lasting repairs.
- ◆ Good thixotropy. Application in successive layers without slump or the need to use form work. Allows high thickness per layer.
- ◆ Its open setting time allows the quick completion of the repair of large surfaces.
- ◆ Good chemical resistance in aggressive environmental ambient due to its microsilica content.
- ◆ Waterproof. Withstands freeze/thaw cycles.
- ◆ Offers high resistance to carbonation penetration.
- ◆ Easy workability and application. It can also be sprayed by wet method.
- ◆ Single component mortar. Only requires water for mixing and it is odourless, making it suitable for poor ventilated areas.

## **SURFACE PREPARATION:**

Remove all damaged and loose concrete in the repair area, clean cut the edges perpendicularly to a minimum depth of 5 mm. Expose all corroded reinforcement, removing all the concrete until the edges of the bars are not affected by rust. Remove concrete all around the reinforcement for an efficient cleaning and to surround it with a minimum thickness of at least 1 cm of Kem Mortar HS. Eliminate rust by wire brush, needle gun, sand or shot blasting, etc. For additional protection, an application of the Rust converter Kem Ruscon can be used.

Prior to application of Kem Mortar HS dampen the exposed surface until saturated but do not leave free-standing water.

## **MIXING:**

Kem Mortar HS is mixed exclusively with clean water, free from contaminants, either manually or mechanically by low speed drill (400 – 600rpm)

One 25 kg bag Of Kem Mortar HS requires about 3.75 to 4.25 litres of water to achieve proper consistency of a repair mortar (16% ± 1%). For applications using pump or spray machines the mixing water can be increased up to 4.5 litres per bag. In any case these quantities are only indicative and should be checked depending on the desired consistency and the existing ambient conditions.

## **APPLICATION SYSTEM:**

For an optimum bonding prepare a slurry, mixing 5 parts of Kem Mortar HS with 1 part of water, mixing well until achieving a homogeneous consistency without any lumps. Apply the slurry using brush on the surface to be repaired and on the reinforcement bars, filling all voids and pores.

While the slurry is still fresh, start placing Kem Mortar HS with the consistency of a repair mortar and apply layers between 5 and 50 mm. thick. Place special attention in pressing with the trowel to prevent any air from being trapped. Mark the surface of each layer with the trowel to improve the adhesion of the following one, which can be placed after about 30 minutes. Shape the last layer as desired before the final hardening occurs.

Once the repair is finished it can be coated with cement-based coating Kem Brushcoat or acrylic-based coating Kem Proof EWC.

#### **CURING:**

Under extreme conditions of wind or heat, lightly spray water over the repaired areas for at least an hour. It is also convenient to cover them during the first 24 hours if the temperature is above 30 °C and the relative humidity is below 50%.

#### **COVERAGE:**

Estimated consumption of Kem Mortar HS are approximately 1.85 kg/m<sup>2</sup> per mm. thickness. One 25 kg sack of Kem Mortar HS fills approximately 13.75 litres

#### **PACKAGING:**

Kem Mortar HS is supplied in 25 kg bags.

#### **SHELF LIFE:**

Nine months in bags in their original unopened and in a dry condition

#### **TECHNICAL SERVICE:**

Chembond has established itself in various fields on the basis of its dependable technical service. For this purpose, we maintain a well equipped laboratory for research & quality assurance of all products. Our experienced personnel are always on call and would always be available for product demonstrations and product performance monitoring.

#### **SAFETY PRECAUTIONS:**

KEM MORATAR HS is cementitious alkaline product; care should be taken to avoid contact with eyes, skin, mouth and food stuff. Any splashes on the human body must be washed with plenty of water.

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