KEM MORTAR HS N

High Build Polymer Modified Repair Mortar

Ref. CR/MR-0822

Description

KEM Mortar HS N is a single component, cement based, micro- silica and polymer modified fibre reinforced restoration mortar. It is specially designed for high performance structural concrete repair and for structures exposed to aggressive environmental ambience. It provides an additional protection for steel reinforcements. It has long open time and thixotropy. This allows for repair of new and old concrete in a simple way, without the need for any form work applied manually or by mechanical means.

Uses

- Structural concrete repair affected by corrosion of reinforcements in marine environment, bridges, harbours, dams, etc.
- Concrete repair affected by repeated loads
- 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 an aggressive environment such as acid rain, atmospheric pollution, etc.

Advantages

- 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
- Withstands freeze / thaw cycles
- Good thixotropy. Application in successive layers without slump or the need to use form work allows high thickness per layer
- Offers high resistance to carbonation penetration
- Easy workability and application
- Single component mortar. Only requires water for mixing
- Its open setting time allows quick completion of repair of large surfaces
- Odourless, making it suitable for poorly ventilated areas

Typical Properties

Nature : Grey powder

Mixing Water (% weight w/powder): 14 ± 1

Consistency After

Mixing : Thixotropic mortar

Pot Life at 20°C : 45-60 minutes

Waiting Time for Between Layer : 1-2 Hrs.

Flexural Strength: ASTM C 580 - at 20° C

3 N/mm^2 at 1 days
6 N/mm^2 at 7 days
9 N/mm^2 at 28 days

Wet Density : BS 1881 – 2150 kg/M^3, giving a yield of a 12.8 L/25 kg bag at mortar consistency.

Bond Strength : BS 6319 slant/shear - substrate concrete pre-soaked with water and slurry primed with KEM BOND 50 @ 28 days 50

Age (Days)	Compressive Strength (Mpa)
1	25
3	30
7	40
28	60

N/mm^2.

Compressive Strength: BS 1881, Part 116 in 100 mm cubes cured under restraint at a water/powder ratio: 0.15 to 0.17

Direction for use

Remove all damaged and loose concrete in the repair area. Cut the edges to a minimum depth of 5 mm. Ensure that the edges are cut perpendicular to the surface. Expose all corroded reinforcements by removing all the concrete right till the edges of the bars not affected by rust. Eliminate rust, if any, by wire brush, needle gun, sand/shot blasting, etc. For additional protection, an application of rust converter such as KEM Ruscon can be used.

Remove concrete all around the reinforcement for an efficient cleaning. Surround the reinforcement with a minimum thickness of at least 1 cm of KEM Mortar HS N. Prior to application of KEM Mortar HS N dampen the exposed surface until saturated but do not leave free standing water.

Mix KEM Mortar HS N with clean water, free from contaminants. For optimum bonding, prepare slurry by mixing 5 parts of KEM Mortar HS N with 1 part of water. One 25 kg bag of KEM Mortar HS N requires about 3.75 to 4.25 of water to achieve proper consistency of a repair mortar (16% ± 1%).

Mix manually or mechanically at low speed drill of 400 - 600 rpm. Mix till a homogeneous consistency without any lumps is achieved.

For applications using pump or spray machines, the mixing water can by increased up to 4.5 /bag.

Apply this slurry using a brush, taking care to fill all voids and pores. While the slurry is still fresh, start placing KEM Mortar HS N with the consistency required and apply layers between 5 - 50 mm thicknesses. Ensure no air is trapped by pressing with a trowel.

Mark the surface of each layer with the trowel to improve the adhesion of the following layer 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 Brush coat/73 or acrylic-based coating KEM Proof EWC Black. 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%.

KEM Mortar HS (Kgs)	Water (litres)	Consistency	Coverage
25	3.0	Thixotropic	2200 kg/m^3
25	3.5	Trowelable	

Packaging

25 kg moisture-resistant bags.

Storage and Shelf life

6 months in original unopened bags if stored in dry conditions.

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

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