LM-S6

A SIKA COMPANY

LM-S6 is a high performance, multi-purpose, polymer-modified, pre-packaged, concrete repair material. It is a pre-blended, pre-packaged, high performance, cementitious concrete repair and construction material containing Portland cement, a redispersible polymer, 6 mm (¼ inch) stone and other carefully selected components.

FEATURES & BENEFITS

- Allows for easy on-site production of polymer modified concrete as required
- Site specific production can eliminate the need for a concrete pump
- Properties similar to conventional concrete, thus offering excellent compatibility to parent concrete
- Reduced bleeding
- Improved resistance to sulphate attack
- Very low permeability
- Low shrinkage
- Moist cure for only 24 hours
- Membrane application possible in only 24 hours after placement, under certain conditions*
- Excellent bond to parent concrete without requiring a bonding agent
- Compatible with integral, pre-applied and/or post-applied corrosion inhibitors**
- Designed with natural normal-density non-reactive fine and coarse aggregates to eliminate potential alkali-aggregate reactivity (AAR)
- All KING products are manufactured using ISO 9001:2015 Certified Processes

*See the Membrane Application section for more detailed information.

**For more information regarding the use of a corrosion inhibitor in conjunction with LM-S6, please contact your KING Technical Representative.

OPTIONAL FEATURES & BENEFITS

CORROSION INHIBITOR

LM-S6 CI

- Corrosion inhibitor protects steel reinforcing and other metals embedded in concrete from corrosion induced by carbonation or chlorides
- Pre-blended corrosion inhibitor provides the correct dosage to enhance corrosion protection

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USES

- Partial depth rehabilitation of concrete slabs in parking garages, on balconies and/or on bridge decks
- Minimum application thickness of LM-S6 is 25 mm (1 inch)
- For full depth repair or for repair edges longer than 1 m (3 ft), refer to LM-S10
- For overlay applications, please contact your KING Technical Representative

PROCEDURES

Surface Preparation: All surfaces to be in contact with LM-S6 must be free from dust, oil, grease or any other foreign substances that may interfere with the bond of the material. Remove all delaminated or unsound concrete providing a roughened surface and a minimum of 25 mm (1 inch) clearance behind any corroded reinforcing steel. The perimeter of the repair area should be sawcut a minimum of 20 mm (¾ inch). Clean the area to be repaired with potable water, leaving the concrete saturated but free of standing water (SSD).

Mixing: Mechanical mixing using a concrete drum-mixer, mortar-style mixer or drill-mixer, is required when mixing LM-S6. Do not mix LM-S6 with a planetary mixer and do not mix LM-S6 manually. **Place 2.1 L (0.55 US gallon) of water into mixer** and slowly introduce entire bag of LM-S6. If additional water is required to meet the target slump slowly add additional water while mixer is running, not exceeding the **maximum recommended water content of 2.5 L (0.66 US gallon) per 30 KG (66 lb) bag.** Continue mixing for 3 minutes and stop only when material has obtained a consistent homogeneous mix.

Placing: Place LM-S6 only when ambient, substrate and mix temperatures are maintained between 10 °C (50 °F) and 30 °C (86 °F). In colder temperatures, place concrete only when the following conditions are met:

1. When ambient, substrate and mix temperatures are expected to be above 7 °C (45 °F) for a minimum of 36 hours.
2. Insulation or heating enclosures are provided in accordance with ACI 306, “Guide to Cold Weather Concreting”.

Place material uniformly and consolidate by forcing it down to the surface of the parent concrete and around the underside of the rebar using a concrete vibrator, following ACI 309 R “Guide for Consolidation of Concrete”, without causing segregation. Ensure material has filled all voids and completely encapsulated any exposed rebar in the area to be repaired. For slab finishing, the use of a wood or magnesium float is recommended.

CURING

Commence finishing immediately after LM-S6 has been placed and complete before surface of concrete has been allowed to dry. Curing is essential to optimize the physical properties of LM-S6 and minimize plastic shrinkage. Cure immediately after material has reached initial set in accordance with ACI 308 “Guide to Curing Concrete”. Continuously moist cure for only a period of 24 hours. Alternatively, apply a water-based curing compound that complies with ASTM C 309. Curing is particularly critical in rapid moisture loss conditions such as high temperatures, high winds and low humidity.

MEMBRANE APPLICATION

Always follow the recommendations of the membrane manufacturer and test the moisture content before applying a membrane. Contact the membrane manufacturer or your KING Technical Representative for any additional information.

	Standard Application Without Primer***	Rapid Application With Primer****
Recommended Curing Method	Moist Curing (in accordance with Curing section of TDS)	Protect From Evaporation (ie. cover with a plastic sheet)
Recommended Curing Period	24 Hours	24 Hours
Recommended Drying Period	24 Hours	-
Recommended Delay Before Membrane Application	48 Hours	24 Hours

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***For more information regarding membrane application without the use of a primer, refer to the KING Technical Report titled “Membrane Application to King Construction Products”.

****For more information regarding rapid membrane application with the use of a primer, refer to the KING Technical Report titled “Rapid Membrane Application to King Construction Products”.

TECHNICAL DATA

The following data is representative of typical values achievable under laboratory conditions. Results in the field may vary.

MASS DENSITY

ASTM C 39	2360 kg/m^3 (147 lb/ft^3)

COMPRESSIVE STRENGTH

ASTM C 39	**50% HUMIDITY CURE**
1 Day	21 MPa (3000 psi)
3 Day	25 MPa (3625 psi)
7 Day	30 MPa (4350 psi)
28 Day	40 MPa (5800 psi)

FLEXURAL STRENGTH

ASTM C 78	
28 Day	7.0 MPa (1015 psi)

MODULUS OF ELASTICITY

ASTM C 469	
28 Day	26.0 GPa (3.8 x 10^6 psi)

BOND STRENGTH BY SLANT SHEAR

ASTM C 882	
28 Day	14 MPa (2030 psi)

SALT-SCALING RESISTANCE

ASTM C 672	
50 Cycles	0.16 kg/m^2 (0.03 lb/ft^2)

CHLORIDE ION PENETRABILITY

ASTM C 1202
750 Coulombs

YIELD

- 30 KG (66 lb) bag yields approximately 0.014 m³ (0.5 ft³)
- 1,000 KG (2,205 lb) bag yields approximately 0.45 m³ (16.5 ft³)

PACKAGING

LM-S6 is normally packaged in 30 KG (66 lb) triple-lined bags and 1,000 KG (2,205 lb) bulk bags and polywrapped on wooden pallets. All KING products can be custom packaged to suit specific job requirements.

STORAGE AND SHELF LIFE

Material should be stored in a dry, covered area, protected from the elements. Unopened bags have a shelf life of 6 months.

SAFETY PROCEDURES

LM-S6 contains Portland cement and polymer. Normal safety-wear such as rubber gloves, dust mask and safety glasses used to handle conventional cement and polymer based products should be worn. Safety Data Sheets are available upon request.

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