

LM-S10 is a high performance, multi-purpose, polymer-modified, pre-packaged, concrete patching or overlay material. It is a one-component, pre-packaged, high-performance, cementitious, concrete repair and construction material containing Portland cement, a redispersible polymer, 10 mm (3/8 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*
- Ideal for full depth repair, does not need to be extended
- 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-S10, please contact your KING Technical Representative.

OPTIONAL FEATURES & BENEFITS

CORROSION INHIBITOR

LM-S10 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

USES

- Partial and full depth rehabilitation of concrete slabs in parking garages, on balconies and/or on bridge decks
- Rapid drain replacement
- Minimum application thickness of LM-S10 is 38 mm (1½ inches)
- For overlay applications, please contact your KING Technical Representative

PROCEDURES

Surface Preparation: All surfaces to be in contact with LM-S10 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 saw-cut 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-S10. Do not mix LM-S10 with a planetary mixer and do not mix LM-S10 manually. **Place 2.0 L (0.53 US gallon) of water into mixer** and slowly introduce entire bag of LM-S10. 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 2.25 L (0.60 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-S10 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 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-S10 has been placed and complete before surface of concrete has been allowed to dry. Curing is essential to optimize the physical properties of LM-S10 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

***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 2380 kg/m³ (149 lb/ft³)

COMPRESSIVE STRENGTH

ASTM C 39 **50% HUMIDITY CURE**
1 Day 15 MPa (2175 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 7.5 MPa (1088 psi)

MODULUS OF ELASTICITY

ASTM C 469
28 Day 26.8 GPa (3.9 x 10⁶ psi)

BOND STRENGTH BY SLANT SHEAR

ASTM C 882
28 Day 15 MPa (2175 psi)

UNIAXIAL DRYING SHRINKAGE

ASTM C 157
7 Day 220 µm/m
28 Day 480 µm/m
56 Day 600 µm/m

SALT-SCALING RESISTANCE

ASTM C 672
50 Cycles 0.12 kg/m² (0.02 lb/ft²)

CHLORIDE ION PENETRABILITY

ASTM C 1202 600 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-S10 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-S10 contains Portland cement and polymer. Normal safetywear 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.

Warranty: This product is designed to meet the performance specifications outlined in this product data sheet. If the product is used in conditions for which it was not intended, or applied in a manner contrary to the written recommendations contained in the product data sheet, the product may not reach such performance specifications. The foregoing is in lieu of any other warranties, representations or conditions, expressed or implied, including, but not limited to, implied warranties or conditions of merchantable quality or fitness for particular purposes, and those arising by statute or otherwise in law or from a course of dealing or usage of trade. [REV.0013_2459292.5]