

Duro-Crete is a high performance, pre-packaged, concrete repair mortar for partial depth repairs. It is a rapid-setting, cementitious, repair mortar containing hydraulic cements, well-graded, natural, fine aggregate and other carefully selected components.

## FEATURES & BENEFITS

- Improved workability and finishability
- Rapid-setting
- Improved early age strength development
- Excellent resistance to freeze-thaw cycling
- Enhances performance of cathodic protection system
- All KING products are manufactured using ISO 9001:2015 Certified Processes

## USES

- Partial depth rehabilitation of concrete beams, columns, and/or soffits in bridges, parking garages, balconies or other concrete structures
- Galvanic anode applications including new construction and rehabilitation

## PROCEDURES

**Surface Preparation:** All surfaces to be in contact with Duro-Crete 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. The perimeter of the repair area should be saw-cut a minimum of 6 mm (¼ inch). Clean the area to be repaired with potable water, leaving the concrete saturated but free of standing water (SSD). For maximum bond strength, use SAKRETE Concrete Adhesive. Place Duro-Crete at a minimum thickness of 6 mm (¼ inch) and a maximum thickness of 38 mm (1½ inches).

**Mixing:** Place 75% of required potable water into mixer and slowly introduce entire bag of Duro-Crete. Add balance of required water slowly while mixer is running, not exceeding maximum recommended volume of water. **Maximum recommended volume of water is 3.2 L (0.85 US gallon) per 25 KG (55 lb) bag.** Continue mixing until material has obtained a consistent homogeneous mix to a maximum of 1 minute.

**Placing:** Mix and substrate temperatures should be maintained between 5 °C (40 °F) and 30 °C (86 °F). For temperatures below 5 °C (40 °F) refer to Duro-Crete CT. In warm weather, ice water may be used as mix water to cool mix temperature and avoid short working times. When ambient temperature is above 30 °C (86 °F), refer to ACI 305, "Guide to Hot Weather Concreting".

### Placing (for slab repairs):

Place material uniformly and consolidate by forcing against the edge of the repair area and continue placing material toward the centre.

## CURING

Curing is essential to optimize the physical properties of Duro-Crete and minimize plastic shrinkage. Duro-Crete should be cured immediately after material has reached initial set in accordance with ACI 308 "Guide to Curing Concrete". Continuously moist cure for a minimum period of 7 days. Alternatively, moist cure for a minimum period of 24 hours and apply a 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.

## TECHNICAL DATA

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

### WET DENSITY

ASTM C 138 2215 kg/m<sup>3</sup> (138 lb/ft<sup>3</sup>)

### FLOW

ASTM C 1437 > 100%

### WORKING TIME\*

10 minutes

### SET TIME

ASTM C 191 (METHOD A)

Initial 25 minutes

Final 45 minutes

### COMPRESSIVE STRENGTH

ASTM C 109

4 Hour 5 MPa (725 psi)

8 Hour 7 MPa (1015 psi)

1 Day 15 MPa (2175 psi)

3 Day 25 MPa (3625 psi)

7 Day 30 MPa (4350 psi)

28 Day 35 MPa (5075 psi)

### FLEXURAL STRENGTH

ASTM C 348

28 Day 8 MPa (1150 psi)

### BOND STRENGTH BY SLANT SHEAR

ASTM C 882

28 Day 7.8 MPa (1130 psi)

### MODULUS OF ELASTICITY

ASTM C 469 27.5 GPa (4.0 x 10<sup>6</sup> psi)

### HARDENED HEIGHT CHANGE

ASTM C 1090

28 Day 0.03%

### SPLITTING TENSILE STRENGTH

ASTM C 496

4.5 MPa (650 psi)

### BOILED ABSORPTION

ASTM C 642

10%

### FREEZE-THAW RESISTANCE

ASTM C 666

104%

(Excellent durability factor)

### ELECTRICAL RESISTIVITY

1500 Ω·cm

## OPTIMUM PERFORMANCE

For repair applications exceeding 38 mm (1½ inches) use FA-S6, FA-S10, MS-S6, MS-S10, MS-S6 SCC, MS-S10 SCC or RS-S10 SCC, depending on the application.

## YIELD

25 KG (55 lb) bag contains approximately 0.012 m<sup>3</sup> (0.42 ft<sup>3</sup>).

## PACKAGING

Duro-Crete is normally packaged in 25 KG (55 lb) triple-lined 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 12 months.

## SAFETY PROCEDURES

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

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**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.0006\_2458717.5]