

CAT. No. CONREP-02-2008

DURCRETE

Shrinkage Compensated, Fiber Reinforced Micro-Concrete

DURCRETE is a ready to use blend of special cement, graded high-crushing strength aggregates and various polymer additives and only requires the addition of water to produce a very high strength, very low water-cement ratio non-shrink free-flowing micro concrete. The unique shrinkage-compensating system of **DURCRETE** does not rely on the liberation of gas and incorporates the latest technological advances in shrinkage prevention. **DURCRETE** is ready-to-mix and does not require any other addition except water.

ADVANTAGES

- Shrinkage compensated, fiber-reinforced.
- Polymer-modified; one component.
- Self-levelling and pumpable
- Very high mechanical strength, similar to conventional epoxy systems but without the added cost.
- Rapid strength gain
- Thermal compatibility with concrete.
- Excellent bond even without primer.
- Low permeability. Excellent resistance to carbonation, chloride ions, salts, sulfates, etc.
- Can be poured or pumped.

USES

DURCRETE is specially formulated for permanent and durable repair of large structural sections of concrete using form and pour technique. It is also used wherever a self levelling repair concrete is desired specially on heavily reinforced sections or difficult to access areas. Typical applications are for repairing concrete columns, beams walls, foundations, seawalls and structures requiring rapid strength gain. For horizontal concrete repair, use **ISOCRETE 100**.

SPECIFICATION

DURCRETE complies with the requirement of ASTM C387 for high early strength mortar. Also complies with EN 1504-3, Class R4, repair method 3.2, 4.4, 7.1 and 7.2.

TYPICAL PROPERTIES

1 . Compressive Strength (ASTM C109)	@ 7 days	75 N/ Sq.mm
	@28 days	85 N/Sq.mm.
2. Flexural strength (ASTM C348)	@28 days	> 9.0 N/Sq.mm
3. Adhesive bond, Pull-off (EN 1542)	> 2.0 N/ Sq.mm	

4. Restrained shrinkage/ expansion (EN 12617-4)	> 2.0 N/ Sq.mm
5. Length change (ASTM C157)	0.04%
6. Carbonation Resistance (EN 13295)	Pass
7. Chloride Ion Content (EN 1015-17)	< 0.05%

DIRECTIONS FOR USE

1. SURFACE PREPARATION

Outline and mark the area to be repaired using a chalk or temporary marker. Enlarge the area beyond the initial size to ensure that any weak or questionable concrete is removed. Mark the area to the nearest square or rectangle using a hand-held saw or grinder, cut-through the marked area to a depth of 15-20 mm to avoid feather-edging. After cutting chip concrete down to sound base using light pneumatic chipping tools or chisel-hammer. All unsound or damaged concrete should be removed until only sound, clean roughened concrete is exposed. Inspect the rebars for corrosion and remove any corrosion deposits by grit blasting or by rotary power wire brush making sure the full circumference is cleaned. If the rebar dimension has substantially been reduced by corrosion, replacement or spicing may be required. Wash the concrete finally with high pressure water jet followed by oil-free compressed air.

2. SURFACE PREPARATION

After cleaning the rebars to near white standard of cleanliness, coat the rebars with EAT RUST one component Zinc Rich Epoxy Primer. Allow to dry until tack free.

3. FORMING

Forms should be strong, braced, sealed at the edges, and properly secured. Keep the unrestrained surface area to a minimum. Forms should have provision for drainage outlets for presoaking.

4. PRIMING

Priming is not necessary as **DURCRETE** has good bond strength. All that is required is to saturate the area with clean water at least one hour prior to placement after which any excess water remaining should be drained. Where conditions require exceptional bond and concrete is highly contaminated with soluble salts, or to prevent ingress of water-borne chloride and sulfates, the use of ISOPOX EPL is recommended. When using ISOPOX EPL, the substrate must be clean, dry and aggregates exposed to ensure mechanical key.

5. MIXING

Mechanical mixing is essential. Use mixers with rotating paddles inside a stationary drum as opposed to free fall mixers (with fins on rotating drum). For small one-bag batches, an electric drill fitted with a spiral paddle running at 200-300 RPM can be used. Mixing of part bags should not be allowed. One bag of **DURCRETE** will require 4.5 liters of clean water. First, put the water into the mixer followed by the powder. Mix for 3 minutes until homogeneous. After mixing, simply pour **DURCRETE** into the cavity.

(Note: Minimum thickness of repair mortar is 50mm. It can be applied up to 400mm single pour. For large areas, consult ACI).

6. CURING

As with all cementitious material, **DURCRETE** should be cured immediately after removal of the forms. Use either **ISOCRYL 100** or **ISOCURE WB** for curing (Note: when working above 32 degrees Celsius ambient temperature, keep the bags under a shade and use cool water for mixing).

PACKING COVERAGE

DURCRETE is packed in 30 kg bag and when mixed with 4.5 liters of water will yield 15.6 liters of repair micro concrete.

HEALTH/ SAFETY

Contains cement which can be harmful to the skin when wet. Avoid inhalation of dust. The use of dust mask is recommended, any skin contact should be washed clean with water and soap. Mildly alkaline. Users are advised to wear protective hand gloves, coveralls and eye goggles. Refer to MSDS for more safety instructions.

SHELF LIFE

Twelve months when stored in dry, covered warehouse condition. Lumps may occur due to warehouse set and should be removed.

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Technical information, data are to be considered as typical values and not sales specification. Actual measured values may vary due to factors beyond our control. Indications concerning function and application of the products are empirical. Although the information is believed to be accurate, there is no warranty by ISOLA. None of the recommendations becomes part of the warranted quality of the products. Due to the fact that the conditions of individual use are beyond ISOLA's direct and continuous control, ISOLA disclaims all responsibility in connection with the use of its products and does not warrant against any loss direct or consequential

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