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a.b.e.® Construction Chemicals

dura.®rep FR

POLYMER MODIFIED, FIBRE-REINFORCED STRUCTURAL REPAIR MORTAR



REPAIRING AND BEDDING CONCRETE

GENERAL CONSTRUCTION

DESCRIPTION

Polymer modified, fibre-reinforced, cement based mortar, which is chloride free, ready-to-use, non-shrink and of a single component.

USES

- Potable water retaining structures.
- Repairing voids and honeycombed areas.
- Also applied by gunning (wet or dry process).
- Bedding mortar for concrete planks i.e. seats at sports stadiums, suspended flooring.
- Water cooling towers.
- Harbour wharf repairs.

ADVANTAGES

- Easy-to-use.
- High ultimate strength.
- Resistant to frost and thawing salt.
- Chloride free.
- Non-shrink.
- Good bonding to concrete.
- Increased abrasion resistance over plain rendering (4 - 6 times).
- Constant quality and performance (pre-blended).
- Non-toxic.

COLOUR

GREY

SURFACE PREPARATION

The substrate must be sound, firm and clean, free of oil, grease, loose particles and cement laitance, old layers of paint, or other contaminants. All edges to be repaired must be square cut to a minimum of 10 mm deep, perpendicular to the surface, followed by the removal of all unsound material. When using compressed air for cleaning, the air must be clean and oil free. Never feather edge the product. Absorbent substrates must be thoroughly wetted, to reduce suction, which causes shrinkage, resulting in loss of bond. This must be carried out at least 12 hours prior to the application of **dura.®rep FR**. The substrate is required to be well dampened, with no free water on the surface. All metal to be coated must be clean, mechanically sound and dry. Expose all corroded reinforcing steel and grit blast. A clean bright finish is required ensuring that all corrosion products are removed, particularly behind the steel. The anchor pattern should be approximately 40 to 60 microns from peak to valley. Prime before flash rusting occurs, see data sheet **dura.®rep FR** primer.

BONDING/PRIMING

Use **epidermix 344** wet to dry epoxy as a primer for structural application where the bond strength must be equal or greater than the parent material.

All exposed reinforcing bars must be primed by applying **dura.®rep ZR** primer (see relevant data sheets).

MIXING

Add approximately $\frac{2}{3}$ of the required mixing water and while stirring, preferably mechanically, slowly add the powder and mix until lump free.

The plastic-thixotropic mortar can now be applied by trowel, spatula or float. The mortar can be made up to a stiffer consistency by using less water.

Note: High speed mixing entraps an excessive amount of air and therefore should be avoided.

COVERAGE

25 kg of **dura.®rep FR** powder with 4.2 litres of water yields approximately 13 litres.

APPLICATION

dura.®rep FR is used for repair and restoration of large horizontal areas and vertical surfaces, such as worn concrete road surfaces and bridges, as well as for repairing concrete, renderings, natural and artificial stone, and erosion damage to sewer tunnel structures. On vertical surfaces, **dura.®rep FR** is suitable for surface repairs, remoulding large breakaway at the edges (on pillars and chords). Rubber gloves should be worn because of the material's high cementitious content (alkaline). Application may be carried out in layers or applied up to 70 mm in one pass. When striking off thick sections care should be taken in terms of timing as the material below may not have set sufficiently and due to its thixotropic properties hogging may occur (slumping) resulting in surface cracking.

PHYSICAL PROPERTIES	
Compressive Strengths	
24 hours	16 MPa
3 days	25 MPa
7 days	35 MPa
28 days	> 45 MPa

PROTECTION ON COMPLETION

Like all cement based materials **dura.®rep FR** must be cured immediately, as soon as the surface will not be marred. This is carried out by applying, by brush or spray, a suitable curing compound like **CHRYSO®Cure R** or as recommended by **a.b.e.® Construction Chemicals**. In rapid drying conditions caused by high winds or direct sunlight additional precautions should be included like sealing with polythene sheeting having the edges taped down. This may include damp hessian behind the sheeting to prevent moisture loss. Similarly in cold conditions, the repaired area must be protected from freezing.

CLEANING

Clean tools with water before the mortar hardens. Hardened material can only be removed by mechanical means.

PACKAGING

dura.®rep FR is supplied in 25 kg polyethylene lined paper bags.

HANDLING & STORAGE

Shelf life of 12 months, but shorter if in extreme conditions. Keep tightly sealed in a dry cool place in the original packaging.

HEALTH & SAFETY

Product safety information required for safe use is not included. Before handling, read product and safety data sheets and container labels for safe use, physical and health hazard information. The safety data sheet is available from your local **a.b.e.® Construction Chemicals** branch.

