



## a.b.e.<sup>®</sup> Construction Chemicals

# METHODOLOGY

## Honeycomb repairs

All the relevant product data sheets are to be read for additional information like pot life, mixing instructions, surface preparation, ventilation, temperature application limitations, etc.

### **SURFACE PREPARATION**

All surfaces shall be sound, clean and free from dust, plaster, oil, paint, grease, corrosion deposits, laitance, organic growth and any other deleterious substance.

Surfaces shall be cleaned by mechanical means, steam, pressure washing with clean water, grit blasting, or a combination to satisfy. Any remaining dust or loose material should be removed by blowing with oil-free clean compressed air.

### **CONCRETE PRIMING**

The prepared substrate shall be thoroughly wetted with clean water to totally satisfy absorption and any standing or excess water shall be removed.

Repairs to concrete subject to permanent immersion shall be primed with **epidermix 344** which shall be worked firmly into the damp substrate with a short-bristle brush to achieve a film intimate with the contact area for immediate repair.

If the primer dries before the mortar is applied, the area shall be cleaned and re-primed.

### **REPAIR MATERIAL**

**(For shuttered repair applications see "Repairs using dura.<sup>®</sup>rep FMC")**

**dura.<sup>®</sup>rep FR** mortar with **epidermix 345** wet to dry epoxy primer (the epoxy primer is only necessary when the adhesion strength is to be equal or greater than the tensile strength of the PARENT concrete (substrate), shall be used for concrete surfaces to be repaired in 13-45 mm section, small pockets 13-100 mm, overhead repairs 13-30 mm section, each per layer, where >45 MPa (N/mm<sup>2</sup>) compressive strength and resistance to carbon dioxide and chlorides is required. The minimum depth for repair shall be 13 mm. Never feather-edge the material, always provide a neat saw-cut joint not less than 10 mm deep perpendicular to the surface.

### **MIXING REPAIR MORTAR**

Before mixing the repair mortar the contractor shall ensure that sufficient and correct areas for reinstatement are prepared and ready to receive repair mortar.

Only mixes using complete bags of **dura.<sup>®</sup>rep FR** shall be allowed and part bag mixes not permitted, unless all the material is "Dry Mixed", to overcome any particle segregation, then add the required amount of water for proportioned quantities. The mixing shall be carried out strictly in accordance with current product instructions for use and only with appropriate mixing equipment.

The mixing water shall be potable quality and the carefully measured quantity of water for the required mix shall be placed into the mixing container before the **dura.<sup>®</sup>rep FR**.

The **dura.<sup>®</sup>rep FR** shall be added to the mixing water and in no circumstances shall more water be added than the maximum volume stated for each bag.

### **MIXING WARNING**

As with other 'one pack' repair mortars **dura.<sup>®</sup>rep FR** may exhibit satisfactory handling characteristics even though inadequately mixed. This will result in a significantly lower level of performance or possible failure. It is therefore essential that mixing instructions are strictly adhered to with particular emphasis on the quantity of water used and the time of the mixing operation.

### **APPLICATION OF REPAIR MORTAR**

Only fully integrated mixes of **dura.<sup>®</sup>rep FR** at the required consistency and workability shall be used.

Immediately following mixing the repair mortar shall be applied by gloved hand or trowel to the prepared and primed surface of the substrate paying particular attention to packing behind and between the reinforcement and thorough compaction overall.

**dura.<sup>®</sup>rep FR** shall be applied in accordance with current instructions for use. Apply in one operation, minimum total thickness is 13 mm, and well compact into repair voids, paying particular attention to compaction around reinforcing steel.

In hot, humid, coastal situations and in heavy industrial areas ensure that the interval between successive layers is kept to a minimum. This is to prevent possible contamination of the surface of the preceding layer with air-borne contaminants, resulting in possible inter-coat adhesion failure and reduced product performance. In the event that delays are

unavoidable, wash down the surface thoroughly with clean water before proceeding with the following coating.

Sagging of the repair mortar is not acceptable and if occurring all the material of the affected repair shall be completely removed prior to re-priming and refilling in two or more applications of mortar supported by formwork if required.

If formwork is used it shall be pre-treated with a varnish to prevent moisture absorption from the repair mortar. Special care shall be taken to ensure that the positioning of the formwork allows for compaction of and does not result in voids within the repair mortar.

After applying sufficient mortar to achieve a level flush with or slightly proud of the surrounding surface the **dura.®rep FR** shall be finished by striking off with a straight edge and trowelled/floated depending upon circumstances. When striking off deep repair areas or striking off too early disturbing the material below may cause "hogging" resulting in sagging cracks, ensure the material has set sufficiently for this operation.

Repair mortar shall not be applied when the ambient or substrate temperature is below 5°C or above 35°C, nor at ambient temperatures of 5°C on a falling thermometer. The applied repair mortar shall always be protected from freezing whilst drying.

## CURING

Curing techniques shall be instigated immediately following application of repair mortar to any given area. Large areas (0.5m<sup>2</sup> at a time) shall be cured as trowelling progresses without waiting for completion of the whole area. During application and curing all work shall be protected against direct strong sunlight.

**dura.®bond GP** may be low pressure spray applied as a curing membrane. In fast drying conditions it will be necessary to supplement this with polyethylene sheet taped around its edges.

## PROTECTIVE COATINGS

**dura.®bond GP** is compatible with the **dura.®cote WB** range of surface coatings and does not require removal prior to application of a **dura.®cote WB** material. Other curing membranes will require removal prior to further surface treatment.

## PRODUCTS REQUIRED

- **dura.®bond GP**
- **dura.®cote WB**
- **dura.®cote WB primer**
- **dura.®rep FMC**
- **dura.®rep FR**
- **epidermix 344**
- **epidermix 345**

## EQUIPMENT NEEDED

- 100 mm paint brush
- Flat steel paddle 25 mm wide x 5 mm thick
- Heavy duty Festo mixer with a helical coil mixing head
- Steel float
- Steel trowel
- Suitable 25 litre metal container for mixing

## IMPORTANT NOTE

This data sheet is issued as a guide to the use of the product(s) concerned. Whilst **a.b.e.® Construction Chemicals Limited** endeavours to ensure that any advice, recommendation, specification or information is accurate and correct, the company cannot - because **a.b.e.®** has no direct or continuous control over where and how **a.b.e.®** products are applied - accept any liability either directly or indirectly arising from the use of **a.b.e.®** products, whether or not in accordance with any advice, specification, recommendation, or information given by the company.

## FURTHER INFORMATION

Where other products are to be used in conjunction with this material, the relevant technical data sheets should be consulted to determine total requirements. **a.b.e.® Construction Chemicals Limited** has a wealth of technical and practical experience built up over years in the company's pursuit of excellence in building and construction technology.

