



a.b.e.[®] Construction Chemicals **dura.[®]rep GT-MCI**

Grade Trowellable - Migrating Corrosion Inhibitor

POLYMER MODIFIED, STRUCTURAL REPAIR MORTAR CONTAINING MIGRATING CORROSION INHIBITOR (MCI)

DESCRIPTION

dura.[®]rep GT-MCI is a pre-mixed ready to use single-component polymer modified, cementitious repair mortar containing **MuCis[®] ad 22 P*** a migrating corrosion inhibitor (MCI).

dura.[®]rep GT-MCI is based on blended cements, graded siliceous aggregate, proprietary chemical additives, fillers and anti-desiccants. **dura.[®]rep GT-MCI** is intended for use in hot climatic conditions as a structural repair mortar for the repair and reinstatement of concrete structures and masonry elements. The mortar is suitable for use in aggressive environmental conditions, and where superior chloride and carbon dioxide resistance is required.

When **dura.[®]rep GT-MCI** is mixed with water, **MuCis[®] ad 22 P** is activated to inhibit anodic as well as cathodic steel corrosion processes, not only in contact with the steel, but also by migration through the concrete porosity reaching the rebars.

MuCis[®] ad 22 P is a superior technical solution to extend the life time expectancy of reinforced concrete subjected to aggressive corrosion promoters such as oxygen, humidity, chlorides from marine environments.

USES

dura.[®]rep GT-MCI is particularly suitable for use in hot climatic conditions for repairs to concrete and masonry. The mortar has been formulated for patching in vertical and overhead applications without formwork as well as for large area rendering.

ADVANTAGES

- Ready to use. (pre-blended).
- Low permeability resists carbonation and chloride attack.
- Formulated for use in hot climatic conditions.
- Can be used in applications without formwork.
- High build, does not require multiple applications.
- Non-shrink.
- Chloride-free.

- Repair inhibits anodic as well as cathodic steel corrosion processes, not only in contact with the steel, but also by migration through the concrete porosity reaching the rebars.
- Repair extend the life time expectancy of reinforced concrete subjected to aggressive corrosion conditions.

SURFACE PREPARATION

Square cut all edges to be repaired to a minimum of 10mm deep. If the rebar is to be exposed, remove concrete to a minimum of 25mm behind the rebar.

Never feather edge the product.

Remove all dust and unsound debris contaminants and corrosion deposits.

In areas that do not require demolition and where the concrete is in good sound condition but additional cover is required, roughen the surface by scabbling or grit blasting the surface to remove laitance.

Expose corroded rebar and remove all loose scale and corrosion deposits.

Grit blasting is recommended for this purpose and particular care must be taken to ensure that the back of the rebar is cleaned as well. If corrosion has occurred due to chloride attack, the rebar should be high-pressure washed with clean water directly after the grit blasting application.

BONDING/PRIMING

Reinforcing steel: Apply one coat of **dura.[®]rep ZR** primer at the rate of 7.5m²/litre and allow to dry (see separate data sheet).

Substrate priming: All areas to be treated should be thoroughly saturated with clean water. Remove excess water from the surface prior to applying one coat of **dura.[®]bond** bonding liquid at the rate of 3 to 4m²/litre. Firmly brush the **dura.[®]bond** into the surface with a hard-bristle brush ensuring that the primer bonds well to the substrate. **dura.[®]rep TG** can be applied to the **dura.[®]bond** as soon as it becomes tacky.

In critical applications when a substrate repair barrier is required or in applications where the substrate is permanently wet, **epidermix 345** epoxy bonding agent should be used (See separate data sheet).

TYPICAL PHYSICAL PROPERTIES	
Compressive strengths – MPa ASTM C109	
24 hours	14
28 days	35
Flexural strength – MPa	
28 days	6
Tensile strength – MPa	
28 days	2
Coefficient of thermal expansion	9 to 12 x 10 ⁻⁶ /°C
Setting time	2 - 4 hours
Wet density	1875 kg/m ³ @ 0,20 water: grout ratio
Chemical resistance	Retards acid gas, chloride ions, oxygen & water

MIXING

Mixing should be carried out using a forced action mixer. Do not use free fall mixers. For single-bag mixing, a heavy-duty drill fitted with a spiral paddle is suitable. Mix product at slow speed (400 - 500 r/min) Add 4 – 5 litres of water to a suitable container and while stirring slowly add the **dura.®rep GT-MCI** to the water and mix for 5 minutes until the mix is homogeneous and lump free. Do not exceed the stipulated amount of 5 litres of mixing water. Never mix part-bag batches.

COVERAGE

25 kg of **dura.®rep GT-MCI** powder mixed with 5 litres of water yields approximately 16 litres. One 25 kg bag **dura.®rep GT-MCI** covers 1,60m² @ 10mm thick. **dura.®bond** applied as a bonding liquid, covers 3 - 4m²/litre; as a curing compound, 6 - 9m²/litre.

epidermix 345 covers 10m²/2 kg kit.

APPLICATION

dura.®rep GT-MCI is applied by hand or trowel to the primed substrate by packing and tamping the product into place using a trowel and gloved hand.

Care must be taken to ensure that the **dura.®rep GT-MCI** is properly compacted against and around the exposed treated rebar. **dura.®rep GT-MCI** can be applied up to 50mm thick on large vertical sections and 100mm thick on smaller pockets. On overhead application the **dura.®rep GT-MCI** should not exceed 20mm thick per application.

However multiple layers can follow in rapid succession. **dura.®rep GT-MCI** should not be applied thicker than 100mm per application. If the profile dictates that the mortar must be thicker than 100mm, then multiple layers are to be applied by hand or trowel. The intermediate layer should be scratch keyed and cured with **dura.®bond**. The cured layer is then re-primed prior to application of the next layer of **dura.®rep GT-MCI**.

For larger rendered surfaces **dura.®rep GT-MCI** should never be applied less than 10mm thick.

Spray application:

dura.®rep GT-MCI can be spray applied using suitable wet or dry spray techniques and machinery. Spray applied application allows for rapid high-build placement due to increased compaction and densities achieved with this method. For further details regarding equipment and application techniques, consult **a.b.e.®**'s technical department.

dura.®rep GT-MCI is finished by striking off the surface with a straight edge or wood float. Finish with a steel trowel, wood float or sponge, depending on the finish and texture required.

CLEANING

For **dura.®rep GT-MCI** and **dura.®bond**, clean tools with water before setting. Hardened material can only be removed by mechanical means (**dura.®rep GT-MCI**).

For **dura.®rep ZR** primer, **dura.®bond** (dried) and **epidermix 345** (wet only) clean all tools with **abe® super brush cleaner**.

PROTECTION ON COMPLETION

Like all cement based materials **dura.®rep GT-MCI** requires curing. As soon as the surface will not be marred, apply **dura.®bond**, by brush or spray, at the rate of 6 - 9m²/litre.



TEMPERATURE AND RELATIVE HUMIDITY

dura.®rep GT-MCI is intended for hot climates, it can however be used in more moderate climates. Surface and ambient temperature must be at least + 5°C and climbing, ideally between 20°C and 35°C. In hot climates above 35°C additional care should be taken to ensure that when **dura.®rep GT-MCI** is being used, the material should be stored in the shade and mixing water should be cool. If required, consider using ice water to cool the mix.

MODEL SPECIFICATION

General purpose cementitious mortar for concrete repairs in tropical climates.

The repair mortar will be **dura.®rep GT-MCI**, a single-component, general purpose, cementitious mortar applied in accordance with the recommendations of **a.b.e.® Construction Chemicals**, including **dura.®rep ZR** steel primer and **dura.®bond** acrylic bonding agent or **epidermix 345** where necessary. The mortar will have a minimum 28-day compressive strength of 30 MPa.

PACKAGING

dura.®rep GT-MCI is supplied in 25 kg polyethylene lined paper bags.

dura.®bond primer is supplied in 5, 20 and 200 litre drums.
dura.®rep ZR primer is supplied in 1 and 15 litre tins.

HANDLING & STORAGE

This product has a shelf life of 12 months if kept in a dry cool place in the original packaging. In more extreme conditions this period might be shortened.

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** sales representative.

IMPORTANT NOTE

This data sheet is issued as a guide to the use of the product(s) concerned. Whilst **a.b.e.® Construction Chemicals** 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 has a wealth of technical and practical experience built up over years in the company's pursuit of excellence in building and construction technology.

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