ARDEX BR 345

High Resistivity Structural Patching and Repair Mortar

MICROTEC® Fibre-Reinforced

High resistivity (>15,000 cm)

Contains active corrosion inhibitor

Polymer modified & shrinkage compensated

Compliant to AS/NZS4020 - Potable Drinking Water

Up to 80mm thickness on horizontal, vertical and overhead applications

MICROTEC TECHNOLOGY

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ARDEX BR 345

High Resistivity Structural Patching and Repair Mortar

DESCRIPTION

ARDEX BR 345 is a MICROTEC® Fibre-Reinforced, High Resistivity, Polymer-Modified, Structural Concrete Patching and Repair Mortar designed for reinstating concrete structures damaged through concrete spalling and other chemical or mechanical causes. ARDEX BR 345 is a high-build patching mortar and is capable of being applied up to a thickness of 80mm on vertical, horizontal and overhead surfaces.

FEATURES

- Polymer modified
- Shrinkage compensated
- High resistivity (>15,000 cm)
- Contains active corrosion inhibitor
- High build applications - up to 80mm thickness
- Compliant to AS/NZS4020 - Potable Drinking Water

SURFACE PREPARATION

To a depth of at least 10mm minimum, break out and remove the affected concrete substrate of the repair locations. A square edge of the repair locations must be provided to avoid feather-edging of ARDEX BR 345.

The substrate must be clean, sound and free from all grease, oil, dust and other contaminants such as corrosion deposits. Surface laitance, damaged or contaminated concrete must be totally removed.

Completely expose any corroded steel in the repair area, and break out at least 20mm minimum behind all exposed reinforcing steel. All loose scale and corrosion deposits must be removed and all reinforcing steel cleaned to a bright condition, with particular attention to the back of exposed steel bars.

PRIMING FOR REINFORCEMENT STEEL

To the prepared reinforcing steel, apply one continuous and uniform coat of ARDEX BR 10 ZP. If a continuous and uniform coat has not been achieved, apply a second coat of ARDEX BR 10 ZP once the first coat has dried (1hr @ 20°C). Again, allow the second coat to dry before continuing with the repair. ARDEX BR 10 ZP should be cured prior to applying the ARDEX BR 345.

PRIMING

The prepared substrate should be pre-soaked with clean water for 24 hours but at least 2 hours before applying ARDEX BR 345. All excess or free standing water must be removed before applying ARDEX BR 345. The saturated surface dry substrate should then be primed by employing one of the following methods:

1. ARDEX WR Prime should be applied and thoroughly worked into the substrate before ARDEX BR 345 application.

2. A slurry bond coat of mixed ARDEX BR 345 and ARDEX WR Prime should be made to a brushable consistency then applied to the saturated surface dry substrate before ARDEX BR 345 can be applied.

ARDEX BR 345 must be applied wet-on-wet for both methods. Do not let the bonding layer dry out completely. Apply the ARDEX BR 345 as soon as the bonding bridge is tacky enough to hold the weight of the mortar. If the surface is too wet or too dry, the application of ARDEX BR 345 may be difficult.

Certain environments (i.e. permanently damp substrate) may require an epoxy-based primer such as ARDEX EG 800 F. All excess or free standing water must be removed before applying ARDEX EG 800 F (saturated surface dry substrate is acceptable). There must be no pin-holes within the epoxy-based primer prior to ARDEX BR 345 application. Apply the ARDEX BR 345 between 30mins - 2 hours after priming.

MIXING

ARDEX BR 345 must be thoroughly mixed at all times. Use between 3.0L – 3.3L of clean water per 20kg bag of ARDEX BR 345. Measure the appropriate amount of clean water into a clean suitable sized pail and then add the 20kg bag of ARDEX BR 345 to the water whilst mixing with a heavy duty electric drill with spiral mixing paddle on slow-medium speed (400 - 600 rpm). Once all of the powder has been added, mix for 3 – 4 minutes until fully homogeneous. Let the mixed mortar sit for 1 – 2 minutes, then briefly mix the mortar again for 1 – 2 minutes prior to application.

Note: Thoroughly mix to allow the polymers in the mix to activate. The powder must always be added to the clean water.

APPLICATION

ARDEX BR 345 is to be applied onto the prepared primed substrate. Ensure the patching mortar is applied whilst the priming layer is still wet (wet-on-wet). Apply using a trowel or by hand (wearing chemically resistant gloves). The material must be sufficiently forced and compacted to the primed substrate, paying close attention around the prepared exposed reinforcing steel ensuring all voids are filled.

Minimum application thickness is 10mm. If repair mortar slumps, remove all ARDEX BR 345 and re-apply after re-priming the substrate, then apply the repair mortar at a reduced thickness.

Application temperature must be between 5°C - 35°C, paying close attention to substrate temperature and environment conditions.

FINISHING

Once the mortar has set to a stiffened consistency, and the surface is hard enough, work can begin on the surface finish. The surface finish can be dense and smooth by using a wooden or plastic float, or coarse and sandy by using a sponge to give the required effect. Ensure not to overwork the surface.

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TECHNICAL DATA

CHARACTERISTICS	TEST METHOD	EN 1504 R3 REQUIREMENTS	TYPICAL RESULTS
Water (per 20kg bag)			3.0L - 3.3L
Wet Density			~1.88g/cc
Pot Life			45 - 90 min
Initial Set			45 - 90 min
Final Set			90 min - 3 hrs
Compressive Strength	EN 12190	≥25 MPa	~10 MPa (1 day) 20 - 30 MPa (7 days) 30 - 45 MPa (28 days
Chloride Ion Content	EN 1015-17	≤0.05%	0.005%
Adhesive Bond	EN 1542	≥1.5 MPa	≥1.5 MPa
Shrinakage & Expansion	EN 12617-4	>1.5 MPa	>1.5 MPa
Carbonation Resistance	EN 13295	d ≤control concrete	Pass (MC0.45)
Elastic Modulus	AS 1012.17	>15 GPa	16.9 GPa
Coefficent of Thermal Expansion	AASHTO T336-11	Declared value	10.1ms/°C
Capillary Absorption	EN 13057	≤.5KG/($m^{-2}Xh^{-0.5}$)	≤0.10KG/($m^{-2}Xh^{-0.5}$)
Flexural Strength	EN 12190		~8MPa (28 days)
Drying Shrinkage (@ 23°C / 50% R.H.)	AS 1478.2		< 400 microstrains (7 days) < 700 microstrains (28 days)
Bulk Resistivity	Internal Method		> 15,000 Ω.cm (28 days) > 20,000 Ω.cm (56 days)

*AS1012.17 replaced EN 13412

**AASHTO T336-11 replaced EN 1770

CURING

It is recommended to apply a curing compound in a consistant film immediately after finishing. Alternatively after the product has set, wet hessian with polythene sheeting taped down at the edges can be used for a minimum 7 days.

RENDER APPLICATION

ARDEX Render can be applied over the cured patch repair and surrounding structure. All curing compounds must be totally removed prior to ARDEX Render application. Approved ARDEX Render products include:

- ARDEX WR 100
- ARDEX WR 80 FR
- ARDEX WR 120 FR

PROTECTIVE COATING

To ensure the repair and surrounding structure is adequately protected, it is highly recommended to apply an ARDEX Protective Coating. All curing compounds must be removed prior to ARDEX Protective Coating application. The protecive coating will also provide a decorative and uniform appearance to the structure. Approved ARDEX Protective Coatings include:

- ARDEX WPM 310
- ARDEX WPM 330

COVERAGE (YIELD)

12.6 litres / 20kg bag of ARDEX 345

PACKAGING

20kg bag

ARDEX BR 345

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CLEAN UP
Clean all tools in water immediately after use. Cured product may need to be mechancially removed.

SHELF LIFE
ARDEX BR 345 has a shelf life of 12 months when stored in the original unopened packaging, in a dry place at 23°C and 50% relative humidity.

LIMITATIONS
The repaired area should always be overcoated with an appropriate and protective coating or sealer. ARDEX BR 345 is not meant to be left exposed. Do not part mix bag, always mix full bag. Not to be exposed to imminent rainfall prior to final set, or moving water during application. Do not apply in temperatures 5°C and falling, or extreme hot temperatures. Do not use ARDEX BRX 60 LO Anodes with ARDEX BR 345.

Before any substrate preparation, installation or finishing methods relating to ARDEX products are undertaken, please be aware of any potential risks and use appropriate PPE (personal protective equipment). This may involve contacting substrate manufacturers for Safety Data Sheets.

SAFETY DATA
May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. May cause cancer. Causes skin irritation. Wear protective gloves, clothing, face and eye protection. Avoid inhaling dust/ fume/ gas/ mist/ vapours/ spray. Ensure adequate ventilation during mixing and application. Check with your local Council regarding the disposal of contents. Keep out of the reach of children. Call the Poisons Information Centre on 131 126 (AUS) and 0800 764 766 (NZ) or call a doctor if you feel unwell. Additional information is in the Safety Data Sheet (SDS) at www.ardexaustralia.com

GUARANTEE
ARDEX Australia Pty Ltd ("we" or "us") guarantees this product ("our goods") is free from manufacturing defects and will perform to any applicable specification published by us for 10 years from the date of purchase. Our liability under this guarantee is limited at our option to replacement of the product, repair of any damage to the immediate surface or area of application of the product, or compensation, in each case if we are satisfied loss or damage was due to a breach of this guarantee. This guarantee does not apply if damage or loss is due to failure to follow published instructions or any act or circumstance beyond our control, including shade variations and efflorescence. If you wish to make a claim under this guarantee you must notify us (ARDEX Australia Pty Ltd, 20 Powers Road Seven Hills NSW 2147; Toll Free: 1800 224 070; Email: technicalservices@ ardexaustralia.com) and provide evidence of your purchase of the product within 30 days of any alleged loss or damage occurring. We reserve the right to ask you for satisfactory evidence of any alleged loss or damage. Any claim under this guarantee is at your cost. This guarantee is in addition to any rights or remedies you may have as a "consumer" under the Australian Consumer Law and to that extent you need to be aware that: "Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss of damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure".

DISCLAIMER
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