ARDEX BR 460 FLOW

High Performance, Flowable, Structural Micro Concrete

Low resistivity (<11,000 Ω.cm)

Contains active corrosion inhibitor

Excellent flow and levelling properties

Suitable for use with ARDEX BRX 60 LO Anodes

Applications between 20mm - 200mm thickness

Shrinkage compensated with high early & final strength

MICROTEC TECHNOLOGY

ARDEX Australia Pty Ltd
20 Powers Road
Seven Hills NSW 2147
Phone: 1300 788 780
Email: technicalservices@ardexaustralia.com
www.ardexaustralia.com

ARDEX New Zealand Ltd
15 Alfred Street, Onehunga Auckland,
New Zealand 1061
Phone: 0800 227 339
Email: info@ardexnz.com
www.ardex.co.nz

ARDEX BR 460 FLOW

High Performance, Flowable, Structural Micro Concrete

DESCRIPTION

ARDEX BR 460 FLOW is a High Performance, Flowable, Structural Micro Concrete repair mortar designed for reinstating concrete surfaces damaged through concrete spalling and other chemical or mechanical causes. ARDEX BR 460 FLOW exhibits superior flow characteristics and is capable of being applied in thicknesses between 20mm - 200mm in one pour.

ARDEX BR 460 FLOW is designed to be used in conjunction with ARDEX BRX 60 LO Anodes for ultimate corrosion control and cathodic prevention.

FEATURES

- Shrinkage compensated
- Low resistivity (<11,000 cm)
- Contains active corrosion inhibitor
- Excellent flow & levelling properties
- Applications between 20mm - 200mm thickness
- Suitable for use with ARDEX BRX 60 LO Anodes

PREPARATION

To a depth of at least 20mm 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 460 FLOW.

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 @ 20ºC). 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 460 FLOW.

If ARDEX BRX 60 LO Anodes are to be installed, please refer to the Product Datasheet for surface preparation, rebar priming, and installation methods.

FORMWORK PREPARATION

The area to be poured must be enclosed with good quality rigid watertight formwork. The formwork must be able to restrain the ARDEX BR 460 FLOW until the product has set. If form release agents are to be used, ensure the form release agent is not applied to the prepared concrete substrate to prevent substrate contamination. Formwork should be flushed out without any standing water present prior to ARDEX BR 460 FLOW application. Sealable outlets must be incorportated into the formwork to allow the water from pre-soaking to be removed.

Formwork must remain in place until the compressive strength acheives minimum 10MPa or otherwise specified by project consultant/engineer.

PRIMING

The prepared substrate must be pre-soaked for 24 hours but at least 2 hours before applying ARDEX BR 460 FLOW to reduce the porosity of the substrate. Remove excess freestanding water on the surface prior to the application of ARDEX BR 460 FLOW. The surface should be mat damp but without standing water.

Certain environments (i.e. permanently damp substrate) may require an epoxy-based primer such as ARDEX EG 800F. 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 460 FLOW application. Apply the ARDEX BR 460 FLOW between 30mins - 2 hours after priming.

MIXING

ARDEX BR 460 FLOW must be thoroughly mixed at all times. Use between 2.4L – 2.7L of clean water per 20kg bag of ARDEX BR 460 FLOW. Measure the appropriate amount of clean water into a clean suitable sized pail and then add the 20kg bag of ARDEX BR 460 FLOW 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.

In certain applications, ARDEX Aggregate 5/2mm can be added to ARDEX BR 460 FLOW mixed at a 3:1 ratio. Whilst mixing with a heavy duty electric drill add all of the powder to the clean water, mix for 3 – 4 minutes whilst adding the ARDEX Aggregate 5/2mm 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.

CHARACTERISTICS	TYPICAL RESULTS
Wet Density	~2.37g/cc
Mix Ratio	3:1 (3 parts powder : 1 part aggregate)
Inital Set (@ 23ºC / 50% R.H.)	4 - 5 hours
Final Set (@ 23ºC / 50% R.H.)	5 - 6 hours

ARDEX BR 460 FLOW

High Performance, Flowable, Structural Micro Concrete

TECHNICAL DATA

CHARACTERISTICS	TEST METHOD	EN 1504 R4 REQUIREMENTS	TYPICAL RESULTS
Water (per 20kg bag)			2.4L - 2.7L
Wet Density			~2.30g/cc
Pot Life (@ 23ºC / 50% R.H.)			Immediate placement after mixing
Initial Set (@ 23ºC / 50% R.H.)			5 - 8 hrs
Final Set (@ 23ºC / 50% R.H.)			6 - 9 hrs
Flow Characteristics	AS 1478.2		300mm - 600mm (depending water ratio)
Compressive Strength	EN 12190	45MPa	>10 MPa (1 day) >35 MPa (7 days) 45 - 70 MPa (28 days)
Chloride Ion Content	EN 1015-17	≤0.05%	0.002%
Adhesive Bond	EN 1542	≥2.0MPa	≥2.0 MPa
Shrinakge & Expansion	EN 12617-4	>2.0MPa	>2.0 MPa
Carbonation Resistance	EN 13295	d control concrete	Pass (MC0.45)
Elastic Modulus	AS 1012.17	>20GPa	27.4GPa
Coefficent of Thermal Expansion	AASHTO T336-11	Declared value	13.9ms/ºC
Capillary Absorption	EN 13057	0.5KG/($m^{-2}Xh^{-0.5}$)	0.08KG/($m^{-2}Xh^{-0.5}$)
Flexural Strength	EN 12190		~8 - 11 MPa (28 days)
Drying Shrinkage (@ 23ºC / 50% R.H.)	AS 1478.2		< 400 microstrains (7 days) < 700 microstrains (28 days)
Bulk Resistivity	Internal Method		< 6,000 Ω.cm (7 days) < 10,000 Ω.cm (28 days) < 11,000 Ω.cm (56 days)

*AS1012.17 replaced EN 13412

*AASHTO T336-11 replaced EN 1770

APPLICATION

ARDEX BR 460 FLOW is to be applied onto the prepared pre-soaked substrate. For optimum results, pour the product immediately after mixing, and in a continuous pour to avoid cold joints. Where applicable, it is recommended to smooth the material after each pour with a steel trowel.

For larger volume pumping applications, please contact ARDEX Technical Services (technicalservices@ardexaustralia.com) on equipment suitability.

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

CURING

It is recommended to apply a curing compound after final set on all exposed areas. If formwork is used, the curing compound should be applied immediately after the formwork is removed. Any laitance should be removed (thoroughlly rinsed off) before applying the curing compound. 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 area. The surface may need to be roughened (light grinding) prior to render application. All curing compounds must be 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. The surface may need to be lightly roughened (cup grind) prior to coating application. All curing compounds must be removed prior to ARDEX Protective Coating application. The protecive coating will also provide

ARDEX BR 460 FLOW

High Performance, Flowable, Structural Micro Concrete

a decorative and uniform appearance to the structure. Approved ARDEX Protective Coatings include:

- ARDEX WPM 310
- ARDEX WPM 330

COVERAGE (YIELD)

10 litres / 20kg bag of ARDEX 460 FLOW

PACKAGING

20kg bag

CLEAN UP

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

SHELF LIFE

ARDEX BR 460 FLOW 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 460 FLOW 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 5ºC and falling, or extreme hot temperatures.

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

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable Australian Standards. Our instructions and recommendations are only for the uses they are intended. Users are advised to confirm that this product is suitable for their application and conforms with the specifications of the system. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may affect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

This data sheet was issued in May 2023 and is valid for 3 years, in some instances a newer version may be published. Always refer to www.ardexaustralia.com for the latest technical data from ARDEX Australia Pty Ltd.