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## ARDEX B 20™

### Overhead & Vertical Repair Mortar with Corrosion Inhibitor

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Polymer-modified structural repair mortar for deteriorated concrete

integral corrosion inhibitor

Glass microspheres add body, reduce weight

Mixes with water only

Easy to apply - non-sag and can be sculpted

Readily bonds to concrete

Installs from 1/4" - 2" (6 mm - 5 cm) in one lift neat, up to 8" in multiple lifts

Freeze-thaw resistant

Suitable for overhead and vertical repairs on commercial, institutional and multi-unit residential applications

Interior or exterior, all grade levels

Low shrinkage; resists delamination

Ideal for parking garages, overhead walkways and columns

# ARDEX B 20™

## Overhead & Vertical Repair Mortar with Corrosion Inhibitor

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### Suitable Substrates

- Concrete
- Exposed reinforcing steel

### Suitable Applications

- Structural repairs under advisement of a structural engineer
- All grade levels
- Interior or Exterior
- Concrete repairs prior to coating, sealer or other finishing course
- Not to receive solvent-borne sealers
- Overhead and vertical repairs only

### Jobsite Conditions

During installation and cure, substrate and ambient temperatures must be a minimum of 50° F / 10° C. Direct sunlight or wind may cause unwanted surface drying. Avoid installation if rain or dew is expected within 6 - 8 hours.

### Priming Method Selection

- Saturated, Surface Dry (SSD)
- ARDEX EP 2000 or ARDEX MC RAPID (primer application)

### Step 1: Substrate Preparation (Proper Prep™)

For full details on Proper Prep, reference the following articles at [ardexamericas.com/services/properprep](http://ardexamericas.com/services/properprep):

- Article 1: Preparing Concrete for Bonded ARDEX or HENRY Applications
- Proper Prep Brochure

Minimum depth for repair areas: 1/2" (12.7 mm)

Prior to proceeding with any repair, please refer to the International Concrete Repair Institute's ICRI Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion; ICRI Guideline for Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays, and the American Concrete Institute's ACI 546R-04 Concrete Repair Guide for general guidelines for concrete repair.

Repair areas must be saw cut in basic rectangular shapes to at least the above minimum depth. The cuts should be made at approximately a 90° angle and should be slightly keyed. Chip out the concrete inside the cuts to the required minimum depth until the area is squared or boxed in shape.

Prepare the substrate using mechanical methods such as scarifying, needle scaling or similar. Do not use acid etching, adhesive removers, solvents or sweeping compounds, as these are bond breakers. Sanding is not an effective method to remove contaminants from concrete.

Substrate must be dry and alkali free. All substrates must be sound, solid and thoroughly clean of all bond-breaking contaminants, including but not limited to: frozen, overwatered or otherwise loose or weak material; dirt, dust, wax, grease, paints and oils; asphalt; all curing compounds and sealers; all existing patching and leveling materials; all adhesive residues.

Mechanically clean exposed reinforcing steel to remove all rust and any other contaminants in accordance ICRI.

## Minimum Preparation

In all cases, substrate must be clean; additional prep may be needed, as follows:

Selected Priming Method	Minimum Preparation
SSD	Create an exposed aggregate surface with a minimum surface profile of approximately 1/16" (1.6 mm) / minimum ICRI concrete surface profile of 5 (CSP #5).
ARDEX EP 2000 or ARDEX MC RAPID (primer application)	Concrete and terrazzo substrates must be clean and prepared to a minimum CSP 3 / maximum CSP 5 (icri.org)

Following preparation, thoroughly vacuum to remove all excess dirt and debris.

Handle and dispose of asbestos and other hazardous materials in accordance with prevailing regulations, which supersede the recommendations in this document.

## Step 2: Treating Joints and Cracks

All moving joints, including expansion joints and isolation joints, as well as all moving cracks, must be honored up through the entire assembly, including the finishing course. Under no circumstances should this product or any other component of the assembly be installed over these.

All dormant joints and dormant cracks greater than a hairline (1/32" / 0.8 mm) that will not be honored must be pre-filled with ARDEX ARDIFIX™ Low Viscosity Rigid Polyurethane Crack and Joint Repair and sand broadcasted to refusal in strict accordance with the technical data sheet.

Cracks will telegraph in any area that exhibits movement, such as an active crack, an expansion or isolation joint, or an area where dissimilar substrates meet. We know of no method to prevent this telegraphing.

## Step 3: Priming

Products may need longer drying times with low surface temperatures and/or high ambient humidity. Do not proceed with subsequent steps before product has dried thoroughly.

### Reinforcing Steel

Always prime exposed reinforcing steel with ARDEX EP 2000 and sand broadcast in accordance with the technical data sheet.

### Concrete

#### Option 1: SSD

First, use water to dampen the concrete until it is saturated thoroughly. The goal is to saturate the pores of the concrete while leaving the surface free of liquid (SSD, Saturated Surface Dry). While the surface of the concrete must be dry and free of puddles, the pores of the concrete must be saturated with water. Installing over concrete that is dry can result in cracking and bond failure. Do not leave any bare spots. Brush or vacuum off puddles and excess liquid before installing.

The structural repair mortar can be applied directly over the SSD concrete.

#### Option 2: ARDEX EP 2000 or ARDEX MC RAPID (primer application)

Mix and apply the selected epoxy as directed in the technical data sheet. While the epoxy is fresh, immediately broadcast fine sand to refusal. Once the epoxy is cured, all excess sand must be collected and removed. Vacuum remaining sand using a heavy-duty, bucket-style (Shop-Vac-style) vacuum and HEPA dust extraction vacuum system.

## Step 4: Mixing and Application

### Recommended Tools

Mixing Paddle; Mixing Container; appropriate measuring bucket; margin trowel; steel trowel; razor scraper; wood or magnesium float; 1/2" - 3/4" (12 - 19 mm) low-to-medium speed heavy-duty mixing drill; heavy gauge square box (butterfly) mixing paddle; wood planking for forming where necessary. Forced action mortar mixers may also be used.

### Application Data

<b>Water Ratio:</b>	6 1/2 - 7 pints (3.1 - 3.3 L) clean water Per bag; +/- 8 fl. oz. (0.24 L)
<b>Approximate Pot life and Working Time:</b>	15 - 30 minutes (70°F / 21°C)
<b>Thickness of Application:</b>	Minimum Thickness: 1/4" / 6 mm Maximum Thickness: 2" / 5.1 cm (Single lift) 8" / 20 cm (Multiple 2" lifts)

### Mixing

Pre-dampen the inside of a 5-gallon pail or the inside of a clean mortar mixer, and remove any excess water. Add water, and slowly add 1/3 of the bag of powder. Once this is blended, add the next 1/3 and so on until all powder is mixed in. Adjust water as needed and as detailed above. Do not overwater.

If mixing in a pail, mix with a low-to-medium speed drill and mixing paddle for approximately 3 minutes to a uniform lump-free consistency. If using a mortar mixer, mix for approximately 4 minutes until uniform and lump free. For both mixing methods, avoid over mixing, which may entrain air.

### Application

Work a scrub coat of the mixed material into the primed or SSD concrete substrate, applying enough pressure to ensure good mortar-to-substrate contact. Apply the repair mortar while the scrub coat is still wet. If the scrub coat is allowed to dry, it must be removed mechanically and reapplied before applying the mortar. Once the mortar is applied, consolidate to remove any air pockets.

When pouring into closed forms, the repairs should be vibrated to ensure full contact and to establish bond with the substrate, as well as to ensure proper consolidation. Avoid over-vibration.

Steel trowel the mortar to the desired finish once it takes its initial set, observing any minimum surface profile that may be required for the installation of the intended finishing course. For the installation of certain ARDEX products, including all ARDEX topping materials, ARDEX EP 2000™ Substrate Preparation Epoxy Primer and ARDEX MC RAPID, the surface of the ARDEX repair mortar must be prepared to a minimum ICRI concrete surface profile of 3 (CSP #3). Consult the ARDEX technical data sheet for the product being installed to confirm profile requirements. Proper profile can be achieved as the mortar is roughed in or via mechanical preparation methods, such as shot blasting, once the product is cured. To view the toppings, underlayments, moisture control materials, dressings and sealers available from ARDEX, please visit [www.ardexamericas.com](http://www.ardexamericas.com).

Cool ambient and surface temperatures will slow the setting time, while high temperatures will accelerate it. Applications when temperatures are above 85°F (29°C) should follow the appropriate warm weather installation guidelines available from the ARDEX Technical Service Department.

## Step 5: Curing

All dry times are calculated at 70°F (21°C). Drying time is a function of jobsite temperature and humidity conditions. Low substrate temperatures and/or high ambient humidity will extend the drying time. Adequate ventilation and heat will aid drying. Forced drying can dry the surface of the product prematurely and is not recommended.

Keep the surface of the installation damp for 48 hours (light water fogging, curing blanket or curing compound). Do not allow water to puddle. Do not use solvent-borne curing compounds or sealers.

Note: If the surface is to receive a topcoat or other type of finish, moist curing methods may be advisable, and additional surface preparation may be required. Verify with the coating / finish manufacturer.

Allow to cure 3 - 7 days prior to coating or sealing.

## Step 6: Finishing

Do not use solvent-borne sealers. Follow the installation instructions for the material being applied. The repaired area can then be put back into service as soon as the finishing course is ready to receive traffic.

## Notes

Intended for use by professional contractors who are trained in the application of this product and/or similar products. Not sold by ARDEX through home improvement centers. For information on ARDEX Academy trainings, visit:

[www.ardexamericas.com](http://www.ardexamericas.com).

Never mix with cement or additives outside of our written recommendations. In accordance with industry standards, and to determine the suitability of the products for the intended use, always install an adequate number of properly located test areas, including the sealer / coating. As finish materials vary, always contact and rely upon the sealer / coating manufacturer for specific directives, such as maximum allowable moisture content and intended end use of the product.

If the installation is not proceeding as expected: Contact the ARDEX Technical Service Department before proceeding further.

Observe the basic rules of concrete work, including the minimum surface and air temperatures detailed above. Install quickly if the substrate is warm, and follow the warm weather installation guidelines available on our website.

Dispose of packaging and residue in accordance with prevailing regulations. Do not flush material down drains. Do not reuse packaging.

## Precautions

Carefully read and follow all precautions and warnings on the product label. For complete safety information, please refer to the Safety Data Sheet (SDS) available at:

[www.ardexamericas.com](http://www.ardexamericas.com).

Made in the USA.

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[www.ardexamericas.com](http://www.ardexamericas.com).

## Technical Data According to Manufacturer Quality Standards

Physical properties are typical values and not specifications. All data based on a partial, in-lab mix. Mixing and Testing completed at 70°F / 21°C.

<b>Coverage:</b>	Per bag: 0.42 cu. ft. (0.0119 m <sup>3</sup> ) Per bag At 1/4" (6 mm): 20 sq. ft. (1.86 m <sup>2</sup> ) Dependent on surface profile, density and porosity.
<b>Compressive Strength (ASTM C109):</b>	3,000 psi (20.6 MPa; 221 kg/cm <sup>2</sup> ) At 1 days 5,000 psi (34.4 MPa; 350.7 kg/cm <sup>2</sup> ) At 7 days 6,300 psi (43.4 MPa; 442.5 kg/cm <sup>2</sup> ) At 28 days
<b>Flexural Strength (ASTM C293):</b>	1,100 psi (7.5 MPa; 76.4 kg/cm <sup>2</sup> ) At 7 days 1,500 psi (10.3 MPa; 105 kg/cm <sup>2</sup> ) At 28 days
<b>Splitting Tensile Strength (ASTM C496):</b>	485 psi (3.3 MPa; 33.6 kg/cm <sup>2</sup> ) At 7 days 565 psi (3.9 MPa; 39.7 kg/cm <sup>2</sup> ) At 28 days
<b>Modulus of Elasticity (ASTM C469):</b>	2.26 x 10 <sup>6</sup> psi (1.5 x 10 <sup>4</sup> MPa; 1.6 x 10 <sup>5</sup> kg/cm <sup>2</sup> ) At 28 days
<b>Direct Tensile Bond Strength (ASTM D4541)</b>	500 psi (3.4 MPa; 34.6 kg/cm <sup>2</sup> ) At 28 days
<b>Length Change (ASTM C157):</b>	<0.1% At 7 days <0.1% At 28 days
<b>ASTM C157 (wet cure)</b>	<0.3 At 28 days
<b>Colors:</b>	Gray
<b>Packaging:</b>	55 lb. (25 kg) bag
<b>Storage:</b>	Store in a cool, dry area. Do not leave units exposed to sun.
<b>Shelf Life:</b>	12 months, if unopened and properly stored
<b>Warranty:</b>	ARDEX Standard Limited Warranty applies.

Visit [www.youtube.com/ARDEX101](http://www.youtube.com/ARDEX101) to watch ARDEX product demonstration videos. For recommended installation tools, visit DTA USA at [www.dtausagroup.com](http://www.dtausagroup.com). For easy-to-use ARDEX Product Calculators and Product Information On the Go, download the ARDEX App.



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