



ARDEX ERM™ Exterior Ramp Mortar

Trowel-Grade Horizontal Concrete Repair Mortar

**Portland cement-based, polymer modified structural repair mortar with
integral corrosion inhibitor**

Mixes with water only

Easy to apply

**Installs from 1/4" to 2" (6 mm to 5 cm) neat, and can be extended up
to 8" (20 cm) for deeper applications**

Freeze-thaw resistant

**Suitable for normal service commercial, institutional and
multi-unit residential applications**

Use for exterior and interior concrete repair

Holds shape for ramping and balconies

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Trowel-Grade Horizontal Concrete Repair Mortar

Description and Usage

ARDEX ERM EXTERIOR RAMP MORTAR is a trowel-grade, polymer-modified, Portland cement-based structural repair mortar. It is used at depths ranging from 1/4" to 2" (6 mm to 5 cm) neat, and can be extended up to 8" (20 cm) for deeper and full depth repairs of deteriorated exterior and interior concrete above, on or below grade. ARDEX ERM has a corrosion inhibitor built-in to protect reinforcing steel, is easy to apply and readily bonds to concrete. The resulting patch has low shrinkage and resists delamination, producing a surface suitable for commercial, institutional and multi-unit residential traffic. Typical applications include sidewalks, plazas, walkways, driveways, parking garages and balconies.

Substrate Preparation

Prior to proceeding with any repair, please refer to the International Concrete Repair Institute's ICRI 03730 Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion; ICRI 03732 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.

The repair area must be saw cut in a basic rectangular shape to at least 1/4" (6 mm) in depth. The cuts should be made at approximately a 90° angle, and should be slightly keyed. Chip out the concrete inside the cuts to a minimum depth of 1/4" (6 mm) until the area is squared or boxed in shape.

All substrates must be solid, thoroughly clean and free of oil, wax, grease, asphalt, existing patching materials, curing and sealing compounds, and any contaminant that might act as a bond breaker. Over watered, frozen or otherwise weak concrete surfaces must also be cleaned down to sound, solid concrete by mechanical methods such as scarifying, scabbling or similar in accordance with ICRI 03732 to create an exposed aggregate surface with a minimum surface profile of approximately 1/16" (1.5 mm). Acid etching, solvents, sweeping compounds and sanding are not acceptable means of preparing the substrate.

For cases with exposed reinforcing steel, mechanically clean the steel to remove all rust and any other contaminants in accordance ICRI 03730. Prime the steel with ARDEX BONDING & ANTI-CORROSION AGENT™ prior to proceeding with the repair. For further details, please refer to the ARDEX Technical Brochure.

Cracks and Joints

Saw cuts and dormant cracks greater than 1/16" (1.5 mm) should be filled with an ARDEX ARDIFIX™ joint filler or similar in strict accordance with the installation instructions provided by the epoxy manufacturer. The filling of dormant cracks and joints as described is recommended to help prevent telegraphing. However, should movement occur, cracks and joints will reappear.

In no case should expansion joints, isolation joints, construction joints or moving cracks be filled with this epoxy. All moving joints and cracks must be must be carried up through the ARDEX ERM by installing a flexible sealing compound specifically designed for use over moving joints, such as ARDEX ARDISEAL™ RAPID PLUS joint filler or similar.

Recommended Tools

A 1/2" to 3/4" (12 to 19 mm) low speed heavy-duty mixing drill, heavy gauge square box (butterfly) mixing paddle, mixing buckets, measuring container, margin trowel, wood or magnesium float, steel trowel and wood planking for forming where necessary. Also suitable for mixing in forced action mortar mixers.

Priming

If ARDEX BONDING & ANTI-CORROSION AGENT is specified as a primer, follow the application instructions in the ARDEX Technical Brochure.

If this primer is not used, dampen the concrete to be repaired until it is thoroughly saturated. Do not leave any bare spots. Brush or vacuum off puddles and excess liquid. The goal is to saturate the pores of the concrete while leaving the surface free of water (SSD, Saturated Surface Dry). Alternatively, ARDEX P 71™ PRIMER can be used in accordance with the ARDEX technical brochure. Do not allow the concrete or ARDEX P 71 to dry before installing the ARDEX ERM. Installing the mortar over a surface that is too dry can result in cracking and bond failure.

Mixing and Application

Pre-dampen the inside of a 5 gallon pail or the inside of a clean mortar mixer, and remove any excess water. Pour in 6 1/2 pints (3.07 L) of clean water, and then slowly add one-third of a 55 lb (25 kg) bag of ARDEX ERM. Once this is blended in, add the next third and so on until all of the material is added. If mixing in a pail, mix with a slow 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 entrap air. If additional water is required, you may add up to 8 oz (0.24 L) of additional mix water per bag. **Do not overwater.**

ARDEX ERM is easily applied to any prepared concrete surface using standard concrete practices. Once mixed, the working time is 25 to 45 minutes depending on surface and ambient temperatures. All material should be installed and finished within this time. Cool ambient and surface temperatures will slow the setting time.

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

Steel trowel the mortar to the desired finish once it takes its initial set. Applications when temperatures are above 85°F (29°C) should follow the appropriate Warm Weather Installation Guidelines available from the ARDEX Technical Service Department.

Thickness of Installation

ARDEX ERM can be installed from a minimum of 1/4" up to 2" (6 mm to 5 cm) neat. For application depths greater than 2 inches (5 cm) in a single lift, including full depth repairs, extend ARDEX ERM by adding 40 pounds (18 kg) of clean, uniformly graded, 1/4" to 3/8" (6 to 9 mm) pea gravel dampened to an SSD condition. Mix the ARDEX ERM with water first, then add the pea gravel and continue mixing until the aggregate is uniformly coated.

Alternatively, ARDEX ERM can be applied in 2" (5 cm) lifts up to a total of 8" (20 cm) without adding pea gravel. For this application, allow each lift to take an initial set, and then score the top of each lift to create a textured bonding surface for the subsequent lift.

Curing

Direct sunlight or wind may cause unwanted rapid surface drying. 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. Note: if the surface is to receive a topcoat or other type of finish, use moist curing methods only.

Surface Finish and Sealing

Once the repair has cured for a minimum of 3 to 7 days it can be coated, topped or sealed as specified. To view the toppings, dressing and sealers available from ARDEX, please visit www.ardex.com.

Notes

The pot life and working time of ARDEX ERM are approximately 25 to 45 minutes at 70°F (21°C). Pot life will vary with ambient temperatures.

ARDEX ERM is intended for repairing and resurfacing exterior or interior concrete in institutional, commercial and residential areas. For horizontal applications, use only for areas subject to normal foot and rubber-wheeled traffic.

Always install an adequate number of properly located test areas, including the finish, to determine the suitability of the products for the intended use. As finishes vary, always contact and rely upon the finish manufacturer for specific directives such as maximum allowable moisture content, sealer selection and intended end use of the product.

Never mix with cement or additives. Observe the basic rules of concrete work. Do not install below 50°F (10°C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of ARDEX ERM. Install quickly if substrate is warm, and follow warm weather instructions available from the ARDEX Technical Service Department.

Precautions

ARDEX ERM contains Portland cement and crystalline-free silica. Avoid eye and skin contact. Mix in a well ventilated area and avoid breathing powder or dust. **KEEP OUT OF REACH OF CHILDREN.** Carefully read and follow all cautions and warnings on the product label. For complete safety information, please refer to the Material Safety Data Sheet or visit our website at www.ardex.com.

Technical Data According to ARDEX Quality Standards

All data based on recommended mix ratio at 70°F (21°C).
Physical properties are typical values and not specifications.

Mixing Ratio:	6 1/2 pints (3.07 L) of water per 55 lb (25 kg) bag
Yield:	0.46 cu. ft. (0.013 m ³) per 55 lb (25 kg) bag 22 sq. ft. (2.04 m ²) per 55 lb (25 kg) bag at 1/4" (6 mm)
Compressive Strength:	7 days 7000
(psi) ASTM C109	28 days 8200
Flexural Strength (psi):	7 days 1200
ASTM C293	28 days 1500
Modulus of Elasticity:	28 days 3.67 x 10 ⁶
(psi) ASTM 469	
Length Change (%):	7 days 0.06
ASTM C157	28 days 0.08
Rapid Chloride:	28 days 820
Permeability	
ASTM C1202	
(Coulombs)	
Pot Life/:	25 to 45 minutes
Working Time	
Time to Traffic:	Light foot traffic: 2 to 4 hours Normal foot traffic: 3 day Full service: 5 to 7 days
Coat or Seal:	3 to 7 days
Color:	Gray
Packaging:	55 lb (25 kg) net weight paper bags
Storage:	Store in a cool dry area. Do not leave bags exposed to direct sunlight. Keep from freezing.
Shelf Life:	One year if unopened
Warranty:	ARDEX Engineered Cements Standard Limited Warranty Applies