BASF

The Chemical Company

Technical Data Guide

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Maintenance of Concrete

MasterEmaco® ADH 1420

General-purpose gel epoxy adhesive

FORMERLY CONCRESIVE® 1420

PACKAGING
15.8 oz (300 by 150 ml) biaxial cartridges, 20 per box

One time use disposable static mixing nozzles sold separately in packs of 3.

YIELD
One gallon equals 7.8 cartridges

SMOOTH SURFACES:
12 ft^2/gal (0.29 m^2/L)

ROUGH SURFACES:
6 ft^2/gal (0.15 m^2/L)

STORAGE
Store and transport in unopened containers in a cool, clean, dry area. Keep from freezing.

SHELF LIFE
2 years when properly stored

VOC CONTENT
11 g/L less water and exempt solvents

DESCRIPTION
MasterEmaco ADH 1420 is a two-component 100% solids nonsag epoxy adhesive. It is used for anchoring fasteners, rebar, and dowels into concrete, but can also be used for other epoxy- bonding surface applications.

PRODUCT HIGHLIGHTS
- Easy-to-use cartridge for pre-proportioned components
- Disposable static mixing attachment reduces material waste and minimizes clean up and solvent use
- Moisture-tolerant bonding suitable for wet environments
- Nonsag gel ideal for vertical and overhead applications

APPLICATIONS
- Interior or exterior
- Horizontal or vertical
- Fastening of bolts, dowels, and rebar into concrete
- Bonding metal, wood, and other construction materials
- Pinning loose and broken masonry

SUBSTRATES
- Concrete
- Metal
- Wood

HOW TO APPLY

SURFACE PREPARATION

CONCRETE

1. Concrete must be structurally sound and fully cured (28 days).
2. Saw cut the perimeter of the area being repaired into a square with a minimum depth of ½" (13 mm).
3. The surface to be repaired must be clean, saturated surface-dry (SSD), strong, and roughened to a CSP of 8–9 following ICRI Guideline no. 310.2 to permit proper bond.

CONCRETE HOLES

1. Holes may be wet or dry drilled using either percussive or rotary machines. Percussive methods are preferred as they create a rougher cut, providing a better key for the grouting adhesive.
2. Surface laitance must be removed from precast holes. Whenever possible, cast holes undersized and drill to the desired size after the concrete has cured.
3. Flush wet-drilled holes with clean water to remove residue and water, and blow out the holes with a nylon-bristled blow-gun attachment with oil-free compressed air. Whenever possible, allow the holes to dry. Damp concrete must be at least surface dry and absent of rising moisture.

Technical Data

Composition

MasterEmaco ADH 1420 is a two-component 100% solids nonsag epoxy.

Compliances

- ASTM C 881, Type I, II, IV, V, Grade 3, Class B and C
- Has been tested in accordance with ICC-AC58

Typical Properties

COMPONENT	PART A (Resin)	PART B (Hardener)
Form	LV Gel	LV Gel
Color	White	Black
Mixing ratio, (A to B) by volume	2	1
Mixed color		Gray
Consistency, sag (ASTM C 881)		Nil
Pot life, min (minimum)		15
Open time, min (maximum)		40
Initial cure, hrs (minimum)		24

Test Data

PROPERTY	RESULTS	TEST METHOD
Tensile strength, psi (MPa)	4,000 (27.6)	ASTM D 638
Elongation at break, %	1.0	
Compressive yield strength, psi (MPa)	12,500 (86.2)	ASTM D 695
Compressive modulus, psi (MPa)	4.5×10^5 (3.06×10^3)	ASTM D 695
Heat deflection temperature, ° F (° C)	122 (50)	ASTM D 648
Bond strength, psi (MPa), 2-day cure	> 2,000 (13.8)	ASTM C 882

Test temperature of 77° F (25° C); cured 7 days. Properties listed are typical and should be used only to determine suitability for a particular application.

STEEL

1. Remove all oxidation and scale from the exposed reinforcing steel in accordance with ICRI Technical Guideline No. 310.1R.
2. For additional protection from future corrosion, coat the prepared reinforcing steel with MasterProtect P 8100 AP.

MIXING

1. MasterEmaco ADH 1420 biaxial cartridges are mixed by a disposable static-mixing attachments. The cartridges are manipulated using a specially designed drop-in dispensing gun.
2. The pot life of MasterEmaco ADH 1420 demands diligence in dispensing the material to prevent clogging and waste of static mixing attachments. Pneumatic or high-mechanical advantage manual-dispensing guns are recommended. ALWAYS condition MasterEmaco ADH 1420 cartridges to between 60 and 80° F (16 and 27° C) to speed and ease dispensing and to ensure mixing consistency.

APPLICATION

GENERAL BONDING

Dry, contaminate-free concrete profiled to expose fine aggregate will produce optimum bond strengths. Bondline thickness should be between 1⁄32 and 1⁄8" (0.79 and 3 mm). Ideally, a small amount of material should be extruded when the bonding surfaces are joined and pressure applied. Surfaces must be joined within the open time of the epoxy adhesive.

ANCHOR HOLES

1. As the annular space between the anchor and the hole becomes smaller, creep resistance will improve from the increased confinement of the epoxy adhesive. The recommended diameter of the hole is ¼" (6 mm) larger than the bar's diameter.
2. Install a measured amount of adhesive into the back or bottom of the hole, then insert the anchor to displace the adhesive toward the front or top of the hole. Secure anchor in the center of the hole. Remove excess adhesive before it hardens. Use pressure grouting when grouting holes deeper than 2 ft (0.6 m).

CLEAN UP

Clean all tools and equipment immediately with xylene or mineral spirits. Cured material must be removed mechanically.

FOR BEST PERFORMANCE

- Do not add solvent, water, or any other material to the bonding agent.
- Always apply slow, even pressure with side-by-side cartridges; excessive pressure may cause improper mixing or damage to cartridges, resulting in seeping of material.
- For professional use only; not for sale to or use by the general public.
- Make certain the most current versions of product data sheet and SDS are being used; visit master-builders-solutions.basf.us to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.basf.us, e-mailing your request to basfbscst@basf.com or calling 1(800)433-9517. Use only as directed.

For medical emergencies only, call ChemTrec® 1(800)424-9300.

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