



ARMOR-HARD KIT

Early-Set Structural Epoxy Mortar Kit for Repairing Concrete Floors

TECHNICAL DATA

AHK-1

1. Product Name **ARMOR-HARD KIT**

2. Manufacturer **METZGER/MCGUIRE**

PO Box 2217 Concord, NH 03302 (USA) Phone: 603-224-6122
Fax: 603-224-6020 Web: www.metzgermcguire.com

3. Product Description

Composition

Armor-Hard Kit is a concrete floor repair kit consisting of a two-component, structural, epoxy binder and a pre-measured bag of custom blended sand aggregate. When epoxy and aggregate are combined they produce a mortar that is easily worked and troweled. This is an early-set system designed specifically for the repair of industrial concrete floors subject to hard wheeled traffic.

Related Products/Versions

Armor-Hard is available in two primary versions:

Armor-Hard Liquid or Kit - Early-Set properties (faster than standard structural epoxies, slower than **Extreme**), use limited to temperatures of 50°F +.

Armor-Hard Extreme Liquid or Kit - Quick-set properties, multiple temperature applications.

Typical Use

As a mortar;

- Spall repair/rebuilding of joint shoulders
- As a topping for delaminated slabs
- Fill in holes, gouges, ruts, popouts
- Repair broken slab panel corners

4. Limitations

- Should not be used in joints or cracks that move
- For deep repairs install in 1" (25 mm) lifts to avoid shrinkage due to exotherm
- Not for use as a surface coating
- Should be installed at 50°F (10°C) or higher

5. Packaging

Kit contains epoxy liquid (pre-measured "A" and "B" components in cans) and custom blended aggregate mix designed for smooth, easy troweling. One unit will yield approximately 540 cubic inches of mortar (approximately 2.35 gallons), enough to apply 15 sq. ft. of mortar 1/4" (6 mm) thick.

TECHNICAL INFORMATION

The following properties are for the installed mortar using aggregate blend provided in Metzger/McGuire's ARMOR-HARD KIT.

Compressive Strength	10,500 psi
Tensile Strength	1,400 psi
Flexural Strength	3,700 psi
Adhesive Strength	Concrete breaks
Shore Hardness (D)	D86+
Solids Content	100%
Working Time (as mortar)	30-40 mins. @ 70°F
Initial Set	3-4 hrs. @ 70°F
Grindable Time	3-5 hrs. @ 70°F
Foot Traffic Ready	3-5 hrs. @ 70°F
Heavy-Duty Traffic	4-8 hrs. @ 70°F
Color, Mixed, Of Liquid	Translucent/clear*
Mix Ratio, By Volume	4A:1B

**Mortar color will be aggregate color*

6. Color

Epoxy liquid color is a translucent/clear. If blended with aggregate mortar color will become aggregate color. Standard aggregate color for kits is Dovetail Gray. Optional aggregate colors in kits are Standard Gray, Natural (light tan/brown in color), and Porpoise.

7. Availability

Armor-Hard Kit is available through quality construction supply distributors in most major U.S. cities or through our New Hampshire headquarters.

8. Advantages

- Early set allows for:
 - Pedestrian/construction traffic in 3-4 hours
 - Grinding/sanding in 3-4 hour
 - Hard wheeled traffic in 8 hours or less (at 70°F)
- Requires no separate primer
- USDA/FDA acceptable
- Superior impact, wear and chemical resistance
- Excellent abrasion resistance
- Very low odor once blended

9. CHEMICAL RESISTANCE

Excellent

Motor Oil
Gasoline
Jet Fuel
Methanol
10% Lactic Acid
10% Nitric Acid
30% Citric Acid
10% Acetic Acid
50% Sulfuric Acid
75% Phosphoric Acid
50% Sodium Hydroxide

Good

1,1,1-Trichloroethane
Toluene
70% Sulfuric Acid
36% Hydrochloric Acid
30% Nitric Acid
Not Recommended
MEK
50% Acetic Acid
50% Nitric Acid
Methylene Chloride

10. Installation Instructions

Surface Preparation

All surfaces must be clean, dry, structurally sound and free of grease, oil, coatings, sealers, paint, etc. Surface preparation may be accomplished by grinding, sawing, chipping, sandblasting, etc. Prevent featheredging by creating a vertical edge at outer point of defect to be repaired (1/2" minimum, 3/4" preferred). See *Metzger/McGuire's Guide to Basic Floor Repair* and related information on repair procedures for recommendations. New concrete should have minimum cure of 30 days.

Mixing

(Read product container labels and SDS before using)

Caution—Due to 4:1 ratio, the entire contents of both epoxy parts should be used. If using less than full unit, "A" and "B" ratio must be measured precisely by volumetric comparison.

Ambient temperature should be at least 50°F (10°C). Combine parts "A" and "B" in a plastic pail and mix for 2-3 minutes using a Jiffy-type mixer and a variable speed drill. Keep drill speed below 800 rpm to avoid air entrapment. If using as a liquid, dispense promptly. Application of mixed liquid as a primer coat (brush applied) will enhance mortar adhesion.

Mortar mixing is best achieved using a 1/2" heavy-duty drill with a mortar mixing paddle or a rotating pail mixer. Thoroughly mix epoxy liquid, then gradually add sand aggregate from kit until all sand aggregate is "wetted" with the epoxy.

10. Installation Instructions (continued)

Note: It is acceptable to use less than the full amount of aggregate blend provided. The amount used will depend upon whether you are using rotating drum mixer or drill-and-paddle, size of drill, type of paddle, etc.

Mix for an additional 2-3 minutes after optimum aggregate loading.

Dispensing

Promptly install mortar into defect, spread evenly using clean steel trowel. Finish installing each unit before mixing the next. Trowel mortar to desired density and finish texture. If mortar starts to stiffen and creates trowel drag, wipe trowel with isopropyl alcohol or acetone. The final surface density and appearance will reflect trowel pressure and intensity. Working time for mortar is approximately 30-40 minutes at 70°F.

Clean-Up

Spills of unmixed components can be cleaned up with solvent (Toluol, Xylol, MEK, denatured alcohol, etc). Clean tools and spills before epoxy or mortar has set using solvent or warm soapy water.

11. Coverage

One unit will yield approximately 540 cubic inches of mortar (approximately 2.35 gallons), enough to apply 1.5 sq. ft. of mortar 1/4" (6 mm) thick. Coverage will be less if you choose to use less than the full amount of aggregate blend provided.

12. Shelf Life and Storage

Armor-Hard Kit has a guaranteed shelf life of 12 months if containers remain unopened. Store in dry, cool areas away from excessive heat, freeze/thaw and sunlight. See complete installation instructions for information.

13. Safety

This product is for industrial use only. Use only in well ventilated areas. Practice all normal jobsite safety precautions (clear work area, etc). Thoroughly read and understand SDS and installation instructions for additional information prior to using material.

14. Food Related Facilities

USDA prohibits the use of any chemicals in areas where existing food or food packaging can be contaminated. Contact *Metzger/McGuire* for further details if food products are present.

WARRANTY: Metzger/McGuire Co. solely and expressly warrants that its product shall be free from defects in material and workmanship for 12 months from the date of purchase. Unless authorized in writing by an officer of Metzger/McGuire, no other representations or statements made by Metzger/McGuire or its representatives, in writing or orally, shall alter this warranty. Metzger/McGuire makes no warranties, implied or otherwise, as to the merchantability or fitness for ordinary or particular purposes of its products and excludes the same. If any Metzger/McGuire product fails to conform with this warrant, Metzger/McGuire will replace the product at no cost to the purchaser. Purchaser's sole remedy in any case shall be limited to the purchase price or replacement cost of product and specifically excludes labor and the cost of labor, lost wages and opportunity costs, and all other possible incidental, consequential or special damages resulting from any claim of breach of warranty, breach of contract, negligence or any legal theory. Any warranty claim must be made within one (1) year from the date of material purchase. Metzger/McGuire does not authorize anyone on its behalf to make any written or oral statements which in any way alter the installation procedures or written installation instructions published in its product literature or on its packaging labels. Any installation of Metzger/McGuire products which fails to conform with such installation information or instructions shall void this warranty. Purchaser shall be solely responsible for determining the suitability of Metzger/McGuire's products for the purchaser's intended purpose.

UPDATED 11/16