



METALPOXY FLOORING

Iron Aggregate Epoxy Mortar for Heavy-Duty Wear and Impact

1. Product Description

a. **Basic Use:** Metalpoxy Flooring is an epoxy and iron aggregate system used to protect horizontal surfaces against the most severe abrasion and impact. Metalpoxy Flooring is usually applied to concrete substrates in need of repair due to excessive wear, gouging and impact, and floor areas subjected to steel wheel traffic.

b. **Features/Benefits:**

- Versatile product formulation permits use as total floor overlay or may be used for small floor or joint repair.
- Rapid high early age strengths allow floor to be placed into service one day after application, when applied at 70°F (21°C).
- Combination of iron aggregate in an epoxy matrix provides one of the most durable and cost effective floor repair systems.
- Excellent adhesive properties permit bonding to most commonly found substrates.
- Formulation of 100% epoxy solids and specially graded and processed iron aggregate is in total compliance with VOC regulations.
- May be applied from a feather edge to several inches thick allowing for repair or patching to total floor resurfacing.
- Contains no volatile solvents, permitting interior application with virtually no fire hazard or toxic odor.
- Easy clean up with soap and water.

c. **Typical Applications:** Solid waste transfer and processing plants, loading docks, steel processing mills, towveyor lines, heavy equipment maintenance areas, manufacturing plants, automotive and truck plants, and railroad maintenance facilities.

d. **Limitations:** Metalpoxy Flooring should not be used where exposure to frequent freezing and thawing is possible as well as areas at temperatures above 140° F (60°C).

e. **Composition:** Metalpoxy Flooring is a multi-component system consisting of 100% solids epoxy and specially graded and selected iron aggregate.

f. **Color/Appearance:** Metalpoxy Flooring is available only in black.

2. Packaging

Metalpoxy Flooring is packaged in three standard units as shown Below:

Unit Size	Binder	Activator	Iron	
			Aggregate	Shipping Wt.
0.75 gal. * (2.8 liter)	0.50 gal. (1.9 liter)	0.25 gal. (0.95 liter)	56 lbs. (25.4 Kg)	64 lbs. (29.0 Kg)
3 gal. (11.4 liter)	2.0 gal. (7.6 liter)	1.0 gal. (3.8 liter)	225 lbs. (102.0 Kg)	255 lbs. (115.7 Kg)
15 gal. (57 liter)	10.0 gal. (37.9 liter)	5.0 gal. (18.9 liter)	1,125 lbs. (510.3 Kg)	1,275 lbs. (578.3 Kg)

*The .75 gal. (2.8 liter) unit is packaged as a kit in a 5-gal. (18.9 liter) pail for small repairs such as joints or holes.

3. Estimating/Coverage

For overlays or toppings, the standard thickness for Metalpoxy Flooring will vary from 1/4 in. (6.4 mm) to 3/4 in. (19 mm) depending on intended floor service. This material may also be used for deep patches up to 4 in. (102 mm) in thickness such as in joint repairs. The coverage rate for various thicknesses is shown below.

Unit Size	Yield	Coverage at 1/4" (6.4 mm)	Coverage at 1/2" (13 mm)	Coverage at 3/4" (19 mm)
0.75 gal. (2.8 liter)	0.26 cu. ft. (0.007 cu. m)	12.3 sq. ft. (1.1 sq. m)	6.2 sq. ft. (0.6 sq. m)	4.1 sq. ft. (0.4 sq. m)
3 gal. (11.4 liter)	1.1 cu. ft. (0.031 cu. m)	50.4 sq. ft. (4.7 sq. m)	25.2 sq. ft. (2.3 sq. m)	16.8 sq. ft. (1.6 sq. m)
15 gal. (57 liter)	5.3 cu. ft. (0.15 cu. m)	252.0 sq. ft. (23.4 sq. m)	126.0 sq. ft. (11.7 sq. m)	84.0 sq. ft. (7.8 sq. m)

4. Technical Data

a. **Compressive Strength:** ASTM C 109 , 2 in. (50 mm) cubes.

Age	Strength
12 hours	3,000 psi (20.7 MPa)
18 hours	5,000 psi (34.5 MPa)
1 day	10,800 psi (74.5 MPa)
3 days	11,500 psi (79.3 MPa)
7 days	13,000 psi (89.7 MPa)
28 days	14,000 psi (96.5 MPa)

Above strengths are based on laboratory conditions at 72°F (22°C).

b. Abrasion Resistance: ASTM C 779 Procedure A.

<i>Duration</i>	<i>Depth</i>
<i>30 minutes</i>	<i>0.007 in. (1.78 mm)</i>
<i>60 minutes</i>	<i>0.012 in. (3.05 mm)</i>

c. Bond Strength: ASTM C 882; 2,400 psi (16.5 MPa).

5. Directions for Use

a. **Preparation:** The surface to be patched or overlaid must be dry, physically and structurally sound, thoroughly clean, free of oil, curing compounds or other deleterious materials that may prevent adhesion. New concrete must be thoroughly cured for at least 28 days before starting surface preparation. New concrete should be finished to at least a rough broom texture. Old or existing concrete should be mechanically roughened or abraded by shot-blasting or scabbling equipment. An exposed aggregate surface is required for good bonding. All loose particles must be removed by vacuuming or flushing with compressed air and water. Allow slab to dry completely if water is used for cleaning.

b. **Priming:** All concrete surfaces must be primed with Metco Hi-Mod LV Epoxy. Mix and apply material in accordance with printed instructions.

c. **Liquid Mixing:** Thorough blending of all components is essential. Use a power drill with a Metco Jiffy mixing paddle. First, mix the binder separately, then, mix the activator separately. Next, add the mixed activator to the mixed binder at the rate of 2 parts binder to 1 part activator by volume and thoroughly blend for at least two minutes at revolution speeds that will not entrap air bubbles into the freshly mixed Metalpoxy Flooring liquid.

d. **Iron Aggregate and Liquid Mixing:** After the binder and activator are completely mixed, add all the iron aggregate to the liquid compound and mix until all the aggregate is thoroughly coated with epoxy. The iron aggregate is added at the rate of 75 lbs. per mixed gal. of liquid epoxy. The .75-gal. unit requires 56 lbs. of iron aggregate. The Metco Batch Mixer, which utilizes a 5-gal. (18.9 liter) pail, is ideal for efficient mixing of the iron aggregate into the mixed epoxy compound on small units. For larger units or batches, utilize a high powered mortar mixer with an extremely strong drive mechanism. Properly mixed Metalpoxy Flooring will be at a damp pack consistency.

e. **Application:** After the substrate has been primed, distribute the mixed epoxy mortar onto the area to be overlaid. On small areas, the mortar may be placed with a trowel or float. For larger areas, it is good practice to use screed bars or rails to act as guides for screeding operations. Care should be exercised to leave the surface free of trowel marks, ridges, and other imperfections. A power trowel may be used to increase smoothness and surface density. Finish material immediately after placement.

f. **Top Coat Application:** After the epoxy/iron mortar system has hardened, a top coat of mixed epoxy liquids is recommended to seal and densify the surface. Use the Metalpoxy liquid epoxy components following mixing directions in item c above. Apply the mixed liquids directly onto the Metalpoxy surface at the rate of 150 to 200 sq. ft. per gal. (3.7 to 4.9 sq. m/liter). Spread the top coat evenly and uniformly with a short nap roller or squeegee.

g. **Cure time:** Metalpoxy Flooring will harden in 8 hours at 70°F (21°C), but must be protected from moisture and traffic for at least 18 hours. The floor is then ready for service.

h. **Clean-up:** Either DL Solvent or Waterzall Concentrate and warm water may be used for cleaning tools and equipment.

i. **Maintenance:** Metalpoxy Flooring surfaces should be cleaned with a Waterzall Concentrate and water solution. Waterzall Concentrate may also be used at full strength to remove built-up deposits and stains. Metalpoxy Flooring may be reapplied to itself.

6. Availability

Metalpoxy Flooring is normally available immediately from your local distributor or it will be shipped within 5 working days upon receipt of order. Please contact your local Metalcrete representative or call Metalcrete directly for more information.

7. Warranty

Metalpoxy Flooring is manufactured in strict accordance with the quality control standards of Metalcrete Industries. It is guaranteed to perform as indicated on this data sheet when applied by competent applicators.

8. Technical Service

Metalcrete technical service representatives are available to provide on-site assistance with a minimum three day notice.



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