



FLOOR E HARDENER

*Emery Aggregate
Dry Shake Floor Hardener*

1. Product Description

a. **Basic Use:** Floor E Hardener is intended for use as a dry shake surface hardener on fresh concrete to provide substantially greater wear resistance on the surface of industrial grade floor slabs and pavements. It is applied to the surface of fresh concrete during the normal floor finishing operations with standard finishing equipment.

b. **Features/Benefits:**

- Provides a high strength floor surface for superior wear resistance.
- Formulated with emery aggregate which gives up to twice the wear resistance of plain concrete floors.
- Works into the surface of fresh concrete easily for complete, monolithic integration.
- Specially graded emery aggregate densifies the floor surface for better resistance to water, fluid, and oil spills.
- Hard, non-dusting surface makes floor cleaning and maintenance easier and faster.
- Suitable for both interior and exterior applications including freeze/thaw exposure.

c. **Typical Applications:** Warehouses of all types, loading docks, manufacturing plants, terminals, processing plants, metal shops, stamped concrete, amusement parks and print shops.

d. **Limitations:** Floor E Hardener should not be used in areas subject to acid spillage or other chemicals which attack portland cement.

e. **Composition:** Floor E Hardener is a blend of a specially graded emery aggregate, portland cement, and a proprietary chemical system.

f. **Color/Appearance:** Floor E Hardener provides a concrete gray floor color when used as a natural colored, unpigmented system. It is also available in standard colors including light reflective, french gray, battleship gray, black, brown, tile red, terra cotta, and green.

2. Packaging

Floor E Hardener is packaged in 50-lb. (22.7 Kg) moisture resistant bags, 60 bags per pallet. Shelf life is 18 months with proper storage and protection.

3. Estimating/Coverage

Floor E Hardener has a normal usage rate of 0.50 to 1.50 psf (2.4 to 7.3 Kg/sq. m). The following table may be used for coverage.

<i>Application Rate</i>	<i>Coverage Per Bag</i>
<i>0.50 psf (2.4 Kg/sq. m)</i>	<i>100 sq. ft. (9.3 sq. m)</i>
<i>1.00 psf (4.9 Kg/sq. m)</i>	<i>50 sq. ft. (4.6 sq. m)</i>
<i>1.25 psf (6.1 Kg/sq. m)</i>	<i>40 sq. ft. (3.7 sq. m)</i>
<i>1.50 psf (7.3 Kg/sq. m)</i>	<i>33 sq. ft. (3.1 sq. m)</i>

4. Technical Data

a. **Applicable Standards:**

- ACI 302.1R-89, Guide for Concrete Floor and Slab Construction.
- ASTM C 779, Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces.

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

<i>Age</i>	<i>Strength</i>
<i>1 day</i>	<i>4,000 psi (27.6 Mpa)</i>
<i>3 days</i>	<i>7,100 psi (49.0 Mpa)</i>
<i>7 days</i>	<i>9,000 psi (62.1 Mpa)</i>
<i>28 days</i>	<i>10,100 psi (69.7 Mpa)</i>

c. **Wear Resistance:** ASTM C 779, Procedure A; 0.050 in. (1.3 mm) at 60 minutes.

5. Directions for Use

(Follow basic ACI 302 guidelines)

a. **Preparation:** Subgrade should be well compacted and graded to proper elevation. If a vapor barrier is used, it should not be placed over the subgrade but rather a minimum of 3 in. (76 mm) under the compacted fill. Vapor barriers will aggravate finishing problems and can contribute to slab curling. Forms should be set strong and true. Strip placements are preferred over checkerboarding. Place under roof whenever possible.

b. **Concrete:** Concrete mix must be non-air-entrained for hard troweled floors. Exterior applications

with broom or float finishes may be air entrained. Concrete must contain enough water to properly wet out the dry shake under the job site conditions, normally a 3-1/2 in. (89 mm) to 4-1/2 in. (115 mm) slump without considering the influence of admixtures. Place the concrete, and screed into place, flush with the top of form. Bull float to smooth surface and fill low spots. (Note: On floors where tight tolerances are required or where the tolerance is specified by "F" numbers, a check rod or highway straightedge may be desirable in lieu of bull floating. See ACI 302, Section 7.15.)

c. Shake Application: Ideal shake application should take place after the initial floating of the base concrete using a power trowel with float shoes. However, other site conditions such as no roof, wind, low relative humidity and/or low concrete water content may dictate earlier application. Apply Waterhold to help prevent rapid moisture loss. Each bay of the placement should have the proper number of bags pre-placed along the slab for accurate coverage. Remove any significant free standing bleed water with a dragged rubber hose prior to shake application. Apply 2/3 of the total shake evenly and uniformly over the slab surface. Mechanical spreader application is preferred but hand or shovel methods can also be effective. Float the shake into the slab surface after it has wetted out. Follow immediately with the remaining 1/3 of the shake and repeat the procedure.

d. Finishing: Once the shake is applied and integrated, normal floating and troweling operations can proceed as the slab sets. The best floor surface is achieved with a burnish trowel. However, colored shake floors should be finished just short of a burnish trowel to prevent discoloration from blade friction. Apply as many trowel cycles as necessary to get desired finish.

e. Curing and Sealing: Curing and sealing are very important to assure proper hydration and surface strength as well as adequate protection from the environment. Apply Seal N Kure 30 at 400 sq. ft. per gal. (9.8 sq. m/liter) using a power sprayer or roller.

f. Joints: Contraction joints are normally sawcut into the floor to a depth of 1/4 of the slab thickness for crack control. Construction joints are a natural consequence of the forming operation. Both types should be filled with Jointfill 302 epoxy after a minimum 3 month wait (according to ACI 302, Sect. 4.10). Isolation joints and expansion joints (around column blockouts and at walls, for example) should be filled with Vulcanox urethane to allow adequate movement.

g. User precautions: Dry shake applications can generate free, airborne dust. Wear protective dust masks. Floor E Hardener contains portland cement. Gloves should be worn during application to prevent cement burns and skin irritation.

h. Maintenance: Floor E Hardener is intended to be free of maintenance once properly installed. Floor E Hardener floors should be cleaned with standard high alkaline floor cleaners and power scrubbers. Additional applications of Seal N Kure 30 at project turnover or at other intervals once the floor is in use are optional, but not mandatory.

6. Availability

Floor E Hardener 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

Floor E Hardener 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.



Metalcrete Industries

4133 Payne Avenue • Cleveland, Ohio 44103
440-526-5600 • 800-526-5602 • FAX 440-526-5601