



METALPLATE F_F

Metallic Dry Shake Floor Hardener for Flat and Superflat Floors

1. Product Description

a. **Basic Use:** Metalplate F_F 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 where flatness tolerances are required. It is applied to the surface of fresh concrete after screeding and highway straight-edge operations where a F_F 50 or greater floor tolerance is specified.

b. **Features/Benefits:**

- Unique gradation of metallic aggregate permits superflat floor construction procedures and finishing techniques.
- Provides a high strength floor surface for superior wear resistance.
- Formulated with graded metallic aggregate which gives up to 8 times the wear resistance of plain concrete floors.
- Designed with state of the art superplasticizers allows for application rates of up to 2.25 pounds per square foot, reducing finishing costs.
- Works into the surface of fresh concrete easily for complete, monolithic integration with a creamy finisher's paste.
- Zero absorption 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.
- Outwears conventional natural aggregate dry shake floor hardeners by up to 400%.

c. **Typical Applications:** High bay/high stack storage facilities and warehouses of all types, high tolerance (flat and superflat) floors, manufacturing plants, terminals, processing plants, metal shops, steel mills, automotive plants and print shops.

d. **Limitations:** Metalplate F_F should not be used in areas subject to acid spillage or other chemicals which attack portland cement or iron. Do not use in areas subject to de-icing salts or continuous exposure to standing water. In general, Metalplate F_F is not intended for outside use.

e. **Composition:** Metalplate F_F is a blend of a specially graded iron aggregate, portland cement, superplasticizers and a proprietary chemical system.

f. **Color/Appearance:** Metalplate F_F provides a dark 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

Metalplate F_F 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

Metalplate F_F has a normal usage rate of 1.00 to 3.00 psf (4.9 to 14.7 Kg/sq. m). The following table may be used for coverage.

<i>Application Rate</i>	<i>Coverage Per Bag</i>
<i>1.00 psf (4.9 Kg/sq. m)</i>	<i>50 sq. ft. (4.6 sq. m)</i>
<i>1.50 psf (7.3 Kg/sq. m)</i>	<i>33 sq. ft. (3.1 sq. m)</i>
<i>2.00 psf (9.8 Kg/sq. m)</i>	<i>25 sq. ft. (2.3 sq. m)</i>
<i>2.50 psf (12.2 Kg/sq. m)</i>	<i>20 sq. ft. (1.8 sq. m)</i>
<i>3.00 psf (14.7Kg/sq. m)</i>	<i>17 sq. ft. (1.6 sq. m)</i>

4. Technical Data

a. **Applicable Standards:**

- ACI 117-90 Standard Specification for Tolerances for Concrete Construction and Materials.
- ASTM E 1155-87 Standard Test Method for Determining Floor Flatness and Levelness Using the F-Number System.
- 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>5,500 psi (38 MPa)</i>
<i>3 days</i>	<i>8,500 psi (59 MPa)</i>
<i>7 days</i>	<i>9,000 psi (62 MPa)</i>
<i>28 days</i>	<i>12,000 psi (83 MPa)</i>

c. **Wear Resistance:** ASTM C 779, Procedure A; 0.013 in. (0.33 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 and not contain any calcium chloride based admixtures. Concrete must contain enough water to properly wet out the dry shake under the job site conditions, normally at 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. Continue finishing operations with a highway straightedge and re-straightening procedures of the concrete surface in lieu of bullfloating. (Refer to ACI 302, Section 7.15 for recommended sequence of finishing procedures.)

c. **Shake Application:** Ideal shake application should take place after the initial highway straightedge and re-straightening operations. 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 up to 2.25 pounds per square foot of dry shake evenly and uniformly over the slab surface. Mechanical spreader application is preferred to achieve high tolerance floors. Float the shake into the slab surface after it has wetted out by restraightening the floor surface with a highway straightedge. Follow immediately with the remaining dry shake material and repeat the restraightening procedures as necessary.

d. **Finishing:** Once the shake is applied and integrated, specialized high tolerance 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. Continue with as many finishing procedures as necessary to get the desired tolerances.

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. Use two coats for exterior exposure or extremely severe drying conditions.

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. Metalplate F_F contains portland cement. Gloves should be worn during application to prevent cement burns and skin irritation.

h. **Maintenance:** Metalplate F_F is intended to be free of maintenance once properly installed. Metalplate F_F 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

Metalplate F_F 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

Metalplate F_F 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

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