



METALPLATE SD

*Static Disseminating
Metallic Aggregate
Dry Shake Floor Hardener*

1. Product Description

a. Basic Use: Metalplate SD 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 in combination with static disseminating, conductive, and spark resistant properties. It is applied to the surface of fresh concrete during the normal finishing operations on the floor with standard finishing equipment.

b. Features/Benefits:

- Static disseminating and conductive to prevent electrical spark.
- 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.
- Works into the surface of fresh concrete easily for complete, monolithic integration.
- Zero absorption aggregate densifies the floor surface for better resistance to water, fluid, and oil spills.
- Provides spark resistance when tools are dropped on the floor surface.
- 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: Ammunition storage facilities, manufacturing plants, processing plants, automotive plants, solvent storage facilities and paint rooms.

d. Limitations: Metalplate SD 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 SD is not intended for outside use.

e. Composition: Metalplate SD is a blend of a specially designed iron aggregate, a conductive portland cement binder, and a proprietary chemical system.

f. Color/Appearance: Metalplate SD is available in standard colors.

2. Packaging

Metalplate SD 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 SD has a standard usage rate of 1.80 psf (8.8 Kg/sq. m). No other coverage rate is permitted.

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.

Age	Strength
1 day	4,800 psi (33.1 MPa)
3 days	7,900 psi (54.5 MPa)
7 days	10,200 psi (70.3 MPa)
28 days	11,200 psi (77.2 MPa)

c. Wear Resistance: ASTM C 779, Procedure A; 0.013 in. (0.33 mm) at 60 minutes.

d. Surface Resistance: <1,000,000 ohms NFPA.

5. Directions for Use

(Follow basic ACI 302 guidelines)

NOTE: Conductive metallic floor surfaces must be properly grounded with studs, mesh, and connecting wire to assure electrical continuity. Consult with your electrical engineer and/or naval specification NFGS 09770.

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. 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 hard steel trowel. Apply as many trowel cycles as necessary to get desired finish.

NOTE: Normal grounding procedures will leave the ends of grounding rods close to the surface with brazed-on conductive mesh at the top of the rod. Remove concrete around the rod to provide a 2 in. (50 mm) cupped depression around the rod. Mix Metalplate SD to a mortar consistency and pack the cupped depression.

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

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

6. Availability

Metalplate SD 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 SD 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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