



Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format. The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings. Delete all “Specifier Notes” when editing this section.

## SECTION 03360

### CONCRETE DRY SHAKE FLOOR HARDENER

Specifier Notes: This section covers Euclid “Diamond-Plate” metallic floor hardener, “Euco-Plate HD” metallic floor hardener, “Surflex®” non-metallic floor hardener, and “Non-Slip Aggregate” non-slip flooring. Consult Euclid for assistance in editing this section for the specific application.

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Dry shake floor hardener for concrete.

##### 1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section.

- A. Section 03300 - Cast-in-Place Concrete.

##### 1.3 REFERENCES

Specifier Notes: Include the following reference when specifying Diamond-Plate or Euco-Plate HD.

- A. ASTM C 109 - Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens).

##### 1.4 SUBMITTALS

- A. Comply with Section 01330 - Submittal Procedures.
- B. Product Data: Submit manufacturer’s product data, including application instructions.
- C. Manufacturer’s Certification: Submit manufacturer’s ISO 9001/9002 certification.

## 1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: ISO 9001/9002 registered or provide proof of documented quality assurance system. Quality assurance system shall be registered by independent registrar accredited by ANSI Registrar Accreditation Board (ANSI-RAB) or by another internationally recognized body.

Specifier Notes: Describe requirements for a meeting to coordinate the application of the dry shake floor hardener and to sequence related work.

- B. Pre-application Meeting: Convene a pre-application meeting [2 weeks] [ \_\_\_\_\_ ] before start of application of dry shake floor hardener. Require attendance of parties directly affecting work of this section, including Contractor, Architect, and manufacturer's representative. Review application, finishing, curing, sealing, protection, and coordination with other work.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage:
1. Store materials in clean, dry indoors area in accordance with manufacturer's instructions.
  2. Keep containers sealed until ready for use.
- C. Handling: Protect materials during handling and application to prevent damage or contamination.

## PART 2 PRODUCTS

### 2.1 MANUFACTURER

- A. The Euclid Chemical Company, 19218 Redwood Road, Cleveland, Ohio 44110. Toll Free (800) 321-7628. Phone (216) 531-9222. Fax (216) 531-9596. Web Site [www.euclidchemical.com](http://www.euclidchemical.com).

### 2.2 CONCRETE DRY SHAKE FLOOR HARDENER

Specifier Notes: Specify Diamond-Plate, Euco-Plate HD, Surfex, or Non-Slip Aggregate.

- A. Metallic Floor Hardener: Diamond-Plate.
1. Description: Dry shake, heavy-duty, metallic floor hardener with graded, non-oxidizing metallic aggregate in high-strength cementitious binder.
  2. Metallic Aggregate: Free of rust, oil, and other contaminants.
  3. Compressive Strength, ASTM C 109, 2-Inch (50-mm) Cubes:
    - a. 1 Day: 4,000 psi (27.6 MPa).
    - b. 7 Days: 7,000 psi (48.3 MPa).
    - c. 28 Days: 10,000 psi (69.0 MPa).

Specifier Notes: Specify the color of the dry shake floor hardener.

4. Color: [Natural] [French Gray] [Battleship Gray] [Black] [Brown] [Tile Red] [Terra Cotta] [Green] [Tan].

B. Metallic Floor Hardener: Euco-Plate HD.

1. Description: Dry shake, heavy-duty, metallic floor hardener with graded, iron aggregate in high-strength cementitious binder.
2. Iron Aggregate: Free of rust, oil, and non-ferrous materials.
3. Compressive Strength, ASTM C 109, 2-Inch (50-mm) Cubes:
  - a. 1 Day: 4,000 psi (27.6 MPa).
  - b. 7 Days: 7,000 psi (48.3 MPa).
  - c. 28 Days: 10,000 psi (69.0 MPa).

Specifier Notes: Specify the color of the dry shake floor hardener.

4. Color: [Natural] [French Gray] [Battleship Gray] [Black] [Brown] [Tile Red] [Terra Cotta] [Green] [Tan].

C. Non-Metallic Floor Hardener: Surfex.

1. Description: Dry shake, quartz-silica mixture of finely graded non-metallic aggregates, plasticizer, and cement binder.
2. Compliance: USDA approved for use in facilities where this material may come into incidental contact with food products.

Specifier Notes: Specify the color of the dry shake floor hardener.

3. Color: [Natural] [French Gray] [Battleship Gray] [Light Gray] [Black] [Brown] [Tile Red] [Terra Cotta] [Green] [Tan].

D. Natural Aggregate Non-Slip Flooring: Non-Slip Aggregate.

1. Description: Dry shake, crushed and graded igneous aggregate.
2. Aggregate: Graded to produce combination of sharp irregular particles, ranging from large to small, which mesh together to form acid-resisting non-slip surface.
3. Specific Gravity: 2.87.
4. Moh Hardness: 7.
5. Absorption: 0.19 percent.
6. Aluminum Oxide: 25.4 percent.
7. Silica: 56.1 percent.
8. Size: #8 to #30 screens.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine concrete surfaces to receive dry shake floor hardener. Notify Architect if surfaces are not acceptable. Do not begin application until unacceptable conditions are corrected.

### 3.2 APPLICATION

- A. Apply dry shake floor hardener in accordance with manufacturer's instructions.
- B. Concrete Mix Design:

1. Apply dry shake floor hardener to properly designed, non-air-entrained concrete at temperatures between 60 degrees F (16 degrees C) and 80 degrees F (27 degrees C) as specified in Section 03300.
2. Do not use calcium chloride or admixtures containing more than 0.05 percent chloride ions in concrete to receive metallic dry shake floor hardener.
3. Maintain air content below 3 percent in concrete to receive dry shake floor hardener.

C. Weather: Adjust application procedures as required by weather conditions in accordance with manufacturer's instructions.

Specifier Notes: Pigmented dry shake floor hardeners require special attention to achieve a uniform color. Consult Euclid for additional information. Delete the following paragraph if pigmented dry shake floor hardeners are not specified.

D. Pigmented Dry Shake Floor Hardener:

1. Apply pigmented dry shake floor hardener in accordance with manufacturer's instructions to achieve uniform color and maximum color saturation.
2. Apply hardener evenly in 2 applications.

Specifier Notes: Use Diamond-Plate or Euco-Plate HD metallic floor hardeners as a mortar in constructing iron armored floor joints. Consult Euclid for additional information. Delete the following paragraph if iron armored joints are not required.

E. Iron Armored Floor Joints: Use metallic floor hardener as a mortar in constructing iron armored floor joints in accordance with manufacturer's instructions.

Specifier Notes: Specify coverage rate of hardener. Higher application rates yield better total abrasion resistance. Consult Euclid for recommended coverage rate.

F. Apply hardener at coverage rate of \_\_\_\_\_ pounds per square foot ( \_\_\_\_\_ kg/m<sup>2</sup>).

G. Apply hardener uniformly in number of shakes in accordance with manufacturer's instructions.

### 3.3 FINISHING

A. Trowel and finish dry shake floor hardener in accordance with manufacturer's instructions.

B. Weather: Adjust finishing procedures as required by weather conditions in accordance with manufacturer's instructions.

Specifier Notes: Edit the following sentence to specify the required finish. While the hardener can be finished to any texture consistent with concrete, maximum abrasion resistance will be realized with a hard, smooth steel trowel finish when using Diamond-Plate, Euco-Plate HD, or Surfex. Non-Slip Aggregate is typically not given a steel trowel finish. Consult Euclid for additional information.

C. Provide hard, smooth steel trowel finish.

D. Do not add additional water to surface during finishing. Apply Eucobar evaporation retardant and finishing aid in accordance with manufacturer's instructions if additional liquid is required.

### **3.4 CURING AND SEALING**

- A. Cure and seal dry shake floor hardener in accordance with manufacturer's instructions.

Specifier Notes: Specify the required Euclid curing compound and sealer. Consult Euclid for assistance in selecting a curing compound and sealer for the specific application.

- B. Cure hardener with \_\_\_\_\_ . Apply in accordance with manufacturer's instructions.
- C. Seal hardener with \_\_\_\_\_ . Apply in accordance with manufacturer's instructions.

### **3.5 PROTECTION**

- A. Protect completed dry shake floor hardener from traffic until material has fully cured.

**END OF SECTION**