DRY SHAKE FLOOR HARDENERS

EUCLID CHEMICAL

APPLICATION INSTRUCTIONS

INTRODUCTION

The following instructions detail the general installation of Euclid Chemical manufactured dry shake floor hardeners. The contractor and engineer are encouraged to consult the individual product's technical data sheet for additional suggestions for a successful installation.
These instructions are written specifically for DIAMOND-PLATE and SURFLEX products.

DIRECTION FOR USE

General Guidelines:

The following recommendations of ACI 302 and the following topics should be carefully reviewed prior to the pre-slab meeting.

1. "Dry Shake Floor Hardeners" are formulated to be applied to properly designed concrete. Conditions such as high winds, low humidity or hot or cold weather require mix design changes and adjustments in application and/ or finishing procedures. In dry conditions, The Euclid Chemical Company recommends the use of surface retarder to help retain moisture.

2. A well compacted, leveled sub-grade is required. Follow recommendations of ACI 360, "Design of Slabs on Grade".

3. Concrete containing calcium chloride or admixtures with > 0.05% chloride ions should not be treated with metallic dry shakes. **Air content must be below 3% for all dry shakes.**

4. The correct number of bags should be positioned along the sides of the slab placement prior to the start of each days concreting operation.

5. Cement should be the only cementitious material present in the mix. The use of supplementary cementitious matierials, such as fly ash, slag, and microsilica can cause delayed bleeding and are not recommended for use with a dry shake harderner.

6. **Note:** Colored (pigmented) dry shakes require special attention to achieve a uniform color. If the job involves placement of a colored dry shake, the best appearance and performance results from:

   a. Delaying application of the shake as long as possible to the get the maximum color saturation at the surface of the slab.

   b. For maximum uniformity, apply the shake in two even passes.

   c. Do not burnish the final trowel. Hand troweling the final finish results in the best appearance.

IMPORTANT: *If the contractor is not familiar with the standard application techniques of a dry shake floor hardener, a pre-job meeting is suggested to review the project concrete mix design as well as placement and curing details unique to the particular job. Contact Flowcrete Asia presentative for additional information.*

Placing: The following directions and ACI 302 Guidelines should be carefully followed when applying the dry shake floor hardener. Apply the product on well designed, non-air entrained concrete mixes containing straight cement only at temperatures of between 16°C and 27°C. If unusual conditions exist, such as direct hot sun, high winds, low humidity or cold weather, care should be taken to protect the slab during dry shake placement. Ideally, the building walls and roof are in place and the slab is protected from the direct environment. If this is not practical, the placement of wind screens protects the fresh, plastic base concrete from moisture evaporation. This allows an earlier than normal dry shake application. In dry conditions, use Surface Retarder to help retain moisture.

Check the specifications for the amount of hardener required per square meter, then stack the correct number of bags along the placement area to be used that day. This is important because it gives the
finishers a "gauge" for applying the correct amount of material. After the above conditions have been met, proceed with work in the following manner:

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Single Pass Application: This method is used in fast track projects where the application of the shake hardener is applied directly behind the screeding process.

After the concrete is hand or mechanically screeded, use a bullfloat or highway straightedge to flatten out or remove any imperfections on the surface of the wet slab. Care should be taken not to "close" the surface of the concrete. This procedure is quickly followed by the application of the full amount of dry shake, by a mechanical spreader. Observe the dry shake, for the color will darken as the material absorbs the bleed water from the slab. Defer initial floating operations until the shake is completely "wetted out" and concrete reaches initial set.

Using a walk-behind or a ride-on power-trowel with float shoes, the shake hardener must be thoroughly worked into the slab. If not, the risk of delamination is higher. After the shake has been worked into the concrete and the slab has been given time to further "tighten up", begin final troweling procedures. Finish the slab according to specifications, paying close attention not to burnish the surface.

Dual Pass Application: This procedure is the best method to use when a colored shake hardener is applied for aesthetic purposes.

Screed and bullfloat as described above. Allow the slab to dry sufficiently to a point where the weight of the finishers and their power-trowel equipment do not leave any indentations. If any excess bleed water remains on the surface, use a rubber hose to drag the water from the concrete. Using float shoes, break the surface of the slab open and apply 2/3 of the desired amount of the shake hardener. Once the shake hardener has fully darkened due to the absorption of moisture, continue to floating process to work the shake hardener into the surface.

Once the first application of shake has been successfully worked into the slab, immediately place the remaining 1/3 of the material over the slab. Pay close attention to the areas where the color may not be prevalent from the first application. Continue the floating process to work the second application into the slab. After the slab has been given time to "tighten up", final finishing operations can begin as described above.

*****In both cases, pay strict attention to the slab edges for they will dry faster than the bulk of the slab.**

Curing: Cure the dry shake per instructions on the individual product's technical data sheet.
Iron Armored Joints: Metallic floor hardener DIAMOND-PLATE may also be used as a mortar in constructing iron armored floor joints. These joints provide added wear resistance at joint edges increasing the serviceable life of the floor.