

INSTALLATION PROCEDURE

Ceilcote® 2000 Flakeline

Flake Reinforced Epoxy Novolac Coating

Description

Installation information contained in this procedure is as specific as possible but cannot cover all variations in field conditions. If anticipated conditions do not permit following these guidelines, do not hesitate to call your Ceilcote Representative.

Materials Required

The materials used for application and installation consist of :

- a. Primer – CEILCOTE 680 Primer
680 Primer Resin and #9 Hardener
- b. Optional Primer (for high temperature)
– CEILCOTE 680M Primer
680M Primer Resin and #9 Hardener
- c. Basecoat – CEILCOTE 2000 Flakeline
2000 Flakeline Resin and Hardener
- d. Topcoat – CEILCOTE 2000 Flakeline
2000 Flakeline Resin and Hardener

Equipment

For Surface Preparation:

Abrasive blasting
Blastrac (Horizontal)
Scarification or other mechanical means

For Mixing:

Volume measure for liquid (1qt. or 1 gal.)
Volume measure for Hardener (cubic centimeters or ounces)
5 gal pail if mixing with drill
Drill motor
Blade (Jiffy Type) or other suitable types

For Application:

Spray equipment - conventional or airless
Paint rollers and brushes
Clean buckets
Wet film thickness gage
Surface thermometer

Environmental Conditions

For all application steps, the surface temperature, air temperature and material temperature should be between 50°F(10°C) and 110°F (43°C), 70°F (21°C) is preferred. For applications below 50°F (°C) consult CEILCOTE.

Do not apply if humidity is above 90% or the surface temperature is less than 5° above the dew point of the air in the work area.

When working outside or in direct sunlight, concrete "gassing" or "breathing" may occur when the surface temperature is rising due to sunlight or increasing ambient temperature. This can cause bubbles or holes in the applied floor, lining or coating. When this problem occurs it is necessary to shade the surface from sunlight and/or apply the material in the cooler evening or at night so that initial cure can take place without air escaping from the concrete. Consult CEILCOTE for more detailed recommendation.

Surface Preparation

Metal - For immersion or intermittent splash and spill conditions, abrasive blast to "White Metal" in accordance with Steel Structures Painting Council Specifications **SP-5-89** or **NACE Specification #1**. For fumes and dry environments, abrasive blast to "Near White" in accordance with **SP-10-89** or **NACE #2**. A minimum surface profile of 3.0 mils is required.

The air supply for each blasting nozzle should be at least 250 CFM continuous input volume at 100 psi. Separators and traps should be used to assure both a dry abrasive and dry air at the nozzle. Proper blasting hoods and gloves are recommended.

Remove dirt, dust and abrasives by vacuuming, air blowing or careful brushing.

Concrete New

New concrete must be thoroughly cured. All form oils, curing solutions and laitance must be completely removed by Blastrac or grit blasting. Concrete should be abrasive blasted to a texture similar to 40-60 grit sandpaper. Pre-pared surfaces must be clean, dry and firm.

Use ASTM D 4263 to determine if the concrete is dry enough to apply the primer. Test several areas. Tape an 18" x 18" square of polyethylene or other clear film to the floor. Leave in place for 16 hours. If condensation appears on the underside of the film or if the concrete becomes visibly damp, it is not dry enough to place the primer. Retest until no moisture appears.

Existing

Previously coated or heavily contaminated surfaces should be abrasive blasted to provide a clean, dense surface. New or uncontaminated surfaces must be prepared, by grit or abrasive blasting, blastrac or scarification. All concrete surfaces can be primed with CEILCOTE 380 Primer. When spark testing is required, use 380 Primer with C-1 Powder.

All oils, grease, dirt, old coatings, or chemical contaminants must be removed by surface preparation. Contaminated concrete may require multiple detergent and/or solvent cleaning, abrasive blasting, or in some instances may be unsuitable for coating. If this is determined, consult CEILCOTE.

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Concrete Repair

All surface irregularities (i.e., bugholes, voids), should be filled. An epoxy mortar can be used by mixing 1 gal. of catalyzed CEILCOTE 680 PRIMER and adding 18-22 pounds of Type S-1 powder or 2 1/2 gals (approximately 9-10 lbs.) of CEILCOTE S-11 Powder to make a thick paste. Adjust working thickness by adding more or less powder. For a pre-mixed filler, use CEILCOTE 610 Ceilpatch. Fill voids and allow to cure hard (12 hrs).

Application

To ensure safe working, the safety precautions listed on the labels as well as the information provided in the MSDS Sheets must be observed. The individual components must be mixed completely and thoroughly.

• Primer

Prime surfaces with 2.0 to 5.0 wet mils of Ceilcote 680 Primer. Use CEILCOTE 680 Primer with the addition of CEILCOTE C#1 Powder (5.2 lbs per 4 gal unit) when spark testing (high voltage holiday testing) will be conducted on concrete. Mix Ceilcote C#1 powder with 3 gal of primer resin prior to adding the hardener. For application use a brush or short nap roller.

Mixing Ratio	By Volume
<u>CEILCOTE 680 Primer*</u>	
680 Primer Resin	3
#9 Hardener	1
<u>CEILCOTE 2000 Flakeline</u>	
2000 Flakeline Resin	4
2000 Hardener	1

• Basecoat

Mechanically premix both 2000 Flakeline resin and 2000 Flakeline hardener individually for 2 minutes. After initial mixing, add 2000 Hardener to 2000 resin and mix three additional minutes.

Apply CEILCOTE 2000 Flakeline at 15 to 25 wet mils. Allow to harden.

• Topcoat

Repeat for second coat application. DFT target is 35 mils.

Thinning

None required. DO NOT THIN.

Application Equipment

Material may be applied by spray, brush or roller. See spray chart for equipment recommendations.

Brush or Roller

When applied by brush or roller, three coats may be required to achieve recommended film thickness.

Handling Properties

Working Time	680 Primer	2000 Flakeline
50°F (10°C)	60 min	1 hr
70°F (21°C)	45 min	25 min
90°F (32°C)	20 min	15 min

Recoat*	680 Primer	2000 Flakeline	
		minimum	maximum
50°F (10°C)	9 hrs	12-16 hrs	4 days
70°F (21°C)	5 hrs	6-8 hrs	48 hrs
90°F (32°C)	3 hrs	3-4 hrs	24 hrs

***Amine blush is possible. If present wash with water and let dry before application of second coat.**

Time to Place in Service*	
70°F (21°C)	1 week
90°F (32°C)	3 days
120°F (49°C)	2 days

***Immersion service for exposure to concentrated sulfuric acid**

Inspection

Visual inspection:

The coating is inspected for visible defects such as blisters, entrapments, irregularities, cracks, or mechanical damage.

Spark testing will detect cracks, internal voids, holidays, and thin spots within a Ceilcote lining or coating. Due to the destructive nature of the test, spark testing should only be done once prior to the actual use of the lining or coating under projected service conditions, and at the recommended voltages. For concrete services our 680 Primer should be used with our C-1 Powder.

Refer to our Inspection Procedure IP-1 and ASTM D 4787 for procedure.

Clean Up

Use Ceilcote T-410 Solvent, methyl ethyl ketone, or lacquer thinner. Observe fire and health precautions with solvents.

Repair Work

Defective areas are removed to sound coating which is well adhered to the substrate. For specific details contact CEILCOTE.

Storage

Store material in a cool, dry and covered location [50° - 90° F (10° - 32° C)], away from fire hazards and direct sunlight. Minimum shelf lives at 70°F (21°C) for products indicated below:

CEILCOTE 680 or 680M Primer	18 months
CEILCOTE 2000 Flakeline	18 months

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Higher temperatures will shorten the shelf life of these products. The packing drums are to be kept tightly sealed and are to be resealed each time materials have been removed. All liquid products are to be stored in a frost-free place.

Safety

CEILCOTE 2000 Flakeline contains epoxy resins and a polyamine catalyst. The product's components have been formulated to optimize physical characteristics such as filling capacity, abrasion, moisture and chemical resistance while minimizing hazardous physical and health factors encountered during application. A concerted effort is made to be aware of the latest chemical toxicological information and to apply this knowledge in a responsible manner to insure product safety.

During application of CEILCOTE 2000 Flakeline materials, always wear gloves and appropriate work clothing to minimize contact. Ventilation is required with special consideration for enclosed or confined areas. Air movement must be designed to insure turnover at all locations in work area and

adjacent areas to avoid buildup of heavy vapors. Use caution when handling flammable liquid, eliminate sources of ignition from work area and containers with residues.

Observe safe storage practices by separating resins from hardeners, by keeping solvents in a cool area, free of sources of ignitions.

Product Material Safety Data Sheets are available and should be consulted when handling products. These products are for industrial and professional use only; application directions must be followed.

Important Note

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to law) any loss or damage arising out of the use of the product. WE HEREBY DISCLAIM ANY WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local International Paint representative that this data sheet is current prior to using the product.

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