Related Bulletins:
Data sheet
Specification bulletin

Master Builders Technologies
Corrosion Control
INSTALLATION PROCEDURE

2.11

CEILCOTE® 2000 FLAKELINE®

Heavy duty coating

IMPORTANT: READ THIS FIRST
Master Builders warrants the performance of this product if and only if the instructions of this document and other related Master Builders documents are adhered to in all respects.

CEILCOTE 2000 FLAKELINE is a catalyzed, flake filled pigmented epoxy novolac coating which is normally roller or squeegee applied in two coats at 15 - 25 mils per coat to achieve a total film thickness of target 35 dry mils. This thick durable film provides exceptional protection against corrosive environments. It is applied to properly prepared steel and concrete substrates.

Installation information contained in this procedure is as specific as possible but cannot cover all variations in field conditions. Supervisors experienced in installing CEILCOTE® 2000 FLAKELINE® Coating materials may deviate slightly from published procedures. This is done to give better installation by using the most up-to-date methods to fit field and service conditions.

EQUIPMENT:

For Surface Preparation:
- Abrasive blasting
- Blastrac (Horizontal)
- Scarification or other mechanical means
- If none of these methods are acceptable consult Master Builders, Inc.

For Mixing:
- Volume measure for liquid (1 qt. 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:
- Medium nap paint rollers and brushes
- Clean buckets
- Wet film thickness gage
- Surface thermometer

PROJECT PREPARATION:

Environmental Conditions:
For all application steps, the surface temperature, air temperature and material temperature should be between 50 and 110 degrees F (10 and 43 degrees C).

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

SURFACE PREPARATION:

Steel:
For immersion service clean to “White Metal” in accordance with SSPC SP-5-89 or NACE No. 1. For immersion all fillet and edge welds shall be rounded to 1/8" minimum. Welds shall be continuous and smooth but not necessarily flush with adjacent surface. Surface weld defects such as crevices or depressions shall be filled by rewelding. Ripples shall be blended to a smooth finish but not necessarily flush with the adjacent surface. All weld spatter shall be removed by chipping or grinding prior to blasting.

Abrasive blasting with clean, sharp abrasives or approximately 16 - 30 mesh size to achieve a minimum anchor profile of 3 mils as defined by the Keane-Tator Visual Comparator. Centrifugal blasting with metal grit is satisfactory as long as the grit remains free of oil. Steel shot is not recommended (such as Wheelabrador).

For non-immersion, such as fumes or occasional spillage, use a “Near White” abrasive blast SSPC SP-10-89 or NACE No. 2. CEILCOTE 2000 FLAKELINE must be applied to cleaned surfaces before rusting occurs. CEILCOTE 680 PRIMER should be applied.

Refer to Spec. 3-2.2 for full details of constructing steel tanks to receive monolithic linings.

Concrete:
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 must be primed with CEILCOTE 680 PRIMER or CEILCOTE 680C (Conductive) PRIMER if sparktesting is desirable.

New Concrete:
New concrete must be thoroughly cured. All form oils, curing solutions and laitance must be completely removed. Prepared surfaces must be clean, dry and firm. Use plastic sheet test method to ensure concrete is moisture free. If moisture is detected, re-test until dry

All oils, grease, dirt, old coatings, or chemical contaminants must be removed by surface preparation. Contaminated concrete may require multiple solvent cleaning, abrasive blasting, or in some instances may be unsuitable for coating. Consult Master Builders for other options or alternatives.
All fins or projections should be struck flush, all holes, pits, voids, and cracks must be filled. For non-immersion service use fast set cements for filling. Fill holes and strike material flush so no patch material remains on outside concrete surface.

SURFACE PREPARATION, continued:
For immersion service fill voids with a epoxy mortar made by mixing 1 gal. of catalyzed CEILCOTE 680 PRIMER and adding approximately 7 - 9 lbs. of CEILCOTE S-11 Powder to make a thick paste. Adjust working thickness by adding more or less powder. Fill voids, allow to cure hard (4-8 hrs) and refill shrinkage cracks if necessary. Allow to cure 8 hours before priming.

Storage:
CEILCOTE FLAKELINE liquids, primer liquids and hardeners should be stored in a cool place and away from flames. Shelf life for material is one year minimum, if kept tightly sealed. Expiration dates are printed on the containers. Powders are stable indefinitely at all temperatures if kept dry.

Batch Sizes:
The size of batch will depend somewhat upon the ambient temperature and the method of application. A chart giving the ratios on mixing hardeners to liquid is contained on container labels.

APPLICATION:
Primer:
Concrete:
Apply 1 coat of CEILCOTE 680 Concrete PRIMER. Refer to CEILCOTE 680 PRIMER Technical Data Sheet. For spark testing use CEILCOTE 680C (Conductive) PRIMER.

Steel:
Priming with CEILCOTE 680 PRIMER is recommended for immersion. Refer to CEILCOTE 680 PRIMER Data Sheet.

Mixing:
When batch mixing, catalyze no more material than can be applied within the pot life period. Available working time, temperature, and complexity or the area to be coated will determine how much material should be catalyzed at one time. Stir material thoroughly. Mechanical agitation is recommended.

Pot Life: (1 pint (471 ml))

160 minutes	@ 50°F (10°C)
70 minutes	@ 60°F (16°C)
25 minutes	@ 75°F (24°C)
20 minutes	@ 90°F (32°C)
20 minutes	@ 100°F (38°C)

Variations in hardener quantity, temperature, and humidity will increase or decrease pot life and curing times.

CAUTION - material hardens quickly when pot life time is exceeded, especially in warm weather. Keep material cool and shield pot from direct sunlight in hot weather. Pot life can be extended by keeping material cool before mixing and immersing pot in ice water during hot weather.

Placement:
- CEILCOTE P-680 Primer can be easily applied by spray or roller.
- CEILCOTE 2000 FLAKELINE is normally applied by plural component spray equipment, trowel, squeegee or roller.
- CEILCOTE 2000 FLAKELINE is applied in two coats of 15 to 25 mils each to achieve a 35 target mil dry film thickness. The coating may be sparktested as 4,000 volts to ensure absence of pinholes.
- **CAUTION:** Amine blush is possible. Precautions should be taken to ensure there is no amine blush present before application of second coat. If present wash with water and let dry.
- To achieve a durable, textured finish in traffic areas, broadcast inert grit aggregate fillers into next-to-last coat while it is still tacky. Various types of grit are used to achieve different texture, thickness and toughness. For specific finish characteristics required, please consult Master Builders, Inc.

Touch Up and Repair:
Touch up and repair can be accomplished using grinders, sanders, or abrasive blasting down to metal/concrete surface and feathering the coating back 1-2 inches. Use the above recommended application techniques and procedures for touch up and repair.

Testing:
Allow to cure completely (fingernail hard) before testing. Visually inspect for color variation due to inadequate hardener and test with fingernail for obvious soft spots. Check dry film thickness with magnetic dry film gauge after reaching full hardness (steel only). For immersion service test coating for pinholes and holidays by using a DC spark tester at a maximum or 5,000 volts.

CLEAN UP:
Use T-410 Solvent, xylene or lacquer thinner for cleaning equipment and hoses before material hardens. **DO NOT USE ACETONE SOLVENTS FOR CLEANING.**

SAFETY:
Store in cool, dry area 50°F to 90°F (10°C to 30°C) away from direct sunlight, flame or other hazards.

CEILCOTE 2000 FLAKELINE contains epoxy resins and 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 liquids, eliminate sources of ignition from work area, and containers with residues.

Product Material Safety Data Sheets (MSDS) and Installation procedures are available and should be consulted when handling products. These products are for industrial and professional use only;

MAINTENANCE:
Periodically inspect the applied material and repair localized areas as needed. Consult your Master Builders representative for additional information.

MASTER BUILDERS, INC.

United States
23700 Chagrin Blvd.
Cleveland, OH 44122
800-MBT-9990
Fax 216-831-6910

Canada
3637 Weston Road
Toronto, Ontario M9L 1W1
800-387-5862
Fax 416-741-7925

Mexico
Blvd. M. Avila Camacho 80, 3er Piso
53390 Naucalpan, Mexico
011-525-557-5544
Fax 011-525-395-7903

Printed in USA 696
flk2000i.pm6
Release 2.1i #2311