Related Bulletins:
Data sheet

Master Builders Technologies
Corrosion Control
INSTALLATION PROCEDURE

3.143I

CEILCOTE® 830 COROCRETE®

High grade epoxy novolac, trowel applied floor system

Installation information contained in this procedure are as specific as possible, but cannot cover all variations in field conditions. Therefore, supervisors experienced in installing Master Builders materials may sometimes deviate slightly from the published procedures. This is done to give a better installation by using the most up-to-date methods to fit specific field and service conditions.

JOB SET-UP:

Prior to starting the installation you should:

1. Inventory all materials ordered from Master Builders, Inc.
2. Determine surface preparation requirements.
3. Make sure all hand and power tools, equipment and electrical source are readily available.
4. Select and set-up an appropriate mixing area clearly designated and at least 50 feet away from heat, sparks, open flames, welding, etc.
5. Brief all personnel involved with the installation procedures and SAFETY requirements.

SURFACE PREPARATION ON CONCRETE FLOORS

Purpose
Performance of monolithic flooring is dependent upon a good bond to a strong concrete substrate. Lack of bond due to a weak surface may cause failure. Proper surface preparation will remove any weak surface material or contamination that would impair bonding.

Finishing and Curing
During the finishing operation water-rich cement rises to the surface. When this cement dries, it leaves a weak and powdery film called “laitance”. This film must be removed so the CEILCOTE COROCRETE materials can bond to a strong concrete substrate. (Methods for removing the laitance will be described in a later section of this procedure.)

Finishing Methods
The preferred finish is “once over” with a steel trowel or wood float. These methods provide the strongest, most uniform concrete surface.

The concrete must be prepared before priming and applying CEILCOTE COROCRETE materials by one of the methods described in a later section of this procedure.

Surface Curing and Hardening Treatments
DO NOT USE these unless they are compatible with the surfacing; they may reduce adhesion of the surfacing and may require subsequent mechanical removal.

Concrete Cure Time
Concrete should be thoroughly cured before applying polymer fill or topping.

The major problem with curing concrete is the water content, therefore a thorough moisture test must be done on the substrate. This can be checked by ASTM D-4263, which calls for taping an 18" x 18" square of polyethylene or other clear film to the floor. If condensation appears on the underside of the film or if the concrete becomes visibly damp within 8 hours, the concrete is not dry enough to place the CEILCOTE COROCRETE materials.

SURFACE PREPARATION:

Abrasive Blasting
This is an excellent method. If dust is a problem, wet blasting or self-contained blasting units (Blastrac) may be used. Any “sensitive” equipment in the area should be removed or protected from the possibility of grit contamination.

NOTE: Old Concrete - if concrete is in doubtful condition or heavily contaminated, contact Master Builders for specific instructions before proceeding.

Old Concrete
Moderately contaminated surfaces
Surfaces which are contaminated with a normal amount of dirt or traffic soil, other than grease and oil, can be satisfactorily cleaned by abrasive brush blasting. If the surface is contaminated with oil, a detergent wash is necessary prior to mechanical treatment. Strong, low foaming detergents such as Johnson’s Wax Company J-Shop 600 or Texo’s Texo 227 should be used. The detergent should be scrubbed vigorously into the surface with a brush or power scrubber. The surface should then be flushed with clean water before beginning further treatment.

Heavily contaminated surfaces
Occasionally, an excessive heavy cake of oil, grease, grime, asphalt, earth or mortar droppings may be encountered. Caked deposits must be removed before attempting surface preparation. Greasy oily deposits should be removed by thoroughly scrubbing with one or two applications of a heavy-duty detergent into the surface. Of course, thick caked oily deposits are best removed by scraping before the detergent treatment. Animal fats and vegetable oils should be removed by scrubbing with a soap solution such as Johnson's Wax company Break-Up to saponify them.

Other deposits may be removed mechanically by grinding, wire brushing, abrasive blasting and scraping.

Laitance
The laitance which may be present on freshly placed concrete surfaces and sometimes on older surfaces must be removed to ensure a satisfactory bond. Blastrac or abrasive blasting as outlined previously are recommended for this purpose.

Curing membranes, oil and silicone treated surfaces
In some cases surfaces may be encountered which have been pretreated with curing membranes, oils, silicones, etc. Such treatments are too numerous to be discussed here. Generally, however, it will be necessary to remove such materials as completely as possible. When in doubt, it would be good practice to try a small area using one or more of the recommended cleaning methods.

NOTE: All surface preparation shall be completed before proceeding with the following instructions.

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.

CAUTION: Concrete "gassing" or "breathing" may occur when the surface temperature is rising, due to sunlight or increasing ambient temperatures. This can cause bubbles or holes in the applied floor. When this problem occurs, it is necessary to shade the surface from sunlight and/or apply the materials in the cooler evening or night hours to allow the initial cure to take place without air escaping from the concrete.

PACKAGING:

CEILCOTE 830 COROCRETE:
(Use CEILCOTE 810 COROCRETE Resin)
Available in 2.5 gal. units (Gray and Tile Red)
CEILCOTE S-15 Powder:
Available in 50 lb bags
CEILCOTE 680 PRIMER:
Available in 1 and 4 gal units
CEILCOTE T-471 Thinning Solvent:
1 and 5 gal available
CEILCOTE 680C (Conductive) PRIMER:
Available in 1 and 4 gal units

HANDLING PROPERTIES

CEILCOTE 830 COROCRETE

	50°F (10°C)	73°F (23°C)	90°F (32°C)
Working Time	100 min.	45 min.	25 min.
Time to Traffic	48 hrs.	24 hrs.	16 hrs.

Mixing ratio: 1.6:1 by volume
Coverage:
70 - 80 ft^2/unit (6.5 to 7.4 m^2/unit) at 1/4"
Add 4 bags of CEILCOTE S-15 Powder per 2.5 gal unit.

CEILCOTE 680 PRIMER

	50°F (10°C)	73°F (23°C)	90°F (32°C)
Working Time	2 hrs.	45 min.	25 min.
Recoat Time	9 hrs.	5 hrs.	3 hrs.

Mixing ratio: 3:1 by volume
Coverage:
150 to 200 ft^2/gal (3.7 to 4.9 m^2/litre) unthinned
175 to 250 ft^2/gal (4.3 to 6.1 m^2/litre) thinned with up to 30 oz. of T-471 per gallon of resin.

CEILCOTE 680C (Conductive) PRIMER

	50°F (10°C)	73°F (23°C)	90°F (32°C)
Working Time	2 hrs.	45 min.	25 min.
Recoat Time	9 hrs.	5 hrs.	3 hrs.

Mixing ratio: 3.5:1 by volume
Coverage: 125 to 175 ft^2/gal (2.9 to 4.3 m^2/litre)

MIXING & APPLICATION

Priming
Use CEILCOTE 810 COROCRETE Resin and CEILCOTE #12 Hardener just prior to application of CEILCOTE 830 COROCRETE Flooring System. Mix resin to hardener at 1.6:1 ratio by volume. Stir well. Apply to the prepared concrete or to the dry CEILCOTE 680 PRIMER surface, at approximately 2 to 5 mils wet, using a nylon or natural bristle brush or a paint roller.

On old, dry, porous concrete, a separate coat of CEILCOTE 680 Primer shall be used. If the system is to be spark tested use CEILCOTE 680C (Conductive) PRIMER.

When dry priming mix CEILCOTE 680 PRIMER resin with CEILCOTE #9 Hardener at 3:1 ratio (3.5:1 ratio if using Conductive Primer). Stir well. Apply to prepared concrete surfaces, at approximately 2 to 5 wet mils (WFT), using a nylon or natural bristle brush or paint roller. DO NOT PUDDLE THE PRIMER. Broadcast 20-50 mesh (range) sand sparingly into wet primer to enhance grip of flooring. Allow to cure.

DO NOT THIN CEILCOTE 680 Primer without consulting Master Builders, Inc.

Note: If there are areas on the concrete that appear dry (all primer absorbed) reprime those areas before proceeding with the flooring system.

Topping

1. Add #12 Hardener to CEILCOTE 810 COROCRETE Resin. **Mixing Ratio**: 1.6:1 by volume
2. Stir well.
3. Pour contents into a paddle-type mortar mixer (5 horsepower is recommended).
4. For CEILCOTE 830 COROCRETE Topping: Add 4 50# bags of S #15 Powder to the mixture. (Use only 3-1/2 bags for the first mix to allow the mixer to wet-out).
5. After the last bag of aggregate is added, allow to mix until all dry pockets are wet-out and no dust is rising from the mixture.
6. Discharge into a sturdy wheelbarrow.
7. Apply mixture to the freshly wet-primed surface.
8. Trowel to desired thickness using a good quality cement finishing trowel.

CEILCOTE 830 COROCRETE Topping is designed to be installed at a thickness range of 3/16" to 5/16" in a single application.

Minimum application temperature is 50 degrees F (10 degrees C) for optimum property development. Shade from direct sunlight until material has set. For lower application temperature, contact Master Builders Technologies for recommendation.

CLEAN UP:

Clean all hand tools and power mixer with CEILCOTE T-410, MEK or lacquer thinner.

CAUTION: Most cleaners of this type are flammable; handle carefully around electric tools.

FLASH POINTS:

(Pensky Martin Closed Cup)

CEILCOTE 810 COROCRETE Resin	>200°F	(>93°C)
CEILCOTE #12 Hardener	>208°F	(>98°C)
CEILCOTE 680 PRIMER Liquid	>204°F	(>95°C)
CEILCOTE 680C (Conductive) PRIMER Liquid	>204°F	(>95°C)
CEILCOTE #9 Hardener	>230°F	(>110°C)
CEILCOTE T-471 Thinning Solvent	>42°F	(>5.5°C)

SAFETY:

CEILCOTE 830 COROCRETE components contain epoxy resin and solvents catalyzed by an aliphatic polyamine. Observe the following health, physical, and storage precautionary measures before using products.

HEALTH PROTECTION INFORMATION:

Wear gloves, eye protection, and appropriate work clothing as required to avoid contact with components. The hardeners contain polyamines which can seriously burn eyes and skin. Hardener fumes may result in skin rash, dermatitis or other allergic reactions. Ventilation is required, with special consideration for enclosed or confined areas. Air movement must be designed to ensure turnover at all locations in work and adjacent areas to avoid buildup of heavy vapors. Chemical hazards with vapor concentration above Permissible Exposure Limits (PEL) requires the use of an organic vapor cartridge respirator or a self-contained breathing apparatus.

PHYSICAL HAZARDS:

CEILCOTE COROCRETE components and solvents are combustible or flammable, refer to Flash Points on products. When using flammable or combustible components; heat, sparks and flames or any source of ignition must be kept at least 50 feet from working area. Use grounded non sparking tools in work area. When applying CEILCOTE COROCRETE materials to enclosed area, use two men. One on the outside for safety. Continued ventilation is required until material has cured, to minimize concentrating solvent vapors and avoid reaching potential explosive limits. Empty containers with residues may ignite from source of ignition explosively.

STORAGE SAFETY:

Observe safe storage practices by separating resins from hardeners, by keeping solvents and hardeners in a cool area free of sources of ignition, and by observing a special warning on RED and YELLOW labeled products. The RED label represents amine type chemicals, and the YELLOW label represents organic peroxide type chemicals which should not be stored adjacent or mixed together because of possible violent reaction between them.

The installation data furnished herein is true and accurate to the best of our knowledge. However, no guarantee of accuracy is given or implied.

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