

CEILCOTE® 870 COROCRETE®
Epoxy novolac, squeegee broadcast floor system

IMPORTANT: READ THIS FIRST

Master Builders does not warrant the performance of this product unless the instructions of this document and other related Master Builders documents are adhered to in all respects.

Installation information contained in this procedure is as specific as possible, but cannot cover all variations in field conditions. Therefore, supervisors experienced in installing Master Builders products from the CEILCOTE corrosion control product group may sometimes deviate slightly from the published procedures. This is done to afford 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.
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 OF 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. Scarifying can also 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 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 to clean the surface. 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. Abrasive blasting or scarification as outlined previously is 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°F(10°C) and 110°F (43°C).

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.

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 material in the cooler evening or night hours to allow the initial cure to take place without air escaping from the concrete.

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PACKAGING:

CEILCOTE 870 COROCRETE (use CEILCOTE 810 COROCRETE Resin & CEILCOTE #12 Hardener)
Available in 2.5 gal. units (Gray and Tile Red)

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

Aggregate

Use 20-50 (range) mesh rounded, clean & dry aggregate, purchased locally.

HANDLING PROPERTIES

CEILCOTE 870 COROCRETE

(use CEILCOTE 810 COROCRETE

Resin and CEILCOTE #12 Hardener)

	50°F (10°C)	73° (23°C)	90°F (32°C)
Working Time	100 min	45 min	25 min
Recoat Time	24 hrs	12 hrs	8 hrs
Time to Light Traffic	48 hrs	24 hrs	16 hrs

Mixing Ratio: 1.6:1 by volume

Coverage: 60 to 80 ft²/2.5 gal unit @ 1/8" (8.8 m²/unit)

Use 150 lbs of 20-50 (range) mesh rounded, clean and dry aggregate for each 2.5 gal unit (purchased locally).

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 ft²/gal (3.7 to 4.9m²/litre) unthinned

175 to 250 ft²/gal (4.3 to 6.1 m²/litre) thinned with up to 30 oz. of T-471 per gal of resin

CEILCOTE 680 (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 ft²/gal (2.9 to 4.3m²/litre)

MIXING AND APPLICATION:

Priming:

Not normally required.

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 a paint roller. **DO NOT PUDDLE THE PRIMER.** Broadcast 20-40 mesh 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. Mix resin and hardener together well for at least two minutes to insure proper blend. For best results, use a mechanical Jiffy type mixer at low speed.
2. Slowly add 50 lbs of aggregate. Blend with a mortar mixer. Make certain there are no dry spots.
3. Using a trowel or screed rake, spread mixture over the required area. The troweled or screed mixture should be 2/3 of the desired thickness.

TROWELED OR SCREED THICKNESS	80 mils	1/8"	3/16"
FINISHED THICKNESS	1/8"	3/16"	1/4"
4. Within 15 minutes, broadcast the remaining aggregate (approximately 50 to 100 lbs) on top of the applied troweled or screed mixture until saturated.
5. Allow to cure. Vacuum or sweep excess sand off surface.
6. With remaining material, mix resin and hardener together well for at least two minutes to ensure proper blend. Topcoat grit covered surface and then allow to cure. The amount of resin on the surface will determine how aggressive the surface texture will be.
7. For vertical surfaces (cove bases) mix resin and hardener as described above in small batches using appropriate mix ratio. Mix in sufficient filler to achieve a trowelable consistency. Mix well. Trowel cove to a wet primed surface of CEILCOTE 680 PRIMER.

CLEAN UP:

Use MEK, T-410 or lacquer thinner

FLASH POINTS:

(Pensky Martin Closed Cup)

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

SAFETY:

CEILCOTE COROCRETE components contain epoxy resin, 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 nonsparking tools in work area. When applying CEILCOTE COROCRETE materials to enclosed area, use two men. One man should be on the outside for safety. Continued ventilation is required until material has cured, to minimize concentrating solvent vapor 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.

FOR INDUSTRIAL AND PROFESSIONAL USE ONLY

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