

# Master Builders Technologies Corrosion Control INSTALLATION PROCEDURE

3.12I

## CEILCOTE® 163 COROCRETE®

### *1/16" Surface textured flooring*

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 products group 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.
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:**

##### **1. 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 premature failure. Proper surface preparation will remove any weak surface material or contamination that would impair bonding.

##### **2. Finishing and Curing:**

**Discussion** - 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 COROCRETE materials can bond to a strong concrete substrate. (Methods for removing the laitance will be described in a later section of this bulletin.)

**Finishing Methods** - The preferred finish is "once over" with a steel trowel or wood float. These methods provide the strongest, most uniform concrete surface. Screed and broom finishing are not as desirable since they may leave an irregular surface; often too weak for suitable surfacing.

Regardless of the finishing method, the concrete must be prepared before priming and applying COROCRETE materials by one of the methods described in a later section of this bulletin.

**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 COROCRETE materials.

##### **3. Surface Preparation:**

**Abrasive Blasting or Blastrac** - 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.

##### **4. 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 directly applying a solution of one part muriatic acid to two parts water. 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. 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, sandblasting and scraping. Abrasive blasting or Blastrac is still necessary to prepare the surface.

**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 Blastrac 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 to 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.

#### PACKAGING:

Available in 1 & 5 gal. units

#### PRIMING:

Concrete and masonry surfaces must be primed with Ceilcote P-380 PRIMER. Coverage 150 to 200 ft<sup>2</sup>/gal (3.7 to 4.9 m<sup>2</sup>/litre). If spark testing or holiday detecting is desirable, prime with CEILCOTE 380C (Conductive) PRIMER.

#### COVERAGE:

Coverage of the system will depend on the type and size of aggregate fillers used per broadcast seed layer. Normal application is 25 to 30 wet mils of CEILCOTE 163 COROCRETE Resin followed by a broadcast seeding 20/40 mesh sand into resin per layer. The approximate yield for total system thickness of is: 45 to 55 ft<sup>2</sup>/gal (1.1 to 1.3 m<sup>2</sup>/litre) of CEILCOTE 163 COROCRETE Resin @ 1/16"; 25 to 30 ft<sup>2</sup>/gal (.61 to .73 m<sup>2</sup>/litre) of CEILCOTE 163 COROCRETE Resin @ 1/8" and 12 to 18 ft<sup>2</sup>/gal (.29 to .44 m<sup>2</sup>/litre) of CEILCOTE 163 COROCRETE Resin @ 1/4".

#### MIXING AND APPLICATION:

CEILCOTE 163 COROCRETE	1 gallon
CEILCOTE #2C Hardener	2.5 oz/gal of resin
20 - 40 mesh sand	1/2 - 1 lb per ft <sup>2</sup>

**Thinning:** DO NOT THIN

After priming, roll, brush, spray or squeegee a base coat of catalyzed CEILCOTE 163 COROCRETE resin onto surface at approximately 30 mils (WFT).

Broadcast aggregate onto surface while base coat is still tacky (**Aggregate must be completely dry**). Figure approximately 1/16" or 60 mils thickness for each broadcast seed layer using 20 - 40 mesh sand. Usually 2 - 4 broadcast seed coats are applied, depending on thickness specified. Final resin topcoat is then applied by roller, brush application. Coverage on resin topcoat is 100 to 150 ft<sup>2</sup>/gallon (2.4 to 3.7 m<sup>2</sup>/litre).

Brush off excess aggregate after base coat has completely set.

Repeat steps 1 through 4 until desired thickness is achieved.

Apply resin topcoat after final layer of aggregate. For flatter surfaces, sand between coats utilizing floor sander. For 1/8" thickness, generally 2 seeded base coats and one topcoat are necessary.

#### WORKING TIME:

##### Handling Properties:

(Approximate Time)

	50°F (10°C)	77°F (23°C)	90°F (32°C)
Working Time	2 hrs.	1 hr.	25 min.
Time to Light Traffic	24 hrs.	6 hrs.	4 hrs.
Cure Time	3 - 4 days	1 day	12 - 16 hrs.

#### CLEAN UP:

Use MEK, T-410 or lacquer thinner.

**Caution:** Do not apply CEILCOTE 163 COROCRETE when the surface temperature is below 50 degrees F. (10 degrees C)

#### Flash Points:

Flash Point (Seta Flash)

Liquid	83 degrees F (28 degrees C)
Hardener	210 degrees F (99 degrees C)

Should be recoated within two (2) weeks to assure proper adhesion of topcoat to base coat. Confirm recoatability by wiping the coating with styrene. If surface becomes "tacky", adhesion is acceptable. If not softened by styrene, surface must be gritblasted or mechanically abraded to provide a non-glossy, rough surface.

CEILCOTE 163 COROCRETE is **NOT** recommended for steel. Not recommended for areas subjected to extreme thermal shock.

#### TESTING:

If CEILCOTE 380C (Conductive) PRIMER is utilized, the system can be tested for holidays. A specific method for high voltage testing is addressed in ASTM D 4787 Standard Practice for Continuity Verification of liquid/sheet linings to concrete.

**SAFETY:**

Resin component contains vinyl ester resin. Resin component is irritating to the skin and eyes. Vapor causes headache, dizziness, nausea and unconsciousness. Always wear protective clothing to minimize body contact. Area must be ventilated. If inhaled, remove victim to fresh air. Give artificial respiration if not breathing. For skin contact, wash with plenty of water immediately. For skin contact, wash with soap and water at once. Remove contaminated clothing. If swallowed, give large amounts of milk or water to drink. Get medical help immediately.

Keep away from all sparks, flames and heat. Extinguish fires with foam, dry chemical, carbon dioxide, or water spray.

**WARNING:** CEILCOTE #2C Hardener is an organic peroxide and should be stored in a cool place away from all sources of heat. It should **NEVER** be stored in the vicinity of cobalt naphthenate or other promoters, accelerators or strong reducing agents.

It is a strong irritant and ingestion can be fatal. Wash contaminated areas thoroughly with soap and water. For eyes, flush immediately for 30 minutes with water. Call a physician.

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

**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 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****MASTER BUILDERS, INC.****United States**

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