

Master Builders Technologies Corrosion Control INSTALLATION PROCEDURE

2.68I

CEILCOTE® 663 CEILGARD®

Maintenance coating

Installation information contained in this procedure are 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 Master Builders Representative.

SURFACE PREPARATION:

Steel:

For immersion or high temperature service a "White Metal" abrasive blast (**SSPC #5-89 or NACE #1**) is required with an anchor pattern profile of 2 - 3 mils as measured by the Keane-Tator Visual Comparator.

For atmospheric service use a "Near White" abrasive blast (**SSPC #10 or NACE #2**).

The prepared surface must be free of all oils, grease, or other contaminants and must be dry.

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 dry abrasive and dry air at the nozzle.

Proper blasting hoods and gloves are recommended.

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

CEILCOTE 680 PRIMER should be applied to prevent rusting of prepared surface and also to assure maximum bond to substrate. Average coverage is 400 - 480 ft²/gal (9.8 - 11.7 m²/litre). CEILCOTE 675 FLAKEPRIME mixing ratio is 6:3 by volume. CEILCOTE 680 PRIMER mixing ratio is 3:1 by volume.

Striping:

A preliminary coat may be desirable for edges and welds prior to application of the first coat. This is generally brushed, sprayed or roller applied onto primed or prepared surface. If edges or welds are very rough, multiple coats may be necessary. Under some circumstances glass mat may be required.

New Concrete:

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.

Prepared surfaces must be clean, dry and firm.

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 663 CEILGARD material.

Existing 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 can be primed with CEILCOTE 680 PRIMER or CEILCOTE 680C (Conductive) PRIMER (when sparktesting is required).

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 Master Builders, Inc.

If primer is utilized, prime prior to filling surface irregularities.

To fill surface irregularities (i.e., bugholes), prior to coating, mechanically mix CEILCOTE 663 CEILGARD components as instructed. Then add approximately 20 pounds of Type S-1 Powder per gallon of CEILCOTE 663 CEILGARD. More or less powder may be added to provide desired consistency. Trowel apply the mixture to the surface. Allow to dry cure, then topcoat with CEILCOTE 663 CEILGARD.

Another option to fill voids is with an epoxy mortar made by mixing 1 gallon of catalyzed CEILCOTE 680 PRIMER and adding 18 - 22 pounds of Type S-1 powder or 2-1/2 gallons (approximately 10 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 coating.

Priming Concrete:**CEILCOTE 680 PRIMER:**

Coverage is approx. 175 - 250 ft²/gal. (4.3 - 6.1 m²/litre) thinned and 150 - 200 ft²/gal. (3.7 - 4.9 m²/litre) unthinned, depending on the condition of the concrete. To thin, use T-471 solvent at up to 30 fl. oz. per gal. of CEILCOTE 680 PRIMER. CEILCOTE 680 PRIMER mixing ratio is 3:1 by volume.

CAUTION: 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 Master Builders for more detailed recommendation.

APPLICATION:

Coverage - Minimum recommended dry film thickness 6 mils (DFT) for one coat. Two coats (6-9 WFT per coat) normally used.

Average coverage of CEILCOTE 663 CEILGARD is 194 - 214 ft²/gal (4.7 - 5.2 m²/litre) per coat (6 mils dry), 2 coats are normally required. Since field application conditions vary, sufficient additional material should be ordered to allow for normal installation losses and to cover rough, pitted or complex surfaces.

For a 50 mil (DFT) system, catalyze the CEILCOTE 680 PRIMER or CEILCOTE 663 CEILGARD and then add S-11 powder. This can be done using a 1/2" drill with a paddle type mixer. For a starting point, use 10 lbs. of S-11 added slowly to a 1 gallon unit of CEILCOTE 680 PRIMER or CEILCOTE 663 CEILGARD. More or less filler will be added to achieve desired mortar consistency. Approximate coverage is 20 - 25 ft² per mix (1.9 - 2.3 m²). This variance is due to temperatures of material and personal preference on desired consistency. With a flat cement finishing trowel apply 45 - 65 wet mils (WFT). Remove trowel marks by smoothing this with a medium-shorter nap roller cover (generally a 3/8" mohair or shorter) and dipping in MEK. Care should be taken to use only as much MEK as needed.

Flash Point:

>136°F (58°C).

(Pensky-Martens Closed Cup Tester, ASTM D93-66)

Mixing:

1. Pot life (Working Time)

CEILCOTE 675 FLAKEPRIME

Mix Ratio 7:3 by volume

Coverage - 400 - 480 ft²/gal (steel)
(9.8 - 11.7 m²/litre)

	50°F (10°C)	73°F (23°C)	90°F (32°C)
Working Time	8 hrs.	3 hrs.	2 hrs.

CEILCOTE 680 PRIMER

Mixing Ratio 3:1 by volume

Coverage - 150 - 200 ft²/gal (3.7 - 4.9 m²/litre) unthinned
175 - 250 ft²/gal (4.3 - 6.1 m²/litre) thinned with
up to 30 oz. of T-471 per gal. of resin

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

CEILCOTE 663 CEILGARD

Mix Ratio 2:1 by volume

CEILCOTE 663 CEILGARD (RED)

Mix Ratio 2:1 by volume, Resin to #12 Hardener

CEILCOTE 663G CEILGARD (GRAY)

Mix Ratio 2:1 by volume, Resin to #14 Hardener

Coverage - Approximately 190 to 210 sq. ft. per gal.
125 ft²/2.5 gal unit (3 m²) @
1/16"; 75 ft²/2.5 gal unit (1.8 m²) @ 1/8"

	50°F (10°C)	73°F (23°C)	90°F (32°C)
Working Time	95 min	35 min.	15 min.

2. Mix only quantities of material that can be applied within the pot life limitation.
3. Use powered agitation (drill & whip) to assure complete mixing of the catalyst.
4. Measure hardener accurately in a measuring cup or graduated cylinder.
5. Do Not Thin

Cure Time:**CEILCOTE 663/663G CEILGARD**

	50°F (10°C)	73°F (23°C)	90°F (32°C)
Recoating			
Minimum	20 hrs.	9.5 hrs.	6 hrs.
Maximum	72 hrs.	36 hrs.	24 hrs.
To Handle	30 hrs.	14.5 hrs.	8 hrs.
Cure Time	10 days	5 days	2 days
(for immersion service)			

After maximum time frame, the cured CEILCOTE 663 CEILGARD must be abraded by sanding or sweep blasting to remove gloss and roughen surface before recoating to assure proper intercoat adhesion.

Spray Application:

CEILCOTE 663 CEILGARD can be applied by conventional air atomizing and airless spray methods.

Air Spray Method:

Use Binks 18 or 62 spray gun; minimum 3/8" I.D. fluid line with #66 (.070) fluid tip and needle with 63 PJ or #63 PB air caps. For high production spraying, substitute #67 (.086) fluid tip and needle with 67 PD air cap. Adjust fluid pressure to provide adequate material to spray gun and use minimum atomization pressure to break up and flow out with minimum over spray.

Airless Spray Method:

Minimum 28:1 ratio pump with 60 mesh filter recommended. A Spraying Systems 25-A Gunjet Spray Gun with Rotoclean tip and tungsten carbide orifices of 0.017 - 0.026"; and 25 - 60° fan angle is recommended.

Operating Pressures:

For airless spray, adjust material pressure between 1,200 - 2,500 psi as required. As the spray tip orifice size is increased, the fluid pressure must also be increased to maintain a proper spray pattern. For air spray, set atomizing air pressure at 50 to 70 psi and then adjust fluid pressure to provide enough material for a proper spray pattern.

Spray Equipment Maintenance:

1. All equipment should be regularly cleaned to assure extended service life. Use T-410, MEK or MIBK to flush fluid hose, gun and pump. **DO NOT USE ACETONE.**
2. Regulators and all movable parts should be inspected frequently and spare parts available.

Brush and Roller Application:

1. Apply base coat and topcoat with a clean, medium length, natural bristle brush or short to medium nap roller.
2. Work the CEILCOTE 663 CEILGARD into all crevices, corners, and surface irregularities.
3. Check the thickness regularly with a wet film tester. Three coats may be necessary to obtain recommended film thickness on vertical surfaces.

Broadcast Application:

1. Stir two components together well for at least two minutes to insure proper blend. For best results, use a mechanical Jiffy type mixer at low speed.
2. Apply coating at approximately 15-20 mils (WFT) by short nap roller or notched squeegee. Do not roll out too thin as with conventional painting methods.
3. Broadcast sand or grit in excess into resin while it is still uncured, covering the entire resin surface.
4. Let cure and then vacuum or sweep excess grit from surface.
5. Apply coating at approximately 15 - 20 mils (WFT) onto the grit covered surface and then allow to cure. The amount of resin on surface will determine how aggressive the skid resistance will be.

CAUTION: CEILCOTE 663 CEILGARD IS A LIMITED POT LIFE (WORKING TIME) MATERIAL. SPRAY EQUIPMENT MUST BE SOLVENT FLUSHED AND CLEANED IMMEDIATELY AFTER USE TO PREVENT MATERIAL FROM CURING IN THE PUMP (OR PRESSURE POT), FEED HOSE AND SPRAY GUN. IF SPRAYING IS TO BE CONTINUOUS, SEVERAL BATCHES MAY BE SAFELY SPRAYED WITHOUT INTERMEDIATE SOLVENT FLUSHING PROVIDING THAT THE POT LIFE OF ANY SINGLE BATCH IS NOT EXCEEDED.

CLEAN UP:

Rollers, brushes, and spray equipment may be cleaned with T-410, MEK or MIBK. After the CEILCOTE 663 CEILGARD has hardened, the best way to remove it from tools is with methylene chloride.

SAFETY:

CEILCOTE 663 CEILGARD contains epoxy resins, polyamide catalyst and aromatic solvent. 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 663 CEILGARD materials, always wear gloves and appropriate work clothing to minimize contact. Ventilation is required with special consideration for enclosed or confined area. Air movement must be designed to insure turn-over 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.

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 and Installation Procedures are available and should be consulted when handling products. These products are for industrial and professional use only; application directions must be followed.

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

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