

CEILCOTE® COROLINE® Series

Modified epoxy lining and flooring, glass cloth reinforced

DESCRIPTION:

The CEILCOTE® COROLINE® Series is an established, proven series of products for corrosion-proof surfacing, designed for use as either a lining for metal or concrete surfaces or as a corrosion resistant floor topping. The series of products is widely used in areas of dilute acid and high caustic environments.

The CEILCOTE COROLINE Series of systems have three components: a liquid resin, a liquid hardener and a powder, which are mixed together before use. CEILCOTE COROLINE Series are trowel applied in combination with a heavy-duty reinforcing layer of fiberglass or synthetic cloth. The resultant mixture hardens to 75% of its ultimate strength in 8 to 16 hours at 75°F (24°C) and will withstand light service at that time. Ultimate strength is developed in two or three days. CEILCOTE 680 PRIMER is used to ensure excellent bond strength to the substrate.

TYPES:

• CEILCOTE 505 COROLINE

- Maximum resistance to organic chemicals, dilute mineral acids & strong caustics.
- 155 mils target thickness of epoxy containing a graded silica filler & reinforced with 1 layer of heavy glass fabric.
- CEILCOTE 505U COROLINE Modified, unreinforced system, utilizing a 1/8" base coat and optional epoxy topcoat.

• CEILCOTE 505M COROLINE

- Constructed & applied the same as CEILCOTE 505 COROLINE, but containing ingredients that comply with FDA requirements for contact with food.
- Practically the same resistance as CEILCOTE 505 COROLINE to acids & caustics, but slightly less resistance in certain organic solvents.

• CEILCOTE 505AR COROLINE

Applied similar to CEILCOTE 505 COROLINE with equal chemical resistance, but improved resistance to abrasion & erosion.

• CEILCOTE 510 COROLINE

Used primarily as electrically conductive system for floor area where static electricity must be eliminated.

• CEILCOTE 510 COROLINE

- Also used as a tank lining in areas of very high caustic conditions that could attack a silica filler.
- Uses carbon filler & is reinforced with a synthetic cloth.

TYPICAL USES:

- Tank, sump & trench linings.
- Floor toppings.
- Piers.
- Equipment foundations.
- Tank pads.
- Process equipment.

ADVANTAGES:

- Excellent alkaline resistance.
- Monolithic/seamless.
- Superior permeation resistance.
- Strong, durable corrosion barrier.
- Low coefficient of expansion.

COLOR:

Available in Gray. Carbon filled system is black.

PHYSICAL PROPERTIES:

Generic Type

Epoxy

Volatile Organic Compounds (VOC)

- CEILCOTE 505 Coroline 1.26 lbs/gallon
- CEILCOTE 505M Coroline 0 lbs/gallon
- CEILCOTE 510 Coroline 1.26 lbs/gallon

Compressive Strength

ASTM C 579-82 10,000 to 12,000 psi

Tensile Strength

ASTM C 307-83 2,000 to 3,000 psi

Thermal Conductivity

3 to 5 BTU, in/hr, sq.ft., °F

Flammability

ASTM D 635-81 0.5 in/min. (1.3cm/min.)

Coefficient of Expansion

(in/in/°F) Range 12 - 15 x 10⁻⁶, etc.; 70°F to 210°F (21°C - 97°C) Reinforced with type H cloth

Electrical Properties

Megger Reading, 3 ft. Span (CEILCOTE 510 COROLINE) 0 to 200,000 ohms typically 500 to 10,000

Flash Points

Pensky-Martens Closed Cup

CEILCOTE 505 COROLINE liquid	107°F	(42°C)
CEILCOTE 505M COROLINE liquid	230°F	(110°C)
CEILCOTE 510 COROLINE liquid	107°F	(42°C)
CEILCOTE 680 PRIMER liquid	204°F	(95°C)
#4A Hardener	210°F	(99°C)
#9 Hardener	228°F	(109°C)
T-410 Solvent	52°F	(11°C)
T-420 Smoothing liquid	80°F	(27°C)

Chemical Resistance

The CEILCOTE COROLINE Series is excellent for immersion in dilute acids, such as 10% sulfuric acid and 5% hydrochloric, caustic to 50% and strong organic solvents such as acetone, toluene and dichlorethane. Temperature limits of exposure depend on type of chemical, concentration and other service details. They will stand spillage exposure to stronger chemicals.

Design Information

Reinforcement:

CEILCOTE COROLINE Series is installed with a reinforcing layer of fiberglass fabric that performs the following functions:

1. Lowers the coefficient of expansion
2. Minimizes effects of resin shrinkage
3. Minimizes possibility of thin spots due to the multi-layer application used.

Service Temperature Limits:

- Immersion/Frequent or severe spills: 160°F (71°C) steel; 180°F (82°C) concrete
- Occasional Splash/Spill: 300°F (149°C)

Shelf Life:

One year minimum, if kept tightly sealed.

COVERAGE:

- CEILCOTE 680 PRIMER (for steel): 275 to 325 ft²/gal (6.7 to 7.9 m²/litre)
- CEILCOTE 680 PRIMER (for concrete): 150 to 200 ft²/gal (3.7 to 4.9 m²/litre)
- CEILCOTE 680C PRIMER (for concrete): 125 to 175 ft²/gal (3.1 to 4.3m²/litre), Use where spark testing is desired
- CEILCOTE 505 COROLINE: 18 to 20 ft²/gal (.5 m²/litre)
- CEILCOTE 505M COROLINE: 18 to 20 ft²/gal (.5 m²/litre)
- CEILCOTE 505AR COROLINE: 18 to 20 ft²/gal (.5 m²/litre)
- CEILCOTE 510 COROLINE: 13 to 15 ft²/gal (.4 m²/litre)
- CEILCOTE 505U COROLINE base coat: 20 to 22 ft²/gal. (.5 to .54 m²/litre)

Powder (sq.ft./bag)	S-1	B-4	S-9AR
CEILCOTE 505 COROLINE	50		
CEILCOTE 505AR COROLINE	100		83
CEILCOTE 505M COROLINE	62		
CEILCOTE 510 COROLINE		83	
Type "H" or "O" Cloth	1.1 x total ft ² (m ²)		
T-410 Cleaning Solvent	200 ft ² /gal (4.9 m ² /litre)		
T-420 Smoothing Liquid	150 ft ² /gal (3.7 m ² /litre)		

PACKAGING:

1 and 5 gallon (U.S.) units (CEILCOTE 505M COROLINE 5 gallons only)

MIXING RATIO:

By Volume 8:1

LIMITATIONS:

Do not apply CEILCOTE COROLINE Series when the surface temperature is below 50°F (10°C).

APPLICATION: (abbreviated)

SURFACE PREPARATION

Steel:

For immersion or high temperature service a "White Metal" sandblast (SSPC #5-89 or NACE #1) is required with a minimum anchor pattern profile of 3 mils. For atmospheric service use a "Near White" sandblast (SSPC #10-89 or NACE #2).

Concrete:

Abrasive blasting or scarification to remove laitance and surface contaminants is recommended. Concrete must be thoroughly cured, free of oils, curing solutions or mold release agents, dust and must be dry at time of application. Use plastic sheet test method (ASTM D 4263) to ensure concrete is moisture free. If moisture is detected, re-test until dry.

Primers:

For Steel Surfaces: CEILCOTE 680 PRIMER

For Concrete: CEILCOTE 680 PRIMER; CEILCOTE 680C (Conductive) PRIMER (use where spark testing of concrete is required)

Mix and apply primer per instructions.

PLACEMENT:

1. Be certain the cured primer is clean and dust free.
2. Mechanically premix CEILCOTE COROLINE components individually (i.e. Part A, Part B) prior to blending together. After initial mixing, add CEILCOTE Hardener to CEILCOTE COROLINE Resin and mix for 3 to 5 additional minutes.
3. In small amounts, add and mix appropriate Powder with resin. More or less powder may be added as required. Use within 15 minutes after adding hardener.
4. Using a trowel, apply 60 to 80 mils of base coat.
5. Press the reinforcing cloth into the base coat, leaving no wrinkles or hollows. Lap each strip about 1" over preceding strips. Press the cloth carefully into all corners. When the cloth is being placed overhead, allow the base coat to get a little firm, not hard, before saturating cloth.
6. Saturating should be done before the base coat has hardened. Mix the Resin and Hardener.
7. Apply the saturant with a brush or roller until all cloth is translucent. Let cure approximately 16 hrs.
8. Examine cured saturating coat before recoating. If it appears damp or has a film on it, wash it with water and allow to dry.
9. Mechanically premix CEILCOTE COROLINE components individually (i.e. Part A, Part B) prior to blending together. After initial mixing, add CEILCOTE Hardener to CEILCOTE COROLINE Resin and mix for 3 to 5 additional minutes.
10. In small amounts, add and mix appropriate Powder with Resin. More or less powder may be added as required. Use within 15 minutes after adding hardener.
11. Trowel on 60 mils of topcoat. Smooth by dampening clean, soft brush with T-420 and brushing lightly to remove trowel marks. If extra smooth surface is desired, allow topcoat to become a little firm before brushing. For CEILCOTE 505U COROLINE a trowel applied topcoat is not used. An optional 8 to 10 mil DFT epoxy topcoat may be applied.
12. Allow system to cure appropriately (72 hrs) before placing in service. Longer curing is needed at cooler temperatures. Consult Master Builders for more information.

CLEAN UP:

Use toluene, xylene or T-410.

SAFETY:

- Store in cool, dry area [50°F to 90°F (10°C to 32°C)] away from direct sunlight, flame or other hazards.
- CEILCOTE COROLINE components contain epoxy resin, solvents and aliphatic 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 COROLINE 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.
- 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 (MSDS) are available and should be consulted when handling products. These products are for industrial and professional use only; application directions must be followed.

MAINTENANCE:

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

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