CEILCOTE® 64 Lining

Reinforced, chlorendic polyester lining

Description

CEILCOTE® 64 Lining is a heavy-duty lining that protects steel and concrete in immersion service from strong chemicals. The lining is formulated from polyester resin, inert fillers, and fiberglass reinforcement. It can withstand solution temperatures to 160°F (71°C) in immersion service.

It is a chemical resistant chlorendic polyester resin lining with excellent resistance to chromic acid, as well as many other oxidizing acids and hot wet chlorine. In addition, this lining will resist dilute inorganic acids, salts, and organic solutions.

Typical Uses

- Plating & pickling storage.
- Acid waste disposal tanks
- Tank lining

Advantages

- Excellent corrosion resistance
- Trowel applied base coat that provides barrier against permeation
- Low coefficient of expansion
- Longer service life

Chemical Resistance

For specific chemical resistance data, refer to the CEILCOTE Corrosion Resistance Guide or contact SGL ACOTEC. Chemical resistance data on CEILCOTE 64 Lining was developed using ASTM C 267 and ASTM C 868 in addition to actual installation performance history. Additional information on the chemical resistance properties will be furnished on request.

Substrate

Refer to Ceilcote concrete specification CPT-1 for concrete requirements and CPT-2 for steel.

Surface Preparation

Metal - Steel must be abrasive blasted to “White Metal” for optimum performance. (Refer to SSPC SP 5 (Sa3 (ISO 8501-1:2007)) or NACE Specification No. 1). A minimum abrasive blast profile of 3 mils (75 microns) is required. Please refer to Construction Specification CPT-2.

Concrete - Abrasive blasting or scarification to remove laitance and surface contaminants is recommended. Concrete must be thoroughly cured, free of oils, curing solutions and mold release agents, dust and must be dry at time of application. Use ASTM D 4263 (plastic sheet test method) to ensure concrete is moisture free. If moisture is detected, re-test until dry. Alternately test per ASTM 1869 for maximum 3 lbs./24hrs., 1000 ft^2. (92.9m^2) For concrete quality and preparation, please refer to Construction Specification CPT-1, CP-14, CP-17 & CS-10.

Application

Refer to Installation Procedure #1.4I for more details.

Mechanically premix CEILCOTE 380 resin (i.e. Part A) individually prior to adding hardener. After initial mixing, add CEILCOTE #2C hardener and mix one minute. If conductivity is required add 1 bag (5.2 lbs (2.4kg)) of CEILCOTE C#1 powder per 5 gal unit (18.92 liter unit) of CEILCOTE 380 Primer. Mix Ceilcote C#1 Powder with the resin prior to adding the hardener.

Apply catalyzed CEILCOTE 380 Primer at 2 to 5 wet mils (50-125 microns) using a short nap roller. The appearance of CEILCOTE 380 Primer, when applied by roller, should be translucent. The metal substrate should be visible. The color of the application will be varied due to overlaps and slight thickness variation. Overlap areas should also be translucent.

Primed surface must be dry and free of foreign matter at time of lining application.

Mechanically premix CEILCOTE 64 Lining resin individually prior to adding hardener. After initial mixing, add CEILCOTE #3C hardener and mix one minute.

Add approximately 18 lbs (8.1kg) of S#1 Powder. More or less powder may be added as required. Use within 15-30 minutes after adding hardener.

The base coat is best applied to large surfaces with a trowel. For outlets, flanges, angles and other more intricate parts of the tanks, it may be best to use a brush. Base coat should be applied at 1/16" (40 to 80 mils)

For the saturant mechanically premix CEILCOTE 64 Lining resin individually prior to adding hardener. After initial mixing, add CEILCOTE #3C hardener and mix one minute.

Press glass mat onto base coat, roll on the saturant coat and roll out air bubbles using a ribbed roller. Repeat for second layer of mat.

Press in the “C” surface veil and roll it out until saturated. In some applications, such as fluorides and hot alkaline, Nexus Synthetic Veil is used in lieu of “C” Surface Veil. After lining has hardened spark test with 15,000 to 20,000 volts and repair any holidays. After the lining has been tested, sand off bumps, loose fibers, etc., then brush or roll on an even, heavy coat of the saturant as the 1st topcoat. Allow this to harden approximately 16 hours.

Apply the 2nd topcoat containing a thin film curing aid. Let harden 24 hrs. at temperatures above 75°F or 48 hrs between 60° and 75°F.

Mixing Ratio	By Volume
CEILCOTE 380 Primer	
380 Primer Resin	1 gal (3.79 liters)
#2C Hardener	2.5 oz (74ml)
CEILCOTE 64 Lining	
64 Lining Resin	1 gal (3.79 liters)
#3C Hardener	2 oz (59ml)

Handling Properties

Working Time	380 Primer	64 Lining
50°F (10° C)	60 min	60 min
70°F (21° C)	45 min	45 min
90°F (32° C)	20 min	25 min

Recoat	380 Primer	64 Lining
50°F (10°C)	5 hrs	12-24 hrs
70°F (21°C)	2 hrs	4-8 hrs
90°F (32°C)	1 hr	3-4 hrs

To ensure proper intercoat adhesion, Ceilcote 64 Lining basecoat should be recoated within two weeks when shaded from sunlight and one week if exposed to direct sunlight

Time to Place in Service	
50°F (10° C)	48 hrs
70°F (21° C)	24 hrs
90°F (32° C)	12 hrs

Coverage

CEILCOTE 380 Primer on concrete	160 - 200 ft^2/gal (3.9-4.9 m^2/liter)
CEILCOTE 380 Primer on steel	250 - 300 ft^2/gal (6.1-7.3 m^2/liter)
CEILCOTE 380 Primer with CEILCOTE C#1 Powder (For holiday testing)	140 - 160 ft^2/gal (3.4-3.9m^2/liter)
Ceilcote 64 Lining	7 to 8.5 ft^2/gal (0.17-0.20m^2/liter)
S#1 Powder	100-120 ft^2/bag (2.4-2.9 m^2/liter)
1.5 oz mat	2.2 x total ft^2
C Veil or Nexus Synthetic Veil	1.1 x total ft^2
Thin Film Curing Aid	0.001 lbs/ ft^2

Packaging

The following standard packages are available

CEILCOTE 380 Primer 1, 5 & 30 gal units (3.79, 18.92, 113.55 liter units)

C#1 Powder 5.2 lb (2.35kg) bag

CEILCOTE 64 Lining 1, 5 & 56 gal units (3.79, 18.92, 221.96 liter units)

Type S-1 Powder 50 lb (22.65kg) bags

1.5 oz mat As required by ft^2

C Veil or Nexus Synthetic Veil As required by ft^2

Thin Film Curing Aid 1 gal (3.79 liter unit)

Storage

Store material in a cool, dry and covered location away from fire hazards and direct sunlight. Minimum shelf life at 70° F (21° C) for each component is indicated below:

CEILCOTE 380 Primer	6 months
CEILCOTE 64 Lining	6 months
S#1, C#1 Powder	Indefinite, if kept dry

Higher temperature will shorten the shelf life of these products. All liquid products are to be stored in a frost-free place.

Safety

Store material in a cool, dry area [50°- 90° F (10° - 32° C)] away from direct sunlight, flame or other hazards.

CEILCOTE 64 Lining contains polyester resins and MEK peroxide catalyst. The product's components have been formulated to optimize physical characteristics such as strength 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 ensure product safety.

During application of CEILCOTE 64 Lining 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 ignition.

Product Material Safety Data Sheets 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 CEILCOTE representative for additional information.

Technical and Physical Data

	Test standard	Unit	Value
Generic Type			polyester
Viscosity	Brookfield HB 100 rpm	cps	600
Tensile Strength	ASTM C307-94	psi (MPa)	6,500-8,000 (45-55)
Flexural Strength	ASTM D 790-71	psi (MPa)	8,000-12,000 (55-83)
Coefficient of Expansion	(in/in/ºF) range: 70ºF to 210ºF (21ºC to 96ºC)	in/inºF (cm/cmºC)	13-17 x 10^{-6} (3.3-4.3 x 10^{-6})
Flexural Modulus	ASTM D 790-71	psi (Gpa)	0.5-0.7x10^{-6} (3.5-3.8)
Thermal Conductivity		BTU, in/hr,ft°F (W/M°K)	1.0-2.0 (0.14-0.29)
Permeance	ASTM E 96	perms	0.021
VOC Ceilcote 380 Primer Ceilcote 64 Lining	EPA Method 24	lbs/gal (gm/liter)	 3.017 (368.57) 2.638 (316.512)
Flash Point Ceilcote 64 Lining resin Ceilcote 380 Primer resin Styrene T-410 solvent Ceilcote #3 Hardener Ceilcote #2 Hardener	Pensky Martens closed cup Tag closed cup 	°F (°C)	 82 (28) 83 (28) 85 (29) 35 (2) 160 (71) 177 (81)
Service Temperature Limits	 Immersion/condensing fumes (concrete) Immersion/condensing fumes (steel)	°F (°C)	 180 (82) 160 (71)

Important Note

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to law) any loss or damage arising out of the use of the product. WE HEREBY DISCLAIM ANY WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local International Paint representative that this data sheet is current prior to using the product.

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