

Description

CEILCOTE® 389 Hybricrete is a revolutionary, new, high performance system designed to provide exceptional resistance to aggressive chemicals such as methylene chloride, acetone, methanol, nitric acid and n-methyl-pyrrolidone.

Based on a novel, two-component, hybrid-resin system, CEILCOTE 389 Hybricrete attains a high degree of cross-link density at room temperature and provides outstanding chemical resistance to a broad range of acids, alkalis, and organic solvents without the need to post-cure.

The CEILCOTE 389 Hybricrete Series are designed especially for the protection of concrete and steel against the attack of corrosive chemicals. CEILCOTE 389 Hybricrete Series are trowel applied, in combination with a heavy-duty reinforcing layer of fiberglass or synthetic cloth.

CEILCOTE 389S Hybricrete is a silica filled system. CEILCOTE S-1 Powder is used as the filler for this standard system.

CEILCOTE 389AR Hybricrete is an abrasion resistant system. CEILCOTE S-9AR Powder is used as the filler for abrasion resistance. If hot caustic or fluorides are present, use CEILCOTE S-10AR Powder to provide chemical resistance as well as resistance to abrasion.

CEILCOTE 389B Hybricrete is a carbon filled system. Use of CEILCOTE B-4 Powder creates an electrically conductive and non-sparking system. It also provides resistance to fluorides, including hydrofluoric acid.

Typical Uses

- Tank lining
- Trench lining
- Tank Pads
- Scrubber lining
- Piers
- Floor covering
- Concrete pipe lining
- Chimney lining
- Equipment foundations
- Pump bases
- Secondary containment

Advantages

- Superior resistance to solvents including methylene chloride, acetone and pyridine
- Low odor
- Low coefficient of expansion
- Superior permeation resistance
- Strong, durable corrosion barrier

Chemical Resistance

For specific chemical resistance data, refer to the CEILCOTE Corrosion Resistance Guide or contact CEILCOTE. Chemical resistance data on CEILCOTE 389 Hybricrete 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 (75microns) 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 sq.ft. For concrete quality and preparation, please refer to Construction Specification CPT-1, CP-14, CP-17 & CS-10.

Application

1. The surfaces to be lined should be at a minimum temperature of 60°F (16°C) for proper application.
2. Prime surfaces with CEILCOTE 370HT primer for steel or concrete. Use CEILCOTE 370HT Primer with the addition of CEILCOTE C#1 Powder (5.2 lbs per 5 gal unit) when spark testing (high voltage holiday testing) will be conducted on concrete. Allow to cure tack free before proceeding.
3. Trowel base coat 1/16" (40-80 mils [1000-2000µm]) thick.
4. Immediately press the mat or cloth reinforcement into base coat.
5. Saturate by brushing or rolling on the saturating liquid until whiteness of glass disappears. Allow to cure.
6. Trowel 1/16" (40-80 mils [1000-2000µm]) topcoat as evenly as possible, then smooth by brushing with Styrene Smoothing Liquid. Allow to cure.



Mixing Ratio	By Volume
CEILCOTE 370HT Primer 370HT Primer Resin #2C Hardener	1 gal (3.79 liters) 2.5 oz (74ml)
CEILCOTE 389 Hybricrete* 389 Hybricrete (Clear) Resin #2C Hardener	1 gal (3.79 liters) 3 oz (89ml)

Handling Properties

Working Time	370HT Primer	389 Hybricrete
50°F (10° C)	60 min	3 hrs
70°F (21° C)	45 min	50 min
90°F (32° C)	20 min	16 min

Recoat	370HT Primer	389 Basecoat/Saturant
50°F (10° C)	5 hrs	12 hrs
70°F (21° C)	2 hrs	4 hrs
90°F (32° C)	1 hrs	2 hrs

Time to Place in Service	
50°F (10° C)	5 days
70°F (21° C)	24 hrs
90°F (32° C)	16 hrs

Coverage

Product

CEILCOTE 370HT Primer (for concrete or steel) 160 to 200ft²/gall (3.9-4.9m²/liter)
 CEILCOTE 370HT Primer with CEILCOTE C#1 Powder (For holiday testing) 140 to 160ft²/gall (3.4-3.9m²/liter)
 STYRENE Smoothing Liquid 200ft²/gall (4.9m²/liter)
 CEILCOTE 389S Hybricrete 14 to 16ft²/gall (0.3-0.4m²/liter)
 CEILCOTE 389B Hybricrete 12 to 14ft²/gall (0.3m²/liter)
 CEILCOTE 389AR Hybricrete 14 to 16ft²/gall (0.3-0.4m²/liter)
 1 ½ oz Mat or H Cloth 1.1 x actual square footage

Powders: ft ² per 50 lb bag	S-1	B-4	S-9AR or S-10AR
CEILCOTE 389S Hybricrete	50		
CEILCOTE 389B Hybricrete		62	
CEILCOTE 389AR Hybricrete Base Coat	100		
CEILCOTE 389AR Hybricrete Topcoat			83

Packaging

The following standard packages are available
 CEILCOTE 370HT Primer .75, 4 & 45 gal units (2.83, 15.14, 170.32 liter units)
 CEILCOTE 389 Hybricrete .75, 4 gal units (2.83, 15.14 liter units)
 Type S-1 Powder 50 lb (22.65kg) bags
 Type S-9AR Powder 50 lb (22.65kg) bags
 Type S-10AR Powder 50 lb (22.65kg) bags

Type B-4 Powder 50 lb (22.65kg) bags
 Type H Cloth or 1 ½ oz Mat (Standard) As required by ft²
 Type K Cloth (Synthetic) As required by ft²
 Styrene Smoothing Liquid) 1 & 5 gal (3.79, 18.92 liter units)

Storage

Store 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 370HT Primer 3 months
 CEILCOTE 389 Hybricrete 4 months
 S-1, S-9AR, S-10AR & B-4 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 in cool, dry area [50° - 90° F (10° - 32° C)] away from direct sunlight, flame or other hazards.

CEILCOTE 389 Hybricrete contains hybrid polymer resins and cumene 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 389 Hybricrete 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			Hybrid polymer
Viscosity	Brookfield HB 100 rpm	cps	800
VOC (Volatile Organic Compounds)	Method EPA 24	lb/gal	.4
Compressive Strength	ASTM C579-96	Psi (Mpa)	11,000-13,000 (76-90)
Tensile Strength	ASTM C307-94	Psi (Mpa)	2,000-2,500 (14-17)
Taber Abrasion Factor	CS 17F wheel, 1,000 gm wt., 5,000 revolutions	mg	70-100
Coefficient of Expansion	(in/in/°F) range: 70°F to 210°F (21°C to 96°C) Reinforced, Type H cloth	°F (°C)	12-15 x 10 ⁻⁶ (7-8 x 10 ⁻⁶)
Electrical Properties - Carbon filled	Megger Reading - 3 ft span	ohms	0-200,000 (500 to 10,000 typical)
Flash Point	Pensky Martens closed cup	°F(°C)	
389 Hybricrete resin			208 (97)
370HT Primer resin			83 (28)
Ceilcote #2 Hardener			162 (72)
Styrene			83 (28)
T-410 solvent			35 (2)
Service Temperature Limits		°F (°C)	
	Immersion/condensing fumes (concrete)		180 (82)
	Immersion/condensing fumes (steel)		160 (71)
	Splash/spill/rinse (occasional)		250 (121)
	Splash/spill/rinse (frequent)		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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