

PRODUCT DESCRIPTION

ChemShield 1680 is a 100% solids, reinforced, proprietary formulated AHC (Advanced Hybrid Cycloaliphatic) Hybrid Epoxy Novolac based thick-film internal lining for chemical storage tanks. ChemShield 1680 is designed for corrosion control, chemical resistance, and abrasion resistance and is used for restoration and leak prevention of petroleum storage tanks and pipelines. ChemShield 1680 is available in three variations allowing spray-application from 20–125 mils DFT depending on the extent of corrosion. ChemShield 1680 is a two-component system; Resin (Part A) and Hardener (Part B).

APPLICATION INFORMATION

Method: Single or Plural Component Airless Spray System (min. 45:1 compression ratio with 1/2 inch hoses). For smaller areas and repairs, a trowel may be used. For more information on airless spray application, call your Wolverine Coatings Technical Representative.	
Surface Preparation: All surfaces shall be clean and dry, free of dust, dirt, oil or any other foreign matter. Steel surfaces shall be abrasive blasted to AMPP SSPC SP-5/NACE No. 1 "white metal" finish with a minimum 2.5 - 5.0 mil angular surface profile. For additional information regarding surface preparation specifications and techniques, or for the preparation of other substrates, call your Wolverine Coatings Technical Representative.	
Minimum Temperature of Application (Air): 45 °F, otherwise force curing is required.	
Thinning:	Not recommended or desired.
Pre-heating:	Heat each component to 95-120°F prior to mixing.
Handling: Store at moderate temperatures (65-85°F) prior to product application for ease of handling and mixing. Additional heating may be required and is recommended for spray application.	
Mixing: Mechanically pre-mix each component; add the hardener into the resin and then mix the combined compound at 400-600 rpm for 3 to 4 minutes.	

ChemShield 1680 is available in 3 versions based on sag resistance (ASTM D4400). This product can blush when applied at lower temperatures or in high humidity.

- **1680-030:** ≤ 30 mils on vertical surfaces per coat
- **1680-060:** ≤ 60 mils on vertical surfaces per coat
- **1680-125:** ≤ 125 mils on vertical surfaces per coat

TECHNICAL DATA

The following technical data tests were conducted @ 77 °F / 50% RH	
Mixed Density, lbs/gal (ASTM D1475)	13.68 +/- 0.5
Density (Resin Hardener): (ASTM D1475)	Resin: 12.94 Hardener: 14.96
Mix Ratio (R:H):	2:1 (by volume)
Recommended Thickness, Mils DFT	30 - 125
Theoretical Coverage, SqFt./Mil/ Gal	1604
VOC Content (mixed), g/l	Nil
Flash Point (mixed), °F	>200
Taber Abrasion (1000g per arm/1000 cycles): (ASTM D4060)	125 mg (7 days cured)
Direct Impact: (ASTM D5420)	34 ft. / lbs.
Elongation: (ASTM D638)	19.0% (7 days cured)
Gloss (GU): (ASTM D523)	26.7
Gel Time (110 ml): (ASTM D2471)	40 - 50 minutes

Ambient Drying Time (@ 77°F at 50% relative humidity)	
To Touch: (ASTM D5895)	3-5 hours
To Handle: (ASTM D5895)	6-8 hours
Shore D Hardness (24 hours): (ASTM D2240)	71
For Immersion Service:	24 hours
*Force curing is required for low temperature applications to expedite curing process.	

Coverage to Achieve Dry Film Thickness, sq.ft./gal.	
Mils	SqFt / lb
30 Mils:	53.4
60 Mils:	26.7
125 Mils:	12.8
(Actual - allow for approximate loss of 10%)	

TYPICAL USES

* Underground fuel storage tanks
* Steel and fiberglass storage tank bottoms
* Pipe internals carrying slurries & abrasive mixtures
* Chemical process floors & concrete containment areas
* Pulp and Paper Services

CHEMICAL RESISTANCE

Summarized; for a more comprehensive list of chemical resistance, please refer to our Product Resistance Data Guide. Films cured for 7 (seven) days at 77°F are unaffected after 1 (one) year immersion at ambient temperatures.

- Benzene	- Hydraulic Oil
- Brine	- Jet Fuel, all grades
- Crude Oil, sweet or sour	- Kerosene
- Diesel Fuel (includes all Biodiesel, B100, B20, B5 and B2)	- Mineral Oil
- Ethanol, All Concentrations	- Naphtha
- Fuel Oil	- Skydrol 500B
- Gasoline, (Regular, Mid, Premium Unleaded)	- Sodium Chloride
- Gasoline, aviation	- Water, Distilled Water, Sea Water
- Gasoline, with MTBE, TBA, or Ethanol	- Xylene

SHIPPING DATA

Packaging:	3 Gal Kits, 15 Gal Kits, 152.5 Gal Kits
DOT Class (Resin) - Non regulated	
DOT Class (Hardener) - Paint Related Material, 8, DOT Number UN 3066, III	

SAFETY

For your safety, all required personal protection equipment should be used when operating machinery or handling chemicals. Concrete dust is a source of silica particles and other hazardous materials that can cause silicosis and other illnesses. Proper safety equipment and methods are the responsibility of the installation company, general contractor, and/or facility owner.

WARRANTY

Wolverine Coatings Corporation warrants its products to be free from defects in material and workmanship. Wolverine Coatings Corporation's sole obligation and Buyer's exclusive remedy in connection with the products shall be limited, at Wolverine Coatings option, to either replacement of products not conforming to this Warranty or credit to the Buyer's account in the invoiced amount of the nonconforming products. Any claim under this warranty must be made by the Buyer to Wolverine Coatings in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the ship date, whichever is earlier. Buyer's failure to notify Wolverine Coatings of such nonconformance as required herein shall bar Buyer from recovery under this warranty.

Wolverine Coatings makes no other warranties about the product. No other warranties, whether expressed, implied, or statutory, such as warranties of merchantability or fitness for a particular purpose, shall apply.

Any recommendation or suggestion relating to the use of the products made by Wolverine Coatings, whether in its technical literature, or in response to specific inquiry or otherwise, is based on data believed to be reliable; however, the products and information are intended for use by Buyers having requisite skill and know-how in the industry, and therefore it is for the Buyer to satisfy itself of the suitability of the products for its own particular use and it shall be deemed that Buyer has done so, at its sole discretion and risk. Variation in environment, changes in procedure of use, or extrapolation of data may cause unsatisfactory results.

LIMITATION OF LIABILITY

Wolverine Coatings Corporation's liability on any claims based upon Wolverine Coatings Corporation's negligence or strict liability, for any loss or damage arising out of, connected with, or resulting from the use of the products, shall in no case exceed the purchase price allocable to the products or parts thereof which give rise to the claim. In no event shall Wolverine Coatings Corporation be liable for consequential or incidental damages.

LITERATURE REVISION - TDS: ChemShield 1680 - Rev. 241230

Published literature is subject to change without notice. Wolverine Coatings Corporation is constantly engaged in the testing of existing formulations, the development of new innovative technologies, and the evaluation of the latest practices. The latest literature should always be consulted at www.wolverinecoatings.com.



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