



Thurmalox® 70 Air Dry Silicone Coating for Stainless Steel Prevents Stress Corrosion Cracking Heat Resistant to 1000°F (538°C)

Description

Thurmalox 70 is a one component, air drying, silicone based, heat resistant coating that protects thermally insulated austenitic stainless steel from chloride induced stress corrosion cracking. Thurmalox 70 withstands temperatures to 1,000°F (538°C) with peaks to 1,100°F (593°C). It is formulated to contain the minimum amount of attainable chlorides, halides, sulfides, nitrates and metals that induce external stress corrosion cracking. Every batch of Thurmalox 70 is tested by an independent laboratory for leachable chloride content.

Thurmalox 70 is formulated to meet the currently accepted practice for selection of protective coatings for stainless steel surfaces under thermal insulation as set forth in NACE SP0198 "Control of Corrosion Under Thermal Insulation and Fireproofing Materials- A Systems Approach".

Recommended Uses

- Insulated and uninsulated stainless steel piping, vessels and equipment.
- Nuclear power facilities (Thurmalox 70-4 nuclear grade) where a high temperature coating for insulated stainless steel with minimum amounts of chlorides, halides, nitrates, sulfides and metals is needed.

Features

- Complies with NACE SP0198 System SS-4.
- Air Dry, easy to apply system
- Withstands continuous temperature up to 1,000°F (538°C) with peaks to 1,100°F (593°C).
- Free of heavy metal pigments.
- Does not contribute to weld embrittlement of stainless steel welds.
- Prevents wet chlorides from the atmosphere or process operations from coming into contact with stainless steel surfaces.
- Excellent bond to stainless steel without need to abrasive blast (see Surface Preparation).
- Prevents insulation, which may contain chlorides, from coming into contact with stainless steel surfaces.

Not Recommended For

- Immersion service
- Interiors of stacks, breechings and scrubbers

Surface Preparation - Stainless Steel

1. Surfaces must be clean and dry. Remove all oil, grease, soil, drawing and cutting compounds, and other foreign matter by methods outlined in Steel Structures Painting Council Specification SSPC-SP-1, "Solvent Cleaning".
2. DO NOT USE CHLORINATED SOLVENTS ON STAINLESS STEEL SURFACES.
3. For optimum adhesion, abrasive blasting as per SSPC-SP-16 or NACE 4 is suggested using garnet, aluminum oxide or other blast media suitable for stainless steel or equivalent with MBX Bristle Blaster. A sharp angular blast profile of 0.5-1.0 mil (12-25µm) is required. If abrasive blasting is not possible the surface can be steam cleaned with an alkaline detergent, followed by a steam or freshwater wash to remove detrimental residues.
4. If abrasive blasting is impractical, solvent clean in accordance with SSPC-SP-1 using only Dampney 170 Chloride Free Cleaning Solvent.

Mixing

Redisperse any settled-out pigments by thorough mixing to a uniform homogeneous consistency, with an explosion-proof or air-driven power mixer. Do not open containers until ready to use. Keep lid on container when not in use.

Dry Time 70°F (21°C) 50% RH

Thurmalox 70 will air dry tack and thumb print free within ½ to 1 hour. Allow 8 hours dry time between coats. Allow 24 hours dry time prior to shipping and handling if coating is not heat cured. Institute protective measures when shipping and handling surfaces coated with Thurmalox 70. Do not use chains for tie-downs, instead use nylon straps and rubber padding which are less damaging to the coating system. Avoid mechanical abrasion during shipping and handling. As with any newly applied coating system expect some degree of coating damage when shipped and handled that will require touch-up painting prior to placing equipment in

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service. Higher temperatures will reduce tack free, recoat and shipping times. Higher film thickness, inadequate ventilation and cooler temperatures will require longer cure times and could cause premature failure of the coating system. Allow one hour solvent flash off period before heat curing or placing into service. Optimum film properties require a heat cure of 350°F (177°C) for 30 minutes. Equipment protected with the Thurmalox 70 in the air-dried state will heat cure when placed into service.

Application Guidelines

Surface temperature must be at least 5°F (3°C) above dew point. For optimum protection apply two coats of Thurmalox 70 to a dry film thickness of 1.5-2.0 mils (37-50 microns) per coat, allowing for proper curing between coats. Total recommended dry film thickness is 3.0-4.0 mils (75-100 microns). Hold gun at the required distance from the surface and at right angles without arching while spraying. Overlap each pass 50% to achieve a uniform finish. Always utilize and follow good painting practices.

Application Equipment

Conventional spray is the recommended method of application. However, Thurmalox 70 may also be applied by airless spray, brush or roller. Do not apply Thurmalox 70 in heavier films than specified since blistering may occur.

Conventional Spray (Preferred spray method):

Spray gun	DeVilbiss MBC-510
Air Cap	58
Fluid Needle	JGA-402-FX
Fluid tip	FX
Fluid hose*	3/8" ID
Air hose	5/16" ID
Atomizing pressure*	40-50 psi

*Smaller hose diam. or length over 25 ft. may require increased pressure.

Airless Spray:

Spray gun	Graco 205-591, 208-663
Pump	Graco 30:1 or Greater
Fluid tips*	.013 - .015
Fluid hose	3/8" ID with a 1/4" ID whip
Air pressure to pump*	40-60 psi

*Use Reverse-A-Clean® tips for fast, easy clean out. The above recommended air pressures are a guide and should be altered based on the operational condition of the spray pump and ambient climatic conditions. The minimum amount of air pressure should be used that is required to produce a proper spray fan.

Brush: Use only wooden-handled brush with short China bristles. Do not use synthetic-bristled brushes. Do not flood surface with coating. Brush out thoroughly, maintaining a continuous wet edge and uniform

appearing paint film. If the surface to be coated is pitted, work coating into the porosity of the surface without allowing the coating to puddle.

Roller: Use 1/4-3/8" (6-9mm) nap mohair roller with a phenolic core. Do not flood surface with coating. Roll out excess coating on a suitable, screened surface. Then roll out thoroughly, maintaining a continuous wet edge and uniform appearing paint film.

Thinning

While thinning Thurmalox 70 is not normally required for viscosity, Dampney 100 or 112 (slow-flash solvent for warm climates) may be used during spray application to minimize dry-spray. Maximum thinning is 5% by volume (6.4 oz./gallon). Do not thin beyond federal, state and/or local VOC (volatile organic compound) emission regulations. Use of other thinners not approved by Dampney may hinder product performance and void product warranty, whether expressed or implied.

Cleanup

Thoroughly flush spray equipment and hoses immediately after use with Dampney 100 Thinner. Dismantle spray equipment and clean parts, brushes and rollers with Dampney 100 Thinner.

Storage

Store in cool, dry place with temperature between 50°F and 100°F (10°C and 38°C). Keep container closed when not in use.

Precautionary Information

WARNING: Flammable Liquid and Vapor.

Keep away from heat, sparks and flame. Vapors may cause flash fire. Do not breathe vapors or spray mist. Avoid contact with eyes, skin and clothing. Use with adequate ventilation during mixing and application. Wear an appropriate, properly fitted organic vapor cartridge-type respirator (NIOSH approved) during and after application unless air monitoring demonstrates vapor/mist levels are below applicable limits. Follow respirator manufacturer's directions for respirator use. Wash thoroughly after handling. Wear protective gloves, chemical safety goggles and impervious protective clothing. Use skin cream. In confined spaces it is required to use a positive pressure supplied air respirator (NIOSH approved). Use explosion-proof lights and electrical equipment. Use only non-sparking tools and equipment. Wear conductive and non-sparking footwear. Make certain all electrical equipment is grounded.

Observe all safety precautions and follow procedures described in OSHA regulations. See Safety Data Sheet (SDS) for complete precautionary and disposal information.

If instructions and warnings cannot be strictly followed, do not use this product.

FOR INDUSTRIAL USE ONLY

TECHNICAL DATA

Characteristics	Thurmalox 70
Generic Type	Silicone
Color	Black
Temperature resistance	
Continuous	1000°F (538°C)
Intermittent	1100°F (593°C)
Percent (%) Solids by volume	18 (+/-2%)
Dry film thickness per coat	1.5 - 2.0 mils (37 - 50 microns)
Wet film thickness per coat	8.0 – 11.0 mils (200 - 275 microns)
Theoretical coverage @ 2 mils (50 µm) DFT	144 ft ² /gallon (3.5 m ² /liter)
Kit size	1 US Gallon (3.78 liters) and 5 US Gallon (18.9 liters)
Application temperature @ 50% RH (air and surface)	50°F – 120°F (10°C – 50°C)
Drying time @ 50% RH	50°F (10°C) 70°F (21°C)
To touch	1 hour 30 minutes
To recoat	12 hours 8 hours
To ship	48 hours 24 hours
Full cure @ 350°F (177°C)*	30 minutes
Weight per gallon (3.78 liters)	
Thurmalox 70	8.6 lb. (3.9 kg.)
Dampney 170 Cleaning Solvent	8.0 lb. (3.7 kg.)
Dampney 100 Thinner	7.2 lb. (3.2 kg.)
Flash point	45°F (7°C)
Pot life	N/A
Shelf life	1 year (when stored properly in original unopened containers, indoors and out of the weather)
Volatile organic compounds	5.96 lb./gal. (715 g./l.)

* See Dry Time section

WARRANTY

Dampney protective coating products are expressly warranted to meet applicable technical and quality specifications. The technical data contained herein are accurate at the date of issuance but are subject to change without prior notification. No warranty of current accuracy is hereby given or implied. User must contact Dampney to verify correctness before ordering. Dampney assumes no responsibility for coverage, performance or injuries resulting from handling or use and **LIABILITY, IF ANY, SHALL BE LIMITED TO PRODUCT REPLACEMENT.** In no event will Dampney be responsible for consequential damages, except insofar as mandated by law. Dampney **DISCLAIMS ALL OTHER WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**