



Dampney

Protective Coatings

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

Description

Thurmalox 70 is an 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 1000°F (538°C) with peaks to 1100°F (593°C). It is formulated to contain the minimum amounts 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 Technical Committee Report 6H189 "A State-of-the-Art Report of Protective Coatings for Carbon Steel and Austenitic Stainless Steel Surfaces Under Thermal Insulation".

Recommended Uses

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

Features

- Air Dries, easy to apply system
- Withstands continuous temperature of 1000°F (538°C) with peaks to 1100°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-SP16 or NACE 4 is suggested using garnet, aluminum oxide or other blast media suitable for stainless steel. 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 fresh water wash to remove detrimental residues.
4. For small surface areas, solvent wipe with Dampney 170 Thinner, a chloride free solvent, using proper procedures and precautions to minimize hazards.

Mixing

Redisperse any settled-out pigments by stirring with a paint paddle followed by thorough mixing to a uniform 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.

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. Total recommended dry film thickness is 3.0-4.0 mils (75-100 microns).

Application Equipment

Conventional spray is the recommended method of application. However, Thurmalox 70 may also be

Bulletin 70

applied by airless spray, brush or roller. Do not apply Thurmalox 70 in heavier films than specified since blistering may occur.

Conventional Spray:

Spray gun	DeVilbiss MBC-510
Fluid tip	AV115-FX (.042" tip)
Air cap	704
Fluid hose*	3/8" ID
Air hose	5/16" ID
Atomizing pressure	40-45 psi

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

Airless Spray:

Spray gun	Graco 205-591, 208-663
Fluid tips*	163-614, 163-616 (12" fan)
Pump	Graco Bulldog 30:1
Fluid hose	3/8" ID
Air pressure to pump	65-80 psi

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.

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

Formulated for use as supplied. Do not thin.

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. Stainless steel surfaces coated with Thurmalox 70 in the air-dried state can be handled and shipped prior to a heat cure as long as shipping and handling procedures for thin filmed systems are followed. Avoid mechanical abrasion during shipping and handling. Higher

temperatures will reduce tack free, recoat and shipping times. 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.

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 nonsparking 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 Material 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
Dry film thickness per coat	1.5 - 2.0 mils (37 - 50 microns)
Wet film thickness per coat	8.5 - 10.5 mils (200 - 250 microns)
Theoretical coverage per gallon	287 mil. sq. ft. 6.8 sq. m. @ 25 microns per liter
Application temperature @ 50% RH	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 Thinner	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
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.**