



Dampney Protective Coatings

Thurmalox[®] 260C TIC Air Dry Series VOC Compliant Self Priming Temperature Indicating Coatings

Description

A heat-resistant, VOC compliant, silicone-copolymer coating designed primarily for temperature indicating applications in the 400°-650°F (200°-325°C) range. When applied to refinery and petrochemical process equipment operating at elevated temperatures the color change provided by Thurmalox 260C-TIC gives an early warning of vessel overheating due to failure of refractory linings or bypassing of hot gases.

From ambient temperature to point of failure Thurmalox 260C-TIC maintains a high degree of color stability. Generally color changes occur over a temperature range of 25-50°F depending on specific formulation. Thurmalox 260C-TIC also provides the same outstanding performance and application properties as other coatings in the Thurmalox 260C TIC silicone-copolymer series, as described in Bulletin 260C TIC, and it is suitable for direct application to hot surfaces of operating process equipment.

Recommended Uses

- Provides an early warning indicator of process vessel overheating due to gas bypassing or refractory failure
- Provides an early warning indicator of temperature conditions conducive to hydrogen attack of carbon or low alloy steels in high pressure/high temperature refinery and petrochemical processes utilizing hydrogen-rich atmospheres.

Features

- Good weathering and UV stability
- Very sharp, easily seen color change from 25 CIE Lab scale Delta E units
- Outstanding application and performance properties as with other Thurmalox 260C TIC series coatings
- Primer not required - contains same corrosion inhibitive pigment system as other 260C TIC series coatings.
- VOC compliance - 3.2 lb/gal (383 g/l)

Color/ Temperature Summary

267C-30	Yellow	475-525°F
269C-42	Blue	675-725°F
265C-17	Red	400-600°F

Surface Preparation - Carbon Steel

1. To ensure optimum long-term coating system performance, surfaces must be clean, dry and free from dirt, oil, grease, salts, welding flux, mill scale, rust, oxides, old paint, corrosion products or other foreign matter.
2. Remove all surface imperfections that will induce premature coating system failure. Chip or scrape off weld splatter. Grind down sharp and rough edges, gouges, and pits.
3. Abrasive blast surface per specification SSPC-SP10, "Near-White Blast Cleaning", or per NACE Standard No.2 to a profile depth of 1.5-2.0 mils maximum. Abrasive used in blasting should be selected carefully from materials of mesh size required to produce the desired anchor pattern.
4. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP 11. Use 3M brand "Heavy Duty Roto Peen", type C flap wheel cleaning system mounted on an air-driven motor. This method will provide a surface equivalent to that provided by commercial blast cleaning per SSPC-SP6, including the desired surface profile (anchor pattern).
5. Feather out all edges of adjacent painted surfaces after completion of surface preparation operations and prior to application of the first coat of paint.

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-SP1, "Solvent Cleaning".
2. DO NOT USE CHLORINATED SOLVENTS ON STAINLESS STEEL SURFACES.

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3. For large surface areas, steam clean with an alkaline detergent, follow 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.

Applications Guidelines – Uninsulated Stainless Steel*

For optimum protection apply two coats of Thurmalox 260C TIC to a dry film thickness of 2.0-2.5 mils (50-62 microns) per coat. Total recommended dry film thickness is 4.0-5.0 mils (100-125 microns).

*For application of other Thurmalox 260C TIC series colors to uninsulated stainless steel consult Dampney Technical Service.

Application Equipment

Conventional spray is the recommended method of application, however Thurmalox 260C TIC series coatings may also be applied by airless spray, brush or roller. Do not apply Thurmalox 260C TIC series coatings in heavier films than specified since blistering may occur.

Conventional Spray:

Spray gun	DeVilbiss JGA402 or equal
Fluid tip	EF
Air cap	704
Fluid hose	3/8" ID
Air hose	5/16" ID
Atomizing pressure	60 psi

Provide material pot with agitator, regulators for fluid and air pressure, and oil and moisture traps in supply line. Smaller diameter Hose may require increased pressure.

Airless Spray:

Spray gun	Graco 205-591, 208-663
Fluid tips*	163-610, 163-315
Pump	Graco Bulldog 30:1
Fluid hose	3/8" to 1/2" ID
Air pressure to pump	100 psi
Pump operating pressure	80-90 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 only wooden-handled roller with phenolic shank and core, and 1/4-3/8" nap. 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

Only thin Thurmalox 260C TIC series coatings with Dampney 162 Thinner. Do not thin beyond federal, state and/or local VOC (volatile organic compound) emission regulations. Note: Use of other thinner not approved by Dampney may hinder product performance and void product warranty. Also see Procedures for Application to Hot Surfaces.

Dry Time at 70°F (21°C), 50% RH

Thurmalox 260C TIC series coatings will air dry tack and thumb print free within 6-8 hours. Allow 10-12 hours dry time between coats. Allow 48 hours dry time prior to shipping and handling if coating is not heat cured. Surfaces coated with Thurmalox 260C TIC series 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 a 1/2 hour. Equipment protected with the Thurmalox 260C TIC series coatings 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

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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 nonsparking footwear. Make certain all electrical equipment is grounded. Observe all safety

precautions and follow procedures described in OSHA regulations. See Material Safety Data Sheet (MSDS) 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 260C-TIC Series Coatings
Generic Type	Silicone copolymer
Color	Yellow, Blue, Red
Temperature resistance	
Continuous	500°F (260°C)
Intermittent	600°F (315°C)
Percent (%) Solids by volume	Varies by color (average 52%)
Dry film thickness per coat	2.0 - 2.5 mils (50 - 62 microns)
Wet film thickness per coat	3.5 - 4.0 mils (87 - 100 microns)
Theoretical coverage per gallon	786 mil. sq. ft. (19 sq. m./liter @ 25 microns)
Application temperature @ 50% RH	50°F-500°F (10°C-260°C)
Drying time @ 50% RH	
To touch	50°F (10°C) 70°F (21°C)
To recoat	10-12 hours 6-8 hours
To ship	24 hours 10-12 hours
Full cure @ 350°F (177°C)*	72 hours 48 hours
Weight per gallon	30 minutes
Thurmalox 260C TIC Series	13.5 lb. (6.1 kg.)
Dampney 162 Thinner	6.8 lb. (3.1 kg.)
Dampney 170 Thinner	8.0 lb. (3.7 kg.)
Flash point	134°F (57°C)
Pot life	N/A
Shelf life	1 year
Volatile organic compounds	3.2 lb./gal. (381 g./l.)

* See Dry Time section

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Color changes at increasing temperatures:

