



# Dampney Protective Coatings

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## Thurmalox® 2804 Aluminum Low VOC Water-Borne Air Dry Silicone Coating Heat Resistance to 1000°F (538°C)

### Description

Thurmalox 2804 Aluminum is a single component air drying, heat resistant, VOC compliant, water-borne coating based on silicone resins formulated specifically to protect metal surfaces operating at temperatures up to 1000°F (538°C). Thurmalox 2804 provides outstanding adhesion, film integrity, weathering, corrosion and thermal shock resistance throughout this entire temperature range.

### Recommended Uses

- Stacks, Breechings, Boiler Casings
- Refinery Equipment - Heaters, Crackers
- Reformers, vessels and exchangers
- Furnaces, Kilns, Ovens
- Compressors, Turbines, Engines
- Commercial and Industrial OEM Components

### Features

- Complies with SCAQMD Rule 1113 as a High Temperature Industrial Maintenance Coating
- Complies with BAAQMD Definition 8-3-226 as a High Temperature Coating
- Air Dries
- Withstands continuous temperature of 1000°F (538°C)
- Low odor waterborne technology
- Easy to apply system

### Not Recommended For

- Immersion service
- Interiors of stacks, breechings and scrubbers

### 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, visible and non-visible contaminants 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 welds, edges, gouges, and pits in accordance to NACE SPO178.
3. Abrasive blast surface per specification SSPC-SP-10, "Near-White Metal Blast Cleaning", or per NACE Standard No. 2 to a surface profile depth of 1.0 - 2.0 mils, with a 1.5 mil profile depth being ideal. Abrasive used in blasting should be selected carefully from materials of mesh type and size required to produce the desired sharp anchor profile.
4. If abrasive blasting is not permitted, prepare surface by power tool cleaning per SSPC-SP-11, "Power-Tool Cleaning to Bare Metal". Use a MBX Bristle Blaster or an equivalent type of power-tool to attain a sharp angular surface profile of 1.0-2.0 mils.
5. **Note:** Non-ferrous metals should be prepared in accordance to SSPC-SP-1 (Solvent Cleaning) with non-chlorinated solvents followed by preparation in accordance to SSPC-SP-16 with a sharp angular surface profile. Consult Dampney Technical Service to determine the appropriate surface profile depth that is needed for the specific non-ferrous metal to be coated.

### 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.

### Applications Guidelines - Carbon Steel

Surface temperature must be at least 5°F (3°C) above dew point. Relative humidity must not exceed 85%. Apply two coats of Thurmalox 2804 Aluminum to a dry film thickness of 1.5-2.0 mils (37-50 µm) per coat allowing for proper curing between coats. Total recommended dry film thickness is 3.0-4.0 mils (75-100 microns). During spray application, hold gun at the required distance from the surface and at right angles without arching while spraying. Overlap each pass 50%

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to achieve a uniform finish. During brush and roller application, any settled pigment on the bottom of the can should be reincorporated back into suspension of the liquid coating, prior to being applied to the surface. Stripe coating by brush should be used to coat difficult to coat areas, edges and weld seams prior to the first full coat application. Stripe coat material should be thinned approximately 20% by volume with clean fresh potable water. Always utilize and follow good painting practices. Adequate ventilation should be present in work area during coating application to allow for proper solvent evaporation from the coating film. Follow dry time instruction before placing in service.

### Application Equipment

Conventional spray is the recommended method of application. However, Thurmalox 2804 Aluminum may also be applied by airless spray, brush or roller. Do not apply Thurmalox 2804 Aluminum in heavier films than specified since blistering or cracking may occur. For conventional spray provide material pot with regulators for fluid and air pressure and oil and moisture traps in the supply line. When applied by airless spray smaller diameter hose may require increased pressure.

#### 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 - .017
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 synthetic bristles. 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 the coating into the porosity of the surface without allowing the coating to puddle.

**Roller:** Use solvent resistant high quality 1/4-3/8" (6-9 mm) nap roller cover with 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. Care should be taken during roller application to ensure the required wet film thickness is being achieved. With roller application additional coats may be needed in order to achieve the recommended dry film thickness. Excessive rolling is not recommended.

### Thinning

Only thin Thurmalox 2804 Aluminum with clean fresh potable water a maximum of 3-5%. Thinning can be used if encountering dry spray and for other application related conditions. Note: Use of other thinner not approved by Dampney may hinder product performance and void product warranty, whether expressed or implied.

### Dry Time 70°F (21°C) 50% RH

Thurmalox 2804 Aluminum will air dry tack and thumb print free within 30-60 minutes. Allow 8 hours dry time between coats. Allow 24 hours dry time prior to shipping and handling if coating is not heat cured. Surfaces coated with Thurmalox 2804 Aluminum 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 2804 Aluminum in the air-dried state will heat cure when placed into service.

### Cleanup

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

### 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

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

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pressure supplied-air respirator (NIOSH approved). Observe all safety precautions and follow procedures described in OSHA regulations.

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

See Safety Data Sheet (SDS) for complete precautionary and disposal information.

**FOR INDUSTRIAL USE ONLY**

## TECHNICAL DATA

Characteristics	Thurmalox 2804 Aluminum
Generic Type	Water-Borne Silicone
Color	Aluminum
Temperature resistance	1000°F (538°C)
Percent (%) Solids by volume	30 (+/-2%)
Dry film thickness per coat	1.5 - 2.0 mils (37 - 50 microns)
Wet film thickness per coat	5.0 - 7.0 mils (125-175 microns)
Theoretical coverage at 2.0 mils (50µm) DFT	240 sq./ft. per gallon (5.9 m <sup>2</sup> /liter)
Application temperature @ 50% RH (air and surface)	50°F-120°F (10°C-50°C)
Drying time @ 50% RH	<u>50°F (10°C)</u> <u>70°F (21°C)</u>
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)	10.0 lb. (4.5 kg.)
Flash point	167°F (75°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	0.71 lb./gal. (85.2 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.**