



**Dampney**

**Protective Coatings**

## **Thurmalox<sup>®</sup> 225HD** **High Build, Air Dry, High Temperature** **VOC Compliant Coating**

### **Description**

Thurmalox 225HD is a two component, corrosion inhibitive, high build, air dry, high temperature, VOC compliant coating system for protection of carbon and stainless steel surfaces from atmospheric corrosion and corrosion under insulation. It is an ideal coating to cover steel surfaces with deep profiles, eliminating the problem of pinpoint rusting by covering the peaks with this unique high build coating. Thurmalox 225HD may be topcoated with itself, Thurmalox 230/230C Series or Thurmalox 260/260C Series.

### **Recommended Uses**

Application where (1) the benefits and features of Thurmalox 225HD are needed and (2) where federal, state, and/or local authorities require high temperature coatings to be compliant with reduced VOC (volatile organic compound) emissions regulations.

- Stacks, Breechings, Boiler Casings
- Manifolds, Mufflers and Exhausts
- Hot Piping, Process Vessels, Heat Exchangers
- Refinery Equipment - Heaters, Crackers
- Furnaces, Kilns, Heat Exchangers
- Insulated surfaces from 500°F (260°C) to 1000°F (538°C). (NOTE: 225HD must be air dried for a minimum of 7 days before insulating)

### **Features**

- High build, high solids
- Self priming, two component
- Easy to apply by brush, roller or spray
- VOC compliant – 3.44 lb./gal. (292 g. /l.)
- Withstands temperature of 1000°F (538° C)
- Air dries
- Easily topcoated with Dampney Topcoats
- Protects against weathering and corrosion

### **Not Recommended For**

- Interiors of breechings
- Interiors of scrubbers

### **Performance Testing Data**

High Temperature Test: ASTM 2485 Method A 1000°F (538°C)  
100% Pass

Abrasion Resistance: ASTM D4060 (Heat Cured)  
(CS-17 wheel, 500 gm load, 1000 cycles). 320mg loss

Abrasion Resistance: ASTM D4060 (Air Dried)  
(CS-17 wheel, 500 gm load, 1000 cycles). 370mg loss

Adhesion: (Air Dried) (ASTM D 4541 Adhesion Elcometer)  
400 psi

Flexibility: ASTM D 522 Mandrel Bend Test

Heat Cured: 6.0 mils DFT-13 % elongation

Ambient Cure: 6.0 mils DFT- 22 % elongation

Salt Fog resistance: ASTM B 117 (6 mils DFT)

Heat Cured: no rust, blisters, cracking & de-lamination and no undercutting – 1500 hours

Ambient Cure: no rust, blisters, cracking, de-lamination and no undercutting – 1000 hours

### **Surface Preparation**

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 contaminants or other foreign matter detrimental to the adhesion of this coating system. Remove all surface imperfections that will induce premature coating system failure. All sharp edges rounded, rough welds and weld splatter shall be ground smooth.

### **Carbon Steel: Insulated or Uninsulated**

Abrasive blast all surfaces to SSPC-SP 10, "Near White Metal Blast" / NACE No. 2, leaving all surfaces with a profile depth of 1.5-3.0 mils (38.1-76.2 microns) after blasting. Care should be taken to select abrasives of a proper mesh size to yield the degree of cleanliness and required profile depth. If abrasive blasting is not permitted, prepare surface by "Power Tool Cleaning" per SSPC-SP 11, using a "Dynascaler<sup>®</sup> Air Powered Surface Preparation Tool" with 3M<sup>®</sup> Heavy Duty Roto Peen "Bonded Shot" flap assemblies mounted in the tool.

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### Stainless Steel: Insulated or Uninsulated

All 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", using Dampney 170 Cleaning Solvent. Prepare all surfaces by using "Starblast<sup>®</sup>" fine grade to achieve a surface profile of 1.5–2 mils (38.1-50.8 microns) of profile.

**Note:** DO NOT USE CHLORINATED SOLVENTS ON STAINLESS STEEL SURFACES.

### Mixing

Thurmalox 225HD has a 9:1 mix ratio by volume consisting of a Part A and Part B which must be mixed together before use. The individual components must be mixed separately to disperse the pigments uniformly. Add Part B to Part A and mix thoroughly with a low-speed power mixer for a minimum of 3 minutes or until mixed coating is completely blended and of a uniform color. Do not open containers until ready to use. Keep lid on container when not in use.

### Cure Time at 70°F (21°C) 50% RH

Thurmalox 225HD will air dry, tack and thumb print free within 4-6 hours. A temperature of 350°F (149°C) must be achieved to cure Thurmalox 225HD before it can be put into wet-dry-wet thermal cycling service.

### Pot Life

After mixing, Thurmalox 225HD must be used within 8–12 hours.

### Application Information

Apply only when air, product and surface temperatures are above 50°F (10°C) and surface temperature is at 5°F (3°C) above dew point. The relative humidity during application and curing should not exceed 80%RH. Thurmalox 225HD can be applied by brush, roller, airless spray or conventional spray. No thinning is necessary for brush, roller or spray application.

**Brush/Roller:** Extra care should be taken to measure and hold film thickness when applied by brush and roller. This method should only be used when spray method is not available.

**Brush:** Use a medium china bristle with steel shank and wooden handle. Do not use synthetic-bristled brushes.

**Roller:** Use a wooden handled roller with a 1/2" phenolic cored lambs wool roller attached. Roll coating out thoroughly, maintaining a continuous wet edge and uniform appearing paint film.

### Airless Spray:

Pump: 30:1  
Operating pressure: 2500-3000 psi  
GPM output: 3.0 gals per minute  
Material hose: 3/8" ID  
Tip Size: .017"-.023"  
Filter Size: None

It is recommended that Teflon packings be used.

### Conventional Spray:

Fluid tip: 66  
Air Cap: 63P  
Atomizing Air: 50 psi  
Fluid hose: 5/16" ID  
Fluid Pressure: 15-20 psi

### Recommended Systems

#### Carbon Steel: Insulated

1 <sup>st</sup> Coat: Thurmalox 225HD	4.0-5.0 mils DFT
2 <sup>nd</sup> Coat: Thurmalox 225HD	4.0-5.0 mils DFT
Total System	8.0-10.0 mils DFT

#### Stainless Steel: Insulated

1 <sup>st</sup> Coat: Thurmalox 225HD	4.0-5.0 mils DFT
2 <sup>nd</sup> Coat: Thurmalox 225HD	4.0-5.0 mils DFT
Total System	8.0-10.0 mils DFT

#### Carbon Steel: Uninsulated

1 <sup>st</sup> Coat: Thurmalox 225HD	4.0-5.0 mils DFT
2 <sup>nd</sup> Coat: Thurmalox 230C or 260C	2.5-3.0 mils DFT
Total System	6.5-8.0 mils DFT

#### Stainless Steel: Uninsulated

1 <sup>st</sup> Coat: Thurmalox 225HD	4.0-5.0 mils DFT
2 <sup>nd</sup> Coat: Thurmalox 230C or 260C	2.5-3.0 mils DFT
Total System	6.5-8.0 mils DFT

**Note:** Other Thurmalox coating systems can be put over Thurmalox 225HD as a finish coating. When extreme cyclic (fast thermal cycling) conditions are present, consult Dampney Technical Service.

### Thinning

Only thin Thurmalox 225HD with Dampney 180 Thinner. Do not thin beyond federal, state and/or local VOC emission regulations. Note: Use of other thinners not approved by Dampney may hinder product performance and void product warranty.

### Cleanup

Thoroughly flush spray equipment and hose immediately after use with Dampney 162 Thinner. Dismantle spray equipment and clean parts, brushes and rollers with Dampney 162 Thinner.

## Storage

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

## Ordering Information

Product Numbers: Thurmalox 225HD  
Package Size: 5 gallon kits  
1 gallon kits

### FOR INDUSTRIAL USE ONLY.

## 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 only with adequate ventilation during mixing and application.

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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 application 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 that 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.

## Technical Data

Characteristics	Thurmalox 225HD
Generic Type	Modified Silicone Co-Polymer
Mix Ratio	9:1 by volume
Color	Light Gray
Number of Components	2
Percent (%) Volume Solids	50%
Theoretical Coverage	740 sq. ft./gallon 17.5 sq. m./liter (@ 1 mil/ 25 microns)
Dry Film Thickness per coat	4.0-5.0 mils (101.6 – 127 microns)
Wet: Film Thickness per coat	8.0-11.0 mils (200 – 275 microns)
Application Temp Range	50°F to 200°F
Flash Point	81°F (27.2°C)
Viscosity	1,190 CPS
Drying Times @ 50% RH Air-Dry	50°F/10°C                      75°F/24°C                      94°F/34°C
Touch	6 hours                              4 hours                              3 hours
Handle	12 hours                             8 hours                             6 hours
Recoat	48 hours                            24 hours                           12 hours
*Full Cure	7 days                                7 days                               7 days
Temperature resistance	
Continuous	350°F -1000°F (149°C - 538°C)
Intermittent	1200°F (648°C)
Shelf Life	1 Year
Weight per gallon	
Thurmalox 225HD (Part A)	14.4 lb (6.4 kg.)
Thurmalox 2252 (Part B)	6.8 lb (3.1 kg.)
Dampney 180 (thinning)	8.3 lb (3.7 kg.)
Dampney 170 (stainless steel cleaning)	8.8 lb (4.0 kg.)
Dampney 162 (cleaning equipment)	7.5 lb (3.4 kg.)
Volatile Organic Content (mixed)	3.5 lbs (420 grams/liter)

\*Humidity, temperature and coating thickness will affect drying and curing times

**Warranty:** Dampney protective coating products are expressly warranted to meet application 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.