product data carboline®

Thermo-Lag 3002

fireproofing systems

Selection & Specification Data

Generic Type
A two component, 100% solids epoxy based intumescent coating for the fire protection of structural steel.

Description
Thermo-Lag® 3002 is spray applied directly over Thermo-Lag® 3000 to provide a hard, durable, duplex system for jet fire applications on structural elements such as beams, columns, bulkheads, underdecks and risers.

Features
- Jet fire ratings
- Durable finish - provides a hard, durable finish resistant to normal wear.
- Thin film coating - offers an economical solution to alternative fireproofing.
- VOC compliant
- Easy repair - if damaged it can be repaired easily using material as putty.

Color
Part A: White
Part B: Beige
Mixed: Off-White

Finish
Textured

*Aesthetics can be improved by trowel and back rolling.

Primers
Thermo-Lag® 3000 / Thermo-Lag® 3002 must be applied over a compatible primer. If the steel has already been coated with an existing primer, refer to Carboline Technical Service for advice before applying Thermo-Lag® 3000 / Thermo-Lag® 3002. Contact Carboline Technical Service for a complete list of approved primers.

*The thickness range for primers used under Thermo-Lag® 3000 / Thermo-Lag® 3002 must be 3-5 mils (75-125 microns) DFT per SSPC-PA2.

Fireproofing Topcoats
Thermo-Lag® 3002 must be applied to the specified DFT and be fully cured before applying a topcoat. The choice of topcoat will depend on project requirements. Contact Carboline Technical Service for a complete list of approved topcoats.

Film Build
120 mils (3 mm)

Solids Content
By Volume 100%

Theoretical Coverage Rates
1,604 ft² at 1 mil (149 m² at 25 microns)

VOC Values
As Supplied 0.11 lbs/gal (13 g/l)

Mesh
Use High Temp Mesh

*Contact Carboline Technical Service for specific design details.

Limitations
Not recommended for steelwork subject to long-term surface temperatures over 175°F (79°C) in normal use.

Substrates & Surface Preparation

General
Remove all oil or grease from the surface to be coated using Thinner #2 or Carboline Surface Cleaner #3.

Steel
Steel preparation before application of approved primer should meet SSPC-SP6 (onshore), SSPC-SP10 (offshore). 1.5-2.0 mil (37-50 micron) angular profile required.

*The thickness range for primers used under Thermo-Lag® 3000 / Thermo-Lag® 3002 must be 3-5 mils (75-125 microns) DFT per SSPC-PA2.

Galvanized Steel
Steel preparation before priming should meet SSPC-SP7. 1.5-2.0 mil (37-50 micron) angular profile required. Prime with Carboguard 893 SG @ 3-5 mils (75-125 microns) DFT per SSPC-PA2

Non-Ferrous Metals
Contact Carboline Technical Service for advice.

Application Equipment Guidelines

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

General
Use only plural component equipment specifically designed for epoxy based PFP. Consult the manufacturers for specific information:
AirTech Spray Systems (Houston, TX)
Spray Quip (Houston, TX)
Covercat (UK)

Plural Component Airless Spray
The following models have been approved for use with Thermo-Lag® products:
Airtech - model# ATK-2-145C1-5RP
(Dual Ram Unit w/ hot water flush)
Airtech - model# AT2.3/4000
(Hopper Unit w/ solvent flush)
Spray Quip - model# 397-883
(Holding Tank Unit w/ hot water flush)
Spray Quip - model# 397-884
(Hopper Unit w/ hot water flush)
Covercat - model# 302F-3000
(Dual Ram Unit w/ hot water flush)
Covercat - model# 352F-3000
(Holding Tank Unit w/ hot water flush)

Spray Gun
Binks 1M Mastic Gun (#44-6000)
Binks Tip Adapter (#49-1834)

Gun Swivel
Graco 5,000 psi (1/2"-3/8")

Spray Tips
0.039" - 0.065" (Use Graco heavy duty RAC non diffuser tips and housing)

Fan Size
6"-10" (depending on section being sprayed).

Static Mixer
Standard Static 12 turn (3/4" I.D.)

Material Hose
100' heated hose bundle (3/4" I.D. minimum) with 3/4" mixer manifold

Whip Hose
20' (1/2" I.D. minimum)

Compressor
Be certain that the air supply is a minimum of 185 cfm @ 100 psi (6.9 kPa). Air volume and pressure required will depend on equipment used.

Thermo-Lag 3002

Mixing & Thinning

Mixer Use 1/2" electric or air driven drill with a slotted paddle mixer (300 rpm under load).

Mixing Thermo-Lag® 3002 is supplied in 9 gallon kits, one full pail of part A and one full pail of part B. Both components must be pre-mixed separately before introduction into the plural equipment. Mix components separately with slotted paddle mixing blade until even consistency is achieved.

Thinning Do not thin.

Ratio 1:1

Pot Life N/A. Use plural component spray equipment only.

Application Procedures

General Thermo-Lag® 3002 is primarily used in conjunction with Thermo-Lag® 3000 to provide a hard durable, duplex system for jet fire applications.
Pre-cut all High Temp Mesh before beginning application. Contact Carboline Technical Service for design details. All mesh must be kept clean and dry.
Prior to spraying using plural component equipment, the Thermo-Lag® 3002 must be preheated to a minimum of 100°F (38°C) to achieve a consistent fan pattern.
Perform at least two ratio checks per day and also after any equipment maintenance.
Apply the base coat of Thermo-Lag® 3000 to the specified thickness. Allow the Thermo-Lag® 3000 to cure for one hour before overcoating with Thermo-Lag® 3002. Apply a light coat of Thermo-Lag® 3002 at 20 mils (0.5 mm) and immediately begin installing the High Temp Mesh. Apply pre-cut mesh into wet coating using solvent resistant mohair rollers. Use Thinner #19 to mist down rollers to prevent them from sticking to material. Continue to build material to a final thickness of 120 mils (3 mm). Use solvent moistened rollers to back roll material to improve finish and level surface.
Contact Carboline Technical Service or refer to the Thermo-Lag® 3000 / Thermo-Lag® 3002 application manual for more detailed information.

Application Rates At an ambient temperature of 70°F (21°C), the following application rates are applicable:
120 mils (3 mm) per coat.
Multiple coats per day.

Wet Film Thickness Frequent thickness measurements with a wet film gauge are recommended during the application process to ensure uniform thickness.

Dry Film Thickness Final thickness must be measured using an electronic dry film thickness gauge. For method of thickness determination and tolerances refer to: AWCI Technical Manual 12-B (Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire Resistive Materials).

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Minimum	100 °F (38 °C)	41 °F (5 °C)	41 °F (5 °C)	0%
Maximum	140 °F (60 °C)	125 °F (52 °C)	110 °F (43 °C)	85%

*Air and substrate temperature must be at least 41°F (5°C) and rising. Steel surface temperature should be a minimum of 5°F (3°C) above the dew point. The maximum humidity is 85%. Area must be protected from rain or running water during application until material is cured and topcoated.

Curing Schedule

Surface Temp. & 50% Relative Humidity	Handle	Recoat	Topcoat	Touch
77 °F (25 °C)	24 Hours	30.0 Minutes	10 Hours	1 Hours

*Curing times are dependent upon temperature, air movement and humidity. For optimum curing at 75°F (24°C), it is recommended to apply coats at 120 mils (3 mm) per coat. Material can be heated to achieve a quicker recoating and curing schedule. Material is ready to be topcoated when an average Shore D hardness of 40 is achieved. Consult Carboline Technical Service for specific details.

Cleanup & Safety

Cleanup Flush static mixer, whip hose, gun and tips with hot water or Thinner #19 (depending on pump set up) immediately after each use. Break down static mixer, gun and tip assembly and hand clean with Thinner # 19.

Safety Follow all safety precautions on the Thermo-Lag® 3002 Material Safety Data Sheet. It is recommended that personal protective equipment be worn, including spray suits, gloves, eye protection and respirators when applying Thermo-Lag® 3002.

Overspray All adjacent and finished surfaces shall be protected from damage and overspray.

Ventilation In enclosed areas, ventilation shall not be less than 4 complete air exchanges per hour until the material is cured.

Maintenance

General If coating becomes damaged, rebuild required thickness by spray or trowel. When dry, smooth and finish with approved topcoat to match. Damaged areas must be abraded back to a firm edge by sanding or scraping. The topcoat should be abraded back by 1" (25.4 mm) from the damaged area. The surface must be clean and dry before re-applying Thermo-Lag® 3002. The coating shall then be built back to the original thickness. If the mesh is damaged, it must be cut out and replaced as well. Allow to cure and then overcoat with the specified topcoat or system.

Testing / Certification / Listing

General Lloyd's Register of Shipping (LRS)
Norsok
Southwest Research Institute (SWRI)

Thermo-Lag 3002

Packaging, Handling & Storage

Shelf Life	12 Months *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
Shipping Weight (Approximate)	12 lbs. per gallon
Flash Point (Setaflash)	Part A: 195°F (90°C) Part B: 245°F (118°C)
Storage	Store indoors in a dry environment between 32°F - 100°F (0°C - 38°C).
Packaging	Full Kits: 9.0 gallons

carboline®
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