Thermo-Lag 3000-SP

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	A two component, 95% solids epoxy based intumescent coating for the fire protection of structural steel.
Description	Thermo-Lag 3000-SP is a flexible, two-component epoxy Intumescent Fireproofing coating designed to provide asset integrity from the damaging effects of hydrocarbon fires. Since 1999 Thermo-Lag 3000-SP has provided fire protection in the harshest of environments, such as oil, gas, refineries, power, marine, petrochemical, and LNG facilities. — Thermo-Lag 3000-SP has been extensively and independently tested in accordance with: UL 1709, UL 2431 Category I-A, ISO 834-3, IMO FTP Code (IMO A.754(18) for H-0, H-60 & H-120 Divisions, ASTM E84, ASTM E119, ISO 20340, NORSOK M-501 5A Fire and Corrosion Testing, and NFPA 290 (extended to 150 minutes).
Features	• Provides a flexible fire protection solution to structural steelwork, process vessels, divisions and electrical raceways for 1 through 4 hours. • Lowest thickness per fire rating of any competitive epoxy intumescent coating. • Inherently flexible and durable formulation designed to withstand abrasion, vibration, handling, transportation and erection stresses in any climate. • Formulated to maintain it's flexibility, elongation and fire resistive properties throughout its service life regardless of climate. • Engineered to resist extreme and rapid temperature cycles without cracking or disbondment. • Extensive outgas testing for controlled cleanroom and sterile environments.
Color	Part A: Light Grey Part B: Black Mixed: Grey
Finish	Textured *Aesthetics can be improved by back rolling and application techniques.
Solids Content	By Volume 95%
VOC Values	**As Supplied** : 0.53 lb/gal (64 g/L)
Maximum Service Temperature	Not recommended for steelwork subject to long-term surface temperatures over 175°F (79°C) in normal use.
Topcoats	Please refer to the UL File XKXC2.R40029 for UL 2431 Class I-A approved topcoats or contact Carboline Technical Service for a list of approved topcoats.
Density	78 – 81 lb/ft3 (1.25 – 1.30 g/cm3)

SUBSTRATES & SURFACE PREPARATION

General	Remove all oil or grease from the surface to be coated using Thinner 2 or Carboline Surface Cleaner 3 per SSPC-SP1.

SUBSTRATES & SURFACE PREPARATION

Steel	Steel preparation before the application of an approved primer should meet SSPC SP6 for onshore use and SSPC-SP10 for offshore use, with a 1.5-2.0 mil (37-50 micron) angular profile. Contact Carboline Technical Service for recommendations and specific primer requirements. — Thermo-Lag 3000-SP must be applied over a compatible primer. Contact Carboline Technical Service for a complete list of approved primers. Recommended thickness range for primers used under Thermo-Lag 3000-SP is 3-5 mils (75-125 microns) DFT per SSPC-PA2, level 3.
Galvanized Steel	Steel preparation before priming should meet SSPC SP7 and a 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.

MIXING & THINNING

Mixer	Use 1/2" (12.7 mm) electric or air driven drill with a rectangular paddle mixer (300 rpm under load).
Mixing	**Single Component Application:** For single component applications, the product is supplied in 4.5 gallon (17.0 liter) kits, one 1/2 full pail of part A and one 1/2 full pail of part B. Add up to 1 quart (1 liter) of Plasite Thinner #19, Thinner #242E or Carboline approved equivalent to part B and mix until fully incorporated. **Trowel Application (Small Areas):** For trowel applications, the product is supplied in 4.5 gallon (17.0 liter) kits, one 1/2 full pail of part A and one 1/2 full pail of part B. Add up to 1 quart (1 liter) of Plasite Thinner #19, Thinner #242E or Carboline approved equivalent to part B and mix until fully incorporated. Thinning is not required for this application and material should only be thinned as necessary to achieve the desired working time and consistency. — See Thermo-Lag 3000-SP application guide for further details.
Thinning	**Single Component Application:** Thin with Plasite Thinner #19, Thinner #242E or Carboline approved equivalent – Maximum 1 quart(1 liter) per 4.5 gallon (17.0 liter) kit **Trowel Application:** Only thin as required with Plasite Thinner 19, Thinner 242E or Carboline approved equivalent. Maximum 1 quart (1 liter) per 4.5 gallon (17.0 liter) kit. Always use clean solvent for thinning.
Ratio	1:1 (by volume)
Working Time	30-45 minutes @ 75°F (24°C) 15-20 minutes @ 100°F (38°C)

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	Only use single component equipment specifically designed for epoxy based Intumescent paint, that has been approved for use by Carboline. Please refer to the Thermo-Lag 3000-SP Application Guide for further details.

APPLICATION PROCEDURES

General

Pre-cut all mesh before beginning application. Contact Carboline Technical Service for design details. All mesh must be kept clean and dry.
Single Component Application:
See Thermo-Lag 3000-SP Application Guidelines for further details.
Trowel Application (Small Areas):
See Thermo-Lag 3000-SP Application Guidelines for further details.

Always use clean solvent for backrolling. Avoid using excessive solvent when backrolling as this can lead to solvent entrapment and lengthen the cure time of the material. Use solvent moistened rollers to back roll material after each subsequent coat to improve finish and level surface if required. Lighter coats will achieve a smoother finish. Contact Carboline Technical Service or refer to the product application manual for more detailed information.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	70°F (21°C)	41°F (5°C)	41°F (5°C)	0%
Maximum	105°F (41°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%.
The best time to apply subsequent coats of Thermo-Lag 3000-SP or topcoat is prior to any chance of contamination. For more information, reference Thermo-Lag 3000-SP Application Manual (latest edition).

CURING SCHEDULE

Surface Temp.	Touch	Handle	Minimum Recoat Time	Maximum Recoat Time	Minimum Topcoat Time	Maximum Topcoat Time
50°F (10°C)	4 Hours	48 Hours	4 Hours	7 Days	48 Hours	7 Days
70°F (21°C)	4 Hours	48 Hours	4 Hours	7 Days	48 Hours	7 Days
95°F (35°C)	3 Hours	48 Hours	3 Hours	7 Days	48 Hours	7 Days

Above cure times are based less than or equal to 85% relative humidity. Curing times are dependent upon temperature, air movement and humidity. For optimum curing, it is recommended to apply coats at 80-160 mils (2-4 mm) wet per coat. Material can be heated to achieve a quicker recoating and curing schedule. If maximum recoat or topcoat times are exceeded, the surface must be mechanically abraded and solvent wiped prior to applying additional coats. After three days, the surface must be solvent wiped prior to overcoating. Consult Carboline Technical Service for specific details.

CLEANUP & SAFETY

Cleanup

Pump, mixer, hose, and gun should be cleaned with Carboline Plasite Thinner #19, Thinner #76 or Thinner #242E at least once every 4 hours at 70°F (21°C), and more often at higher temperatures. After each use or any shut down, the pump, mixer, hopper and gun must be completely flushed with solvent. After flushing pump, remove hopper and bottom foot of pump to clean lower ball check valve. Also remove and hand clean gun, tips and tip housing. The hopper and mixing paddle must be kept clean continuously during application to prevent cured material from falling into the foot of the pump.

Safety

Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Use adequate ventilation. Keep container closed when not in use.

Overspray

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

CLEANUP & SAFETY

Ventilation	When used in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved respirator.

PACKAGING, HANDLING & STORAGE

Packaging	**Half Kits:** 4.5 gallons (17.0 liters) Part A: 2.25 gallons (8.5 liters) Part B: 2.25 gallons (8.5 liters)
Shelf Life	12 Months *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
Storage	Store indoors in a dry environment between 32-120°F (0-49°C). Can be stored down to 20°F (-7°C) for no longer than 30 days. 0-100% Relative Humidity
Shipping Weight (Approximate)	12 lb. per gallon (1.4 kg per liter)
Flash Point (Setaflash)	Part A: 95°F (35°C) Part B: 93°F (34°C)

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.