



Protective & Marine Coatings

FIRETEX® M89/02 SYNTACTIC EPOXY INSULANT

PART A
PART B

B59W510
B59HV510

WHITE
BUFF ADDITIVE

Revised: January 26, 2024

PRODUCT INFORMATION

PRODUCT DESCRIPTION

FIRETEX M89/02 is a durable, lightweight, anticorrosive, 100% solids two-component epoxy coating, designed to create a protective thermal insulation barrier on steel members and equipment. FIRETEX M89/02 allows for the use of intumescent fireproofing systems to be applied when the continuous operating temperature of the steel substrate ranges between the dry heat resistance temperature of the intumescent coating and 302°F (150°C). It is also designed and tested to ISO 20088, to prevent thermal cracking of steel during a cryogenic spill. Other uses include:

- Thermal barrier finish coat to protect fireproofed steel against radiant heat exposure or steam impingement
- Thermally insulating equipment to prevent Corrosion Under Insulation (CUI)
- Personnel protection coating to prevent burns
- Moisture resistant filler material

FIRETEX M89/02 can be applied onsite or off site, such as in shops and in modular yards.

PRODUCT CHARACTERISTICS

Color:	Buff
Volume Solids:	100%
VOC:	<50 g/L ; <0.4 lb/gal
Mix Ratio:	2.33:1 by volume ; 2.40:1 by weight

Typical Thickness:

Dry film thickness requirements are calculated by Sherwin-Williams FIRETEX estimation team according to project objectives, such as fireproofing hot substrates or for cryogenic spill protection, along with fire protection requirements, if applicable. Contact your Sherwin-Williams FIRETEX representative for detailed technical support.

Recommended

Application Methods: Trowel and plural PFP spray

Thermal Conductivity

(KValue): 0.088W/mk @ 68°F (20°C)

Recommended Spreading Rate per coat:

	Trowel	Spray
Wet mils (mm)	400 (10)	320 (8)
Dry mils (mm)	400 (10)	320 (8)
Maximum sag tolerance with overlap typically 800 mils (20mm) dry by trowel. Sag tolerance by spray typically 480 mils (12mm).		

Drying Schedule:

	@ 50°F/10°C	@ 60°F/15°C	@ 73°F/23°C
To handle:	30 hours	22 hours	9 hours
To recoat: min:	17 hours	10 hours	6 hours
max:	28 days	28 days	28 days

The recoat times quoted are applicable to self overcoating as well as overcoating with FIRETEX M90/02 and M90/03. Subsequent coats may be applied prior to M89/02 drying tack free as long as they are applied within the defined recoat window.

Drying time is temperature, humidity, and film thickness dependent.

Pot Life:	60 minutes	45 minutes
Sweat-in-time:	None	

Shelf Life: 24 months

Flash Point: Above 131°F (55°C)

Clean Up*: Cleanser/Thinner No 9 ; For US & Canada VOC Restricted Areas (<25 g/L, or <3%); use High Solids Compliant Thinner #1 - Fast (R7K111).

Reducer: Do not thin!

*Other US & Canada areas (>25 g/L, or >3%): use High Solids Compliant Thinner #1 - Fast (R7K111) or Xylene optionally including MEK <10% by volume. Choose a solvent that is compliant in your area. Confirm compliance with state and local air quality rules before use.

RECOMMENDED USES

FIRETEX M89/02 is suitable to use when protective thermal insulation is required on steel substrates within refineries, chemical process plants, and LNG terminals. Typical steel structures include:

- Columns
- Beams
- Steel troughs
- Vessel skirts
- Vessels
- Tanks

ENDORSEMENTS

Norsok M501 Rev 6 System 5A
ISO20088-1 Cryogenic spill
ISO20088-3 Cryogenic spray
NFPA 290 Hose Stream Testing as duplex system

MIXING

It is advisable to store FIRETEX M89/02 at temperatures between 68-77°F (20-25°C) as this will assist the mixing process.

Prior to mixing of Part A and Part B a low shear mixer should be used in Part A (White base component) to ensure it is homogeneous. This should stop immediately once it becomes homogeneous.

Mix FIRETEX M89/02 by using a low shear mixer, until a consistent buff color is obtained. At this point, mixing MUST stop as excessive mixing can have an adverse effect on the product. UNDER NO CIRCUMSTANCES CAN CHAIN MIXERS BE USED.

After mixing to a consistent, homogeneous color, fill a container of known volume (e.g. 1 cup or 200cm³) and weight with the M89/02, avoiding air entrapment. Weigh the filled cup, subtract the empty cup weight and divide the weight by the cup volume to calculate the density. The density should be below 0.29oz/in³ (0.5g/cm³), any weight higher than this indicates an excessive mixing process - consult a Sherwin-Williams FIRETEX representative.

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed Thinner.

Spray Application

Spray Application requires plural spray units equipped with ram feed pumps, heating tanks, and proportional pumping units. Such approved units include Graco XM PFP and WIWA Duomix 333 PFP. Contact your Sherwin-Williams FIRETEX technical representative for complete details. For equipment maintenance, the use of Xylene and/or MEK is recommended.

Trowel

By trowel (or float) application on flat surfaces, it is possible to obtain up to 20mm (800mils) thickness in one application. For more complex shapes/geometry, it may be necessary to apply more than one coat to obtain the required thickness. If specific application equipment is not listed above, equivalent equipment may be substituted. Please refer to the FIRETEX M89/02 application manual for further details. microns) are not recommended.



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RECOMMENDED SYSTEMS

The following typical systems are recommended for application on to suitably prepared carbon steel:

	Dry Film Thickness / ct.	
	Mils	(Microns)
FIRETEX Cryogenic Spill Protection: 1 ct. Macropoxy 4600 1 ct. FIRETEX M89/02 Syntactic Epoxy	3.0-5.0	(75-125)
FIRETEX Elevated Operating Temperature: 1 ct. Phenicon HS Flake Filled 1 ct. FIRETEX M89/02 Syntactic Epoxy	3.0-5.0	(75-125)

Recommended topcoats are as follows:

- FIRETEX M90/02 and M90/03
- Hi-Solids Polyurethane
- Acrolon 218 HS
- Acrolon 7300
- Epo-Phen FF

The topcoat used must be approved by Sherwin-Williams. Contact your Sherwin-Williams representative for details of the approved topcoat list and the qualification protocol.

The systems listed above are representative of the product's use, other systems may be appropriate. Primer thicknesses above 5 mils (125 microns) are not recommended.

ADDITIONAL NOTES

Finish coat should be applied within 28 days of final application of FIRETEX M89/02. If 28 days is exceeded, abrading the FIRETEX M89/02 surface is advised to ensure proper adhesion.

Drying times, curing times and pot life should be considered as a guide only.

The curing reaction of epoxies begins immediately when the two components are mixed, and since the reaction is dependent on temperature, the curing time and pot life will be approximately halved by a 18°F (10°C) increase in temperature and doubled by a 18°F (10°C) decrease in temperature.

Galvanizing shall be prepared according to SSPC-SP 16, to achieve an angular profile on the natural nodular galvanizing finish, ranging between 50-90 microns (2.0-3.5 mils) with a peak count density ranging ~35-50 peaks per linear cm (~90-120 peaks per linear inch). Galvanizing must be confirmed as being tightly adhered and free from passivators according to SSPC-SP 16, section 4.3.3. Galvanizing must be primed same day after suitable profile is confirmed.

Numerical values quoted for physical data may vary slightly from batch to batch.

Epoxy Coatings - Color Stability:

Epoxy materials tend to discolor and darken with age particularly when used on internal areas. Therefore any areas touched-up and repaired with the same color at a later date may be obvious due to this color change.

When epoxy materials are exposed to ultra-violet light a surface chalking effect will develop. This phenomenon results in loss of gloss and a fine powder coating at the surface which may give rise to color variation depending on the aspect of the steelwork. This effect in no way detracts from the performance of the system. There may be slight variations in color from batch to batch.

Epoxy Coatings - High Temperature Application:

FIRETEX M89/02 at the time of mixing should not exceed a temperature of 73°F (23°C), this is necessary to ensure a satisfactory working pot life. Use of this product outside its pot life may result in inferior adhesion properties even if the material appears fit for application. Thinning the mixed product will not alleviate this problem.

Consult a FIRETEX technical representative when applying onto substrates above 113°F (45°C). These conditions can introduce paint film formation defects, such as bubbling and pinholing etc.

High Temperature Bursts:

The material is capable of withstanding short-term bursts of up to 365°F (185°C), when demanded for purging prior to shutdown.

The material will cope with this provided it is spasmodic and not maintained at this higher temperature for long periods. Contact your Sherwin-Williams representative for further information.

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Minimum recommended surface preparation:

Steel	SSPC-SP10 (Sa 2.5), 2-3 mils (50-75 microns) profile
Galvanizing	SSPC-SP16, 2-3 mils (50-75 microns) angular profile

APPLICATION CONDITIONS

Temperature:	50°F (10°C) minimum, 131°F (55°C) maximum (air) Minimum 5°F (3°C) above dew point, 167°F (75°C) maximum (substrate)
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Relative Humidity:	85% maximum
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In order to achieve optimum water and chemical resistance, temperature needs to be maintained above 50°F (10°C) during curing.

ORDERING INFORMATION

A two component material supplied in separate containers to be mixed prior to use.

Small Kits (15L / ~4 gallons):

- 1 pail of Part A to 1 pail of Part B
Part A: 10.5L / ~2.8 gallons in a 20L container
Part B: 4.5L / ~1.2 gallons in a 10L container

Large Kits (45L / ~12 gallons):

- 2 pails of Part A to 1 pail of Part B
Part A: 15.75L / ~4.2 gallons in a 20L container
Part B: 13.5L / ~3.6 gallons in a 20L container

Density: 0.46 g/cm³ / 3.84 lb/gal
(practical determination on the dry film)

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.