



Protective & Marine Coatings

FIRETEX[®] M89/02 SYNTACTIC EPOXY INSULANT

PART A **B59W510** **WHITE**
PART B **B59HV510** **BUFF ADDITIVE**

Revised: August 28, 2020

PRODUCT INFORMATION

PRODUCT DESCRIPTION

FIRETEX M89/02 is a highly durable, solvent free epoxy, multi-purpose thermal insulation coating. Providing excellent corrosion and weather protection, it is designed as:

- Cryogenic spill protection
- Insulation bridge between high temperature steelwork and epoxy passive fire protection
- Personnel protection coating
- Lightweight anticorrosive filler material

PRODUCT CHARACTERISTICS

Color: Buff
Volume Solids: 100%
VOC: 0lb/g; 0g/L
Mix Ratio: 2.33:1 by volume
2.40:1 by weight

Typical Thickness:
Product thicknesses are dependent on many factors, including project and protection type, usage of the product, exposure conditions and project specific criteria such as limiting temperatures. Consult FIRETEX representative for a detailed estimation of dry film thickness requirements.

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:	Thinner No. 9 - Do not thin

RECOMMENDED USES

FIRETEX M89/02 can be used with FIRETEX Intumescent Coatings to enable effective fire protection of substrates operating at elevated temperatures outside the limitations of the FIRETEX M90 series. It also provides excellent protection to steel for cryogenic spill exposure for up to 120 minutes. FIRETEX M89/02 is resistant to temperatures ranging from -103°F/-75°C to 302°F/150°C.

Typical asset protection within hydrocarbon processing and LNG facilities include:

Columns and beams, Structures, Vessels & Tanks.

ENDORSEMENTS

Norsok M501 Rev 6 System 5A
ISO20088-1 Cryogenic spill
ISO20088-3 Cryogenic spray

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, the product density should be checked by filling a 200 cc paper cup with the M89/02, ensuring as little air entrapment as possible, level off the M89/02 with the top of the cup, and then weigh the cup plus the M89/02. The weight should be less than 100 grams. Any weight higher than this indicates an excessive mixing process - consult 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 FIRETEX Thinner No. 9 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.

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 400 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 Hi Temp

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.



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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 ASTM D6386-16a, section 5.4.1, to achieve an angular profile 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 discolour 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 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.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Thinner No. 9. Clean tools immediately after use with Thinner No. 9. Follow manufacturer's safety recommendations when using any solvent.

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.

SURFACE PREPARATION

Surface contamination shall be removed according to SSPC-SP 1 Solvent Cleaning, ensuring surfaces are clean, dry, and in sound condition for maximum adhesion.

Minimum recommended surface preparation:

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

Galvanizing ASTM D6386-16A, section 5.4.1, SSPC-SP 16, section 4.3.3, profile 50-90 microns (2.0-3.5 mils)

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)

Relative Humidity: 85% maximum

In order to achieve optimum water and chemical resistance, temperature needs to be maintained above 10°C (50°F) during curing.

ORDERING INFORMATION

Order Quantity:

~12 gallons (45L) mix: 2 units of Part A for every 1 unit of Part B

Part A: 4.16 gallons (15.75L) in a 5 gallon (18.9L) container

Part B: 3.57 gallons (13.5L) in a 5 gallon (18.9L) container

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

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.