Protective & Marine Coatings
PRODUCT DATA SHEET

UNITHERM® STEEL SB EXTERIOR

SOLVENT BASED FIRE PROTECTION COATING FOR STEEL

Revised 07/2023 Issue 2

PRODUCT DESCRIPTION

A fast drying, thin film fire protection coating system for interior* and exterior structural steel work.
It is forming a heat insulating layer under the influence of fire and improves the fire resistance of steel parts like columns, girders and framework.
• Applicable on steel constructions exposed to weathering

RECOMMENDED USE

Unitherm® Steel SB Exterior is designed for application by airless spray to provide fire resistance for periods of up to 90 minutes on structural steel.
* For interior use on structural steel members like columns, girders and framework as long as there is no demand for national emission schemes, e.g. German AgBB, etc.
Note: With critical situation e.g. frequent formation of condensation and / or heating up of surfaces above + 45°C adequate arrangements should be taken.
No topcoat required for dry environments except for a coloured decorative finish.

PRODUCT TECHNICAL DATA

Volume Solids: 71 ± 2% (BCF Guidance Method)

VOC: 325 g/l determined practically in accordance with Protective Coatings Directive of German Paint Industry Association (VdL-RL 04).
334 g/l calculated from formulation to satisfy EC Solvent Emissions Directive.
257 g/kg calculated from formulation to satisfy EC Solvent Emissions Directive (UK).

Colours: White

Flash Point: 32°C

Cleaner/Thinner: Unitherm® Thinner (for cleaning)
Thoroughly clean tools and equipment immediately after use.
Unitherm® Thinner for thinning with max. 3% to adapt the viscosity.
Thinning will affect VOC compliance, sag tolerance and dry film thicknesses.

Pack Size: Single component material:
25 kg (19.2 litre) and 5 kg (3.8 litre).
Volume will vary with colours and density.

Density: 1.3 kg/l (may vary with colours).

Shelf Life: 18 months from date of manufacture, stored in originally sealed containers in a cool and dry environment.

Recommended Application Methods:
Airless Spray, Brush and Roller

Typical Thickness:

Recommended Spreading Rate Per Coat

	Typical
Dry	1000 µm
Wet	1408 µm
Theoretical Consumption*	1.831 kg/m² 1.408 l/m²
Theoretical Coverage*	0.55 m²/kg 0.71 m²/l

* This figure makes no allowance for surface profile, uneven application, overspray or losses in containers and equipment.

Fire rate of Unitherm® Steel SB Exterior depends on national standard. See corresponding separate consumption table / diagram.

Note: The Unitherm® Steel SB Exterior shall be applied in several coats up to the final dry film thickness required. Wet film thickness max. 400 µm for first application coat on primer. Wet film thickness approx. 750 µm for each subsequent application coat is recommended.

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AVERAGE DRYING TIMES

For 1000 µm Dry Film Thickness:

	+ 23°C
Dry to touch	1 hour
To Recoat	4 hours

*ISO 9117

Recoat intervals and waiting times (at + 20°C)
Unitherm® Steel SB Exterior requires a minimum of 24 hours drying prior to application with topcoat FIRETEX® Top SB / FIRETEX® Top SB EG.
A complete drying of the fire protection coating prior topcoat application is highly recommended.
Through-drying of Unitherm® Steel SB Exterior can be checked by 'finger- nail-test'.

These figures are given as a guide only. Factors such as air movement, film thickness and humidity must also be considered.

APPROVALS & ENDORSEMENTS

Independently fire tested and approved to major European and national standards including:
• DIN 4102-2 (ref: Z-19.11-1319)
• Solvent based coating for steel protection with CE- mark

SURFACE PREPARATION

Ensure surfaces to be coated are clean, dry and free from all surface contamination such as oil, grease, dirt and corrosion products to achieve satisfactory adhesion.
For contaminated and weathered surfaces we recommend to clean with Cleaner Wash.

Steel substrates shall be blast-cleaned to Sa 2½ according to ISO 8501-1 (ISO 12944-4).

Manual de-rusting with wire brushing or power tool cleaning according to ISO 8501-1, St 3.

Hot-dip galvanized substrates shall be prepared by degreasing or, in case of permanent condensation, sweep blasting according to ISO 12944-4 with a ferrite-free blasting abrasive.

Other surfaces: Tests should be carried out on the specific surfaces.

MIXING

The material is supplied ready for use; stir thoroughly with a mechanical paint mixer prior to application.
During mixing and handling of the materials always wear protective goggles, suitable gloves and other protective clothing.

APPLICATION CONDITIONS

Substrate temperature shall be between + 5°C and + 40°C* and at least 3°C above the dew point.
Material temperature shall be above + 15°C.
Relative air humidity shall be below 80%.

During application and drying of total Unitherm® coating system including FIRETEX® topcoats as well as transportation special protection measures must be taken against weathering.

* If higher temperatures occur, please consult Sherwin-Williams for further assistance.

APPLICATION EQUIPMENT

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

Airless Spray
Unit: Efficient airless equipment (transmission ratio > 45: 1)
Tip Size: 0.48 – 0.69 mm (0.019 – 0.027 inch)
Fan Angle: 40° - 80°
Operating Pressure: min. 200 bar (2900 psi)
Spray hoses: Ø ⅜ inch (10 mm), max. 20 m
+ 2 m with reduced Ø of ¼ inch (6 mm)
Note: Hoses must be used for water-based products only

Temperature of material and equipment at least + 20°C. Remove sieves.
Pump directly (without connected suction hose). Material shall be applied undiluted.

The airless spray details given above are intended as a guide only.
Details such as fluid hose length and diameter, paint temperature and job shape and size all have an effect on the spray tip and operating pressure chosen. However, the operating pressure should be the lowest possible consistent satisfactory atomisation.
As conditions will vary from job to job, it is the applicators responsibility to ensure that the equipment in use has been set up to give the best results.
If in doubt consult Sherwin-Williams customer service.

Brush and Roller
• Material shall be applied undiluted
• Solvent resistant brush or roller must be used

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RECOMMENDED SYSTEMS

Approved generic primer types:

On blast cleaned steel:
a) Short / medium oil alkyd, e.g. Unitherm® 1705
b) 2-pack epoxy, e.g. Macropoxy® 2706 EG
c) Zinc rich epoxy, e.g. Zinc Clad® R Plus
d) water dispersed zinc rich epoxy
e) Zinc silicate, e.g. Zinc Clad® ZS (+ tiecoat Macropoxy® 2706 EG)

On manually prepared steel:
Kem Kromik® Aktivprimer Rapid or Macropoxy® Primer HE N

On galvanized steel:
Macropoxy® 2706 EG

Intumescent coating Unitherm® Steel SB Exterior without topcoat:
Internal exposure, Type Z1 and Z2

Intumescent coating Unitherm® Steel SB Exterior with topcoat:
Semi-exposed, Type Y and external exposure, Type X

Topcoats:
FIRETEX® Top SB / FIRETEX® Top SB EG
Interior use (Type Z1 / Z2) / decorative:
1 x 60 µm FIRETEX® Top SB / FIRETEX® Top SB EG
Exterior use (Type X) / exposed to weathering:
2 x 50 µm FIRETEX® Top SB / FIRETEX® Top SB EG

Unitherm® Steel SB Exterior can be applied on coating systems for corrosion protection, e.g. to accommodate the requirements according to ISO 12944-5.

HEALTH & SAFETY

Consult Product Health and Safety Data Sheet for information on safe storage, handling and application of this product.

WARRANTY

Whilst all statements made about our products (whether in this data sheet or otherwise) are correct and accurate to the best of our knowledge, we have no control over the quality or the condition of the substrate, the application conditions or the many other factors affecting your use and application of our product.

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