



# UNITHERM® STEEL WB-120

## WATER-BASED FIRE PROTECTION COATING SYSTEM FOR STEEL

Revised 07/2023 Issue 1

### PRODUCT DESCRIPTION

An ecological, efficient, very fast drying and tough water-based fire protection coating for interior structural steel work. It is forming a heat insulating layer under the influence of fire and improves the fire resistance of steel parts.

- Free of halogens and aromatic solvents
- Meets Type Z1 classification (e.g. internal conditions includes temperatures till + 5°C and high humidity) with topcoat
- Complies with the high-quality requirements (level 4) of DGNB

### RECOMMENDED USE

Unitherm Steel® WB-120 is designed for application by airless spray to provide fire resistance for periods of up to 120 minutes on structural steel. For use in internal dry controlled environments without topcoat. External urban or uncontrolled internal environments with topcoat.

### PRODUCT TECHNICAL DATA

<b>Volume Solids:</b>	71 ± 2% (ISO 3233-3)
<b>VOC:</b>	0 g/l determined practically in accordance with Protective Coatings Directive of German Paint Industry Association (VdL-RL 04). 14 g/l calculated from formulation to satisfy EC Solvent Emissions Directive. 10 g/kg calculated from formulation to satisfy EC Solvent Emissions Directive (UK).
<b>Colours:</b>	White
<b>Flash Point:</b>	> 101°C
<b>Cleaner/Thinner:</b>	Water (for cleaning). Thoroughly clean tools and equipment immediately after use.
<b>Pack Size:</b>	Single component material: 25 kg (18.5 litre). Volume will vary with colours and density.
<b>Density:</b>	1.35 kg/l (may vary with colours).
<b>Shelf Life:</b>	18 months from date of manufacture, stored in originally sealed containers in a cool and dry environment - <b>Protect against frost.</b>

#### Recommended Application Methods:

Airless Spray, Brush and Roller

#### Typical Thickness:

##### Recommended Spreading Rate Per Coat

	Typical
Dry	1000 µm
Wet	1408 µm
Theoretical Consumption*	1.901 kg/m <sup>2</sup> 1.408 l/m <sup>2</sup>
Theoretical Coverage*	0.53 m <sup>2</sup> /kg 0.71 m <sup>2</sup> /l

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

Fire rate of Unitherm® Steel WB-120 depends on national standard. See corresponding separate consumption table / diagram.



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### AVERAGE DRYING TIMES

**For 1000 µm Dry Film Thickness:**

	+ 20°C and 60% RH
Dust dry (Drying Stage 1*)	20 min
Dry to handle (Drying Stage 6*)	45 min

\*ISO 9117

**Recoat intervals and waiting times (at + 20°C)**

Unitherm® Steel WB-120 requires a minimum of 24 hours drying prior to application with itself or topcoats of FIRETEX® or Acrolon® range.

A complete drying of the fire protection coating prior topcoat application is highly recommended.

Through-drying of Unitherm® Steel WB-120 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:

- EN 13381 part 8 (ETA 20/1197)
- Water based coating for steel protection according to EN 13501-2 and EAD 350402-00-1106, DoP, with CE-mark

Sustainability:

- Complies with French VOC (A+), even as coating system

### 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® and Acrolon® 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 (water).

**Airless Spray**

Unit: Efficient airless equipment (transmission ratio > 45: 1)

Tip Size: 0.48 – 0.61 mm (0.019 – 0.024 inch)

Fan Angle: 40° - 80°

Operating Pressure: min. 200 bar (2900 psi)

Spray hoses: Ø ¾ 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
- Load natural fine bristle brushes or short pile lambswool rollers are recommended



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### RECOMMENDED SYSTEMS

#### Approved generic primer types:

##### On blast cleaned steel:

- Short / medium oil alkyd, e.g. Unitherm® 1705
- 2-pack epoxy, e.g. Macropoxy® 2706 EG or Macropoxy® EG Phosphate N  
(+ Macropoxy® EG-1 Plus + Acrolon® EG-4)
- Zinc silicate, e.g. Zinc Clad® ZS (+ tiecoat Macropoxy® 2706 EG)

##### On manually prepared steel:

Kem Kromik® Aktivprimer Rapid or Macropoxy® Primer HE N

##### Intumescent coating Unitherm® Steel WB-120 without topcoat:

Internal exposure, Type Z1 and Z2

##### Intumescent coating Unitherm® Steel WB-120 with topcoat:

Internal exposure, Type Z1 and Z2

Application for semi-exposed areas (Type Y) and exterior use (Type X) is with topcoat possible. Please consult the technical department for further information.

#### Topcoats:

For additional protection of the intumescent coating and for decorative options we recommend the FIRETEX® or Acrolon® topcoats:

FIRETEX® Top WB (water based)

FIRETEX® Top SB, Acrolon® EG-4, Acrolon® EG-5 (solvent based)

### 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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