



PYROPLAST® ST-100

WATER-BASED FIRE PROTECTION COATING SYSTEM FOR STEEL

Revised 07/2023 Issue 2

PRODUCT DESCRIPTION

A 1-pack, 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 (internal conditions includes temperatures till +5°C and high humidity) without topcoat
- Complies with the high-quality requirements (level 3) of DGNB

RECOMMENDED USE

Pyroplast® ST-100 is designed for application by airless spray to provide fire resistance for periods of up to 90 minutes on structural steel.

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

Weight Solids: 68 ± 2 %

VOC: 0 g/l determined practically in accordance with Protective Coatings Directive of German Paint Industry Association (VdL-RL 04).
37 g/l calculated from formulation to satisfy EC Solvent Emissions Directive.
29 g/kg calculated from formulation to satisfy EC Solvent Emissions Directive (UK).

Colours: White

Flash Point: > 101°C

Cleaner/Thinner: Water (for cleaning)
Thoroughly clean tools and equipment immediately after use.
Do not thin Pyroplast® ST-100.

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

Recommended Application Methods:

Airless Spray, Brush and Roller

Typical Thickness:

Recommended Spreading Rate Per Coat

	Typical	
Dry	500 µm	1000 µm
Wet	780 µm	1580 µm
Theoretical Consumption*	1.015 kg/m ² 0.781 l/m ²	2.031 kg/m ² 1.563 l/m ²
Theoretical Coverage*	0.98 m ² /kg 1.28 m ² /l	0.49 m ² /kg 0.64 m ² /l

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

Fire rate of Pyroplast® ST-100 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*)	60 min

*ISO 9117

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

Pyroplast® ST-100 requires a minimum of 24 hours drying prior to application with itself or topcoat FIRETEX® Top WB.

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

Through-drying of Pyroplast® ST-100 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 part 2 (ref. Z-19.11-1461)

Sustainability:

- Complies with German AgBB 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 clothings.

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 Pyroplast® 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.



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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 (pressure 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)

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

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 Pyroplast® ST-100 without topcoat

Internal exposure, Type Z1 and Z2

Intumescent coating Pyroplast® ST-100 with topcoat

Internal exposure, Type Z1 and Z2

Topcoats

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

FIRETEX® Top WB (water based)

HEALTH & SAFETY

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

WARRANTY

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