



# MACROPOXY® 450 RAPID

## FAST CURING EPOXY COAT

Revised 07/2023 Issue 1

### PRODUCT DESCRIPTION

A chemically and mechanically resistant high solid 2-pack epoxy primer and intermediate coat containing zinc phosphate for steel. Low solvent content according to Protective Coatings Directive of German Paint Industry Association (VdL-RL 04).

- Short overcoating times, up to 3 coats can be applied per day
- Fast curing at low temperatures
- Very good corrosion protection properties
- Suitable as sealer for thermal-sprayed metallic coatings
- Very economical due to low solvent contents

### RECOMMENDED USE

Can be used as a primer coat or intermediate coat in combination with Zinc Clad® or Macropoxy® high performance primers and Acrolon® topcoats. Also recommended as a sealer coat for thermal-sprayed metallic coatings to seal the pores and also as a subsequent intermediate coat.

### PRODUCT TECHNICAL DATA

<b>Volume Solids:</b>	68 ± 2% (ISO 3233-3)
<b>Weight Solids:</b>	83 ± 2%
<b>VOC:</b>	272 g/l determined practically in accordance with Protective Coatings Directive of German Paint Industry Association (VdL-RL 04). 280 g/l calculated from formulation to satisfy EC Solvent Emissions Directive. 175 g/kg calculated from formulation to satisfy EC Solvent Emissions Directive (UK).
<b>Colours:</b>	Light grey
<b>Flash Point:</b>	Base: 40°C, Hardener: 34°C
<b>Cleaner/Thinner:</b>	Cleaner 26 (for cleaning) Thinner EG for thinning with max. 5% to adapt the viscosity. Thinning will affect VOC compliance, sag tolerance and dry film thicknesses. If used as a sealer, thin with 20% Thinner EG and use the thinned material immediately and under continuous stirring to avoid settling.
<b>Pack Size:</b>	A two component material supplied in separate containers to be mixed prior to use: 30 kg (18.7 litre) unit when mixed. Volume will vary with colours and density.
<b>Mixing Ratio:</b>	89 parts base to 11 parts hardener by weight. 4 parts base to 1 part hardener by volume.
<b>Density:</b>	1.6 kg/l (may vary with colours)
<b>Shelf Life:</b>	2 years from date of manufacture, stored in originally sealed containers in a cool and dry environment.

#### Recommended Application Methods:

Airless Spray, Brush, Roller

#### Typical Thickness:

	Recommended Spreading Rate Per Coat		Maximum Sag
	Typical		
Dry	100 µm	160 µm	240 µm
Wet	147 µm	235 µm	353 µm
Theoretical Consumption*	0.235 kg/m <sup>2</sup> 0.147 l/m <sup>2</sup>	0.376 kg/m <sup>2</sup> 0.235 l/m <sup>2</sup>	
Theoretical Coverage*	4.25 m <sup>2</sup> /kg 6.80 m <sup>2</sup> /l	2.66 m <sup>2</sup> /kg 4.25 m <sup>2</sup> /l	

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

Film thickness will vary depending on actual use and specification.

#### Pot Life:

+ 5°C	+ 20°C
8 hours	6 hours

Pot life is dependent on temperature and volume.



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### AVERAGE DRYING TIMES

#### For 100 µm Dry Film Thickness:

	0°C	+ 5°C	+ 20°C
Dry to handle (Drying Stage 6*)	12 hours	6.5 hours	3.5 hours
To Recoat	12 hours	4 hours	2 hours

#### For 160 µm Dry Film Thickness:

	0°C	+ 5°C	+ 20°C
Dry to handle (Drying Stage 6*)	24 hours	12 hours	4.5 hours
To Recoat	24 hours	12 hours	4.5 hours

\*ISO 9117

Maximum recoat time is 1 year. Prior to further applications all contamination must be removed. In the case of extended recoating times consult Sherwin Williams customer service.

Final cure: 1 week, depending on film thickness and temperature.

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

### APPROVALS & ENDORSEMENTS

Approved according to ENERCON specification for corrosivity categories C3 high to C5 high according to ISO 12944-2.

### 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 e.g. primed areas we recommend to clean with Cleaner Wash.

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

**Thermal-sprayed metallic coating** shall be thoroughly cleaned of spray dust and loose spray particles. Sealing must be started immediately after the spraying process and before visible oxidation of the surface occurs and to avoid contamination by dirt or moisture.

### MIXING

Stir component A very thoroughly using a mechanical paint mixer (start slowly, then increase up to approx. 300 rpm). Add component B carefully and mix both components very thoroughly (including sides and bottom of the container). Mix for at least 3 minutes until a homogeneous mixture is achieved. We recommend to fill the mixed material into a clean container and mix again shortly as described above to avoid incorrect mixing. During mixing and handling of the materials always wear protective goggles, suitable gloves and other protective clothing.

### APPLICATION CONDITIONS

Substrate temperature shall be above - 10°C and at least 3°C above the dew point. The surface must be dry and free from ice.

Material temperature shall be above + 5°C.

Relative air humidity shall be below 85%.

### 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. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

#### Airless Spray

Unit: Efficient airless equipment

Tip Size: 0.38 – 0.53 mm (0.015 – 0.021 inch)

Fan Angle: 40° - 80°

Operating Pressure: min. 180 bar (2600 psi)

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

The coating is suitable for brush and roller application. Application of more than one coat may be necessary to give equivalent dry film thickness to a single spray applied coat.



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### RECOMMENDED SYSTEMS

#### Steel

1-2 x Macropoxy® 450 Rapid

#### Intermediate coat

Compatible with a wide range of Sherwin-Williams Macropoxy® and Zinc Clad® epoxy primers.

#### Suitable topcoats

Versatile to overcoat with 1- or 2-pack epoxy and polyurethane coatings of Sherwin-Williams. Provided the surface to be coated is clean, dry and free from contamination.

#### Thermal-sprayed metallic coatings

1 x Macropoxy® 450 Rapid as sealer  
1 x Macropoxy® coating

For use as a sealer on thermal-sprayed metallic zinc coatings, thin with 20% Thinner EG. Apply the thinned material immediately and under constant stirring as a thin mist-coat to fill substrate porosity without applying a full coat at this stage.

After a waiting time of approx. 15 minutes, spray 'wet on wet' the remaining thickness of the following Macropoxy® coating.

### ADDITIONAL NOTES

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

#### Epoxy Coatings - Tropical Use:

Epoxy coatings at the time of mixing should not exceed a temperature of 35°C. Use of these products outside of the pot life may result in inferior adhesion properties even if the materials appear fit for application. Thinning the mixed product will not alleviate this problem. If the air and substrate temperatures exceed 40°C and epoxy coatings are applied under these conditions, paint film defects such as dry spray, bubbling and pinholing etc. can occur within the coating.

#### Chemical resistance:

Resistant to weather, water, seawater, smoke, de-icing salts, acid and alkali vapours, oils, grease and short term exposure to fuels and solvents.

#### Temperature resistance:

Dry heat up to + 150°C, short term up to + 200°C.  
Increased humid ambient temperature up to approx. + 50°C.  
In case of higher temperatures consult Sherwin-Williams customer service.

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

### 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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