Protective & Marine Coatings
PRODUCT DATA SHEET

MACROPOXY® PRIMER HE N

HIGH SOLIDS, SURFACE-TOLERANT EPOXY PRIMER

Revised 03/2024 Issue 3

PRODUCT DESCRIPTION

A 2-pack epoxy primer coat for steel and galvanized surfaces.
Economically and high-performance corrosion protection also for manually prepared surfaces and surfaces prepared by high-pressure water jetting.
Low solvent content according to Protective Coatings Directive of German Paint Industry Association (VdL-RL 04).

- Surface tolerant
- High film thickness and diffusion resistance combined with very good surface wetting properties and adhesion result in a very high safety margin for good corrosion protection
- Fast initial drying and full curing
- High build application
- Very economical due to high volume solids

RECOMMENDED USE

Can be used as a robust versatile overcoatable primer for corrosion protection on steel exposed to atmosphere. Especially suitable for use on surfaces where only manual preparation (wire brushing or power tool cleaning) or high-pressure water jetting is feasible or economic.

PRODUCT TECHNICAL DATA

Volume Solids: Aluminium shade: 67 ± 2%
Red-brown/sand-yellow: 71 ± 2% (ISO 3233-3)

Weight Solids: Aluminium shade: 80 ± 2%
Red-brown/sand-yellow: 83 ± 2%

VOC: 255 g/l determined practically in accordance with Protective Coatings Directive of German Paint Industry Association (VdL-RL 04).
307 g/l calculated from formulation to satisfy EC Solvent Emissions Directive.
205 g/kg calculated from formulation to satisfy EC Solvent Emissions Directive (UK).

Colours: Aluminium, material no. 694.01
Red-brown, material no. 694.06
Sand-yellow, material no. 694.02 and 650.02

Flash Point: Base: 30°C, Hardener: 27°C

Cleaner/Thinner: 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.

Pack Size: A two component material supplied in separate containers to be mixed prior to use:
Aluminium shade: 28 kg (21.5 litre), 14 kg (10.7 litre) and 4 kg (3.0 litre) units when mixed.
Red-brown/sand-yellow: 28 kg (18.6 litre), 14 kg (9.3 litre) and 4 kg (2.6 litre) units when mixed.
Volume will vary with colours and density.

Mixing Ratio: 88 parts base to 12 parts hardener by weight.
4.3 parts base to 1 part hardener by volume.

Density: Aluminium shade: 1.3 kg/l
Red-brown/sand-yellow: 1.5 kg/l
(may vary with colours)

Shelf Life: 2 years from date of manufacture, stored in originally sealed containers in a cool and dry environment.

Recommended Application Methods:
Airless Spray, Conventional Spray, Brush

Typical Thickness:

Recommended Spreading Rate Per Coat

Aluminium shade	Typical	Maximum Sag
Dry	100 µm	240 µm
Wet	149 µm	358 µm
Theoretical Consumption*	0.194 kg/m² 0.149 l/m²	
Theoretical Coverage*	5.15 m²/kg 6.70 m²/l	

Red-brown/ sand-yellow	Typical	Maximum Sag
Dry	100 µm	240 µm
Wet	141 µm	338 µm
Theoretical Consumption*	0.211 kg/m² 0.141 l/m²	
Theoretical Coverage*	4.73 m²/kg 7.10 m²/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
6 hours	4 hours

Pot life is dependent on temperature and volume.

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AVERAGE DRYING TIMES

For 100 µm Dry Film Thickness:

	+ 5°C	+ 20°C	+ 30°C
Dry to handle (Drying Stage 6*)	12 hours	6 hours	3 hours
To Recoat	12 hours	6 hours	3 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: 1-2 weeks, 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 German standard 'TL KOR-Stahlbauten, Blatt 94'.
- Approved according to German standard 'TL KOR-Stahlbauten, Blatt 50'.

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) in case of permanent condensation.

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

Manually prepared surfaces shall be prepared by wire brush or power tool to surface preparation grade St 2 according to ISO 8501-1 (ISO 12944-4), in case of atmospheric exposure. Even ultra-high pressure water jetting according to ISO 8501-4 Wa 2 with a maximum flash rust grade M is also acceptable.

Old coatings: In case of well adhering coating systems, careful cleaning (e.g. by water jetting) is sufficient. Loose particles must be removed, damaged areas should be minimum prepared in accordance with PSa 2, PMa or PSt 2 and primed with Macropoxy® Primer HE N.

The required surface preparation/cleaning and compatibility of the system should be determined with trial areas.

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 + 5°C and at least 3°C above the dew point.

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)

Spray hoses: Ø ⅜ inch (10 mm), max. 20 m
+ 2 m with reduced Ø of ¼ inch (6 mm)

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.

Conventional Spray

Atomising Pressure: 3 - 5 bar (43 - 73 psi)
Tip Size: 1.5 – 2.5 mm (0.06 – 0.10 inch)

Brush and Roller

- Surface preparation St 2 or St 3
- With brush application best penetration and surface wetting is achieved

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RECOMMENDED SYSTEMS

Steel resp. patch up of spots on hot-dip galvanized surfaces
2 x Macropoxy® Primer HE N

Overcoatable with 1- and 2-pack coatings e.g Macropoxy®, Acrolon® and Kem Kromik®, provided the surface to be coated is clean, dry and free from contamination.

Example Blatt 94
1 x Macropoxy® Primer HE N
1 x Macropoxy® EG-1 VHS
1 x Acrolon® EG-4 or Acrolon® EG-5

Old coatings
Macropoxy® Primer HE N can be used on a variety of sound 1-pack and 2-pack coats for refurbishment.

Note: Macropoxy® Primer HE N is not recommended for permanent immersion.

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 weathering, de-icing salts, oils and 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 + 40°C.

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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