Protective & Marine Coatings
PRODUCT DATA SHEET

DURA-PLATE® 299 AIRLESS

HIGHLY RESISTANT EPOXY COATING FOR STEEL PROTECTION

Revised 07/2023 Issue 1

PRODUCT DESCRIPTION

Especially mechanically and chemically resistant 2-pack epoxy coating.
Low solvent content according to Protective Coatings Directive of German Paint Industry Association (VdL-RL 04).

- Abrasion and impact resistant
- Excellent chemical resistance
- Suitable for cathodic protection systems
- Tough, hard and scratch resistant
- High build application

RECOMMENDED USE

Can be used as a corrosion protection coating for steel surfaces exposed to heavy mechanical and chemical wear.
Especially suitable for the interior coating of tanks, pipelines and vessels in:
• chemical industry • wastewater industry • waste disposal management • food industry
Also used for corrosion protection of hydraulic steel structures.

PRODUCT TECHNICAL DATA

Volume Solids: 90 ± 2% (ISO 3233-3)

Weight Solids: 94 ± 2%

VOC: 87 g/l determined practically in accordance with Protective Coatings Directive of German Paint Industry Association (VdL-RL 04).
207 g/l calculated from formulation to satisfy EC Solvent Emissions Directive.
142 g/kg calculated from formulation to satisfy EC Solvent Emissions Directive (UK).

Colours: Black, redbrown, approx. RAL 7032 and approx. RAL 9002

Flash Point: Base: 46°C, Hardener: >101°C.

Cleaner/Thinner: Cleaner 26 (for cleaning).
Clean spills, tools and spatters immediately with Cleaner 26.
Do not thin Dura-Plate® 299 Airless.

Pack Size: A two component material supplied in separate containers to be mixed prior to use:
14 kg (9.6 litre) unit when mixed.
Volume will vary with colours and density.

Mixing Ratio: 80 parts base to 20 parts hardener by weight.

Density: 1.45 kg/l (may vary with colours).

Shelf Life: 1 year 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	Maximum Sag
Dry	200 µm	300 µm
Wet	222 µm	333 µm
Theoretical Consumption*	0.322 kg/m² 0.222 l/m²	
Theoretical Coverage*	3.10 m²/kg 4.50 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.

Apart from small areas the dry film thickness should not exceed 300 µm per coat when in contact with liquids or foodstuffs.

Pot Life:

+ 20°C	+ 40°C
45 min	15 min

Pot life is dependent on temperature and volume.

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AVERAGE DRYING TIMES

For 200 µm Dry Film Thickness:

	+ 20°C
Dry to touch	12 hours
To Recoat	12 hours
Foot Traffic	24 hours

Maximum recoat time is 4 days at 20°C and 6 days at 10°C. Prior to further applications all contamination must be removed. In the case of extended recoating times the surface must be grinded resp. sweep-blasted.

Final cure: At + 20°C surface temperature and adequate ventilation: approx. 7 days.

Contact with foodstuffs only after the applied coating is fully cured to avoid contamination.

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

APPROVALS & ENDORSEMENTS

- Tested and listed by the German Federal Waterways Engineering and Research Institute (BAW).
- The coating system is in compliance with the German rules of Foodstuff and Consumer Goods, certified by ISEGA

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.

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

Average surface profile Rz ≥ 50 µm.

MIXING

Stir component A very thoroughly using an 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.

Material temperature shall be above + 10°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.

Airless Spray

Unit: Efficient airless equipment

Tip Size: 0.48 – 0.58 mm (0.019 – 0.023 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)

Temperature of material and equipment at least + 20°C. At low temperatures the use of a flow heater is recommended.

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. Dry film thickness of approx. 150-200 µm per coat is achievable. 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
Airless application:
2 x Dura-Plate® 299 Airless

In contact with food
200 µm nominal dry film thickness per coat

Hydraulic steel structures, chemical exposure
250 µm nominal dry film thickness per coat

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 water, saltwater, sewage, diluted organic and anorganic acids, alkalis, salts, detergents, beer, wine, fruitjuice, oil, fat.
Not permanently resistant to phenol, formic acid and acetic acid at higher concentration.

Temperature resistance:
Dry heat up to approx. + 100°C
Increased humid ambient temperature up to approx. + 80°C.
In case of higher temperatures consult Sherwin-Williams customer service.

Not resistant to hot water in case of significant temperature gradient (“cold wall effect”).

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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