

Stelpant-PU-Combination 500

Product description

Stelpant-PU-Combination 500 is a one component moisture-curing low solvent high-build coating on polyurethane basis containing micaceous iron oxide. In comparison to other products from our product range, Stelpant-PU-Combination 500 is fast curing and is exceptional suitable for stationary application on hydraulic steel structures and civil engineering structures.

The dry film is extremely resistant to fresh- and sea water and provides maximum corrosion protection in the most aggressive marine and industrial environments. The coating has excellent elongation properties. If gloss retention and UV-resistance are required, Stelpant-PU-Combination 500 needs to be overcoated with one of our topcoats.

Recommended use

In combination with Stelpant-PU-Zinc or Stelpant-PU-Oxide primer, the product is suitable for the protection of all types of hydraulic steel structures exposed to mechanical impact. In conjunction with suitable primer coatings also suitable for hot-dip galvanized surfaces. Stelpant-PU-Combination 500 is also used as an intermediate coating in coating systems for atmospheric corrosion protection.

Technical data*

Product:	Stelpant-PU-Combination 500 black
Colours:	black, red brown, grey, special colours on request
Gloss:	-
Density:	approx. (1.47 +/- 0.05) g/cm ³
Volume solids:	approx. (64 +/- 2) %
Theoretical coverage:	approx. 3.2 m ² /l or 2.2 m ² /kg at 200 microns DFT
Recommended DFT:	120 - 200 microns per coat
VOC:	ca. 320 g/l
Thinner:	Stelpant-PU-Thinner (also to be used for cleaning)
Temperature resistance:	max. 140°C (dry heat) or 60°C (wet heat)
Storage:	12 months in unopened original packing and stored at a temperature between 5°C and 30°C and protected from direct sunlight

* Data below refers to color black. Values are calculated. Other colors may vary.

Drying

Drying stages acc. to DIN EN ISO 9117-5:2012-11	20°C	10°C
TG 1	2.0 h	2.0 h
TG 3	3.5 h	5.0 h
TG 6	5.5 h	6.0 h

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The above mentioned drying times have been determined under laboratory conditions. They are related to the temperatures indicated, at a relative humidity of 60% and a dry film thickness of 200 microns. Lower temperatures will increase, higher temperatures will shorten the drying process. As this is a moisture-curing coating a humidity of 30% or higher will speed-up the drying process.

In practice drying starts at a relative humidity of 5%, at this level however drying times will increase considerably. Higher dry film thicknesses also increase the drying time of the coating. At a temperature around or below 0°C drying times will also increase considerably. Should you wish to force-cure our coatings at elevated temperatures, a sufficient level of humidity is necessary to enable curing.

Overcoating: min. possible after approx. 8h
 Depending on the condition of the coating it may be necessary to prepare the surface accordingly. After intervals of over 6 months, it may be necessary to sweepblast the surface.
 If you are using a UV-resistant top coat, please contact our application engineering department.

Application conditions

Substrate temperature: from -5°C to +50°C; substrates must be ice free
 Relative humidity: between 30% and 98% relative humidity

Stelpant-products are highly tolerant towards humidity and can be used on slightly damp surfaces, however drops of water must not be visible on the surface. Surfaces have to be clean and free of salts or substances that could interfere with adhesion, e.g. oils and greases.

Material preparation

The material is delivered ready for use. It has to be stirred thoroughly with an electrical or air-driven agitator (at least 3 minutes).

Please check the condition of the cans before opening. They may be under pressure. In this case puncture the lid in order to reduce the pressure.

Open paint cans should be used within a few days. Protect the product from water (e.g. moisture in brushes or residual humidity in spraying devices).

Application methods

	Viscosity	Nozzle (recommended)	Pressure (recommended)
Airless spray:	undiluted	0.43 - 0.53 mm 0.017 - 0.021 inch	280 - 440 bar 4060 - 6380 psi
Brush / Roller:	undiluted		

High pressure air spray is also possible, depending on the viscosity it may be necessary to dilute the material before application.

Processing instructions

Only use Stelpant-PU-Thinner to dilute Stelpant products or for cleaning purposes. The use of other thinners is not allowed and can lead to negative properties of the dry film and/or thickening of the coating material.

Our one component moisture-curing coatings are specialty products and can only partially be compared with conventional systems. This is why some standard values, for example the tolerances regarding nominal dry film thickness as determined in DIN EN ISO 12944-5:2018-06, are not always applicable.

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Coating systems

For hydraulic steel structures – BAW certified; suitable also for Im1/Im2 and Im3 acc. to DIN EN ISO 12944-6:1998-07

1 x 50 microns*	STELPANT-PU-ZINC
2 x 200 microns	STELPANT-PU-COMBINATION 500

*) Above mentioned dry film thickness does not include the correction factor for blasted surfaces acc. to ISO 19840.

If a Stelpant coating system for hydraulic steel construction is to be overcoated with a UV-resistant topcoat, the use of Stelcatec-L-TC offers the most application-related advantages.

For offshore structures acc. to DIN EN ISO 12944-9:2018-06

1 x 60 microns	STELPANT-PU-ZINC
1 x 140 microns	STELPANT-PU-COMBINATION 500
1 x 80 microns	STELPANT-PU-MICA UV / STELPANT 2K-PU-MICA UV / STELPANT 2K-PU-COVER UV
1 x 60 microns	STELPANT-PU-ZINC
1 x 160 microns	STELPANT-PU-COMBINATION 500
1 x 60 microns	STELPANT-PU-COVER UV

For structural steel under C5 conditions acc. to DIN EN ISO 12944-6:2018-06

Durability: high

1 x 60 microns	STELPANT-PU-ZINC
1 x 120 microns	STELPANT-PU-COMBINATION 500
1 x 80 microns	STELPANT-PU-MICA UV / STELPANT 2K-PU-MICA UV / STELPANT 2K-PU-COVER UV
1 x 60 microns	STELPANT-PU-ZINC
1 x 140 microns	STELPANT-PU-COMBINATION 500
1 x 60 microns	STELPANT-PU-COVER UV

Durability: very high

1 x 60 microns	STELPANT-PU-ZINC
1 x 180 microns	STELPANT-PU-COMBINATION 500
1 x 80 microns	STELPANT-PU-MICA UV / STELPANT 2K-PU-MICA UV / STELPANT 2K-PU-COVER UV
1 x 60 microns	STELPANT-PU-ZINC
1 x 200 microns	STELPANT-PU-COMBINATION 500
1 x 60 microns	STELPANT-PU-COVER UV

Suitable acc. to Network Rail Spezifikation NR/L3/CIV/039 XM92-MCU

1 x 100 microns	STELPANT-PU-ZINC
1 x 150 microns	STELPANT-PU-COMBINATION 500
1 x 75 microns	STELPANT-PU-COVER UV

Above systems are to be considered as examples. Other systems are possible depending on the intended use and the required lifecycle.

Important notes

Issue date of Data Sheet:

08/2024. This data sheet supersedes those previously issued.

Safety precautions:

For professional use only.

For all relevant physical, safety, toxicological and environmental data please refer to the Material Safety Data Sheet, which can be provided on request.

Please observe all relevant regulations regarding storage, transport and application as well as the safety precautions printed on the labels on the can.

Disposal:

All empty cans should be disposed of in accordance with local legislation.

Disclaimer:

All products supplied are subject to our General Sales Conditions.

The information given in this Technical Data Sheet is non-binding and merely indicative, as the products can be used under conditions beyond our control. Above data regarding use, application and consumption are to be considered as guidelines only. The corresponding practical data can only be defined per project.

The information in this Technical Data Sheet is based on laboratory testing and given to the best of our knowledge, according to the results of our research activities and our practical experience. However as the products can be used on different materials, substrates and under different working conditions, it is impossible for us to mention all possible details and therefore we cannot accept liability for any damage, unless willfully intended or caused by gross negligence from our side.

The suitability of this product is depending on the substrate, application conditions and intended use. The user must check whether the products are suitable for the intended use.