TIEFENBACH
Oberflächen Schutz

Polyvia RHD

The professional,
wear resistant coating for:

- Steel
- Concrete

on:

- Road surfaces
- Sidewalks and cycle tracks
- Construction trestles and boards

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Product information

Polyvia RHD is a skid proof, corrosion and wear resistant coating for steel, aluminum alloy and concrete surfaces. The coating for steel surfaces is in accordance with ZTV-Ing/TL/TP-RHD “Additional technical contract conditions for reaction resin bound thin film coatings on steel” or the respective conditions of delivery and the technical regulations.

The skid proof **Polyvia RHD** coatings protect the surface permanently against acids, bases, greases, oils, petroleum products and salt water.

Our coatings are durable, skid and wear proof and they are qualified for driving on it with cars, trucks and other heavy vehicles of any kind.

The bridge devices, D-Brücke, SKB-Brücke, bridge device SS 80 as well as bridge devices of the German Federal Armed Forces are for many years coated with our coating material. The bridge devices are used by the Federal Ministry Transport, Railways and Armed Forces.

The coatings for the road cover were tested by the “Polymer Institut” in Flörsheim, received the test certificate and are therefore approved by the Bundesanstalt für Straßenwesen (BAST) (Federal Road Research Institute) (www.bast.de).

Our internally and externally monitored coating works are performed in accordance with ZTV-Ing part 7.5.

A condition for the application of the coatings on steel is a surface prepared in accordance with the standard cleanliness factor SA 2 ½ according to DIN EN ISO 12 944 part 4; 05.98 “Types of surfaces and surface preparations”.

ZTV-Ing part 3.4 (Protection and maintenance of concrete work “Preparation of the concrete subsurface”) is applicable for concrete surfaces – with our MMA resin, which cures even at low temperatures (< 0°C).

The coating with our resin mixture is applied after the corrosion protecting base coat on a zinc phosphate basis (for steel and metal components) has been applied, which consists of a mixture of methyl-methacrylate compounds and additives as well as of mineral filler media. The interlacing is performed after a peroxide is added as a “starter” to a PMMA (polymethylmethacrylate).

Installation temperatures down to -20°C are possible through different volume additions of the peroxide and the additional use of an accelerator. An installation temperature of -5°C was tested (ZTV – Ing part 7.5).

The relative humidity can be up to 85%. However, the dew-point is important. (Difference of the component temperature to the dew-point temperature ≥ 3 K).

The time for the curing of the coating – based on 20°C - is app. 2 hours. Depending on the coating thickness, a waiting time of 6 – 24 hours should be targeted for a 100% usage.

Layer thicknesses of 2 – 10 mm in one pass are possible depending on the material added.

Repair work at the **Polyvia RHD** coatings can be performed without problems. The old coating can be over-coated after cleaning and roughening of the surface – preferably though blasting – and the new resin mixture activates the old coating in such a way that a chemical compound (interlacing) is guaranteed.

Our coating has the following characteristics:

- Proven, skid proof load quality
- Viscous-plastic, crack bridging, high coating hardness (shore-D hardness Mw 85)
- Good adhesion on steel, aluminum and concrete surfaces
- Application on oscillating steel surfaces proven and qualified
- Rationally processable, quick curing
- Curing at low temperatures (0°C)
- Weather and UV resistant, free of solvents
- Not harmful to health
- Cold curing, free of solvents and therefore **environmentally friendly**

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Leaflet for the manufacture of Polyvia RHD coatings on steel and aluminum

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Leaflet for the manufacture of **Polyvia RHD** coatings on

- Road surfaces
- Sidewalks and cycle tracks
- Construction trestles and boards

made from **steel and aluminum.**

1 Conditions for the coating

Before coating, the steel base must be blasted in accordance with Sa 2 ½, according to EN ISO 12 944; 05. 98 “Types of surfaces and surface preparations”.

2 Manufacture of Polyvia RHD coatings

Road surfaces

Base coat: The just blasted surface is coated with the **Polyvia GST** base coat.
Application rate: app. 600 g/m² depending on the surface roughness.
Drying time: app. 1 – 2 hours.

Cover layer: Mixing ratio in weight and volume parts;

1) Stirring: 100 weight parts **Polyvia RHD** resin mixture

1-3 weight parts **Polyvia RHD** curing powder (relative to the resin)

2) Mixing: ~ 100 weight parts **Polyvia (RHD)** filler

Polyvia RHD curing powder	temperature
3 %	+18°C
4 %	0°C
5 % + 0.5 % accel.	-5°C

Different installation temperatures and therefore different viscosities of the resin mixture are balanced by a relatively small change of the filler volume.

Application: The mixture is applied with a coating knife or a smoothing trowel and will be filled immediately with the **Polyvia RHD** filler, grain size 2 – 3 mm.

Pot life
The pot life of the mixed components relative to the temperature and the packing size is 25 minutes at 20°C for the 100 g preparation with a 2% curing agent.
The pot life is also applicable to 10 – 20 kg preparations when adhering to the data listed under mixing ratio.

Consumption per m²

Total layer thickness [mm]	Resin curing agent filler [kg]	Filler [kg]
6 - 7	6	6 - 7
8	7	7 - 8
9 - 10	9	8 - 9

2.2 Sidewalks and cycle tracks

Base coat and main layer as described under 2.1 **Polyvia RHD** use filler with a grain size of 0.7 – 1.2 mm.

Consumption per m²

Total layer thickness [mm]	Resin curing agent filler [kg]	Filler [kg]
3 - 4	4	5
5 - 6	5	5 - 6

2.3 Construction trestles and boards

Base coat and main layer as described under 2.1 **Polyvia RHD** use filler with a grain size of 0.7 – 1.2 mm 400 mass parts and 0.3 – 0.7 mm 100 MT.

Consumption per m²

Total layer thickness [mm]	Resin curing agent filler [kg]	Filler [kg]
2 - 3	3	5 - 6

2.4 Sealing

A **Polyvia V** sealing must be rolled on to the finished coating.
3% curing powder must be stirred into the sealing. The consumption is app. 500 – 800 g/ m² depending on the grain size.

3 Ambient conditions

3.1 Minimum and maximum installation temperatures and rel. humidity

The minimum installation temperature is app. -10°C. The coating can also be installed at lower temperatures if additional volumes of the Polyvia RHD accelerator is used. The maximum relative humidity during the manufacture of the coating can be 85%. Adherence to the dew point is required (safe difference 3).

3.3 Maximum and minimum waiting times for multi-layer coating depending on temperature and rel. humidity

The **Polyvia RHD** coating cures within 1 hour (+30°C) and 5 hours (+10°C). For safety reasons,12 hours waiting time should be added before traffic loads are applied.

4 Cleaning

The work equipment is cleaned by using the **Polyvia RHD** cleaning agent.

5 Shelf life and storage conditions of the components

Polyvia RHD resin mixture and **Polyvia RHD** curing powder have a shelf life of at least 12 months assumed they are stored cool (not above +25°C) in closed packages.
The mineral materials can be stored without time limit.

6 Safety measures during storage and processing of the components

Polyvia RHD resin mixture and **Polyvia RHD** curing powder are flammable when delivered. This means that they must not be stored next to possible ignition sources.

Direct contact with **Polyvia RHD** resin mixture and **Polyvia RHD** curing powder with the skin must be prevented. An allergic reaction can be found in some cases.

Wash wetted body parts with warm water and soap.
The eyes, which are especially sensitive, must be flushed with plenty of clear water.
Please contact a physician afterwards.

Leaflet for the manufacture of Polyvia RHD coatings on concrete sub-surfaces

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1 Conditions for the coating

Clean concrete surfaces with high pressure water blasting or dry blasting.
Bonding value according to ZTV-Ing, min 1.5 N/mm².

2 Contingency item

Balance subsurface roughness with **Polyvia RHD** balance mortar.

1 GT **Polyvia RHD** resin (+ curing powder)
1 GT Filler
1 GT Quartz sand (grain size 0.8 – 1.2 mm).

The consumption depends on the roughness of the subsurface, app. 1.5 kg/m² -1 mm layer thickness.

3 Base coat with Polyvia B71

Coating or rolling
Consumption app. 400 g/m², even higher depending on the absorbency.

Contingency item
Sand new base coat with quartz sand, grain size 0.3 – 0.7 mm
Quartz sand consumption: app. 1.5 – 2 kg/m².
Swipe loose sand off after curing.

4 Wearing surface 6 – 7 mm

Polyvia RHD is applied with a coating knife or a smoothing trowel and will be filled immediately with the **Polyvia RHD** filler, grain size 2 – 3 mm.

Mixture ratio in weight parts:
1) Stirring: 50 GT **Polyvia RHD** resin mixture
1.5 GT **Polyvia RHD** curing powder
2) Mixing: 50 GT **Polyvia RHD** filler, grain size 0 – 0.5 mm

The consumption of the mixture with a layer thickness of 6 – 7 mm is app. 6 kg/ m² and app. 8 – 10 kg Korund filler material.

5 Sealing (contingency item)

A **Polyvia V** sealing must be rolled on to the finished coating. 3% curing powder must be stirred into the sealing.
The consumption is app. 500 – 800 g/m²/ m² depending on the grain size of the filler.