HEGGEL

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HEGGEL Flex 545

Light and weather-resistant, flexible 2-component polyurea top sealer for OS 11a surface protection system for outdoor use. Top sealer for internal and external weatherproof scattered coatings

Description:

HEGGEL Flex 545 is a coloured, solvent-free 2-component polyurea top sealer for the production of light and weather-resistant scattered coatings.

HEGGEL Flex 545 is used in multi-storey car parks, on exposed areas and as a top sealer for slip-resistant surfaces, especially when a light-resistant top layer is required.

HEGGEL Flex 545 is a component of a complete car park system for surfaces which are subject to different requirements.

The system components are:

- **HEGGEL Pox 484**
  "2-component epoxy resin primer"
- **HEGGEL Pox 488**
  "2-component epoxy resin primer"
- **HEGGEL Flex 540**
  "2-component polyurethane floating coat, cold-flexible even at low temperatures"
- **HEGGEL Flex 544**
  "2-component polyurethane wearing coat"
- **HEGGEL Pox 473**
  "2-component epoxy resin top sealer, flexibilized"

The top sealer has good processability and opacity. The material hardens quickly and is soon rainproof on exterior surfaces.

HEGGEL Flex 545 has very good plasticiser resistance and good chemical resistance, in particular resistance to petrol, anti-freezing agents, oil, battery acid, de-icing salts and other chemicals

Characteristics:

- Solvent-free
- Rapid setting
- Visco-plastic
- Light-resistant
- Weather-resistant
- Abrasion and wear resistant
- Resistant to de-icing salts
- Resistant to glycol, oil and battery acid
- Resistant to chemicals
- Good plasticiser resistance
- Quickly rainproof

Application:

- Top sealer for OS 11a/b surface protection system
- For internal and external car parks, garages, etc.
- Low-yellowing and weather-resistant coating in external areas, e.g. stadiums, open spaces, etc.

Technical data:

Mixing ratio	Parts by weight	A : B =	4 : 1	
	Parts by volume	A : B =	100 : 34	
Processing time	Temperature	10 °C / 50 °F	20 °C / 68 °F	30 °C / 86 °F
	Time	35 minutes	25 minutes	15 minutes
Processing temperature		Minimum 10 °C / 50 °F (room and floor temperature)		
Curing time	Temperature	10 °C / 50 °F	20 °C / 68 °F	30 °C / 86 °F
(Accessibility)	Time	8 – 10 hrs.	6 - 8 hrs.	4 - 6 hrs.
Curing		24 hrs. for mechanical loading capacity at 20 °C / 68 °F 3 days for chemical loading capacity at 20 °C / 68 °F		
Further coatings		After curing, but no longer than 48 hours at 20 °C / 68 °F		
Consumption		Approx. 0.6 - 0.9 kg/m²		
Packaging		Hobbock combi 25 kg		
Colour		Colours available on request		
Shelf life		12 months (in original packaging)		

1. Build-up of Coats

Surface protection system in accordance with DAfStb guideline OS 11a

Coating with improved, dynamic crack-bridging ability for walkable and drivable areas as well as open parking decks

- Prepare the substrate, preferably using shot blasting, and thoroughly vacuum off.
- Prime using **HEGGEL Pox 484,** consumption approx. 0.3 - 0.4 kg/m². Open sanding using quartz sand, grain size 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m².
- Alternatively, **HEGGEL Pox 488,** consumption approx. 0.3 - 0.6 kg/m², can be used as a pre-filled primer. Open sanding with quartz sand, grain size 0.3/0.8 mm or 0.7/1.2 mm, consumption approx. 0.5 - 1.0 kg/m².
- Apply the **HEGGEL Flex 540** floating layer using the toothed rake, consumption approx. 2.0 - 2.3 kg/m².

Relevant layer thickness aggregates are required for roughness depths in accordance with the maintenance guidelines.

- Fill the **HEGGEL Flex 544** wearing coat with approx. 20 % quartz sand of grain size 0.1/0.3 mm and mix until homogeneous.
- Apply the **HEGGEL Flex 544** wearing surface using the toothed rake, consumption approx. 2.2 - 2.5 kg/m².

Relevant layer thickness aggregates are required for roughness depths in accordance with the maintenance guidelines.

- Sand the entire surface of the fresh layer using quartz sand with a grain size of 0.3/0.8 mm, consumption approx. 4 - 6 kg/m².
- Remove excess sand after curing, brush off loose grains and thoroughly vacuum off entire surface.
- For weathered surfaces, the non-yellowing **HEGGEL Flex 545** top sealer, consumption approx. 0.6 - 0.9 kg/m², is applied using an expanded rubber wiper and uniformly distributed in criss-cross strokes using a velour roller.

Important notes:

- The maintenance guidelines require compliance with the layer thicknesses for attaining the certified properties, such as crack-bridging in class IIT-V.
- A minimum layer thickness of 1.5 mm for the flexible surface protection (floating layer) and of 3.0 mm plus the current roughness depth layer thickness aggregate for the wearing surface is required for OS 11a.
- Please observe the maintenance guidelines for further requirements.

Surface protection system in accordance with OS 11b

Coating with improved, dynamic crack-bridging ability for walkable and drivable areas

- Prepare the substrate, preferably using shot blasting, and thoroughly vacuum off.
- Prime using **HEGGEL Pox 484,** consumption approx. 0.3 - 0.4 kg/m². Open sanding using quartz sand, grain size 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m².
- Optional if surface roughness has to be smoothed off: Scratch coat with an **HEGGEL Pox 484** compound: **HEGGEL quartz sand-mix 2/1,** mixing ratio (A + B): Mixing sand = 1 : (0.5 - 0.8) parts by weight, consumption approx. 0.8 -1.2 kg/m².
- Alternatively, **HEGGEL Pox 488,** consumption approx. 0.3 - 0.6 kg/m² can be used as a pre-filled primer.
- Apply the **HEGGEL Flex 540** floating layer using the toothed rake. Consumption approx. 2.8 - 3.2 kg/m² of the mixture. For OS 11b, the **HEGGEL Flex 540** floating layer is mixed with 30 % quartz sand, grain size 0.1/0.3 mm, until homogeneous.

Relevant layer thickness aggregates are required for roughness depths in accordance with the maintenance guidelines.

- Cover the entire surface of the fresh layer using quartz sand with a grain size of 0.3/0.8 mm, consumption approx. 4 - 6 kg/m². Remove surplus sand after hardening, brush off loose grains and thoroughly vacuum off entire surface.
- Apply the coloured, flexibilised **HEGGEL Flex 545** top sealer with a rubber spatula/expanded rubber slider or a scraper, consumption approx. 0.6 - 0.9 kg/m², and distribute evenly in criss-cross strokes with a velour roller, consumption approx. 0.6 - 0.9 kg/m².
- Alternatively, the flexible 2-component epoxy resin sealant **HEGGEL Pox 473** can also be used for interior surfaces, insofar as lower requirements are made regarding light stability.

Important notes:

- The maintenance guidelines require compliance with the layer thicknesses for attaining the certified properties, such as crack-bridging in class IIT-V.
- A minimum layer thickness of 4.0 mm plus the cur-rent roughness depth layer thickness aggregate is required for OS 11b.
- The OS 11b composition is not allowed to be used on naturally-weathered parking levels.
- Please observe the maintenance guidelines for further requirements.

2. Substrate

The substrate to be sealed must be free from all kinds of soiling. It is usually used on quartz scattered surfaces. Excess quartz sand must be swept off, brushed off or vacuumed up so that no loose grains are left.

The following applies in general for coating layering systems:

The substrate to be coated must be even, dry, dust-free, sufficiently resistant to tension and compression, and free from weakly bonded components or surfaces. Materials impairing adhesion such as grease, oil and traces of paint should be removed using suitable measures. Please refer to the notes in the product information of the recommended primers **HEGGEL Pox 484** or **HEGGEL Pox 488.** The substrates which are to be coated should be mechanically prepared, preferably using shot blasting. The prepared area must be primed carefully and in a saturated and pore-free way. If the substrate has not been primed to be pore-free, blisters and pores can appear in the coating as a result of the air rising from the substrate. When in doubt, a test area is recommended. The surface is scattered with approx. 0.5 - 1.0 kg/m² quartz sand with a grain size of 0.3/0.8 mm to improve adhesion.

3. Mixing

For combi-packaging, a ready mix contains the factory-weighed material at exactly the right mixing ratio. Component A's packaging has sufficient volume to hold the entire quantity.

Empty hardening agent B completely into the resin packaging. Mixing is carried out mechanically using a slow speed mixer (200 - 400 rpm) for 2 - 3 minutes until a homogeneous, streak-free compound is obtained. To avoid mixing errors, it is recommended to transfer the resin/ hardener compound to a clean container ("to repot") and then to briefly stir it again.

Processing must take place immediately after mixing!

4. Processing

After the base layer has hardened, the surface of the scattered coating must be cleaned of excess grains by sweeping and vacuuming until no more quartz grains loosen. The top sealer is applied when all

preliminary works have been completed and the working areas have been divided.

The sealer is applied immediately after mixing. Watch out for rapid hardening, especially at higher relative humidities, and adapt your working method accordingly. The compound is then distributed using a smooth rubber squeegee, expanded rubber wiper, scraper or steel squeegee, depending on the desired quantity of material, by evenly pulling it over the sanded surface. Ensure uniform application and avoid ponding. Rigid squeegees result in smoother road surfaces, soft rubber squeegees result in rougher road surfaces. Slip resistance requirements must comply with the recommended consumption levels for the respective R class. Please seek advice if required.

To ensure even distribution on the surface and to avoid balding and traces of build-up, the surface must be gone over with a roller immediately after application and the sealer distributed evenly. To avoid hardening, always work whilst the compound is still wet and change rollers early after 20-30 minutes.

The floor and air temperature should not be lower than 10 °C / 50 °F and the air humidity should not exceed 75 %. The floor temperature must remain 3 °C / 37.4 °F above the dew point, so that hardening is not impaired. If a dew point situation arises, normal hardening cannot take place. Furthermore, hardening impairments and discolourations (blushing, etc.) can occur. Do not work in strong sunlight or on strongly heated surfaces as this shortens the processing time considerably and possibly creates bubbling. When fresh, polyurethane coatings are sensitive to moisture, so it is essential to comply with the humidity specifications. Coating damp substrates, using damp sand as well as perspiration lead to material foaming or hardening problems and must be avoided. Water loading should be avoided during the first 5-10 hours.

The specified hardening times apply for 20 °C / 68 °F: at lower temperatures the processing and curing times are longer, at higher temperatures they are shorter. If the processing conditions are not observed, the end product's technical properties may deviate from the description. Water and chemical loading should be avoided during the first 7 days.

Special remarks: For coloured products, the same batch should always be used on the same surface as slight colour deviations in different batches cannot be excluded due to the raw material. The batch number is indicated on the product label. For certain shades, particularly white, yellow and orange or light pastel colours, care must be taken to adhere to the recommended layer thicknesses in order to ensure opacity. During prolonged and intensive use or after exposure to chemicals, surface changes and loss of gloss may occur.

5. Cleaning

To remove fresh impurities and to clean tools, use **Cleaner V30** or **V40** immediately after use. Hardened material can only be removed mechanically.

6. Storage

Store in a dry location which, if possible, is protect against frost. Ideal storage temperature 10 - 20 °C / 50 - 68 °F. Bring to the correct processing temperature before applying. Tightly seal opened packaging and use up as soon as possible. Material can only be stored for a limited period. Opened containers harden through within a few days.

7. Special Remarks

The product is subject to the hazardous material regulation, the operational safety regulation and the transport regulation for hazardous goods. Refer to DIN safety data sheet and the information on the container label!

GISCODE: PU 20

VOC content labelling:

(EU Regulation 2004/42)

Maximum Permissible Value 500 g/l (2010,II,j/lb):

Ready-for-use product contains < 500 g/l VOC.

Technical Data*

Viscosity	Components A + B	Approx. 1400 - 1800	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Solids content	Components A + B	>99	%	HEGGEL method
Density	Components A + B	1.45	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)
Shore-hardness D		Approx. 70 - 75	-	DIN 53505 (after 7 days)

(*Values achieved in sampling are average values. Variation in product specification is possible.)

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