

TI 270

Technical Information Surface Protection Linings
Issue 20.05.2021

STEULERFLAKE EPN

Chemically resistant epoxy resin based flake coating for steel substrates

Base

Epoxy Novolac resin

Material Group

Tank-/vessel linings – Flake coatings

Description and use

Highly chemical resistant lining system on base of a solvent-free, flake filled epoxy novolac resin. Resistant to 98% sulphuric acid.

As coating on steel substrates or sealing layers with low mechanical load, e.g. cups, or pits. Concrete substrates should be provided with a crack-bridging sealing layer before application.

Properties

- High chemical resistance, e.g. to solvents, concentrated acids and alkalis (also to 98% sulphuric acid)
- Depending on the chemical stress, temperature resistant up to 60 °C (wet stress) or up to 95 °C (dry stress)
- Very good diffusion resistance
- Plain

System Design

- Priming with ALKADUR V
- Steulerflake EPN

Physical Data

Property [unit], Test method	Value
Density [g/cm³], DIN EN ISO 1183-1, ASTM D 792	1.4
Compressive strength [MPa], DIN EN ISO 604, ASTM C 579	62
Tensile strength [MPa], DIN EN ISO 527	23
Data are mean values.	

Chemical Resistance

Good resistance against solvents, concentrated acids and bases.

The system is resistant to 98% sulphuric acid.

When exposed to concentrated or mixed media, discolourations of the surface may appear which normally have no adverse effect to the chemical resistance. We recommend to use muted colours.

Please contact our Application Technology Department for approval of the project-specific possible application.

Substrate

Requirements

Processing temperature	approx. 10–30 °C
Dew point distance	> 3 K
Dew point distance from 70% air humidity	> 5 K

Optimal temperature is 20 °C. Higher and lower temperatures influence the pot life and consistency of the mixtures.

Avoid draughts and solar radiation.

Steel

Refer to DIN EN14879-1 as well as to STEULER-KCH-Formsheet 020 and 030.

The steel surface is blasted to a metallic bright finish. A surface cleanliness of Sa 2½ according to DIN EN ISO 12944-4 and the roughness grade "Medium (G)" according to DIN EN ISO 8503-1 must be achieved; minimum surface roughness $R_z = 70 \mu\text{m}$. After blasting, the formation of new rust must be prevented by suitable measures, such as priming directly.

The condition of the substrate must be documented by STEULER-KCH-Test-Record 003 (Steel) resp. STEULER-KCH-Test-Record 004 (Inspection of Grit Blasting Works).

Moisture

During application, the substrate must be kept dry. No moisture (condensate, mist, etc.) must get onto the material.

Packaging / Shelf life

All components must be stored and transported dry. The minimum shelf life applies to a storage temperature of 20 °C, unless otherwise specified. Higher temperatures reduce, lower temperatures increase the minimum shelf life.

Component	Item number	Package	Content	Shelf life
Alkadur-DFG/V-Solution 1	5035120011	Jug	3 kg	24 Months
Alkadur-V-Solution 2	5035251019	Drum	6.9 kg	24 Months
Steulerflake-EPN-Solution 1	5035405010	Hobbock	4.5 kg	24 Months
Steulerflake-EPN-Solution 2	5035183002	Hobbock	20 kg	12 Months

For handling, transport and storage observe the relevant safety data sheets.

Mixing Ratio / Consumption

Primer ALKADUR V

Component	kg/m²	Part by weight	kg / batch	Batch
Alkadur-DFG/V-Solution 1	0.045	1.0	3.00**	3.0 l**
Alkadur-V-Solution 2 clear	0.105	2.3	6.90**	6.4 l**
Total	0.150		9.90	

** pre-dosed package.

Total consumption in kg/m² (approx.) 0.15 Batch yields in m² (approx.): 66

Steulerflake EPN Top Coat

Component	kg/m ²	Part by weight	kg / batch	Batch
Steulerflake-EPN-Solution 1	0.15	1.0	4.50**	2.0 l
Steulerflake-EPN-Solution 2	0.65	4.4	20.00**	7.6 l
Total	0.80		24.50	

** pre-dosed package.

Consumption per application in kg/m² (approx.) 0.80 Work steps: min. 2
 Kg-application results per application in m² (approx.): 30.6
 Small batch results per application in m² (approx.): 13.6
 Layer thickness for 2 applications in mm (approx.) 0.8–1.2

Pot Life

Pot life depends on temperature:

Alkadur V

Temperature	Pot life
15 °C	approx. 70 minutes
20 °C	approx. 30 minutes
30 °C	approx. 15 minutes

Steulerflake EPN

Temperature	Pot life
10 °C	approx. 180 minutes
20 °C	approx. 45 minutes
30 °C	approx. 15 minutes

Waiting and curing times

The maximum waiting time between operations is 48 hours at 20 °C.

The finished coating is fully mechanically and chemically resistant at 20 °C after 7 days.

Safety and Disposal

The following points should be observed:

- Sufficient ventilation and venting (especially in pits and tanks)
- No smoking and no fire
- Safety Data Sheets
- Observe hazard warnings and safety instructions on labels
- Wear required personal protective equipment (avoid skin contact with materials)
- Clean and protect hands with skin protection soap (no solvents!) and skin protection cream
- Wear a dust mask when grinding (e.g. for repairs)
- Operating instructions as per § 14 of GefahrstoffV (Toxic Substances Act) and TRGS 507 (Technical regulations for Hazardous Substances - Germany)
- Accident prevention regulations by the Liability Insurance Association for the Chemical Industries (Germany)
- Avoid direct contact of the materials with the flame, especially during welding work (welding beads) on site

Preferably consume residual quantities. Do not pour into a spout or dustbin! Collect separately for disposal in durable, lockable and labelled containers.

GISCODE

Product	GISCODE
Alkadur V	RE 70
Steulerflake EPN Top Coat	RE 55

Cleaning of Equipment

Tools soiled with uncured materials can be cleaned with STEULER UNIVERSAL CLEANER (Technical Information TI 190). Only clean in well ventilated areas.

Steulerflake-Cleaner A to clean the spray equipment.

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This issue replaces all previous versions.