

TI 229U

Technical Information Surface Protection Linings
Issue 19.09.2019

Steulerflake SPG U

Airless-spray applied lining with barrier fillers; High chemical and thermal resistance

Base

Epoxy Novolac Vinyl ester resin

Material Group

Tank- / vessel linings – Flake coatings

Description

Glass flake filled system based on special vinyl ester resin with excellent resistance against high temperatures and aggressive chemicals. Due to its high content of platelet-shaped barrier fillers which align themselves parallel to the substrate, very good diffusion and permeation resistance to water vapour is achieved.

Furthermore, the system avails good mechanical resistance and wear resistance.

Nominal thickness is 1.2 mm.

Use

Lining for ducts and tanks and chimneys of raw gas cleaning plants and other equipment based on steel structures in several industries.

Properties

- high chemical resistance
- high diffusion resistance
- thermal resistance up to 200 °C (dry exposure), up to 80 °C (wet exposure)
- standard thickness approx. 1.2 mm

Physical Data

Property (unit), Test method	Value
Density (g/cm ³), DIN EN ISO 1183-1, ASTM D 792	1.3
Flexural strength (MPa), DIN EN ISO 178, ASTM C 580	60
Compressive strength (MPa), DIN EN ISO 604, ASTM C 579	80
The thermal coefficient of linear expansion (1/K), ISO 11359-2, ASTM C 531	2.2 x 10 ⁻⁵
Tensile Strength (MPa), DIN EN ISO 527, ASTM C 307	40

Chemical Resistance

Extensive resistance to acids (also concentrated sulfuric acid), alkalis, solvents, oils and other, also oxidizing chemicals.

Please contact our application engineering for approval of the project-specific possible application.

Substrate

Steel

Refer to DIN EN14879-1 as well as to STEULER-KCH-Formblatt 020.

The steel surface shall be sandblasted to a metallic bright finish. A preparation degree of SA 2 ½ as specified in DIN EN ISO 12944-4 and a roughness grade "medium (G)" as specified in 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, e.g. immediate application of a primer.

The substrate should have a temperature of approx. 12 – 25 °C.

Moisture

During application, the substrate must be kept absolutely dry. Uncured material has to be protected from any kind of moisture (condensation, fog, precipitation or other water source). Distance to dew point has to be at least 3 K, at a relative humidity of above 70 % at least 5 K.

System Design

- Steulerflake Primer HTU
- STEULERFLAKE SPG U

Packaging / Shelf life

All components must be stored and transported dry and frost-free. Shelf life is specified for a storage temperature of 20 °C. Higher temperatures reduce, lower temperatures increase the shelf life.

Components	Colour approx.	Item number	Package	Content	Shelf life
Steulerflake-Priming-Solution HTU		5032098001	Hobbock	25 kg	6 Months
Steulerflake-Colour-Paste blue	Blue	5011015007	Bucket	1 kg	12 months
Oxydur-Accelerator OF		5032011096	Bottle	0.15 kg**	12 Months
Oxydur-Accelerator OF		5032011044	Bottle	0.5 kg	12 Months
Oxydur-Hardener C		5032015007	Bottle	1 kg	12 Months
Steulerflake SPG-U Solution		5032102001	Hobbock	25 kg	6 Months

Mixing Ratio / Consumption

Steulerflake Primer HTU

	Part by weight	Part by volume
Steulerflake-Priming-Solution HTU	1.000	0.900
Oxydur-Accelerator OF	0.020	0.020
Oxydur-Hardener C	0.020	0.020
Consumption	approx. 0.150 kg / m ²	
Layer thickness	approx. 0.1 mm	
Work steps	1	

STEULERFLAKE SPG U

	Part by weight	Part by volume
STEULERFLAKE SPG U	1.000	0.830
Oxydur-Accelerator OF*	0.015	0.015
Oxydur-Hardener C	0.020	0.020
<i>Steulerflake-Colour-Paste blue</i>	<i>0.005</i>	<i>0.002</i>
Consumption per application	approx. 0.700 kg / m²	
Layer thickness	1.2 mm	
Work steps	minimum 2	
**0.013 parths by weight by temperatures ≥ 25 °C		

Waiting Times

Waiting times between the layers depend on the temperature and are as follows:

10 °C	minimum 8 h	maximum 120 h
20 °C	minimum 6 h	maximum 78 h
30 °C	minimum 4 h	maximum 24 h

Pot Life

The working times depend on the temperature and are as follows:

Temperature	Primer	Cover Layers
10 °C	approx. 80 minutes	approx. 90 minutes
20 °C	approx. 55 minutes	approx. 60 minutes
25 °C	approx. 30 minutes	approx. 40 minutes

Curing times

To achieve full mechanical resistance 3 days and chemical resistance 7 days.

Safety measures

Mix and apply material only in well ventilated areas. Provide ventilation suited to the conditions when working in pits or tanks. Do not smoke!

Do not expose materials to heat or open flame. This applies in particular to welding works (weld beads). Avoid direct skin contact with the materials. Wash hands with soap and water; do not clean the skin with solvents. Use barrier soap and protective creams on exposed skin areas. In all other respects comply with the relevant regulations for prevention of accidents.

Refer to the Safety Data Sheets!

GISCODE

Product	GISCODE
Steulerflake Primer HTU	SB-STY 30
STEULERFLAKE SPG U	SB-STY 30

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.