

## TI 257

Technical Information Surface Protection Linings  
Issue 19.09.2019

# STEULERFLAKE VSG

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

### Base

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. Thanks to the high content of plate-like barrier filling materials that are aligned parallel to the surface, excellent diffusion / permeation resistant, also toward 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 120 °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 <sup>3</sup> ), 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 <sup>-5</sup>
Tensile Strength (MPa), DIN EN ISO 527, ASTM C 307	40

### Chemical Resistance

Extensive resistance to inorganic acids and mineral oils and other, also oxidizing chemicals.

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

### Substrate

#### Steel

Refer to DIN EN 14879-1 as well as to STEULER-KCH-Formsheet 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. priming directly.

The substrate should have a temperature of approx. 10 – 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 VS
- Steulerflake VSG

## Packaging / Shelf life

All components must be stored and transported dry and frost-free. Unless otherwise specified, the minimum shelf life applies to 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 VS		5032099001	Drum	25 kg	3 Months
Steulerflake VSG		5032130001	Drum	25 kg	3 Months*
Oxydur-Hardener E		5032016007	Bottle	1 kg	12 Months

## Mixing Ratio / Consumption

### Steulerflake Primer VS

	Part by weight	Part by volume
Steulerflake-Priming-Solution VS	1.000	0.930
Oxydur-Hardener E	0.020	0.020
Consumption	approx. 0.150 kg/m <sup>2</sup>	
Work steps	1	

### Steulerflake VSG

	Part by weight	Part by volume
Steulerflake VSG	1.000	0.830
Oxydur-Hardener E	0.020	0.020
Consumption per application	approx. 0.700 kg/m <sup>2</sup>	
Layer thickness by 3 applications	1.2 mm	
Work steps	minimum 2	

## Waiting Times

Waiting times between the layers depend on the temperature:

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

Pot life depends on temperature:

Temperature	Primer	Cover Layers
10 °C	approx. 70 minutes	approx. 90 minutes
20 °C	approx. 45 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 and Disposal

- Sufficient aeration and de-aeration (especially in tanks and pits).
- No smoking/no fire
- Refer to the Safety Data Sheets
- Avoid skin contact with materials
- Clean and protect hands with skin protective soap and skin protection cream (no solvents)
- Wear a dust mask when sanding (e.g. for repairs).
- Observe danger references and safety recommendation labels.
- Instructions as per § 14 of GefahrstoffV (Toxic Substances Act) and TRGS 507 (Technical regulations for Hazardous Substances - Germany)
- Accident precautions issued by the Liability Insurance Association for the Chemical Industries (Germany)

Do not expose materials to heat or open flame, this applies in particular to welding works (weld beads).

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

## GISCODE

Product	GISCODE
Steulerflake Primer VS	SB-STY 10
Steulerflake VSG	SB-STY 10

## 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.