

# STEULERFLAKE SPC

Airless-spray applied lining with barrier fillers; High chemical and temperature resistance, electrically conductive

## Base

Epoxy Novolac Vinyl ester resin

## Material Group

Tank-/vessel linings – Flake coatings

## Description

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

Due to its barrier fillers the system is electrically conductive and shows a long term resistance against strong alkalis and fluoride containing acids (HF).

standard thickness is 1.0 mm.

## Application

Lining for ducts and tanks and chimneys of raw gas cleaning plants and other equipment based on steel structures in several industries attacked by strong alkalis or hydrofluoric acid or if electrical conductivity is required.

The system is also applicable as top layer on Oxydur Flake or other Steulerflake systems from our assortment.

## Properties

- highly chemically resistant
- high diffusion resistance
- electrically conductive
- temperature resistant up to 200 °C (dry exposure), up to 80 °C (wet exposure)
- standard thickness approx. 1.0 mm

## Physical Data

Property [unit], Test method	Value
Density [g/cm <sup>3</sup> ], DIN EN ISO 1183-1, ASTM D 792	1.17
Flexural strength [MPa], DIN EN ISO 178, ASTM C 580	30
Compressive strength [MPa], DIN EN ISO 604, ASTM C 579	40
Dissipation resistance [Ohm] to DIN EN 14879-3 at a relative humidity of > 70 %, ASTM F 150/98	< 10 <sup>6</sup>
The thermal coefficient of linear expansion [1/K], ISO 11359-2, ASTM C 531	3.1 x 10 <sup>-5</sup>
Tensile strength [MPa], DIN EN ISO 527	20

## Chemical Resistance

Extensive resistance to acids (also hydrofluoric acid), alkalis, solvents, oils and other, also oxidizing chemicals.  
 Please contact our Application Technology Department for approval of the project-specific possible application.

## Substrate

### Requirements

Application temperature approx.	10 - 25 °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.

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

### Steel

Refer to DIN EN 14879-1 as well as to STEULER-KCH-Formsheet 020 and 030.

The steel surface is blasted to near white blast cleaning. 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 Rz = 70 µm. 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).

## System Design

- Steulerflake Primer HT
- Steulerflake SPC

## 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
Steulerflake-HT-Primer-Solution	5032063001	Hobbock	25 kg	3 months
Steulerflake-SPC-Solution	5032064001	Hobbock	25 kg	3 Months (below 15° C)
Oxydur-Hardener C	5032015007	Bottle	1 kg	12 Months
Steuler-Universal-Cleaner	5040023005	Canister	4 kg	24 months
Steulerflake-Cleaner A	5040026005	Canister	4 kg	24 Months

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

## Mixing Ratio / Consumption

### Steulerflake Primer HT

	Part by weight	Part by volume
Steulerflake-HT-Primer-Solution	1.000	0.900
Oxydur-Hardener C	0.020	0.020
Consumption approx.	0.150 kg / m <sup>2</sup>	
Application steps	1	

## Steulerflake SPC

	Part by weight	Part by volume
Steulerflake-SPC-Solution	1.000	0.850
Oxydur-Hardener C	0.020	0.020
Consumption per application approx.	0.800 kg / m <sup>2</sup>	
Coating thickness: with 2 coats	1.0 mm	
Application steps	at least 2	

## 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 pot life depends on the temperature and are as follows:

Temperature	Primer	Top coats
10 °C	approx. 60 minutes	approx. 80 minutes
20 °C	approx. 45 minutes	approx. 60 minutes
25 °C	approx. 20 minutes	approx. 30 minutes

## Curing times

To achieve full chemical resistance 5 days and mechanical resistance 3 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
Steulerflake Primer HT	SB-STY20
Steulerflake SPC	SB-STY20

## Cleaning of Equipment

Tools that are soiled with uncured materials can with Steuler-Universal-Cleaner be cleaned. Only clean in well ventilated areas.  
Steulerflake-Cleaner A for cleaning the syringe equipment.

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This issue replaces all previous versions.