

STEULERPLAST PE

Special joint sealing for sealing surfaces with comprehensive chemical resistance with DIBt-approval, Berlin Z-74.5-250

System Design

- SABA Primer 9102 for stainless steel
- Steulerplast-Adhesive / Steulerplast pre-coat
- Steulerplast-strip and Steulerplast-Crosses for joint filling

Description and Use

Special joint sealing material based on closed-cell expanded cross-linked polyethylene foam. It is pre-cut into need-based joint profiles and is fixed in the joint by the use of a synthetic resin adhesive system.

It is used as a joint sealing material to seal "LAU-Anlagen" (plants for storage, filling and handling) and "HBV-Anlagen" (plants for manufacturing, treating and usage) material that are hazardous to water. It is meant for the sealing of expansion joints as butt joints and lap joints that function as a component joint or as a connection joint. The design is always carried out in the definition of a maintenance joint.

Main usage areas are plants for the chemical industry, storage for materials that are hazardous to water, production areas in industry and commerce, road surfaces for industry and commerce, areas in scrap yards, filling stations in petrol stations, safety areas in airports.

Properties

- High chemical resistance comparable to PE with medium bulk density
- Flammability B2 / normally flammable
- Colour black

Permitted Upset Movements ^[1]

Joint width (mm)	Upset movement (mm)
15.0	1.5
20.0	2.0
40.0	4.0

Permitted Elongation Movements ^[1]

Joint width (mm)	Elongation movement (mm)
15.0	2.3
30.0	4.5
40.0	6.0

^[1] See information in the respective valid general building approval.

Permitted Shear Movements ^[1]

Joint width (mm)	Shear path (mm)
15.0	1.9
30.0	3.8
40.0	5.0

Physical Data

Physical Property	Testing Standard	Value	Unit
Density (PE-Profile)	DIN EN ISO 1183-1	0.056	g/cm ³
Density (Synthetic resin)	DIN EN ISO 1183-1	1.09	g/cm ³

Data are mean values

Chemical Resistance

For the design with technical approval, the data for resistance given in the corresponding test certificate must be taken into account.

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

Substrate

Use in "LAU-Anlagen" (Plants for Storage, Filling and Handling)

- Made of concrete, uncoated (prefabricated parts) with national technical approval strength classes: $C\ 30/37 \leq C \leq 50/60$
- Made of concrete, uncoated (in-situ concrete) according to DIN EN 206-1 in conjunction with DIN 1045-2 with the properties of a FDE or FD concrete, according to german "DAfStb-Richtlinie" „Betonbau beim Umgang mit wassergefährdeten Stoffen (BUMwS)“ and MVV TB 2.15.16
- Made of split clinker, acid resistant according to DIN EN 14411
- Made of cementitious repair mortars and concrete with national technical approval to use in "LAU-Anlagen"
- Parts of sealing constructions made of laminates or profiles (vinyl ester base)
- With parts of sealing constructions made of alloyed stainless steel according to MVV TB C 2.4.4.1, DIN EN 10088-4 or -5
- Made of semi-rigid sealing layers with national technical approval for use in "LAU-Anlagen"

Tiles, bricks, stainless steel, resin based mortar, coated concrete etc. must be pre-processed taking into account the specifications given above in such a way that an adequate adhesive bond is achieved.

In the case of traffic, the joint may not be of flush construction design (chamfered joint edge according to the specifications given in the approval).

See information in the respective valid general building approval.

Requirements

Application temperature approx.	7 - 25 °C
Dew point distance	> 3 K
Dew point distance from 70 % humidity	> 5 K

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

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

Concrete / Screed

Refer to DIN EN 14879-1 as well as to STEULER-KCH-Formsheet 010.

To achieve sufficient adhesive tensile strength, the substrate must generally be pre-treated in such a way that it is free of cement slurry, cement skin, loose and friable parts, structural defects and separating substances.

The residual moisture of cementitious substrates must not exceed 4 %.

The condition of the substrate must be documented by STEULER-KCH-Test-Record 006 (Concrete) resp. STEULER-KCH-Test-Record 007 (Screed).

Stainless Steel

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

The steel surface is blasted to near white blast cleaning. The degree of preparation 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 roughness depth $R_z = 50 \mu\text{m}$. After blasting, the formation of new rust must be prevented by suitable measures, such as priming directly.

The condition of the substrate is documented using STEULER-KCH-Test-Record 003 (Steel) or STEULER-KCH-Test-Record 004 (Inspection of Grit Blasting Works).

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
Steulerplast-Resin	5032122003	Canister	5 l	6 months
Steulerplast-Hardener	5032123243	PE bottle	0.125 l	6 months
Steulerplast-cross 20x30 mm (WxH)	5019121000	Pc.	1	24 months
Steulerplast-cross 25x30 mm (WxH)	5019122000	Pc.	1	24 months
Steulerplast-cross 30x30 mm (WxH)	5019123000	Pc.	1	24 months
Steulerplast-strip 20x30x2000 mm (WxHxL)	5019124000	Pc.	1	24 months
Steulerplast-strip 25x30x2000 mm (WxHxL)	5019126000	Pc.	1	24 months
Steulerplast-strip 30x30x2000 mm (WxHxL)	5019127000	Pc.	1	24 months
Steulerflake-Cleaner A	5040026005	Canister	4 kg	24 months
SABA Primer 9102	9300002299	Can	1 l	18 months

Steulerplast elements can also be supplied in other dimensions on request. The preferred joint width is between 15 and 40 mm in 5 mm increments.

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

Mixing Ratio / Consumption

Primer

Steulerplast-Adhesive / Steulerplast pre-coat

Component	Mix	Consumption kg/m ²
Steulerplast-Resin	2.00 l	0.246
Steulerplast-Hardener	30 ml	0.004
Total		0.250
Area per mix approx.		9.1 m ²

Typical Consumption per Meter of Joint Depending on the Height of the Joint Profile

Height of the joint profile (mm)	Surface to be processed (m ²)	Consumption of the primer (kg/m joint)
15	0.06	0.015
20	0.08	0.020
30	0.12	0.030

The total consumption depends on the dimensions of the joint. The primer is applied to both vertical flanks of the joint and both vertical flanks of the expansion joint profile. The consumption per meter of expansion joint corresponds to four times the height of the joint profile in m².

SABA Primer 9102

The primer is applied to stainless steel substrates.

Consumption per application approx.

50 g/m²

Steulerplast PE Joint Profile

The width of the joint profile must be approx. 15 % greater than the joint width.

Pot Life

The pot life at a material temperature of 20 °C approx. 30 minutes.

Waiting and Curing Times

The minimum waiting time to walkability are approx. values.

Temperature	Walkable After
20 °C	8 h
30 °C	6 h

The finished coating is fully mechanically and chemically resistant after 3 days at temperatures above 20 °C. Below 20 °C the full chemical resistance is reached after 10 days at the earliest.

No waiting time between SABA Primer 9102 and Steulerplast-Adhesive.

Testing

After Installation

The built-in joint sealing system must be visually inspected along its entire length to ensure that it has been installed correctly in accordance with the following requirements.

- The adhesion of the joint profile to the joint flanks must be checked at random (at least once every 5 meters), e.g. by means of a ball bar test. For this purpose, a rod with a hemispherical rounded end and half the joint width is pressed approx. 2 mm deep into the joint. During this test, there must be no flank separation greater than 5 mm.
- For joints that are subject to traffic, check that the joint profile connects below the joint chamfer.
- All profile joints must be glued with 45° bevel cuts, covering the entire surface.

It must be checked that there are no connection points at the intersection.

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
Steulerplast-Adhesive	SB-STY20
Steulerplast pre-coat	SB-STY20

Cleaning of Equipment

Tools that are soiled with uncured materials can be cleaned with Steuler-Universal-Cleaner. Only clean in well ventilated areas.

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This issue replaces all previous versions.