

TI 316

Technical Information Surface Protection Linings
Issue 18.09.2019

OXYDUR VE BL

Resin based mortar for corrosion resistant brick and tile linings

Base

Vinyl ester resin

Material Group

Mortars, Jointing Materials

Description

Synthetic resin based system for jointing and bedding ceramic brick and tile linings.

Use

Bedding and jointing mortar for tile and brick linings especially at exposure to high chemical loads.

Properties

- thermal resistance up to 120 °C
- very good mechanical properties and chemical resistance
- cures at normal temperatures without subsequent heat treatment
- Workable with jointing injector

Physical Data

Property (unit), Test method	Value
Density [g/cm ³], DIN EN ISO 1183-1, ASTM D 792	1.79
Abrasion resistance [cm ³ /50 cm ²], DIN 52108, ASTM C 241	6.0
Flexural strength [MPa], DIN EN ISO 178, ASTM C 580	29
Compressive strength [MPa], DIN EN ISO 604, ASTM C 579	100
Modulus of elasticity [MPa], DIN EN ISO 178, ASTM C 580	14,000
The thermal coefficient of linear expansion [1/K], ISO 11359-2, ASTM C 531	3.0 x 10 ⁻⁵
Lowest working temperature [°C] (Preheat material to 20°C)	
Maximum working temperature [C] (Cool material to 20°C)	
Tensile Strength [MPa], DIN EN ISO 527, ASTM C 307	18
Data are mean values	

Chemical Resistance

Resistant to higher concentrated acids and alkalis, oxidizing media as well as fats, oils and solvents.

For detailed information about the chemical resistance please refer to Technical Information TI 300A.

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

Substrate

Uneven spots should be levelled in the substrate already. Do not apply the mortar directly to the substrate! If the substrate is not provided with a surface protection system, apply with a suitable primer and sprinkle if necessary. Please contact our Application Technology Department for possible solutions.

Usually the mortar is applied onto STEULER-KCH's coating systems or rubber linings.

Concrete / screed

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

To attain a sufficient adhesive tensile strength, the substrate is generally to be pretreated in such a way that it is free of cement slurry, cement skin, loose and crumbly particles, structure imperfections and separating substances.

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

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.

Packaging / Shelf life

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

Components	Item number	Package	Content	Shelf life
Oxydur-VE-BL-Solution	5032021001	Drum	25 kg	9 Months
Oxydur-Accelerator D	5032007023	Jug	2.5 kg	24 Months
Oxydur-Hardener E	5032016007	Bottle	1 kg	12 Months
Oxydur-K-Powder	5011109001	Bag	25 kg	24 Months
Cab-O-Sil TS720	5011016006	Bag	10 kg	24 Months

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

Mixing Ratio / Consumption

Oxydur VE-BL

	Part by weight	Part by volume
Oxydur-VE-BL-Solution	1.0	0.95
Oxydur-Accelerator D	0.016	0.016
Oxydur-Hardener E	0.016	0.016
Oxydur-K-Powder	3.6	2.77
Consumption: 1.790 kg/liter mortar mass		
Add 10 % buffer to the calculated project demand for bedding and jointing.		

By vertical surfaces a suspending agent can be used to adjust the viscosity of the mortar, depending on the temperature.

Consumption of mortar

Split tiles 240 x 115 x 20 mm	approx. 7.5 l	13.4 kg/m ²
Split tiles 240 x 115 x 40 mm	approx. 9.5 l	17.0 kg/m ²
Bricks 240 x 115 x 65 mm	approx. 11.5 l	20.6 kg/m ²
Bricks 240 x 115 x 80 mm	approx. 13 l	23.3 kg/m ²

Filled-joint laying (bed joint 5 mm / butt joints 7 mm)

Pot Life

Pot life depends on temperature:

20 °C	approx. 30 minutes
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Low temperatures prolong, higher temperatures shorten the processing time.

Waiting and curing times

The waiting time until the product can be walked on depends on the temperature:

Temperature	Walkable after
15 °C	6 h
20 °C	4 h
25 °C	3 h

The finished coating is fully mechanically and chemically resistant at 20 °C after 5 days.

GISCODE

Product	GISCODE
Oxydur VE BL	SB-STY 20

Safety and Disposal

- Sufficient aeration and de-aeration (especially in tanks and pits).
- No smoking/no fire
- Refer to the Safety Data Sheets
- Observe danger references and safety recommendation labels.
- Wear required personal protective equipment (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).
- 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.

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.

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This issue replaces all previous versions.