

## TI 353B

Technical Information Surface Protection Linings  
Issue 18.09.2019

# STEULER ACID CEMENT AE B

Halogen-free water glass mortar for bedding and jointing of acid resistant tiles and bricks on floor areas

### Base

Potassium water glass

### Material Group

Mortars, Jointing Materials

### Description

Halogen-free 2-component water glass mortar for the construction of filled joint- and hollow joint- applied acid resistant tile and brick linings on floor areas.

In contrast to traditional silicate mortars, the mortar cannot only be applied in acidic areas but also in neutral areas, i.e. outdoors.

### Use

Ceramic linings on floor areas, in channels, in pits – not for linings in vessels.

### Properties

- halogen-free
- thermal resistance up to 450 °C

### Physical Data

Property (unit), Test method	Value
Density [g/cm <sup>3</sup> ], DIN EN ISO 1183-1, ASTM D 792	2.15
Compressive strength [MPa], DIN EN ISO 604, ASTM C 579	70
Modulus of elasticity [MPa], DIN EN ISO 178, ASTM C 580	3 x 10 <sup>4</sup>
Adherence to concrete / screed [MPa], DIN EN ISO 4624	> inherent strength of concrete
Adherence to ceramic bricks [MPa], DIN EN ISO 4624	> inherent strength of ceramic Bricks
The thermal coefficient of linear expansion [1/K], ISO 11359-2, ASTM C 531	1.5 x 10 <sup>-6</sup>
Thermal conductivity [W/mK], ISO DIS 22007	≈ 1.2
Tensile Strength [MPa], DIN EN ISO 527, ASTM C 307	7
Lowest working temperature [°C]	10
Maximum working temperature [C]	40
Data are mean values	

### Chemical Resistance

For detailed information about the chemical resistance please refer to Technical Information TI 350.

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

+ = resistant at 20 °C

(+) = short time resistant

- = not resistant

## Substances

### Acids

Formic/acetic/lactic acid	+
Chromic acid 30 %	+
Hydrofluoric acid	-
Oleum	+
Nitric acid 65 %	+
Hydrochloric acid up to 37 %	+
Sulfuric acid up to 98 %	+

### Alkalis

Ammonia solution 25 %	(+)
Chlorine bleaching	-
Sodium hydroxide solution, potassium hydroxide solution	-

### Solvents

Aldehyde	+
Alcohols	+
Benzene / Toluene / Xylene	+
Ester / Ketones	+
Formaldehyde	+
Methylene chloride	+
Mineral oils	+
Petrol	+
Trichlorethylene	+

### Other

Amines	+
Vegetable/animal oils and fats	+

## Substrate

- Concrete, screed, plaster (solid, clean, free of oil, grease or other separating substances). Before application preferably moisten the substrate. Do not saturate it.
- Impervious sealing layer (sanded)
- Lead linings, ceramic brick and tile linings (clean, dry)

Use in any case for sanding SKC-Filler 16. Please contact our application engineering for approval of the project-specific possible application.

### 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.

## 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
Acid-Cement-AE-Solution 1	5021001001	Drum	25 kg	24 Months (at min. 5 °C)
Acid-Cement-AE-Powder	5021137001	Bag	25 kg	24 Months

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

## Mixing Ratio / Consumption

### STEULER Acid cement AE-B

	Part by weight	Part by volume
Acid-Cement-AE-Solution 1	1.0	1.0
Acid-Cement-AE-Powder	8.8	6.9
Consumption	2,150 kg/litre mortar mass	
Bed / bed joint thickness		5 - 8 mm
Joint width		5 - 8 mm
Joint width (hollow joint laying)		5 - 8 mm
Joint depth (bumpy joint installation)		min. 15 mm

### Consumption of mortar by filled-joint laying (bed joint 5 mm / butt joints 7 mm):

Split tiles 240 x 115 x 20 mm	approx. 7.5 l	16.3 kg/m²
Split tiles 240 x 115 x 40 mm	approx. 9.5 l	20.5 kg/m²
Bricks 240 x 115 x 65 mm	approx. 11.5 l	24.8 kg/m²
Bricks 240 x 115 x 80 mm	approx. 13 l	28 kg/m²

The joints must always be acidified. Acidification should take place approximately 24 hours after application. This can be used for this purpose:

- Sulfuric acid 20 % or
- alcoholic sulphuric acid 20 %

## Pot Life

Pot life depends on temperature:

20 °C	approx. 30 - 60 minutes
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## Curing times

To support foot traffic at 20 °C at least 24 hours.

To achieve full chemical resistance: at least 8 days at 20 °C.

Joints are to be acidified always approx. 24 hours after application.

For an acidification following media can be used: sulphuric acid 20 % or alcoholic sulphuric acid 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 can be cleaned with water. During application the mortar must not come into contact with water!

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This issue replaces all previous versions.