

## TI 245B

Technical Information Surface Protection Linings  
Issue 23.11.2020

# ALKADUR HR LF PROTECT 1

Electrically insulating lining system consisting of a self-levelling, crack-bridging and highly chemically resistant sealing layer with subsequent tile or brick lining for use in "LAU-Anlagen". General construction technique permit of DIBt, Berlin: Z-59.31-482

## Base

Epoxy resin (sealing layer)

## Material Group

Secondary containments

Combined lining system

## Description and use

Combined lining system consisting of a self-levelling, crack-bridging synthetic resin coating for concrete and screed surfaces with subsequent tiles or brick lining. The system is trafficable, highly chemically resistant and - due to the mortar used - electrically insulating.

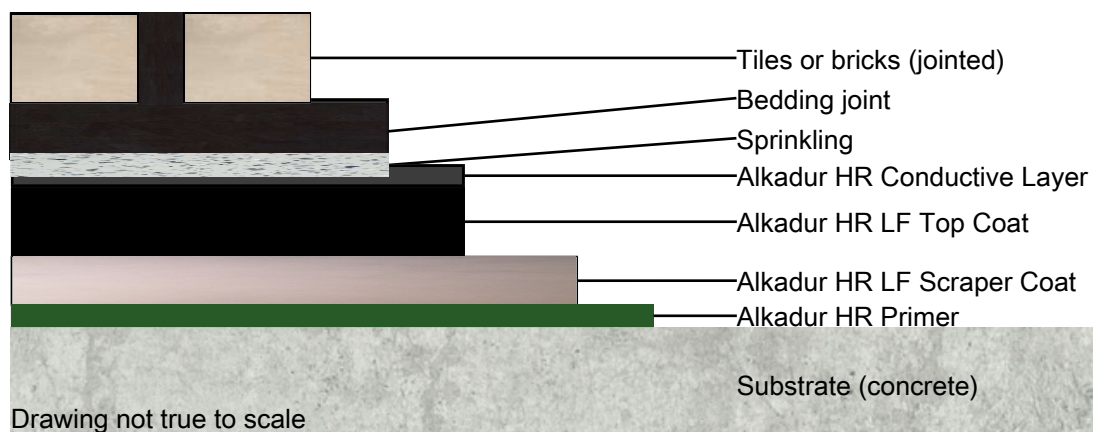
For sealing secondary containments (inside and outside) which serve as structural facilities for the storage, filling and handling of water-polluting liquids.

When cured, the sealing layer is particularly low in emissions and suitable for indoor use. It fulfills the emission requirements of the AgBB scheme and Class A+ of the VOC regulation of the French Ministry of Environment (MEDDTL).

## Properties

- The temperature resistance can reach the resistance of the mortars used, depending on the thickness of the tile and brick layer and the duration of the load. The temperature resistance will be advised in individual cases by our Application Technology Department.
- slip-resistant surface (depending on the tiles and bricks used)
- fit for vehicles with pneumatic, solid rubber, Vulkollan or polyamide tyres
- sealing layer crack-bridging up to 0.5 mm
- electrically insulating

## System Design



## Floor surfaces

- Alkadur HR Primer, sprinkled
- Alkadur HR LF Scraper Coat
- Alkadur HR LF Top Coat
- Alkadur HR Conductive Layer, sprinkled
- Mortar bed and butt joints with OXYDUR A (see TI/VA 301) or OXYDUR VEQ (see TI/VA 317A)
- Tiles or bricks (15-115 mm thick, acid-resistant bricks, red coloured ceramics or porcelain stoneware)

## Wall surfaces

- Alkadur HR Primer, sprinkled
- Alkadur HR LF Scraper Coat (with PE-Fibres as thixotropic agent)
- Alkadur HR LF Top Coat (with PE fibres as thixotropic agent)
- Alkadur HR Conductive Layer, sprinkled
- Mortar bed and butt joints with OXYDUR A (see TI/VA 301) or OXYDUR VEQ (see TI/VA 317A)
- Tiles or bricks (15-115 mm thick, acid-resistant bricks, red coloured ceramics or porcelain stoneware)

## Physical Data

### Parameters for the sealing layer

Property (unit), Test method	Value
Density [g/cm <sup>3</sup> ], DIN EN ISO 1183-1, ASTM D 792	1.14
Shore D hardness, DIN 53505, ASTM D 2240	75
Abrasion resistance [mg/1000 turns] ASTM D 4060, Taber Disc CS 17	42
Modulus of elasticity [MPa], DIN EN ISO 178, ASTM C 580	500*
Tensile strength [MPa], DIN EN ISO 527, ASTM C 307	35*
	Data are mean values *after heat treatment

Please refer to the corresponding technical information for the physical data of the mortars.

## Chemical Resistance

Information of chemical resistance is available on request.

For use in "LAU-Anlagen" (plants for storage, filling and handling), the approved chemical resistance can be found in the respective general construction technique permit.

## Substrate

### Requirements

Application temperature	approx. 10–30 °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.

## 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).

## Moisture

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

## 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
Alkadur-HR-Solution	5035197001	Hobbock	25 kg	24 Months
Alkadur-HR-Solution	5035197020	Hobbock	16 kg	24 Months
Alkadur-HR-Hardener	5035198085	Drum	8.8 kg	24 Months
Alkadur-HR-Hardener	5035198001	Hobbock	25 kg	24 Months
Alkadur-HR-Top-Coat-Solution RAL7030*	5035191002	Hobbock	20 kg	24 Months
Alkadur-HR-Top-Coat-Solution RAL7032*	5035193002	Hobbock	20 kg	24 Months
SKC-Filler 15	5011202001	Bag	25 kg	24 Months
SKC-Filler 16	5011203001	Bag	25 kg	24 Months
SKC-Filler 3L	5011194017	Bag	12.5 kg	24 Months
SKC-Filler 4L	5011195017	Bag	12.5 kg	24 Months
Carbon-Fibre 6 mm	5119089083	Pouch	30 g	24 Months
PE-Fibre 920T	5019028006	Bag	10 kg	24 Months
Diluent EN	5060005005	Canister	4 kg	24 Months

\* The colours may differ slightly from the RAL colour template. Other colours on request.

Plus the components for the mortar used.

## Mixing Ratio / Consumption

### Alkadur HR Primer

Component	kg/m <sup>2</sup>	Part by weight	kg / batch	l / batch
Alkadur-HR-Solution	0.161	1.800	1.800	1.600
Alkadur-HR-Hardener	0.089	1.000	1.000	1.000
<b>Total</b>	<b>0.250</b>		<b>2.800</b>	

Sprinkling with SKC-Filler 15; Consumption: approx. 0.5 kg/m<sup>2</sup>

Total consumption in kg/m<sup>2</sup> (approx.): 0.250      Mix yields in m<sup>2</sup> (approx.): 11.2

### Alkadur HR LF Filling

Component	kg/m <sup>2</sup>	Part by weight	kg / batch	l / batch
Alkadur-HR-Solution	0.183	1.800	1.800	1.600
Alkadur-HR-Hardener	0.102	1.000	1.000	1.000
SKC-Filler 3L	0.265	2.600	2.600	3.100
Diluent EN*	(0.004)	(0.036)	(0.036)	(0.046)
PE Fibre 920T (only for wall surfaces)	(0.003)	(0.030)	(0.030)	(1.000)
<b>Total</b>	<b>0.550 (0.557)</b>		<b>5.400 (5.466)</b>	

Total consumption in kg/m<sup>2</sup> (approx.): 0.550      Work steps: 1

Dry coating thickness in mm: (approx.): 0.4–0.5      Batch yields in m<sup>2</sup> (approx.): 9.8

\* If necessary, especially at temperatures below 15 °C. Do not use by application according to DIBt approval!

## Alkadur HR LF Top Coat floor

Component	kg/m <sup>2</sup>	Part by weight	kg / batch	l / batch
Alkadur-HR-Top-Coat-Solution	1.595	2.300	20.000**	17.400**
Alkadur-HR-Hardener	0.703	1.000	8.800**	8.800**
Carbon-Fibre 6 mm	0.002	0.003	0.030**	pre-dosed
<b>Total</b>	<b>2.300</b>		<b>28.830</b>	
PE-Fibre 920T (only for slopes > 2 %!)	0.007	0.010	0.090	3.000

\*\* pre-dosed package.

Total consumption in kg/m <sup>2</sup> (approx.):	2.300	Work steps:	1
Layer thickness in mm (approx.):	2.0	Batch yields in m <sup>2</sup> (approx.):	12.5

## Alkadur HR LF Top Coat wall

Component	kg/m <sup>2</sup>	Part by weight	kg / batch	l / batch
Alkadur-HR-Top-Coat-Solution	2.212	2.300	4.000	3.480
Alkadur-HR-Hardener	0.975	1.000	1.760	1.760
Carbon-Fibre 6 mm	0.003	0.003	0.006	
PE-Fibre 920T	0.110	0.115	0.200	6.600
<b>Total</b>	<b>3.300</b>		<b>5.966</b>	

Total consumption in kg/m <sup>2</sup> (approx.):	3.300	Work steps:	2
Layer thickness in mm (approx.):	2 x 1.5	Batch yields in m <sup>2</sup> (approx.):	3.6 per work step

## Alkadur HR Conductive Layer wall/floor (for subsequent bricks and tiles)

Component	kg/m <sup>2</sup>	Part by weight	kg / batch	l / batch
Alkadur-HR-Top-Coat-Solution	0.130	2.260	5.000	4.350
Alkadur-HR-Hardener	0.057	1.000	2.200	2.200
SKC-Filler 4L	0.113	1.960	4.350	6.200
<b>Total</b>	<b>0.300</b>		<b>11.550</b>	

Sprinkle with SKC-Filler 16. Consumption approx. 2.0 kg/m<sup>2</sup>

Total consumption in kg/m <sup>2</sup> (approx.):	0.300	Work steps:	1
		Batch yields in m <sup>2</sup> (approx.):	38

## Bedding and jointing mortar

- OXYDUR A: see Application Instruction VA 301, electrically insulating
- OXYDUR VEQ: see Application Instruction VA 317A, electrically insulating

## Pot Life

Pot life depends on temperature:

Temperature	Pot life
10 °C	approx. 70 minutes
20 °C	approx. 30 minutes
30 °C	approx. 20 minutes

The pot life of the mortars can be found in the corresponding Application instructions.

## Waiting and curing times

The minimum waiting time until further processing and the maximum waiting time between application steps are as follows (approx.):

Temperature	Walkable after	Maximum waiting time
10 °C	24 h	72 h
20 °C	16 h	48 h
30 °C	10 h	16 h

With the sprinkled conductive layer, the maximum waiting time to be observed for subsequent tile lining does not apply as long as the sprinkling is intact and clean.

The waiting time until walkability of tiles and bricks depends on mortar is used.

At 20 °C it is:

OXYDUR A	4 h
OXYDUR VEQ	4 h

For further data, please refer to the corresponding Application Instruction.

The finished combined lining system can be fully loaded mechanically and chemically at 20 °C after 5 days.

## Safety and Disposal

- sufficient ventilation and venting (especially in pits and tanks)
- No smoking/no fire
- Refer to the 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 protective soap and skin protection cream (no solvents)
- Wear a dust mask during grinding work (e.g. during 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
Alkadur HR Primer	RE 90
Alkadur HR LF Filling	RE 90
Alkadur HR LF Top Coats (different designs)	RE 90

Please refer to the corresponding Application instructions for the GISCODES of the mortars.

## 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.