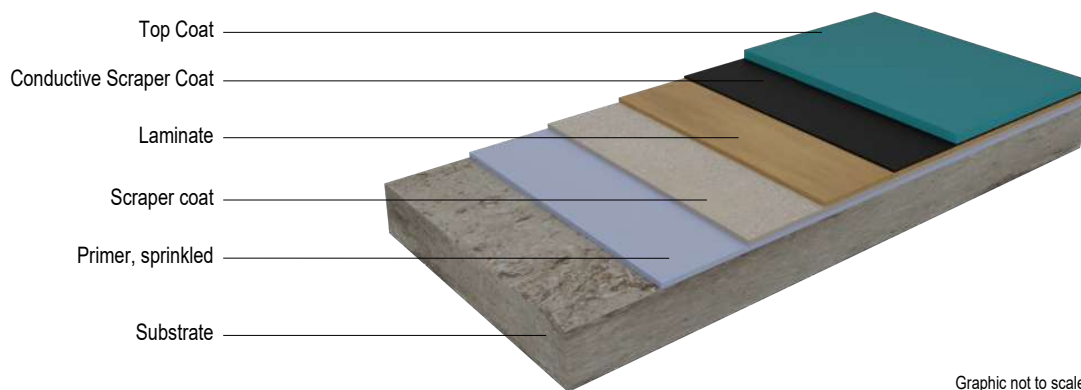


# OXYDUR iVE LC

Monostyrene-free, crack-bridging, electrically conductive and highly chemically resistant laminate system based on vinyl ester resin  
Top coat for the general technical approval of the DIBt, Berlin Z-59.12-497

## System Design



- Alkadur HR Primer, sprinkled
- Oxydur iVE Scraper Coat
- Variant 1 Hand laminate (Glass-Fibre-Mat 300 g/m<sup>2</sup>)
- Variant 2 Chopped laminate floor surfaces (Spray-Roving 2400tex)
- Variant 3 Hand laminate conductive (Glass Roving Fabric)
- Oxydur iVE Conductive Scraper Coat (for variant 1 and 2)

If necessary:

- On floor surfaces sprinkling with sealant
- On floor and wall surfaces coating with OXYDUR iVE PC (see TI/VA 222J)<sup>[1]</sup>

## Description and Use

Monostyrene-free, crack-bridging, dissipative and chemically highly resistant laminate system based on vinyl ester resin.

For sealing structural installations such as secondary containments in which water-polluting liquids are stored, filled and handled.

For concrete built secondary containments application according to national technical approval is possible.

The coating fulfils the emission requirements of the AgBB scheme and Class A+ of the VOC regulation of the French Ministry of Environment (MEDDTL).



<sup>[1]</sup> OXYDUR iVE PC not to be used for designs in accordance with DIBt approval

## Properties

- Temperature resistant
  - Up to 60 °C as a sealing layer on concrete substrates
  - The temperature resistance is basically dependent on the individual chemical stress.
- Crack-bridging 0.3 mm (variant 3) or 0.4 mm (variants 1 and 2)
- „Total solid“ (complies with the test method of Deutsche Bauchemie)
- Can be used for electrically conductive coverings
- Fit for vehicles with pneumatic, solid rubber, Vulkollan or polyamide tyres
- Slip-resistant design possible

## Physical Data

Physical Property	Testing Standard	Value	Unit
Density	DIN EN ISO 1183-1	1.2	g/cm <sup>3</sup>
Flexural strength	DIN EN ISO 14125	185 <sup>[2]</sup>	MPa
Flexural modulus of elasticity (variant 1 glass fibre mat)	DIN EN ISO 14125	6,000 <sup>[2]</sup>	MPa
Tensile strength (variant 1 glass fibre mat)	DIN EN ISO 527-4	90 <sup>[2]</sup>	MPa
Elongation at tear (variant 1 glass fibre mat)	DIN EN ISO 527-4	2 <sup>[2]</sup>	%
Shore D hardness	DIN EN ISO 868	80	
Dissipation resistance	DIN EN 14879-3	≤ 10 <sup>6</sup> <sup>[3]</sup>	Ohm
Temperature resistance for a short time (e.g. for high-pressure cleaners)		60 100	°C

Data are mean values of cured systems

## Chemical Resistance

Resistant to higher concentrated acids, including hydrofluoric acid, alkalis, oxidising substances as well as fats, oils and solvents.

For application as a sealing layer with national technical approval please refer to the list of authorized substances according to the latest test report.

For detailed information about the chemical resistance please refer to TI 240.

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

## Substrate

### Requirements

Application temperature approx.	8 - 30 °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.

Avoid draughts and solar radiation.

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

<sup>[2]</sup> After heat treatment

<sup>[3]</sup> At a relative humidity of > 70 %.

## 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).

**NOTE! Only the concrete substrate is part of the DIBt-approval.**

## 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-Hardener	5035198001	Hobbock	25 kg	24 months
Oxydur-iVE-Solution	5032186001	Hobbock	25 kg	24 months
Oxydur-iVE-Laminating-Solution black	5032199001	Hobbock	25 kg	24 months
Oxydur-iVE-LF-Solution	5032194001	Hobbock	25 kg	24 months
Oxydur-iVE-Sealing-Solution grey30 <sup>[4]</sup>	5032198001	Hobbock	25 kg	24 months
Oxydur-iVE-Accelerator 1	5032192023	Canister	2.5 kg	24 months
Oxydur-iVE-Accelerator 2	5032193023	Canister	2.5 kg	24 months
Oxydur-iVE-Hardener	5032189007	PE-bottle	1 kg	12 months
SKC-Filler 16	5011203001	Bag	25 kg	24 months
SKC-Filler 1L	5011192001	Bag	25 kg	24 months
SKC-Filler 2L	5011193001	Bag	25 kg	24 months
SKC-Filler 5L	5011196017	Bag	12.5 kg	24 months
Oxydur-WV-Powder	5011119002	Bag	20 kg	24 months
Carbon Fibre fine	5019090007	Drum	1 kg	24 months
Spray-Roving 2400tex	5019004002	Coil	20 kg	unlimited
Glass-Fibre-Mat 300 g/m <sup>2</sup>	9300900390	Roll 1.27 m wide		unlimited
Glass-Roving-Fabric 580 g/m <sup>2</sup>	9300090008	Roll 1.25 m wide		unlimited
Glass-Carbon Fiber-Mixed-Fabric 280 g/m <sup>2</sup>	9300940199	Roll 1.25 m wide		unlimited
Copper strip self-adhesive	9703301015	Roll 19 - 20 mm wide		unlimited

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

<sup>[4]</sup> Other colours on request.

## Mixing Ratio / Consumption

### Pre-Acceleration

To simplify application, one container of each of the different Oxydur-iVE-Solutions is mixed with Oxydur-iVE-Accelerator 1 and, if necessary, Oxydur-iVE-Accelerator 2. The accelerator quantities are dependent on temperature. A partial quantity of the pre-accelerated solution is removed for further processing.

#### Pre-Acceleration of the Oxydur-iVE-Solution as a Function of the Substrate Temperature

Component	Mix	
Oxydur-iVE-Solution or Oxydur-iVE-LF-Solution or Oxydur-iVE-Laminating Solution black or Oxydur-iVE-Sealing-Solution	25.00 kg	pre-dosed package
<b>from 24 to 30 °C</b> Oxydur-iVE-Accelerator 1	60 g	60 ml
<b>from 17 to 25 °C</b> Oxydur-iVE-Accelerator 1	100 g	100 ml
<b>from 12 to 18 °C</b> Oxydur-iVE-Accelerator 1	180 g	180 ml
<b>from 8 to 13 °C</b> Oxydur-iVE-Accelerator 1	250 g	250 ml
<b>At low temperatures and for faster curing in all variants, especially for applying the scraper coat to sprinkling coatings (≤ 15°C).</b>		
Oxydur-iVE-Accelerator 1	150 g	150 ml
Oxydur-iVE-Accelerator 2	150 g	150 ml

**NOTE!** The temperature of the components must be adapted to the substrate temperature, otherwise the reactivities in the mix and on the surface will differ. If the substrate temperature is below 15 °C, a maximum excess of 5 K is permissible. At temperatures above 30 °C, the material must be cooled.

**NOTE!** The pre-accelerated solutions must be used within one day.

### Primer, Sprinkled

#### Alkadur HR Primer

Component	Mix	Consumption kg/m <sup>2</sup>
Alkadur-HR-Solution	3.60 kg	0.161
Alkadur-HR-Hardener	2.00 kg	0.089
<b>Total</b>	<b>5.60 kg</b>	<b>0.250</b>
Area per mix approx.		22.4 m <sup>2</sup>
Sprinkling with SKC-Filler 16. Consumption approx. 2.0 kg/m <sup>2</sup>		

## Laminate

### Variant 1 Scraper Coat + Hand Laminate (Glass Fibre Mat) + Conductive Scraper Coat

#### Oxydur iVE Scraper Coat (Hand Laminate)

Component	Mix	Consumption kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-Solution	5.00 kg	0.990
Oxydur-iVE-Hardener	100 g	0.020
Oxydur-WV-Powder	5.00 kg	0.990
<b>Total</b>	<b>10.10 kg</b>	<b>2.000</b>
Area per mix approx.		5.1 m <sup>2</sup>

#### Oxydur iVE Hand Laminate (Glass Fibre Mat)

Component	Mix	Consumption kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-Solution	5.00 kg	1.275
Oxydur-iVE-Hardener	100 g	0.025
<b>Total</b>	<b>5.10 kg</b>	<b>1.300</b>
Area per mix approx.		3.9 m <sup>2</sup>
Glass-Fibre-Mat 300 g/m <sup>2</sup>		2 layers
Depending on the project-specific geometry, additional consumption of glass fibre materials and laminating solution must be planned due to the fact that the glass fibre reinforcement are overlapped.		

#### Oxydur iVE Conductive Scraper Coat

Component	Mix	Consumption kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-LF-Solution	5.00 kg	0.442
Oxydur-iVE-Hardener	100 g	0.009
SKC-Filler 5L	2.82 kg	0.249
<b>Total</b>	<b>7.92 kg</b>	<b>0.700</b>
Area per mix approx.		11.3 m <sup>2</sup>
If required - sprinkling with SKC-Filler 1L or SKC-Filler 2L. Consumption approx. 2.5 kg/m <sup>2</sup>		

## Variant 2 Scraper Coat + Chopped Laminate (Spray Roving) + Conductive Scraper Coat

### Oxydur iVE Scraper Coat (chopped laminate)

Component	Mix	Consumption kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-Solution	5.00 kg	0.676
Oxydur-iVE-Hardener	100 g	0.014
Oxydur-WV-Powder	6.00 kg	0.810
<b>Total</b>	<b>11.10 kg</b>	<b>1.500</b>
Area per mix approx.		7.4 m <sup>2</sup>

### Oxydur iVE Chopped Laminate (Spray Roving)

Component	Mix	Consumption kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-Solution	5.00 kg	1.275
Oxydur-iVE-Hardener	100 g	0.025
<b>Total</b>	<b>5.10 kg</b>	<b>1.300</b>
Area per mix approx.		3.9 m <sup>2</sup>
Spray-Roving 2400tex approx.		600 g/m <sup>2</sup>

### Oxydur iVE Conductive Scraper Coat

Component	Mix	Consumption kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-LF-Solution	5.00 kg	0.442
Oxydur-iVE-Hardener	100 g	0.009
SKC-Filler 5L	2.82 kg	0.249
<b>Total</b>	<b>7.92 kg</b>	<b>0.700</b>
Area per mix approx.		11.3 m <sup>2</sup>
If required - sprinkling with SKC-Filler 1L or SKC-Filler 2L. Consumption approx. 2.5 kg/m <sup>2</sup>		

## Variant 3 Scraper Coat + Hand Laminate Conductive (Glass Roving Fabric)

### Oxydur iVE Scraper Coat (Hand Laminate Conductive)

Component	Mix	Consumption kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-Solution	5.00 kg	0.891
Oxydur-iVE-Hardener	100 g	0.018
Oxydur-WV-Powder	5.00 kg	0.891
<b>Total</b>	<b>10.10 kg</b>	<b>1.800</b>
Area per mix approx.		5.6 m <sup>2</sup>

### Oxydur iVE Hand Laminate conductive (Glass Roving Fabric) - With Black Laminating Solution

Component	Mix	Consumption kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-Laminating Solution black	5.00 kg	0.674
Oxydur-iVE-Hardener	100 g	0.013
Carbon Fibre fine	100 g	0.013
<b>Total</b>	<b>5.20 kg</b>	<b>0.700</b>
Area per mix approx.		7.4 m <sup>2</sup>
Glass-Roving-Fabric 580 g/m <sup>2</sup>		1 layer
Glass-Carbon Fiber-Mixed-Fabric 280 g/m <sup>2</sup>		1 layer
Depending on the project-specific geometry, additional consumption of glass fibre materials and laminating solution must be planned due to the fact that the glass fibre reinforcement are overlapped.		

## If Required (Floor Areas) - Sprinkling With Sealing

For an anti-slip, conductive surface for variants 1 and 2, sprinkle the conductive scraper coat with SKC-Filler 1L or SKC-Filler 2L (consumption approx. 2.5 kg/m<sup>2</sup>). In variant 3, the conductive scraper coat is applied after the hand laminate (glass roving fabric) and sprinkled with SKC-Filler 1L or SKC-Filler 2L. Subsequently, the sealing is applied on each variant to the sprinkled conductive scraper coat in two application steps. The choice of filler determines the consumption of the sealant.

### Oxydur iVE Conductive Scraper Coat

Component	Mix	Consumption kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-LF-Solution	5.00 kg	0.442
Oxydur-iVE-Hardener	100 g	0.009
SKC-Filler 5L	2.82 kg	0.249
<b>Total</b>	<b>7.92 kg</b>	<b>0.700</b>
Area per mix approx.		11.3 m <sup>2</sup>
If required - sprinkling with SKC-Filler 1L or SKC-Filler 2L. Consumption approx. 2.5 kg/m <sup>2</sup>		

## Sealing

### Oxydur iVE Sealing When Sprinkling With SKC-Filler 1L

Component	Mix	Consumption sealing 1 kg/m <sup>2</sup>	Consumption sealing 2 kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-Sealing-Solution	5.00 kg	0.490	0.245
Oxydur-iVE-Hardener	100 g	0.010	0.005
<b>Total</b>	<b>5.10 kg</b>	<b>0.500</b>	<b>0.250</b>
Area per mix approx.		10.0 m <sup>2</sup>	20.0 m <sup>2</sup>
Application steps		1	1

### Oxydur iVE Sealing When Sprinkling With SKC-Filler 2L

Component	Mix	Consumption sealing 1 kg/m <sup>2</sup>	Consumption sealing 2 kg/m <sup>2</sup>
Pre-accelerated Oxydur-iVE-Sealing-Solution	5.00 kg	0.343	0.147
Oxydur-iVE-Hardener	100 g	0.007	0.003
<b>Total</b>	<b>5.10 kg</b>	<b>0.350</b>	<b>0.150</b>
Area per mix approx.		14.6 m <sup>2</sup>	34.0 m <sup>2</sup>
Application steps		1	1

## Pot Life

Higher temperatures reduce, lower temperatures extend the pot life.

### Alkadur HR Primer

Temperature	Pot Life
10 °C	70 min
20 °C	30 min
30 °C	20 min

The times given are approximate temperature-dependent values

### Oxydur iVE Components

Temperature	Pot Life
10 °C (Accelerator 1 + 2, Hardener)	70 min (including 15 min waiting time)
15 °C (Accelerator 1 + 2, Hardener)	50 min (including 10 min waiting time)
15 °C (Accelerator 1, Hardener)	90 min (including 15 min waiting time)
20 °C (Accelerator 1, Hardener)	70 min (including 10 min waiting time)
25 °C (Accelerator 1, Hardener)	60 min (including 5 min waiting time)
30 °C (Accelerator 1, Hardener)	35 min (including 2 min waiting time)

The times given are approximate temperature-dependent values

## Waiting and Curing Times

The minimum waiting time until further processing and the maximum waiting time between application steps are temperature dependent approx. values.

Temperature	Walkable After	Maximum Waiting Time
10 °C	24 h	96 h
15 °C	17 h	96 h
20 °C	12 h	72 h
25 °C	8 h	72 h
30 °C	5 h	48 h

For sprinkled layers, the maximum waiting time for next layers does not apply as long as the sprinkling is intact and clean.

The waiting time until full chemical and mechanical resistance is reached is 5 days at a temperature of 20 °C.

## Testing

### Visual Testing

The lining is checked for visible defects such as bubbles, inclusions, inequalities, cracks or mechanical damage.

### Testing the Electrostatic Conductivity

The measurement of the earth leakage resistance  $R_A$  is carried out with a commercially available resistance measuring device up to  $10^8$  Ohm with 100 volts DC as measuring voltage. A circular electrode with a diameter of 50 mm is used as the measuring electrode. On the surface of the floor covering to be measured, a 50 mm diameter blotting paper slightly moistened with tap water is placed as a contact mediator. The electrode is placed flush on this and pressed onto the surface with a force of about 10 N during the measurement.

When applying conductive layers, the conductivity must be tested after 24 hours and before applying the subsequent layer.

The final test for reaction resin coatings is carried out at the earliest 48 hours after installation. The floor covering is cleaned before the test. There must be no insulating layers.

The test specification PV 016 ELECTROSTATIC CONDUCTIVITY must be observed.

## Repair and Connections

### Repair of the Sealing Layer

#### Faulty, Damaged or Connected Areas

When carrying out repair work, the relevant information in the Application chapter must be observed.

1. Grind damaged areas down to the substrate with a grinding machine.
2. Bevel the edge zones and roughen the surface of the old coating generously (with sandpaper or, for larger areas, by blasting).
3. Clean the surface with a cloth and Steuler-Universal-Cleaner.
4. Prime the substrate and completely rebuild the coating as described above, observing the waiting times. Apply the new material only to the roughened and ground areas.

## 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
Alkadur HR Primer	RE90

## 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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