Product Information

Dolit LF (S)

BL.FU.001.S | 14/06/2024

PRODUCT GROUP

Coatings Laminate

BINDER BASE

Furan resin

PROPERTIES / APPLICATION

Crack-bridging laminate system based on a modified furan resin for the protection of steel surfaces. The system can also be applied to suitable Dolit rubber linings.

Wide range of applications as a highly chemically resistant coating system, especially when exposed to acids, alkalis, solvents and hydrocarbons.

- Temperature resistance
  - Up to 100 °C dry load on steel (direct stress on the laminate).
  - The temperature resistance is basically dependent on the project-specific chemical stress.
- Very high chemical resistance to a wide range of media, such as various inorganic and organic acids and alkalis, greases, oils and fuels, solvents and various hydrocarbons.
- Depending on requirements, Glass-Fibre-Mat 450 g/m² can also be used instead of Glass-Fibre-Mat 300 g/m².
- Electrically conductive version possible.

SYSTEM DESIGN

- 2 x Dolit VE Barrier layer
- **If necessary**
  - Scattering with Dolit-Filler 16
  - Dolit LF Scraper Coat
- Dolit LF Laminate (2 x Glass-Fibre-Mat 450 g/m² + Glass-Fleece 30 g/m² in Dolit LF Laminating Solution)
- **If required** for conductive version Dolit LF Conductive Layer

Layer thickness (without Scattering with Dolit-Filler 16 and Dolit LF Scraper Coat) ≈ 2 mm

PHYSICAL DATA

Physical property	DIN	ASTM	Value	Unit
Shore D hardness	DIN 53505	ASTM D 2240	> 60	Shore D
Adhesive strength to steel	DIN EN ISO 4624		> 2	MPa
Electr. leakage resistance (when Dolit LF Conductive Layer is used)	DIN EN 14879-3 At >70% relative humidity	ASTM F 150/98	≤ 10^6	Ω

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PRECONDITIONS

The temperatures for the substrate, ambient air and Dolit materials must be between 15 °C and 30 °C during application. The optimum processing temperature is 20 °C. Higher and lower temperatures affect the working time and consistency of the composition. Consumption and application performance may change as a result.

During application, the substrate must be kept absolutely dry. No moisture (condensate, mist, etc.) may get onto the surfaces to be protected.

Unevenness must already be levelled out in the substrate.

Distance to dew point has to be at least 3 K, at a relative humidity of above 70 % at least 5 K.

The construction site must be protected from draught and direct sunlight.

STEEL

Refer to DIN EN14879-1.

The steel surface is blasted to near white blast cleaning. A surface cleanliness of Sa 2½ according to DIN EN ISO 12944-4 and the roughness grade "Medium (G)" according to DIN EN ISO 8503-1; minimum surface roughness R_z = 70 µm must be achieved. After blasting, the reformation of rust must be prevented by suitable measures.

DELIVERY FORM / BEST BEFORE DATE

Component	Item no.	Quantity	Package	Months
Dolit-LF-Solution	5233015001	25 kg	Hobbock	24
Dolit-LF-Solution AS	5233035003	5 kg	Drum	24
Dolit-LF-Hardener Dolit-LF-Hardener must be stored and transported at >15 °C.	5233014003	5 kg	Canister	24
Dolit-VE-Solution	5232003001	25 kg	Hobbock	6
Dolit-VE-Accelerator	5232001023	2.5 kg	Can	24
Dolit-VE-Hardener	5232002007	1 kg	Bottle	12
Cab-O-Sil TS 720	5011016044	0.5 kg	Bag	24
Dolit-Filler 16	5211203001	25 kg	Bag	24
Dolit-FN-Powder	5233036021	15 kg	Bag	24
Glass-Fibre-Mat 450 g/m² W=127cm L=80m	9300900388	102 m²	Roll	unlimited
Glass-Fleece 30 g/m² W=100cm	9300900089	250 m²	Roll	unlimited
Copper tape self-adhesive	9703301015	33 m	Roll	

- All components must be stored and transported in a dry and frost-free place.
- The minimum shelf life applies to a storage temperature of 20 °C. Higher temperatures shorten, lower temperatures extend the minimum shelf life.

Safety notice

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

WORKING EQUIPMENT

NOTE! **The materials to be processed can have an aggressive effect on mixing and processing tools due to the solvents, acidic, alkaline or abrasive components they contain. Therefore, please use only suitable tools for mixing and processing.**

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Measuring cup
Scale
Mixing vessel
Drilling machine
Anchor stirrer
Paint roller
Brush
Disk roller
Scissors
Mohair roller
Laminating brush
Metal smoothing trowel

GISCODE

Product	GISCODE
Dolit VE Barrier layer	SB-STY20
Dolit LF Scraper Coat	SB-F30
Dolit LF Laminate	SB-F30
Dolit LF Conductive Layer	SB-F40

MIXING RATIO / CONSUMPTION

DOLIT VE BARRIER LAYER ON STEEL

Dolit VE Barrier layer apply 2 x 0.300 kg/m² each. Total consumption: 0.600 kg/m²

DOLIT VE BARRIER LAYER

Component	kg/m²	Part by weight	kg/batch	Litres/ batch
Dolit-VE-Solution	0.281	100.0	2.180	2.000
Dolit-VE-Accelerator	0.006	2.0	0.045	0.045
Dolit-VE-Hardener	0.007	2.5	0.055	0.055
Cab-O-Sil TS 720	0.006	2.0	0.045	0.900
Total	**0.300**	**106.5**	**2.325**	

Area per batch	≈ 7.75 m²

IF NECESSARY

SCATTERING WITH DOLIT-FILLER 16

Component	kg/m²
Dolit-Filler 16	3.000

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DOLIT LF SCRAPER COAT

Component	kg/m²	Part by weight	kg/batch	Litres/ batch
Dolit-LF-Solution	0.692	100	2.000	1.650
Dolit-FN-Powder	1.108	160	3.200	4.200
Total	**1.800**	**260**	**5.200**	

Area per batch	≈ 2.9 m²

LAMINATE

NOTE! **Depending on the project-specific geometry, additional consumption for mats, fleece and solution must be planned due to the overlapping of the glass fibre materials.**

DOLIT LF LAMINATING SOLUTION

Component	Part by weight	kg/batch	Litres/batch
Dolit-LF-Solution	100	10.000	8.300
Dolit-LF-Hardener	3	0.300	0.220
Total	**103**	**10.300**	
Optional for wall surfaces Cab-O-Sil TS 720	1	0.100	2.000

	On Dolit VE Barrier layer	**On** Dolit LF Scraper Coat
Consumption kg/m²	2.200	2.000
Area per batch	≈ 4.7 m²	≈ 5.2 m²

GLASS-FIBRE-MAT 450 G/M²

Component	m²	
Glass-Fibre-Mat 450 g/m²	2.2	

GLASS-FLEECE 30 G/M²

Component	m²	
Glass-Fleece 30 g/m²	1.1	

CONDUCTIVE LAYER IF REQUIRED

DOLIT LF CONDUCTIVE LAYER

Component	kg/m²	Part by weight	kg/batch	Litres/ batch
Dolit-LF-Solution AS	0.194	100	2.500	2.100
Dolit-LF-Hardener	0.006	3	0.075	0.055
Total	**0.200**	**103**	**2.575**	

Area per batch	≈ 12.9 m²

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COPPER TAPE SELF-ADHESIVE

Component	m/connection	
Copper tape self-adhesive	0.5	2 connections per area to be connected, at least 1 connection per 50 m²

MIXING / APPLICATION

Processing may only be started when the application requirements are met and can be maintained during the entire processing and curing.

Scattered surfaces should be lightly grinded over after curing. In any case, the surface must be carefully cleaned of loose material before applying further coats.

MIXING SEQUENCE

DANGER

The mixing sequence for VE systems must be strictly adhered to, otherwise there is a risk of explosion!

Mixing sequence for Dolit VE barrier layer

- Liquid components are measured or weighed out.
- First add Dolit-VE-Solution to the mixing vessel.
- Then add Dolit-VE-Accelerator and stir carefully with an anchor stirrer (300 - 500 rpm) to a homogeneous solution.
- Only then add Dolit-VE-Hardener and mix again carefully until a homogeneous solution is formed.
- Move the stirrer past the vessel wall and bottom.

Mixing sequence for other components

- Stir solutions well with an anchor stirrer (300 - 500 rpm) before use or partial withdrawal. Move the stirrer past the vessel wall and bottom.
- Liquid components are measured or weighed out, transferred to a mixing vessel and carefully stirred.
- Mix the components with a drill and an anchor stirrer (300 - 500 rpm) to a homogeneous solution. Move the stirrer past the vessel wall and bottom.
- Solids are measured or weighed out individually, added to the solution in portions and mixed in carefully until a lump-free mixture is obtained.

APPLICATION

Dolit VE Barrier layer

- Apply the first coat of the barrier layer with a paint roller or brush. No puddles must be left in concrete depressions or expansion joints.
- After the first coat has hardened, apply the second coat of the barrier layer in the same way.

If necessary

- Scatter the fresh second coat of the barrier layer with Dolit-Filler 16.
- Remove loose, excess scattering material after curing.

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If required (if Dolit VE Barrier layer has been scattered)
Dolit LF Scraper Coat

- Apply the levelling compound in the required thickness to the spread, hardened primer using the smoothing trowel. Trowel marks and ridges are to be avoided.

Dolit LF Laminate

At Dolit VE Barrier layer without scattering

- Apply to the hardened Dolit VE Barrier layer with the mohair roller Dolit LF Laminating Solution.
- Freshly embed the glass fibre mat 450 g/m² in two layers one after the other with the necessary overlap (approx. 5 cm).
- Press on each layer individually with the disc roller and apply Dolit LF Laminating Solution with the mohair roller.
- Each layer is vented with the disc roller.
- The seams of the individual layers are to be staggered by 20 cm.
- If not all layers can be applied in one work step, apply Dolit LF Laminating Solution again after the surface is tack-free and continue working as described.
- The final layer Glass-Fleece 30 g/m² must always be applied together with the underlying Glass-Fibre-Mat 450 g/m².

If required on Dolit LF Scraper Coat

- Embed the Glass-Fibre-Mat 450 g/m² freshly into the Dolit LF Scraper Coat in two layers one after the other with the necessary overlap (approx. 5 cm).
- Further application is carried out as described for processing on Dolit VE Barrier layer without scattering.

If required for conductive version Dolit LF Conductive Layer

- Copper tape self-adhesive on the adhesive-free hardened laminate surface.
- Dolit LF Conductive Layer apply with the paint roller. Avoid the formation of puddles.

POT LIFE

- The pot life depend on the temperature and are as follows at 20 °C.

Dolit VE Barrier layer	**If necessary** Dolit LF Scraper Coat	Dolit LF Laminate	**If necessary** Dolit LF Conductive Layer
≈ 40 min	≈ 60 min	≈ 30 min	≈ 20 min

WAIT- / CURING TIME

The minimum waiting time before further processing and the maximum waiting time between working steps are at 20 °C.

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Layer	Until further processing	Maximum waiting time
Dolit VE Barrier layer **(1st coat)**	3 h	78 h
Dolit VE Barrier layer **(2nd coat)**	3 h	72 h No maximum waiting time is to be observed for scattered surfaces.
If necessary Dolit LF Scraper Coat	none	≈ 40 min
Dolit LF Laminate **(e.g. for subsequent layers based on furan resin)**	24 h	48 h
If necessary Dolit LF Conductive Layer	24 - 48 h (until walkability)	24 h

The finished coating is fully mechanically and chemically loadable at 20 °C after 7 days.

LEAK TEST LAMINATE ON STEEL SUBSTRATES

The laminate can be tested for leaks on steel substrates after completion. This can be done with a spark tester. The test voltage is 2 - 3 KV (for set-up with 2 x Glass-Fibre-Mat 450 g/m² + Glass-Fleece 30 g/m²). The laminate must have a curing time of at least 5 days before the test procedure.

The leak test must be carried out before applying the Dolit LF Conductive Layer.

CLEANING

Tools that are soiled with uncured materials can be cleaned with Dolit-Universal-Cleaner. Clean only in well ventilated areas and observe safety measures.

SAFETY / DISPOSAL

- Ensure sufficient ventilation, especially when working in closed rooms, pits or containers.
- Observe fire and smoking ban.
- Observe safety data sheets, hazard statements and safety advice on the containers.
- Wear prescribed personal protective equipment. Avoid skin contact with the materials.
- Clean and care for hands with skin protection soap and ointment. Do not use solvents.
- Wear a dust mask during grinding work, e.g. repairs.
- Follow operating instructions according to §14 GefahrstoffV and Technical Rules for Hazardous Substances TRGS 507.
- Comply with the accident prevention regulations of the employers' liability insurance associations.
- Avoid direct contact of the materials with the flame, especially when welding, watch out for welding beads.
- Preferably consume residual quantities.
- Do not pour residues down the sink or into the dustbin.
- Collect residues for disposal separately in durable, sealable and labelled containers.

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