

LUCOBRIDGE® BIT

WATERPROOFING MEMBRANES FOR CONCRETE BRIDGES

WATERPROOFING TECHNOLOGY WITH LUCOBRIDGE®



... Waterproofing that lasts

A NEW APPROACH IN STRUCTURAL WATERPROOFING

APPLICATIONS

The Lucobridge® BIT membranes have been designed to waterproof any Concrete Bridge construction. The advantages of using this innovative membrane system to seal concrete bridge decks lies in its safe and simplified application. The membrane construction results in an extremely tear-resistant but still elastic product.

Consequently, the system has an extended lifetime due to its superior stress-crack resistance, resistance to perforation, penetration and impact, low temperature workability, and thus also contributes to saving of financial resources.

The hassle-free, extended lifetime of the system was tried and proven on concrete bridge constructions especially in multi-layer lay-outs. The system proved superior to the other flamed membranes for waterproofing onto concrete bridge constructions.

PRODUCT

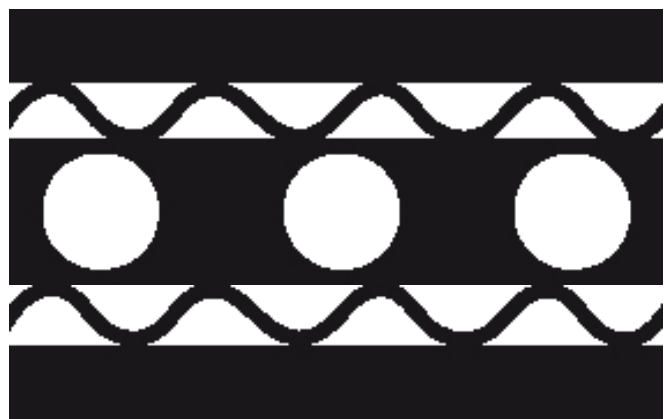
Lucobridge® BIT is a single ply membrane with a total thickness of 4,7 mm. It exists of a Lucobridge® membrane, which is covered with a modified bituminous mass of 1,6 mm on both sides. Lucobridge® BIT was conceived for single-ply sealing under stone mastics asphalt (SMA), mastic asphalt or bituminous concrete.

Lucobridge® BIT for concrete bridges in combination with Lucosol® 2000 (proprietary resin priming coat for steel or concrete bridges) complies with ZTV-ING part 7, Section 1.

External tests showed that the Lucobridge® BIT system exhibits an optimized interlocking system between the basic bridge construction and the top wearing course asphalt layers.

Lucobridge® BIT consists of a 1,6 mm polymer modified bitumen thick ECB (ethylene-copolymer-bitumen) membrane with a glass-fibre mat inlay and polyester mats on both sides. This structure is then covered on both sides by PmB layers (polymer modified bitumen) that can be heat-activated either by (torch-)flame or hot-air directly onto any bridge deck and acts as a heat- and protective shield against hot asphalt mixes to be placed directly on top. This membrane system warrants an excellent cover for any cracks or breaks due to its superior elasticity even after aging.

The single ply-membrane was conceived for the single-ply sealing under stone mastic asphalt, mastic asphalt or concrete.





ADVANTAGES

- Gluing of limits potential heat damage to the waterproofing membrane
- Reduced energy requirements
- Chlorine-free system
- Extremely tear-resistant due to built-in glass mat
- Easy to were flamed in both tested cases as single ply membrane for bridges
- High resistance to static loading due to its elasticity
- High resistance to impact, perforation and penetration
- Excellent behavior in low temperature
- Superior in counteracting cracks and breaks in the basic bridge structure
- Extremely high adherence to pretreated surfaces
- Excellent temperature resistance
- Aging-resistant
- UV-resistant

PROCESSING

The concrete surface must be prepared according to regulations; pre-treatment with Lucobridge® Primer 2000P (ZTV-ING Part 7, clause 1 resp. 4) is required.

Lucobridge® BIT has to be rolled out, free of voids with overlapping seams. These seams are welded by flash welding procedures. Details are found in the handling and installation instructions. The temperature of bitumen should not exceed 160 °C.

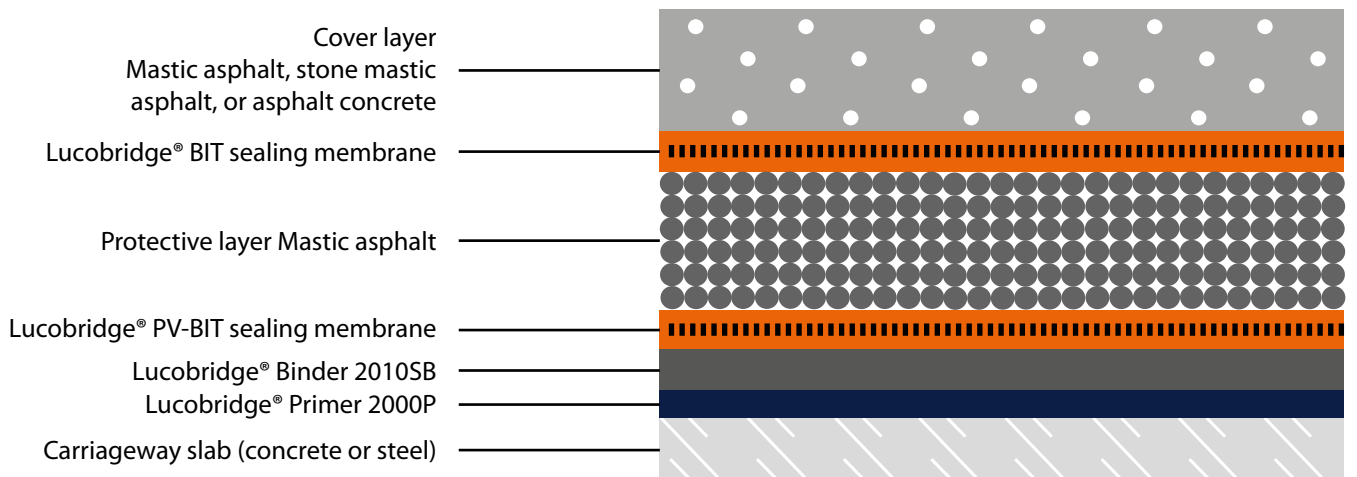
STORAGE

Lucobridge® BIT should be stored upright, protected from moisture and heat.

WASTE DISPOSAL GUIDELINES

Polymeric bitumen- and bitumen membranes as well as other construction material waste acc. to the European Waste Catalogue EWC-No. 17 03 02 ("Bitumen mixtures") can be disposed of in and with thermal combustion disposal processes.





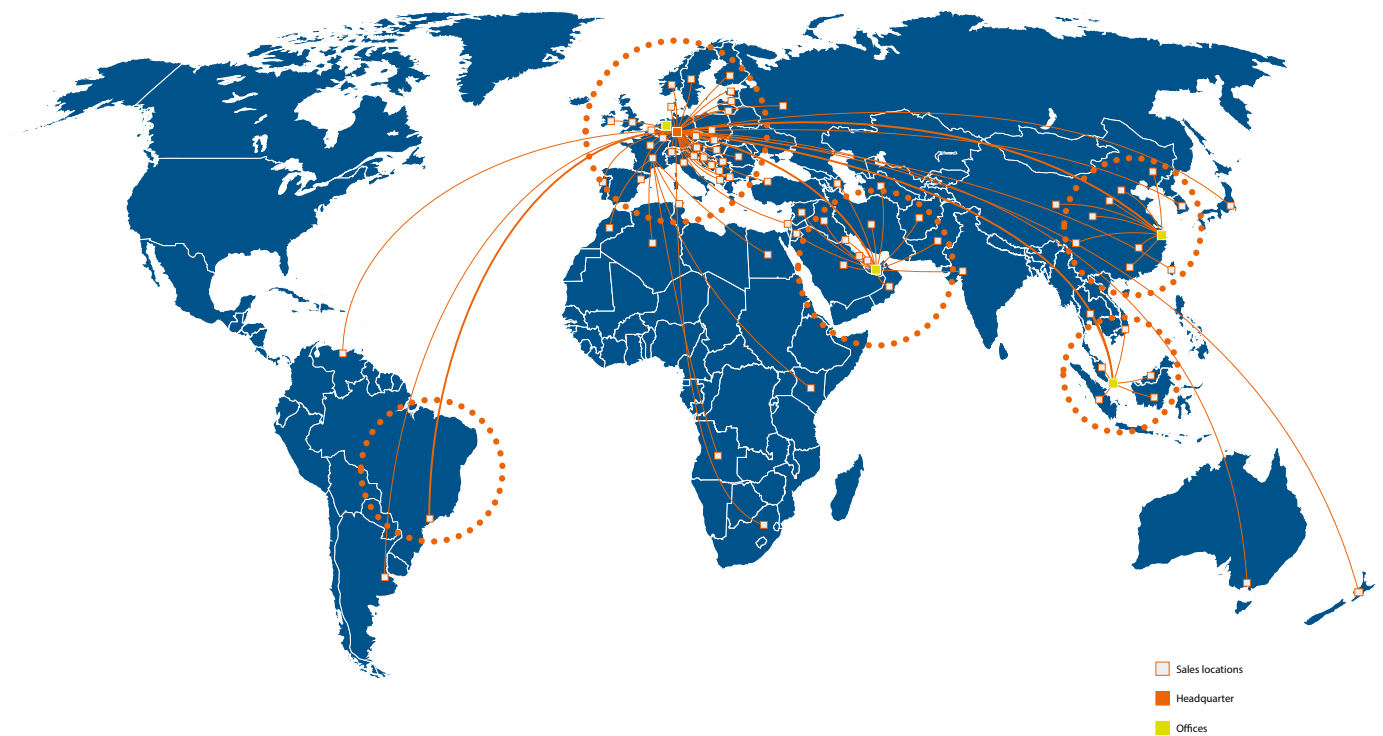
Two-membrane layers (mandatory) Dutch Bridge Design



Table 1: Lucobridge® BIT – basic test according to TL/TP BEL-B 1 - Test report P 9309 dated 21/10/2016, KIWA

TL/TP-BEL-B 1		STANDARD	UNIT	LUCOBRIDGE® BIT	REQUIREMENTS TL/TP-BEL-B 1
3.1	Surface weight, total membrane	DIN 52123	g/m ²	4730	≥ 4500
3.2	Surface weight Raw reinforcement insert	acc. to DIN 52123	g/m ²	N/A	> 175
3.3	Surface weight Raw reinforcement, extracted	acc. to DIN 52123	g/m ²	1160	
3.3	Surface weight Separating layer	TP-BEL-B 1	%	6,7	
3.4	Proportion of more soluble binding agent in the adhesive mass	TP-BEL-B 1	%	94,3	≥ 60
3.5	Proportion of polymers and type of polymers				
	upper layer	DIN 51451	%	PmB, 15% SBS	
	middle layer	DIN 13956	g/m ²	ECB, 100% Lucobit® 1235	
	lower layer	DIN 51451	%	PmB, 15% SBS	
3.6	Distribution of polymers in the adhesive mass	TP-Min-StB 3.1.3		N/A	homogeneous
3.7	Type of fillers of the adhesive mass	TP-Min-StB 3.1.3		mineralic	mineralic
3.8	Filler content of adhesive mass	DIN EN 53568	%	5,7	≤ 40
3.9	Type and property of reinforced sheet	DIN EN 18192	N/50 mm %	1280/1280 40 / 50	≥ 700 ≥ 30
3.10	External property of the sheet	TP-BEL-B 1		no complaint	no defects, no inclusions of particals > 0,7mm
3.11	Soaking of reinforced sheet	acc. to DIN 52123		totally soaked	totally soaked
3.12	Thickness of sheet	acc. to DIN 52123	mm	xi = 5,0 xi, min = 4,5	4,5<xi<5,5
3.13	Thickness of adhesive layer top	TP-BEL-B 1	mm	xm = 1,8 xi, min = 1,4	≥ 3,0
3.13	Thickness of adhesive layer underneath	TP-BEL-B 1	mm	x _m 1,3 xi, min = 1,1	≤ 0,5
3.14	Roll width	TP-BEL-B 1	cm	104,7	100
3.16	Edge covering of sheet	TP-BEL-B 1	cm	0,2	≤ 1 cm on 5 m
3.17	Maximum tensile force of sheet	acc. to DIN 52123	N/50 mm	length/cross/diagonal 1160 / 690 / 810	length/cross/diagonal ≥ 550 / ≥ 550 / ≥ 550
3.17	Elongation of sheet for maximum tensile force	acc. to DIN 52123	%	length/cross/diagonal 53 / 109 / 78	length/cross/diagonal ≥ 30 / ≥ 30 / ≥ 30
3.18	Water impermeability	acc. to DIN 52123	2 bar/24h	Passed	Passed
3.19	Change by water immersion	acc. to DIN 52123	%/vol	0	Volume ≤ 5
			%/mass	0	Mass ≤ 5
3.20	Heat resistance	acc. to DIN 52123	°C	130	
3.21	Availability at low temperatures	acc. to DIN 52123	°C	no crack, 0°C	no crack, 0°C
3.22	Softening RuK of adhesive layer underneath	DIN 52011	°C	152 SBS	SBS min. 125 APP min. 150
3.23	Pen of adhesive layer underneath	DIN 52010	1/10 mm	34	
3.25	Cold bending temperature	DIN EN 1109	°C	-16	≤ -10

LOCATIONS



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Note

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