



WATERPROOFING SELECTION GUIDE FOR TUNNELS

BUILDING TRUST



WATERPROOFING OVERVIEW FOR TUNNELS



Product Group	Product Type	Product Example	Station Box/ Cut-and-Cover Tunnel	Drained mined tunnel (Umbrella)	Pressurized mined tunnel (Displacement)	Cross passage of segmental lining
Waterproofing membranes	Fully-bonded membranes	SikaProof®-110 PP-500 / -810 PP-500	Recommended application	Recommended application	Not recommended application	Not recommended application
		SikaProof®-200	Recommended application	Recommended application	Not recommended application	Not recommended application
		SikaProof® A+	Recommended application	Not recommended application	Not recommended application	Not recommended application
	Loose-laid membranes	Sikaplan® WP 1100	Recommended application	Recommended application	Recommended application	Recommended application
Cushion layer	Drainage boards	SikaDrain® / Sikaplan® Tundrain W	Recommended application	Recommended application	Not recommended application	Recommended application
Joint solutions	Geotextile	Sikaplan® PP	Recommended application	Recommended application	Recommended application	Recommended application
	Fully-bonded waterstops	Sika Waterbar® FB	Recommended application	Recommended application	Recommended application	Recommended application
	General waterstops	Sika Waterbar® PVC	Recommended application	Recommended application	Recommended application	Recommended application
	Injection hoses	SikaFuko® VT 1	Recommended application	Not recommended application	Recommended application	Recommended application
	Tapes	Sikaplan® WT Tape-200	Recommended application	Recommended application	Recommended application	Recommended application
	Swellable profile	SikaSwell® A	Recommended application	Recommended application	Recommended application	Recommended application
Hot-spray membranes	PUA Hybrid	Sikalastic®-851	Recommended application	Recommended application	Not recommended application	Not recommended application
		Sikalastic® M 800 / M 811	Recommended application	Not recommended application	Not recommended application	Not recommended application
	Pure PUA	Sikalastic®-8800	Recommended application	Not recommended application	Not recommended application	Not recommended application
		Sikalastic® M 689	Recommended application	Not recommended application	Not recommended application	Not recommended application
Sprayed underground WP membrane	EVA cementitious membrane	Sikalastic®-245	Not recommended application	Recommended application	Not recommended application	Not recommended application
Rock and soil injection	PU Injection	Sikalnject®-210 DE	Recommended application	Recommended application	Recommended application	Recommended application
	Acrylic Injection	Sikalnject®-301 DE	Recommended application	Recommended application	Recommended application	Recommended application
	Silicate Injection	Sikalnject®-501 DE	Recommended application	Recommended application	Recommended application	Recommended application
(Concrete) Repair Injection	PU Flexible Injection	Sikalnject®-102 Sikalnject®-201 DE	Recommended application	Recommended application	Recommended application	Recommended application
Rock bolt anchoring	PU Silicate	Sikalnject®-680	Recommended application	Recommended application	Recommended application	Recommended application
Protection of tunnel segments	Epoxy coating	Sikagard®-65 WN	Not recommended application	Not recommended application	Not recommended application	Only for the segments

■ Recommended application
 ■ Possible application
 ■ Not recommended application

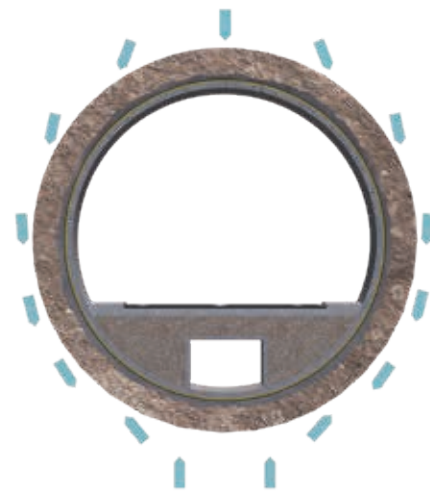
WATERPROOFING PRODUCTS FOR TUNNELS

SELECTION TABLE FOR DRAINED TUNNELS (UMBRELLA)



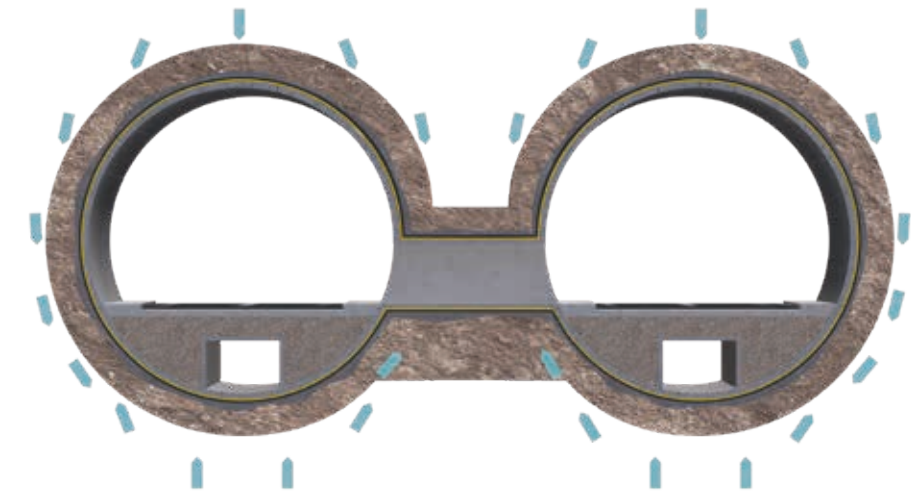
Fully-bonded membranes			Loose-laid membranes	EVA cementitious membranes
SikaProof®-200	SikaProof®-110 PP-500 SikaProof®-810 PP-500	SikaProof® A+	Sikaplan® WP 1100	Sikalastic®-245
				For tunnels with low requirements, e.g. escape tunnels

SELECTION TABLE FOR PRESSURIZED TUNNELS (DISPLACEMENT)



Fully-bonded membranes			Loose-laid membranes	EVA cementitious membranes
SikaProof®-200	SikaProof®-110 PP-500 SikaProof®-810 PP-500	SikaProof® A+	Sikaplan® WP 1100	Sikalastic®-245

SELECTION TABLE FOR CROSS PASSAGES (OF SEGMENTAL LINING)



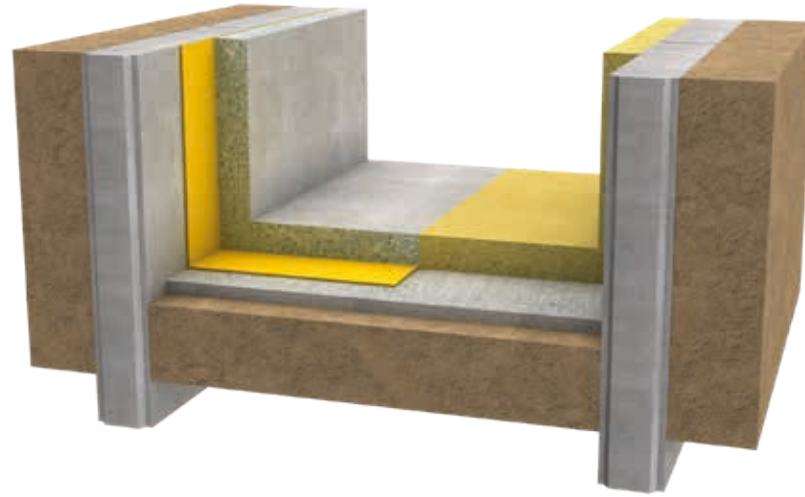
Fully-bonded membranes			Loose-laid membranes	EVA cementitious membranes	Protection of tunnel segments
SikaProof®-200	SikaProof®-110 PP-500 SikaProof®-810 PP-500	SikaProof® A+	Sikaplan® WP 1100	Sikalastic®-245	Sikagard®-65 WN
Termination with Sikaplan® WT Tape-200	Termination with Sikaplan® WT Tape-200	Termination with Sikaplan® WT Tape-200	Termination with Sikaplan® WP Tape-200		

Recommended application
 Possible application
 Not recommended application



WATERPROOFING PRODUCTS FOR STATIONS

SELECTION TABLE FOR STATIONS (BOX-IN-BOX TYPE)



Type	Fully-bonded membranes			Loose-laid membranes	EVA cementitious membranes	Hot-spray PUA membranes	
	SikaProof®-200	SikaProof®-110 PP / -810 PP	SikaProof® A+			Sikaplan® WP 1100	Sikalastic®-245
Blind-side waterproofing (e.g. base slab, wall)	High water pressure			Compartment system			
Open-cut structure (e.g. wall, top slab)	Post-applied		Post-applied				

SELECTION TABLE FOR STATIONS (PERMANENT D-WALLS)

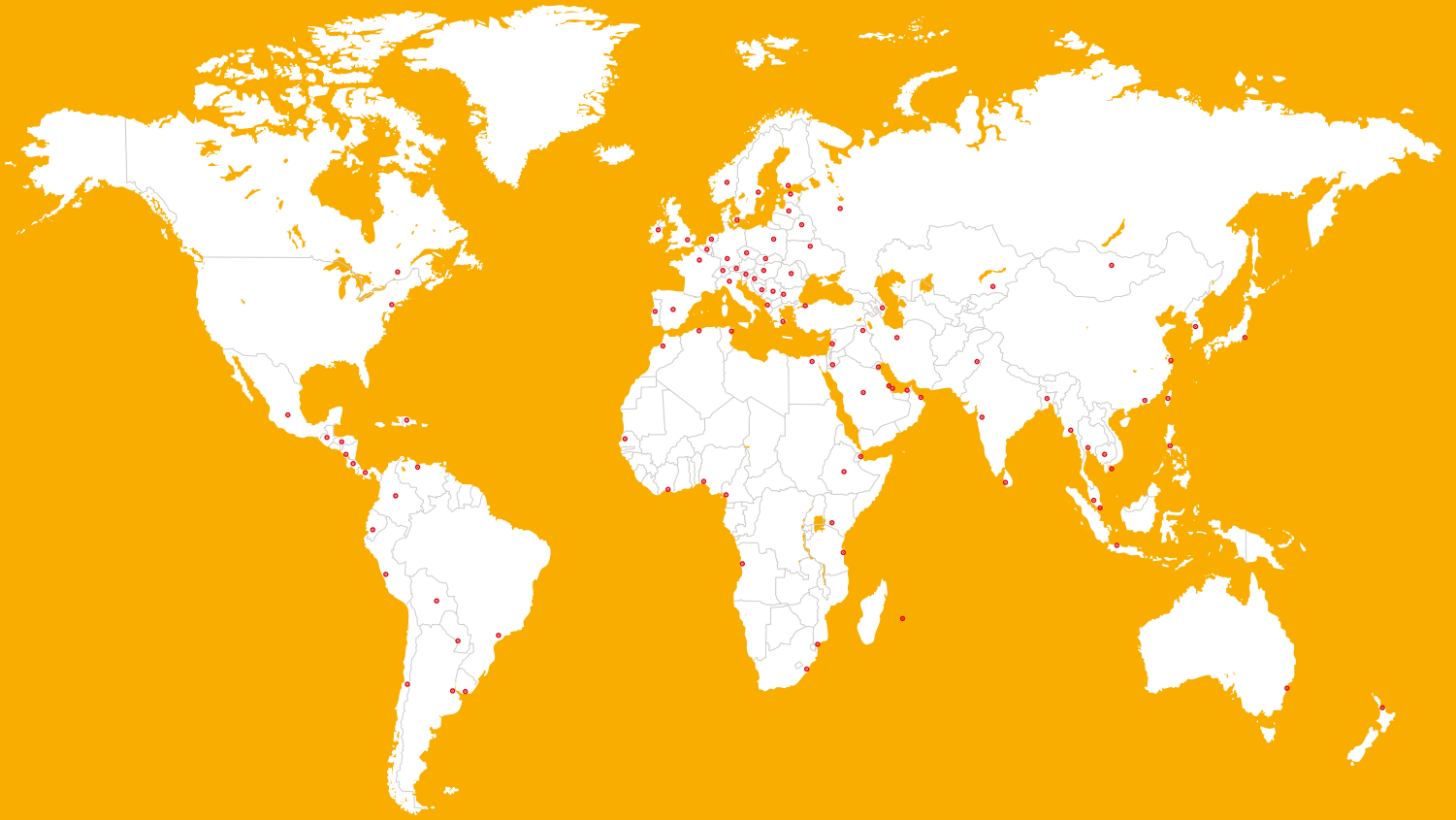


Type	Fully-bonded membranes			Loose-laid membranes	EVA cementitious membranes	Hot-spray PUA membranes	
	SikaProof®-200	SikaProof®-110 PP / -810 PP	SikaProof® A+			Sikaplan® WP 1100	Sikalastic®-245
Base slab	High water pressure			Compartment system			
D-Wall Treatment	Use Sikalastic®, Sika Waterbar®, SikaFuko®, SikaSwell®...						
Top slab	Post-applied		Post-applied				

■ Recommended application
 ■ Possible application
 ■ Not recommended application



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SIKA SERVICES AG
Tueffenwies 16
CH-8048 Zurich
Switzerland

Contact
Phone +41 58 436 40 40
www.sika.com

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