



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	Not recommended	Recommended	Recommended	Recommended
		SikaProof® A+	Recommended	Possible	Recommended	Recommended
	Loose-laid membranes	Sikaplan® WP 1100	Possible	Possible	Possible	Possible
Cushion layer	Drainage boards	SikaDrain® / Sikaplan® Tundrain W	Possible	Recommended	Not recommended	Possible
Joint solutions	Geotextile	Sikaplan® PP	Recommended	Recommended	Recommended	Recommended
	Fully-bonded waterstops	Sika Waterbar® FB	Recommended	Possible	Possible	Possible
	General waterstops	Sika Waterbar®	Recommended	Recommended	Recommended	Recommended
	Injection hoses	SikaFuko® VT 1	Recommended	Not recommended	Recommended	Recommended
	Tapes	Sikaplan® WP / WT Tape-200	Recommended	Possible	Possible	Recommended
	Swellable profile	SikaSwell® A	Possible	Possible	Possible	Possible
	Hot-spray membranes	PUA Hybrid	Sikalastic®-851	Recommended	Not recommended	Not recommended
Sikalastic® M 800 / M 811			Recommended	Not recommended	Not recommended	Not recommended
Pure PUA		Sikalastic®-8800	Possible	Not recommended	Not recommended	Not recommended
		Sikalastic® M 689	Possible	Not recommended	Not recommended	Not recommended
Sprayed underground WP membrane	EVA cementitious membrane	Sikalastic®-245	Not recommended	Possible	Not recommended	Possible
Rock and soil injection	PU Injection	Sikalnject®-210 DE	Recommended	Recommended	Recommended	Recommended
	Acrylic Injection	Sikalnject®-301 DE / 304 DE	Recommended	Recommended	Recommended	Recommended
	Silicate Injection	Sikalnject®-501 DE	Possible	Recommended	Recommended	Possible
(Concrete) Repair Injection	PU Flexible Injection	Sikalnject®-102	Recommended	Recommended	Recommended	Recommended
		Sikalnject®-201 DE	Recommended	Recommended	Recommended	Recommended
Rock bolt anchoring	PU Silicate	Sikalnject®-680	Possible	Recommended	Recommended	Recommended
Protection of tunnel segments	Epoxy coating	Sikagard®-65 WN	Not recommended	Not recommended	Not recommended	Only for the segments

■ Recommended application
 ■ Possible application
 ■ Not recommended application

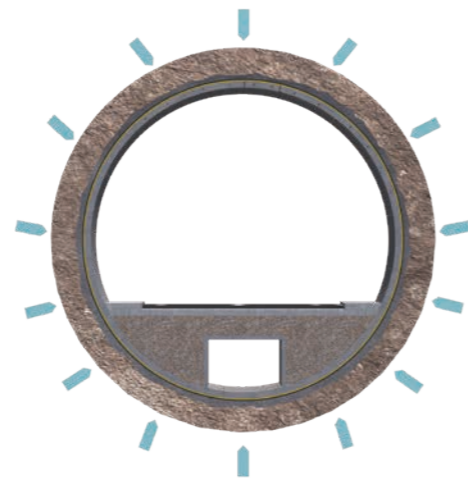
WATERPROOFING PRODUCTS FOR TUNNELS

SELECTION TABLE FOR DRAINED TUNNELS (UMBRELLA)



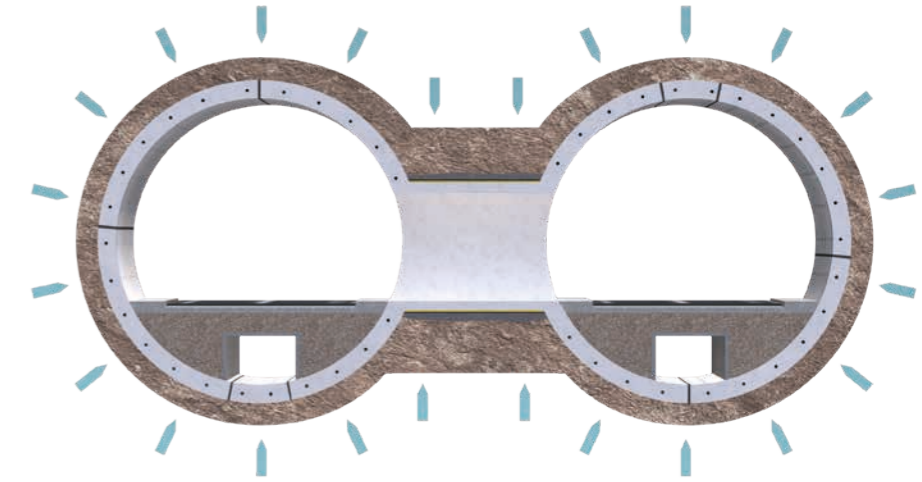
Fully-bonded membranes		Loose-laid membranes	EVA cementitious membranes
SikaProof® A+	SikaProof®-110	Sikaplan® WP 1100	Sikalastic®-245
			For tunnels with lower requirements

SELECTION TABLE FOR PRESSURIZED TUNNELS (DISPLACEMENT)



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

SELECTION TABLE FOR CROSS PASSAGES (OF SEGMENTAL LINING)



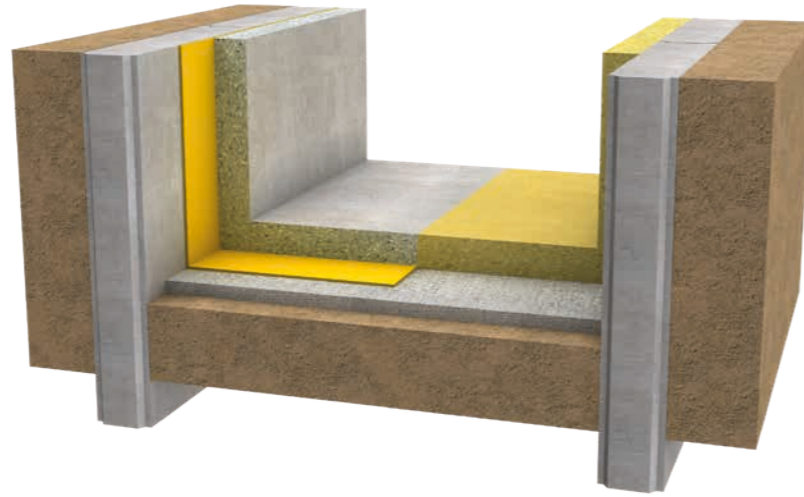
Fully-bonded membranes		Loose-laid membranes	EVA cementitious membranes	Protection of tunnel segments
SikaProof® A+	SikaProof®-110	Sikaplan® WP 1100	Sikalastic®-245	Sikagard®-65 WN
Termination with Sikaplan® WT Tape-200	Termination with Sikaplan® WT Tape-200	Termination with Sikaplan® WP Tape-200		

■ 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® A+	SikaProof®-110			Sikalastic® M 800 / M 811	Sikalastic®-851
	SikaProof® A+	SikaProof®-110	Sikaplan® WP 1100	Sikalastic®-245	Sikalastic®-851	Sikalastic® M 800 / M 811
Blind-side waterproofing (e.g. base slab, wall)	Recommended application	Not recommended application	Possible application	Not recommended application	Not recommended application	Not recommended application
Open-cut structure (e.g. wall, top slab)	Post-applied	Not recommended application	Possible application	Not recommended application	Recommended application	Recommended application

SELECTION TABLE FOR STATIONS (PERMANENT D-WALLS)



Type	Fully-bonded membranes		Loose-laid membranes	EVA cementitious membranes	Hot-spray PUA membranes	
	SikaProof® A+	SikaProof®-110			Sikalastic® M 800 / M 811	Sikalastic®-851
	SikaProof® A+	SikaProof®-110	Sikaplan® WP 1100	Sikalastic®-245	Sikalastic®-851	Sikalastic® M 800 / M 811
Base slab	Recommended application	Not recommended application	Possible application	Not recommended application	Not recommended application	Not recommended application
D-Wall Treatment	Use Sikainject®, Sika Waterbar®, SikaFuko®, SikaSwell®...			Recommended application	Not recommended application	Not recommended application
Top slab	Post-applied	Not recommended application	Possible application	Not recommended application	Recommended application	Recommended application

■ Recommended application
 ■ Possible application
 ■ Not recommended application



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FOR MORE INFORMATION ON SOLUTIONS FOR TUNNELING:



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