



NEXT GENERATION TUNNEL WATERPROOFING WITH SikaProof®

BUILDING TRUST

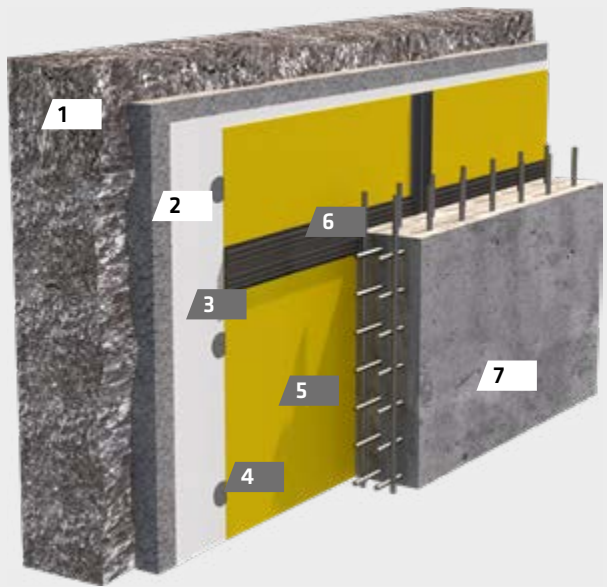


GOING NEW WAYS IN TUNNEL WATERPROOFING

CONVENTIONAL SYSTEMS

BUILD-UP

1. Rock
2. Shotcrete
3. Geotextile
4. Discs
5. Plain water-proofing membrane
6. Waterstops
7. Lining concrete



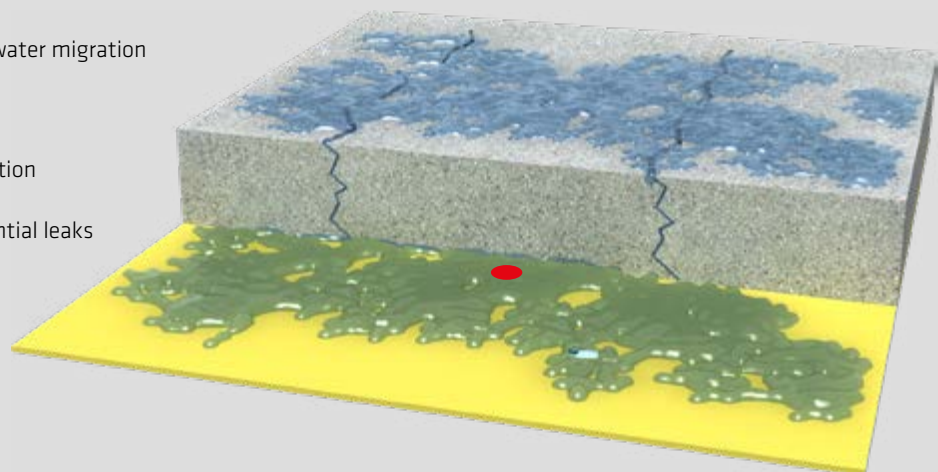
In a traditional tunnel waterproofing system, water ingress can occur at weak points or due to improper installation, infiltrating the system through cracks and joints in the membrane or where the layers meet.

To combat this issue, compartments with additional waterstops are required to create a barrier against water penetration. However, this adds complexity, time, and cost to the project, and even with waterstops in place, the risk of leaks persists due to potential inconsistencies in installation quality. If damage does occur, isolating the source of the leak is difficult.

WATER INGRESS THROUGH CRACKS AND JOINTS IN CASE OF MEMBRANE DAMAGE, CAN ONLY BE AVOIDED WITH ADDITIONAL WATERSTOPS AND INJECTION SYSTEM.

PAIN POINTS

- Not resistant to lateral water migration
- Complex system
- Time consuming application
- Difficult to localize potential leaks



SikaProof® FOR TUNNEL SYSTEM

BUILD-UP

1. Rock
2. Shotcrete
3. **SikaProof® for Tunnels**
(Fully bonded FPO/TPO membrane + PP Geotextile)
4. Lining concrete



The SikaProof® for Tunnel system consists of a fully bonded FPO/TPO membrane and a polypropylene (PP) Geotextile spot welded on the back-side. Membrane and Geotextile can be applied in one application step without fixation discs.

The highly robust and durable mechanical and chemical bond between membrane and concrete structure withstands high water pressure and resists lateral water migration eliminating the need for waterstops and injection flanges.



SikaProof® TECHNOLOGY – FEATURES & BENEFITS

A fully bonded, highly durable and chemical resistant FPO/TPO membrane is the common denominator of all SikaProof® systems. In addition, SikaProof® for tunnel systems are pre- and post-applicable and overlap joints are sealed by thermal jointing.







FULLY BONDED	FPO/TPO MEMBRANE	THERMAL JOINTING	PRE & POST-APPLICABLE
 <ul style="list-style-type: none"> ■ Mechanical & chemical bond ■ No lateral water migration 	 <ul style="list-style-type: none"> ■ High chemical resistance ■ Proven durability 	 <ul style="list-style-type: none"> ■ Durable joint quality ■ Cost effective method 	 <ul style="list-style-type: none"> ■ Flexible application ■ Suitable for various project types

SikaProof® FOR TUNNEL SOLUTIONS CAN BE USED FOR DRAINED AND PRESSURIZED WATERPROOFING OF:

- Mined tunnels and cross-passages
- Cut & cover tunnels
- Station boxes

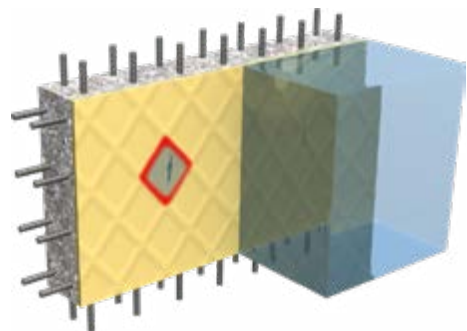
MORE PERFORMANCE, MORE SUSTAINABLE WITH SikaProof® FOR TUNNELS

FASTER APPLICATION

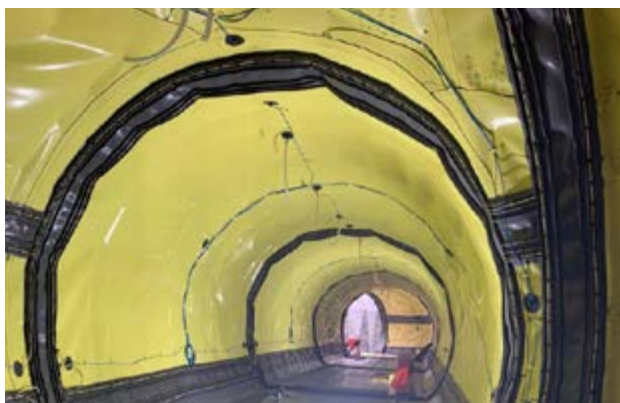
	1 Nail Geotextile	2 Mount discs & membrane	3 Weld Water-proofing membrane	4 Install Waterstops	5 Fix Injection Flanges
Conventional System					
SikaProof® for Tunnels				<div style="border: 1px solid orange; padding: 10px; text-align: center;"> Application is 3 times faster! Save valuable time & cost. </div>	

LESS COMPLEXITY, MORE SAFETY

By preventing lateral water migration the SikaProof® for Tunnel system significantly reduces the risk of leakage and facilitates the localization of a damage and repair works if required. Additionally, eliminating the need for discs, waterstops and injection flanges not only speeds-up the application process but also significantly reduces its complexity - just have a look at both pictures below. The simpler a system is, the lower the risk for human mistakes.



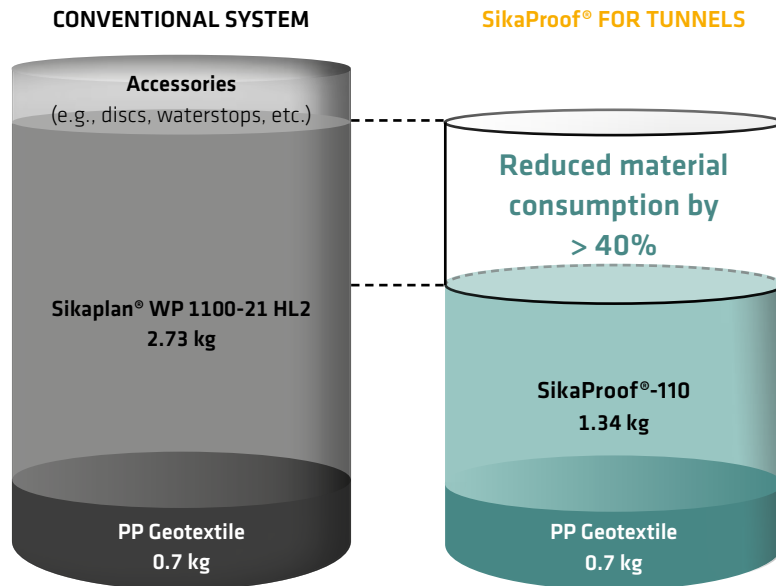
CONVENTIONAL SYSTEM



SikaProof® FOR TUNNEL SYSTEM

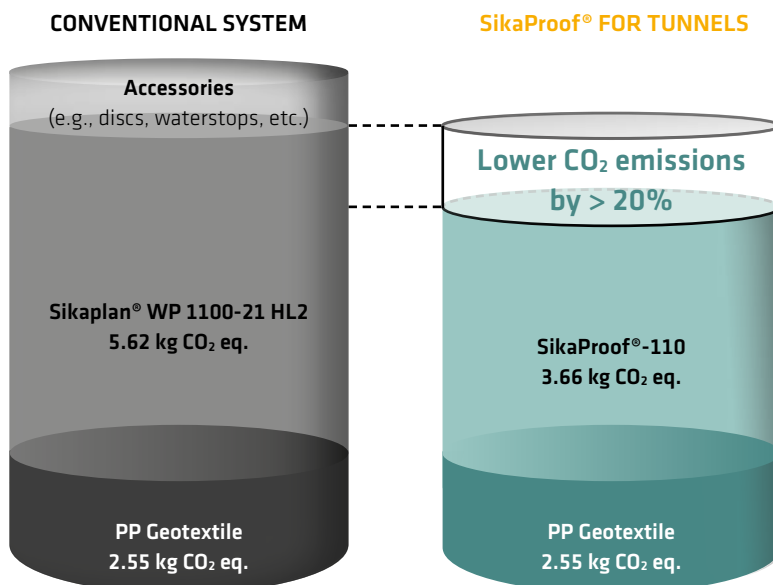


REDUCED MATERIAL CONSUMPTION*



* All values are given per m²

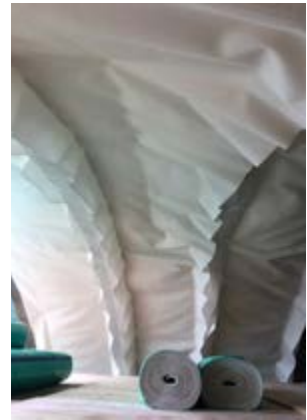
LOWER CO₂ EMISSIONS**



** CO₂ emissions (cradle-to-gate) are based on product specific LCA reports

GLOBAL REFERENCES

MINED TUNNEL AND CROSS-PASSAGE REFERENCES



Mined Tunnels, Korea, SikaProof®-110, 920,000 m²



Mined Tunnel (drained), Saudi Arabia, SikaProof®-110, 1,000,000 m²

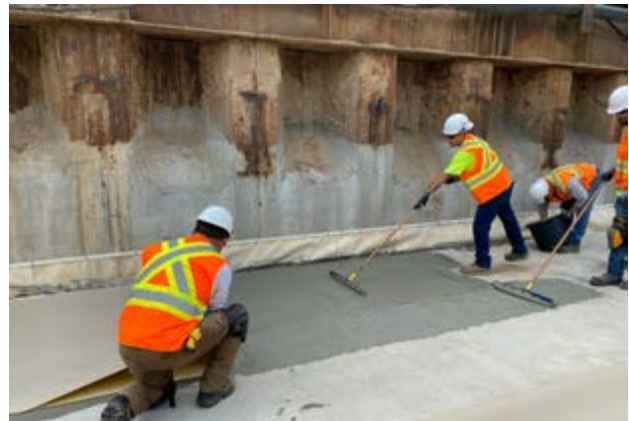


Mined Tunnel (drained) + Cross-passage, Switzerland, SikaProof®-200, 30,000 m²

CUT & COVER TUNNEL REFERENCES



Cut & Cover Tunnel, Airport Tunnel, USA, Pre- & Post-applied SikaProof® A+, 10,000 m²



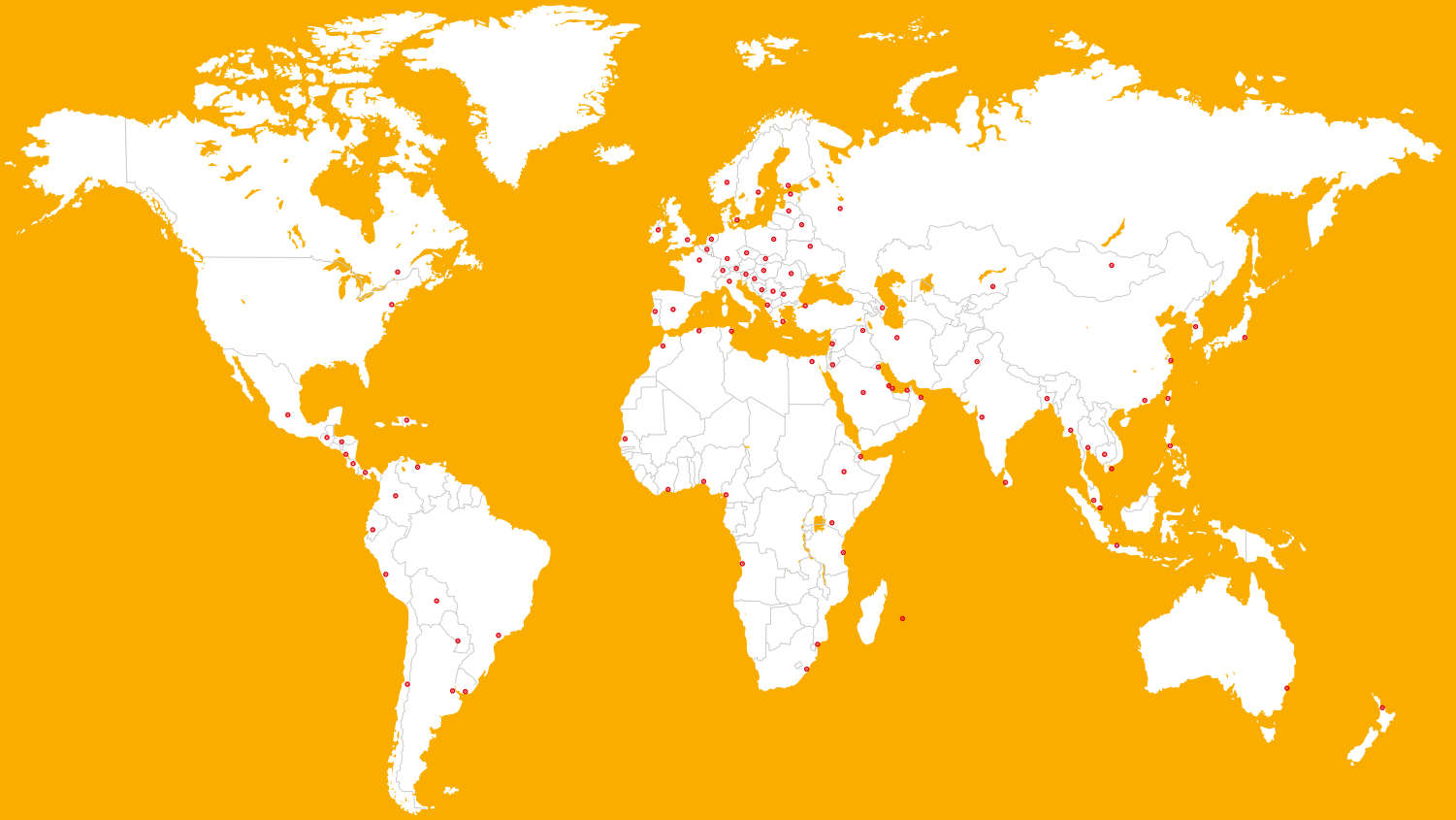
Cut & Cover Tunnel, LRT Tunnel, USA, Pre- & Post-applied SikaProof® A+

STATION BOX REFERENCE



Station Box, Metro Station, Poland, Pre-applied SikaProof® A+, 25,000 m²

GLOBAL BUT LOCAL PARTNERSHIP



WE ARE SIKA

Sika is a specialty chemicals company with a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing and protecting in the building sector and the motor vehicle industry. Sika's product lines feature concrete admixtures, mortars, sealants and adhesives, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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