



MORE **PERFORMANCE**
MORE **SUSTAINABLE**

WATERPROOFING SPEED UP TUNNEL WATERPROOFING WITH SikaProof®-110

THE NEW GENERATION FULLY BONDED TPO COMPOSITE MEMBRANE:
HIGH-PERFORMANCE
COST SAVING

BUILDING TRUST



NEW GENERATION OF WATERPROOFING MEMBRANE

Lower Risk of Water Ingress, Easy to Apply and Sustainable

TIME-CONSUMING APPLICATION WITH HIGH COMPLEXITY is a typical problem in tunnel waterproofing. The traditional system build-up is based on a compartment concept, which is composed of a membrane and accessories. Simplifying the waterproofing system would benefit all project partners, leading to improved productivity and optimized construction time.



TRADITIONAL TUNNEL WATERPROOFING

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.

Summary

- Time consuming installation - several steps
- Waterstops and compartments required
- Multiple products required
- Difficult to address leaks

Water ingress through cracks and joints in case of membrane damage, can only be avoided with additional waterstops and injection system.



SikaProof®-110 is a new generation, fully bonded TPO membrane that addresses the issues present in traditional waterproofing solutions. Its unique composite feature simplifies the tunnel waterproofing system build-up and application process.



SikaProof®-110 NEXT GENERATION WATERPROOFING

In contrast, the SikaProof®-110 membrane is designed to provide a durable barrier against water penetration. The unique, fully bonded design eliminates the possibility of lateral water migration and water ingress through cracks and joints without the need for waterstops or injection systems.

By combining three layers into one lightweight product which includes the membrane and geotextile, the installation process is streamlined, reducing construction time and labor costs. Furthermore, any damage is easy to repair locally.

Summary

- Combined membrane/geotextile -> 1-step application, time saving
- Composite waterproofing -> Material savings
- Fully bonded membrane -> No need for waterstops and injection system
- Low risk of water ingress
- Easy to address leaks and to repair

No lateral water migration, no water ingress through cracks and joints in case of membrane damage.



SIMPLE AND EFFECTIVE TUNNEL WATERPROOFING SOLUTION

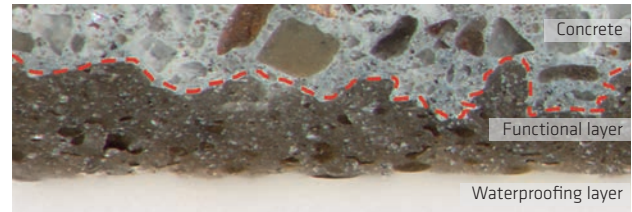
Fast and Simplified Application

SikaProof®-110 - FULLY BONDED TPO COMPOSITE MEMBRANE.

This new-generation membrane is able to form a firm connection with concrete after application:

- Mechanical bond through the coarse surface texture that enables larger contact with the concrete surface
- Chemical bond through the modified surface of the membrane

The result is a chemical and physical bond that is capable of withstanding high water pressure, with no lateral water migration.



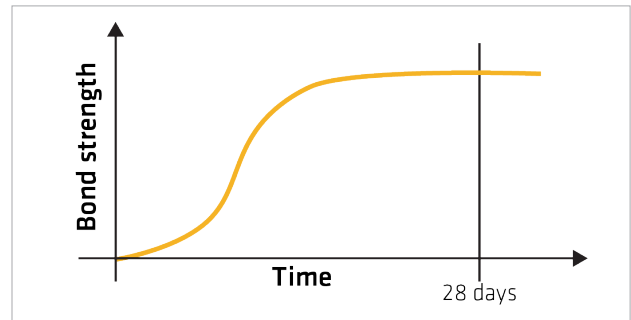
- 1 Rock
- 2 Shotcrete
- 3 Nail fixation
- 4a High-quality synthetic waterproofing membrane including 4b functional layer for full bond
- 4c Geotextile spot-fixed to the waterproofing membrane
- 4d Geotextile strip
- 5 Lining concrete

Note: SikaProof®-110 is composed of 4a - 4d, - four in one.





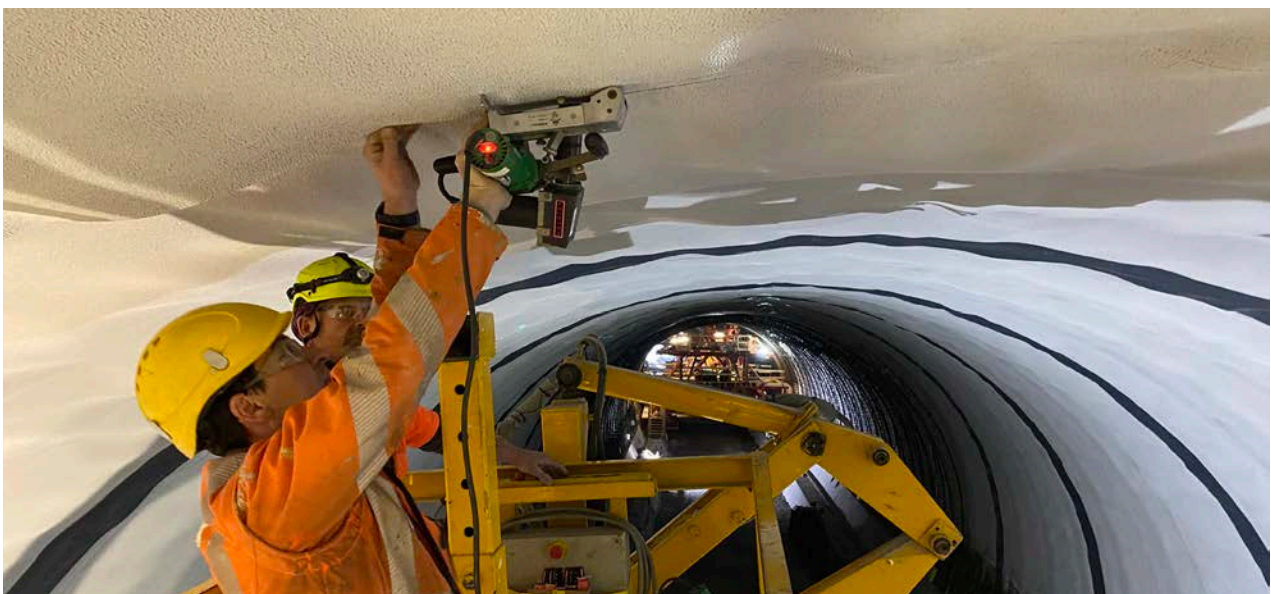
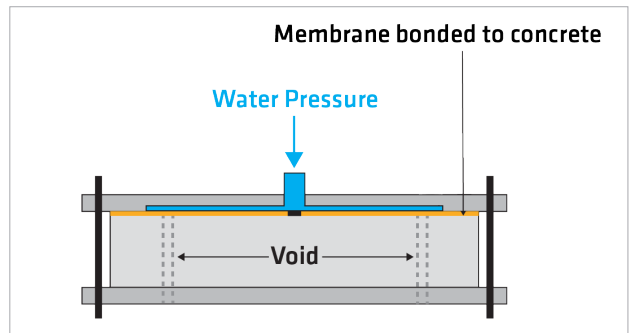
Cement content for hydration with concrete



Membrane side

Concrete side

No lateral water migration tested under water pressure 7 bar (70m)



SikaProof[®]-110

High Performance, More Sustainable
TPO Membrane, Fast Installation



This innovative product was designed with the goal to reduce carbon footprint and improve the product performances.



FAST AND EASY APPLICATION

- Tunnel waterproofing application process reduced from four steps to one step
- Easy to repair
- Easy application due to its lightweight nature



EASY TO APPLY

SIMPLE BUT EFFECTIVE

- Fewer accessories required
- No waterstops needed
- No injection systems required
- No compartments needed
- Combined product of membrane and cushion layer
- Easy to locate damage and leaking areas



LOWER RISK

- Fully bonded to concrete surface
- No lateral water migration
- No water ingress through cracks and joints
- Efficient use of material (less weight per square meter)
- Reduced CO₂ emissions
- High water pressure tolerance
- High durability

MORE PERFORMANCE

REDUCED RISK OF WATER INGRESS

SikaProof®-110 Tunnel System forms a durable barrier against water penetration. The unique, fully bonded design eliminates the possibility of lateral water migration and water ingress through cracks and joints without the need for waterstops or injection systems.

DURABLE SOLUTION

SikaProof®-110 Tunnel System has the ability to withstand extreme conditions and changes in temperature. Highly flexible, it adapts to the movements and vibrations of the tunnel structure. This ensures that the membrane remains intact even under extreme stress, providing long-lasting waterproofing protection.

MORE SUSTAINABLE

CLIMATE

REDUCED CARBON FOOTPRINT

Thanks to the full bond, the thickness of the membrane can be reduced. This directly results in a lower CO₂ footprint compared to conventional loose-laid sheet membranes (a reduction of 30% to 50% possible), and there is no need for accessories such as compartment waterstops.

COST SAVINGS DOWNSTREAM

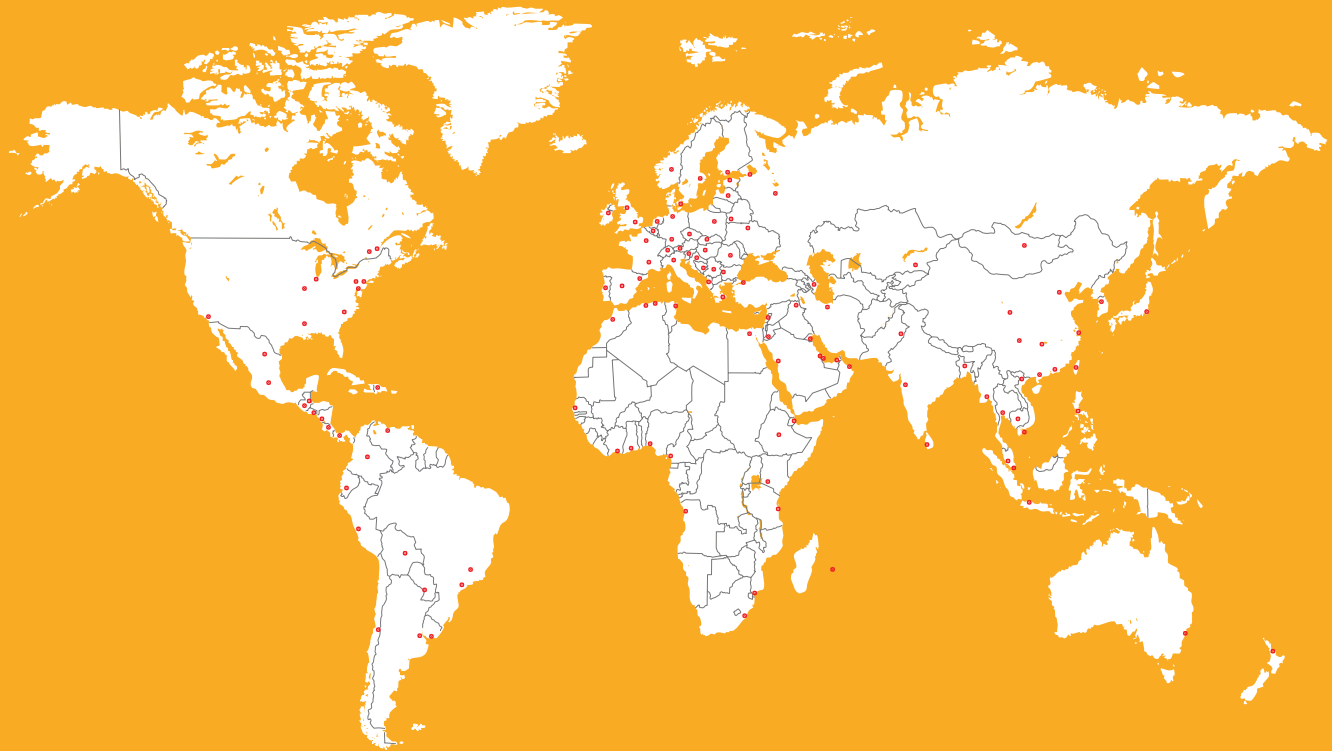
SIMPLIFIED APPLICATION PROCESS

SikaProof®-110 Tunnel System uses a hybrid membrane which combines TPO membrane and geotextile. The waterproofing system buildup is therefore simplified and the application process is reduced from four steps (Geotextile, fixing discs, waterproofing membrane, waterstops) to one. This innovative design makes the entire process quicker, easier, and more efficient than traditional methods.

AT SIKA WE BELIEVE that performance and sustainability need to walk hand in hand. Why compromise? SikaProof®-110 is the result of our unique mindset and development efforts where we can proudly prove that, yes, more performance and more sustainability is possible. To learn more about the product, please visit our webpage and download the Sustainability Factsheet.



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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