BUILDING TRUST

PRODUCT DATA SHEET

Sika Waterbar® WP DF AT

EXTERNAL WATERBARS FOR EXPANSION JOINTS FOR TUNNEL WATERPROOFING

PRODUCT DESCRIPTION

Sika Waterbar® WP DF AT is a flexible, external waterbar for expansion joints made from PVC-P.

USES

Watertight expansion joint sealing in new concrete tunnel structures.
Sika Waterbar® WP DF AT can be combined with Sikaplan® WP membranes for tunnel waterproofing.
- Closed tunnel construction method (GBW)
- Cut-and-cover tunnel construction method (OBW)

CHARACTERISTICS / ADVANTAGES

- Permanent flexibility
- Homogeneous waterbar
- Welding link strap on both sides of the waterbar for machine welding
- Suitable for welding with PVC-P based Sikaplan® WP membranes
- Suitable for thermal welding on site
- Resistant to all natural mediums in soil and groundwater
- Robust products designed for handling and installation on site

PRODUCT INFORMATION

Chemical Base	PVC-P (plasticized)
Packaging	Roll length 15 m
Appearance / Colour	grey / black
Shelf Life	Up to 60 months from date of production.
Storage Conditions	Store in originally sealed, undamaged packaging, in a dry place at temperatures between +5°C and +30°C. **Long-term storage ≥ 6 months:** ▪ The storage area must be covered, cool, dry, free from dust and moderately ventilated. ▪ The waterbars must be protected from heat and UV radiation. **Short-term storage < 6 months** (on construction sites, outdoors < 6 weeks): ▪ In dry conditions, protected from UV radiation, snow and ice, and any kind of contamination or mechanical damage. ▪ Store separately from any potentially harmful or damaging materials, plant or equipment such as structural steel, steel reinforcement, fuel or vehicles, etc ▪ Store away from trafficked areas and roads on site to avoid damage.
Total Width	280 mm

Width of Movement Part	90 mm
Thickness of Movement Part	4.0 mm
Sealing Ribs	4 ribs

TECHNICAL INFORMATION

Shore A Hardness	75 ± 5	(DIN 53505)
Tensile Strength	> 12 MPa	(EN ISO 527-1/-2)
Elongation	> 300 %	(EN ISO 527-1/-2)
Tear Strength	> 12 N/mm	(ISO 34-1)
Chemical Resistance	Permanent resistant at +23°C: water, seawater, alcalic water and wastewater, deicing salt solutions. Temporarily resistant against: diluted anorganic alcalies and mineral acids, mineral oils. PVC-P waterbars are not compatible with bitumen.	
Ambient Maximum Temperature of Liquids	Pressurised water	-20°C min. / +40°C max.
	Non-pressurised water	-20°C min. / +60°C max.

SYSTEM INFORMATION

System Structure	Suitable for welding with: ▪ Sikaplan® WP Membranes ▪ Sikaplan® WP Protection Sheets ▪ All other Sika Waterbar® WP AF types

APPLICATION INFORMATION

Ambient Air Temperature	+5°C min. / +35°C max.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY

In-situ concrete:
Must be clean and dry as well as free from burrs, gravel nests, dust and loose parts.

Shotcrete:
The profile of the shotcrete surface must not exceed a ratio of length to depth of 5:1 and the minimum radius must be 20 cm. The shotcrete surface must not contain broken aggregates. Any leaks must be sealed with Sika® waterproof plugging mortar, or drained with a Sika® FlexoDrain system. Where necessary to achieve the desired profile/surface, apply a fine sprayed concrete layer on the shotcrete surface with a minimum thickness of 3-5 cm and aggregate diameter not exceeding 8 mm. Steel (girders, reinforcement mesh, anchors, etc.) must also be covered with a minimum of 4 cm fine sprayed concrete. The shotcrete surface must be clean (no loose stones, nails, wires, etc.). A polypropylene geotextile (≥ 500 g/m2) or a compatible drainage layer must be installed prior to the waterbar application.

APPLICATION METHOD / TOOLS

Application:
The waterbars are installed flush with the external face of the concrete. It should be carefully fixed in the formwork before concreting.
The external waterbar should be aligned and installed on the waterproofing substrate as centrally as possible to the segment joint.

Welding:
The specific welding parameters must be adjusted and checked on samples prior to the welding work. A minimum ambient temperature of +5 °C and dry weather conditions are required for welding onsite. Sika Waterbar® WP DF AT can be connected by butt welding with suitable welding equipment. The welding edges are melted in the process and fused permanently together whilst in the plastic state. Only longitudinal joints of the profiled waterbars are permitted to be welded at the building site. All other joints are prefabricated under workshop conditions.

Integrated injection channels:
In the case of corners and impacts, the injection channels must be cut back approx. 10 cm on both sides and bridged with flexible injection hoses (8 mm outer diameter).

Protection of exposed waterbars on site:
The waterbars should be protected from damage until they are fully embedded into the concrete. The waterbar and the joint must be cleaned before concreting.

LIMITATIONS

- PVC-P waterbars are not compatible with bitumen.
- The quality of the joint sealing depends on the fully enclosure of the waterbar with concrete. In order to obtain a qualitative embedding, gravel nests have to be avoided.
- For a watertight building, attention must be paid to a closed waterbar-system.

VALUE BASE

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

ECOLOGY, HEALTH AND SAFETY

REGULATION (EC) NO 1907/2006 - REACH

This product is an article as defined in article 3 of regulation (EC) No 1907/2006 (REACH). It contains no substances which are intended to be released from the article under normal or reasonably foreseeable conditions of use. A safety data sheet following article 31 of the same regulation is not needed to bring the product to the market, to transport or to use it. For safe use follow the instructions given in this product data sheet.Based on our current knowledge, this product does not contain SVHC (substances of very high concern) as listed in Annex XIV of the REACH regulation or on the candidate list published by the European Chemicals Agency in concentrations above 0.1 % (w/w)

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

SIKA LIMITED
Watchmead
Welwyn Garden City
Hertfordshire, AL7 1BQ
Tel: 01707 394444
Web: www.sika.co.uk
Twitter: @SikaLimited

SIKA IRELAND LIMITED
Ballymun Industrial Estate
Ballymun
Dublin 11, Ireland
Tel: +353 1 862 0709
Web: www.sika.ie
Twitter: @SikaIreland