alwitra

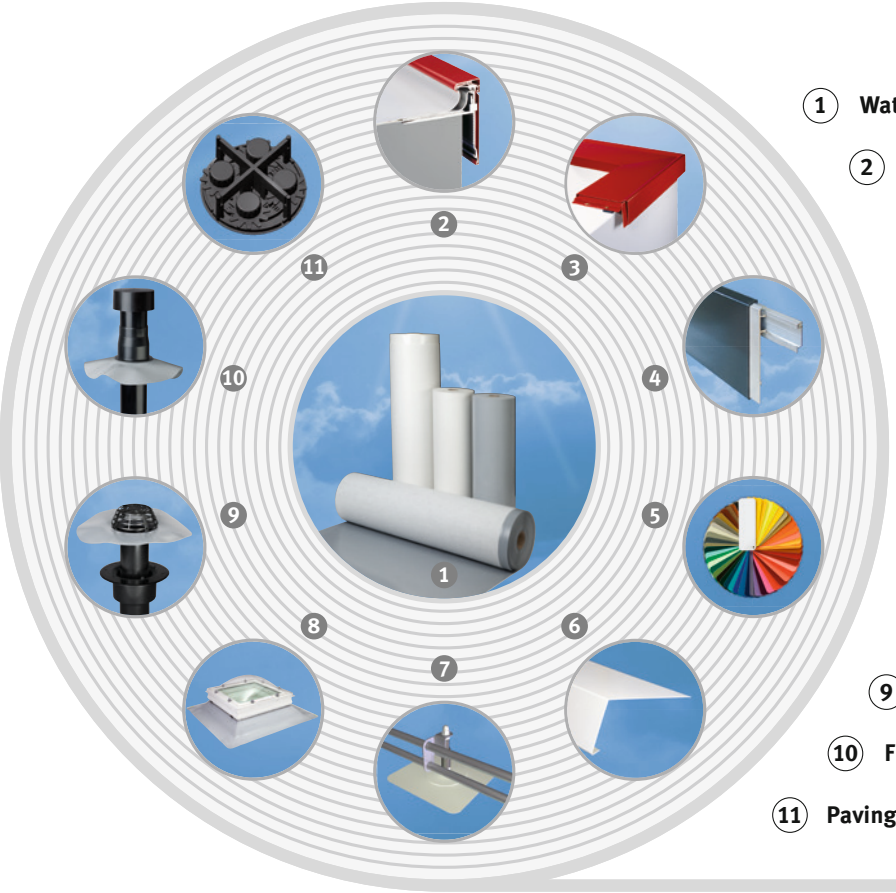
DIE DACHMARKE

EVALON® Waterproofing Membranes

The original by alwitra – worldwide proven!

The alwitra waterproofing system

EVALON® waterproofing membranes are part of the proven alwitra waterproofing system. This system comprises:



1. Waterproofing membranes
2. Roof edge trim profiles incl. colour coating
3. Wall capping profiles incl. colour coating
4. Wall flashing profiles incl. colour coating
5. Colour coating
6. Coated metal sheets
7. Snow guard profiles
8. Daylight systems
9. Rainwater outlets
10. Flat roof vents
11. Paving slab supports

alwitra was the first enterprise of the industry to introduce relevant Environmental Product Declarations of the Institute Construction and Environment (Institut Bauen und Umwelt e. V. - IBU) for the EVALON® and EVALASTIC® waterproofing membranes.

For certifications according to DGNB, LEED or BREEAM alwitra provides appropriate product fact sheets.

Perfect solutions for flat roofs

Content

Perfect solutions for flat roofs 3

In-house and external control 4

EVALON® waterproofing membranes 5

Performance Profile 6

Application Examples 7

Technical Data 8

Product Range 9

EVALON® VSK / VGSK 10

Technical Data 11

EVALON® VSKA 12

Coated metal sheets 13

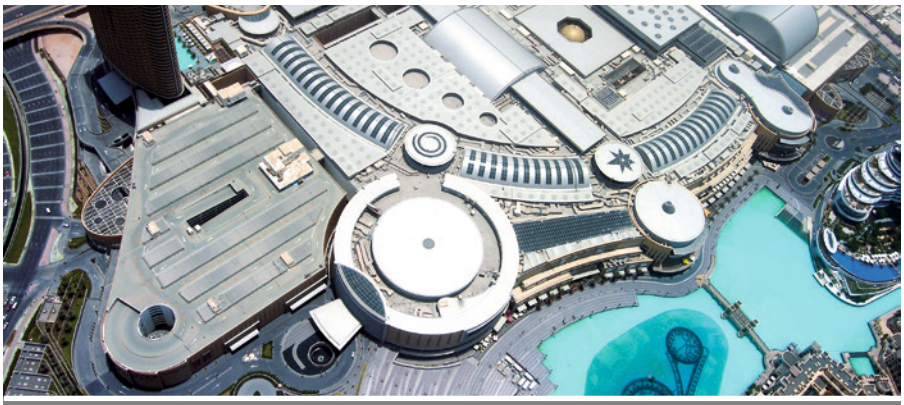
EVALON® standing seam effect profile 14

EVALON® maintenance walkway tiles 15

alwitra is the expert when it comes to waterproofing flat and low sloped roofs. With a system of integrated components and many years of experience and know-how, we are offering perfect solutions for new build and roof refurbishment. Flat roof expertise is also demonstrated in the way in which alwitra cares about its clients. One of the industry's largest teams of expert consultants always keeps in personal touch with clients on site. Working together, individual flat roof solutions are developed to ensure long lasting performance.

Positive proof: alwitra EVALON® waterproofing membranes

For more than four decades, alwitra has been specialising among others on the production of light-coloured and white synthetic waterproofing membranes. Because light-coloured waterproofing membranes have a special advantage: the lighter the colour, the more sunlight / heat it reflects. This will minimise the temperature increase within the building. A superior synthetic waterproofing membrane with optimum properties, combining more than 55 years of competence and flat roof experience. Worldwide, more than 180 million square metres of flat roofs have now been effectively and reliably covered with alwitra waterproofing membranes. This area increases by several million square metres every year.



Dubai Mall, Dubai

Casa Bela Vista, Brazil

Top quality – ensured by national and international testing as well as in-house and external control

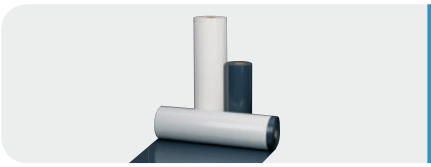
• Staatliche Materialprüfungsanstalt (MPA), Darmstadt, Germany	External quality control Certificate of conformity according to DIN EN 13956 and DIN EN 13967
• DEKRA Certification GmbH, Stuttgart	Comprehensive external quality control of the product system
• Gesellschaft für Materialforschung und Prüfungsanstalt für das Bauwesen Leipzig mbH (MFPA Leipzig GmbH), Germany • Warringtonfire Gent (Belgium) • Exova Warringtonfire (United Kingdom)	Tests with General Building Construction Supervision Test Certificate (AbP) according to DIN 4102-7 (resistance to flying sparks and radiant heat) as well as DIN CEN/TS 1187; Test methods 1, 3 and 4 (external fire load) with classification according to DIN EN 13501-5 resp. AbP Tests according to DIN 4102-1 (building material class B2) and DIN EN ISO 11925-2 with classification according to DIN EN 13501-1 (class E)
• Environmental Product Declaration	EPD's for various application methods and material thicknesses according to ISO 14025 and EN 15804 corresponding to the guidelines of the Institute Construction and Environment (IBU)
• Deutsches Institut für Bautechnik (DIBt), Berlin, Germany	European technical assessment ETA-08/0112 (ETAG 006)
• Landwirtschaftskammer Rheinland, Lehr- und Versuchsanstalt für Garten- und Landschaftsbau, Essen, Germany • Forschungsanstalt, Fachgebiet Landschaftsbau, Geisenheim, Germany	Testing according to FLL 84 (root penetration resistance) Testing according to FLL 99 (root / rhizome penetration resistance)
• British Board of Agrément (BBA), Garsten/Watford, UK	Tests according to Building Standards Regulations (England, Wales and Scotland), Certificate No. 96/3293
• CSTB (Centre Scientifique et Technique du Bâtiment), Marne-la-Vallée, France	Avis Techniques CSTB 5.2/19-2641_V1, CSTB 5.2/19-2640_V1
• Factory Mutual / FM Global, Norwood, USA	FM-Approval, Class 4470

Residential building complex, Meppen, Germany

Fort Regent Leisure Centre, Jersey, Channel Islands

Indoor family playground "Willi, the Whale", Friedrichskoog, Germany

VivoCity, Singapore



EVALON® waterproofing membranes

Certificate-No. 1343 – CPR – K1562/03.14

EVALON® waterproofing membranes are superior quality EVA membranes according to DIN 18531-2 (resp. DIN SPEC 20000-201 / DIN SPEC 20000-202) for single-ply waterproofing of all types of flat roof construction and application methods as well as for waterproofing of foundations. Product and system tests are carried out according to the requirements of the European standards DIN EN 13956 and DIN EN 13967 and provide for the basis and the entitlement to CE marking.

EVALON® membranes consist of a high polymer alloy of ethylene vinyl acetate terpolymer (EVA) and polyvinyl chloride (PVC), a purpose-made thermoplastic material. Both components are high polymer solids and remain over time. Thus, physical properties remain unaltered and optimum life expectancy is assured.

The material is calandered to homogeneous soft and elastic membranes and also provided with various backings, depending on application specifics.

Teahouse Mikado, Timmendorf Beach, Germany

Performance profile
Quick, simple and economical installation

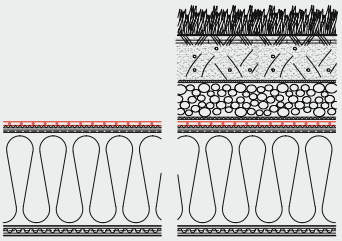
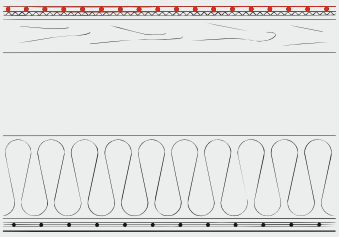
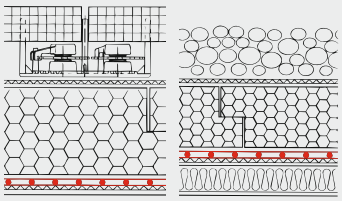
EVALON® waterproofing membranes

- are superior quality synthetic waterproofing membranes for single-ply waterproofing.
- are homogeneous, soft, flexible with an extremely high percentage of high polymer solids.
- have a smooth surface which does not retain dirt.
- are resistant to damaging radiation without protective coating.
- are tested to external fire loads or resistance to sparks and radiant heat (hard roof). The fire load is five times lower than that of built-up felt roof.
- are resistant to general chemical environmental impact.
- are resistant to root / rhizome penetration according to FLL testing and can be applied on green roofs without any additional root protection layer.
- are compatible with bitumen and can be directly applied on all standard bituminous layers and insulation materials including rigid polystyrene foam boards, depending on the approved roof build-up (hard roof).
- have an extremely low vapour diffusion resistance, allowing moisture to escape from the roof build-up all over the whole membrane surface.
- are available in a range of colours, at a width of up to 2.05 m with a standard length of 25 m (special lengths on request), i. e. up to 50 m^2 of seamless waterproofing, providing optimum waterproofing solutions for each roof shape and application method.
- are suitable for all application methods and flat roof configurations (with polyester fleece or glass/polyester fleece backing or with self-adhesive coating on underside).
- are suitable for use under wear layers (walkways, commercial kitchens and green roofs).
- are easy and quick to install by homogeneous hot air or solvent welding in the overlap area.
- can be recycled.

Fire Station, Weymouth, England

International Centre, Harrogate, England

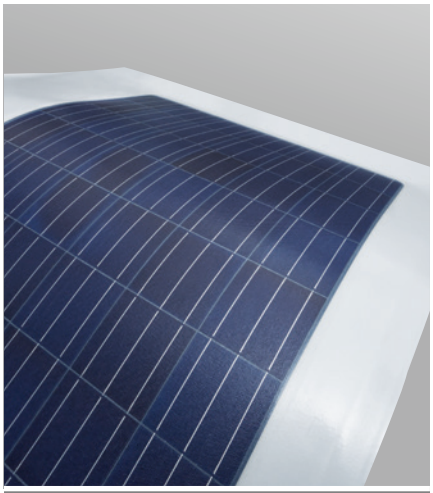
Universal Studios, Singapore

Application Examples	WATERPROOFING MEMBRANES loose laid with ballast	WATERPROOFING MEMBRANES mechanically fastened	WATERPROOFING MEMBRANES bonded
	gravel, roof garden, concrete paving slabs	in the seam overlap or with field fastening	with cold or hot-melt adhesives
non ventilated roofs (warm deck roofs) 	**EVALON® V** **EVALON® VG** depending on the purpose and the condition, especially roughness of the substrate	**EVALON® V** **EVALON® VG** depending on the building material class of the insulation material and on the approved roof build-up	**EVALON® V** **EVALON® VG** **EVALON® VSK** **EVALON® VGSK** on thermal insulation materials with backing or fire protection layer, depending on the approved roof build-up directly on the bituminous waterproofing to be refurbished or self-adhesive EVALON® VGSK, directly bonded on unbacked rigid EPS foam boards
ventilated (two layer) roofs (cold deck roofs) 	**EVALON® V** **EVALON® VG** depending on the condition, especially roughness of the substrate	**EVALON® V** **EVALON® VG** depending on the approved roof build-up	**EVALON® V** **EVALON® VG** **EVALON® VSK** **EVALON® VGSK** on fire protection layer, depending on the approved roof build-up
inverted roofs / DUO roofs 	**EVALON® V** **EVALON® VG** depending on the condition, especially roughness of the substrate		

Already in 1999 alwitra recognized the importance of renewable energies and presents EVALON® Solar, the world's first building-integrated solar installation.

"The power-generating waterproofing membrane" quickly established itself as the economical solution for utilising large unused roof areas only suitable for light loads.

20 years later, alwitra is now presenting its next multifunctional innovation: **EVALON® Solar cSi** – the world's one and only waterproofing membrane with integrated crystalline PV modules without glass – combines state-of-the-art roof waterproofing technology with the opportunities of solar energy generation.



EVALON® Solar cSi – The world's one and only solar waterproofing membrane

Technical Data

alwitra waterproofing membranes with CE marking

Excerpt **Tests according to DIN EN 13956 and DIN EN 13967**			**EVALON® V** with polyester fleece backing	**EVALON® VG** with glass/polyester fleece backing
Properties	**Testing method**	**Unit**	**Result** [a]	
Visible defects	EN 1850-2		passed	
Effective thickness (e_{eff}) of the waterproofing layer	EN 1849-2	mm	1.2 / 1.5	
Water tightness	EN 1928 (B)	kPa	≥ 400	
External fire performance	ENV 1187 CEN/TS 1187		class B_{ROOF} (t1) + (t3) + (t4) Resistant to sparks and radiant heat, confirmed by General Building Construction Supervision Test Certificates [b]	
Reaction to fire	EN 13501-1		class E	
Joint peel resistance	EN 12316-2	N/50 mm	≥ 150 [c]	
Joint shear resistance	EN 12317-2	N/50 mm	≥ 400 [c]	
Max. tensile force	EN 12311-2 (A)	N/50 mm	≥ 500	
Elongation at max. tensile force	EN 12311-2 (A)	%	≥ 60	
Resistance to impact load	EN 12691 (A)	mm	≥ 300	
Resistance to static load	EN 12730 (B)	kg	≥ 20	
Tear resistance	EN 12310-1	N	≥ 300	
	EN 12310-2	N	≥ 150	
Resistance to root penetration	EN 13948		passed [d]	
Dimensional stability	EN 1107-2	%	≤ 1	
Low temperature flexibility	EN 495-5	°C	≤ -30	
Durability (UV exposure, high temperatures and water)	EN 1297	visual control	passed	
Durability of water tightness against artificial ageing	EN 1296 EN 1928	kPa	≥ 60	
Durability of water tightness against chemicals incl. water	EN 1847 EN 1928	kPa	≥ 60	
Hail resistance	EN 13583	m/s	≥ 30	
Water vapour permeability	EN 1931	µ	approx. 20,000	
Bitumen compatibility	EN 1548		passed	

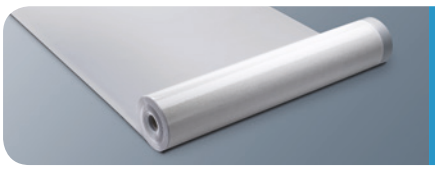
[a] Minimum requirements without specified tolerances
[b] Valid for the respective tested build-up
[c] Hot air welding
[d] The test according to the "FLL method for the examination of the root resistance of membranes and coatings for green roofs" was successfully passed already in 2001.

The results contained in this document are taken from tests and comply with the current standards as of 01/2020.
Normal tolerances apply.

Product Range

	EVALON® V with polyester fleece backing	EVALON® VG with glass/ polyester fleece backing	EVALON® VSK with polyester fleece backing and self-adhesive coating	EVALON® VGSK with glass/ polyester fleece backing and self-adhesive coating
effective thickness of waterproofing layer (mm)	1.2 / 1.5			1.5
Membrane widths (m) - with welding edge on one side - with welding edge on both sides	1.05 / 1.55 / 2.05 1.09 / 1.59	1.05 / 1.55 1.09 / 1.59	1.05	1.05
Tape widths (cm)	54 / 79	54 / 79		
Standard lengths (m)	25	25	20 [1] / 25	25
Specified lenghts	on request			
Standard colours	white / light grey / slate grey			
Special colours	on request			
Accessories:				
EVALON® tape widths (cm), unbacked	16 / 20 / 25 / 33 / 50 / 66 / 75 / 105 / 155 / 200			
EVALON® VSKA tapes with self-adhesive underside coating **Length (m)** **Widths (cm)** - with welding edge on one side - with welding edge on both sides	 25 33 / 43 / 63 66 / 86 / 126			
EVALON® preformed details - internal / external corners - flange [2] / sleeve - lightning conductor and cable penetrations	 • • •			
EVALON® coated metal sheets - sheets 1 m x 2 m - sheets 1 m x 3 m - coils 1 m x 30 m	white / light grey / slate grey			
EVALON® coated stainless steel metal sheets - sheets 1 m x 2 m	white [3]			
Adhesives - alwitra L 40 - alwitra PUR D - alwitra PUR S750	 • • •	 • • •		
alwitra solvent welding agent	•			
EVALON® liquid	•			
alwitra membrane cleaner	•			
alwitra primer SK / SK-L			•	

[1] Only available for EVALON® VSK 1.05 mm, slate grey
[2] For alwitra rainwater outlets and vents
[3] Other colours on request



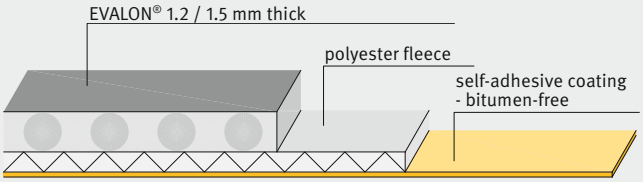
Self-adhesive waterproofing membranes EVALON® VSK / VGSK

The fleece backed synthetic waterproofing membrane with bitumen-free self-adhesive coating

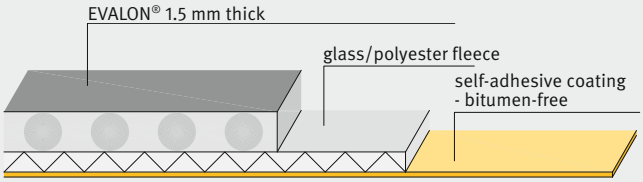
- **with self-adhesive underside coating**
  bitumen-free and solvent-free
- **optimal vapour pressure compensation function of the polyester fleece backing**
- **allows diffusion – even with self-adhesive coating**
- **high adhesive strength**
  the self-adhesive coating adheres to many standard building substrates
- **efficient laying**
  no adhesive to be applied – fast and safe
- **ideal also for steep slope roof areas (e. g. shed or arched roofs)**
  time-saving and clean laying
- **white and light-coloured self-adhesive membranes,** heat reflecting
- **no fire hazard**
  cold bonded application without open flame

EVALON® VSK / VGSK waterproofing membranes are based on our long-term proven EVALON® waterproofing membranes. Additionally, the membranes have a polyester fleece **(EVALON® VSK)** or glass/polyester fleece **(EVALON® VGSK)** backing and a synthetic adhesive compound coating. After laying, the fleece backing also reduces stress and strain on the system (vapour decompression, movement compensation, etc.). The coating is bitumen-free and solvent-free and covered with a protective film when delivered. Product and system audits are carried out according to the requirements of the European standards DIN EN 13956 and DIN EN 13967 and provide the basis for the entitlement to CE marking.

EVALON® VSK

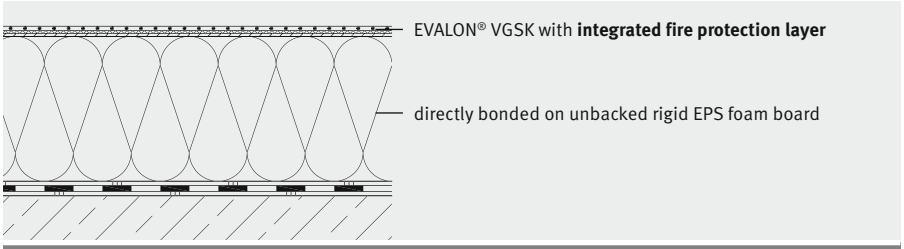


EVALON® VGSK

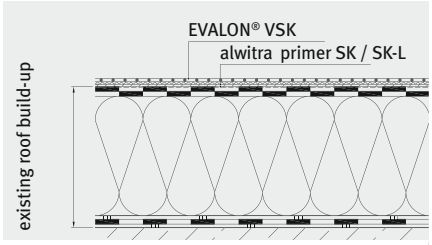


EVALON® VSK and **VGSK** waterproofing membranes are 25 m long, 1.05 m wide and produced with a non-coated welding edge on one side. Thus, a homogenous welding in the seam area is guaranteed.

Application examples



New build



Refurbishment

Technical Data EVALON® VSK and VGSK waterproofing membranes, self-adhesive

Excerpt Tests according to DIN EN 13956 and DIN EN 13967			EVALON® VSK	EVALON® VGSK
Properties	**Testing method**	**Unit**	**Result [a]**	
Visible defects	EN 1850-2		passed	
Effective thickness (e_{eff}) of the waterproofing layer	EN 1849-2	mm	1.2 / 1.5	1.5
Water tightness	EN 1928 (B)	kPa	≥ 400	
External fire performance	ENV 1187 CEN/TS 1187		class B_{ROOF} (t1) + (t3) + (t4) confirmed by General Building Construction Supervision Test Certificates [b]	
Reaction to fire	EN 13501-1		class E	
Joint peel resistance	EN 12316-2	N/50 mm	≥ 150 [c]	
Joint shear resistance	EN 12317-2	N/50 mm	≥ 400 [c]	
Max. tensile force	EN 12311-2 (A)	N/50 mm	≥ 500	
Elongation at max. tensile force	EN 12311-2 (A)	%	≥ 60	
Resistance to impact load	EN 12691 (A)	mm	≥ 300	
Resistance to static load	EN 12730 (B)	kg	≥ 20	
Tear resistance	EN 12310-1	N	≥ 300	
	EN 12310-2	N	≥ 150	
Resistance to root penetration	EN 13948		passed [d]	
Dimensional stability	EN 1107-2	%	≤ 1	
Low temperature flexibility	EN 495-5	°C	≤ - 30	
Durability (UV exposure, high temperatures and water)	EN 1297	visual control	passed	
Durability of water tightness against artificial ageing	EN 1296 EN 1928	kPa	≥ 60	
Durability of water tightness against chemicals incl. water	EN 1847 EN 1928	kPa	≥ 60	
Hail resistance	EN 13583	m/s	≥ 30	
Water vapour permeability	EN 1931	µ	approx. 20,000	
Bitumen compatibility	EN 1548		passed	

[a] Minimum requirements without specified tolerances
[b] Valid for the respective tested build-up
[c] Hot air welding
[d] Waterproofing layer and seam welding identical with EVALON® unbacked

The results contained in this document are taken from tests and comply with the current standards as of 01/2018.
Normal tolerances apply.

Supply specifications EVALON® VSK / VGSK

Thickness (mm) (without backing and self-adhesive coating)	**EVALON® VSK:** 1.2 / 1.5 **EVALON® VGSK:** 1.5
Width (m)	1.05
Lengths (m)	20 [1] / 25
Standard colours	white, light grey, slate grey
Special colours	on request

[1] Only available for EVALON® VSK 1.05 slate grey

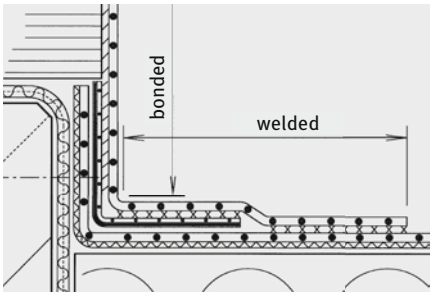
Specifications alwitra primer for EVALON® VSK / VSKA

	alwitra primer	
	SK	SK-L
Base	dispersion, solvent-free	SBS rubber, solvent-containing
Consistency	liquid, rollable and brushable	liquid, rollable and brushable
Colour	blue	red
Containers	10 L / 25 L	10 L / 25 L

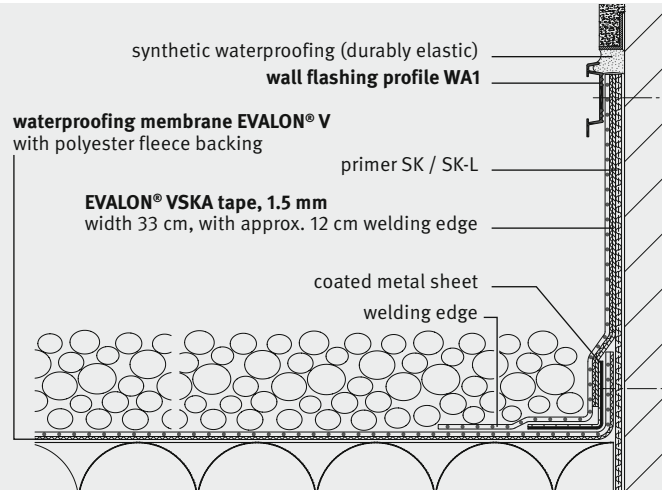
EVALON® VSKA
The self-adhesive tape

Application

Adhesive-free and windproof flashing and waterproofing with EVALON® waterproofing membranes. The underside coating of the **EVALON® VSKA** tapes will adhere to various substrates at the roof perimeter and wall flashing area, e. g. timber, concrete, bituminous felt, brick work, zinc and steel sheets, aluminium, but also to various synthetic materials, e. g. rooflight upstands made of polyester and other synthetic materials or built-in details made of polyvinyl chloride (PVC), polypropylene (PP), etc.



Widths	Length	Characteristics
66 / 86 / 126 cm	25 m	central underside coating with uncoated welding edge (approx. 12 cm) **on both sides**
33 / 43 / 63 cm	25 m	underside coating with uncoated welding edge (approx. 12 cm) **on one side**
Installation temperature		from +5 °C to +40 °C
Storage		in a dry and cool place



EVALON® VSK

Synthetic waterproofing membrane with polyester fleece backing (PV) and bitumen-free and solvent-free self-adhesive coating, for bonding on various substrates at the roof perimeter.

EVALON® VGSK

Synthetic waterproofing membrane with glass/polyester fleece backing (GV/PV) and bitumen-free and solvent-free self-adhesive coating. With integrated fire protection layer, for direct bonding on unbacked rigid EPS foam boards.

EVALON® VSK und VGSK

The waterproofing with reliable and efficient self-adhesive technique

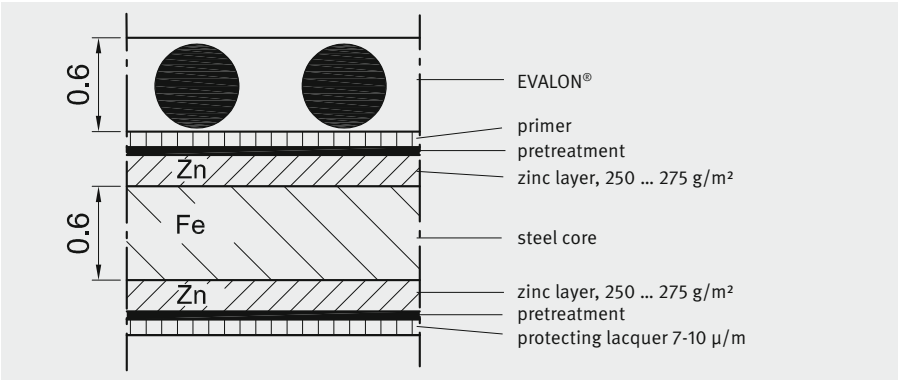
- optimal vapour pressure compensation function of the polyester fleece or glass/polyester fleece backing
- ideal also for steep slope roof areas
- no fire hazard – bonded without open flame

Coated metal sheets

alwitra coated metal sheets are galvanized, coil-coated thin sheets. The duplex coating on both sides, i. e.

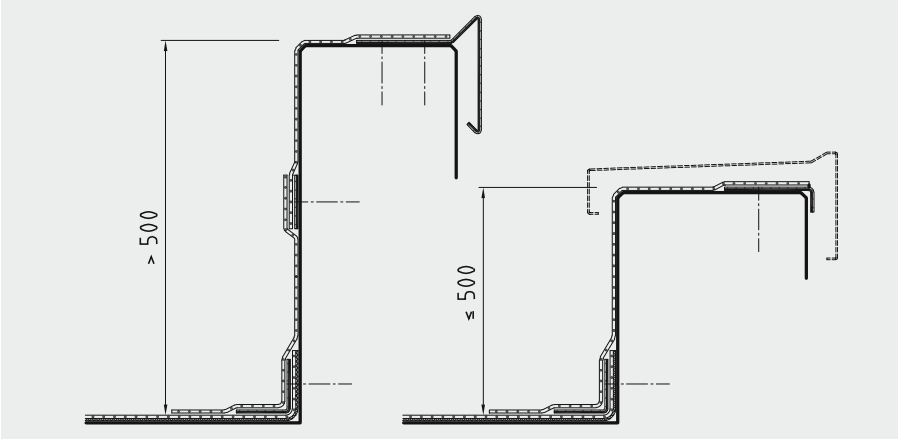
- EVALON® (white, light grey or slate grey) on the upper side
- zinc layer and organic protecting lacquer on the lower side

provides for optimal corrosion protection. The zinc layer prevents corrosion below the coating, the coating prevents abrasion of the zinc layer. Practice has shown that corrosion resistance of a duplex coating is 1.2 ... 2.5 times higher than the total of the individual protection of the zinc layer and the coating (synergetic effect).



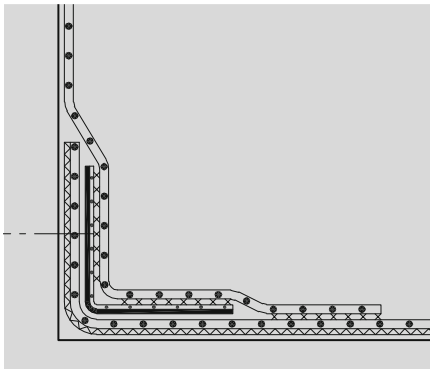
The sheared edges of EVALON® coated metal sheets are also corrosion-protected because of the cathodic protection effect. When the zinc layer and the steel core get into electroconductive contact via electrolyte (humidity, precipitation), a galvanic element is formed. The baser metal zinc “dissolves“, migration of ions from the zinc to the steel occurs. The bare sheared edges are protected against corrosion. Temporarily, i. e. until the formation of the protection layer, the surfaces may change colour.

For special purposes, stainless EVALON® coated metal sheets are available on request.

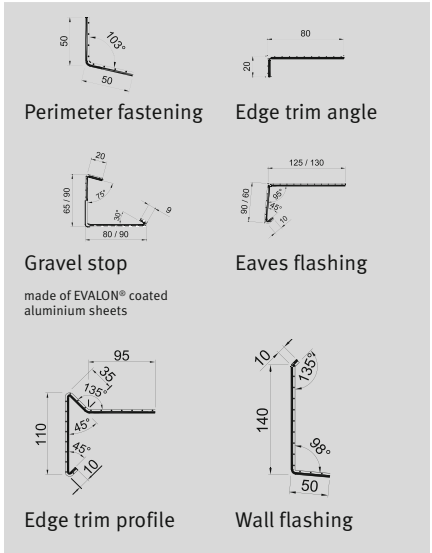


Parapets can be waterproofed with loose laid membranes that are welded to mechanically fastened coated metal sheets. Intermediate fixing of the membrane will be necessary for parapet heights over 50 cm. The waterproofing can be formed with coated metal angles (blank approx. 20 cm, triple bend).

EVALON® coated metal sheets are delivered on pallets in sheets of 1 m x 2 m, 1 m x 3 m or as coils of 1 m x 30 m ex works. They must be stored horizontally on a dry and plain area. They are to be processed (cutting, bending) at room temperature (approx. 18 °C). The coated metal sheets should be cut with sharp tools with the protecting lacquer coating up. The cutting clearance should be 0.03 to 0.04 mm.



EVALON® coated metal sheets can be bent on any standard sheet metal bending machine. The bending radius should be min. 1.2 - 1.8 mm. Coated metal angles are to be bent with an angle which is approx. 10° - 15° wider than the required angle, so the angle legs will fit closely to the substrate when fastened.



Coated metals sheets are to be fastened with non-corrosive screws or other suitable fastening elements.

EVALON® standing seam effect profile Structure on your roof – as easy as this

The application of EVALON® standing seam effect profiles is as easy and safe as for all alwitra waterproofing membranes. Both waterproofing membrane and profile perfectly adjust to the given roof structure.

Installation is also possible on low-sloped roof areas. This is, where other waterproofing types meet their limits. Upon request, the EVALON® standing seam effect profile may also be retro-fitted.

Product description: The EVALON® standing seam effect profile is an extruded hollow profile.

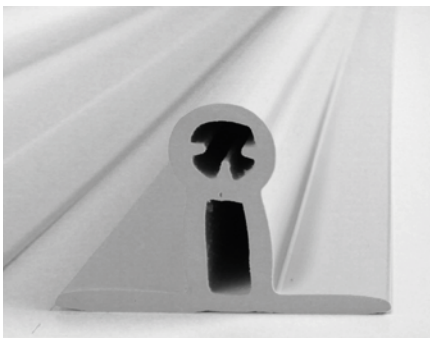
Length: 2 m

Colour: light grey, slate grey, green, other colours on request

Packing unit: 90 m/cardboard box (dowel pins for profile connection enclosed)

Installation: with EVALON® liquid

Application instructions: Installation preferably from the ridge to the eaves. Profiles are normally placed on the seam, or for a narrower spacing e.g. in the membrane centre.

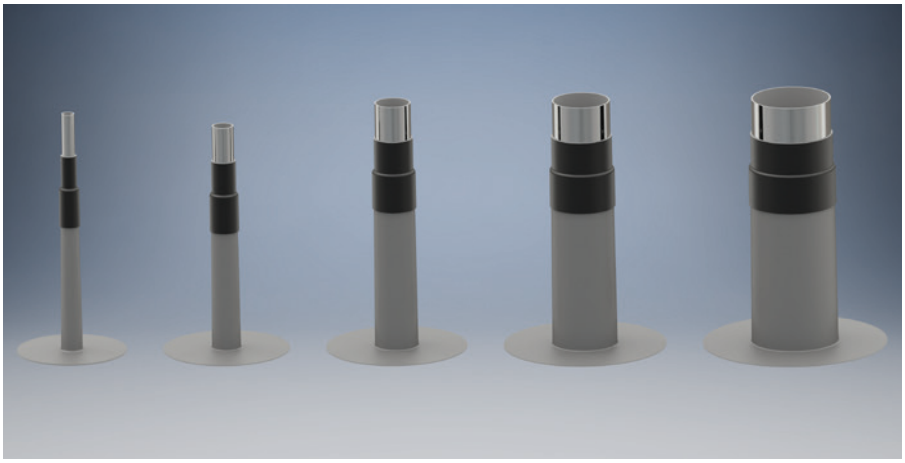


EVALON® sleeve for roof penetrations and safety barriers

Flashing of roof penetrations with EVALON® sleeves

Flashing of roof penetrations to the roof waterproofing (e. g. cable or lightning conductor inlets, safety barriers and other round penetrations) is carried out with preformed EVALON® sleeves. The EVALON® sleeve consists of a tube with connection collar (approx. 230 mm) and a heat shrink tube (approx. 100 mm) with hot melt adhesive.

Sleeve	Penetration outer diameter min. / max. in mm
18	8 / 18
26	19 / 26
50	27 / 50
80	51 / 80
110	81 / 110



EVALON® maintenance walkway tiles

High-quality maintenance walkway tiles for safe maintenance walkways on the roof.

In the course of an efficient use of available spatial resources, technical systems are increasingly being installed on flat roof areas. This means that production lines and other operational facilities can be optimally designed. The installation of technical systems on flat roofs also means that the areas for maintenance work and the routes to them are subject to greater stress. Therefore it is of advantage to carry out these areas as inspection and maintenance walkways. EVALON® maintenance walkway tiles are used to protect the waterproofing and for the optical marking of maintenance walkways on flat roofs.

Anti-slip surfaces and higher perforation protection for the waterproofing are the requirements for materials used in these areas. The textured surface of EVALON® maintenance walkway tiles provides a strong grip, even on sloped and wet areas. Moreover, the maintenance walkway tiles also provide for load distribution. The system-compatible bonding of the protection plates to the EVALON® waterproofing membranes (with alwitra EVATACK) prevents any movement of the maintenance walkway tiles even at increased wind loads. The visible delineation between waterproofing membrane and maintenance walkway tiles has a further advantage: It clearly marks the roof areas people can safely walk on.

Intended use:

EVALON® maintenance walkway tiles are used to provide protection for the waterproofing and to mark the inspection and maintenance walkways on flat roofs covered with EVALON®. The textured surface provides a strong grip, even on sloped and wet areas. Moreover, the maintenance walkway tiles also provide for load distribution.

Material:

Analogous to EVALON® waterproofing membranes, UV stable and weatherproof.

Product design:

Colour: dark grey; Surface: structured;

Texture height: 4 mm; Lower side: even

Dimensions:

Length x Width: approx. 800 x 600 mm

Thickness: approx. 8.5 mm

Weight: approx. 7.3 kg/m² or approx. 3.5 kg/tile

Application:

with alwitra EVATACK

alwitra

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06/2020

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