alwitra
DIE DACHMARKE

EVALON®
Waterproofing Membranes
Installation Manual

Installation manual for
indoor waterproofing
according to DIN 18534
– commercial kitchens –

Installation manual for EVALON® waterproofing membranes for indoor waterproofing according to DIN 18534

General information:

This additional installation manual, together with the current **EVALON® waterproofing membrane installation manual,** represents the technical basis with regard to indoor waterproofing or waterproofing of commercial kitchens.

Principally, for design and execution, consideration is to be given to the following parts of standards.

DIN 18534 Waterproofing for indoor applications –
Part 1: Requirements and principles for design and execution

DIN 18534 Waterproofing for indoor applications –
Part 2: Waterproofing with waterproofing materials in sheet form

For the waterproofing of commercial kitchens, EVA membranes should be used according to the requirements of the European product standard DIN SPEC 20000-202 (application type “BA” - waterproofing of buildings). EVALON® waterproofing membranes meet these requirements.

This installation manual contains basic rules and serves as a guideline for the waterproofing of buildings with EVALON® waterproofing membranes for new build and refurbishment. It represents the manufacturer’s instructions and guidelines for installers and construction site managers. Other local conditions as well as different material combinations not indicated or described in this installation manual may affect functionality. Consequently, an adequate range of tests needs to be carried out.

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Adherence to the relevant national technical rules, as published in standards and regulations, as well as to the workers protection and safety regulations is obligatory. Depending on the country / continent, material combinations / material thicknesses other than described in this installation manual can be applied according to the relevant national approval.

Written consent by alwitra is required for installations or material combinations deviating from this installation manual or national approvals due to local conditions, otherwise we shall not be liable for the suitability / appropriateness of our waterproofing membranes including accessories for the applications described. The handling instructions and notes on container labels and safety data sheets for alwitra adhesives and auxiliary materials are to be observed.

Drawings included in this manual are not true to scale and are schematic.

As of March 2018.
Technical changes reserved

Installation manual for EVALON® waterproofing membranes for indoor waterproofing according to DIN 18534

1. Area of application

The following installation manual details the waterproofing of various areas with EVALON® waterproofing membranes. Special conditions or situations not indicated hereunder need to be agreed with the alwitra Technical Department or the alwitra Product Management Department.

This installation manual applies to waterproofing of commercial kitchens.

2. Waterproofing of commercial kitchens

Design and execution of the waterproofing is carried out according to DIN 18534.

2.1 Water action classes

Nr.	1	2		3
	Water action class	**Water action**		**Application examples** [a,b]
1	WO-I	low	Areas exposed to infrequent splashing	• Wall areas in bathrooms over washbasins or in home kitchens over sinks • Floor areas in domestic spaces without floor drain, e.g. in kitchens, utility rooms, guest toilets
2	W1-I	**moderate**	Areas exposed to frequent splashing or infrequent action of domestic water, without higher loads caused by water accumulation	• Bathroom wall areas above bathtubs and in showers • Floor areas in domestic spaces with drain • Bathroom floor areas with / without drain, without intense water action from shower area
3	W2-I	**high**	Areas exposed to frequent action of splash and/or domestic water, with temporarily higher loads due to water accumulation, especially on floor	• Wall areas of showers in sports / commercial facilities [c] • Floor areas with drains and / or gutters • Floor areas in spaces with flush floor showers • Wall and floor areas in sports / commercial facilities [c]
4	**W3-I**	**very high**	Areas exposed to very frequent or long-lasting action of splash and/or domestic water and/or water from intensive cleaning operations, with high loads due to water accumulation	• Areas of pool surrounds • Showers and shower facilities in sports / commercial facilities [c] • Areas in commercial facilities [c] (**commercial kitchens**, laundries, breweries etc.)

[a] A respectively higher water action class should be assigned to adjacent areas not protected due to lacking distance or constructional measures (e.g. shower enclosure).
[b] Depending on the expected water action, applications may be assigned different water action classes.
[c] Waterproofing areas with possible additional chemical loads

For the waterproofing of commercial kitchens water action class **W3-I** applies.

2.2 Crack classes

For selecting the type of waterproofing, depending on the constructional element the following crack classes must be considered. If in individual cases larger cracks are to be expected, the corresponding constructional element should be assigned a higher crack class. Depending on the crack class, measures to prevent damage to the waterproofing are required. Crack changes or new cracks are normally caused by single (diminishing), load-dependent (creeping, setting) and/or load-independent (shrinkage, thermal linear expansions) changes in form / volume. The waterproofing layer must be suitable for bridging expected changes in crack width or new cracks in the substrate.

The following requirements need to be considered:

- **R1-I** up to approximately 0.2 mm
  (max. change in crack width / new crack after applying the waterproofing)
- **R2-I** up to approximately 0.5 mm
  (max. change in crack width / new crack after applying the waterproofing)
- **R3-I** up to approximately 1.2 mm, additional crack offset up to approximately 0.5 mm
  (max. change in crack width / new crack after applying the waterproofing)

2.3 Substrate requirements

The substrate must be stable, plain, dry, clean, free from debris and cavities / voids with a diameter ≥ 5 mm as well as cured and surface-dry. The surface must be even, closed and free from gravel clusters and burrs. The described requirements by analogy also apply to pressure-resistant thermal insulation boards. If the requirements are not fulfilled, improvement of substrate surface conditions is to be considered.

3. Materials

3.1 General information

Impacts that may affect the functionality and integrity of the individual layers (wear layer / protection layer / waterproofing) need to be considered already when designing and selecting materials including interaction between them.

In particular, when designing the wear layer, the following impacts must be taken into account:

- thermal impact (e.g. discharging hot grease)
- mechanical impact (e.g. moving kitchen appliances, cleaning supply carts etc.)
- chemical impact (e.g. process water, cleaning water)
- biochemical impact (e.g. grease, lactic acid)

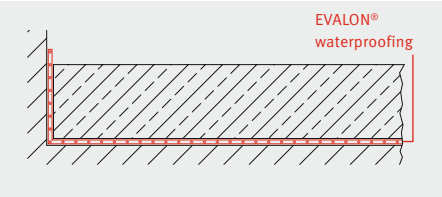
Due to the position of the waterproofing (see waterproofing structure), the load from the described impacts is very low to inexistent.

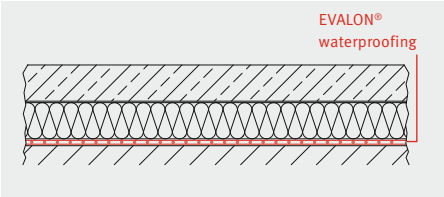
Durability testing of EVALON® waterproofing membranes follows the existing standards. According to these testing requirements EVALON® waterproofing membranes are resistant to e.g. vegetable oils, fatty acids, lactic acid, butyric acid etc.

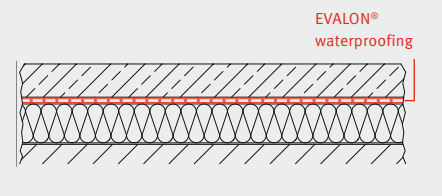
3.1.1 Waterproofing structure

In the case of waterproofing of commercial kitchens the waterproofing layer is always installed under a wear / protection layer.

Examples for the position of the waterproofing







When using thermal insulation on top of the waterproofing (DEO / DES), a low compressive strength (dg) according to DIN 4108-10 may be selected. If the thermal insulation (DEO / DES) is placed under the waterproofing, a high compressive strength (dh) must be selected. For the waterproofing of commercial kitchens **1.5 mm** thick EVALON® waterproofing membranes (EVALON® V / VSK) should be selected.

3.2 Application methods

3.2.1 Loose laying

Waterproofing membranes **EVALON® V** are loose laid on a protection layer.

Protection layer consisting of:

- synthetic fibre fleece or artificial fibre geotexiles ≥ 300 g/m²

  or

- pressure-resistant thermal insulation (DEO / DES dh).

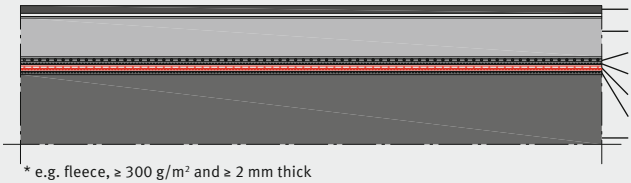
Application / sealing of seams is carried out according to the installation manual for EVALON® waterproofing membranes.

3.2.2 Bonded application

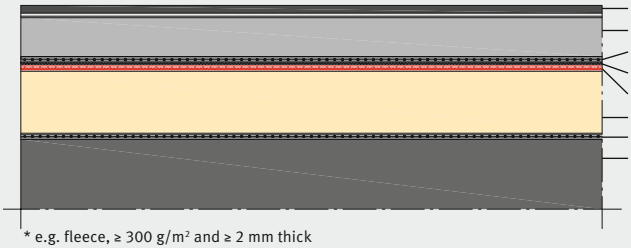
EVALON® VSK waterproofing membranes, self-adhesive, in connection with alwitra primer SK or SK-L on suitable substrate or bituminous or polymer bituminous sheets according to DIN 18534-2. Application / sealing of seams is carried out according to the installation manual for EVALON® waterproofing membranes.

Example of a kitchen waterproofing structure:

Layer sequence



* e.g. fleece, ≥ 300 g/m² and ≥ 2 mm thick



* e.g. fleece, ≥ 300 g/m² and ≥ 2 mm thick

3.3 Seam testing method

According to DIN 18534-2 seams and butt joints carried out on site must be tested for integrity. A combination of at least 2 testing methods is to be used.

Therefore, mechanical testing (using the alwitra seam checker) should be combined with visual testing (visual seam check).[1]

[1] Tip: Set up a test report for the seam and butt joint check.

4. Flashings

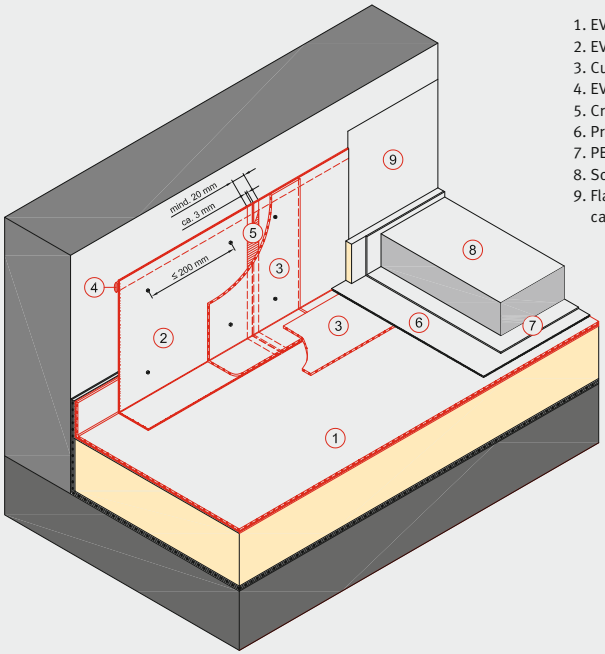
4.1 Wall flashing

Flashings are carried out with cut-to-size EVALON® tapes, EVALON® VSKA or with EVALON® **coated stainless steel sheets**.

Before carrying out flashings/forming of details in combination with a suitable liquid plastic it is necessary to check possible material combinations (material compatibility).

In case of non-covered flashings, the waterproofing must be raised at least 15 cm over the top water-bearing level and secured to not allow any water ingress.

Wall flashing, covered, e. g. behind tiled backsplash

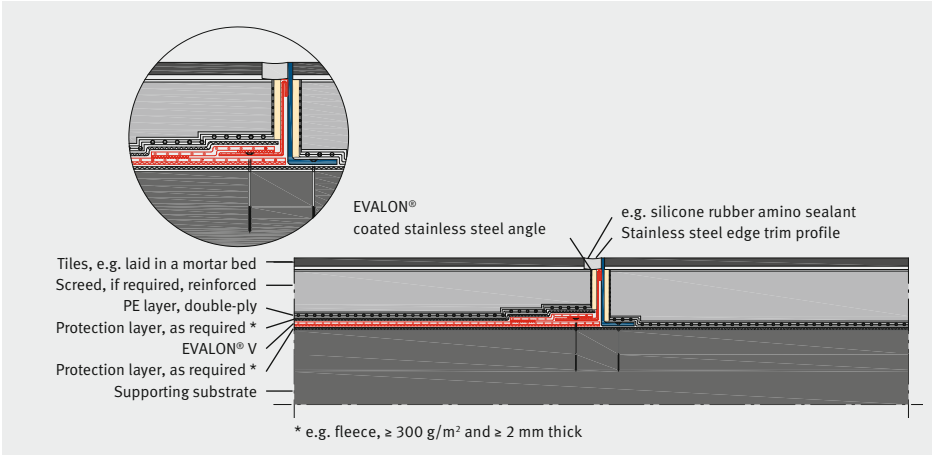


1. EVALON® V/VSK
2. EVALON® coated stainless steel angle
3. Cut-to-size EVALON® tape
4. EVATACK adhesive and sealant
5. Crêpe tape
6. Protection layer, as required
7. PE layer, double-ply
8. Screed
9. Flashing tape, self-adhesive, with top carrier fleece

In case of wall flashings, e.g. behind a tiled backsplash, waterproofing should preferably be carried out with EVALON® **coated stainless steel sheets**. The EVALON® **coated stainless steel angles** are fixed with non-corrosive fasteners matching the substrate (screw spacing ≤ 200 mm) welded over with a membrane strip (vertical part) on the coated sheet. The butt joints of the coated metal sheets are to be welded over with a min. 16 cm wide cut-to-size tape (incl. prior direct covering of the butt joint with 2 cm wide crêpe tape). The horizontal part of the coated metal angle (floor) is to be welded to the waterproofing using a cut-to-size EVALON® tape. In order to prevent water ingress, the upper edge of the coated metal sheet is to be sealed with single-component alwitra EVATACK adhesive and sealant.

A special self-adhesive flashing tape with topside fleece[2] is applied to the vertical coated metal angle or the EVALON® flashing to serve as an adhesive base for the tiled backsplash to be installed.

4.2 Transition from kitchen waterproofing to standard-use spaces



[2] e.g. “Gerband 612” by Gerlinger, Nördlingen or “Tescon” product range by Harrer, Frohnleiten, AT.

5. Flashing against integrated details and penetrations

Integrated details must be resistant to standard-use active media and be compatible with the flashing material. Reliable flashing against the waterproofing layer must be ensured. In general, when selecting material for integrated details, corrosion issues must be considered. Preferably, use non-corrosive materials or apply appropriate corrosion protection measures. There must be no water ingress behind the waterproofing layer through integrated details. The flashing must be raised at least 15 cm over the top water-bearing level or the flashing must be waterproof.

Flashings against integrated details and penetrations are to be carried out with a corresponding welding flange (integrated PVC detail) and cut-to-size EVALON® tapes or EVALON® sleeves or with a loose / fixed flange construction (EVALON® unbacked).

In case of non-covered flashings or penetrations, the waterproofing must be secured to not allow any water ingress. At round penetrations, clamps are used to prevent sliding off and water ingress. Clamps must be made of corrosion-resistant metal and be retightenable. If required for installation, they may consist of several parts. The contact surfaces must be at least 25 mm wide. The contact pressure must not lead to compression of the EVALON® waterproofing.

6. Outlets

Outlets as integrated details have to conform with the DIN 1253 series of standards.

Special outlets or gutter systems[3] with welding flange or loose / fixed flange are to be used.

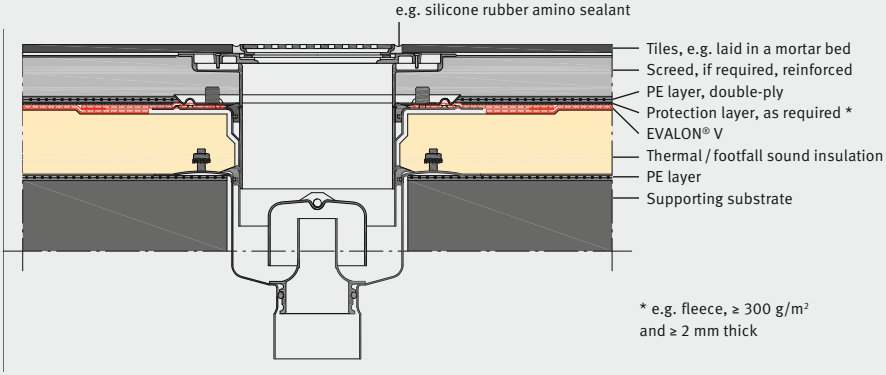


Photo credits: ACO Haustechnik

[3] Commercial kitchen drainage system ACO Hygiene First, ACO Passavant GmbH, 36269 Philippsthal, Germany.

Notes

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