



System **SOLITEX[®] PLUS**

Optimum protection for roofs and walls



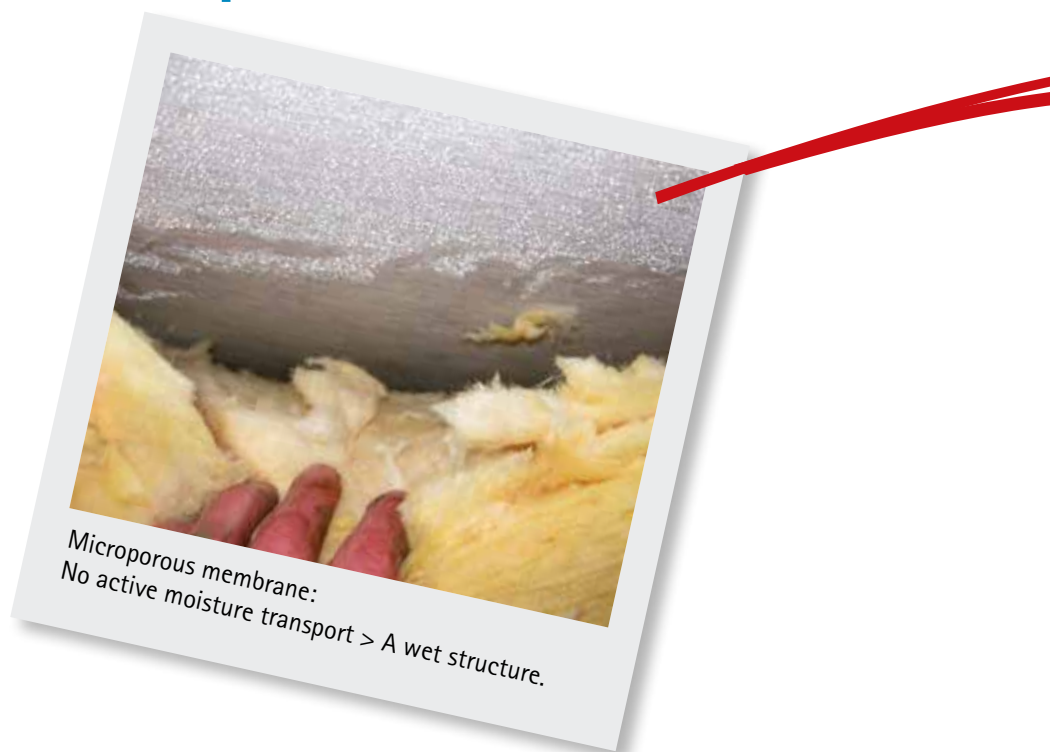
Vapour permeable, diffusion open, roof lining system: pro clima SOLITEX PLUS



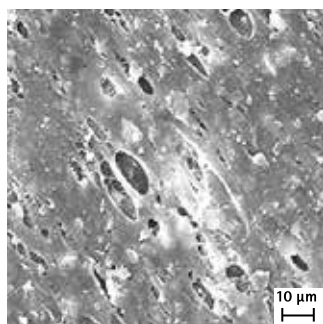
SOLITEX[®] PLUS



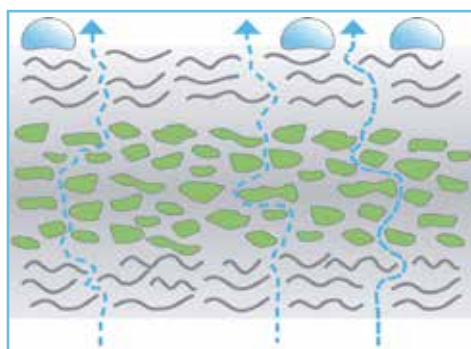
Conventional technology: Underlay with micropores



Conventional approach: Microporous membrane



Microscopic image of a conventional underlay membrane. The PP sheeting is stretched during production and calcium carbonate is added. In this way, micropores are created that are just small enough to prevent a water drop passing through due to its surface tension, but which allow water vapour to pass out into the open.



Porous membranes allow moisture to escape by means of an air exchange. They offer average reliabilities for diffusion and watertightness against driving rain.

In the case of conventional PP membranes with micropores, water vapour passes through tiny holes to the outside. If a lot of vapour has to pass through, a film of moisture may form on the inside of the membrane. The result is that the membrane becomes more watertight and damage may occur.

Moisture transport to the outside is a passive process that only works if there is a relatively high vapour partial pressure gradient. This is not always achievable in modern, highly insulated buildings.

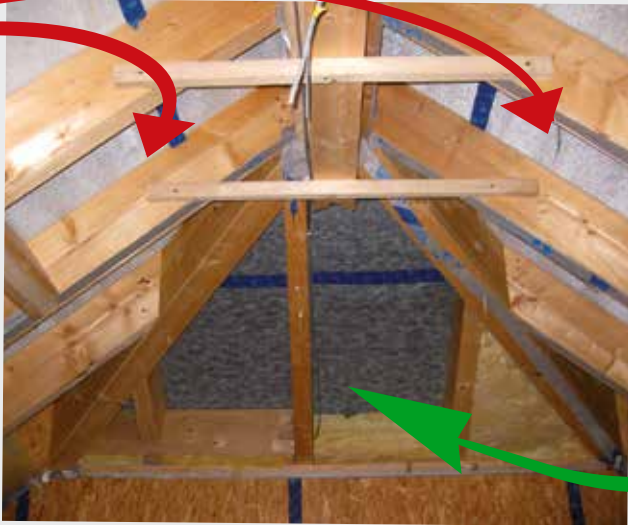
There is protection against water from the outside as water drops are too large and cannot enter through the pores due to their surface tension. However, if there is driving rain or if wood contents or solvents reduce the surface tension, significant amounts of water can penetrate into the thermal insulation and cause structural damage and mould formation.



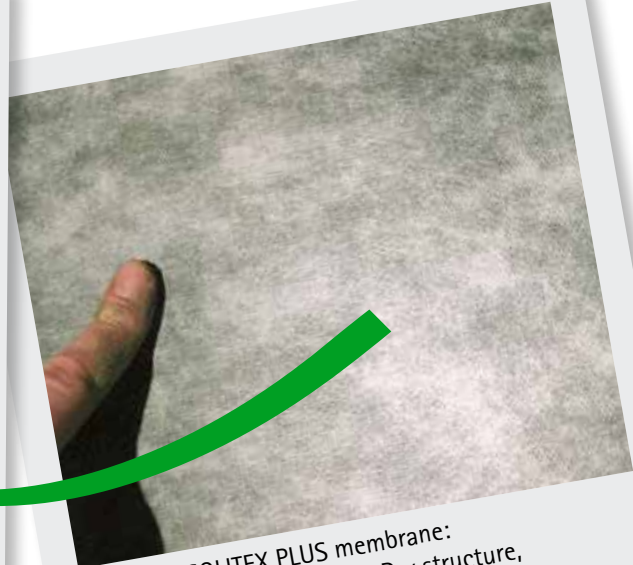
Micropores in a functional film:

- ✗ Conventional protection against driving rain
- ✗ Passive moisture transport
- ✗ Large vapour partial pressure gradient required
- ✗ Wet membrane becomes more closed to diffusion

Absolute permeability and maximum sealing: The monolithic SOLITEX membrane

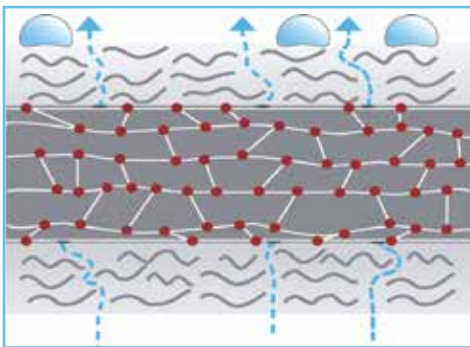


One roof, the same conditions, different results: pore-free SOLITEX PLUS membrane on the hip roof, microporous membrane on the main roof surfaces to the left and right.



Pore-free SOLITEX PLUS membrane:
Active moisture transport > Dry structure,
no condensation.

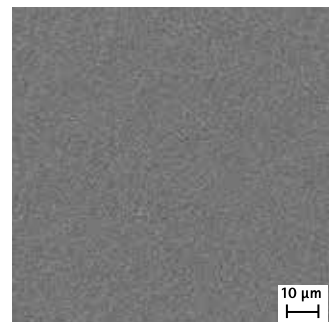
SOLITEX approach: Pore-free membrane for greater reliability



In the case of pore-free membranes, moisture is actively transported along the molecular chains to the outside. This results in reliable diffusion and particularly good watertightness against driving rain.

Pore-free membranes actively transport moisture to the outside – the more moisture is present, the faster it is transported. Their diffusion resistance drops in this case. Only a minimal vapour partial pressure gradient is required for transport.

The particular protection against driving rain results from the fact that there are no pores present. High impact speeds or water drops with reduced surface tension do not present a problem for the SOLITEX underlay system.



A monolithic, pore-free SOLITEX membrane viewed at the same magnification. Even with reduced surface tension, water drops cannot pass into the structure. Water vapour is actively transported out into the open.

Pore-free SOLITEX membrane:

- ✓ Maximum protection against driving rain
- ✓ Water column > 2500 mm
- ✓ Active moisture transport
- ✓ Minimum vapour partial pressure gradient required
- ✓ Wet membrane becomes more open to diffusion
- ✓ No tent effect
- ✓ Can be used as a temporary covering

Exterior wind sealing

The SOLITEX PLUS system



System with 4-ply, reinforced highly diffusion-open underlay and sarking membrane. Can also be used for temporary coverings. SOLITEX PLUS has a monolithic, pore-free functional membrane. This makes it watertight against water from the outside and also means that it can actively transport moisture from the building structure into the open at the same time. It is particularly suitable for applications with high demands with regard to tear-resistance (e.g. blown-in insulation).

- ✓ Active diffusion transport through a monolithic TEEE membrane for permanently dry building components
- ✓ Intelligent, humidity-variable membrane
- ✓ Water column > 2,500 mm
- ✓ High wear resistance thanks to microfibre fleeces
- ✓ Very high thermostability
- ✓ Reinforced: Very high nail pull-out resistance and penetration resistance, can be used with blown-in insulation materials
- ✓ Can be used as a temporary covering
- ✓ connect technology with two integrated self-adhesive zones is available



Best possible protection for roofs and walls

Robust structure

The SOLITEX PLUS underlay membrane has a 4-ply structure. Its TEEE functional membrane is reliably protected between two robust, particularly tear-resistant protective and covering fleeces made from polypropylene. The additional reinforcement increases the tear-resistance of the membrane – which is very important given the high loads that occur when installing or walking over the membranes and roof covering. In addition, the covering fleece is designed to be water-repellent and provides ideal protection against penetrating moisture. The special film

that is located beneath it offers protection against damage and UV radiation. The honey-comb structure guarantees a non slip surface even in wet conditions. The membranes are glare-free as a result of the blue colour of the upper covering fleece. The special membrane has a watertightness of over 2,500 mm of water column, i.e. it is watertight even when subjected to strong driving rain. The membrane can be exposed to outdoor weathering for three months. It can only be fastened with staples in the protected overlap area.

TEEE membrane watertight and diffusion open

SOLITEX PLUS membranes have a pore-free, closed-cell TEEE membrane that offers outstanding good protection against driving rain. In contrast with conventional sarking membranes where diffusion results from air exchange through a microporous membrane, diffusion occurs actively along the molecule chains in the case of the SOLITEX membrane. At the same time, SOLITEX PLUS has a humidity-variable diffusion resistance that attain s_d values significantly below 0.02 m. With its active moisture transport, the TEEE membrane has an extremely quick drying ability, which provides the best possible protection for the membrane against ice

formation in winter. Once ice forms, permeable underlay and sarking membranes are transformed into vapour barriers (ice is impermeable to diffusion) and effectively become moisture traps. Other particular features of TEEE membranes include reliable protection in the presence of wood preservatives (the membrane cannot be penetrated as there are no pores present) and their particularly high thermostability (melting point of TEEE approx. 200 °C, PP approx. 140 °C). This stability at high temperatures gives the plastic material extremely high ageing stability over a period of decades – even on dark-coloured roofs.

Web

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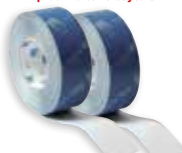
System core components



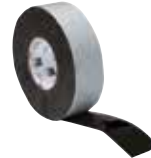
SOLITEX PLUS / PLUS connect
4-ply, reinforced highly diffusion-open underlay and sarking membrane.



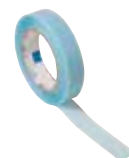
ORCON F
For bonding to adjacent components



TESCON VANA / TESCON No.1
For sticking membrane overlaps



TESCON NAIDEC
Nail sealing tape



DUPLEX
Double sided tape

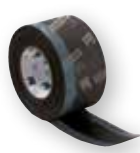
Supplementary products for detail solutions



TESCON PROFIL
For joints at windows, doors and corners



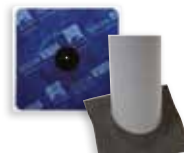
CONTEGA PV
For reliable joints with subsurfaces that are to be plastered



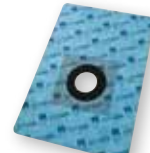
CONTEGA EXO
Diffusion open sealing tape for outdoor use at window junctions



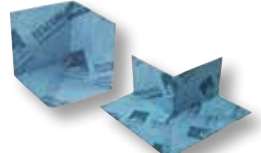
TESCON PRIMER RP
For quick and easy application of primer



KAFLEX/ROFLEX
Seal grommets for cable and pipe feed-throughs



ROFLEX exto
Vent pipe grommet for the windtight joints between pipes and ventilation tiles



TESCON INCAV and INVEX
Self-adhesive 3D shaped elements for interior and exterior corners

Planning and installation instructions

Area of application

The pro clima SOLITEX PLUS system can be used as an underlay or sarking membrane. It stops cold air from flowing through the building structure and ensures that the thermal insulation works in an optimal manner.

With its extremely high level of watertightness and high stability, SOLITEX PLUS fulfils the requirements of the Central Association of the German Roofing Trade (ZVDH) as an additional measure underneath roof coverings – even in the case of more demanding requirements – and can also be used as a temporary covering.

Use as a temporary covering

SOLITEX underlay and sarking membranes can be used as temporary covering for up to 3 months to protect the building structure during the construction phase in accordance with the ZVDH regulations. In this case, the roof slope must be at least 14°. The system components TESCON NAIDEC nail sealing tape, ORCON F joint adhesive and TESCON No.1 / TESCON VANA are to be used here for bonding of the overlaps

and joints. The connect variants have two self-adhesive zones for reliable exterior sealing. The specifications of the regulations of the Central Association of the German Roofing Trade are to be taken into account when carrying out installation and bonding. Dark marks may form on the membrane as a result of rainwater. These have no influence on the high level of watertightness and the effectiveness of the interior membrane.

No rear ventilation is necessary

Rear ventilation of insulation is not required as a result of the high diffusion permeability of SOLITEX PLUS. The membrane can be applied directly onto the thermal insulation in all cases, i.e. the insulation thickness can be equal to the full height of the rafters.

In the case of non-insulated attics, it is advantageous to provide hip ridge ventilation in order

to ventilate the attic space. Complicated and frequently ineffective ventilation features on the eaves, ridge, valley, hip and roof fittings are thus not necessary.

In Ireland and the UK please refer to the relevant national standards for further guidance in relation to ventilation requirements.

Installation and fastening

pro clima SOLITEX PLUS is installed with the blue covering fleece side (with writing) facing outwards. It can be installed taut parallel or perpendicular to the eave. Horizontal installation (perpendicular to the eave) is preferable with regard to water flow paths during the construction phase. When it is used as a sarking membrane, the rafter spacing is limited to 1.00 m. Use clout

nails or fastening staples that are at least 10 mm wide and 8 mm long to attach the membranes. The membranes can only be fastened with staples in the protected overlap area. The maximum distance between fasteners is 10 to 15 cm. Allow for an overlap of at least 10 cm between the membranes. A larger overlap is recommended if the roof slope is less than the critical roof slope.

Maximum diffusion permeability

Moisture can dry out of the structure to the outside more easily and more quickly. This is advantageous both during the construction phase (when construction timber may be moist) and during normal use (when moisture from indoor air penetrates into the structure by diffusion or convection).

As a rule, moisture due to construction work should be able to escape the building quickly by ventilation through open windows. Dehumidifiers can help to speed up the drying process in wintertime. This helps to avoid permanently high levels of relative humidity.

Additional instructions for blown-in insulation materials

SOLITEX PLUS may also be applied in conjunction with blown-in insulation materials of all types. A reinforcement structure ensures that there is little expansion during the blowing-in process. The battens should already be fitted before the blowing-in process takes place. Depending on the rafter spacing, a supporting batten that is attached to the main load-bearing battens is recommended in the centre of the space between the rafters (in the direction of the rafters). This limits the amount of bulging of SOLITEX PLUS

Approval and composition

The SOLITEX PLUS special membrane is made from a thermoplastic elastomer-ether-ester; the protective and covering fleeces and the reinforcing roving are made from polypropylene.

pro clima SOLITEX PLUS has been tested in accordance with the specifications of DIN EN 13859-1. It has been approved as a building material in accordance with the European Construction Products Directive; it bears the CE marking.

SOLITEX PLUS has also received 3rd party approval with the NSAI & BBA.

that occurs during the blowing-in process.

Installation in parallel with the supporting structure has the advantage that the joint will be on a solid base and is protected by this base.

The separation distance between the staples used to fasten the membrane strips must be a maximum of 5 to 10 cm.

If the insulation material is blown in from the outside, the blow-in holes can subsequently be sealed using TESCON VANA with a width of 15 cm.

Installation instructions

Installing membranes



1

Install the membrane parallel to the eave with the blue side facing up. In the case of valleys: install an underlay membrane along the valley with equal parts on each of the two roof surfaces.



2

Fold back the membranes by approx. 5 cm on their long sides and attach using staples sparingly. Stick the underlay membranes placed over the valley membrane using TESCON No.1 or TESCON VANA.

Overlapping the membranes



3

Install the membranes with 10–15 cm of an overlap. The membranes should be fastened in a manner that is protected against moisture in the upper third of the overlap area of the membrane that will later be the overlay and underneath the counter batten. Use galvanised staples (min. 10 mm wide and 8 mm long). Fasteners should not be applied in areas where water run-off is collected (e.g. in roof valleys).



pro clima adhesive tapes for exterior bonding have very good adhesion behaviour on:

- Subsurfaces that are dry, smooth and free of dust, bitumen and grease
- Smooth surfaces such as wood-based panels (chipboard, OSB panels, plywood)
- Planed and painted wood
- Plastic, glass, metal, and
- PE, PA, PP and aluminium sheeting (surface tension > 40 dyn)
- Smooth mineral subsurfaces (e.g. plaster or concrete; pre-treated with TESCON PRIMER RP) and
- wood fibre underlay panels (pre-treated with TESCON PRIMER RP)

Repairs

Damaged areas can be sealed with SOLITEX PLUS and the TESCON VANA or TESCON No.1 multi-purpose adhesive tapes. The repair patch on the roofing membrane should then be positioned underneath the overlap of the next continuous roofing membrane above the defect and should be joined in a waterproof manner.



4a

Bonding of the membrane overlap on SOLITEX PLUS with the TESCON No.1 or TESCON VANA all-round adhesive tapes. End joints should be positioned underneath the counter batten. When doing this, ensure the membrane is pulled tight to ensure a secure bond is attained. Avoid folds or creases. Only carry out bonding on dry, dust-free membranes.

Remove the backing paper and rub over the bonds, applying pressure. A hard subsurface (such as timber, solid thermal insulation materials) is advantageous here. Rub over the bonds using the pro clima PRESSFIX application tool, for example.



4b

Bonding of the membrane overlap of SOLITEX PLUS connect can be carried out in a reliable manner with adhesive on adhesive thanks to the two integrated self-adhesive zones. Both strips of backing paper can be removed in a single action.

Membranes without self-adhesive zones can be bonded using double-sided DUPLEX in a manner that protects against moisture. Handling can be simplified by using the DUPLEX dispenser – press into place, roll out and cut to length in a single working step.

Rub over the bonds using the pro clima PRESSFIX application tool, for example.

Sticking membranes, general information

Continue with steps 5–8 on the following pages

... Installation instructions continued

Sealing at hip and ridge



In the case of fully insulated cross sections, place SOLITEX PLUS over the ridge/hip and attach in place using staples in the area of the counter batten. Overlap relative to the membrane underneath of at least 10–15 cm. Stick the membrane overlap using TESCON No.1 / TESCON VANA or pro clima DUPLEX double-sided adhesive tape. Ridge ventilation should be provided in the case of non-insulated attics that have not been converted. To do so, install SOLITEX PLUS in such a way that it stops 5 cm before the ridge. In addition, permanent ventilation fittings should be provided in the unconverted attic.

Sealing at eaves



pro clima SOLITEX PLUS must be joined at the eaves in a waterproof manner. Position the membrane on an eave flashing or eave strip. Stick in place using the integrated self-adhesive zone, double-sided pro clima DUPLEX adhesive tape or single-sided TESCON No.1 / TESCON VANA adhesive tape, ensuring that there are no folds or creases.

Sealing to dormer windows / walls



Allow around 15 cm of SOLITEX PLUS to run up onto the dormer cheek and attach it at the upper membrane edge using staples. SOLITEX PLUS can also be used in the area of dormer cheeks to provide protection against outdoor exposure during the construction phase.



8a

SOLITEX PLUS can be bonded to smooth surfaces such as skylights, chimneys, pipes and other roof elements using the pro clima TESCON No.1 or TESCON VANA all-round adhesive tapes. Smooth mineral surfaces should be pre-treated with TESCON PRIMER RP. Use the ORCON F or ORCON CLASSIC bonding adhesives for bonding to rough subsurfaces.

Penetrations



8b

Installation of a gutter strip above/adjacent to the roof window by fitting a second SOLITEX PLUS membrane as an underlay. This must be guided into the overlap area of the next continuous roofing membrane above the integrated roof element. Create the sheeting channel in such a way that moisture is guided by a continuous counter batten into the next adjacent field that does not have an integrated roof element.



9

When installing temporary roof coverings, the TESCON NAIDEC nail sealing tape must be installed between the counter battens and the SOLITEX PLUS underlay and sarking membrane in order to create a seal.

Creating temporary covering



TESCON NAIDEC
Nail sealing tape



Additional system solutions for sealing of the building envelope



Interior air
sealing

The INTELLO maximum reliability system

INTELLO intelligent vapour check retarder and airtightness system

Maximum protection against structural damage and mould – also for sophisticated civil engineering structures.

Humidity-variable s_d value 0.25 to >25 m.



Refurbishment and
modernisation

New protection for existing structures – the DASATOP system

The DASATOP sub-and-top refurbishment system

Optimised for roof restoration from the outside.

Quick, simple, reliable!



Exterior wind
sealing

Best possible protection for roofs and walls – the SOLITEX system

Highly permeable roof lining and facade membranes

The best quality for reliable structures that are free from structural damage and mould for roofs and walls.



Secure bonding and detail solutions

- All-round adhesive tapes and joint adhesives for interior and exterior use
- Plaster sealing tapes
- Sealing grommets

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Phone: +49 (0) 62 02 – 27 82.0

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E-mail: info@proclima.com

For further technical information phone:

Ecological Building Systems Limited
Main Street, Athboy
County Meath
Republic of Ireland

+353 46 9432104

+353 46 9432435

www.ecologicalbuildingsystems.com

For Stockists contact

Ireland T. 046 9432104

F. 046 9432435

UK T. 01228 711 511

F. 01228 712 280

MOLL

Bauökologische Produkte GmbH

Rheintalstraße 35 – 43

D 68723 Schwetzingen

Germany

Phone: +49 (0) 62 02 – 27 82.0

Fax: +49 (0) 62 02 – 27 82.21

eMail: info@proclima.com



www.proclima.com