

Pro

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August -07

Diffusion-Permeable Roofing Underlay



Combined roofing underlay and wind barrier

isola[®]
Dry and healthy buildings

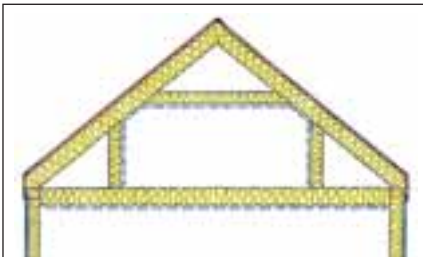
Pro Diffusion-Permeable Roofing Underlay

Windproof and waterproof yet breathable!

Pro Diffusion-Permeable Roofing Underlay is a unique roofing product designed for all types of fully insulated pitched timber roofs. New, advanced materials technology means that the underlay is windproof and waterproof yet diffusion-permeable. This ensures that building moisture will dry rapidly and prevents condensation from building up.

The new roofing underlay will therefore act as both an underlay and a wind barrier combined, with no ventilation (50 mm air gap) being required between the insulation and the underlay.

NB: Pro Diffusion-Permeable Roofing Underlay is not suitable for use on roofs with creosote roofing.



Pro Diffusion-Permeable Roofing Underlay must have a base of insulation or possibly chipboard or the like. It must not be open to the space below. The minimum recommended pitch for Pro Diffusion-Permeable Roofing Underlay is 18°.



A simple, fast and flexible solution

Pro Diffusion-Permeable Roofing Underlay comes on a lightweight roll, which means that it is easy to handle and does not take up much room on site.

The underlay simplifies construction work on the roof by doing away with the air gap between traditional roofing underlay and the wind barrier. Its documented technical properties, which ensure water tightness while allowing condensation to dry, save on both time and materials.

This makes Pro Diffusion-Permeable Roofing Underlay an extremely economical and simple solution when it comes to constructing a functional roof, while its strength and durability ensure efficient, safe installation.

Refurbishment of old roof structures

Pro Diffusion-Permeable Roofing Underlay is an efficient and functional solution for refurbishing old roof structures. An example of this is old apartment buildings, where the underlay can be installed directly on top of old chipboard or cladding with ties and stringers. The roof space can then be fully insulated from the inside. Remember that

Underlay



battens are required under the overlaps to ensure impermeable joints. (See illustration.) A thickness of 23 mm is recommended.



NB: The base must be sufficiently vapour-permeable.

Installation

Before installation

Pro Diffusion-Permeable Roofing Underlay can be installed as soon as the rafters are in place. Remember that the layer of felt with printing on should always face up. Don't get any paint or solvents directly on the membrane. Openings are best supported before the roofing underlay is laid. Pro Diffusion-Permeable Roofing Underlay should be ventilated between the roofing and underlay. Tailor batten and counter-batten dimensions to the size and pitch of the roof. Use the following minimum counter-batten thicknesses for roofs with a maximum length of 7 metres from base to ridge:

Pitch	Thickness
<34°	36 mm
<40°	30 mm
≥40°	23 mm

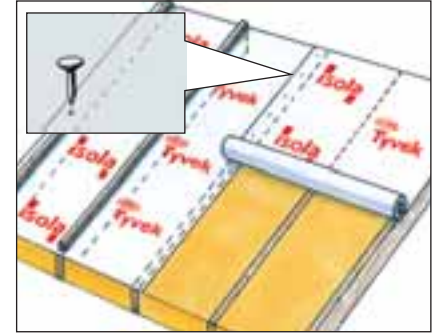
In the case of large roofs and long rafters a total counter-batten and batten height of 100 mm is recommended. In this case the max. height of the first counter-batten layer is 23 mm.

NB: The roofing should be installed before the roof is insulated. This allows the membrane to be checked once roofing work is complete. The primary roofing should be done as soon as Pro has been installed. If this is not being done, it is advisable to cover Pro with tarpaulin, for example, during the building period. This is particularly important if the underlying structures are insulated or inhabited. A detail

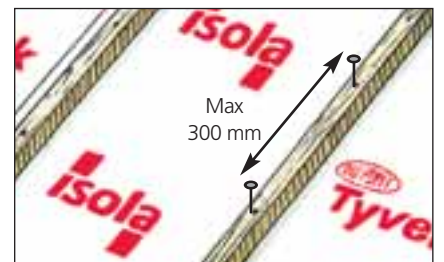


solution at the eaves is vital if satisfactory air circulation is to be achieved. See separate section.

Unrolling

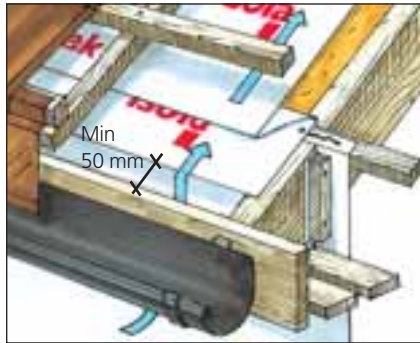


Cut measured lengths before installation starts. Remember to allow extra at the ridge and eaves. Unroll the roofing underlay over three rafters from ridge to eaves. Secure it at the top of the middle rafter first. Pull the membrane taut and secure at the bottom of the same rafter. Use 2.8 x 25 mm felt nails. (NB: Using a pin hammer will damage the membrane!) Then secure the underlay at intervals along the middle rafter. Use the smallest number of felt nails possible. Then pull the membrane over the two parallel rafters and secure in the same way. Secure the next length in the same way so that it overlaps the length just installed by 50 mm. Fit counter-battens as you go along. Secure the counter-battens with 2.8 x 90 mm galvanised square nails with a maximum spacing of 300 mm.

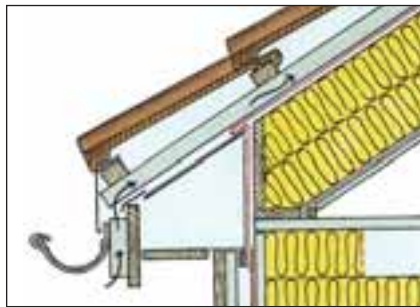


NB: If tiles or other roofing materials are not to be laid immediately, the counter-battens should be secured with galvanised screws.

Finishing at the eaves

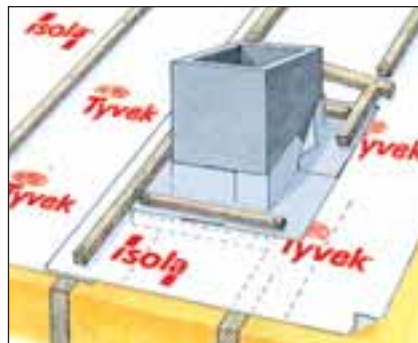


Alt.1 Attach a batten on top of the rafters as shown in the illustration. Secure the wind barrier for the wall over the batten. Fold and secure the roofing underlay as shown. Use Isola Sealant and 2.8 x 25 mm felt nails. If the roof projects by more than 400 mm, use Isola Roofing Underlay or other "dead" material to avoid the risk of flapping noise. Insert it in the fold and secure with felt nails.

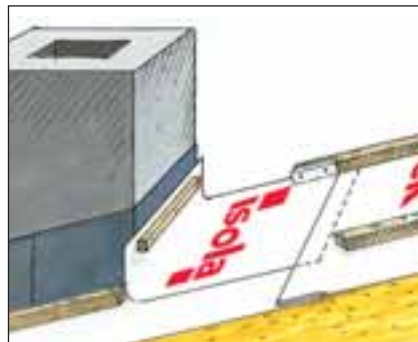


Alt.2 Only recommended in areas with low snowfall. Install as shown for alternative 1, but take the membrane right out to the gutter as shown in the illustration. It is advisable to have at least 36 mm blocks between the gutters and fascia boards. If the roof projects by more than 400 mm, the same applies as for alternative 1.

Openings



Alt.1 Lay a frame around the opening. Materials with a width of 48 mm are recommended. Fit the bar at the back edge of the opening at an angle to shed water. Put Isola Sealant on the frame. Fit the diffusion-permeable Roofing Underlay. Then install an Isola Opening Fitting for round or square openings. Remember to put sealant between the roofing underlay and the opening fitting. See separate installation instructions.



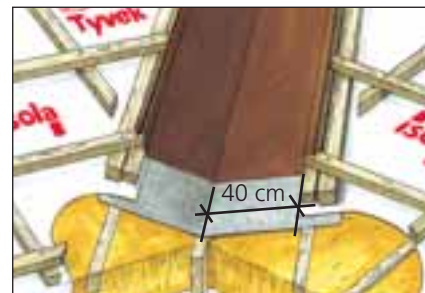
Alt. 2 Recommended as extra protection at the top edge of the opening. Do the same as for alternative 1, but fold the roofing underlay as shown in the illustration – approx. 800 mm above the top edge of the opening. Once the opening fitting has been installed, insert an extra layer of membrane, laying it vertically at the top edge of the opening. (See illustration.) This provides a double seal.

Ridge



Cut the rafters horizontally at the ridge. Lay a batten over the cut rafters and secure the roofing underlay to it with felt nails. Then fit a clamping batten, nailing it in place in the same way as the counter-battens. To provide ridge ventilation, insert blocks before installing the fixing board for the roofing. (See illustration.)

Valley



Fit chipboard or plywood as a base. Lay a membrane (Isola Isokraft) without counter-battens from the base of the roof to the ridge in the valley. Fit Pro with an overlap in over the membrane along the outside edge of the valley. Then clamp the overlap continuously with battens secured in the same way as the counter-battens (max. spacing 30 cm).

Two products in one!

Advanced materials technology

Pro Diffusion-Permeable Roofing Underlay has been developed as a highly advanced laminated product with unique end properties.

The material is made up of several layers of various types of polyethylene- and polypropylene-based fabric. This produces a stable, strong material that, despite being waterproof and windproof, ensures effective and reliable vapour diffusion.

The roofing underlay can therefore best be compared to a protective skin that is waterproof yet still able to breathe.

Water tightness and strength

Pro Diffusion-Permeable Roofing Underlay has been tested and approved by the Norwegian Building Research Institute (NBI). Tests involving simulated heavy rain combined with hurricane force winds are used to document the product's properties when it comes to both water tightness and strength.

The test results for vapour permeability show that Pro Diffusion-Permeable Roofing Underlay is the most diffusion-permeable on the market and exceeds NBI's minimum requirements by a long way. Please note that condensation can occur on the underside of the roofing underlay during construction if there are large differences in temperature between inside and outside. This is normal and it will dry out once the building has been finished and is in normal use.

Pro Diffusion-Permeable Roofing Underlay has also been tested for safety on the building site using the static point load resistance tests defined in Swedish standards.



Reliable detail solutions

Based on its own trials and testing by NBI, Isola has developed solutions that make Pro Diffusion-Permeable Roofing Underlay complete and reliable. Detail solutions are vital when it comes to achieving a successful end result.

Bracing

Like most other simplified roofing underlays, Pro provides no stiffening for the roof. Stiffening can be achieved using Isola Stays or BMF perforated strips, or possibly 21 x 98 mm board fitted diagonally.

Openings

Isola has detail solutions for all types of opening, both square and round, that ensure the necessary water tightness and strength. Openings require a solid base for the opening fitting and roofing underlay to be secured to.

See installation instructions and NBI Building Detail Sheet A.525.866.

Pro

Diffusion-Permeable Roofing underlay

System components:

Isola Stay

- 1.0 mm galvanised steel, length 3.10 m

Isola Opening Fitting, for single pipe

- square, 4 corners with sealant and 1.5 mm CPE film

Isola Opening Fitting with dividers for double pipe

- square, 4 corners with sealant and 1.5 mm CPE film

Isola Opening Fitting

- round with sealant and 1.5 mm CPE film

Asphalt membrane

- for valleys

Isola Self-Build

Isola Master Roof

Isola Master Membrane

NB: With Self-Build and Master Roof the grit must face down towards the insulation.

Technical approval

Pro Diffusion-Permeable Roofing Underlay has been tested by the Norwegian Building Research Institute (NBI). Based on its tests, NBI has drawn up a Technical Approval, which provides information on applications and important detail solutions. The technical approval serves as documentation for the properties of the roofing underlay system.

Product specification

Material description: Pro Diffusion-Permeable Roofing Underlay is a spunbonded felt fabric made from polyethylene fibre laminated with polypropylene felt. Weight approx. 145g/ m².

Roll size: 1,30 m x 50 m

Content per roll: 65 m²

Property	Value	Test method
Water tightness, material	Impermeable at 2 kPa	NS-EN 1928
Rain tightness, construction**	Impermeable with 15° pitch and 400 Pa pressure difference	NT Build 421
Air tightness, material	0.002 m ³ /(m ² hPa)	Equivalent to NS 3261
Air tightness, construction**	0.002 m ³ /(m ² hPa)	NS-EN 12114
Vapour resistance	0.07 – 109 (m ² sPa)/kg	NS-EN ISO 12572 (50/93% RH, 23°C)
Sd value (equivalent air layer)	14 mm	
Static point load resistance*	2.4 kN	SP 0487
Tensile strength		
- Longitudinal	510 N/50 mm	NS-EN 12311-1/
- Transverse	530 N/50 mm	prEN 13859
Elongation at break		
- Longitudinal	19%	NS-EN 12311-1/
- Transverse	22%	prEN 13859
Nail resistance		
- Longitudinal	323 N	NS-EN 12310 /
- Transverse	360 N	prEN 13859
Flammability	Flammable	ISO 1182

* Tested on fully installed PRO and PRO Super with rafter spacing c/c of 1.2 m

** This value is for fully installed PRO Super

Made by DuPont

DuPont™
Tyvek®



NBI – Technical Approval

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