# Installation instructions INTELLO® X connect

## Application for external roof insulation

### 1. Install the membrane

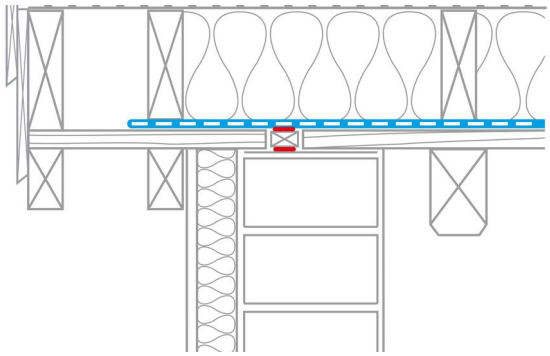
Roll out the membrane and fasten it using galvanised staples that are at least 10 mm (3/8") wide by 8 mm (5/16") long at intervals of 10-15 cm (4"-6") in the overlap area in a manner that protects against moisture entry. If exposure to the elements is planned, staples installed in open areas of the membrane should be taped over.
Install the membrane leaving an additional 4 cm (1 5/8") overlap at adjacent building components so that an airtight bond can be applied here subsequently.

### 2. Overlap the membranes

Allow for an overlap of approx. 10 cm (4") between the membranes and ensure that the upper membrane lies over the lower membrane in the finished overlap to create a waterproof arrangement. The marking that is printed onto the membrane will serve as a guide here.

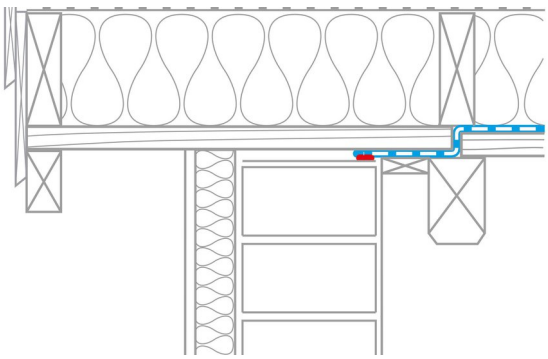
### 3. Stick the overlap

Stick the membrane overlap using INTELLO X connect with two integrated self-adhesive strips. Rub firmly using the pro clima PRESSFIX application tool to secure the adhesive bond.



### 4. Joint at bargeboard

Interruption of the wood sheathing at the top of the wall cap, which has a layer of mortar applied to it. A roof lath is adhesively bonded to the wall cap with ORCON F along its entire length. Sealing of the membrane to the roof lath using ORCON F.

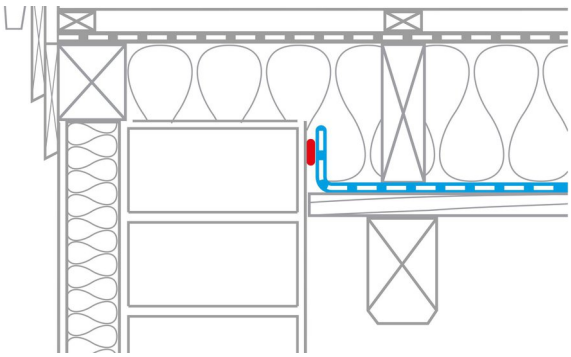


### 5. Joint at bargeboard, alternative 1

Butt joint between wood sheathing and last rafter. The membrane passes through the butt joint and onto the inside of the wood sheathing and is stuck to the top of the wall cap using ORCON F.

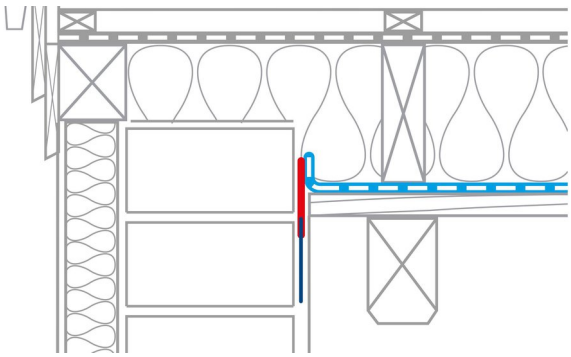
### Example: Joint at wall cap

Sealing to the continuous smooth plaster finish on the wall cap can be carried out using the ORCON MULTIBOND joint adhesive (applied from a roll) or in liquid form using ORCON F (or, alternatively, ORCON CLASSIC). Any loose material on the subsurface should be removed beforehand.



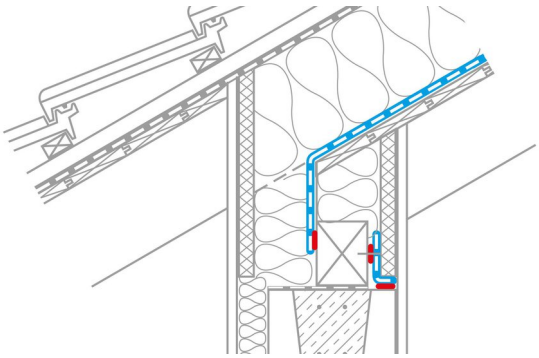
## 6. Joint at bargeboard, alternative 2

In the case of a plastered gable wall, bond the pro clima membrane to the plaster using ORCON F.



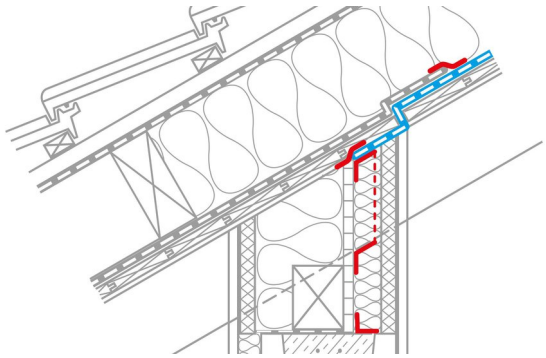
## 7. Joint at bargeboard, alternative 3

If there is no layer of plaster, affix CONTEGA PV to the wall using joint adhesive and bond the membrane to the adhesive strip. At least 1 cm (3/8") width of the fleece must be embedded into the middle of the layer of plaster.



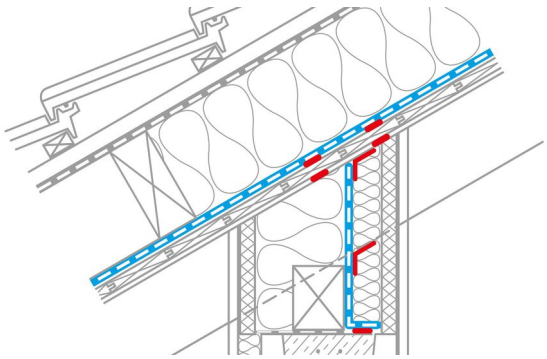
## 8. Eave joint with exposed rafters without rafter tails

Stick the membrane to the wallplate in an airtight manner using ORCON F. Seal the joint between the wallplate and the ring beam in an airtight manner using a strip of vapour check (e.g. INTELLO conneX) and ORCON F.



## 9. Eave joint with exposed rafters with rafter tails

Install a positioning board made of wood-based panel on the inside between the rafters and bond it to the ring beam and the rafters using TESCON PROFECT. If necessary, apply ORCON F underneath the tape in the case of rough concrete. Interrupt the sheathing above the positioning board and tape the membrane to this board.



## 10a. Eave joint with exposed rafters with rafter tails, alternative

Install a strip of vapour check, e.g. INTELLO conneX, on the inside between the rafters and bond it to the ring beam and the rafters using TESCON PROFECT. If necessary, apply ORCON F underneath the tape in the case of rough concrete. Stick the sheathing to the rafters above the vapour check strip and to the membrane using a double strip of adhesive.

## 10b. Sheet joint in corners with support

The TESCON FIX mounting bracket rail is stuck to the subsurface using one of the two independent strips of adhesive tape that are fitted to it. The vapour check sheet is put in place and then stuck to the second independent strip of adhesive tape in an airtight manner (working from the inside). The (exterior) bracket rail provides resistance pressure when pressing with the PRESSFIX tool.

Airtight sealing to the upper side of the rafter is carried out simply by using a length of TESCON VANA.


### 11a. Joints to cables

Place a KAFLEX cable grommet over the cable and stick to the membrane. The cable grommets are self-adhesive.

The range includes:

- KAFLEX mono (see photo)
- KAFLEX duo - for 2 cables
- KAFLEX multi - for up to 16 cables
- KAFLEX post - for retrofit installation


### 11b. Joints to pipes

Place a ROFLEX pipe grommet over the pipe and stick to the membrane using TESCON VANA.

The range includes:

- ROFLEX 20 - e.g. for pipes, Ø 15-30 mm (1/2" - 1 3/16")
- ROFLEX 20 multi - for up to 9 conduits
- ROFLEX 30 - 300 - for Ø 30-320 mm (1 3/16" - 12 1/2")


### 12. Quality assurance

If all joints have been implemented in an airtight manner, the thermal insulation structure will be reliable and permanent. Testing of the airtightness with a BlowerDoor test is recommended for quality assurance purposes.

## Roof refurbishment from the outside

### 1. Fill the space between rafters

Completely fill the existing space between the rafters with insulation material. If the existing insulation can be easily compressed, select the next highest thickness for the new insulation layer and use this to compress the existing insulation. Existing and new insulation should only use rock or mineral wool.

### 2. Roll out and staple the membrane

Install INTELLO X flat over the rafters and insulation, and fasten it using galvanised staples that are at least 10 mm (3/8") wide by 8 mm (5/16") long at intervals of 10-15 cm (4"-6") in the overlap area in a manner that protects against moisture entry. If exposure to the elements is planned, staples installed in open areas of the membrane should be taped over. Install the membrane leaving an additional 4 cm (1 5/8") overlap at adjacent building components so that an airtight bond can be applied here subsequently.

### 3. Overlap the membranes

Allow for an overlap of approx. 10 cm (4") between the membranes and ensure that the upper membrane lies over the lower membrane in the finished overlap to create a waterproof arrangement. The marking that is printed onto the membrane will serve as a guide here.

### 4. Cut the release films

Cut the release films of the self-adhesive strips in the middle of the roof.

### 5. Stick the overlap

Gradually remove the release films and stick the membranes to one another.

### 6. Rub the adhesive joint firmly

Rub the seals firmly with the pro clima PRESSFIX application tool to secure them. Ensure that there is sufficient resistance pressure.

### 7. Joint at bargeboard

Firstly, apply a smooth plaster finish to rough wall caps. Clean the subsurface. Apply a line of ORCON F system adhesive of at least d = 5 mm (3/16") (more in the case of rough subsurfaces, if necessary). Apply the membrane, leaving slack to allow for expansion, and do not press the adhesive completely flat so as to allow for relative motion between components. Alternatively, ORCON MULTIBOND can be used for sealing.

### 8a. Joints at rafters

Cut the membrane as necessary and install it around the rafters.

## 8b. Joints at rafters

Bond the membrane to the top and sides of the rafters and to the ring beam using ORCON F.

## 8c. Joints at rafters

Stick the membrane cut and joint underneath the rafters using TESCON VANA system adhesive tape. Apply a line of ORCON F adhesive between the rafters and TESCON VANA.

## 8d. Joints at rafters

Stick the corners using TESCON VANA. If necessary, pre-treat reconditioned wood or knee walls using TESCON PRIMER RP or TESCON SPRIMER.

## 9. Joint at wall cap

Firstly, apply a smooth plaster finish to rough wall caps. Clean the subsurface. Apply a line of ORCON F system adhesive of at least d = 5 mm (3/16") to the wall cap (more in the case of rough subsurfaces, if necessary). Apply the membrane, leaving slack to allow for expansion, and do not press the adhesive completely flat so as to allow for relative motion between components.

## 10. Insulate the fascia surface

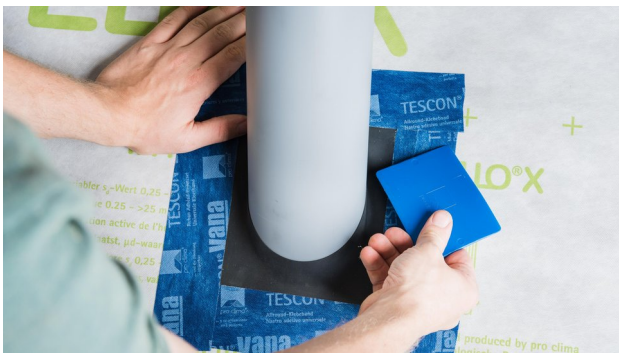
Fill the space between the rafters with insulation material on the fascia surface.

## 11. Joints to cables

Place a KAFLEX cable grommet over the cable and stick to the membrane. The cable grommets are self-adhesive.

The range includes:

- KAFLEX mono (see photo)
- KAFLEX duo - for 2 cables
- KAFLEX multi - up to 16 cables
- KAFLEX post - for retrofit installation




### 12. Joints to pipes

Place a ROFLEX pipe grommet over the pipe and stick to the membrane using TESCON VANA.

The range includes:

- ROFLEX 20 - e.g. for pipes, Ø 15-30 mm (1/2" - 1 3/16")
- ROFLEX 20 multi - for up to 9 conduits
- ROFLEX 30 - 300 - for Ø 30-320 mm (1 3/16" - 12 1/2")

### 13. Insulation cover

In the case of refurbishment from the outside and installation between two layers of insulation, the choice of insulation materials for the two layers is limited to mineral or rock wool. Please contact Technical Support [https://proclima.com/service/technical-support#germany] at pro clima in Germany for assistance with calculating the possible insulation thicknesses.

### 14. Install a roofing underlay membrane

The final step is to install a roofing underlay ($s_d$ value ≤ 0.10 m; g value ≤ 0.50 MN·s/g; vapour permeance ≥ 32.8 perms), e.g. pro clima SOLITEX MENTO 3000.

## General conditions

pro clima INTELLO X connect is to be installed with the printed side facing the installation technician. It may only be installed on top of sheathing.

Airtight seals can only be achieved on vapour checks that have been fitted with no folds or creases. Ventilate regularly and systematically to prevent build-up of excessive humidity (e.g. during the construction phase). Occasional, intermittent ventilation is not sufficient to remove large quantities of moisture due to construction work from a building; use a dryer if necessary.

To avoid condensation formation, the thermal insulation should be installed immediately after the airtight installation of INTELLO X connect. This applies particularly to work carried out in winter.

**Fastening**
Overlap the membranes by at least 10 cm (4"). Use fastening staples that are at least 10 mm (3/8") wide by 8 mm (5/16") long to attach the membranes. The membranes can only be fastened in a protected manner in the overlap area. The maximum distance between fasteners is 10 to 15 cm (4"-6"). Fasteners may not be applied in areas where water runs off in a collected manner (e.g. in roof valleys).
If exposure to the elements is planned, it is recommended to provide additional mechanical support for the membranes (e.g. with counter battens). TESCON NAIDECK mono sticks to counter battens, seals nail holes and improves the level of rain protection.

The information provided here is based on practical experience and the current state of knowledge. We reserve the right to make changes to the recommended designs and processing or to make alterations due to technical developments and associated improvements in the quality of our products. We would be happy to inform you of the current technical state of the art at the time you use our products.

Further information about installation and design details is available in the pro clima planning documentation. If you have any questions, please contact [pro clima Technical Support](https://proclima.com/service/technical-support).

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