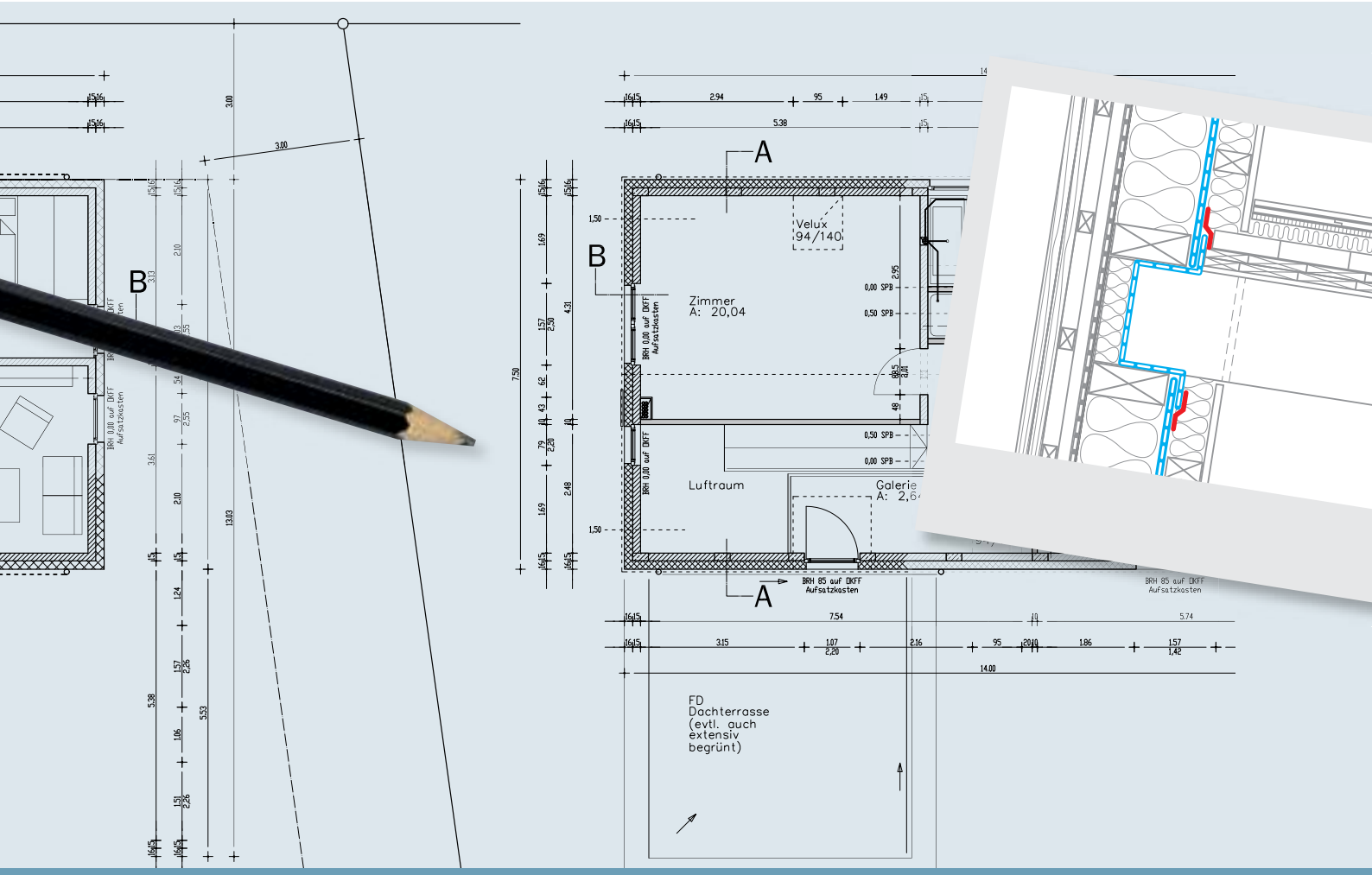
Permanent safe

Constructions

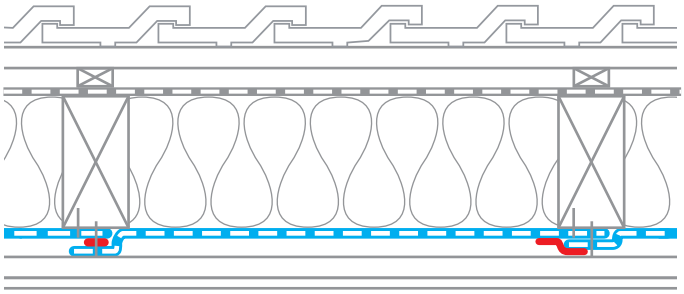
Interior air sealing provides protection against structural damage and mould



Roofs | Walls | Ceilings | Floors | New buildings and refurbishments

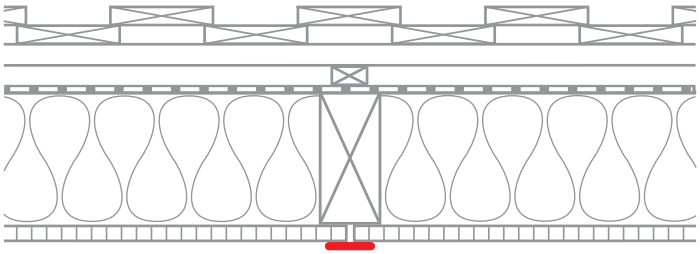
pro clima®

Interior air sealing with airtightness / vapour control membranes



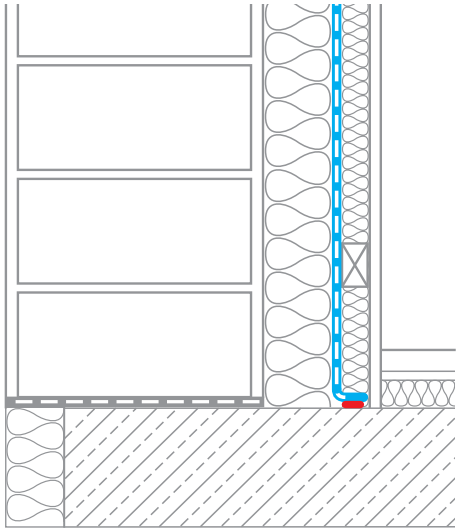
4

Interior air sealing with derived timber sheathing (e.g. OSB)



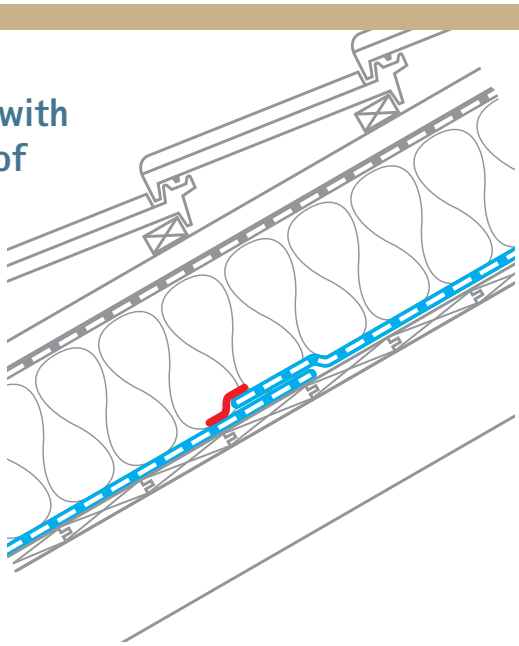
9

Interior air sealing of masonry structures



12

Air sealing with external roof insulation



13

Construction

Interior air sealing with airtightness / vapour control membranes

Installation with vapour retarder and airtightness layers consisting of membranes

Sealing 4
of membrane overlaps

Sealing 4
General
Knee wall
Bargeboard
Middle purlin
Ground or ceiling slab
Interior wall
Windows
Skylights

Penetrations 6
Beams or angular components
Pipes or cables
Chimneys

Interior air sealing with wood-based panels

Installation with vapour retarder and airtightness layers consisting of wood-based panels

Sticking 9
of panel joints

Sealing 9
Knee wall
Bargeboard
Ground or ceiling slab
Interior wall
Windows

Penetrations 10
Beams or angular components
Pipes or cables
Sockets without installation layer

Interior air sealing for masonry structures

Sealing 12
Ground or ceiling slab for interior insulation
Windows in solid walls

Interior air sealing with external roof insulation

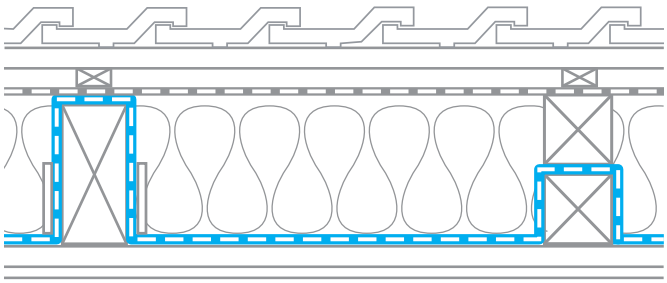
Installation of external roof insulation with vapour retarder and airtightness layers consisting of membranes

Sticking 13
of membrane overlaps

Sealing 13
Knee wall
Bargeboard
Skylights

Penetrations 15
Pipes or cables
Chimneys

Air sealing for refurbishment projects



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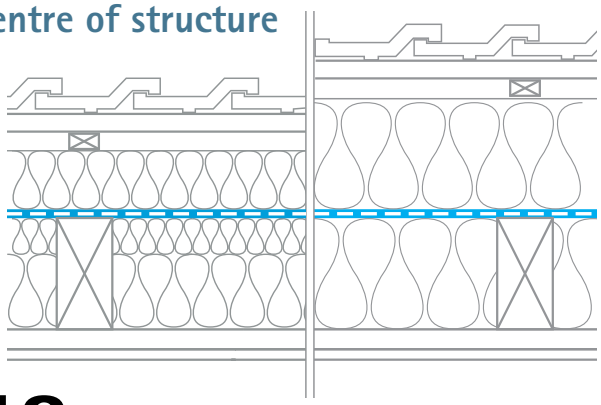
Refurbishment solution, air sealing at centre of structure



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Safe structures are achieved by taking advantage of potential for avoiding structural damage to the greatest possible extent. Appropriate planning and the installation of the vapour retarder and airtightness layers are critical here.

Air sealing for refurbishment projects

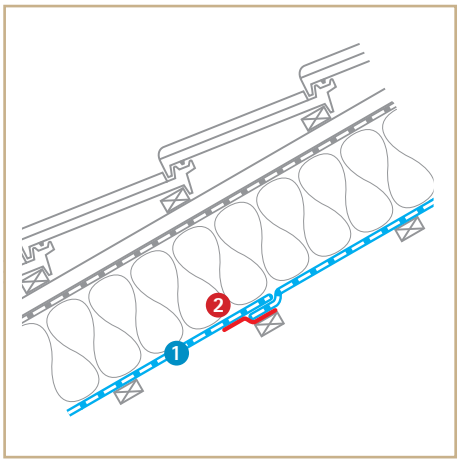
Interior air sealing with airtightness / vapour control membranes

Legend

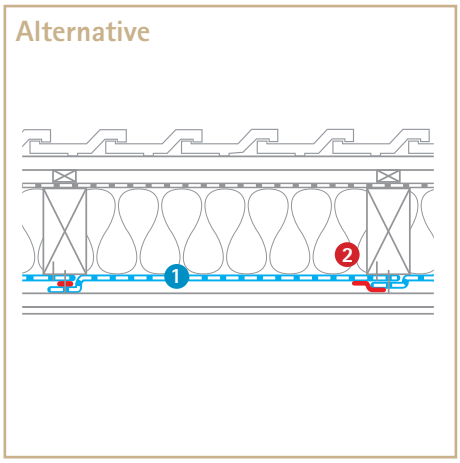
1. Airtight membrane
   INTELLO
   INTELLO PLUS
   DB+
2. Adhesive tape
   TESCON VANA
   TESCON No.1
   UNI TAPE
3. Joint adhesive
   ORCON F
   ORCON CLASSIC
   ORCON LINE
   ECO COLL for DB+
4. Plaster sealing tape
   CONTEGA PV*)
5. Sealing tape
   TESCON PROFIL
6. Rafter
7. Airtight layer of wall
8. Rafters parallel to inside of wall
9. Pressure lath
10. Fibrous compartment insulation
11. Roof decking
12. Roof sealing
13. Vapour barrier
14. Insulation material

Info

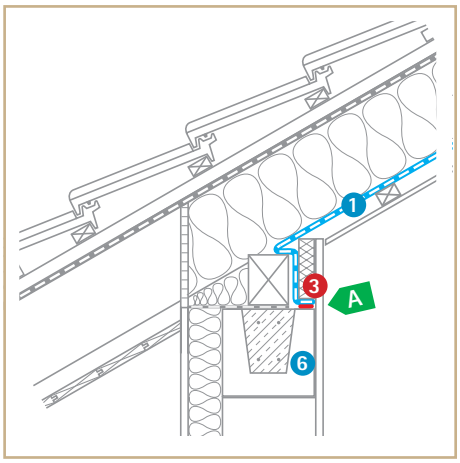
*) Gypsum plasters have very good adhesion on CONTEGA fleece. A bonding bridge – e.g. a reinforcing mortar – must be used for lime and cement plasters.



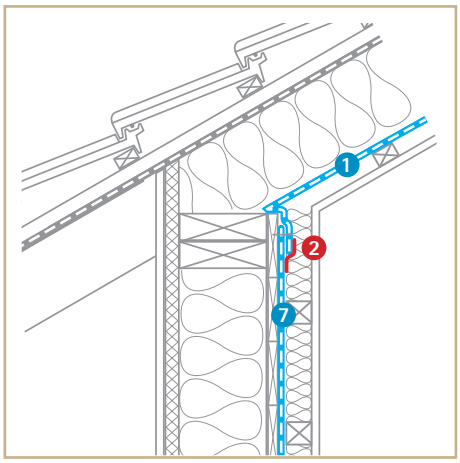
Sticking membrane overlaps perpendicular to rafter



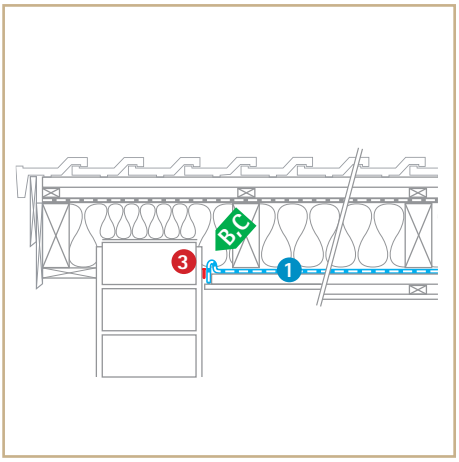
Sticking membrane overlaps parallel to rafter



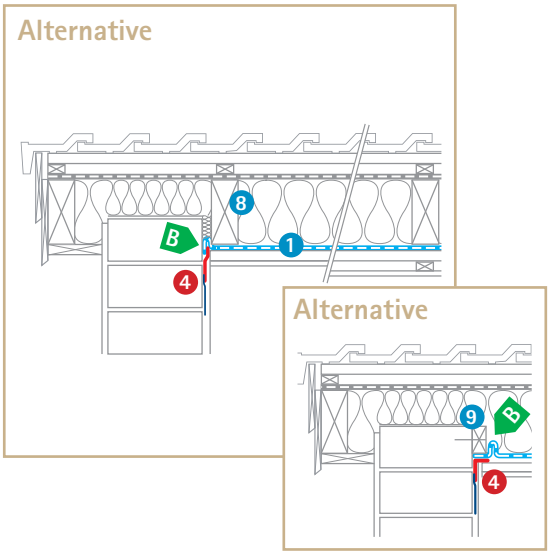
Sealing at knee wall for masonry structures



Sealing at knee wall for timber structures



Sealing at Gable



Sealing in general

Always clean the subsurface carefully. If necessary, apply primer to subsurfaces with insufficient load-bearing capacity or with a sandy substrate.

Sealing to rough subsurfaces:
ORCON F / ORCON CLASSIC for vapour retarders made from fleece/sheeting.
ECO COLL for vapour retarders made from paper.
Unevenness of up to 2 cm in depth can be filled using pro clima air-sealing joint adhesives – for example, in the case of rough concrete slabs.
When sealing sheeting that strongly hinders diffusion (e. g. PE or alu) on concrete surfaces, the dry process is recommended for ORCON F/ ORCON CLASSIC. Sealing to smooth subsurfaces: With one of the pro clima adhesive tapes

Only adhesive tapes should be used on unprotected metal parts, e.g. iron, due to the risk of corrosion.

Achieving the best air seal possible is critical for all structures. For this reason, we recommend that air tightness be checked using a pro clima WINCON or blower door measurement.

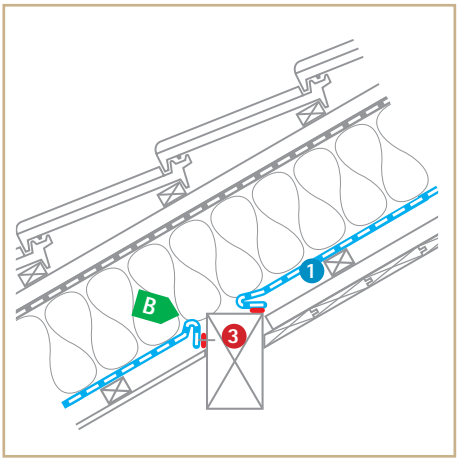
Tips

A Ensure that the joint between the base purlin and the rafter is sealed.

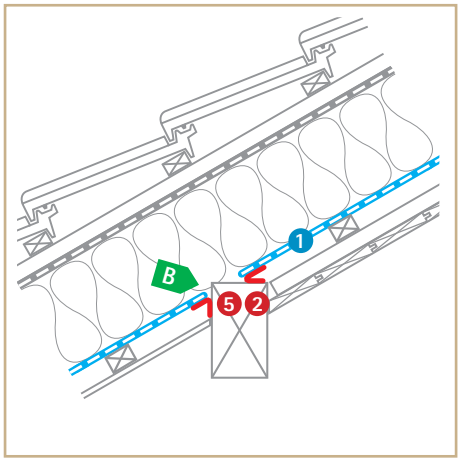
B Leave slack when applying the membrane to allow for relative motion between components.

C Pressure lath generally not required. Recommended for
- Delayed drying of the adhesive, e.g. when installing the vapour retarder during frost
- Subsurface with insufficient load-bearing capacity

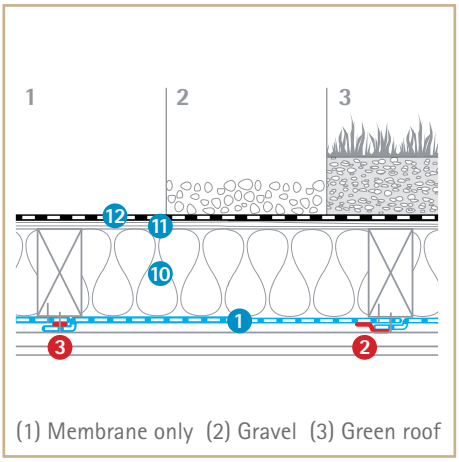
D Under certain circumstances, additional insulation with hygric separation may be necessary. Contact our Engineering Hotline for a release. > Call:
+49 (0) 62 02 – 27 82.0



Sealing to roughly sawn middle purlin

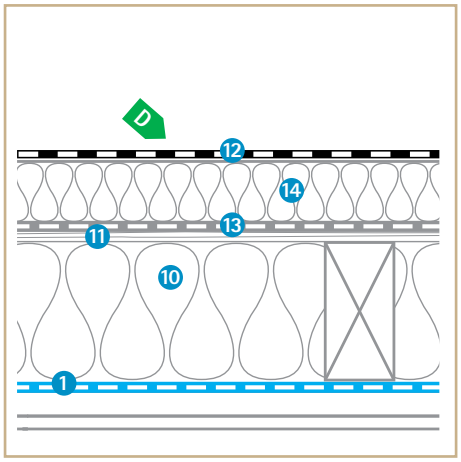


Sealing to planed middle purlin



(1) Membrane only (2) Gravel (3) Green roof

Flat roof



Flat roof (insulation cover, e.g. for shading)

... Interior air sealing with vapour retarder membranes – continued

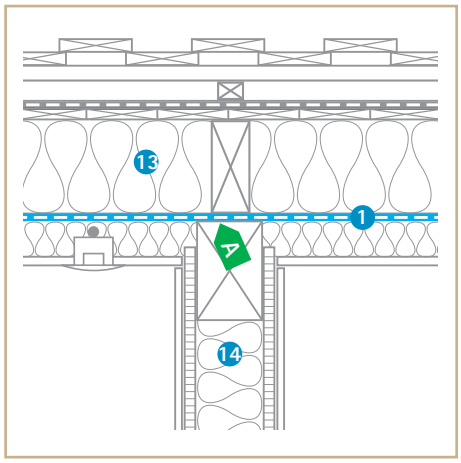
Legend

1. Airtight membrane
   INTELLO
   INTELLO PLUS
   DB+
2. Wind-sealing membrane
   SOLITEX UD
3. Adhesive tape
   TESCON VANA
   TESCON No.1
4. Adhesive tape
   UNI TAPE
5. Window sealing tape
   CONTEGA SL*)
6. Window sealing tape
   CONTEGA IQ*)
7. Sealing tape
   TESCON PROFIL
8. TESCON INCAV in corner areas
9. TESCON INVEX in corner areas
10. Joint adhesive
    ORCON F
    ORCON CLASSIC
    ORCON LINE
    ECO COLL for DB+
11. Pipe grommet
    ROFLEX **)
12. Installation box
    INSTAABOX
13. Exterior wall
14. Interior wall

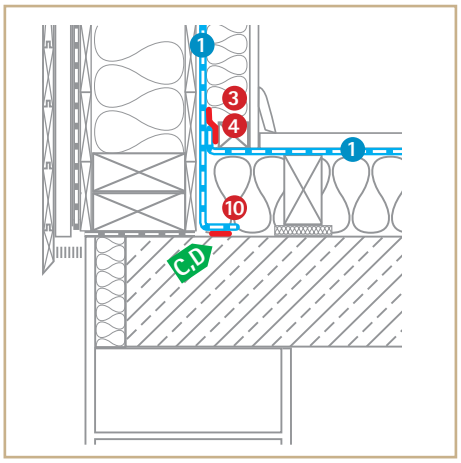
Info

*) Fold tape into the corners of the window. Stick tape to the airtightness layer in an airtight manner after this layer has been installed.

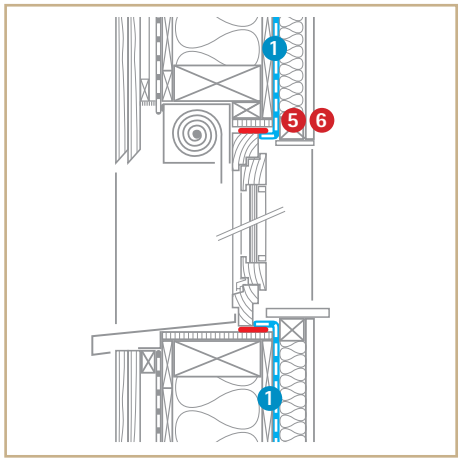
**) Alternatively, pipes can be sealed using short strips of TESCON VANA or TESCON No.1.



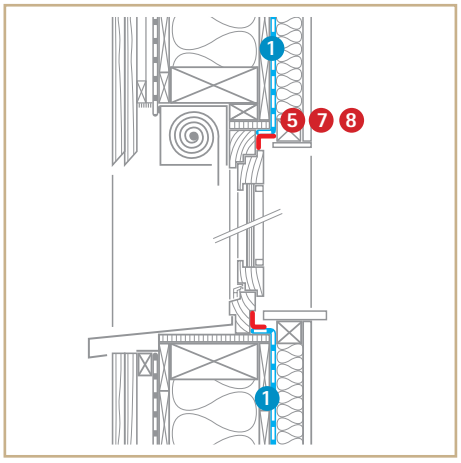
Sealing at interior wall



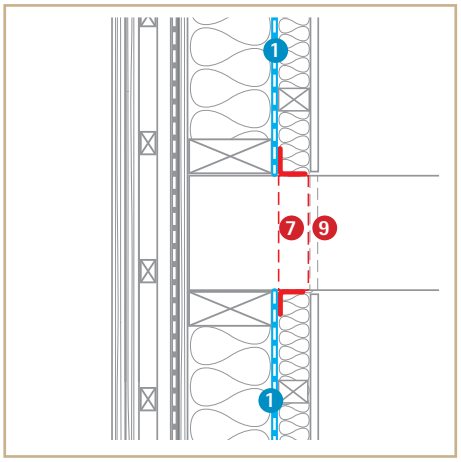
Sealing at reinforced concrete, ceiling or ground slab



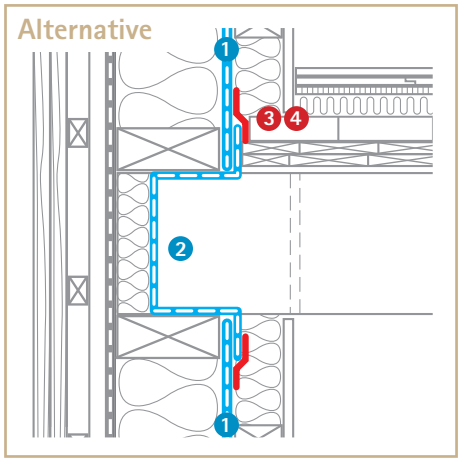
Sealing at windows, at the side of the frame

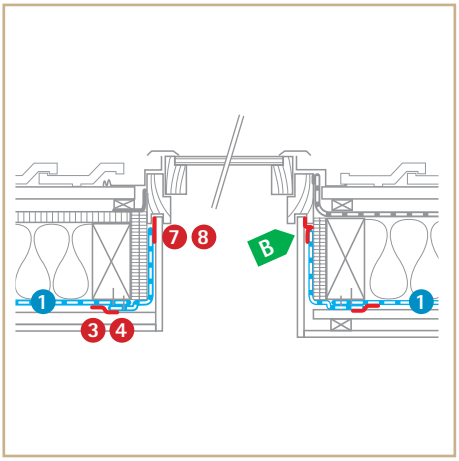


Sealing at windows, on the frame

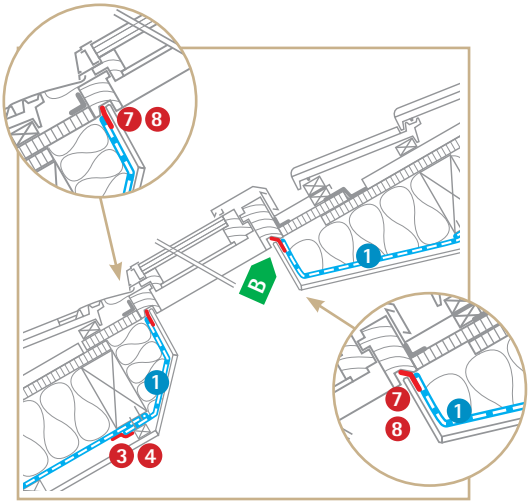


Penetration
Beams or angular components

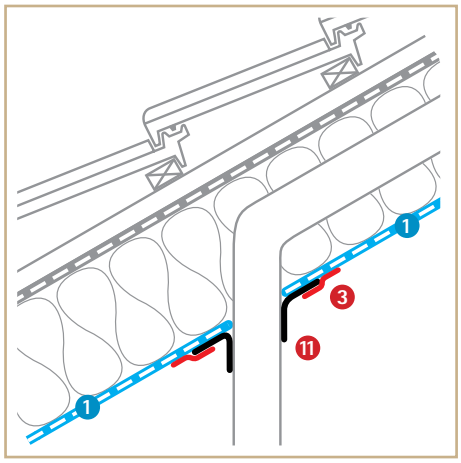




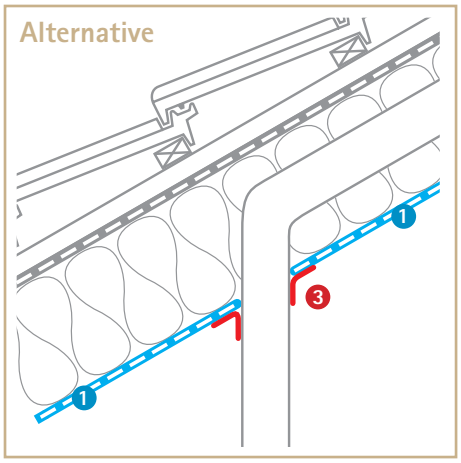
Sealing at skylights
Longitudinal cross-section



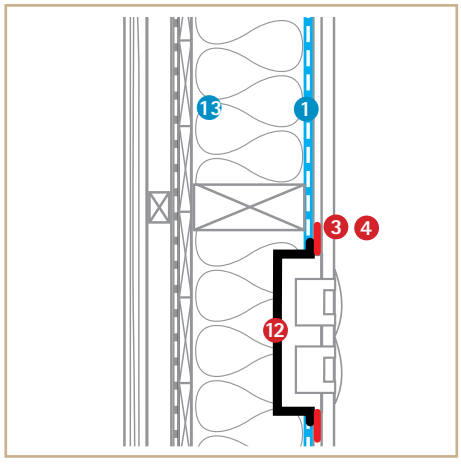
Sealing at skylights
Transverse cross-section



Pipe feed-through with grommet



Pipe feed-through with adhesive tape



Inclusion of sockets
Without a service zone

Tips

A The airtightness layer should not be compromised close to interior walls.

B Stick in the groove of the skylight. There must be no tensile loading on the sealing due to the weight of the thermal insulation. If necessary, the insulation should be supported by a substructure.

C Clean the concrete surface carefully. Bind particulate dust with an undercoat of TESCON PRIMER AC or TESCON PRIMER RP where necessary.

D Level off unevenness around brackets and screws using airtightness joint adhesive.

... Interior air sealing with vapour retarder membranes – continued

Legend

1. Airtight membrane
   INTELLO
   INTELLO PLUS
   DB+
2. Wood-based panel (e.g. OSB)
3. Sealing tape
   DA-S
4. Adhesive tape
   TESCON VANA
   TESCON No.1
   RAPID CELL*)
   UNI TAPE
5. Plaster sealing tape
   CONTEGA PV **)
6. Joint adhesive
   ORCON F
   ORCON CLASSIC
   ORCON LINE
7. ECO COLL for DB+
8. Exterior wall
9. Interior wall

Info

*) Care is required when crossing occurs in the case of adhesion using RAPID CELL: ORCON F / ORCON CLASSIC, ORCON LINE and ECO COLL have no adhesion on the siliconised surface of pro clima RAPID CELL fast adhesive tape. Transfer tape consisting of TESCON VANA, TESCON No.1, TESCON INVIS or UNI TAPE must be applied perpendicular to the fast adhesive tape for these air seals.

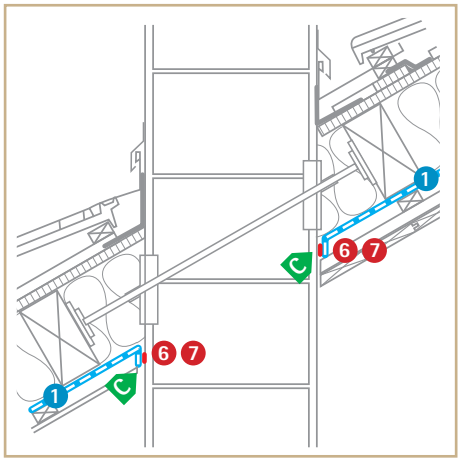
**) Gypsum plasters have very good adhesion on CONTEGA fleece. A bonding bridge – e.g. a reinforcing mortar – must be used for lime and cement plasters.

Chimney penetration

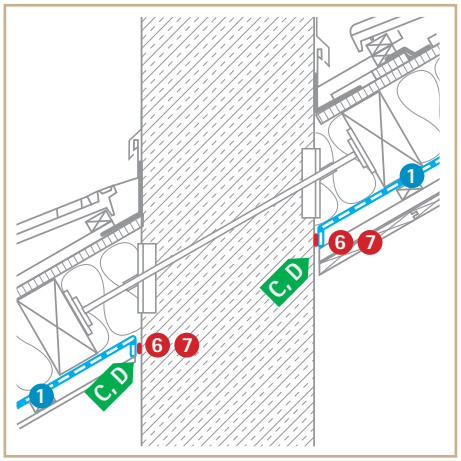
Sealing at chimneys is governed by the German Specimen Firing Ordinance (MFeuV) and DIN V 18160 -1: 2006-01 in Germany. According to these regulations, flammable components may not be attached directly to chimneys because of the risk of a chimney fire. According to the ordinance and standard listed above, components with a small contact area form an exception here, e.g. underlay/sarking membranes and vapour retarders.

For this reason, these membranes can generally be attached directly. If necessary, consult your local district chimney sweep.

Prefabricated chimneys made from concrete are airtight by nature. However, chimneys made from shaped
blocks (e.g. expanded clay) are not. The consequence of this is that a significant lack of airtightness results if moulded bricks are not plastered, but instead only cladded with plasterboard; this can significantly worsen the air change rate of a building. Chimneys made from moulded bricks must be covered with at least a thin layer of plaster on all sides. If the chimney is to be installed beside an adjacent wall, the layer of plaster must be applied before the individual bricks are laid.

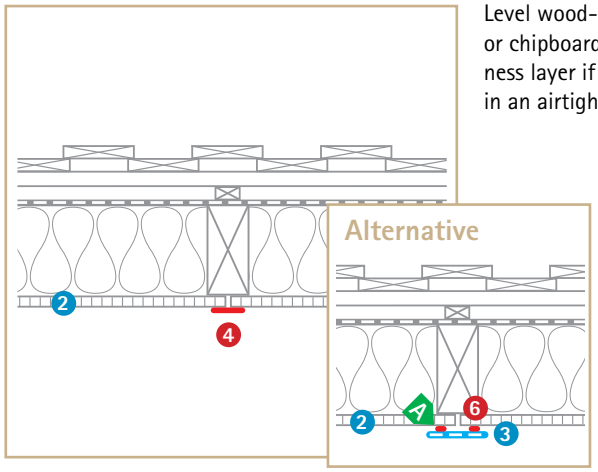


Sealing to plastered chimney



Sealing to concrete chimney

Interior air sealing with derived timber sheathing (e.g. OSB)



Sealing panel joints

Level wood-based panels such as OSB, plywood or chipboard panels can be used as an airtightness layer if joints and connections are sealed in an airtight manner.

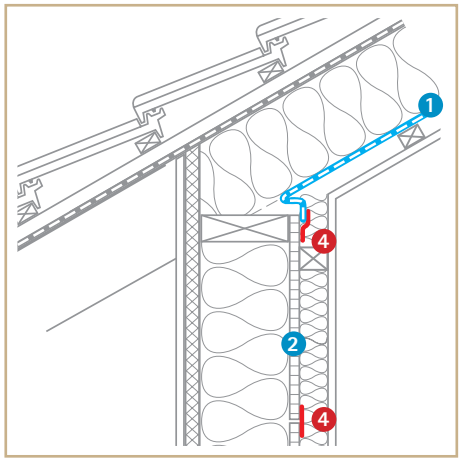
Tips

A With the DKF double nozzle, two parallel lines of ORCON F/ ORCON CLASSIC can be applied simultaneously.

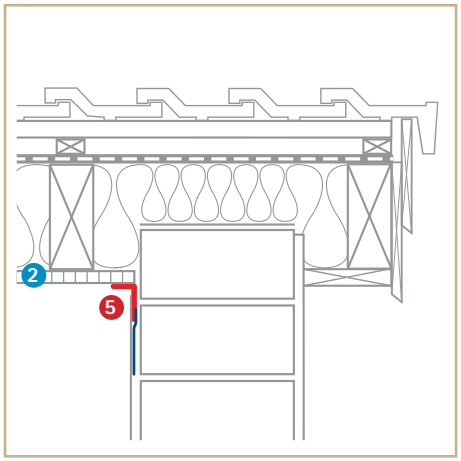
B The airtightness layer should not be broken close to interior walls.

C Clean the subsurface carefully. Bind particulate dust with an undercoat of TESCON PRIMER AC or TESCON PRIMER RP where necessary.

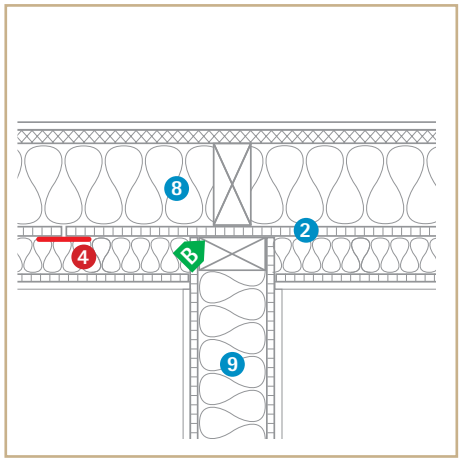
D The bond between the vapour retarder and smooth, pore-free, non-sanding pre-fabricated chimneys can also be carried out using TESCON VANA or TESCON No.1. If necessary, apply primer to the subsurface here too.



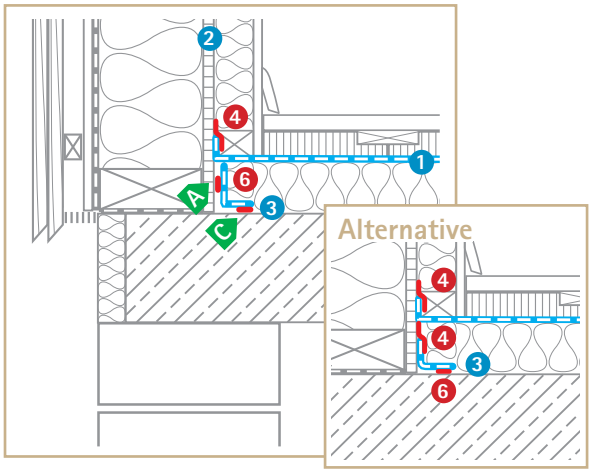
Sealing at knee wall



Sealing at Gable



Sealing at interior wall



Sealing to solid ceiling or ground slab

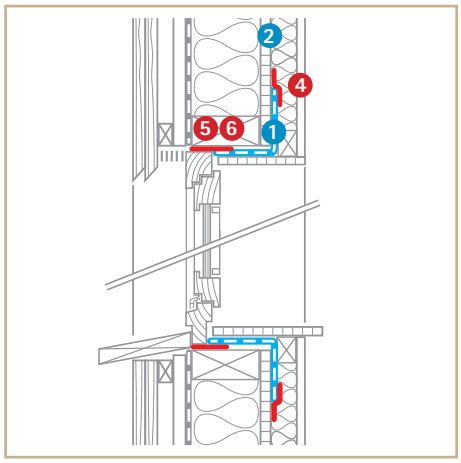
... Interior air sealing with wood-based panels – continued

Legend

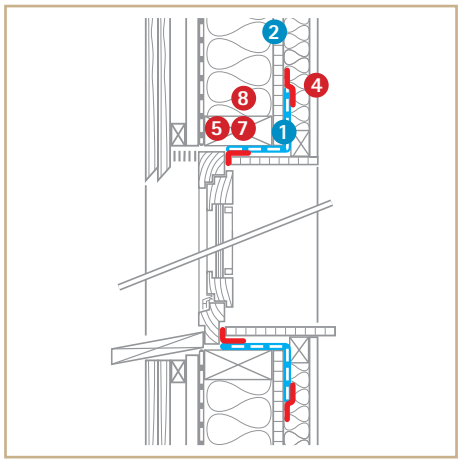
1. Airtight membrane
   INTELLO
   INTELLO PLUS
   DB+
2. Wood-based panel (e.g. OSB)
3. Wind-sealing membrane
   SOLITEX UD
   SOLITEX PLUS
4. Adhesive tape
   TESCON VANA
   TESCON No.1
   RAPID CELL
   UNI TAPE
5. Window sealing tape
   CONTEGA SL*)
6. Window sealing tape
   CONTEGA IQ*)
7. Sealing tape
   TESCON PROFIL
8. TESCON INCAV in corner areas
9. Cable grommet
   KAFLEX mono / KAFLEX duo
10. Pipe grommet
    ROFLEX
11. Installation box
    INSTAABOX

Info

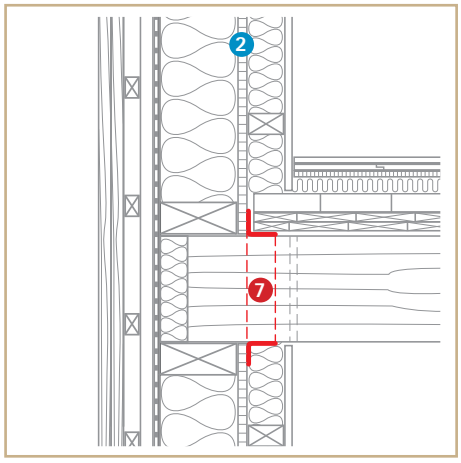
*) Fold tape into the corners of the window. Stick tape to the airtightness layer in an airtight manner after this layer has been installed.



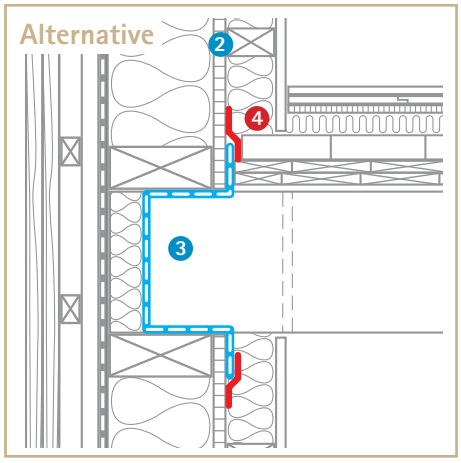
Sealing at windows, at the side of the frame

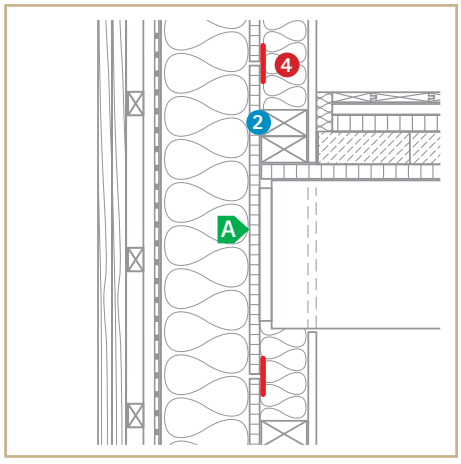


Sealing at windows, on the frame

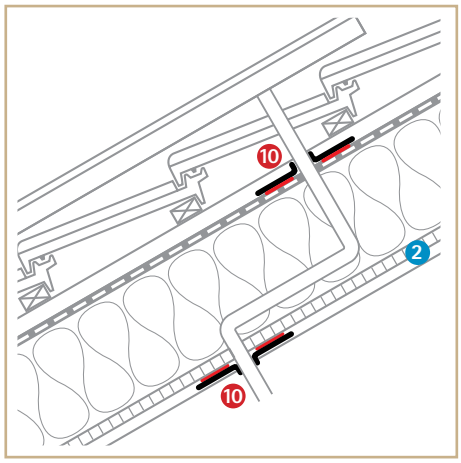


Penetration of beams or angular components

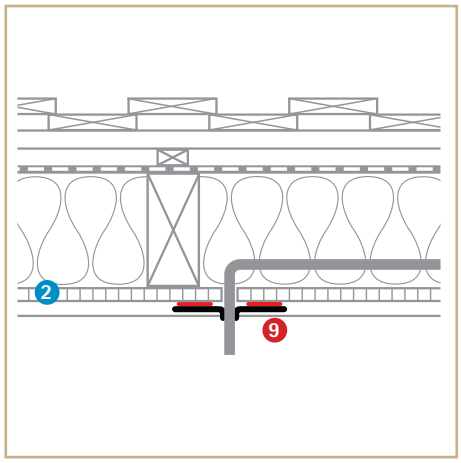


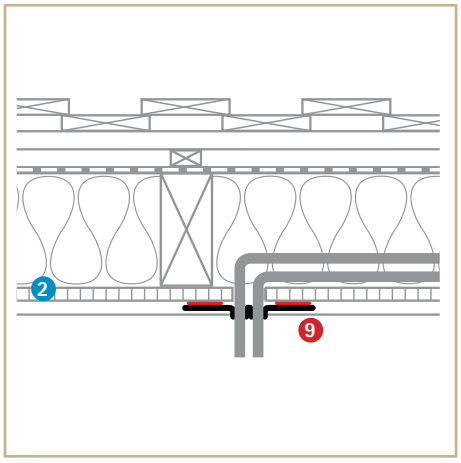


Sealing to beam, without penetration

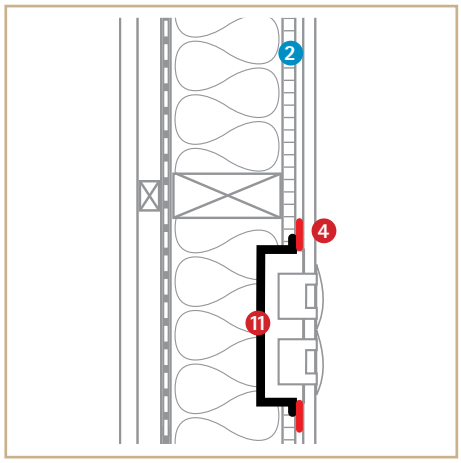


Pipe feed-through





Cable feed-through



Inclusion of switches and sockets, without a service zone

Tips

A It is often easier to plan the airtightness layer in such a way that is does not need to be broken close to the ceiling levels.

Interior air sealing for masonry structures

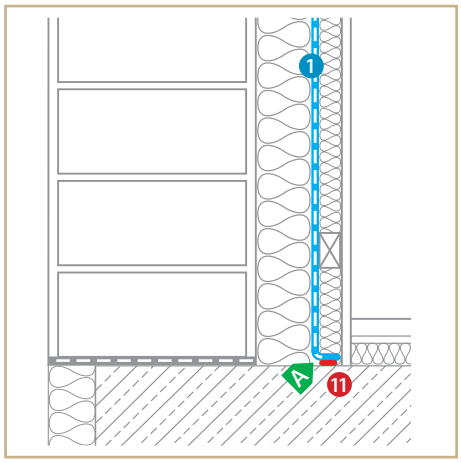
Legend

1. Airtight membrane
   INTELLO
   INTELLO PLUS
2. Airtight membrane
   INTESANA
   DA
3. Sealing tape
   DA-S
4. Airtight
   interior plaster layer
5. Adhesive tape
   TESCON VANA
   TESCON No.1
6. Adhesive tape (double-sided)
   DUPLEX
   connect technology
   (integrated self-adhesive zones)
7. Sealing tape
   TESCON PROFIL

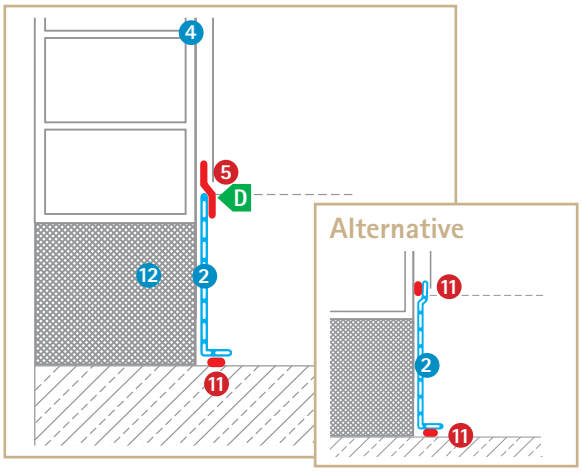
   Window sealing tape
8. CONTEGA SL*)
9. CONTEGA FC*)
10. CONTEGA IQ*)
11. Joint adhesive
    ORCON F
    ORCON CLASSIC
    ORCON LINE
12. ISO filling layer or plaster not applied as far as bottom
13. Beam
14. Rafter

Info

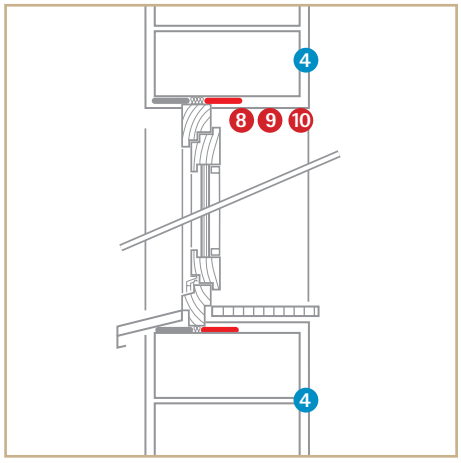
*) Fold tape into the corners of the window. Stick tape to the airtightness layer in an airtight manner after this layer has been installed.
Gypsum plasters have very good adhesion on CONTEGA fleece. A bonding bridge – e.g. a reinforcing mortar – must be used for lime and cement plasters.



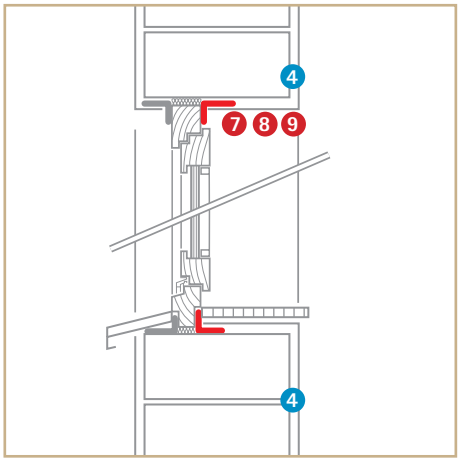
Sealing at ground or ceiling slab with interior insulation



Air sealing to non-plastered areas

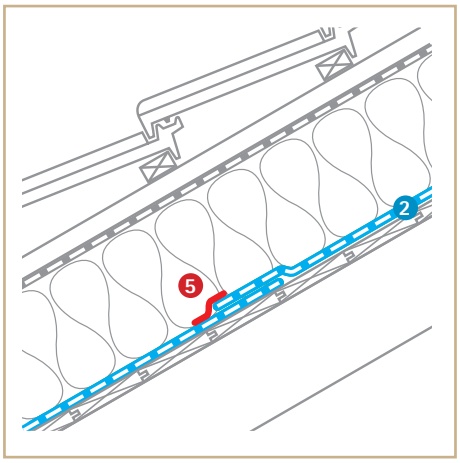


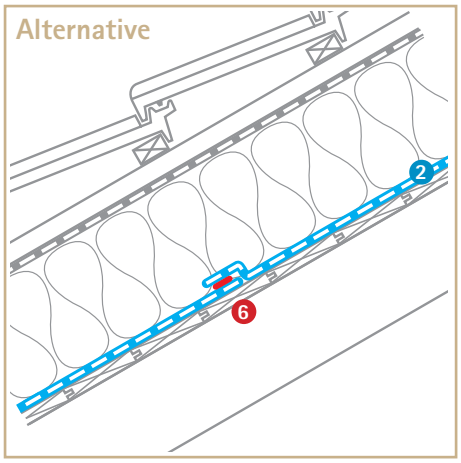
Sealing at windows, at the side of the frame, masonry wall



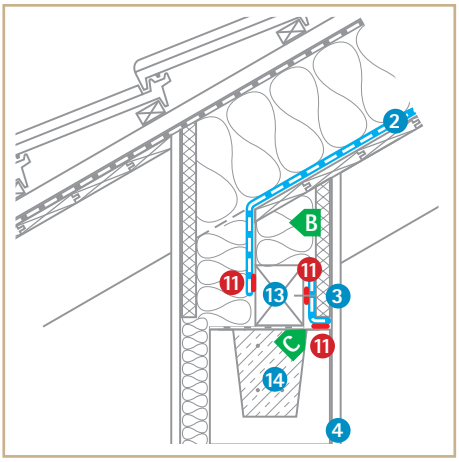
Sealing at windows, on the frame, masonry wall

Air sealing with external roof insulation

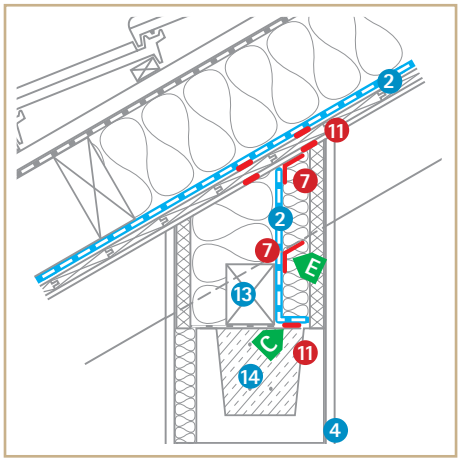




Sticking membrane overlaps



Sealing at knee wall (offset main rafter)



Sealing at knee wall (continuous main rafter)

In the case of over-rafter insulation, the airtightness layer must be planned in detail in advance, particularly in joint areas. Careful installation is essential, as testing of the airtightness is only partially possible with overpressure and artificial fog – for example, using pro clima WINCON – as the airtightness layer is no longer directly accessible.

Tips

- **A** Clean the subsurface carefully. Bind particulate dust with an undercoat of TESCON PRIMER AC or TESCON PRIMER RP where necessary.
- **B** If more than 20 % of the thermal insulation (of total thermal resistance) is located before the vapour retarder, diffusion verification is to be carried out where necessary.
- **C** Ensure that the joint between the base purlin and the rafter is sealed.
- **D** Adhesive tape plastered over
- **E** Corners with TESCON INVEX

... Air sealing with external roof insulation – continued

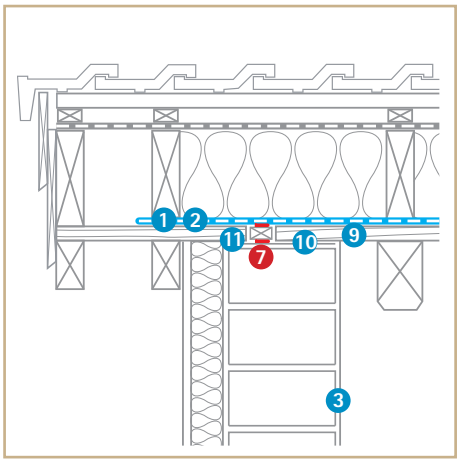
Legend

1. Airtight membrane INTESANA
2. Airtight membrane DA
3. Airtight interior plaster layer
4. Adhesive tape TESCON VANA TESCON No.1
5. Sealing tape TESCON PROFIL TESCON INCAV in corner areas
6. Plaster sealing tape CONTEGA PV*)
7. Joint adhesive ORCON F ORCON CLASSIC ORCON LINE
8. Pipe grommet ROFLEX**)
9. Wooden decking
10. Mortared wall cap
11. Roof lath
12. Roof sealing

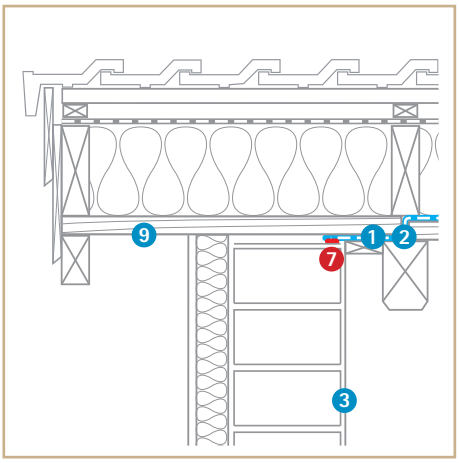
Info

*) Gypsum plasters have very good adhesion on CONTEGA fleece. A bonding bridge – e.g. a reinforcing mortar – must be used for lime and cement plasters.

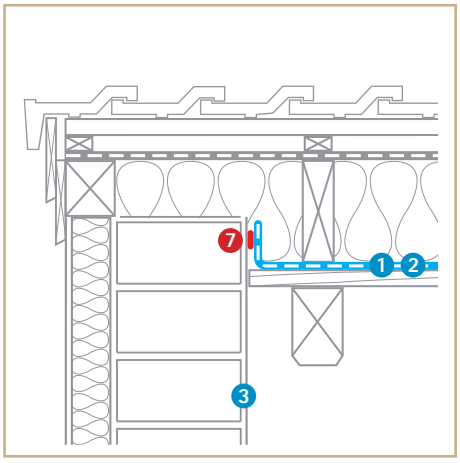
**) Alternatively, pipes can be sealed using short strips of TESCON VANA or TESCON No.1.



Sealing at bargeboard with interrupted boarding

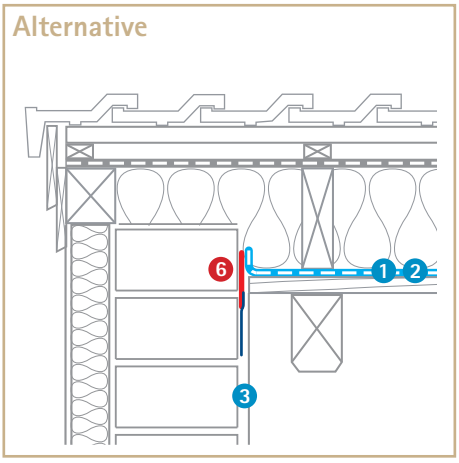


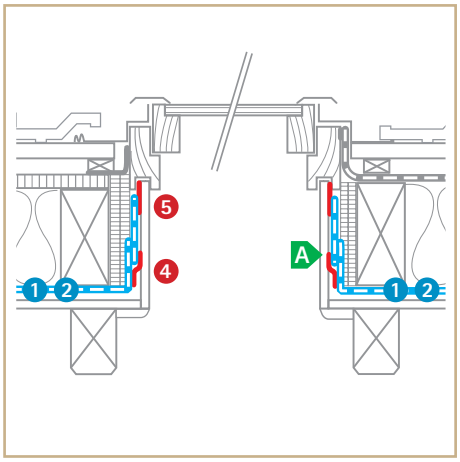
Sealing at bargeboard with interruption at first visible rafter



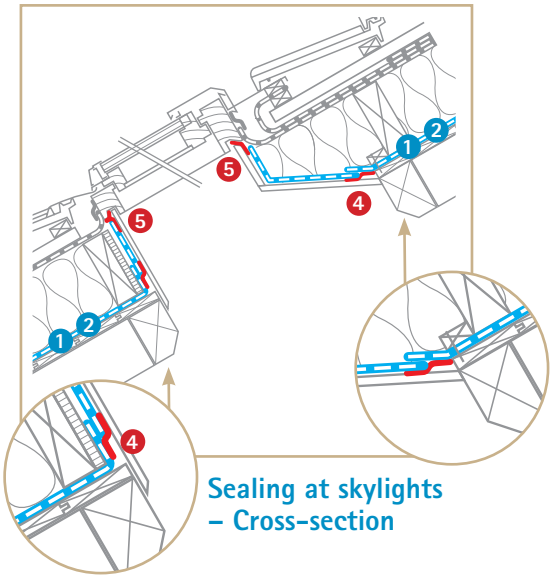
Sealing at bargeboard, interior

Alternative

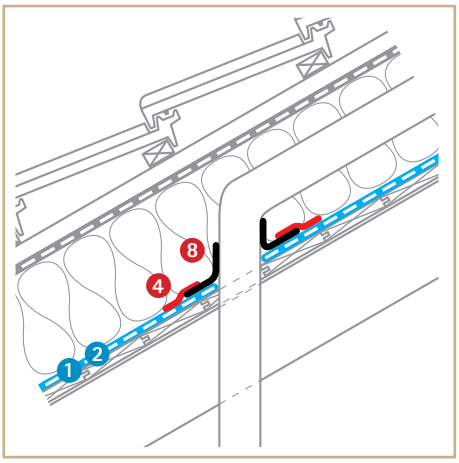


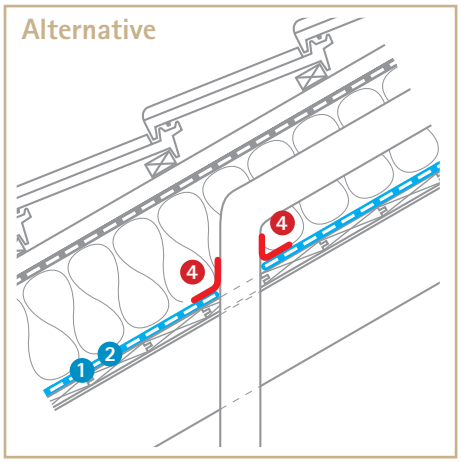


Sealing at skylights – Longitudinal section

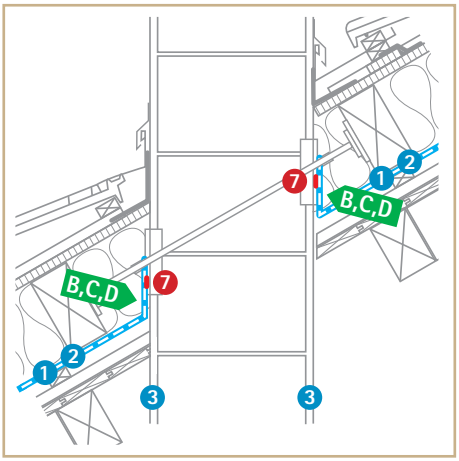


Sealing at skylights – Cross-section



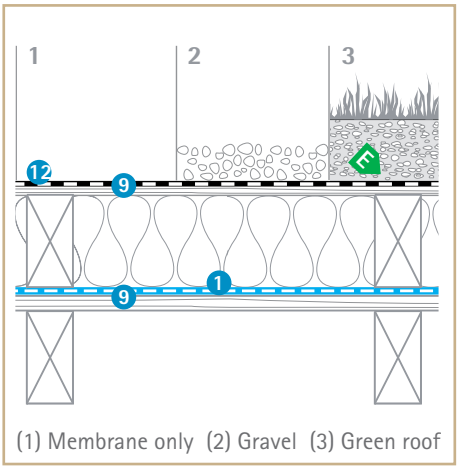


Pipe or cable feed-throughs



Sealing to chimneys

Please also observe the general information on sealing to chimneys on page 8.



Vapour retarder for diffusion-tight flat roof

Tips

A For sealing at skylights, pro clima DA or INTESANA must protrude sufficiently from the roof surface so that they can be attached to the frame of the window using a strip of vapour retarder.
Alternatively, the membrane can be extended with an additional strip of vapour retarder as far as the window frame. Sealing to the window frame is carried out using pro clima TESCON PROFIL.

There must be no tensile loading on the sealing due to the weight of the thermal insulation. If necessary, the insulation should be supported by a substructure.

B Stick overlaps in the vapour retarder in corner areas using pro clima TESCON No.1 / TESCON VANA.

C Clean the subsurface carefully. Bind particulate dust with an undercoat of TESCON PRIMER AC or TESCON PRIMER RP where necessary.

D The bond between the vapour retarder and smooth, pore-free, non-sanding pre-fabricated chimneys can also be carried out using TESCON VANA or TESCON No.1. If necessary, apply primer to the sub-surface here too.

E Under certain circumstances, additional insulation with hygric separation may be necessary. Contact our Engineering Hotline for a release. > Call: +49 (0) 62 02 – 27 82.0

Refurbishment solutions

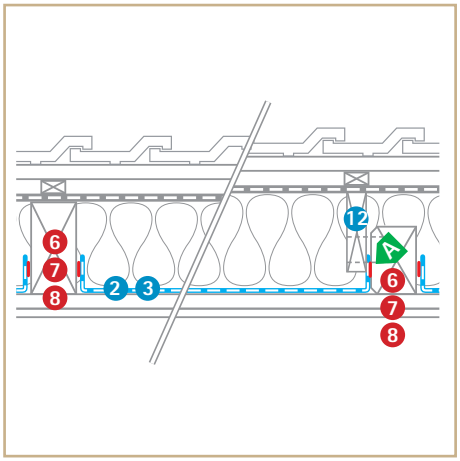
Air sealing for sub-and-top, tub-shaped and renovation wallpaper

Legend

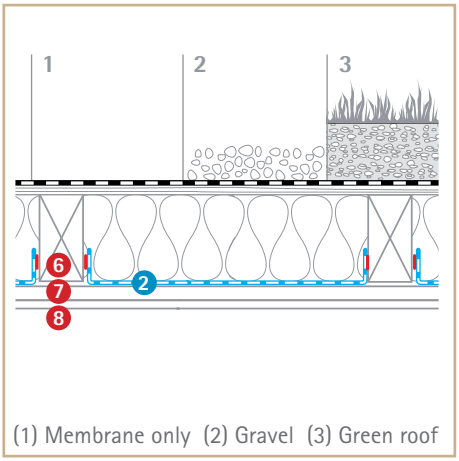
1. Airtight membrane DASATOP
2. Airtight membrane INTESANA INTELLO DB+
3. Airtight membrane DA
4. Vapour retarder membrane SANTA
5. Adhesive tape TESCON VANA TESCON No.1
6. Joint adhesive ORCON F ORCON CLASSIC
7. Joint adhesive ECO COLL for DB+
8. Joint adhesive ORCON LINE
9. Pipe grommet ROFLEX*)
10. Cable grommet KAFLEX
11. Rafter
12. Strap
13. Position held by 3-4 mm of hard fibre or chipboard, for example.
14. Doubling
15. Existing inner cladding (airtight)
16. Purlin

Info

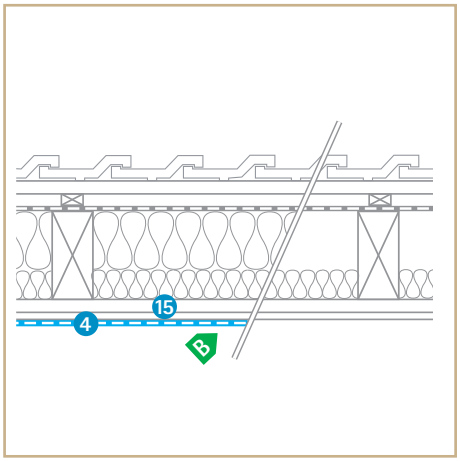
*) Alternatively, pipes can be sealed using short strips of TESCON VANA or TESCON No.1.



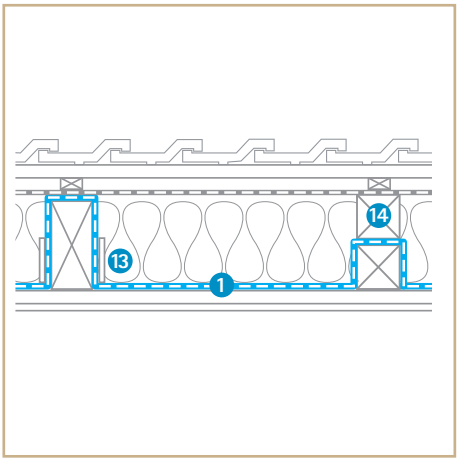
Vapour retarder, external installation, tub-shaped



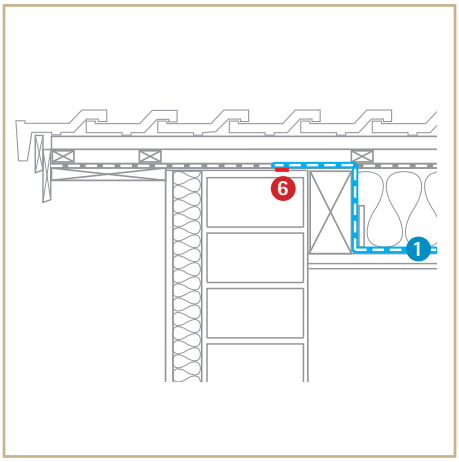
Flat roof, installation of vapour retarder, tub-shaped



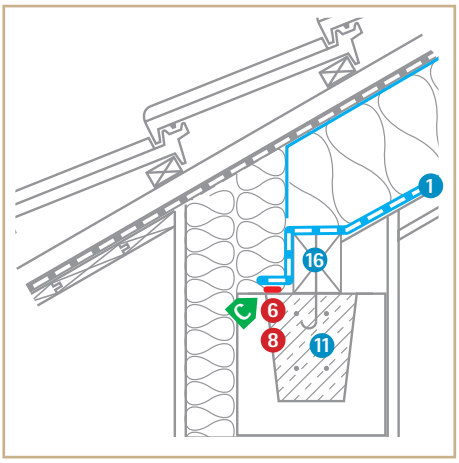
Vapour retarder, interior, renovation wallpaper



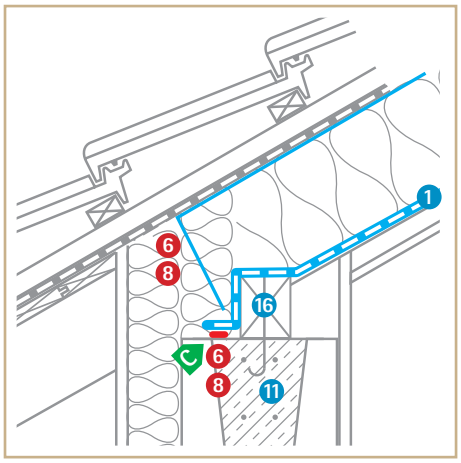
Vapour retarder, external installation, sub-and-top



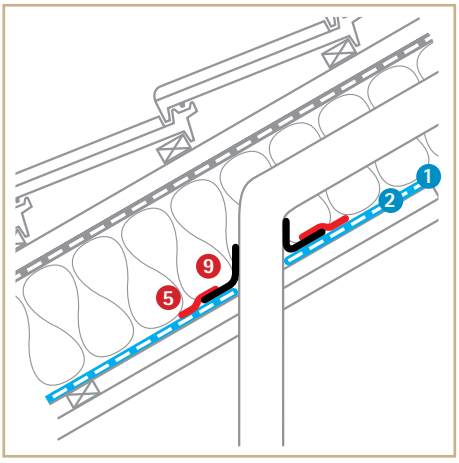
Sub-and-top installation
Sealing at bargeboard



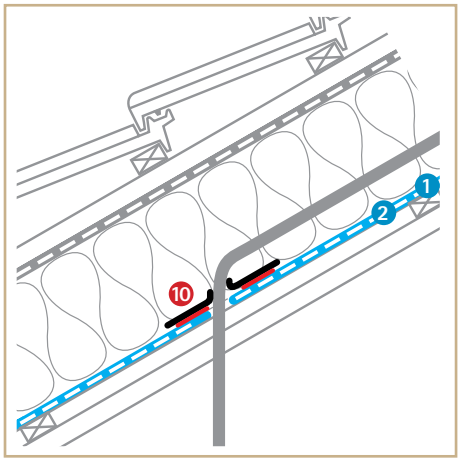
Knee wall sealing, sub-and-top with offset rafter



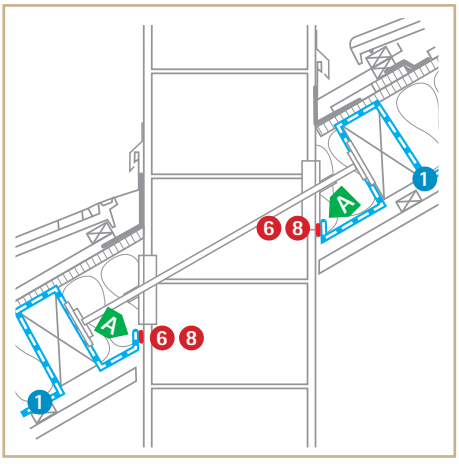
Knee wall sealing, sub-and-top with continuous rafter



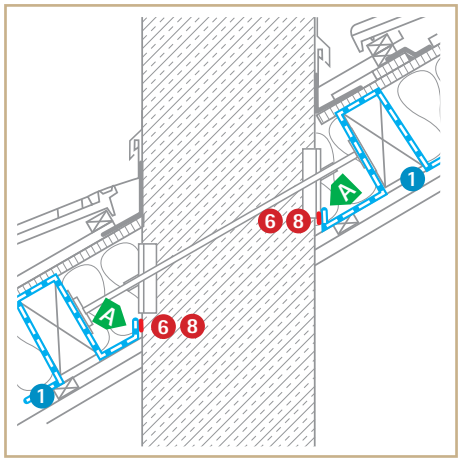
Pipe feed-through for sub-and-top and tub-shaped



Cable feed-through for sub-and-top and tub-shaped



Sub-and-top installation Sealing to plastered chimney



Sub-and-top installation Sealing to concrete chimney

Tips

A Clean the subsurface carefully. Bind particulate dust with an undercoat of TESCON PRIMER AC or TESCON PRIMER RP where necessary.

B The pro clima SANTA renovation wallpaper fulfils the function of a vapour retarder. To ensure airtightness, the subsurface (e. g. plaster on Heraklith woodwool boards or plasterboards) is to be attached to the adjacent components in a permanently elastic and joint-free manner.

C Ensure that the joint between the base purlin and the rafter is sealed.

Please also observe the general information on sealing to chimneys on page 8.

Refurbishment solutions
Air sealing at centre of structure

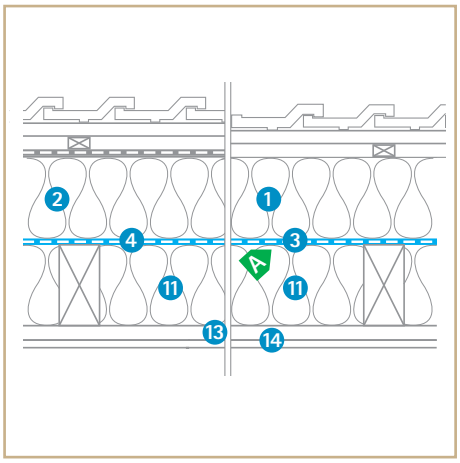
Legend

1. Over-rafter insulation wood fibre underlay panel
2. Over-rafter insulation, mineral fibre, wood or cellulose fibre, flax, hemp ...
3. Airtight membrane DASAPLANO 0.01 connect
4. Airtight membrane DASAPLANO 0.50 connect
5. Adhesive tape TESCON VANA TESCON No.1
6. Sealing tape TESCON PROFIL
7. TESCON INCAV in corner areas
8. Joint adhesive ORCON F ORCON CLASSIC ORCON LINE
9. Pipe grommet ROFLEX*)
10. Cable grommet KAFLEX
11. Fibrous compartment insulation
12. Fibrous, sorptive compartment insulation, at least 4 cm
13. Laths
14. Inner cladding
15. Rafter
16. Wall cap

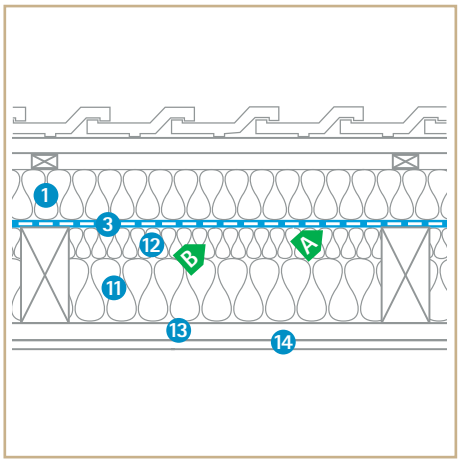
Info

*) Alternatively, pipes can be sealed using short strips of TESCON VANA or TESCON No.1.

**) Different recommendations may be made by the manufacturers of insulation materials; in such cases, the manufacturers' recommendations apply.

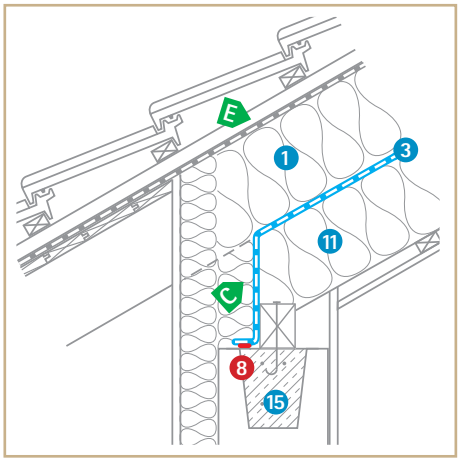


Standard structure, 1:1 solution **)

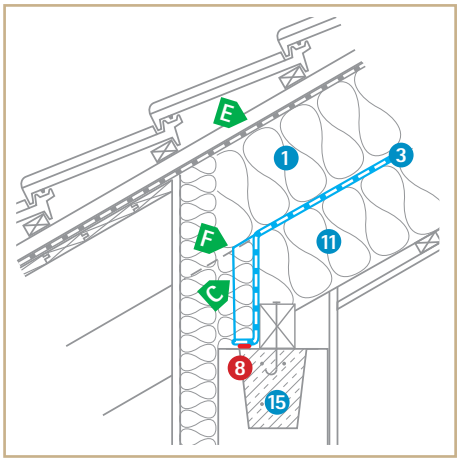


Standard structure, 2:1 solution **)

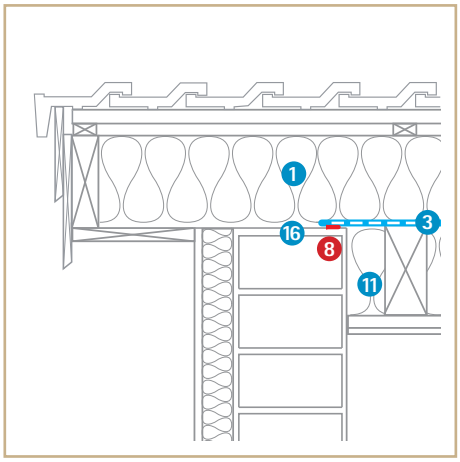
Sealing detail views show the 1:1 structure with insulation cover consisting of wood fibre underlay panels. Sealing for 2:1 structure is carried out in an manner.



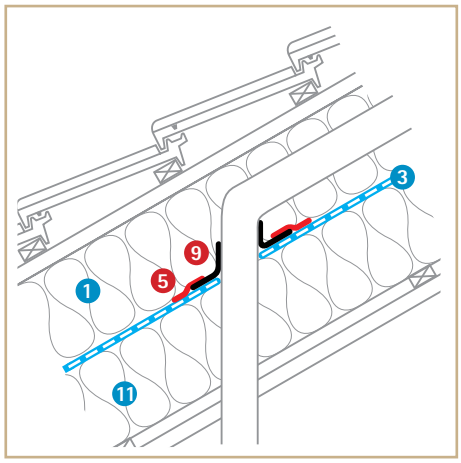
Sealing at knee wall with offset rafters



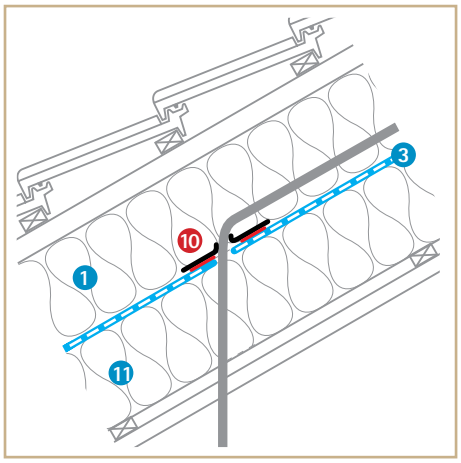
Sealing at knee wall with continuous rafters



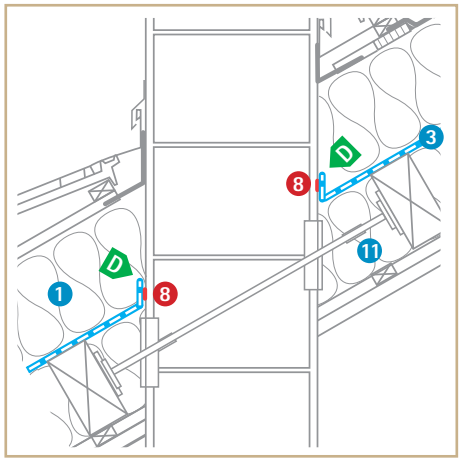
Sealing at bargeboard



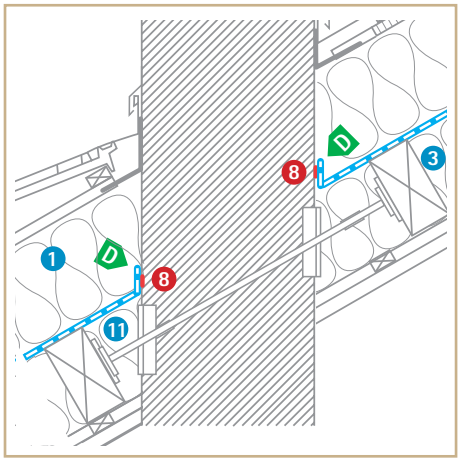
Pipe feed-through



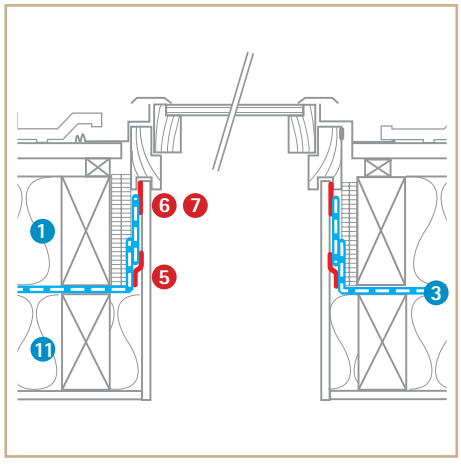
Cable feed-through



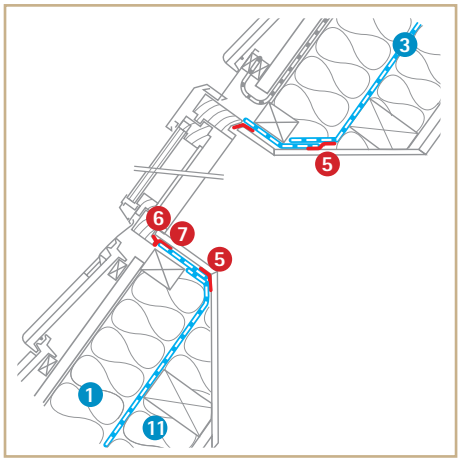
Sealing to plastered chimney



Sealing to concrete chimney



Sealing at skylights – Longitudinal section



Sealing at skylights – Cross-section

Tips

A DASAPLANO 0.01 connect with monolithic pore-free membrane required. Installation only possible with wood fibre underlay panel without additional underlay membrane.

B In the case of 2:1 insulation cover, a sorptive insulation material (e.g. wood fibreboard or cellulose) with a thickness of at least 4 cm is required in the space between the rafters directly underneath the DASAPLANO 0.01.

C In vertical area, place as much insulation as possible on the cold side of the airtight membrane.

D Clean the subsurface carefully. Bind particulate dust with an undercoat of TESCON PRIMER AC or TESCON PRIMER RP where necessary.

E Guide the underlay membrane into the first panel joint.

F TESCON INVEX in corner areas

Please also observe the general information on sealing to chimneys on page 8.

Additional system solutions for sealing of the building envelope

INTELLO maximum reliability system

INTELLO vapour retarder and air sealing system
Maximum protection against structural damage and mould – also for sophisticated civil engineering structures.
Humidity-variable s_d value 0.25 to >25 m.

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!

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 of 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

You can also visit pro clima ONLINE!

Further information and background information at

www.proclima.com

Information and ordering

You can obtain information on all pro clima systems, tender information and brochures quickly and simply by contacting our information service:
Phone: +49 (0) 62 02 – 27 82.0
Fax: +49 (0) 62 02 – 27 82.21
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Further information about application and construction is given in the pro clima planning documentation and application recommendations. If you have any questions, please call the pro clima technical hotline Ireland and UK:

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