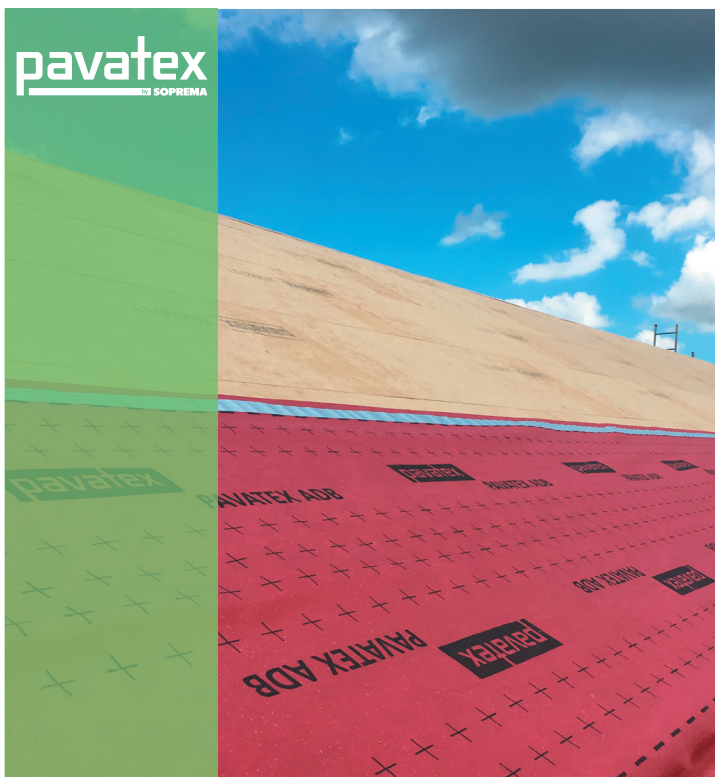


pavatex
BY SOPREMA



NATURAL
INSULATION

PAVATEX
PAVAROOF PITCHED



PAVATEX BY SOPREMA

WOODFIBRE INSULATION

PAVATEX provides insulation solutions for the modern building environment and is able to meet the needs of your project including roofs, floors, internal and external insulation.

PAVATEX systems can help to solve a number of issues including thermal insulation in the winter, heat protection in the summer as well as acoustic insulation. A truly sustainable product, **PAVATEX** helps to provide a breathable structure which is airtight and yet maintains the perfect indoor climate.



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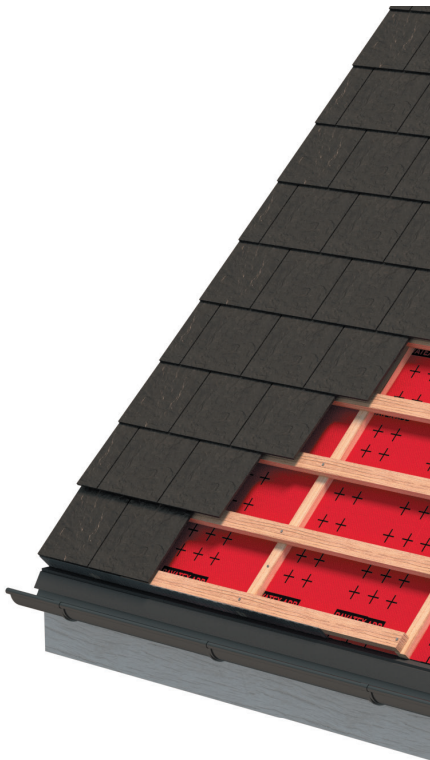
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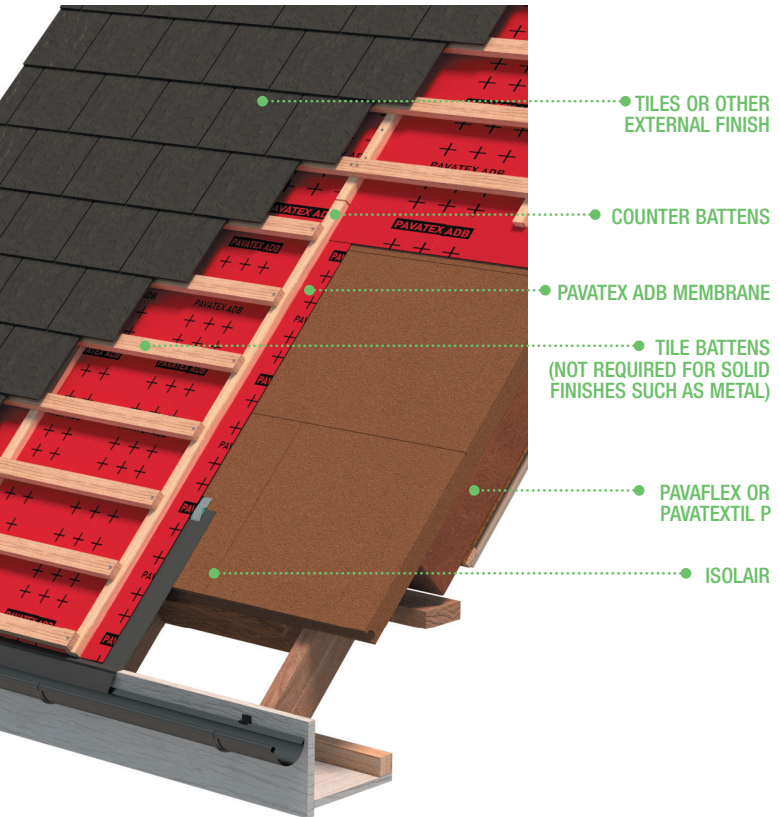
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1. Introduction

What is Pavatex pitched roof system.

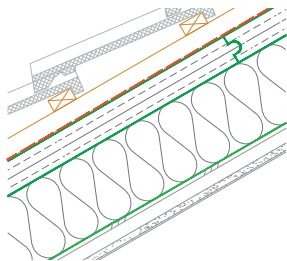
A layer of Tongue and groove (T&G) high density insulation board (PAVATEX ISOLAIR) over the rafters and a flexible insulation (PAVATEX PAVAFLEX OR PAVATEXTIL P) between the rafters. Counter battens to fix the T&G insulation boards back to the rafters. Breathable membrane is not necessarily required but it is suggested to install one if it is the local practice or as per the site requirement.



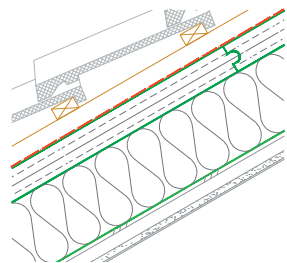


Compatibility

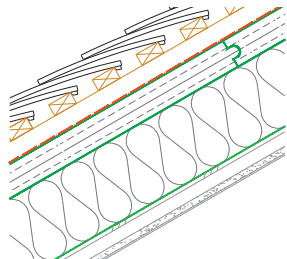
The Pavatex pitched roof system can be used with various roof finishes



Low profile tiles



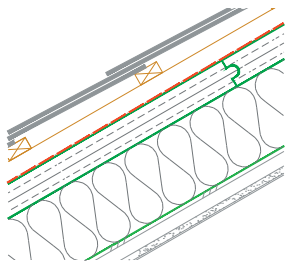
High profile tiles



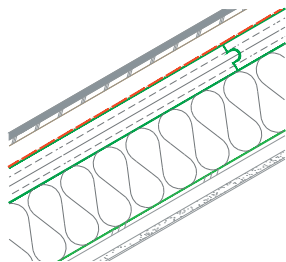
Plain tiles

Compatibility

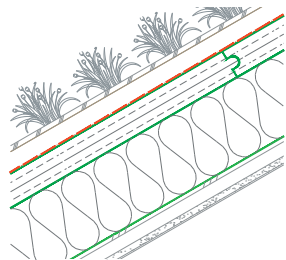
The Pavatex pitched roof system can be used with various roof finishes



Slate tiles



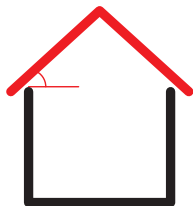
Metal finish on structural decking



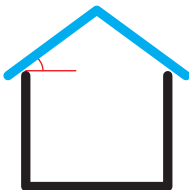
Decking with green roof system

2. Conditions/Requirements

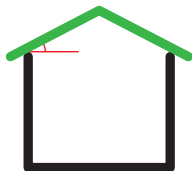
Breathable membrane requirement



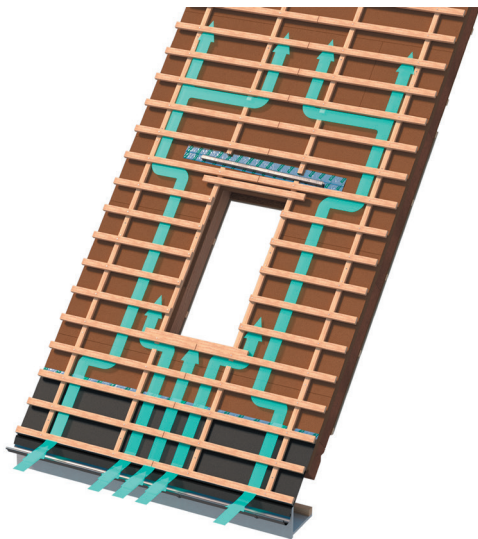
Greater than 18°
not necessarily required



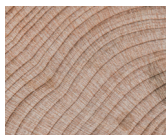
Greater than 15°
and less than 18°
required



Less than 15°
contact technical support



Roof **MUST** be ventilated
via counter battens. System
MUST be installed with a
counter batten.

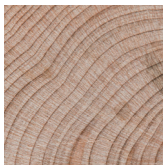
Min. counter batten thickness

40mm

50mm

(Optional) For open finish

Tiles slates, etc,
similar



50mm

50mm

For all type of finish**If in doubt**

Contact technical

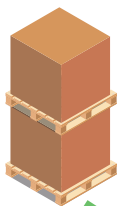
3. Health & Safety

- Local health and safety guidance/law must be followed for working at height. Proper PPE must be worn whilst working on the roof.
- Safety goggles, gloves and dust mask must be worn during cutting to protect the user from the small, non-hazardous, dust particles.

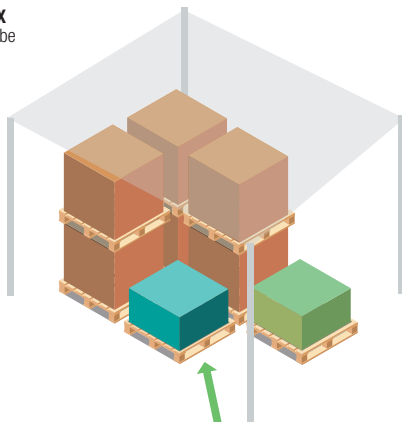


4. Storage and Site handling

Pallets of **PAVATEX PAVAFLEX** or **PAVATEX PAVATEXITIL** must not be stacked



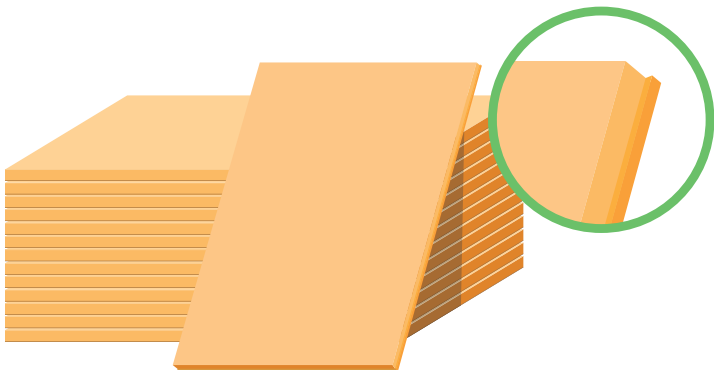
Up to 2 pallets of rigid boards may be stacked if the pallets are less than 1.3 metres tall. Ensure that pallet stacks are aligned and not staggered.



All **PAVATEX**-products must be stored in a dry place and protected from moisture. The storage area must be level so that the pallets or pallet stacks are stable and secure.

Carrying the boards

Profiled boards increase product stability. For smooth installation of the insulation boards, it is important to treat the board edges with care and avoid damage during use.

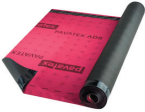




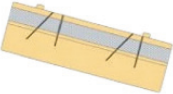



The insulation boards can be placed (e.g. on the roof) individually or as a unit on the pallet. Normal lifting equipment such as a crane or conveyor belt are used.



5. Site check list

Products		Tick
<p>ISOLAIR T&G Pavatex rigid insulation boards</p>		
<p>PAVAFLEX or PAVATEXIL P Flexible insulation to fit between rafters</p>		
<p>PAVATEX PAVATAPE 150 To seal non-t&g joints of the boards (not necessarily required if breathable membrane is used over the boards)</p>		
<p>PAVATEX PAVATAPE 75 To seal the eaves tray to the rigid woodfibre boards (not necessarily required if breathable membrane is used over the boards)</p>		
<p>PAVATEX PAVATAPE FLEX To seal circular junctions and complicated junction i.e, Vent pipes penetrations. Required in both case with or without breathable membrane</p>		

<p>PAVATEX ADB BREATHABLE MEMBRANE (if required) Self sealing longitudinal joints. Pavabond glue or pavatape 12 double sided tape is required to seal the lateral overlaps</p>		
<p>PAVATEX DB 3.5 VAPOUR CONTROL MEMBRANE (for internal airtightness, as per design) Pavafix tape range and Pavatape flex is required to fully seal the membrane</p>		
<p>PAVATEX PAVAFIX 60 TAPE To seal the membrane joints and Pavatex PAVAFIX 150 for larger gaps</p>		
<p>PAVATEX PAVATAPE 12 Double sided tape to seal the membrane overlaps or to masonry or mineral substrate. There is no waiting time before it achieves its full strength</p>		
<p>PAVATEX PAVABOND To seal the membrane overlaps or to masonry or mineral substrate. There is a waiting time before it achieves its full strength</p>		
<p>FIXING DETAIL and FIXING PLAN Supplied by the fixing manufacturer. If not available, request the design team to provide one</p>		
<p>THERMALLY BROKEN, WASHER FIXINGS Required to temporarily fix the insulation boards</p>		

For high density insulation
(ISOLAIR)


For low density insulation
(PAVAFLEX or PAVATEXIL P)

Tools

<p>ALLIGATOR SAW</p> <p>The Alligator saw is a useful power tool with 110v to cut into greater thicknesses of rigid woodfibre board on site. Confirm the correct blade with the manufacturer.</p> <p>The Alligator saw can be used with an upright guide to give a neat and clean cut.</p>	YES	YES
<p>CIRCULAR SAW</p> <p>With min 70mm cut depth. Deeper depth would be an advantage</p> <p>The insulation board thicknesses start from 20mm up to 300mm or more.</p>	YES	NO
<p>RECIPROCATING SAW</p> <p>The saw can also cut greater thicknesses of woodfibre insulation boards. Draft cut with circular saw and complete the cut with a reciprocating saw. Use a serrated blade.</p>	YES	NO
<p>HANDSAW</p> <p>A handsaw is not ideal for cutting woodfibre boards but can be used for quick small cuts.</p>	YES	NO
<p>TAPPING TOOL</p> <p>A hammer and site made "timber block" to tap the board edges for tight fit. Other in situ methods can be used, make sure the tongue and groves are not damaged in tapping.</p>	YES	NO
<p>MULTI TOOL</p> <p>Multitool is ideal for intricate cuts, holes and other precision cuts in the boards.</p>	YES	NO

For high density insulation
(ISOLAIR)

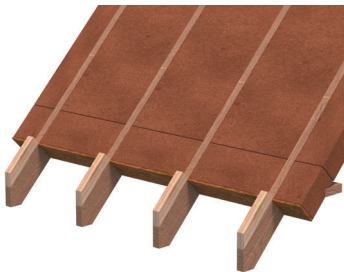
For low density insulation
(PAVAFLEX or PAVATEX^{PI})

<p>MAFELL INSULATION SAW</p> <p>The mafell insulation saw is a unique wire saw for cutting high density and flexible woodfibre insulating materials. Precision cutting for a perfect fit improves building insulation, eliminates thermal bridges and provides ideal thermal performance.</p>	YES	YES
<p>CIRCULAR TABLE SAW</p> <p>With 110mm or more cut depth for quick and clean cuts. Greater thicknesses of boards can be cut by flipping the boards (two side cut)</p>	YES	YES
<p>BAND SAW</p> <p>For larger jobs, band saw would be more efficient to make all types of cuts in almost all thicknesses of woodfibre with precision.</p>	YES	YES
<div style="text-align: center;">  </div> <p>FLEXIBLE INSULATION SAW</p> <p>Use the Pavatex flexible insulation knife or similar hand tool to cut flexible insulation.</p>	NO	YES
<p>FESTOOL FLEXIBLE INSULATION SAW</p> <p>For fast and easy cutting into flexible insulation.</p>	NO	YES
<p>OTHER TOOLS</p> <p>Other wood working tools may be required for proper installation of the insulation boards.</p>		

6. Site setup

Flexible insulation installation check

Prior to the installation of the over rafter T&G boards, check if the flexible insulation between the rafter is installed or is it possible to install it after the installation of the over rafter boards. Generally, it is installed from inside (friction fitted)



PAVAFLEX OR PAVATEXITL P between rafters

Measurements

Similar to laying T&G engineered floor laminates.

Measure the distance from the bottom edge location of the board to the ridge. Calculate the number of courses to avoid ending too short of the ridge (min 200mm of rafter length for fixing). If so, cut the boards at the eaves to adjust to the roof pitch length. It also applies if there is any roof window or chimney up the slope, make sure that the boards do not end up less than 200mm short of the stop.

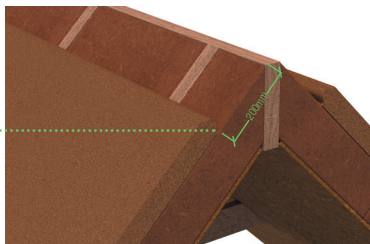
Also, measure the continuous horizontal length of the roof and make sure that each board must span over min. two rafters. If not, cut the first board and plan so that every board spans min. two rafters. No need to hit the board joints on the rafters, board joints can exist between rafters.



Initial measurement and planning

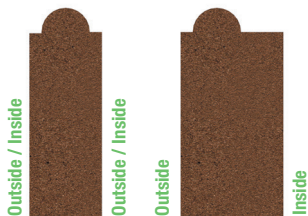
Careful planning can minimise wastage.

Min 200mm timber to take fixing for the end course.



Which side of the board is the right side

If the tongue is in the centre of the board edge, then there is no right or wrong side of the boards. If it is off centre, then the tongue must be furthest away from the structure i.e., towards the outside.



7. Installation

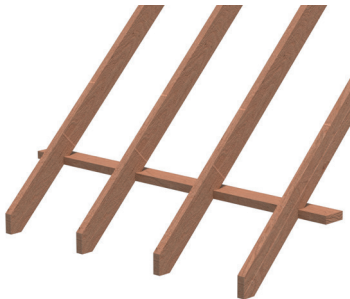
Sprocket/Stop timber

Fix a timber sprocket/stop of the same thickness as the external insulation boards on each rafter along the eaves.

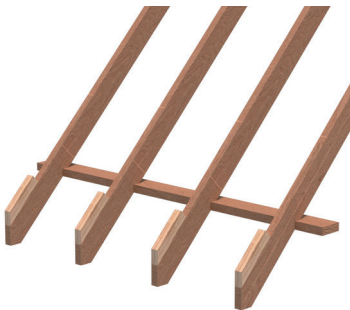
If the sprockets are not used, fix a temporary stopper to act as a stop for the first layer of insulation boards.

The sprocket also helps in reducing the number of fixings to be used to fix the counter battens. Check with the fixings manufacturer and the project structural engineer.

NOTE– the wall insulation layer (if any) should butt against the roof insulation to maintain the continuity of the insulation (low thermal bridging). Location and length of the sprockets should be calculated accordingly.



Roof timber structure



Sprocket or timber stop fixed to support the installation

Installation of the first course

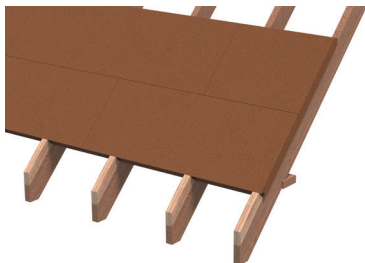
Make sure the tongue of the boards face up the ridge.

Place the first board tight against the sprocket. Fix the subsequent board ensuring that the (1) tongue is fully engaged by locating end tongue first then (2) side down.

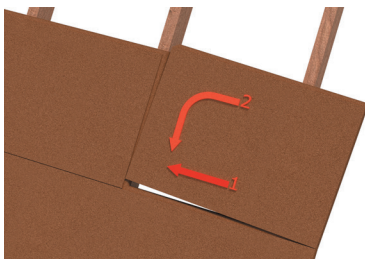
The T&G should be tightly fitted, if necessary, tap the boards to fit tight. Make sure that T&G are not damaged during tapping.

Joints

The lateral joints between the two insulation boards are not necessarily required to hit on the rafters.



First course with full board



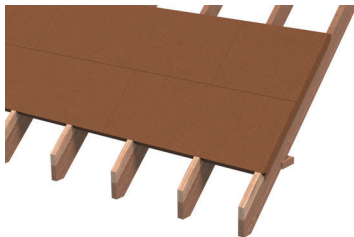
Fix ensuring that the tongue is fully engaged by locating end tongue first then slide down onto the lower board.

Installation of the second course

Generally, you would start the next course with half board and so on.

Joints

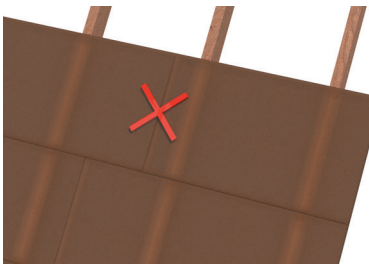
Avoid having joints between rafters in consecutive courses.



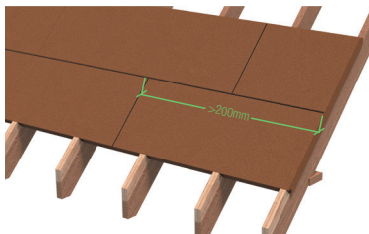
Second course generally starts with half board or as per planning.

Staggering

Stagger the board courses by min. 200mm or plan to have staggering of minimum half a board.



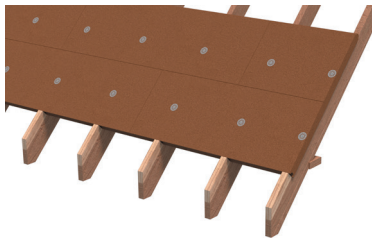
Second course generally starts with half board or as per planning.



Boards must be installed with a minimum 200mm staggered bond.

Temporary fixing the board (optional)

In a windy condition or if the boards are left overnight, each board can be temporarily fixed with 1-2 washer fixing or as suggested by a structural engineer. Fix in the middle. Final fixing occurs through the counter battens into the rafters.

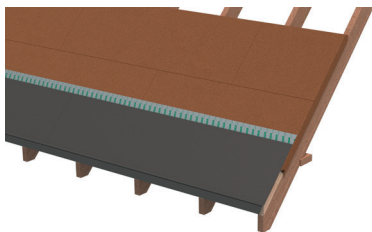


If leaving overnight temporarily fix the board

Eaves Tray installation

Eaves tray must be installed after the first course is complete.

The eaves tray is sealed to the boards with recommended tapes and primer. See page 47 for details.



Eaves tray to be installed before laying any counter battens.

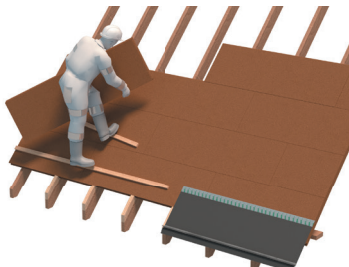
Climbing up the roof slope

Once 2-3 courses of the boards are done, installers can climb up the boards to install other courses. The surface of the boards is designed to provide friction to the safety boots.

NOTE –Walk only in line of the rafters, **DO NOT WALK IN THE MIDDLE OF THE RAFTERS.**

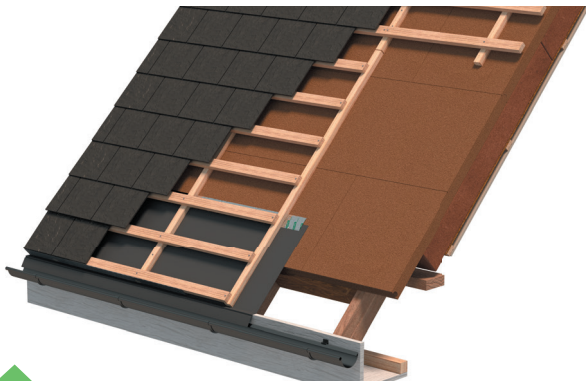
Avoid digging heels in the boards and damaging the surface.

If required, fix a temporary horizontal batten, and walk up the battens. If used, patch the screw holes after removal of the screws with Pavatape 75. See sealing section for details.

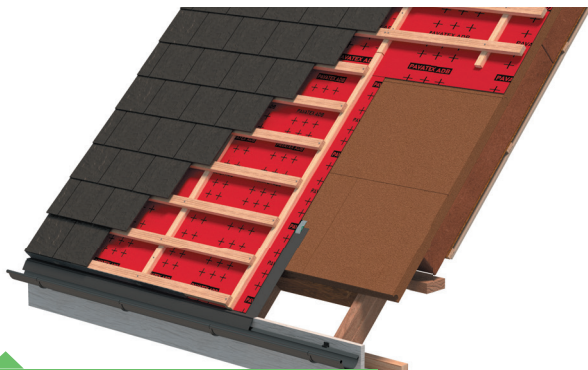


Climbing up the boards (the image is for no breathable membrane option)

At this stage the installation is divided into two parts



WITHOUT THE BREATHABLE MEMBRANE - page 25



WITH THE BREATHABLE MEMBRANE - page 36

Installation without the Breathable membrane

Once 4 to 5 courses are done, counter battens can be installed at this stage and fixed back to the rafters with recommended fixings. Tile batten can also be fixed to climb up the roof.

NOTE – Make sure that the non-T&G joints are not covered by the counter battens that need sealing at a later stage. Or seal any non-T&G junction or other open joints at this stage. Refer to the 'Sealing' section of the document for more details

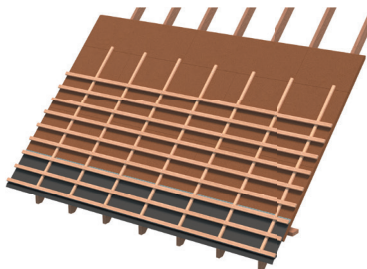
Consecutive courses

Repeat the pattern of first and second course and so on

NOTE – If covering the entire roof in one go with the over rafter insulation, make sure to mark the line of the rafter for the installation of the counter batten and fixings points.



Application without breathable membrane.



Repeat the pattern with local adjustment to any termination such as openings.

Sealing the Pavatex Pitched Roof system (without the breathable membrane)

Sealing of the non-T&G joints, abutment joints and terminations are important to ensure the integrity of the woodfibre installation and to prevent water ingress. It should be done after fitting the over rafter insulation boards and always prior to the installation of the counter battens.

General comment for all taping job

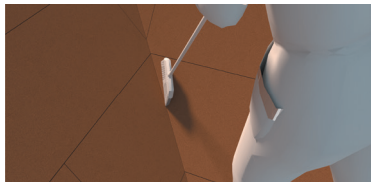
All non-T&G junction or termination need to be sealed.

The surface to be taped must be clean and dry.

Prior to taping, prime the surface with the PAVATEX PAVAPRIM primer to provide a sticky surface. Read instruction on the primer data sheet for more information re optimum temperature, drying time etc.

During the application of the tape apply pressure over the tape with hard rubber or metal roller or similar to achieve perfect bonding.

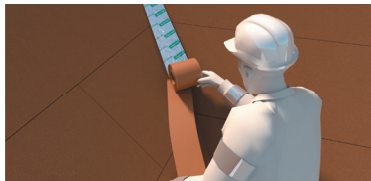
Always start the tape from bottom up.



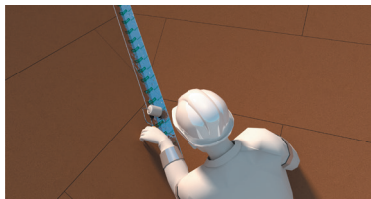
Clean the surface with a brush. Surface **MUST** be dry to ensure good adhesion. (If required use hot gun to dry the boards)



Apply recommended PAVATEX primer with a brush or a roller and allow to dry.



Roll out recommended PAVATEX tape and press down with other hand. Avoid creases.



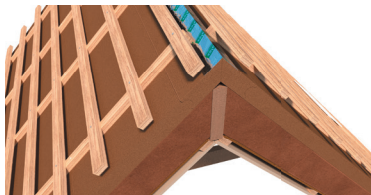
Press the tape firmly using hard seam roller.

Sealing along the valley, ridge or hips

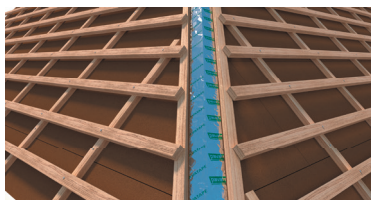
Follow the general comments.

Apply the PAVATEX PAVATAPE 150 by peeling the dual backing as you move along the joint.

Apply sufficient pressure to achieve a smooth transition from the insulation boards over the tape edges.



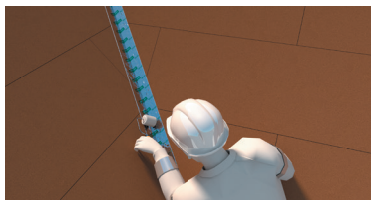
Ridge joint sealing, PAVATAPE 150



Hip joint sealing, PAVATAPE 150



Valley joint sealing, PAVATAPE 150



Valley junction, PAVATAPE 150

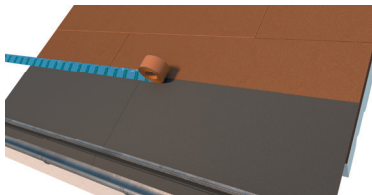
Sealing along the eaves

Follow the general comments.

Apply the PAVATEX PAVATAPE 75 by peeling the backing as you move along the junction.

Half width of the tape should be adhered to the insulation boards and half to the eaves membrane or preformed tray.

Apply sufficient pressure to achieve a smooth transition from the insulation boards over the tape edges.



Eaves tray sealing to the board with PAVATAPE 75

NOTE – if a smooth transition is not achieved the junction would fail.

Sealing along the masonry (brick) chimney, square. (Temperature not greater than 100° C)

Follow the general comments.

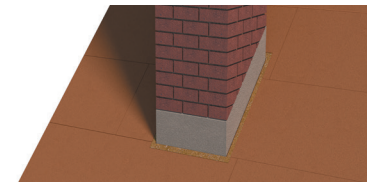
Prior to taping, parge the chimney with render to fully fill the perpend gaps.

Leave a 50mm gap around the chimney and fill with fire retardant such as mineral wool. Cross check the fire detail with the project fire consultant.

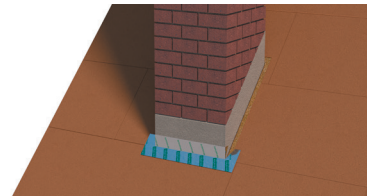
Start the PAVATAPE 150 tape from the bottom of the chimney. Making neat corners and move up the roof slope.

A water diverter can be used above the chimney to divert any accidental water leak towards the cavity between adjacent counter battens.

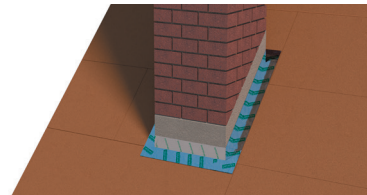
See the illustration for clarity.



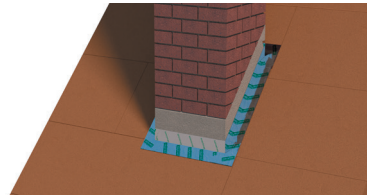
Parge the chimney to achieve flat surface. 50mm mineral wool or similar or as recommended by fire consultant.



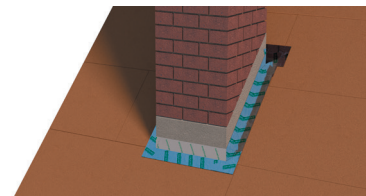
Tape the bottom edge with PAVATAPE 150. Don't forget to prime!



Tape the sides with PAVATAPE 150



Tape the top with PAVATAPE 150



Tappe PAVATAPE 75 or 150 flach auf die Oberseite als Doppelschutz

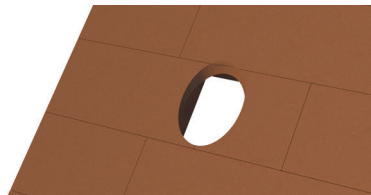
Sealing along the chimney, circular (modern, insulated).

Follow the general comments.

Leave a 50mm gap around the chimney and fill with fire retardant such as mineral wool. Cross check the fire detail with the project fire consultant.

Fire rated chimney collar is used to seal the penetration back to the insulation boards.

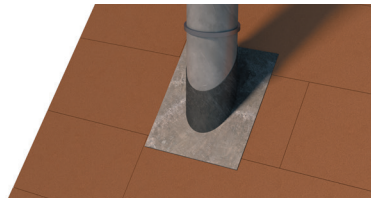
Start sealing with a short piece of the PAVATAPE 75 tape from the bottom of the collar and move up the slope from either side of the chimney. See the illustration for clarity.



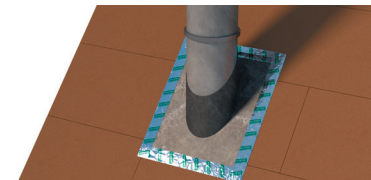
Create a hole bigger than the chimney diameter



Insert the chimney with min. 50mm mineral wool or similar or as recommended by fire consultant.



Install a fire rated chimney collar

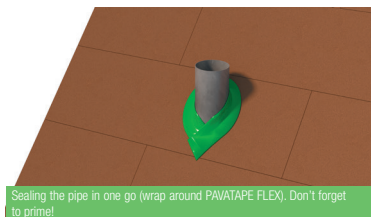
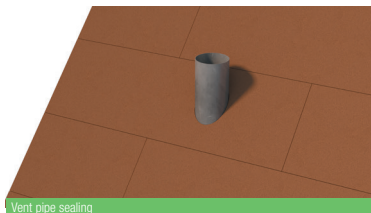


Seal the collar to the boards as explained on brick chimney. See Brick chimney sealing. Don't forget to prime!

Sealing a circular opening. (Air vents etc).

Follow the general comments.

Seal the penetration with one layer of the PAVATAPE FLEX tape from the top moving down to the bottom to overlap two arms of the tape.



Sealing a roof light

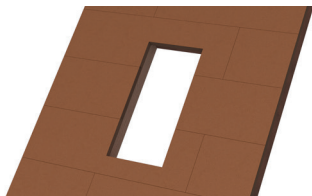
A breathable membrane is used to cover the roof light opening. The membrane must span min 300mm extra away from the opening perimeter.

Follow the general comments.

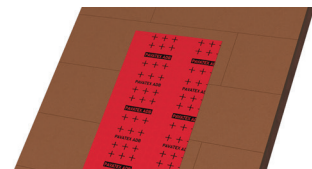
Seal the membrane on all sides over the insulation boards with PAVATAPE 75. Start from the bottom and seal up the slope of the roof, making neat corners and move up.

A water diverter can be used above the rooflights to divert any accidental water leak towards the cavity between adjacent counter battens.

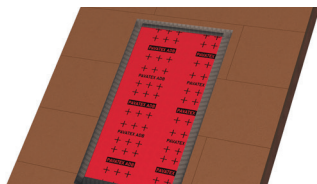
See the illustration for clarity.



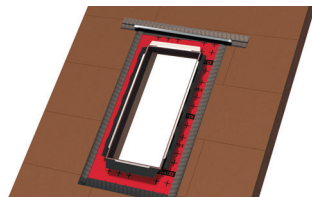
Cut the woodfibre right to the window opening.



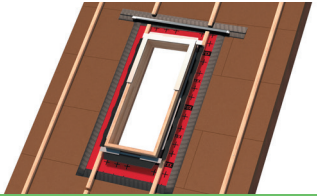
Install a breathable membrane over the opening. Large enough to cover the opening and must span min 300mm extra away from the opening perimeter.



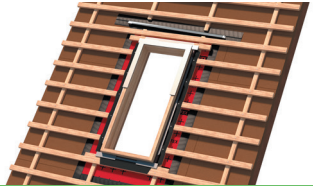
Tape the edges of the breathable membrane with PAVATAPE 75 starting bottom-up. Don't forget to prime!



Insert the rooflight as per manufacturer instructions.



Install leak diverter at the head of the roof light.



Allow for gaps in the counter battens (broken) to facilitate airflow around the opening. Especially in case of closed finish (zinc roof etc.)

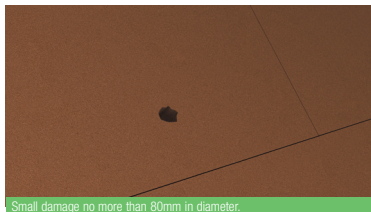
Sealing damaged or open screw holes

Follow the general comments.

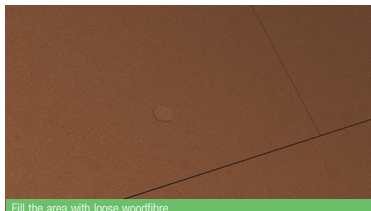
Patch the damaged area with PAVATAPE 75 or 150

Fill some loose woodfibre in the screw holes and patch it with PAVATAPE 75 or 150.

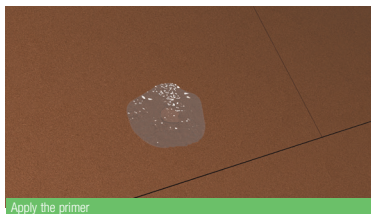
NOTE – Excessively damaged boards must not be used.



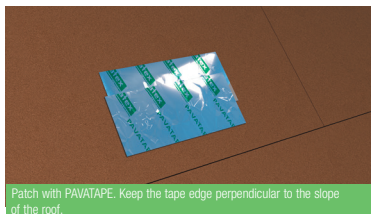
Small damage no more than 80mm in diameter.



Fill the area with loose woodfibre



Apply the primer



Patch with PAVATAPE. Keep the tape edge perpendicular to the slope of the roof.

Installation with the Breathable membrane

Installation

The membrane is installed as any other standard breathable membrane. The only difference in this case is that the membrane goes under the counter battens i.e. installed straight over the insulation boards. The counter batten and the tile battens sits over the membrane.

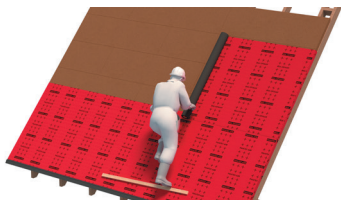
The membrane can be installed after the installation of entire insulation boards or in stages. That is, after the installation of 4 to 5 courses of the insulation board.

Once a few layers of the membrane are installed, fully seal the membrane at this stage. Refer to the 'Sealing' section of the document for more details.

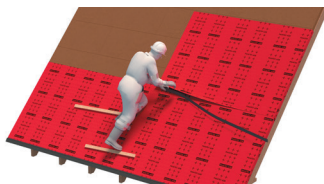
NOTE – Woodfibre insulation is not an ideal substrate for taping (stapling) the membrane. The membrane is installed with min. two people and secured to the structure by the counter battens.



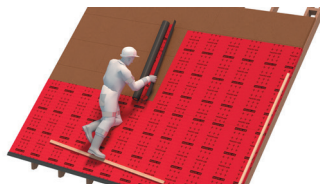
Unroll the first roll overlapping the eaves tray. Do not overhang over the gutter as the membrane is not UV stable.



Installation of 2nd roll. Min. overlap of 100mm



Seal the overlaps with the self-adhesive sealing elements built in the membrane.



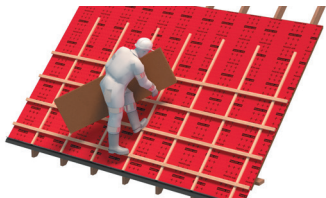
Start a new roll with 100mm overlap and sealing the joint with PAVATAPE 12 double sided tape.

Climbing up the roof slope (breathable membrane over woodfibre)

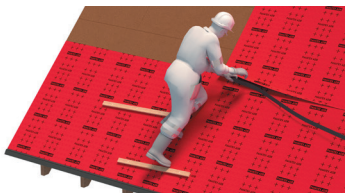
Temporary horizontal battens can be used to climb up the roof to install the membrane. The battens can also hold the membrane in windy condition.

Once 1-2 layers of the breathable membrane is installed, counter battens can be installed with few tile battens to climb up the roof.

Seal the holes of the screws used to fix temporary battens with PAVAFIX 60.



Climbing up, using the tile battens



Climbing up during PAVATEX ADB breathable membrane application

Sealing the Pavatex Pitched Roof system (with the breathable membrane)

Sealing of the joints, abutment joints and terminations are important to ensure the integrity of the woodfibre installation and to prevent water ingress. It should be done after fitting the breathable membrane and always prior to the installation of the counter battens.

General comments

Breathable membrane surface should be clean, dry and free of oil or grease.

Use recommended breathable membrane to secure the system performance warranty. PATATEX ADB "red" breathable is recommended and it comes with a self-adhesive overlap

Use recommended PAVATEX tapes to seal the membrane.

Primer is generally not required for the membrane but it may be required for fibrous or mineral based substrated such as woodfibre, plaster, render etc.

Sealing the overlaps

The longitudinal edges of the Pavatex breathable membrane are self-sealing, whereas the lateral overlaps are sealed with either PAVATEX PAVABOND or with PAVATEX PAVATAPE 12 double sided tape.



Self-sealing longitudinal overlaps (ADB membrane).



Sealing lateral overlaps with PAVATAPE 12 (ADB membrane).

Sealing at the termination

Follow the general comments

Generally, the membrane will terminate at the eaves, overlapping the eaves membrane or the eaves tray. The membrane is not UV stable hence should not be used to dress into the gutter (eaves membrane or preformed tray must be used)

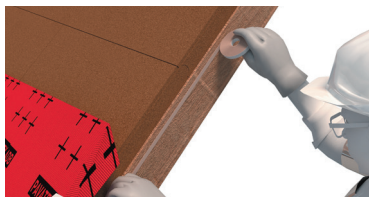
In some cases, the membrane will terminate on the wall plate and/or on the gable ends. In this case the membrane is sealed to the abutment with double sided tape PAVATEX PAVATAPE 12 or PAVATEX PAVABOND highly sticky bonding agent. Prime the surface with PAVATEX PAVAPRIM primer prior to taping on mineral substrate.



Best practice is to seal the membrane on the eaves tray to avoid snow water back pressure. PAVATAPE 12 (ADB membrane)



Sealing along the gable ends. PAVATAPE 12 (ADB membrane)



Sealing along the gable ends. PAVATAPE 12 (ADB membrane)

Sealing along the masonry chimney, square. (Temperature not greater than 100° C

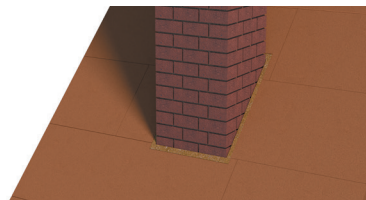
Prior to taping, parge the chimney with render (to fully fill the perpend gaps) and prime the surface of the chimney with recommended primer.

Leave a 50mm gap around the chimney and fill with fire retardant such as mineral wool. Cross check the fire detail with the project fire consultant.

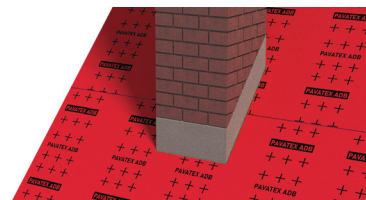
Seal the chimney to the membrane with PAVATAPE 150.

Start the PAVATAPE 150 tape from the bottom of the chimney. Making neat corners and move up the roof slope.

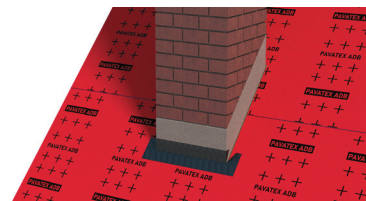
See the illustration for clarity.



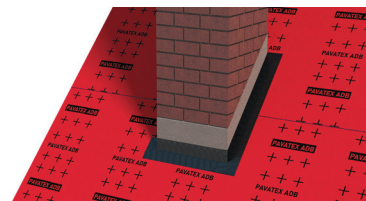
Fire rated insulation (to local standard) around chimney



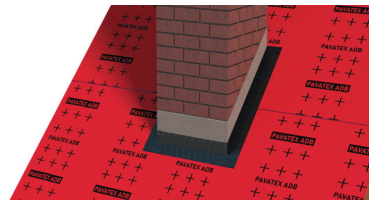
Parge the chimney to achieve a flat surface.



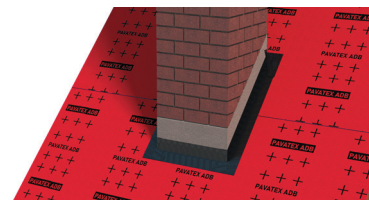
Tape the bottom edge with PAVATAPE 150. Don't forget to prime



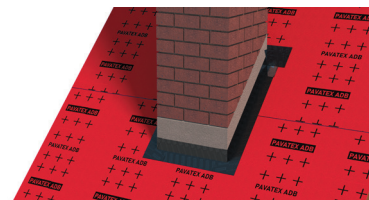
Tape the sides with PAVATAPE 150



Tape the other sides with PAVATAPE 150.



Tape the top with PAVATAPE 150.



Tape PAVATAPE 75 or 150 flat on the top as double seal.

Sealing along the chimney, circular (modern, insulated)

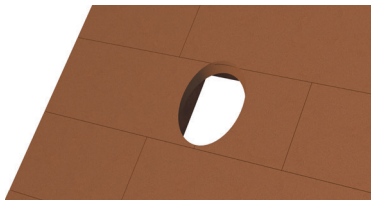
Follow the general comments

Leave a 50mm gap around the chimney and fill with fire retardant such as mineral wool. Cross check the fire detail with the project fire consultant.

Fire rated chimney collar is used to seal the penetration back to the membrane. Seal the collar to the membrane using PAVABOND or PAVATAPE 12 double sided tape.

Use a strip of the breathable membrane on the top part of the penetration and overlap it with the top part of the collar. Seal the strip's top horizontal edge to the main membrane to form a drip.

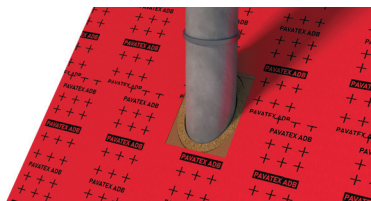
See the illustration for clarity.



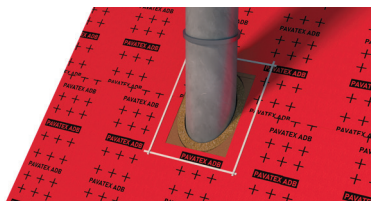
Create a hole bigger than the chimney diameter



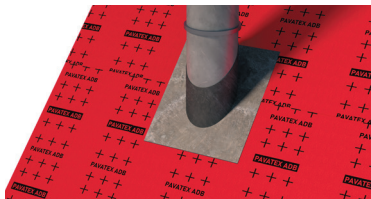
Insert the chimney with min. 50mm mineral wool or similar or as recommended by fire consultant.



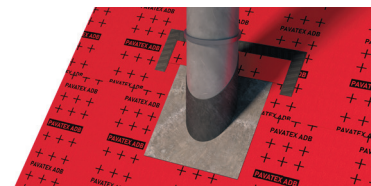
Install the membrane cut back to the chimney.



Apply PAVATAPE 12 double sided tape



Place the fire rated collar on the membrane sealed with PAVATAPE 12.



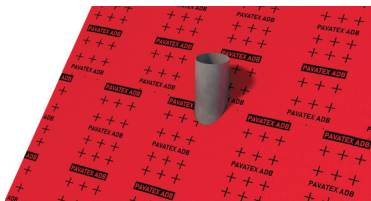
Install a strip of membrane or PAVAFIX/PAVATAPE 150 to double seal the top of the chimney collar. (Tape around the strip with PAVATAPE 75).

Sealing a circular opening. (air vents etc).

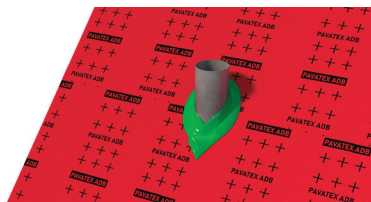
Follow the general comments

Seal the penetration with one layer of the PAVATAPE FLEX tape from the top moving down to the bottom to overlap two arms of the tape.

See the illustration for clarity.



Wrap the ADB membrane around the penetration.

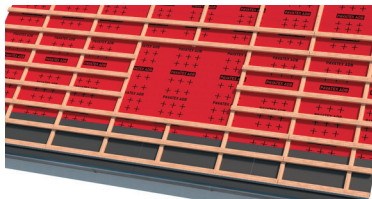


Seal the pipe using one piece of tape (wrap around PAVATAPE Flex)

Roof lights

The membrane is generally laid over the rooflight and later cut and sealed as per the rooflight manufacturer recommendations. PAVATEX sealing range can be used to seal the membrane around the roof lights.

Refer to the Pavatex detail catalogue for roof light standard details.



Breathable membrane roof light application

Sealing damaged or open screw holes

Follow the general comments.

Patch the damaged area of the membrane with PAVAFIX 60 or 150

Heavily damaged boards or membrane must not be used

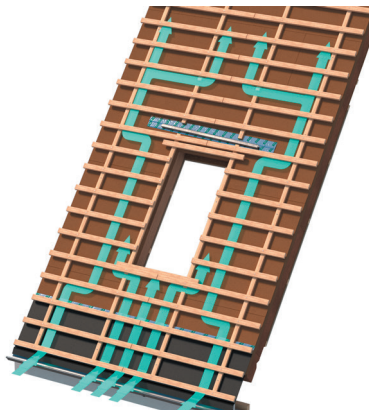
8. Details

External ventilation

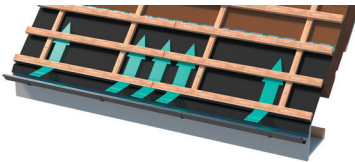
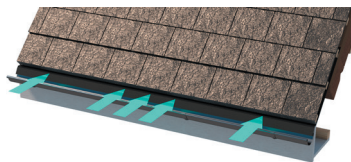
Aim for unobstructed flow of air between counter battens. It can be achieved by eaves, ridge, hip, valley or other types of ventilation.

No pocket of air should be stagnant. The air must be able to move in almost all parts of the roof.

In case of the counter battens only, such as in closed cladding roof (zinc finish on ply or similar), special ventilation detail should be provided to avoid obstruction to free flow of air. Such as breaking the battens under the roof light to allow free movement of air



Ventilation is key, ventilation around any obstruction must be planned in advance.

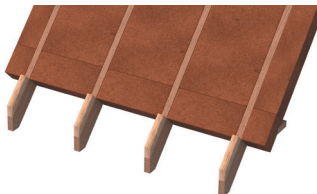


Eaves vents are essential for proper channelling of air.

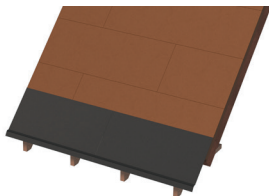
Eaves detail

Eaves ventilation grill along the eaves is required to allow air movement between the counter battens.

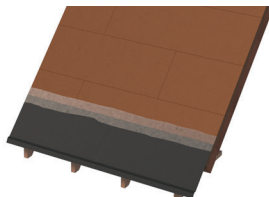
There are many types of eaves ventilation systems in the market. Aim for minimum equivalent continuous opening of $100\text{cm}^2/\text{m}$ or $10,000\text{mm}^2/\text{m}$.



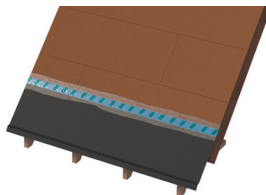
Boards ready to be covered with eaves tray and ventilation element.



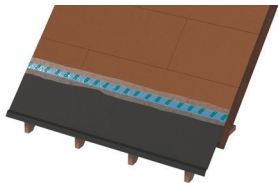
Unroll/install the eaves tray.



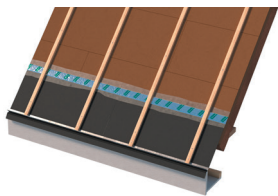
Prime the board surface with Pavatex primer.



Tape the eaves tray firmly to the Pavatex insulation boards.



Install the angled ventilation grill at this point. Or provision to be installed later.



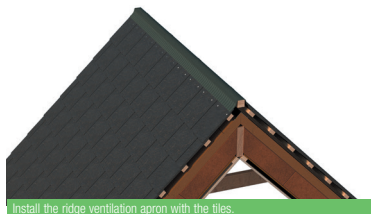
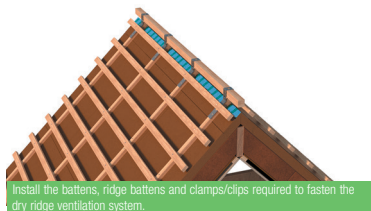
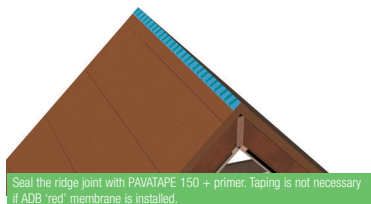
Install the counter batten to firmly fix the ventilation grill.

Ridge detail

Ventilated ridge system to provide minimum equivalent continuous opening of $50\text{cm}^2/\text{m}$ or $5000\text{mm}^2/\text{m}$ on one side of the roof.

The illustration is only for reference, there are various variants of ventilated ridge system that are available in the market. Confirm the specification with the manufacturer.

Taping the open joints of the Pavatex insulation is not necessary if the breathable membrane is used (under the counter battens) for weathertightness.



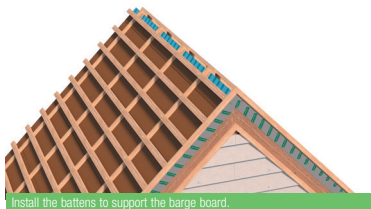
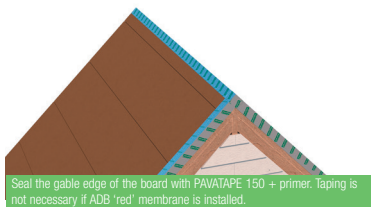
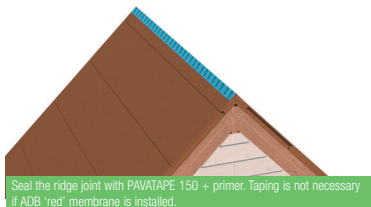


Ridge System. Other dry systems are also available.

Verge detail

The illustration is only for reference, there are various variants of verge trims that are available in the market. Confirm the specification with the manufacturer.

Taping the open joints of the Pavatex insulation is not necessary if the breathable membrane is used (under the counter battens) for weathertightness.



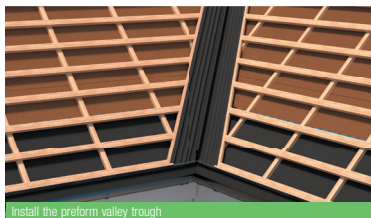
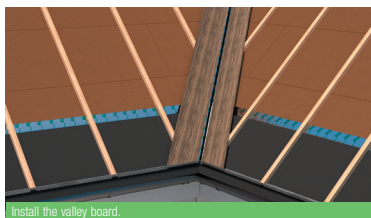
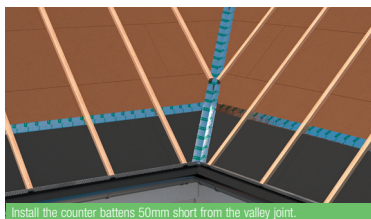
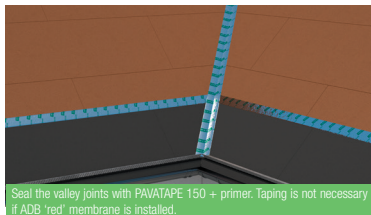
Valley Detail

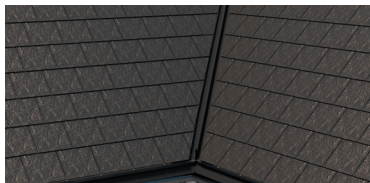
Install the counter battens as standard along the valley, leaving gaps along the valley to allow air movement.

Install the valley boards over the rebated counter battens. Make sure to install vents at the bottom end of valley boards, that should allow air under the valley board to ventilate the spaces between the counter battens terminating at the valley.

The illustration is only for reference, there are various variants of ventilated valley systems that are available in the market. Ventilated valley system to provide minimum equivalent continuous opening of $50\text{cm}^2/\text{m}$ or $5000\text{mm}^2/\text{m}$ on one side of the roof. Confirm the specification with the manufacturer.

Taping the open joints of the Pavatex insulation is not necessary if the breathable membrane is used (under the counter battens) for weathertightness.





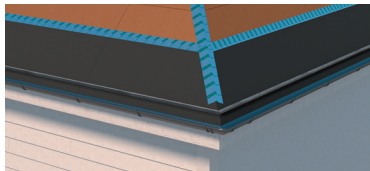
Install roof finish. Make sure the ventilation grill is installed at the base of the valley board.

Hip Detail

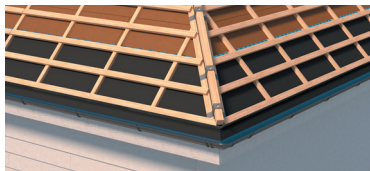
Ventilated hip tiles are required to ventilate the counter battens terminating at the hip.

The illustration is only for reference, there are various variants of ventilated hip systems that are available in the market. Ventilated hips system to provide minimum equivalent continuous opening of $50\text{cm}^2/\text{m}$ or $5000\text{mm}^2/\text{m}$ on one side of the roof. Confirm the specification with the manufacturer.

Taping the open joints of the Pavatex insulation is not necessary if the breathable membrane is used (under the counter battens) for weathertightness.



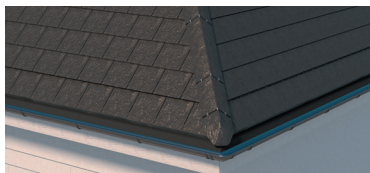
Seal the hip joints with PAVATAPE 150 + primer. Taping is not necessary if ADB 'red' membrane is installed.



Install the battens, hip battens and clamps/clips required to fasten the dry hips ventilation system.



Install the tiles, ventilation apron and hips tile clamps.

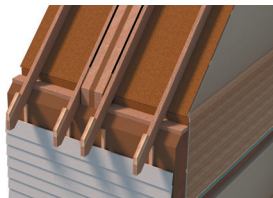


Finally, install the slates and the hip tiles. Make sure the ventilation grill is installed at the base of the hip joint.

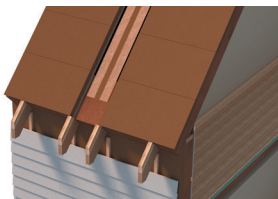
Roof party wall

The illustration is for reference only, there are various methods to achieve roof party wall detail.

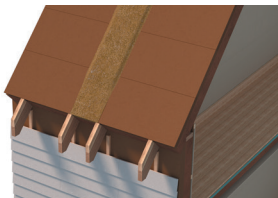
Prior to the installation, the construction detail must be cross checked with the project fire consultant.



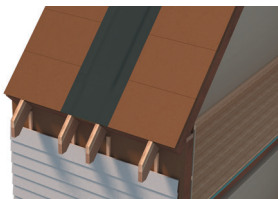
Roof party wall, timber frame



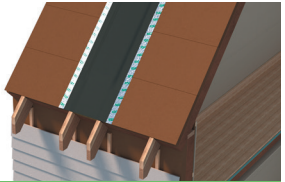
Pavatex insulation cut short at the last rafter near the party junction.



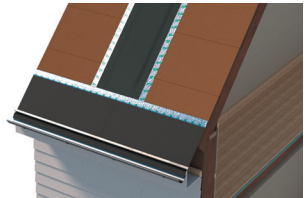
Fire rated insulation infill over the party junction.



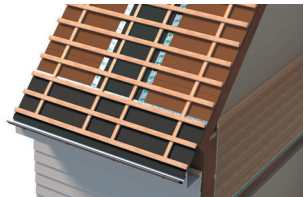
Fire rated/suitable weather membrane to cover the junctions



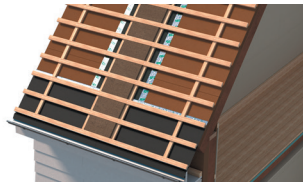
Seal the membrane to the insulation boards with PAVATAPE 150 + primer. If using breathable membrane, overlap and seal.



Install the eaves tray and seal. See eaves sealing section of the document.



Install the battens making sure clear ventilation.



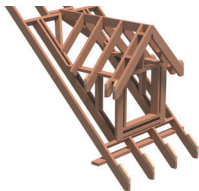
Fully fill space between the tile battens with fire rated/suitable insulation or similar.

Dormer cheek to roof detail

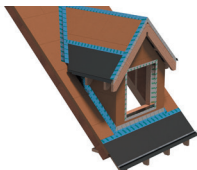
The illustration is for reference only, there are various variants of flashing systems that are available in the market. Confirm the specification with the manufacturer. If the dormer cheeks require ventilation, make sure it is not blocked by the flashing.

Taping the open joints of the Pavatex insulation is not necessary if the breathable membrane is used (under the counter battens) for weathertightness.

If only using tape for sealing, breathable membrane can still be used only on the dormer cheeks to ease the cheek to pitched slope sealing.



Dormer timber frame



Install woodfibre insulation layers. Seal the eaves tray to the insulation, seal around the window opening and other open joints with PAVATAPE tape + primer. Taping is not necessary if ADB 'red' membrane is installed.



Install counter battens and tile battens. Make sure ventilation flow is not blocked.



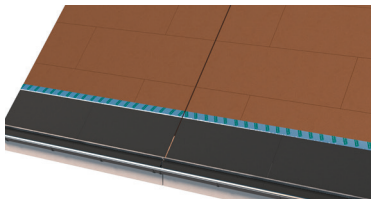
Finally install the finish as per the design.

Movement joints detail

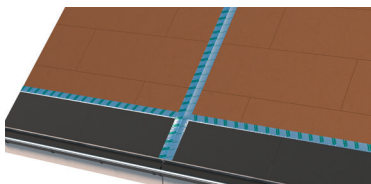
Any structural movement joint must be transferred into the Pavatex roof system. After the whole roof is installed, cut a groove into the Pavatex boards over the existing movement joint. The groove width is subject to the width of the structural movement joint width. Seal over the groove with PAVATAPE 150, prior to taping prime the surface with PAVAPRIM.

If using a breathable membrane, cover the movement joint with the membrane.

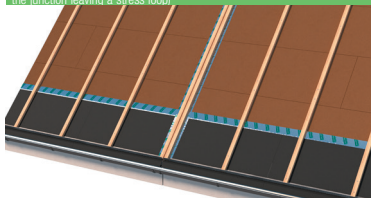
Subject to the suggestion of the structural engineer the groove can be filled with flexible insulation to minimise thermal bridging.



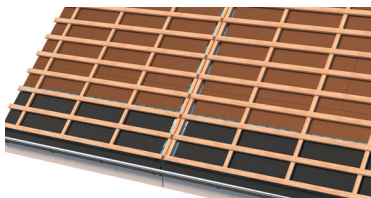
Cut a groove into the Pavatex boards over the existing movement joint



Prime and tape the junction with Pavatex tape and primer. Taping is not necessary if ADB "red" membrane is installed (Overlap the membrane at the junction leaving a stress loop)



Install the counter battens on either side of the joints.



Finally, tile battens on either side of the movement joint.

Other info

Damaged boards

Heavily damaged board must not be used. If the damage is local, the area should be filled tightly with woodfibre offcuts and taped with PAVATAPE 150, prior to taping prime the surface with PAVAPRIM.

Other Detail

Please refer to Pavatex Pitched Detail Catalogue. Available on the Soprema/Pavatex website or request support from the local technical team.

Final Fixing

Final fixing is done with the counter battens fixed back to the rafters.

ETA (European Technical Approval) approved fixings with fixings plan must be used to fix the boards to the roof structure.

50mm x 50mm battens are ideal for fixing the boards, however, in some cases lower thickness of battens can also be used. Follow the instructions from the fixing manufacturer.

Fixing lengths, fixings plan and batten specification must be checked with the fixing manufacturer or the project structural engineer.

Pavatex would suggest HECO fixings. They are the leading manufacturers of the ETA approved fixing for pitched roof systems.

The fixing plan would look something like this.



General fixings pattern for final fix of the insulation system.'

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