Eternit

Profile 6
Fixing Guide





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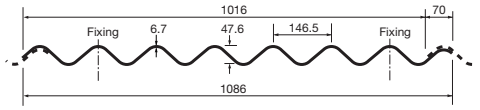
Profile 6 is commonly used on all types of buildings for both roofing and vertical cladding applications.

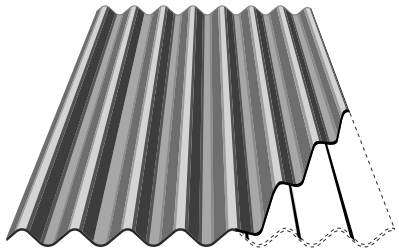
Profile 6 is a fibre cement sheet with polypropylene reinforcement strips inserted along precisely engineered locations which run for the full length of the sheet to give the sheet more strength.

Technical data

	Profile 6
Overall Width	1086mm
Net covering width	1016mm
Thickness (nominal)	6.7mm
Pitch of corrugations (nominal)	146.5mm
Depth of profile	47.6mm
Profile height catergory	C
Side lap	70mm
Minimum end lap	150mm
Maximum purlin centres	1375mm
Maximum rail centres	1825mm
Maximum unsupported overhang	350mm
Min roof pitch*	5 °

*Maximum slope length of 15m, with no penetrations of the roof.





Sheet Sizes:

1525mm, 1675mm, 1825mm, 1975mm, 2125mm, 2275mm, 2440mm, 2600mm, 2750mm, 2900mm, 3050mm.

Colours

Natural Grey

Storage and Handling:

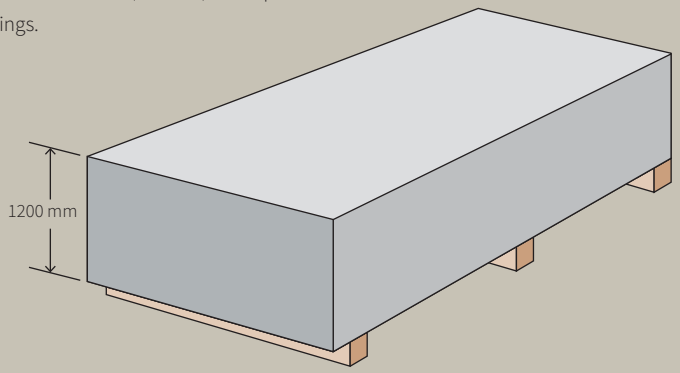
Stacking

Profiled sheets should be stored as close as practically possible to the area of works, on a firm level base, using the profiled bearers (on which the sheets are delivered) to raise the sheets off the ground.

Sheeting stacks may only be at a maximum of 2 delivered pallets high, a separate stack should be made of each length of sheet; if this is not possible, stack with the longest sheets at the bottom and the shortest at the top.

Sheets should always be stored weather (smooth) side upwards.

Do not stack pallets of fittings.



Packaging and storage

Stacks of sheets should not be stored in full sun during the summer months as the differential temperature across the sheets can result in unacceptable stresses in the sheets and can lead to edge cracking.

They should be stored in a ventilated and frost-free space where there is no risk of condensation at low temperatures.

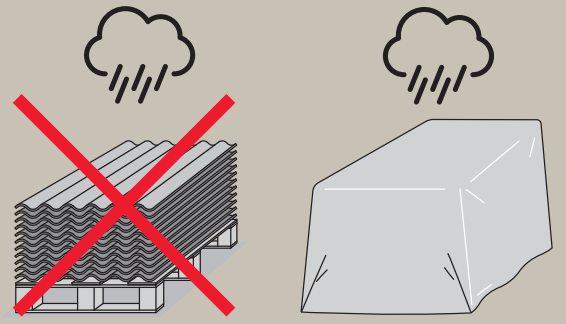
If sheets are to be retained in the packs for more than 3 months, they should be stored inside a building where they can be protected from extreme variations in temperature and moisture.

Ingress of moisture into packs of profiled sheets may cause efflorescence staining, bowing during installation or permanent distortion.

Natural Grey sheets: The plastic wrapping should be retained for as long as possible to control the environment around the sheets. Once the pack has been opened, or if the wrapping is damaged and allowing the ingress of water, the sheets should be stored under cover.

Coloured sheets: Coloured sheets should be always stored under cover, preferably inside a building, but if this is not available, they can be stored under a coloured tarpaulin. The tarpaulin should be spaced off the top and sides of the sheets to allow effective air circulation and avoid condensation.

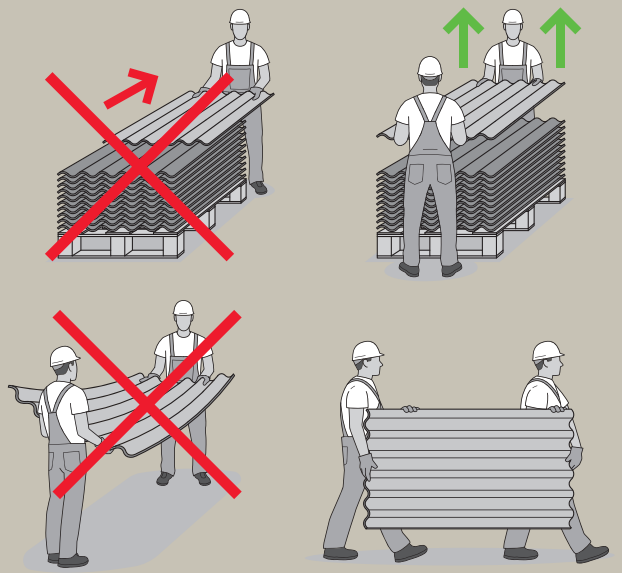
The plastic wrapping on coloured sheets is only designed to protect the sheets in transit. It should be removed and carefully disposed of as soon as possible.



Handling

When handling the Eternit sheets, lift by the ends only, lifting them up from the sheet beneath. (Do not drag over the sheet below)

- Carry the Eternit sheets on their side to prevent bowing



Working with the material

During the installation process of the sheets, dust may be released which can be irritating for the airways and eyes. Accordingly, correct breathing apparators/mask and eye protection should be worn. Following the recommendations of the HSG 33, minimum grade dust mask is FFP2.

Please refer to the COSHH data sheet for further information.

Cutting

Preferably sheets should be cut using equipment suitable for fibre cement materials, in a well-ventilated area at ground level on suitable rigid supports using hand or powered saws. Powered saws should be of the reciprocating saw type and NOT disc or circular blade devices. Experience has shown that hand or powered saw blades having 3-3.5mm tooth pitch are most suited.

- To minimise dust, cut sheets with a handsaw or slow speed reciprocating power saw. The use of angle grinders is not recommended.
- Sheets should be laid so they are flat and in one plane. For cranked ridge units do not distort or twist when installing. The requirement for the crowns to be twisted is an indication that the corrugations of the two roof elevations being joined by the ridge unit are not aligned. Sheet alignment must be corrected.

Drilling

- For holes, a rotating drill bit for fibre cement products.
- For larger holes, such as flues, windows etc, a reciprocating saw or saw holes for fibre cement products can be used.

Important

Any cutting dust must be wiped off the sheets and fittings immediately using a dry cloth. If not removed this could cause spots and stains.

Note: Please request the safety data sheet from our technical department for further information regarding health and safety when working with the Eternit sheets.

The recommendations of HSG 33 should always be followed

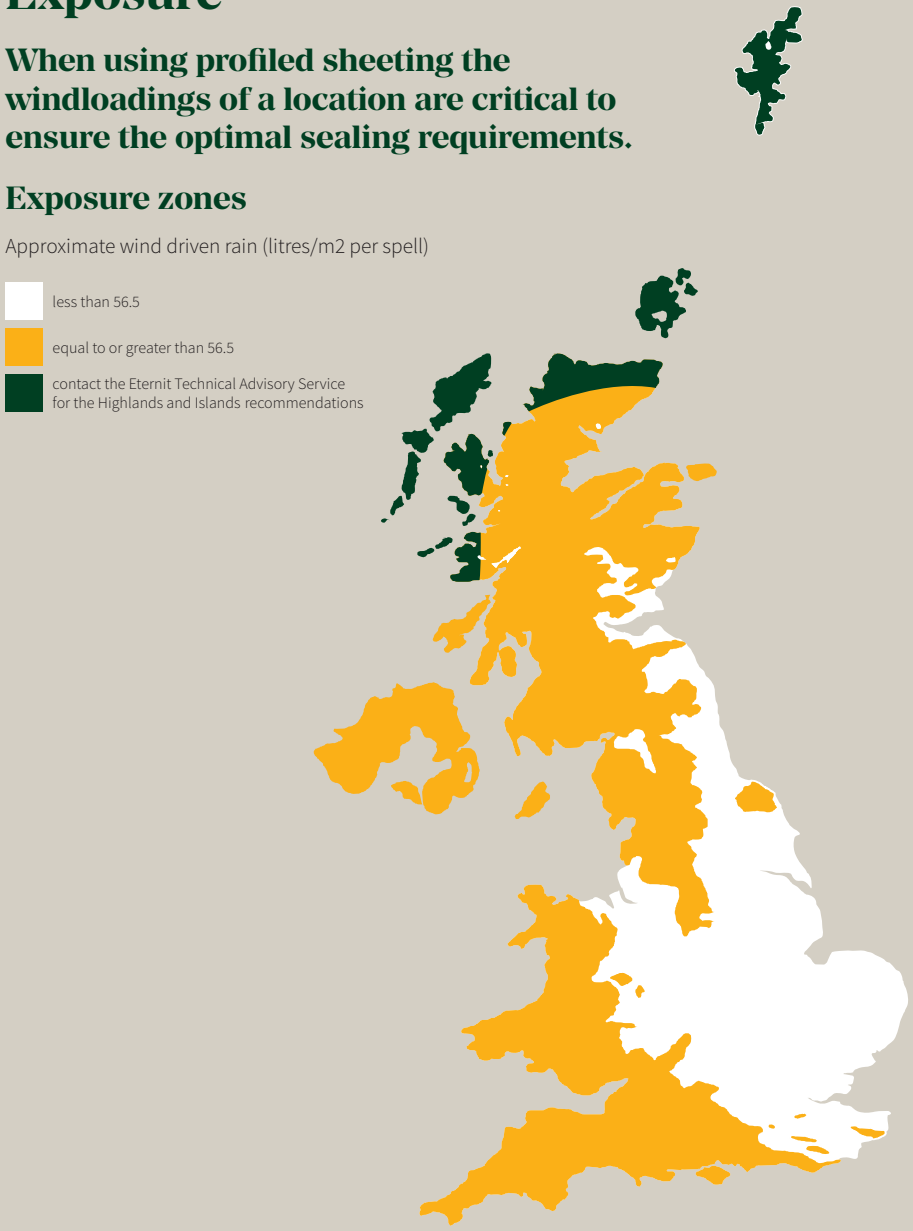


Exposure

When using profiled sheeting the windloadings of a location are critical to ensure the optimal sealing requirements.

Exposure zones

Approximate wind driven rain (litres/m2 per spell)



Note: Map taken from BS 8219. When buildings stand above their surroundings or are situated in open country with no windbreaks, including sites on or near the coast, or on hill tops, they must be considered subject to severe exposure.

Lap

This describes how much one sheet overlaps another at either the end (end lap) or the side (side lap).

Pitch

This describes the degree to which the roof slopes.

Guidance procedure

Step 1: Exposure: Determine the expected degree of exposure by examining the adjacent map.

Step 2: Centres of support: For Profile 6: Purlins at 1375mm c/c, Rails at 1825mm c/c.

Step 3: Lap and seal: Establish requirement for lapping and sealing by reference to the exposure zones map of the UK and the table below. See page 13-14 for sealing details.

Sheltered and moderate sites

Less than 56.5 l/m2 wind driven rain per spell

Minimum Roof pitch	End lap (mm)	Lap treatment	
		End laps	Side laps
22.5° and over	150	Unsealed	Unsealed
15° and over	300	Unsealed	Unsealed
15° and over	150	Sealed	Unsealed
10° and over	150	Sealed	Sealed
5° and over	300	Double Sealed	Sealed

Moderate and severe sites

More than 56.5 l/m2 wind driven rain per spell

Minimum Roof pitch	End lap (mm)	Lap treatment	
		End laps	Side laps
25° and over	150	Unsealed	Unsealed
17.5° and over	150	Sealed	Unsealed
15° and over	150	Sealed	Sealed
10° and over	300	Sealed	Sealed
5° and over	300	Double Sealed	Sealed

On roofs over 10° pitch where parapets might allow snow build up, 300mm double sealed end laps and single seal side laps are recommended. The minimum pitch for Profile 6 is 5°. Where slopes are between 5° and 10° the maximum slope length should be 15m with double sealed end laps and single sealed side laps.

Setting Out the roof

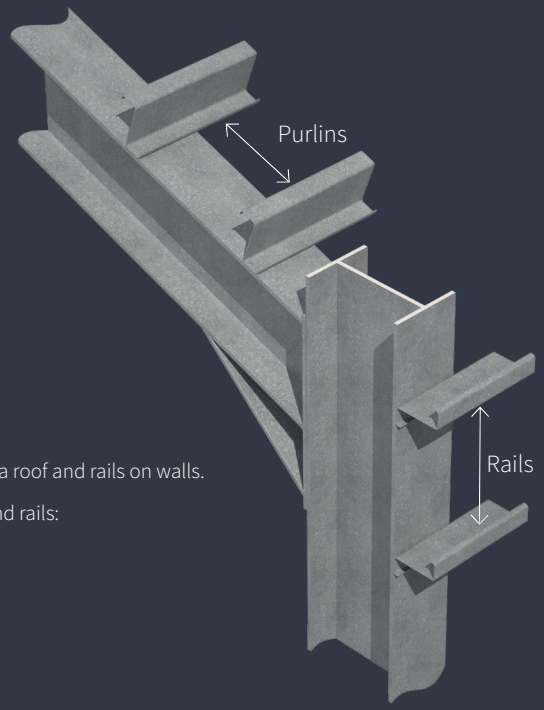
Checking the structure

Before sheeting is commenced, the structure should be checked to ensure that all purlins and rails are in a true plane, correctly spaced and securely fixed and adequately restrained.

Laying the sheets

Roof sheeting should commence from one end of the building at eaves level, rising in vertical tiers, one sheet wide, from eaves to ridge. Where cranked crown sheets are used, it is especially important that the slopes are accurately aligned with each other.

Vertical sheeting should also be fixed in tiers, one sheet wide, from the lowest level of the profiled sheeting. The end laps of each row of sheets should form a continuous straight line from gable to gable and must not be staggered. Similarly, the side laps should be aligned from eaves to ridge.



Profiled sheets are fixed to purlins on a roof and rails on walls.

There are 3 general types of purlins and rails:

- Timber – 50 x 75mm Minimum
- Cold rolled steel - 1.2 – 3mm
- Hot rolled steel - > 3mm thick

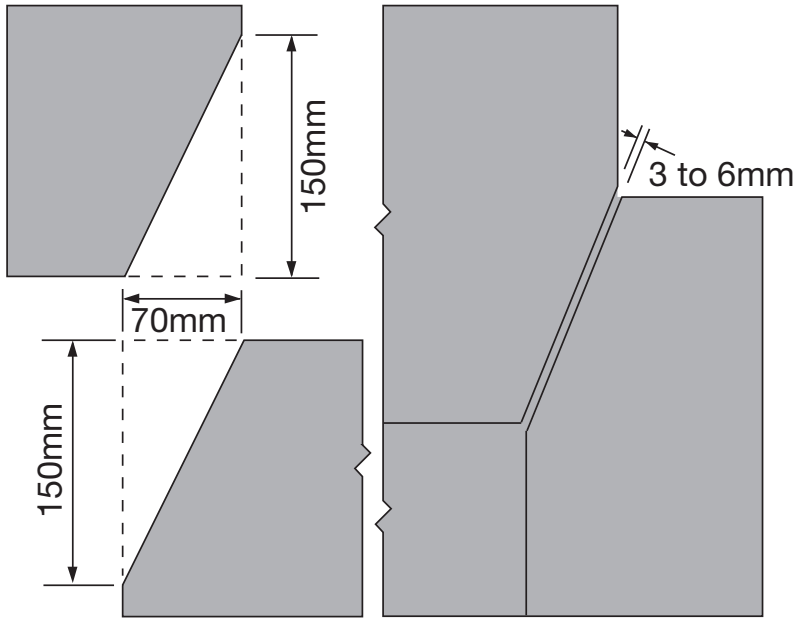
Mitring

To avoid four thicknesses of sheeting at the junctions of side and end laps, it is necessary for two of the sheets at each junction to be mitred at the corners so that they lie in the same plane.

Mitres on Profile 6 sheets should be cut from a point 150mm up the vertical edge from the corner (or the amount of the end lap) to a point 70mm along the horizontal edge, i.e., the width of the side lap by the length of the end lap.

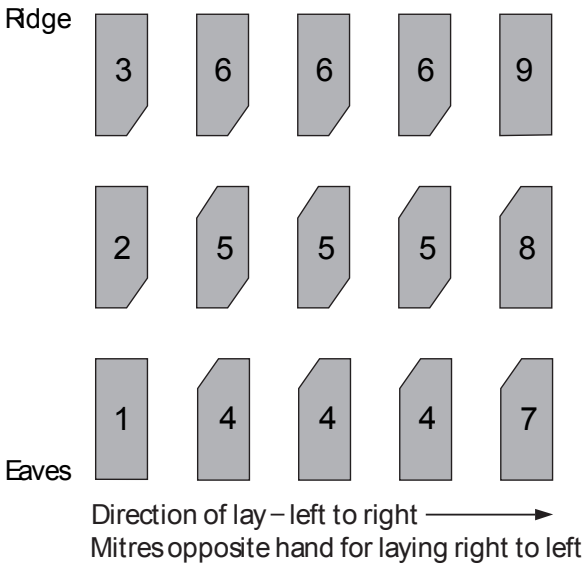
Ideally, the gap between mitres should be a minimum of 3mm to a maximum of 6mm. Box mitres should be avoided. The mitred joint is covered top and bottom by the other two sheets, and is thus weatherproof and unseen

Mitring Profile 6*



10 easy steps to fixing

Mitring plan single slope roof



1. Lay sheet number 1 at the eaves without mitring.
2. Lay sheet number 2, mitring bottom right hand corner as per the illustration opposite.
3. Lay sheet number 3, mitring as per step 2. Continue up the roof slope to complete the first tier.
4. Lay sheet number 4 at the eaves of the next tier, mitring the top left hand corner as per the illustration opposite.
5. Lay sheet number 5, mitring both top left hand and bottom right hand corners as per illustration opposite, and continue up the slope until ready to lay sheet number 6 at the ridge.
6. Lay sheet number 6 at the ridge, mitred as per step 2.
7. Repeat the procedure from and including step 4, working across the roof from eaves to ridge, until there is room for only one more tier to be laid, on the right hand edge.
8. Lay sheet number 7, mitring the top left hand corner. If necessary, reduce the sheet width by cutting down the right hand edge. All subsequent sheets in this final tier should be cut accordingly.
9. Lay sheet number 8 as per step 7, continuing up the roof slope until ready to lay the final sheet at the ridge.
10. Lay sheet number 9 at the ridge without mitring to complete the roof.

Note: On a duo pitch roof start both slopes from the same end of the building. One slope will therefore be sheeted left to right, the opposite slope will be sheeted right to left.

The corrugations of sheets must line up at the apex to ensure that the ridge accessories will fit.

When cranked crown sheets are used, both top courses of roofing sheets and the cranked crowns themselves must be mitred.

Always lay sheets with the correct end and side laps, as detailed elsewhere in this booklet.

Do not cut mitres in situ.

Sealing

When installing corrugated sheets on a roof a sealing cord must be applied if required. It is used for the sealing of end and side laps of the Eternit Profile 6 corrugated sheets.

For best results, BS 8219 recommends a pre-formed 8mm diameter mastic ribbon of butyl or a polyisobutylene based material, which has a rubbery, tacky consistency, and which will adhere to both surfaces when sheets are overlapped and never sets hard. Gun grade sealants are not suitable..

Side Laps

When sealed side laps are required, butyl strips should be positioned as shown in Fig.1.

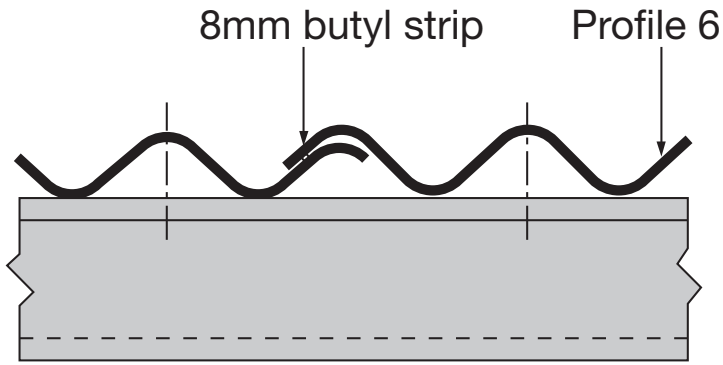


Fig.1.

End Laps

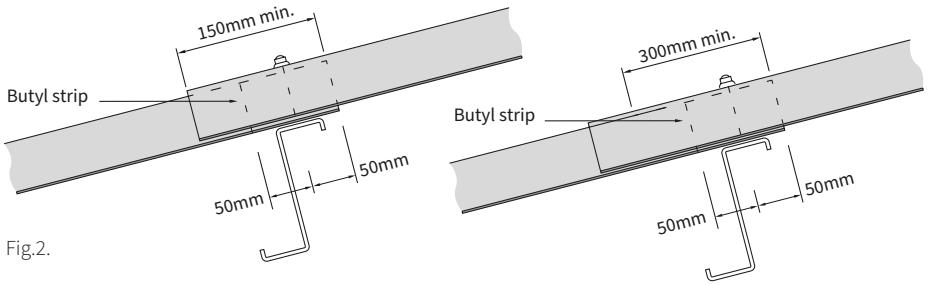


Fig.2.

The minimum end lap for Profile 6 is 150mm, fixed as shown in Fig.2.

Where double sealing is necessary, with a 300mm end lap, the second butyl strip should be positioned 100 to 200mm below the fixing, as shown in Fig.3.

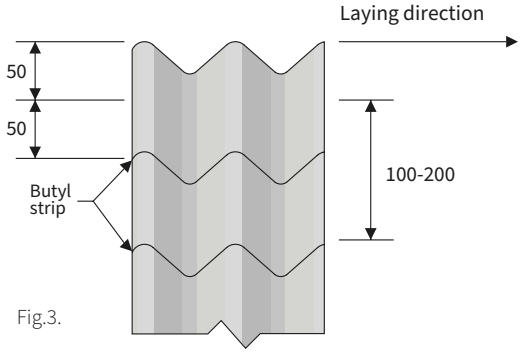


Fig.3.

Fittings

The requirement for sealing laps also applies to any fibre cement fittings that are used together with the sheets.

Application

The surface of the sheet where the sealing cord is to be applied must be dust and grease free. The sealing cord must be applied without stretching and following the corrugations when being applied transversally. When placing the top sheet over the sealing cord it must be placed in the correct position as sliding the sheet to correct its position will not be possible. Press the top sheet down firmly onto the sealing cord before installing the fixings.

As the sealant may ease during the time of the installation a final check of the fixings for tightness should be carried out at the end of the installation. The Sealing cord will work better when warm so keeping it in warm areas during the colder periods will make it easier to install.

Fixing

General guidance

All sheets must be fixed in accordance with the recommendations of BS 8219.

Profiled sheeting should always be fixed with 2 fasteners per sheet per purlin, no more and no less.

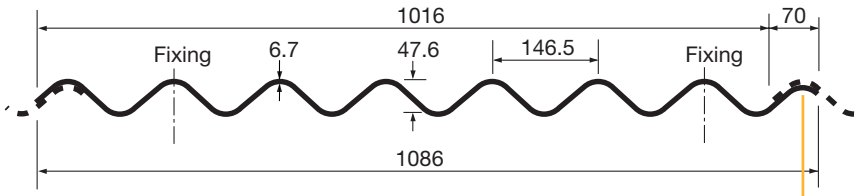
The selection of the correct sheet fastener is extremely important. The integrity of the roof covering, type of purlin or rail system, and weatherproofing with washers and caps all must be considered to avoid premature failure, corrosion, or a leaking roof.

Profiled sheets are fixed to purlins on a roof and rails on walls. There are 3 general types of purlins and rails:

- Timber – 50 x 75mm Minimum
- Cold rolled steel - 1.2 – 3mm
- Hot rolled steel - > 3mm thick

Fixing position

The fasteners should be positioned on the first full corrugation to the side of the side lap. At end laps, the fasteners should be 50mm from the top end of the lap. See image below.



Underlap corrugation is lower in height, ensure this side of the sheet is used as the under lap only.

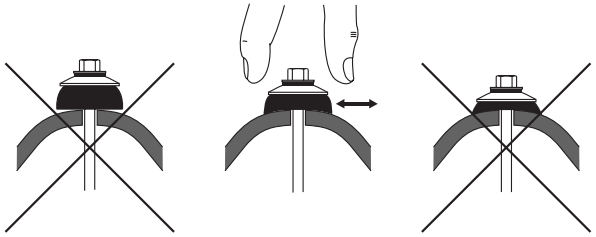
Topfix fasteners

General guidance

Self-drilling, self-tapping 'topfix' fasteners are generally used to fix Profile 6 sheets to the purlins.

These fasteners drill through the Profile 6 sheet, creating a 3mm oversize hole and self tap into the purlin. It is important that the fasteners are installed using the correct power tools, which should have an adjustable depth setting device to ensure the washers are seated correctly. The fasteners typically have different drill points to suit the different purlin types:

When following the recommendations of the fastener manufacturers, please give particular regard to minimum purlin thickness and maximum roof pitch.



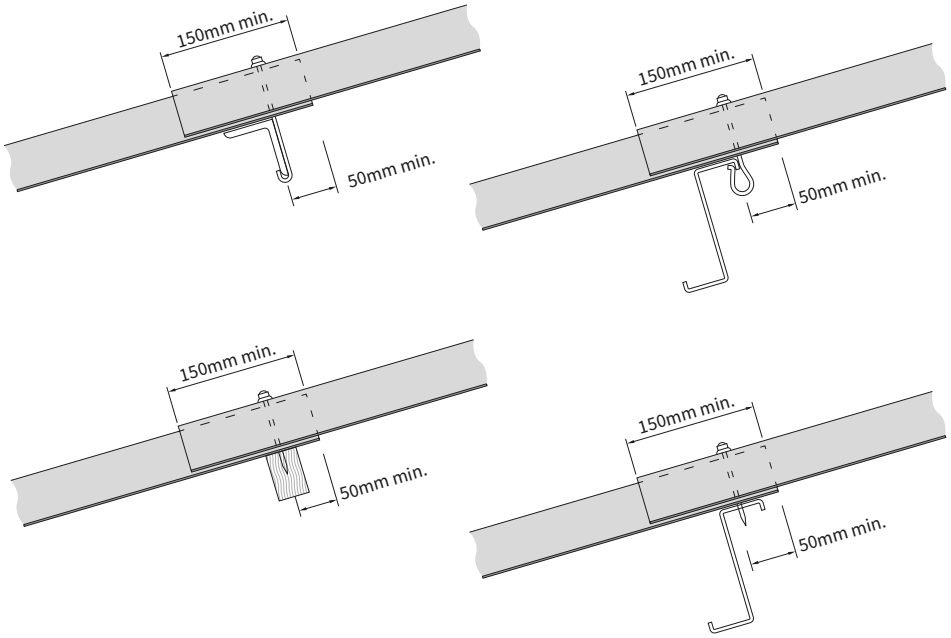
Eternit Topfix Fastener Range

Timber	Carbon steel 6.5mm x 130mm	4069994
Timber	Stainless steel 6.5mm x 130mm	4069996
Steel	Carbon steel 6.3mm x 105mm	4069999
Steel	Stainless steel 6.3mm x 120mm	4070003
	Depth setting drill bit	4071041

Traditional fasteners

In certain circumstances it may be preferable to use traditional fasteners such as hook bolts, crook bolts and drive screws. There are, however, additional health and safety implications to consider when using these fixings.

The fasteners are generally 8mm diameter for Profile 6 and are fixed through 10mm diameter pre-drilled holes in the sheet. For hook and crook bolts, the fixing should be positioned 4mm upslope from the back leg of the purlin. Drive screws should be located centrally on the purlin.

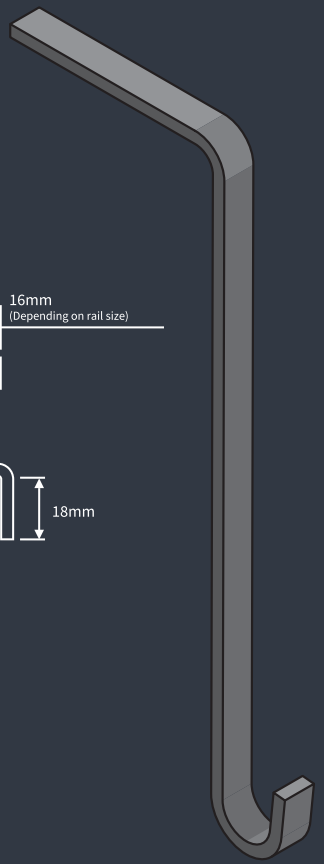


Support clips

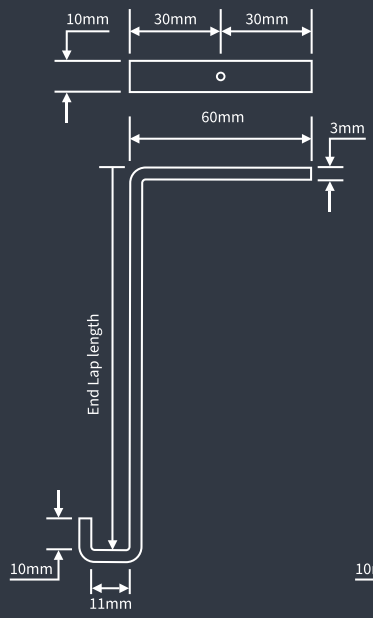
Support clips are required for roof pitches above 30° and vertical application when fixing through the crest of the sheet.

Support clips are typically fabricated from 10 x 3mm steel bar and are galvanised. Their length should be determined by the end lap of the sheeting.

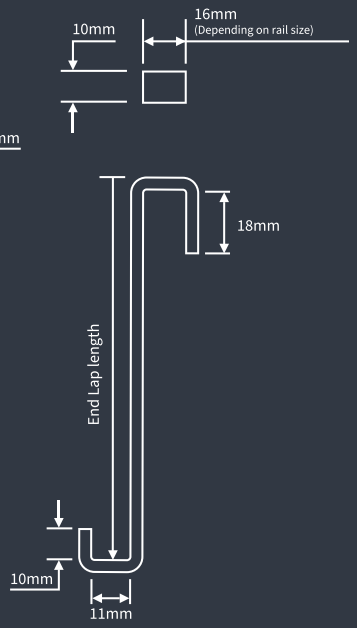
The top of each course of sheets should finish 5mm below the top of the rail so the support clip can bear on the top of the rail. The clips are positioned in the valley corrugation adjacent to the fixing, 2 support clips are required per sheet.



Timber



Metal



Notes: When fixing to timber purlins, BS 5268: Structural use of Timber, recommends that the minimum edge distance of the fixing should be five times the fixing diameter to avoid undue splitting of the timber.

Fasteners should be installed perpendicular to the plane of the roof.

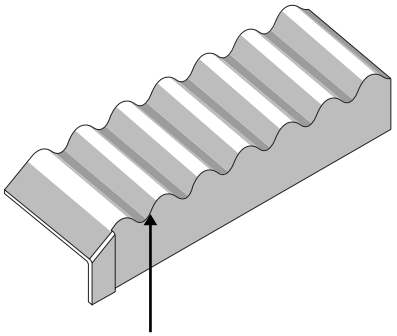
With some types of insulated cladding, or where sealant has been used, sheet settlement can take place. It may be necessary to retighten the fixings after a suitable period.

Eaves installation

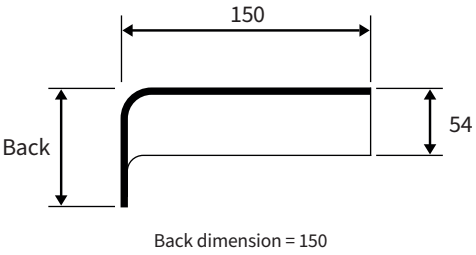
Eaves closers and eaves fillers are used to close off the sheet corrugations at the eaves. They have the same 1016mm coverage as the Profile 6 sheets and have universal handing, i.e. they can be used whether the sheets are laid from left to right or right to left. The lower corrugation (as indicated below) is shaped to fit under the side lap corrugations of the sheets.

The fittings are fixed to the eaves beam or bottom purlin by the sheet fasteners.

Eaves closers

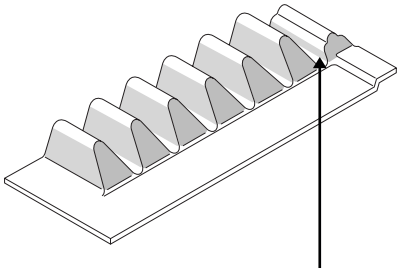


This corrugation fits under sheet side lap.

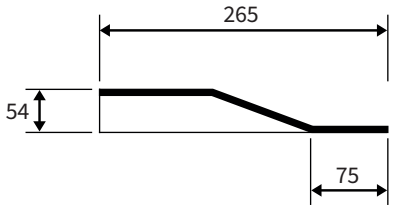


Back dimension = 150

Eaves fillers



This corrugation fits under sheet side lap.



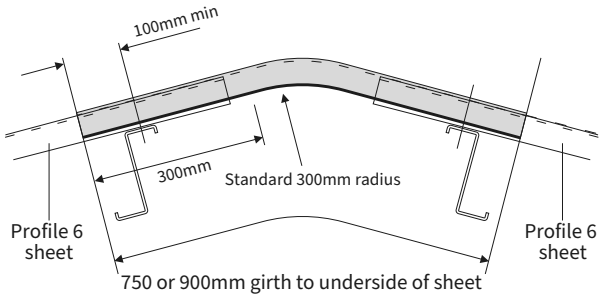
Crank Crown and Vent installation

Cranked crown ridges and vents are available in girths of 750mm, 900mm and 1800mm in pitches of 10° to 22½°, allowing use on roof pitches from 8.5° to 23¼° (see table below).

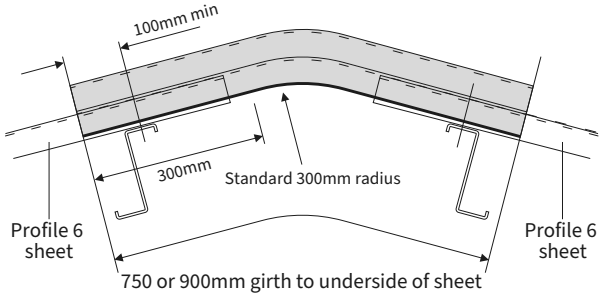
Cranked crown sheet pitch	Roof Pitches	
	from	to
10°	8.5°	10.75°
12.5°	11°	13.25°
15°	13.5°	15.75°
17.5°	16°	18.25°
20°	18.5°	20.75°
22.5°	21°	23.25°

It is essential that both slopes of the roof are sheeted commencing at the same gable end and the corrugations are accurately aligned. Both the cranks and the top sheets must be mitred. The cranks are fixed in the same way as the sheets, with the fasteners being a minimum of 100mm up from the tail end of the ridge where the exposure rating requires 150mm end laps for the sheeting or 250mm up where the exposure rating requires 300mm end laps.

Cranked crown fixings



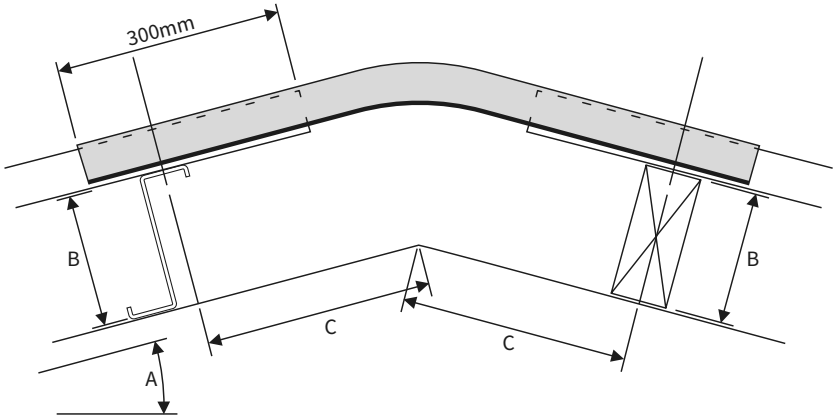
Ventilating cranked crown fixings



Purlin setting out

To form a non-fragile detail, 900mm cranked crowns and 750mm cranked crowns and vents must lap onto the sheets by 300mm. The tables below give the setting out details of the purlins for a range of purlin sizes. If the sheets must be laid with 300 mm laps because of the exposure rating, use the smaller dimension.

When 750mm girth ridges are used on roof pitches of 15° to 22½°, the 300mm overlap encroaches on the curved part of the ridge. To avoid damage, 8mm butyl strip should be used as a spacer between the ridge and the sheet.



Dimension C for 900mm cranked crowns

Pitch A	Purlin Depth B			
	B = 75	B = 125	B = 175	B = 225
10°	187 - 337	178 - 328	170 - 320	161 - 311
12.5°	184 - 334	173 - 323	162 - 312	151 - 301
15°	182 - 332	168 - 318	155 - 305	142 - 292
17.5°	179 - 329	164 - 314	148 - 298	132 - 282
22.5°	175 - 325	155 - 305	134 - 284	113 - 263

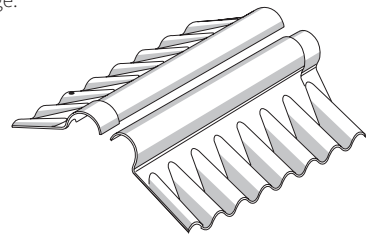
Dimension C for 750mm cranked crowns and cranked vents

Pitch A	Purlin Depth B			
	B = 75	B = 125	B = 175	B = 225
10°	112 - 262	103 - 253	95 - 245	86 - 236
12.5°	109 - 259	98 - 248	87 - 237	76 - 226
15°	107 - 257	93 - 243	80 - 230	67 - 217
17.5°	104 - 254	89 - 239	73 - 223	57 - 207
22.5°	100 - 250	80 - 230	59 - 209	38 - 188

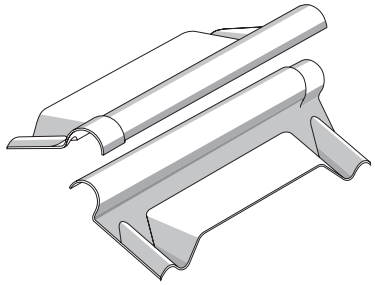
Two-piece ridges installation

Profile 6 two piece adjustable ridges can be used on roof pitches from 10° - 45°. The ridges have a cover width of 1016mm to match the Profile 6 sheeting and are fixed through the sheets into the top purlin. There are 4 types of two piece ridge:

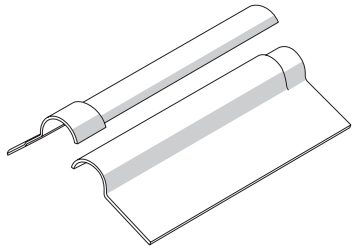
2 Piece Close Fitting Ridge
i.e. with a profiled base.



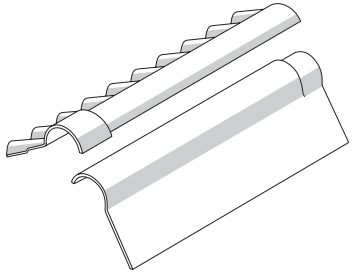
2 Piece Ventilating Ridge
Can be used continuously or together with close fitting ridges. If used continuously, a pair of close fitting ridges should be used at each end of the run in case the last ridge needs to be cut to length



2 Piece Plain Wing Ridge
Sits across the tops of the corrugation

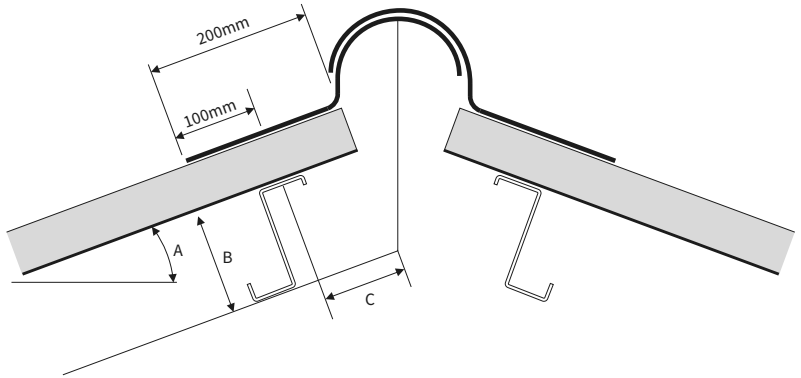


2 Piece Northlight Ridge
Uses the inner roll of the 2 piece plain wing ridge and the outer roll of the 2 piece close fitting ridge. It is now mainly used on monopitch roofs



Position of purlins

The sheets on each slope should be fixed to allow at least 200mm lap with the ridge. The position of the top purlins should be established by using the table shown.

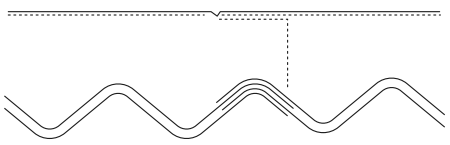


Dimension C for 2 piece ridges

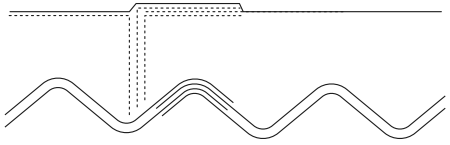
Pitch (A)	Purlin Depth (B)			
	75mm	125mm	175mm	225mm
10°	152	143	134	125
12.5°	146	135	124	113
15°	140	127	113	100
17.5°	134	118	102	87
22.5°	121	100	80	59
30°	100	71	42	-

Position of two-piece ridges

When positioning the 2 piece close fitting ridges, if the small roll of the ridge is laid on the slope sheeted left to right and the large roll is laid on the slope sheeted right to left, the laps of the ridge will align with the laps of the sheets

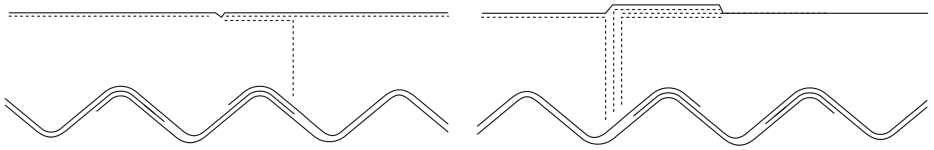


Sheeting left to right, small roll of ridge



Sheeting right to left, large roll of ridge

If the small roll of the ridge is laid on the slope sheeted right to left and the large roll is on the slope sheeted left to right, the lap of the ridge must be offset 1 corrugation frmo the lap of the sheets.



Sheeting right to left, small roll of ridge

Sheeting left to right, large roll of ridge

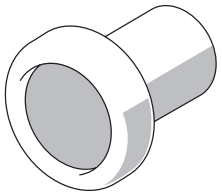
Where lap sealants are required for the sheeting, the sealant should also be applied to the 2 piece close fitting and 2 piece northlight ridges.

Finials

Finials are used to finish the ridge at each end of the building. Disc finials are used in conjunction with plain wing bargeboards or where bargeboards are not being used.

The finials fit best onto the main body of the ridge, not on the socketed end, so it may be preferable to offset the ridges as described above.

The disc finials should be seam bolted to the inner roll of the ridge before fitting the outer roll.



Disc type ridge finial

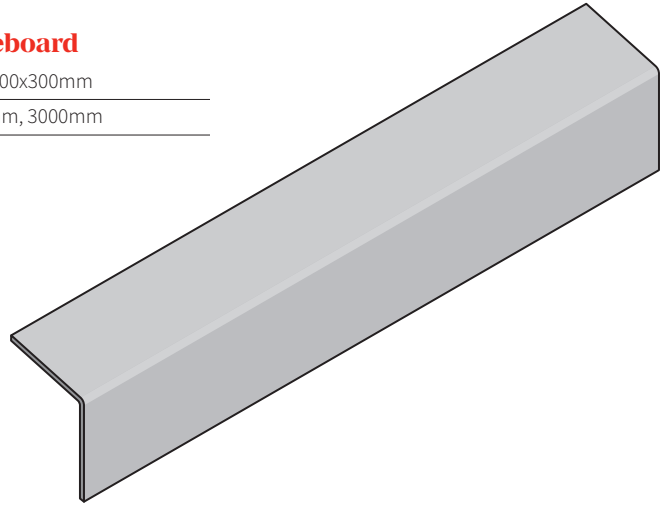
Bargeboards

The range of profiled sheeting bargeboards provides a choice of weatherproof finishes to the verges of a building. With each bargeboard, one leg extends across the roof sheeting while the other covers the top of the masonry wall or vertical cladding.

Plain wing bargeboard

Wing: 300x200mm and 300x300mm

Length: 1800mm, 2440mm, 3000mm



Cranked plain wing bargeboard

Note: Used with the crank crown ridge

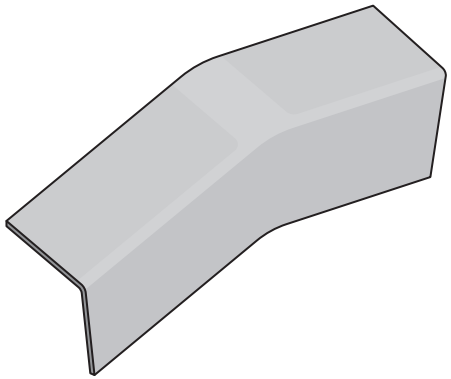
Wing: 300x200mm and 300x300mm

Girth: 1300mm

Pitches: 10° ,12.5°, 15°, 17.5, 20° & 22.5°

Handing of bargeboards

Plain wing bargeboards are universal, as are all cranked crown bargeboards.



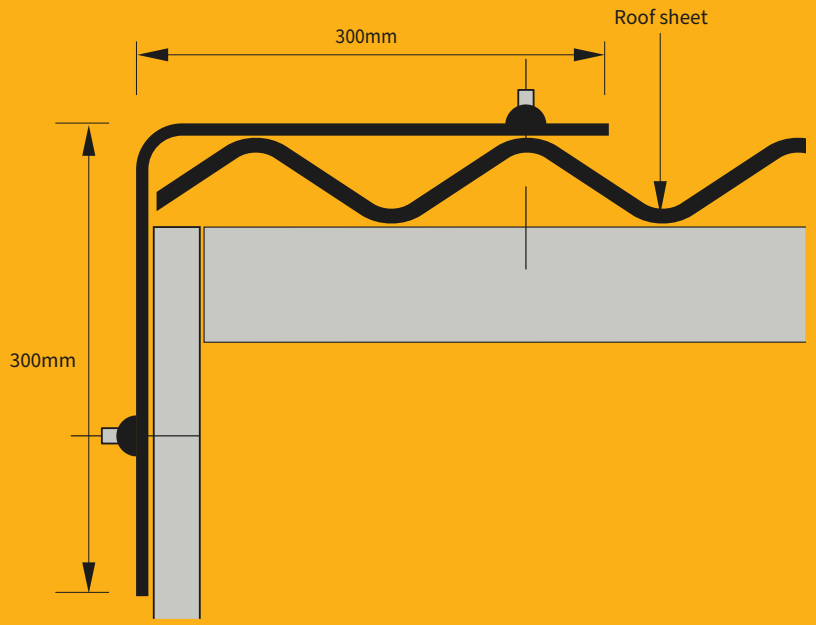
Fixing bargeboards

Note: Care must be taken to ensure there is at least 2 wave corrugations beneath the bargeboard.

Bargeboards are fixed with the sheet fasteners into the purlins through the sheets and screwed to the wall or vertical cladding. The sheets should project at least two crest corrugations under the bargeboard to provide optimum weather protection. Intermediate fixings should be introduced as necessary to ensure that the bargeboard fixings are at 750mm maximum centres.

Bargeboards should be positioned so that their lap is directly below the end lap of the sheeting, with the top of the underlapping bargeboard close to the tail of the sheet in the course above.

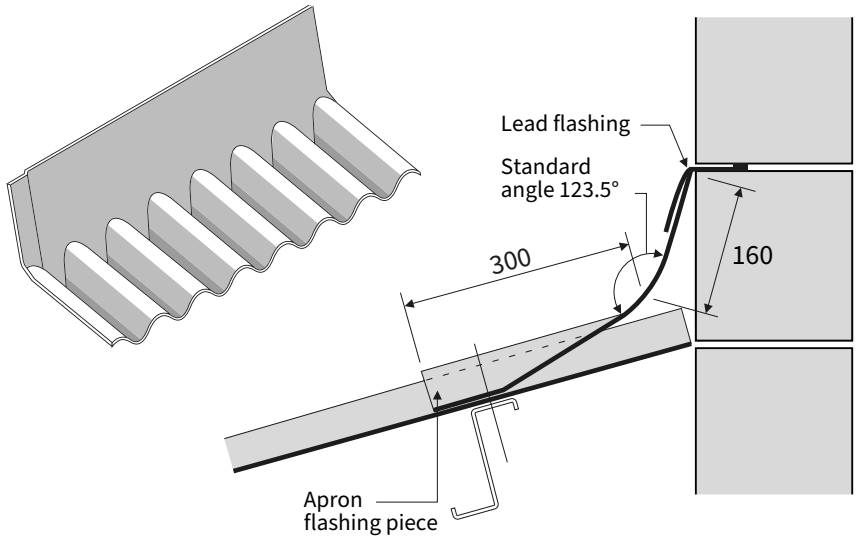
When the gable is brick or block, position the bargeboard 25mm clear of the face of the wall. Fix both legs of the bargeboard to the roof using the Topfix fasteners and the wall at all purlin positions.



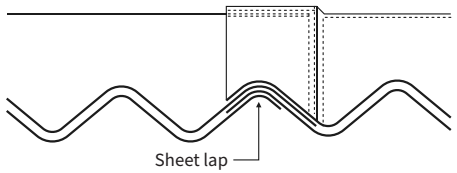
Note: As the verge is the part of the roof that is often the most vulnerable to wind damage, more fastenings are required there to ensure that bargeboards in general and the ends of the bargeboards are always securely fixed.

Apron flashing

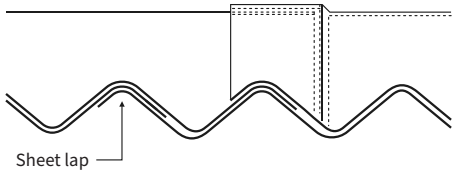
Apron flashings are typically used to finish off the top end of a roof where it abuts a wall and a lead flashing is dressed into the wall and over the apron flashing to ensure a weathertight detail.



Sheets laid left to right



Sheets laid right to left



When sheeting from left to right, the lap of the apron flashings aligns with the sheet lap, but when sheeting right to left, the apron flashings are offset by one corrugation, as shown above.

Agricultural ventilation systems

*Please note that agricultural ventilation systems are generally used on roof pitches of 15° to 22.5°.

System 1: Open protected ridges

Overall length	2300mm
Cover length	2200mm
Wing length	250mm
Angle	112.5° (up to 22.5° pitch)

There are two types of open ridge: unprotected and protected. Both provide efficient ventilation whilst simultaneously reducing draughts. Rain falling into the ridge area will be drained away above the profiled sheeting. It is, however, important to protect the supporting rafters from the elements with a flashing.

Advantages of open ridges

- Provides an efficient outflow of air
- Designed to fit any roof design, but particularly suitable for spaced roofing
- Allows rain to be channelled away over the roof

The critical factor for open ridge ventilation is the air gap marked 'y' on the diagrams below. The clear width of this air gap relates to the number of animals that will be kept inside the building. Eternit recommend that professional advice be sought during construction to establish the optimum air space.

To meet the requirements of HSG 33, the gap between the purlins at the apex of the roof should be no more than 300mm. For this reason, we show two purlins on each side of the apex. The ventilation gap (y) is therefore limited to 250mm.

Unprotected open ridges (Fig.1)

Ideal for farm buildings with central cleaning passages.

Eternit's open ridge fittings are suitable for roofs with pitches from 10°to 22.5°.

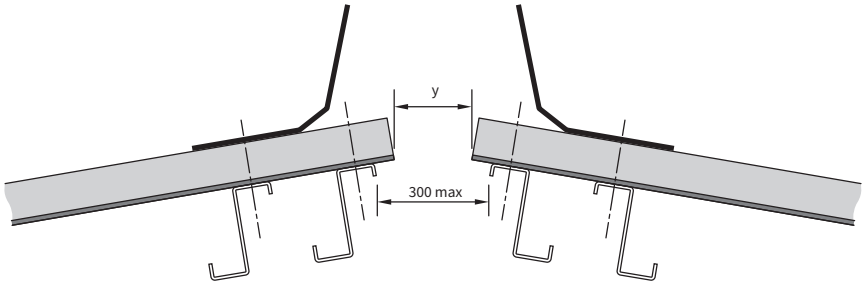


Fig. 1 Unprotected open ridge

Protected open ridges (Fig.2)

In this ventilation system, the ridge units should be installed in the same fashion as for unprotected open ridges. Additionally, however, the ridge unit is bridged at 750mm centres by galvanised metal straps manufactured to suit the pitch of the roof. The straps are fixed at an angle of 5° from the horizontal, semi compressed fibre cement flat sheet or poly carbonate soffit strip is then bolted to the straps along the length of the ridge to form a cover. This cover must be positioned 20mm minimum below the top of the upstands of the ridge units and the total gap between the cover and the open ridge (x) is such that x = y/2.

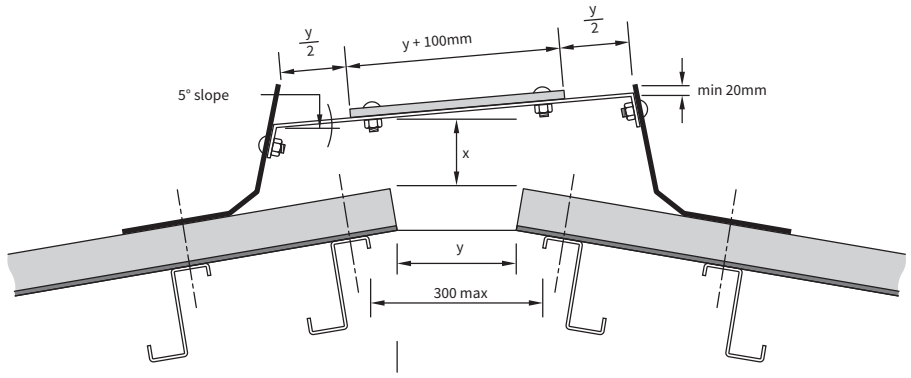


Fig. 2 Protected open ridge

System 2: Breathing roofs

The breathing roof is a simple and effective means of achieving natural ventilation in agricultural buildings such as cattle sheds or pig pens by inserting battens between courses of profiled sheeting.

Advantages of breathing roofs

- Reduction of condensation over the whole roof area
- Small ventilation opening minimises weather penetration
- Eliminates mitring

Breathing roofs with battens (Fig.3)

This form of ventilated roof is achieved simply by inserting a preservative treated 50 x 25mm timber batten between the profiled sheets at the horizontal overlap of each course.

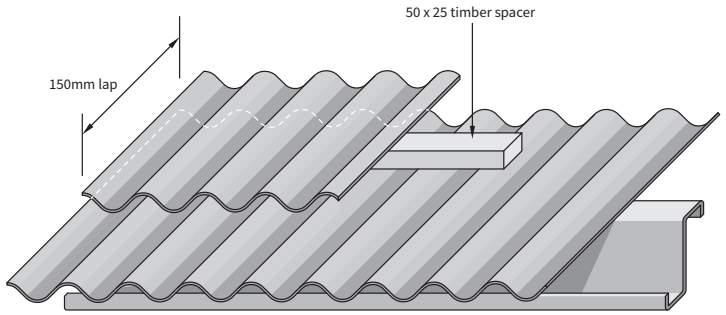


Fig. 3 Breathing roofs with battens

When installing a breathing roof or converting an existing roof, purlins should be fixed at 1375mm maximum centres, with one Profile 6 sheet spanning each purlin spacing. Sheet lengths should be calculated to give a minimum end lap of 150mm. In exposed conditions, this should be increased to 300mm to minimise the penetration of driving rain or snow into the building.

System 3: Spaced roofs*

In larger span agricultural buildings and those used for high unit intensive rearing, considerable ventilation is required and can be achieved by the use of spaced roofing.

Advantages of spaced roofs

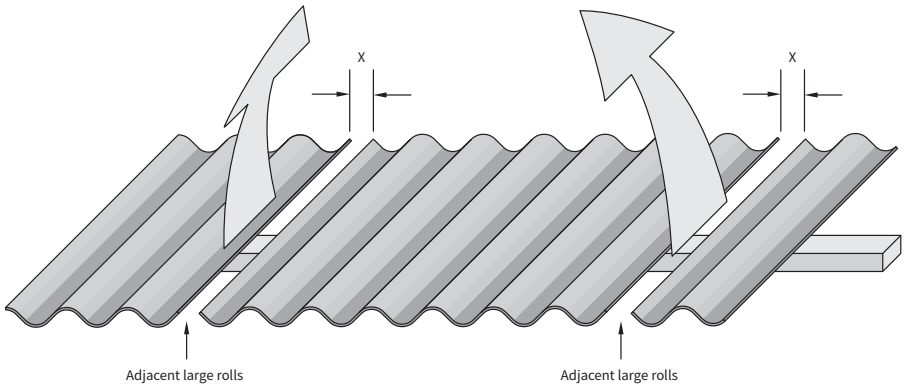
- Achieve a high degree of ventilation and natural internal light
- Minimises internal condensation levels
- Reduction or elimination of mitring

A spaced roof is best achieved by using Profile 6 roof sheets specially trimmed to a width of 1,000mm. When these sheets are laid with a gap between each vertical run of sheets it provides the maximum ventilation for a building whilst minimising the potential for weather ingress.

Alternate tiers of sheets should, ideally, be turned around so that they are laid with large rolls adjacent to each other.

Trimmed sheets should be fixed with the fastener passing through the crown of the first corrugation in from the edge of the sheet and with two fixings per sheet per purlin.

The gap 'X' (see Fig. 4) will be determined by the size of the building, the amount of ventilation required and the stock units to be housed. The gap, however, should be between 15 and 25mm, to minimise snow bridging and reduce the risk of rain penetration.



The benefits of using trimmed sheets in this way is that the sheets can be installed the right way up and have well-formed edge 'gutters' to prevent water dripping into the building

during periods of heavy rainfall. Side laps are not required in installation and the building will receive natural daylight through the openings created. Should rooflights be required in a spaced roof, please contact the Eternit Technical department.

Note: A soaker or DPM should be installed beneath each gap in the roof sheeting to protect the purlins, especially where these are timber.

Note: Please note that sheets fixed in this manner will be classed as a fragile roof covering.

Movement Joint installation

Components

- Straight movement joint length: 1525mm, 2440mm, 3000mm
- Cranked crown movement joint: girth- 1300m / degrees – 10°, 12.5°, 15°, 17.5°, 20°, 22.5°
- Movement joint stop ends
- Movement joint two-piece ridge end caps

Applications

Movement joints are intended for use in long, continuous stretches of roofing or vertical sheeting, to accommodate thermal and other movements. BS 8219 recommends that movement joints be included in stretches of roofing and vertical sheeting on buildings exceeding 45 metres in length.

They should also be designed to coincide with any structural or movement joints provided in the building, in which case, there should always be a movement joint through the complete system.

For buildings in which the temperature or humidity is higher than normal, or which are subjected to sudden changes in temperature, the movement joints may be required at closer centres than indicated.

Movement joints for single and built up roofs

Recommended spacings

Length of building	Number of movement joints
0-45m	0
45-75m	1
75-105m	2

Plus one extra movement joint for every additional 30m

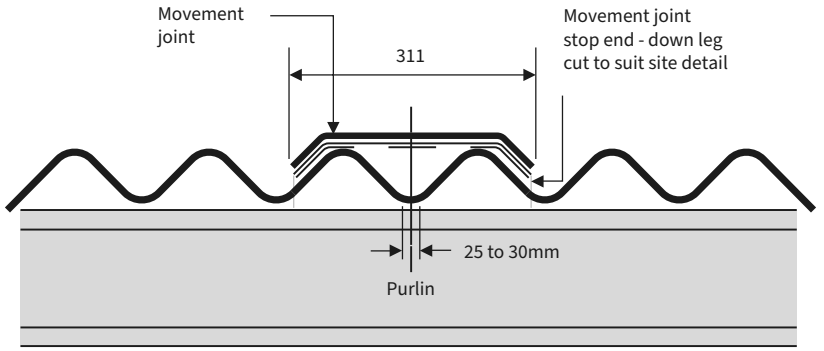
Forming movement joints

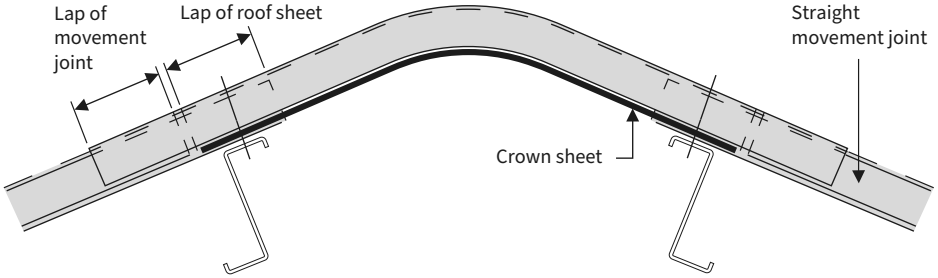
Where the movement joint is to be formed, each sheet is cut through the valley at the centre of the sheet, and the resulting pair of half sheets spaced 25 to 30mm apart.

The movement joint should be laid with the top end butting up to the bottom edge of the next sheet upslope allowing a min 150mm lap.

The movement joint pieces are fixed to the purlins using the same method of fixing as the roof sheets, with one fixing in the centre of the movement joint at each purlin run.

This fixing should pass through the gap between the two half sheets and must not be overtightened (Figs.1 and 2).





Movement joint cranked crown caps

Cranked crown caps are available in a range to suit the standard Profile 6 cranked crown ridge pieces. When laying cranked crown ridge pieces, form a 25 to 30mm movement gap as detailed opposite and cover it with the crown cap, screwing this directly to the ridge purlins.

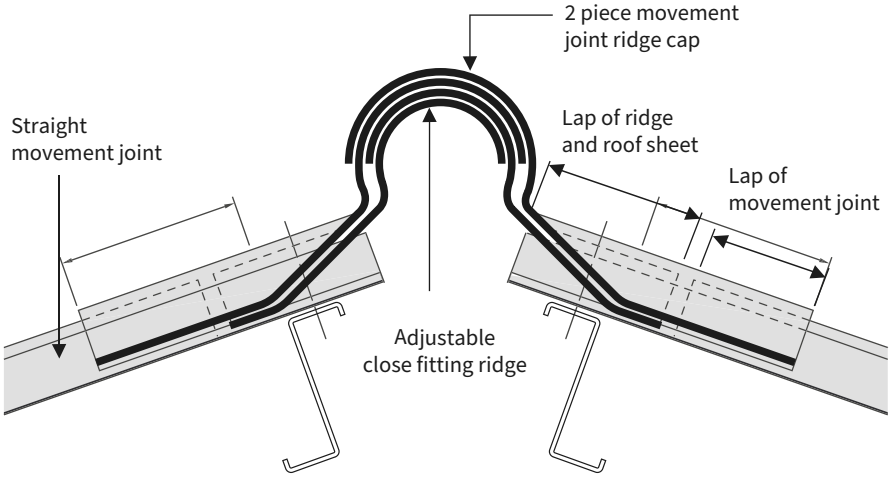
Note that when laying the straight movement joint, the top end should butt up to the overlap of the cranked crown ridge piece. The crown cap, being longer than the crown ridge piece will then correctly overlap the straight movement joint.

Movement joint stop ends

Intended to close the open end of a movement joint, stop ends are made to fit over the sheeting and into a straight movement joint. They should be fixed by bolting to the movement joint.

Movement joint ridge caps

These are used in the same way as movement joint cranked crown caps but designed to fit two piece close fitting ridges (Fig.3).



GRP Rooflights installation

Introduction

Eternit supply Agrisheet agricultural grade profiled GRP rooflights, suitable for use with Profile 6. These are classified non-fragile class C when fixed correctly and first installed.

GRP sheets should be supported at each purlin position using profile filler blocks, eaves closers or the Profile 6 sheet.

The GRP sheets do not require mitres, and the corresponding corner of the Profile 6 sheet should also be unmitred.

Material	2.4kg/m² GRP
Fire Rating	SAB Class 3
Fragility	Non-fragile Class C to ACR(M)001:2014 when new and fully fixed in accordance with Eternit recommendations
Lengths	1525, 1675, 1825, 2440, 2750, 2900, 3050mm

Fixing

GRP rooflights should be fixed through every corrugation using the same fasteners as for the Profile 6 sheets, apart from the side lap corrugations. Holes should be drilled 2mm oversize, as for the fibre cement sheets. In addition, self-sealing fasteners with a synthetic rubber shank (laplox) or seam bolts and washers with a wide bearing, should be used at 300-400mm centres for side stitching to the adjacent sheet.

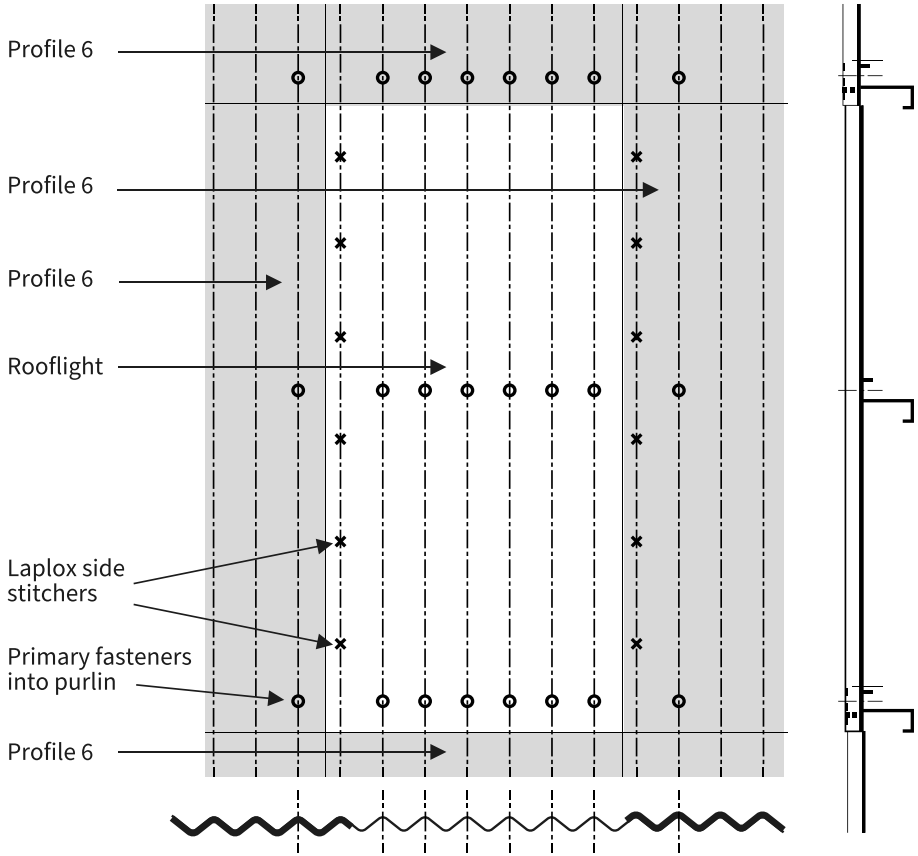
End and side laps should be sealed using 10mm diameter butyl strip sealant.

It is advisable to use weatherproof caps, and washers where possible, that are a distinctly different colour to the fixings for the rest of the roof. Conventionally, poppy red caps are used for rooflights.



Laplox side stitcher with Sela washer and cap.

Typical fixing arrangement





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Issued: April 2026

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