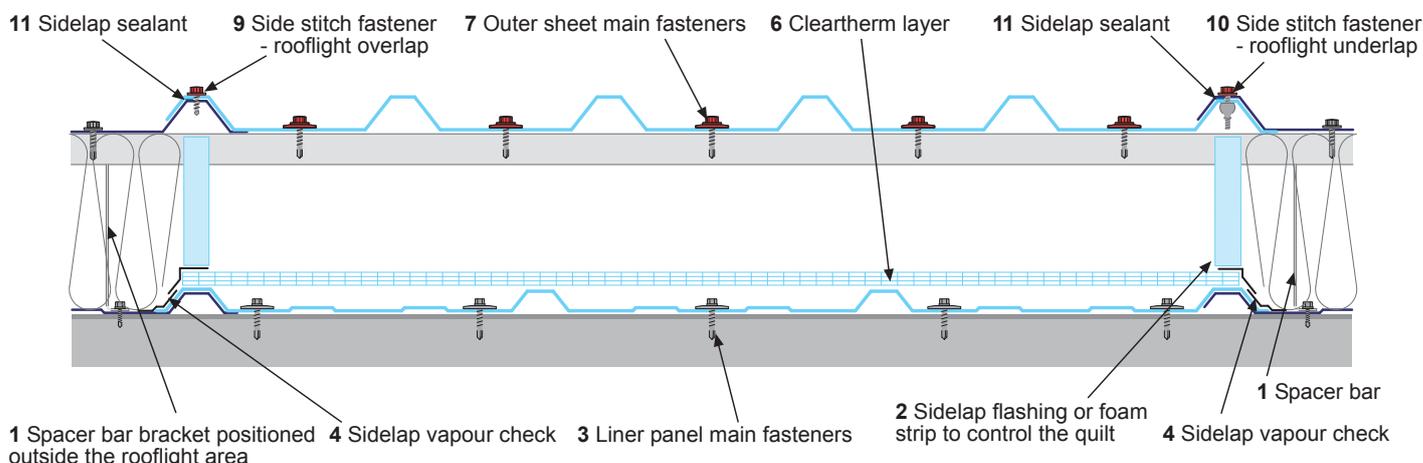


# INSTALLATION INSTRUCTIONS: In-Plane Site Assembled GRP Rooflights

Triple Skin with Cleartherm - Trilite Ultra 3.6, Trilite Ultra 4.5 and Safelight

1 of 2



## Cross Section: Cleartherm Triple Skin Rooflight

- GENERAL ARRANGEMENT**
- 1 **SPACER BRACKET POSITIONING & CLEARTHERM SHEET LENGTH** - Generally, spacer brackets are positioned outside of the area of rooflight, necessitating the use of 3m spacer bars. Cleartherm sheets are normally fitted in standard 6m sheet lengths butted up to one another for lowest cost. (Butt joints between sheets do not need to be aligned with purlins or laps in the liner or outer sheet). Or, spacer bar brackets can be positioned as normal within the rooflight area (avoiding the need for longer spacer bars). Cleartherm sheets should then be fitted in single span lengths, butted together along the line of the spacer bar with the end of the sheet notched to clear the spacer bar bracket.
  - 2 **FIXING SEQUENCE** - Either, Cleartherm is laid and secured over the liner panel (after the liner has been fitted as normal): the spacer bar system, fillers and/or flashings to stop insulation migration are then fitted as normal. Cleartherm sheets should not be exposed to weather before the outer sheet is fitted. Or, the Cleartherm sheet can be installed at the same time as the outer sheet, simply sliding into position under the spacer bars: limiting sheet lengths to double spans may assist with this.
- LINER PANEL**
- 3 **MAIN FASTENERS - LINER PANEL (standard weight)** - 5.5mm diameter fasteners fitted with a large diameter (29/32mm) washer with bonded seal or passing through brackets. \* see over for typical references. Liner panels should be secured with 5 fasteners at each purlin and should extend a minimum of 50mm beyond the fixing line at each end after allowing for on site tolerances. Fixed spacer bar brackets can be regarded as a single fastener.
  - 4 **SIDELAPS - LINER PANEL (standard weight)** - Both sides of the liner panel should lap over the adjacent metal sheet. Apply 50mm wide film backed butyl tape over laps to prevent opening, improve resistance to impact and achieve good airtightness and vapour control.
  - 5 **ENDLAPS - LINER PANEL (standard weight)** - Endlaps should be sealed with a 6x5mm strip of pale coloured butyl mastic (BMDS:Class A) inside the lap, along the line of the fasteners or alternatively with 50mm wide film backed butyl tape.
- CLEARTHERM LAYER**
- 6 Cleartherm can be laid in place after the liner has been fixed and sealed, simply secured with 50mm film backed butyl tape along each side lap. Or, 9x3mm sealant can be applied to the crown of each side corrugation of the liner panel and the Cleartherm layer placed on top.
- OUTER SHEET**
- 7 **MAIN FASTENERS - OUTER SHEET** - 5.5mm diameter fasteners fitted with minimum 19mm diameter washer with bonded BS seal located in the centre of the top flange of the ashgrid bar, zed spacer or equivalent, typically poppy red colour. Do not over tighten fasteners. Typically there should be at least one main fastener in every trough on every purlin, with max. 200mm apart. \*see over for typical references.
  - 8 **END LAP SEALANT - OUTER SHEET** - Endlaps should be sealed with 2 beads (8mm diameter round section) of UV stable pale coloured cross linked butyl mastic (BMDS:Class A). This should be positioned above and below the line of fasteners, no more than 25mm from the line of the fixings. If a seal is required at the tail of the lap, gun applied silicon (ISO11600-F-25LM) should be used.
  - 9 **SIDE STITCH FASTENER - ROOFLIGHT OVERLAP** - Brett Martin Daylight Systems recommend GRP overlaps the metal on both sides if possible. This reduces the cost of fasteners and the number of fastener types on site, and improves ease of installation. Standard stitching screws should then be fitted at 600mm centres, typically poppy red colour. \* see over for typical references.
  - 10 **SIDE STITCH FASTENER - ROOFLIGHT UNDERLAP** - If it is necessary for the GRP to underlap the metal on one side, expanding rubber bolts should be fitted at 600mm centres.\* see over for typical references.
  - 11 **SIDELAP SEALANT - OUTER SHEET** - Single strip (6x5mm section) of UV stable pale coloured cross linked butyl mastic (BMDS:Class A) - positioned on the crown of the sheet just outside the line of sidelap fasteners. Immediately downslope of the endlap, it is necessary to have at least a 5mm thick sidelap sealant for a distance of 150mm on the side where the outer sheet underlaps adjacent sheets. The same applies for the sidelap sealant immediately upslope of the endlap on the side where the outer sheet overlaps the adjacent panels - see overleaf.

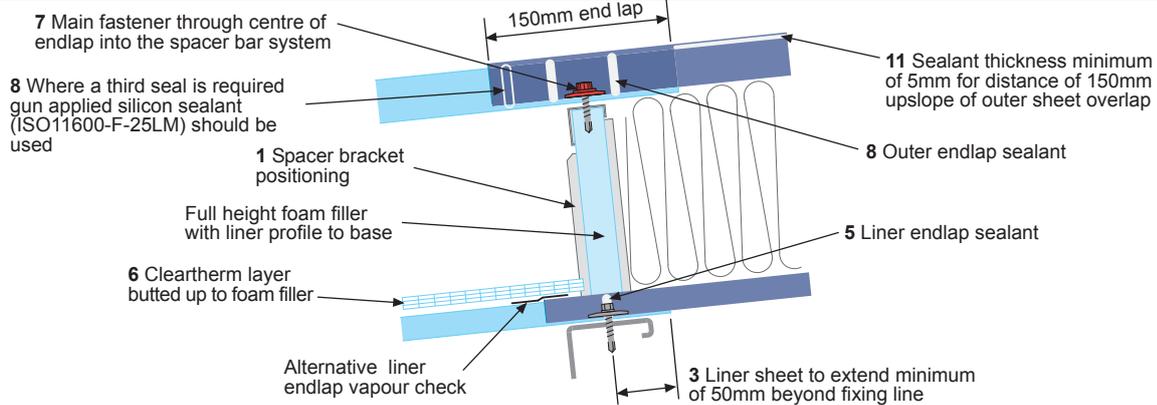
**Note: These heavyweight rooflights are no more dependant on fixings for safe performance than the surrounding metal sheet and choice of carbon or stainless steel fasteners can therefore match the type of fastener being used on the surrounding roof.**

### Minimum Design Roof Pitch 5.5° / Finished Roof Pitch 4°

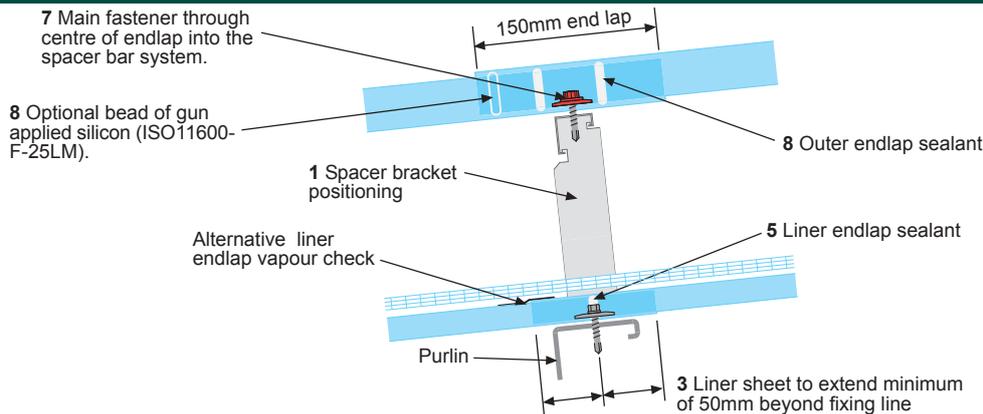
BS5427, the British Standard "Code of practice for the use of profiled sheet for roof and wall cladding on buildings" recommends a minimum finished roof pitch of at least 4°, with a minimum design pitch of 5.5° to allow for tolerances and onsite variations, when using any profiled roofing systems with either through fixings or endlaps (see BS5427:2016 section 5.1.3). We recommend that all Trilite in-plane rooflights should be installed in accordance with these BS5427 recommendations. If Trilite sheets are fitted at lower than 4° finished roof pitch, there will not be any detrimental effect on the rooflight sheet itself, but the risk increases of small variations in installation details causing leaks at endlaps or fixings, as detailed in BS5427 (see Note 3 to 5.1.3). Trilite Ultra rooflights are more rigid, providing more even compression of sealants and less localised deflection around fasteners, thus reducing risk of leaks at endlaps or fixings and should be considered for use on applications near BS5427 minimum pitch recommendations.

*	Stainless Steel	Carbon Steel
Main Fasteners - Outer sheet	SFS SX3/15-S19-6x40 EJOT CF19-JT3-3-5.5x32	SFS SDP3-A19-5.5x38 or EJOT CF19-LS-5.5x32
Overlapping Side Stitch	SFS SXP3/12-A16-6x35 or EJOT CF15-JT3-2H-5.5x30	SFS SDL3-T15-5.5x25 or EJOT CF15-SF-6.3x25
Underlapping Side Stitch	SFS LL-S-S16-9.5x25+cap	SFS LLP-T-T16-9.5x25 or EJOT CF15-RLS-25
Main Fasteners - Liner Panel	SFS SX3/9-S29-6x29 or EJOT CF29-JT3-3-5.5x32	SFS SDL3-S29-5.5x25 or EJOT CF29-LS-5.5x32

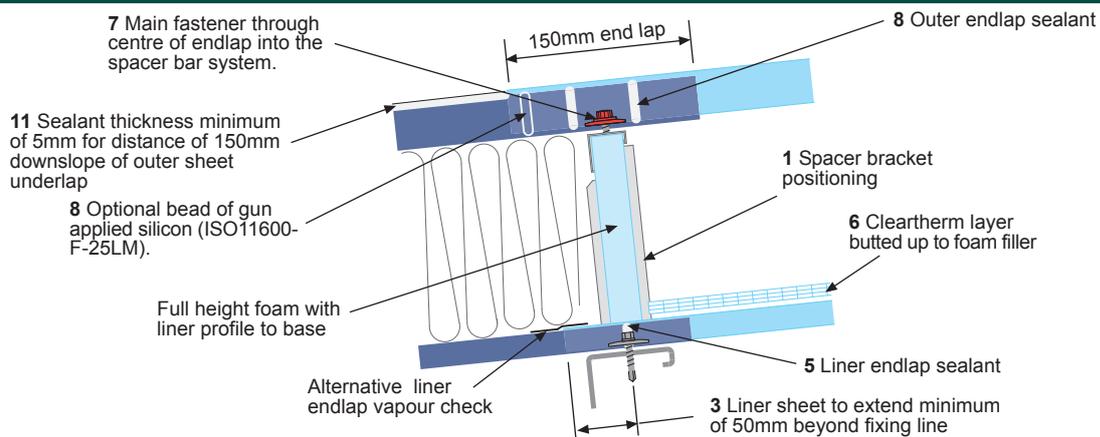
## ENDLAP - CLADDING OVER ROOFLIGHT



## ENDLAP - ROOFLIGHT TO ROOFLIGHT



## ENDLAP - ROOFLIGHT OVER CLADDING



**ESSENTIAL HANDLING & STORAGE RECOMMENDATIONS refer to:**  
**Technical Bulletin 154: for GRP and Technical Bulletin 140: for Cleartherm (polycarbonate)**



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### TECHNICAL SUPPORT:

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