

Technical Information Sheet

Rooflight Application Guide



TIS104 November 2020

Previous issue April 2020

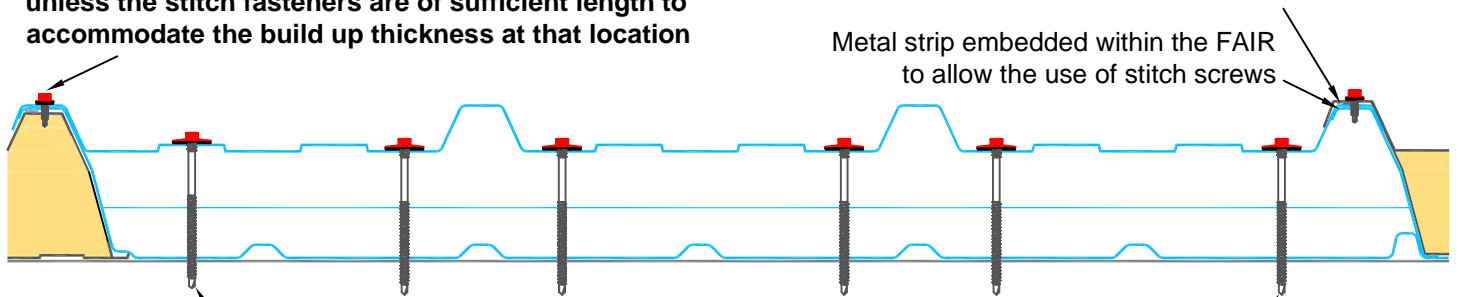
Factory Assembled Insulating Rooflight (FAIR) for use with a composite panel system

Typical cross section

Austenitic stainless steel stitch screws @ maximum 450mm centres. For exposed sites or roof pitches less than 10° reduce centres to 300mm. **Note, avoid stitching through an end lap unless the stitch fasteners are of sufficient length to accommodate the build up thickness at that location**

6mm x 5mm tape, UV stable, cross-linked butyl mastic sealant on the weather side of the stitch fasteners. **Note, for three and four way end laps sealant is required between all lapping layers**

Metal strip embedded within the FAIR to allow the use of stitch screws



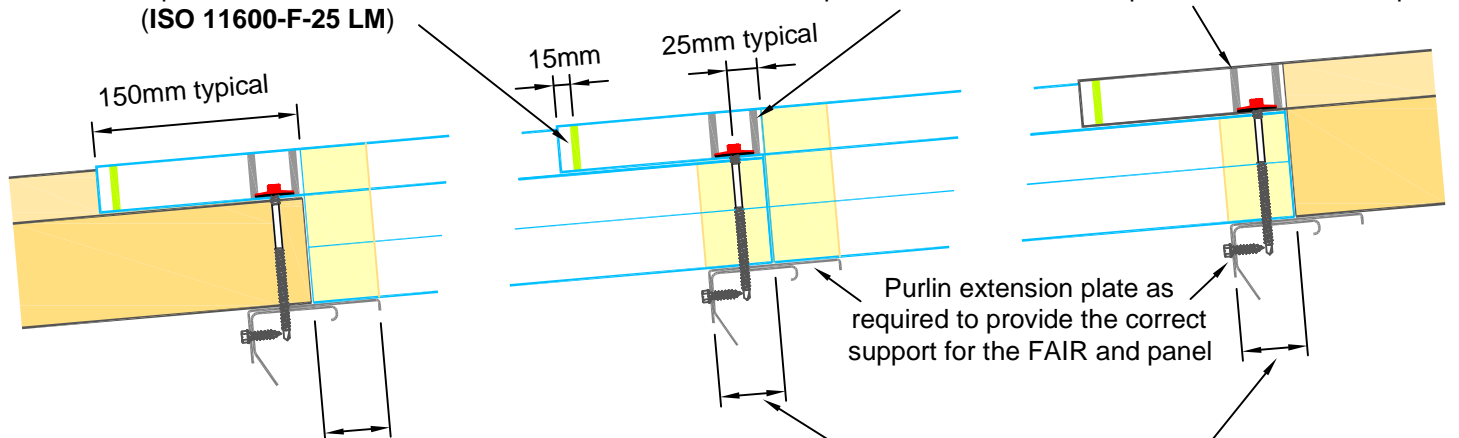
Main fastener adjacent to a FAIR overlap located on top of the stiffener swage to avoid the risk of penetration of the FAIR sidewall

Austenitic stainless steel main fasteners that incorporate minimum 29mm diameter, 40/50 shore hardness sealing washers located as shown. Minimum 19mm diameter sealing washers may be used with a CE36E, CEDR30E or Supasafe E sheet subject to wind loads

Typical end laps

Two continuous runs of 6mm x 5mm tape or 6mm bead, cross-linked butyl mastic sealant located 10mm to 15mm from the main fixing line on both sides of it. 8mm bead may be used with CE36E and Supasafe E outer sheets for panel with FAIR end laps

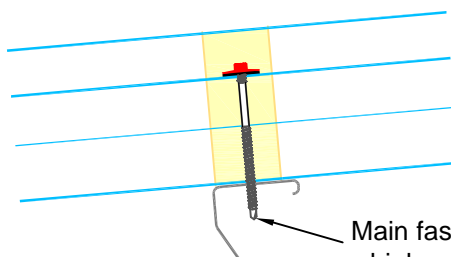
Optional run of silicone sealant (ISO 11600-F-25 LM)



Minimum 25mm of support below an overlapping FAIR, but note that the end filler is 50mm wide and may be visible without a wide enough support

Minimum 50mm of support below an underlapping FAIR

Intermediate purlins



Main fasteners must pass through the centre of the high compression resistance fillers that should be located over a purlin or purlin extension plate

Recommended outer sheet types

Filon outer sheet type	Non-fragility classification to ACR[M]J001	¹ Expected period of non-fragility	Recommended frequency of roof access	Recommended purlin spans
² CE24E	B	³ 5 to 20 years	Infrequent	Up to 2.0m
CE30E & CEDR24E	B	25 years	Frequent	Up to 2.0m
CE36E & CEDR30E	B	25 years plus	Frequent	⁴ Up to 2.25m with a mid-span stiffener over 2m
SUPASAFE E	B	30 years	Very frequent	⁴ Up to to 2.5m with a mid-span stiffener over 2m

¹Note that the expected non-fragility period of rooflights is affected by all components used within the roof assembly and when a specific period of non-fragility is required all components used should have the same degree of durability as the rooflights. This would typically require the use of austenitic stainless steel fasteners and minimum Class A butyl mastic for the rooflight installation, always consult the component manufacturer or supplier.

²CE24E outer sheet types will provide a Class B non-fragile classification but higher specification outer sheets may be required in areas of high wind loads or snow loads.

³Minimum specification, correctly installed rooflights are rated Class B non-fragile during the construction phase, when new, and for an expected period of 5 to 20 years depending on external factors as defined in the National Association of Rooflight Manufacturers guidance document NTD03.

⁴FAIRs that require an insulating core and a mid-span stiffener are only supplied with a polycarbonate core.

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Fire performance

Filon Grade 300: B_{ROOF} (t4) to BS EN 13501 Part 5. SAB to BS 476 Part 3. Standard for an outer sheet.

Filon Grade 104: Class 1 to BS 476 Part 7. Standard for a liner.

Filon Grade 101: B_{ROOF} (t4) to BS EN 13501 Part 5. SAA to BS 476 Part 3. Class 1 to BS 476 Part 7. Class 0 as defined in Building Regulations, to BS 476 Part 6. Available when a higher fire performance than is normally required in Building Regulations is specified.

For further information, please refer to Filon Technical Information Sheet TIS003.

U-value W/m²K

Double skin

3.0. Non-compliant for a building that is not exempt from Building Regulations.

Triple skin

1.9 as standard, 1.7, 1.3 and 0.9 are also available. For other U-value requirements please contact Filon Technical Department.

Typical fixing specification

Minimum roof pitch

In accordance with *BS 5427: Code of practice for the use of profiled sheet for roof and wall cladding on buildings*, Filon rooflights are suitable for a finished roof pitch of at least 4° (5.5° design pitch). For lower roof pitch solutions, please contact Filon Technical Department.

Main fasteners

Filon FAIRs should be secured to purlins with minimum 5.5mm diameter, self drill/tap austenitic stainless steel screws that incorporate minimum 29mm diameter, 40 to 50 shore hardness sealing washers, typically coloured poppy red. Minimum 19mm diameter washers may be used with CE36E, CEDR30E and Supasafe E outer sheets. Main fasteners should be located in the profile troughs. For FAIRs that match modern composite panel systems this normally requires two fasteners per trough either side of the main profile ribs. Note that the fastener situated adjacent to a FAIR overlap at a side lap joint should be located on top of the stiffener as shown in the cross section drawing. This will prevent the fastener penetrating the sidewall of the FAIR. All fasteners that penetrate the FAIR must pass through an internal high compression resistance filler to ensure the optimum sealing performance of the fastener washer.

End laps

Any end laps should be located directly over a purlin. The end lap length is typically 150mm. The end of an underlapping FAIR box liner should be supported by 50mm of length by the purlin or a purlin extension plate in order to maintain the expected impact resistance. An overlapping FAIR may be supported by a minimum of 25mm but a wider support than this is recommended for aesthetic reasons to conceal the 50mm wide end closure filler. The end lap joints should be sealed with two continuous runs of 6mm x 5mm tape, or 6mm bead cross-linked butyl mastic sealant. Note that 8mm bead may be used with CE36E or Supasafe E outer sheets if required, for panel to FAIR and FAIR to panel end laps. The sealant runs should be located 10mm to 15mm from the fixing line on either side of it. An optional run of gun applied silicone to classification ISO 11600-F-25 LM may be applied 15mm from the leading edge of the overlapping sheet within the joint to provide a supplementary seal to prevent dirt ingress. FAIR to FAIR end laps should be fixed and sealed in the same way.

Continued.

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Side laps

The side lap joints should be stitched at maximum 450mm centres with austenitic stainless steel stitch screws. For exposed sites or roof pitches below 10° the stitch centres should be reduced to 300mm. **Note that stitching through an end lap should be avoided unless the stitch fastener is of sufficient length to accommodate the build up thickness at that location.** The side lap joints should be sealed with minimum one run of 6mm x 5mm tape or 6mm bead, cross-linked, butyl mastic sealant located on the weather side of the stitch fasteners. **Note that there should be sealant located between all lapping layers in a three or four way end lap joint.** FAIR to FAIR side laps should be treated in the same manner as for FAIR to composite panel side laps. **Note that it is recommended to restrict the number of FAIRs sidelapping to one another to three units.** This will reduce the risk of sheet tiers running out of true if there are small tolerance differences in the cover width of end lapping FAIRs and composite panels.

Notes

FILON®

Filon Products Limited
Unit 3, Ring Road, Zone 2, Burntwood Business Park
Burntwood, Staffordshire WS7 3JQ, England

Tel: +44 (0)1543 687300 Fax: +44 (0)1543 687303
Email: sales@filon.co.uk Website: www.filon.co.uk

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