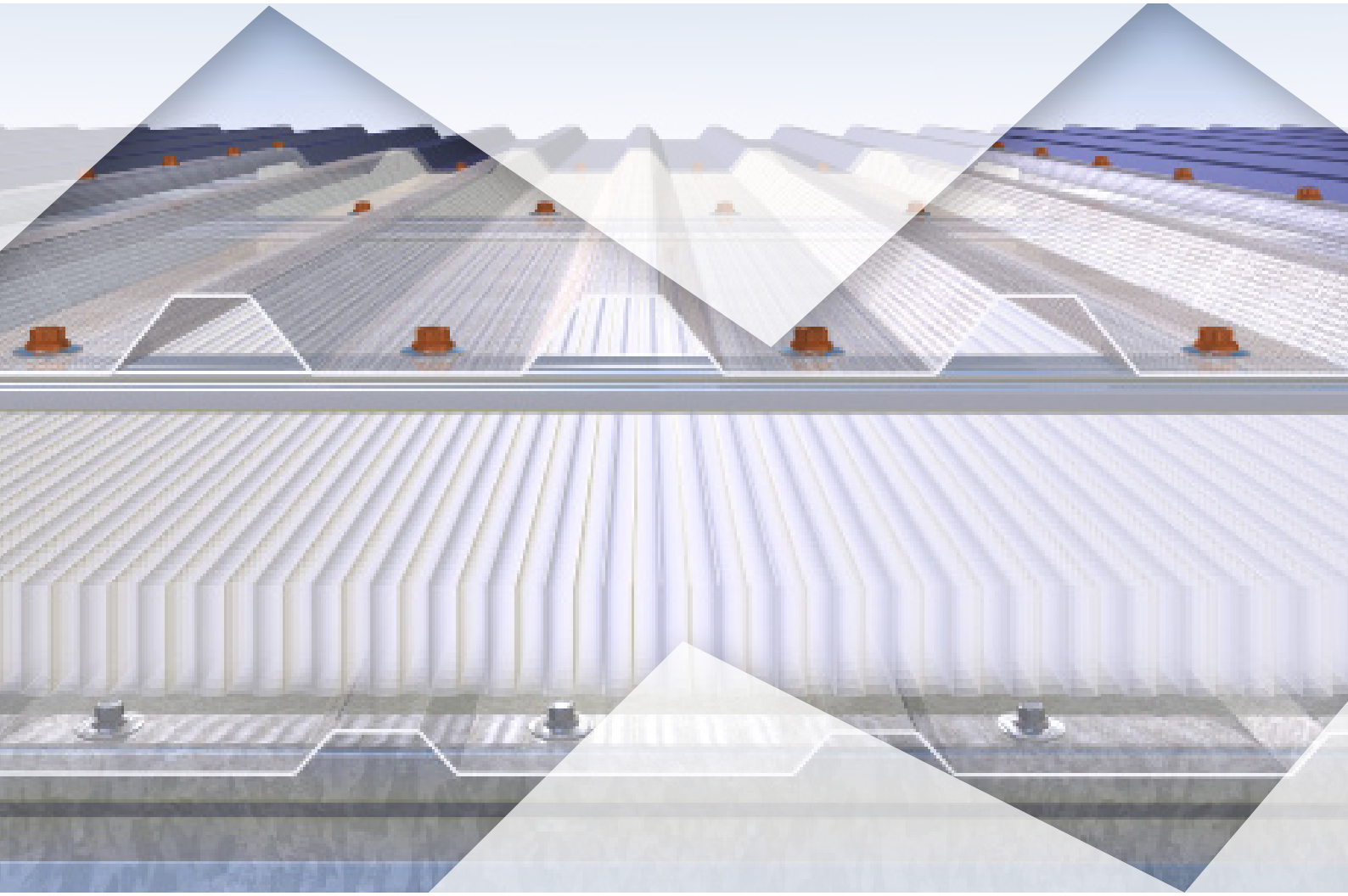
Hambleside Danelaw
Building Products

Installation Guidelines



Site-Assembled Rooflights

ZENON®

LOW CARBON DAYLIGHT SOLUTIONS

A rooflight area of 20% for industrial buildings is a feasible, realistic and a cost effective proposition not only for improving levels of natural daylight, but for delivering significant energy savings when used in conjunction with automated controls to reduce the daytime need for artificial lighting.

Rooflight assemblies incorporating the unique Zenon Insulator core can deliver excellent levels of light transmission, by avoiding the reflectance losses usually associated with the need for the multiple insulation layers, combined with low U-values to deliver real tangible benefits to both the designer and building occupier in reduced carbon emissions and energy savings.

With ever increasing demands for reduced energy consumption, carbon embodiment and carbon emissions, the importance of the provision of good quality thermally efficient rooflights with good levels of natural light transmission should not be underestimated.

The Health and Safety Executive clearly state that those persons responsible for the design of a roof structure should consider carefully the potential to eliminate or reduce the hazard of using materials that are of a fragile nature. GRP rooflights provide an effective and long term means of compliance.

ACR[M]001:2014 Test For Non-Fragility of large element Roofing Assemblies is a test of the completed roof assembly that defines the test procedure and minimum standard required to demonstrate and achieve non-fragility classification. Further guidance is contained in Guidance Note NTD 03 2014 produced by the National Association of Rooflight Manufacturers.

Further information, product data and guidance on design considerations for Zenon rooflights can be found at www.hambleside-danelaw.co.uk

Site-Assembled

1. Rooflight Outer Sheet
GRP (Glass Reinforced Polyester) rooflight outer sheets available in a wide variety of profiles to match the surrounding metal cladding, different specifications and weights to meet all customer requirements.

2. Rooflight Liner Sheet
GRP rooflight liner sheets available in a wide variety of profiles to match the surrounding roof liner panels, different specifications and weights to meet all customer requirements.

3. Zenon Insulator Core
As an alternative to multi-layered polycarbonate insulants, the lightweight cellulose acetate honeycomb core provide varying levels of thermal insulation in accordance with the required specification depending upon the thickness of the layer with no detrimental effect on light transmission. The core is simply laid directly over the rooflight liner sheet.

4. Primary Fixings
The purpose of primary fixings is to secure the rooflight outer sheet in position. They must also create sufficient compression of the sealant strips to provide a continuous weather seal across the width of the profile. Differences in the design and shape of profiles means the number and position of fixings required to achieve a complete seal may vary.

There should always be a minimum of 5 fixings per purlin and each should have a minimum 29mm diameter self-sealing washer with a poppy red cap. Ideally, the fixings should be positioned as evenly as possible across the profile of the sheet and central to each trough. Wider troughs may need two each.

5. Side Stitch Fastener
A sidelap stitch fastener is used when fixing the rooflight sidelaps over the metal profile. These fixings should have a poppy red cap and use a minimum of a 16mm diameter self-sealing washer and be placed at a maximum of 400mm centres.

6. Expanding Grommet Fastener
When the metal cladding is fitted over the GRP, an expanding grommet type fastener to suit durability requirements should be used to fasten the side lap of the metal over the rooflight.

7. Sidelap Sealant
The sidelap sealant is essential and must be installed on the crown of the underlapping panel. The sealant should be a continuous 6x5mm butyl type strip.

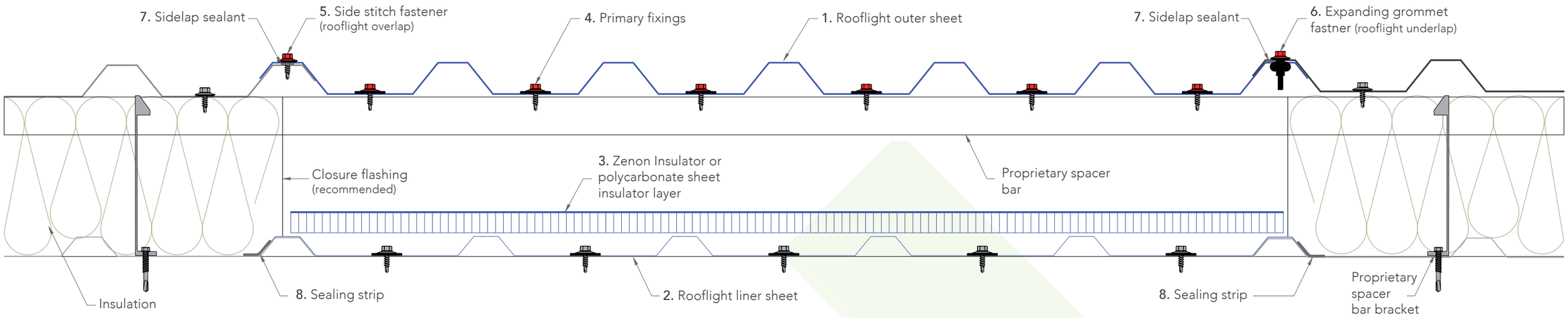
8. Sealing Strip - Liner Panel
A 40x1mm butyl/foil type tape should be positioned half onto the rooflight and half onto the metal liner panel.

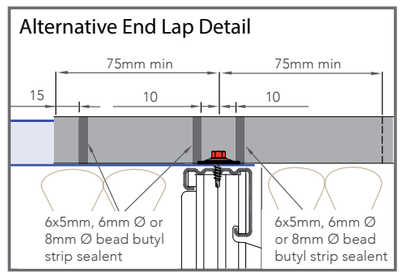
9. End Lap Sealant
The sealant strips should be 6x5mm, 6mm Ø or 8mm Ø bead butyl type strip sealant. Two strips should be positioned approximately 10 to 15mm either side of the fixing, and a further strip positioned 15mm from the outer end lap. Where a better seal is required at the bottom of the lap to keep out dirt and trapped water, a bead of premium quality neutral cure silicone sealant positioned approximately 10 to 15mm from the bottom of the lap may be used.

Alternatively, and for improved sealing, the sealing strip on the line of the fixings can be a single 18x4mm or 22x5mm U-section butyl type strip sealant with a 6x5mm, 6mm Ø or 8mm Ø bead placed 15mm from the end of each sheet as illustrated.

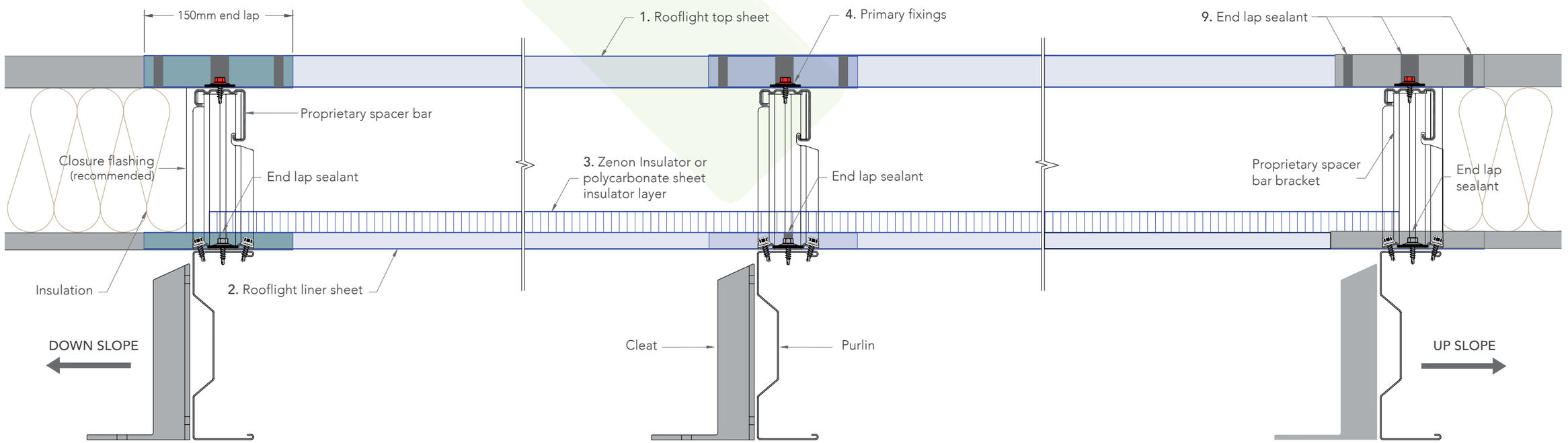
The end laps of the liner panels should be sealed with one row of 6x5mm, 6mm Ø or 8mm Ø bead butyl type strip sealant.

Rooflight cross section





Rooflight long section



Zenon Pro

The Zenon Pro rooflight range for in-plane installation in profiled metal cladding systems is manufactured from polyester resins with traditional glass fibre reinforcement. These products are available in a range of nominal weights from
1.8kg/m² to 5.4kg/m² manufactured and CE marked in accordance with BS EN 1013:2012 + A1:2014.

Zenon Evolution

The Zenon Evolution range of low carbon rooflights, also manufactured and CE marked to BS EN 1013:2012 + A1:2014, uses state of the art reinforcement technology to deliver a truly innovative rooflight solution with excellent impact resistance and an improved service life.

The strength of the reinforcement allows the product to be manufactured using significantly less resin than would be the case with traditional reinforcement techniques, resulting in a significant reduction in the embodied carbon and better profile definition providing a far better profile match resulting in a better fit and more reliable seal with the adjacent metal sheets, aiding weather proofing and airtightness.

Wall Lights

Zenon Pro and Zenon Evolution GRP rooflight sheets are suitable where there is a requirement to incorporate wall lights for improved localised daylighting in buildings clad with profiled metal sheet assemblies.

Barrel Vault Rooflights

Zenon Arc and Zenon Archlight are two cost effective and robust Glass Reinforced Polyester (GRP) barrel vault rooflight systems.

Both systems provide excellent light transmission with good levels of diffused light distribution to the internal areas of the building, and are designed for simple installation onto kerbs or upstands in flat plane or curved roof structures and can be installed for roof-lighting application along ridgelines.

Insulator

Hambleside Danelaw manufactures a full range of site and factory assembled insulated rooflights (FAIRS) to match most cladding systems incorporating conventional multi-layer polycarbonate insulation options or the unique Insulator core for improved light transmission and a range of U-values from 1.8W/m²K down to 0.8W/m²K.

Non-Fragility

Zenon Pro and Zenon Evolution rooflights, when correctly installed in accordance with Hambleside Danelaw's recommendations will comfortably achieve non-fragile classifications subject to specification, provided that all other elements of the roof assembly retain their integrity for the same period.

Transmission Data

All data provided with respect to light, solar and thermal transmission for Zenon rooflight assemblies is based on data from physical testing by authoritative test houses, and by software developed using recognised modelling techniques, to accurately predict the transmission characteristics of most permutations of GRP rooflight configurations and their insulants.

U-Values

Rooflight U-values quoted by Hambleside Danelaw are values determined by physical testing in the horizontal plane. When using design tools such as SBEM, it is important to ensure that the entered value is not assumed by the program to be the value determined in the vertical plane and consequently an automatic adjustment or correction applied.

Wall lights used in the vertical plane provide a nominal 10% improvement on the stated U-values when compared to their use in the horizontal application.

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE No 03/3898

RIBA CPD CORE CURRICULUM

Manufactured in the UK

The Building Envelope Authority

NFRC LEADING ROOFING EXCELLENCE

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