

METAL CLADDING DESIGN AND INSTALLATION TECHNICAL GUIDES

GUIDE 017: IN-PLANE PROFILED ROOFLIGHTS

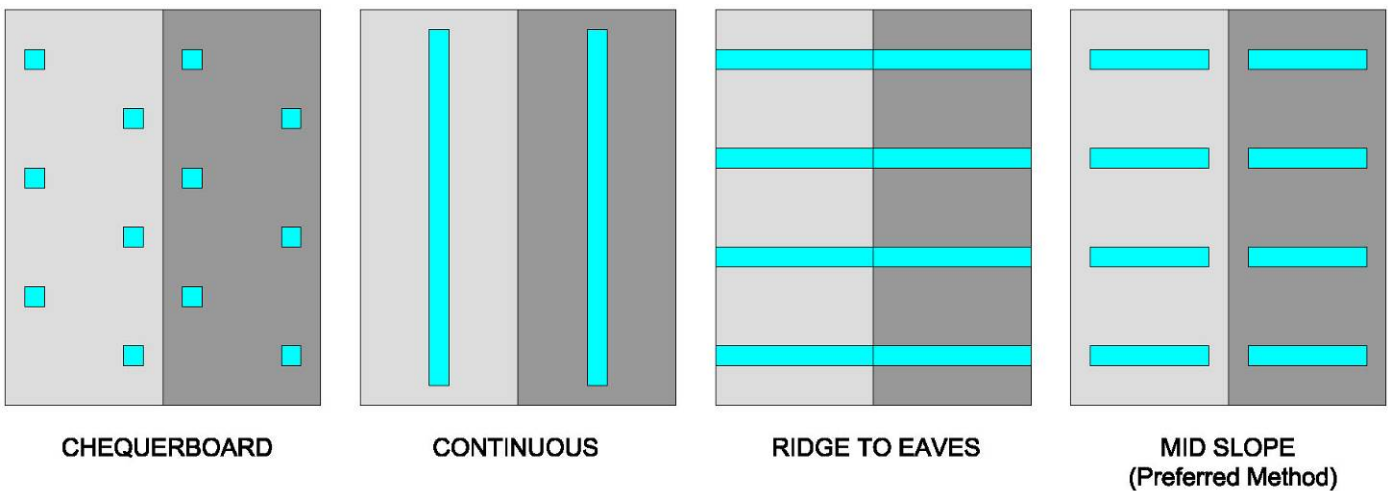
Installing Rooflights is an excellent method for providing a cost effective way of introducing natural day light into a wide variety of buildings. Alpha Clad offer both site assembled and factory assemble solutions to suit our product range.

Manufactured in GRP or polycarbonate, these products are designed to be easily integrated into the surrounding profiled steel sheeting and can cover a range of safety levels, U values and fire ratings. Single, double and triple skin options are available for a huge variety of applications such as warehouses, factories and leisure centres.

Rooflight Layout

Careful consideration should be paid to rooflight layout. The aim should be to create an even distribution of natural daylight. There are four main approaches to rooflight layout. However, in general the mid-slope method offers the most practical solution, offering a good compromise between even distribution of light, ease of junction detailing and maintenance access.

The illustration below highlights these four methods.



Percentage Rooflight Area

The building regulations recommend a minimum rooflight area for industrial and commercial building.

The minimum recommendation is 10% in order to achieve a 'daylit' classification with a nominal area in heated buildings of 20%. If the rooflights

achieve a U value below 1.8W/m²K, a larger rooflight area can be incorporated. The new standards can be easily achieved using site assembled triple skin rooflights in GRP or polycarbonate, with little or no increased cost or complexity.

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Recommended Percentage Areas

INTERIOR ACTIVITY	LEVEL OF ILLUMINANCE REQUIRED (Lux)	RECOMMENDED MINIMUM ROOFLIGHT AREA (%)
Occasional visual tasks limited to movement and little perception of detail, e.g. bulk stores.	100	10%
Continuously occupied interiors. Visual tasks requiring limited perception of detail, e.g. loading bays, plant rooms.	200	10%
Visual tasks where moderate colour judgement required, e.g. assembly halls, general offices and retail shops.	300 - 500	13 - 15%
Difficult visual tasks requiring accurate colour judgement, e.g. drawing offices, inspection and electronic assembly.	750 - 100	17 – 20%

Rooflight Non-Fragility Status

GRP and polycarbonate profiled rooflights are significantly more fragile than their steel cladding counterparts. Safety is of paramount importance but it is worth to note that rooflights even when specified as 'non-fragile' it is not recommended that the product is walked upon. In terms of

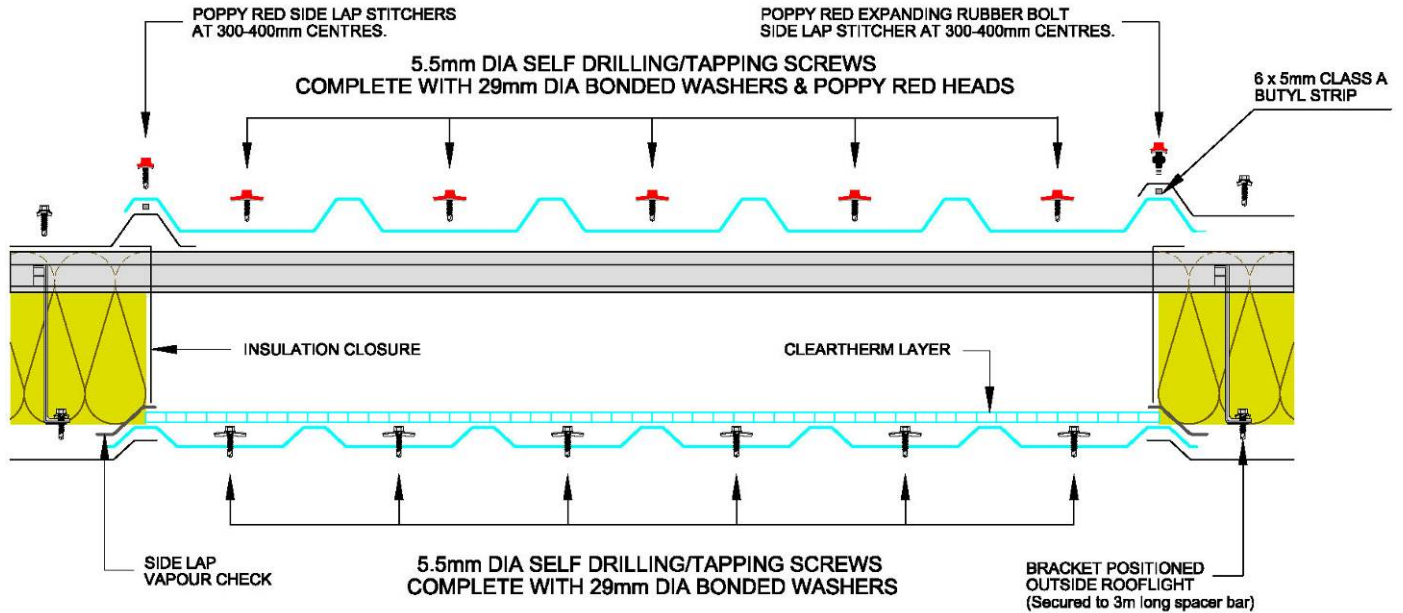
safety, the difference between rooflights which achieve the same non-fragile classification, when tested to the industry standard drop test for roofing material ACR[M] 001:2000, is the margin of safety that they provide, and the length of time they will remain safe.

ROOFLIGHT CONSTRUCTION	MATERIAL WEIGHTS	NON-FRAGILITY CLASSIFICATION	SAFETY LEVEL	ROOF ACCESS	ESTIMATED PERIOD OF NON-FRAGILITY
Lining Panel only	2.44 kg/m ²	C	Minimum	Not suitable	During Construction
Lining Panel Outer Sheet	2.44 kg/m ² 1.83 kg/m ²	B	Good	Infrequent	5 – 20 years
Lining Panel Outer Sheet	2.44 kg/m ² 2.44 kg/m ²	B	Good	Infrequent	25+ years
Lining Panel Outer Sheet	2.44 kg/m ² 5.50 kg/m ²	B	Very Good	Frequent	30+ years

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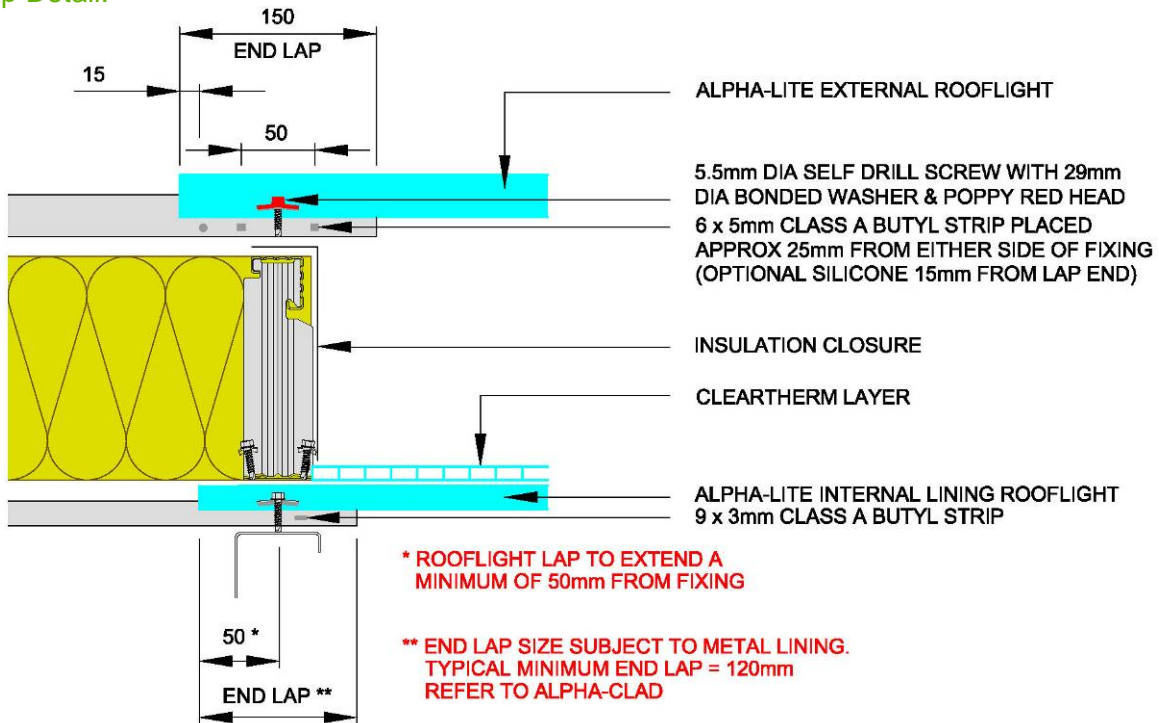
Built Up Installation Method:

Section Detail:



DIRECTION OF LAY

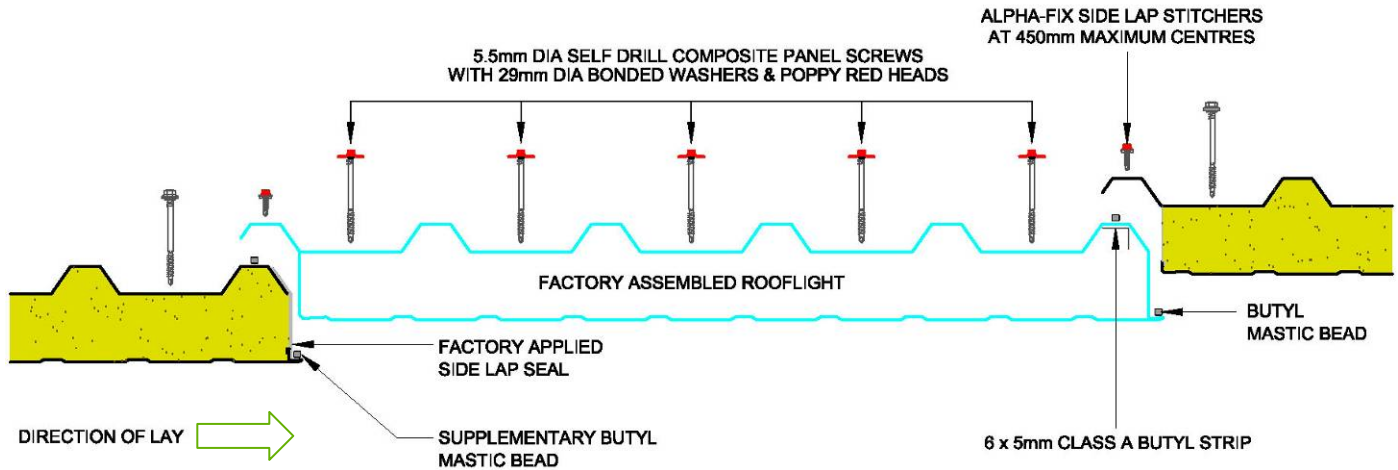
End Lap Detail:



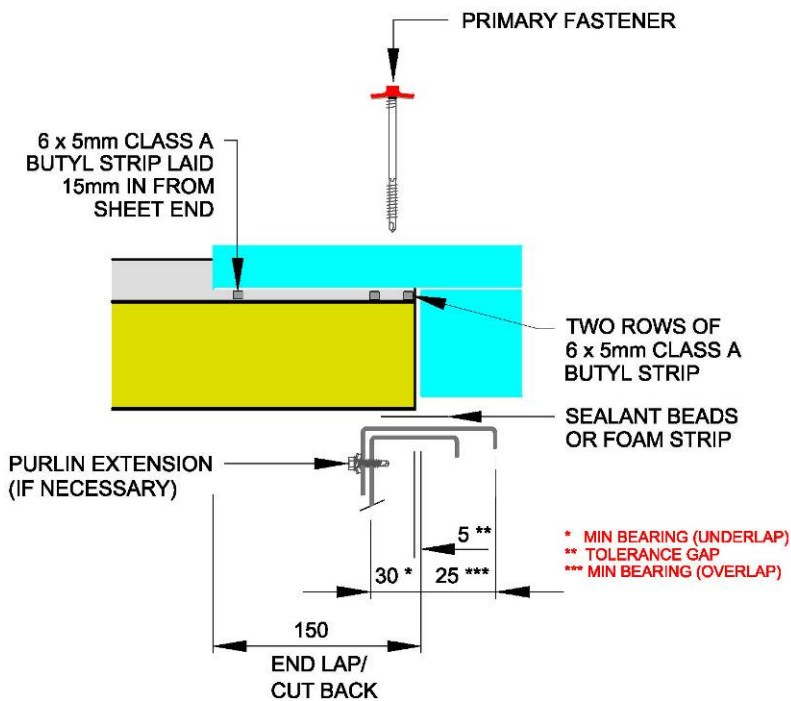
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Composite Panel Installation Method:

Section Detail:



End Lap Detail:



MINIMUM BEARING WIDTHS

ROOFLIGHT OVER PANEL	
Panel Under-Lap	- 30mm
Light Over-Lap	- 25mm
PANEL OVER ROOFLIGHT	
Light Under-Lap	- 30mm
(Nominal 40mm preferred)	
Panel Over-Lap	- 25mm

Note:
If the bearing surface dimension is insufficient a purlin extension plate can be supplied.