Product Booklet

Skylights & Panel Glazing

Middle East

Brett Martin

DESIGNING FOR DAYLIGHT

SKYLIGHTS & PANEL GLAZING

CONTENTS

Brett Martin

COMMITTED TO MIDDLE EAST SUCCESS

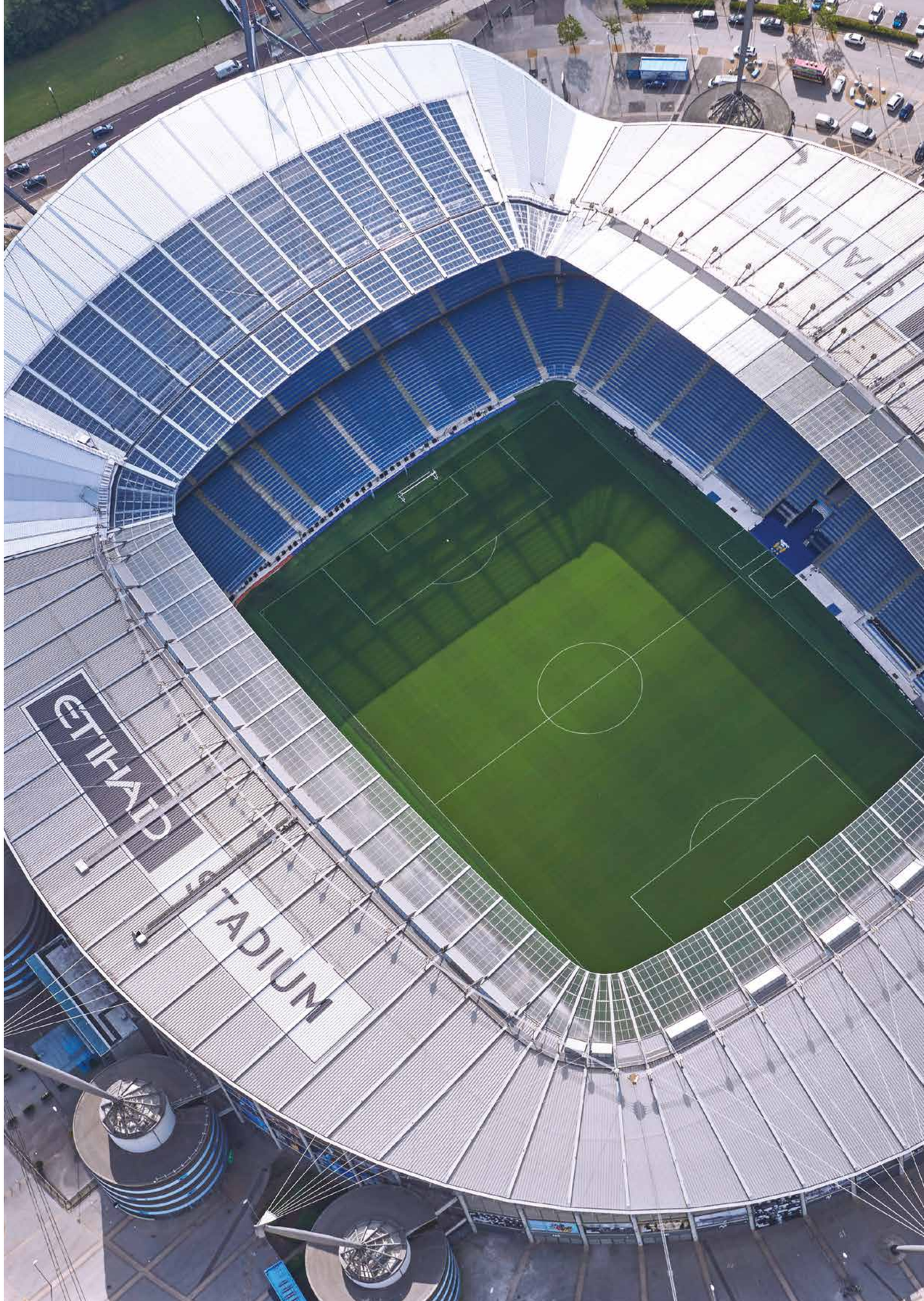
Established in 1958, Brett Martin is a privately owned family business which has become one of Northern Ireland's most successful independent manufacturing companies.

With headquarters located on its founding site in Co. Antrim, the company has grown scale to employ over 1000 people at several locations throughout the UK, Europe and across the world.

The company's product portfolio includes an impressive range of plastic sheets, factory engineered skylight systems, and, plumbing & drainage systems. A commitment to an ongoing programme of investment in the latest manufacturing technology, innovation and product development ensures that Brett Martin solutions remain at the forefront of its chosen markets. Such an excellent reputation has emerged from our success in providing tailored solutions to the world's leading brands.

Brett Martin have been successfully operating in the Middle East for almost a decade and our commitment to this market has been consolidated with the inception of Brett Martin DWC LLC, a centrally located sales office in the UAE to cater for the wider GCC region. Our Middle East team have established key relationships with world renowned partners and suppliers, and are instrumental in delivering state of the art technologies in daylight systems to the construction industry.

Strong partnerships with our clients and customer have helped Brett Martin secure projects for many of the Middle East's leading brands and most prestigious projects across the region.

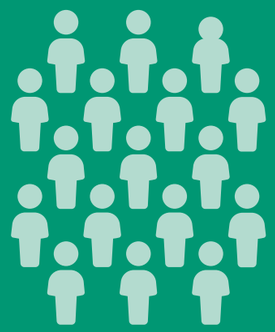


Our Global Reach

With £100m of exports to over 70 countries worldwide, Brett Martin is becoming the preferred brand of professionals around the globe.

Global Supplier

Of specialist plastic products for the construction, fabrication, print and display sectors worldwide.



1000+

Employees

£210

MILLION

Group turnover in financial year ending 2021

ESTABLISHED

1958

Privately owned by the founding family

Our Sustainable Future

At Brett Martin we are committed to a lower carbon future.

We are at the forefront of the drive to reduce embodied carbon through efficient manufacturing and the lowering of operational carbon in buildings through the design of energy saving roofing products.

Our policy to Reduce, Reuse and Recycle is lessening our impact on the environment with innovative investments in renewable energy, re-cycled resources and bio-based materials, across our business.

Partnering with Brett Martin is an effective way to introduce intelligent carbon solutions to your next development project.

PlanetMark

Our membership of Planet Mark's Net Zero Programme represents the way we measure and reduce our carbon use as we work to build a sustainable brighter future for us and our planet.

Our dedicated 6.42 MWp solar farm provides clean energy and saves 900 tonnes of CO_2 each year.

Our 2.3MWp wind turbine towers 99.5m above our site and saves 832 tonnes of CO_2 each year.

Our Marlon BioPlus Clickfix Facade system is manufactured from a remarkable material with an 84% carbon reduction and is produced with 100% renewable energy.

ACCREDITATIONS

All Brett Martin Group manufacturing facilities have achieved ISO 9001: 2008 in recognition of our commitment to quality. Extensive certifications and approvals are held throughout the product ranges including CE marking, BBA certifications and BSI Kitemarks.

From 2007 Brett Martin Daylight Systems has also held the ISO 14001accreditation for Environmental Management.

Brett Martin Daylight System not only are the first skylight manufacture to receive certification from Dubai Central Laboratory (DCL) for its BBA certification, but are also the First international skylight manufacture to hold the Certificate of Compliance to the UAE Fire Life and Safety Code of Practice for its complete Trilite skylight Range.

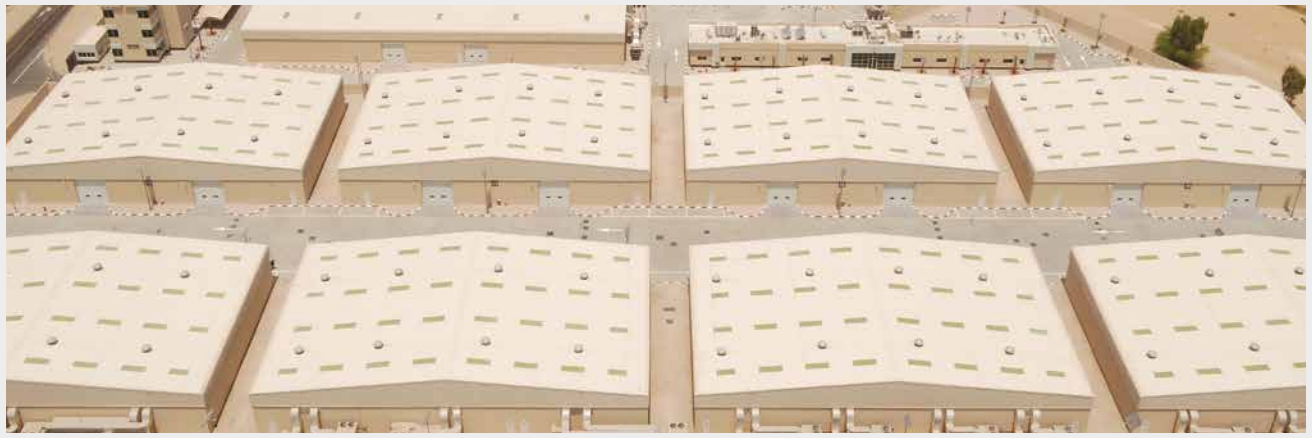

ATTESTATION OF CONFORMITY


DUBAI CENTRAL LABORATORY DEPARTMENT
VERIFICATION AND ATTESTATION SERVICE - EVALUATION REPORT


Electronic Copy


CERTIFICATE OF COMPLIANCE

EnergySaver FAIRs



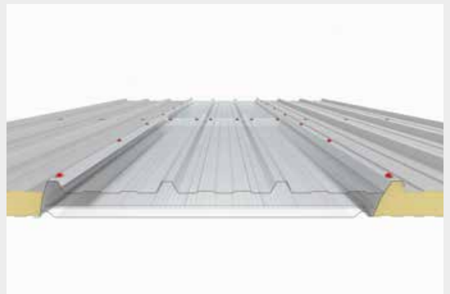
Energysaver composite panel rooflights are the optimum solution for providing natural quality daylight in buildings constructed with composite roofing panels. They are manufactured from Trilite GRP and are available in a range of sheet options which are compatible with all composite panel roofing systems. Energysaver rooflights can also be tailored to meet specification. These innovative, triple skin factory assembled insulating rooflights are easy to handle on site, easy to install and offer the best quality diffused natural daylight, thermal performance and ready-to-fit convenience for wide-span buildings.

Key Features

- **UV Protection:** Outer sheets supplied with Superlife^{TM} enhanced UV surface protection. Optional Diamond protection for protection against weathering, UV degradation and chemical attack
- **Thermal Performance:** Option of U-value range from 1.9W/m^{2}K to as low as 0.9W/m^{2}K
- **Light Transmission:** 65-70% diffused (55-65% on heavier sheet weights)
- **Sizing:** can be tailored to meet specification requirements
- **Durability:** Life span up to 20 years in normal industrial conditions in the Middle East environment
- **Fragility:** Class B non-fragility to ACR[M]001
- **Fire Grade:** SAB class 3 and SAA class 1 to BS 476 parts 3 & 7
- **Certification:** BBA approved, DCL certification & UAE Fire Code

Applications

Energysaver improves the internal environment, reducing heat loss and condensation and improving long term performance in a diversity of industrial and commercial buildings and leisure environments such as factories and warehouses, distribution centres, retail outlets and sports halls.

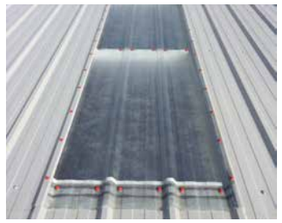


EnergySaver FAIRs

TB421
Product Data Sheet
Trilite 24 FAIR (ME)

Product Description
Trilite 24 Energysaver FAIRs are Factory Assembled Insulating Rooflights specifically intended for use with composite panel cladding systems and are available to match most systems.

They comprise of a corrugated translucent GRP outer; intermediate layer and flat GRP liner bonded together with Hardpak internal spacers positioned to align with the purlins when they are installed. The outer weighs 2.4 kg/m², and is approximately 1.3mm thick. Typically supplied with an outer fire rating of SAB to BS476 part 3 and liner of Class 1 to BS476 part 7. They have full BBA approval certified under 04/4114.



Durability
Trilite 24 FAIRs have a typical life span of 15 to 20 years when used in standard industrial applications in the Middle East environment. They have Superlife™ surface protection and UV stabilised resin system to resist discolouration (yellowing)[1] and degradation which would otherwise be caused by UV exposure, although some discolouration is likely in this environment, (life span may also be reduced in more aggressive environments).

Safety Requirements / CDM Regulations
Trilite 24 Energysaver FAIRs achieve Class B non-fragility to ACR[M]001 when fully installed.

Rooflight Assembly	Classification [2]	Expected period of non-fragility [3]
Trilite 24 FAIR	Class B	When new [4]

PLEASE REFER TO NARM NTD03 FOR FULL DETAILS & CONDITIONS

Trilite 24 Energysaver FAIRs when fully fixed will resist loads typically created by foot-traffic or a falling person without failure, although such impacts may result in damage. Appropriate precautions should be used when installing and accessing these rooflights to ensure they are not subjected to impact or foot traffic. Damaged rooflights, whether from impact, foot traffic or other cause, must be replaced.

Composition & Appearance
Trilite 24 GRP is manufactured from polyester based resins (containing UV inhibitors, fire retardant and process additives) and chopped strand glass fibre reinforcement, with 33% glass content and are classified CE24[5]. Outer sheets also incorporate our Superlife UV protective surface and are classified CE24E[6].

Design features
All Energysaver FAIRs include Hardpak fillers at each end and every intermediate purlin position, providing much greater support for fasteners to ensure more reliable installation. Hardpak fillers have a bulk compressive modulus of 8MPa, ensuring an 80mm deep filler will compress by less than 0.2mm when subjected to the weight of a 90kg man (applied evenly).

All Energysaver FAIRs include Underlap Strip as standard, specially profiled to match the underlap corrugation and fitted in a single piece to match the full length of the FAIR, allowing use of standard sidelap fasteners to ensure more reliable installation on site.

All Energysaver FAIRs are supplied in Ecopac packaging, allowing outdoor storage whilst minimizing use of packaging materials reducing waste and enhancing sustainability.

Manufacture
Trilite 24 GRP is manufactured to EN 1013 under ISO 9001 Quality Management System.

Tolerances

Sheet weight:	± 10%
Sheet length:	-0 +20mm (for sheets <2.5m)
	-0% +0.8% (for sheets >2.5m)
Cover width:	± 0.8%
Squareness:	0.5% of cover width

Installation
Standard installation details can be found in Technical Bulletin 125 or CAD drawing HC222.

Maintenance, Handling & Storage
For full maintenance, handling and site storage details see separate data sheet - COSHH Data Sheet 02.

[1] performance proven by accelerated weathering test on rooflight outer sheets (typically SAB class 3 grade), showing delta E less than 10 and light transmission reduced by less than 12% after 3000 hours exposure to QUV testing, comprising cycles of 4 hours of UVA340nm at 60°C and 4 hours condensation at 40°C

[2] when installed at purlin centres of 0.6 - 2.0m with a roof system which has been determined (without rooflights) to achieve an equal or better non-fragility classification

[3] when all other components have been specified accordingly and it has been demonstrated that the roof system (without rooflights) will retain the same non-fragile classification for the same period

[4] the installed assembly may remain non-fragile in the long term but a range of external factors can affect non-fragility, and deterioration of any aspect of the installation may render the installed assembly fragile at any point, typically any time in the first 10 years, even if there has been no deterioration of the rooflight sheets themselves

[5] as defined in National Annex to BS EN 1013

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ENERGYSAVER FAIRS

EnergySaver FAIRs

TB421
Product Data Sheet
Trilite 24 FAIR (ME)

Fire Ratings
Standard Energysaver rooflights are supplied with the following fire ratings:

Sheet	BS476 pt3	BS476 pt7	
Outer Sheet	**SAB**	Class 3	
Liner Panel	SAA	**Class 1**	

(Certificates from independent laboratories are available to confirm these fire ratings)

For full details see Technical Bulletin 106.

The fire rating of Trilite GRP rooflight sheets is printed on each rooflight; in addition a coloured tracer is incorporated to identify the fire rating:
- SAB Class 3 are identified with a blue tracer
- SAA Class 1 are identified with a red tracer

Transmission Values

Rooflight Application	U Value	Tv Visible Light Transmission	G Value Total Solar Transmittance	Shading Coefficient
Double Skin	3.0 W/m² K	0.67	0.64	0.74
Energysaver 1.9 (Internal layer - thermal membrane)	1.9 W/m² K	0.64	0.59	0.67
Energysaver 1.3 (Internal layer - Cleartherm)	1.3 W/m² K	0.58	0.55	0.63
Energysaver 1.0 (Internal layer - 2 x Cleartherm)	1.0 W/m² K	0.52	0.49	0.57
Energysaver 0.9 (Internal layer - 2 x Cleartherm + Gap)	0.9 W/m² K	0.52	0.47	0.54

Physical Properties

TENSILE STRENGTH
90 MPa

FLEXURAL STRENGTH
180 MPa

BARCOL HARDNESS
40 - 50

FIXING PULL-OUT LOAD
29mm washer: 930 N

COEFFICIENT OF LINEAR EXPANSION
30 X 10^{-6}/°C

SERVICE TEMPERATURE
-20°C TO 80°C

FLEXURAL MODULUS
6600 MPa

GLASS CONTENT
33%

Brett Martin

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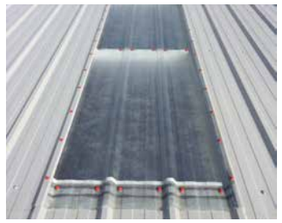
EnergySaver FAIRs

TB261
Product Data Sheet
Trilite 30 FAIR (ME)

Product Description
Trilite 30 FAIRs are Factory Assembled Insulating Rooflights specifically intended for use with composite panel cladding systems and are available to match most systems.

They comprise of a corrugated translucent GRP outer; optional intermediate layer and flat GRP liner bonded together with Hardpak internal spacers positioned to align with the purlins when they are installed.
The outer weighs 3.0 kg/m², and is approximately 1.7mm thick.
Typically supplied with an outer fire rating of SAB to BS476 part 3 and liner of Class 1 to BS476part 7. They have full BBA approval certified under 04/4114.



Durability
Trilite 30 FAIRs have a typical life span of 15 to 20 years when used in stnadard industrial applications in the Middle East environment. They have Superlife™ surface protection and UV stabilised resin system to resist discolouration (yellowing)[1] and degradation which would otherwise be caused by UV exposure, although some discolouration is likely in this environment, (life span may also be reduced in more aggressive environments).

Safety Requirements / CDM Regulations
Trilite 30 Energysaver FAIRs achieve Class B non-fragility to ACR[M]001 when fully installed.

Rooflight Assembly	Classification [2]	Estimated period of non-fragility [3]
Trilite 30 FAIR	Class B	10 Years

Trilite 30 FAIRs when fully fixed will resist loads typically created by foot-traffic or a falling person without failure, although such impacts may result in damage. Appropriate precautions should be used when installing and accessing these rooflights to ensure they are not subjected to impact or foot traffic. Damaged rooflights, whether from impact, foot traffic or other cause, must be replaced.

Composition & Appearance
Trilite 30 GRP is manufactured from polyester based resins (containing UV inhibitors, fire retardant and process additives) and chopped strand glass fibre reinforcement, with 33% glass content and are classified CE30[4]. Outer sheets also incorporate our Superlife UV protective surface and are classified CE30E[4].

Design features
Trilite 30 FAIRs include Hardpak fillers at each end and every intermediate purlin position, providing much greater support for fasteners to ensure more reliable installation. Hardpak fillers have a bulk compressive modulus of 8MPa, ensuring an 80mm deep filler will compress by less than 0.2mm when subjected to the weight of a 90kg man (applied evenly).

They include Underlap Strip as standard, specially profiled to match the underlap corrugation and fitted in a single piece to match the full length of the FAIR, allowing use of standard sidelap fasteners to ensure more reliable installation on site.

They are also supplied in Ecopac packaging, for temporary outside storage whilst minimizing use of packaging materials reducing waste and enhancing sustainability.

Manufacture
Trilite 30 GRP is manufactured to EN 1013 under ISO 9001 Quality Management System.

Tolerances
Sheet weight: ± 10%
Sheet length: -0 +20mm (for sheets <2.5m)
-0% +0.8% (for sheets >2.5m)
Cover width: ± 0.8%
Squareness: 0.5% of cover width

Installation
Standard installation details can be found in Technical Bulletin 125 or CAD drawing HC222.

Maintenance, Handling & Storage
For full maintenance, handling and site storage details see separate data sheet - COSHH Data Sheet 02.

[1] performance proven by accelerated weathering test on rooflight outer sheets (typically SAB class 3 grade), showing delta E less than 10 and light transmission reduced by less than 12% after 3000 hours exposure to QUV testing, comprising cycles of 4 hours of UVA340nm at 60°C and 4 hours condensation at 40°C

[2] when installed at purlin centres of 0.6 - 2.0m with a roof system which has been determined (without rooflights) to achieve an equal or better non-fragility classification

[3] when all other components have been specified accordingly and it has been demonstrated that the roof system (without rooflights) will retain the same non-fragile classification for the same period

[4] as defined in National Annex to BS EN 1013

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ENERGYSAVER FAIRS

EnergySaver FAIRs

TB261
Product Data Sheet
Trilite 30 FAIR (ME)

Fire Ratings
Standard Energysaver rooflights are supplied with the following fire ratings:

Sheet	BS476 pt3	BS476 pt7	
Outer Sheet	**SAB**	Class 3	
Liner Panel	SAA	**Class 1**	

(Certificates from independent laboratories are available to confirm these fire ratings)

For full details see Technical Bulletin 106.

The fire rating of Trilite GRP rooflight sheets is printed on each rooflight; in addition a coloured tracer is incorporated to identify the fire rating:
- SAB Class 3 are identified with a blue tracer
- SAA Class 1 are identified with a red tracer

Transmission Values

Rooflight Application	U Value	Tv Visible Light Transmission	G Value Total Solar Transmittance	Shading Coefficient
Double skin	3.0 W/m² K	0.65	0.63	0.73
Energysaver 1.9 (Internal layer - thermal membrane)	1.9 W/m² K	0.60	0.55	0.63
Energysaver 1.3 (Internal layer - Cleartherm)	1.3 W/m² K	0.55	0.51	0.58
Energysaver 1.0 (Internal layer - 2 x Cleartherm)	1.0 W/m² K	0.49	0.45	0.52
Energysaver 0.9 (Internal layer - 2 x Cleartherm + Gap)	0.9 W/m² K	0.49	0.43	0.49

Physical Properties

TENSILE STRENGTH
90 MPa

FIXING PULL-OUT LOAD
29mm washer: 1160 N

FLEXURAL MODULUS
6600 MPa

FLEXURAL STRENGTH
180 MPa

COEFFICIENT OF LINEAR EXPANSION
30 X 10^{-6}/°C

GLASS CONTENT
33%

BARCOL HARDNESS
40 - 50

SERVICE TEMPERATURE
-20°C TO 80°C

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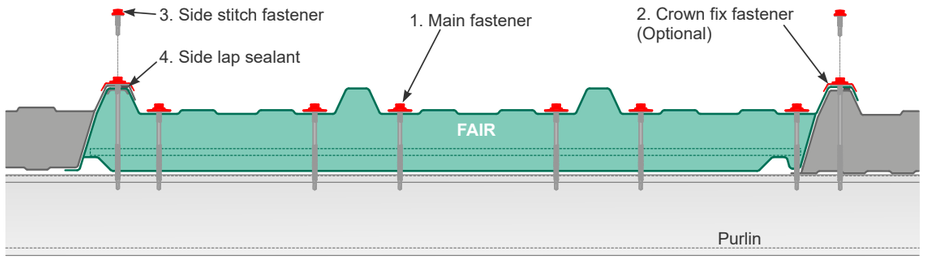
EnergySaver FAIRs

TB125

Installation - Trilite 24 & 30 Energysaver FAIR (150mm Endlap) All U Values

Main Fasteners - End Lap & Intermediate Purlin



1. Main fastener
Stainless steel Ø5.5/6mm with Ø29/32mm sealing washer with soft bonded seal, typically poppy red; min 5 fasteners per purlin, fitted in the trough, max 250mm apart; for profiles >200mm pitch use two fasteners per trough, located either side of the main corrugations. See below for typical fastener references.

2. Crown fix fastener (optional)
Stainless steel Ø5.5/6mm with Ø19mm sealing and saddle washer, typically poppy red; fix at end laps along the end lap fixing line into the purlin, on each side lap of the end lap (2 per end lap). See below for typical fastener references.

3. Side Stitch fastener
Stainless steel side stitch fastener with Ø15/19mm sealing washer, typically poppy red; fix at 300mm to max 400mm centres and evenly spaced about all FAIR end laps - not through the end lap joint. See below for typical fastener references.

4. Side lap sealant
One run of Class A 6x5mm cross linked butyl mastic, pale coloured, positioned on the crown of the side lap corrugation, on the weather side of the side stitch fasteners. Immediately downslope of the end lap, it is necessary to have a double thickness of side lap sealant for a distance of min 50mm on the side where the outer sheet underlaps adjacent sheets. The same applies for the side lap sealant immediately upslope of the end lap on the side where the outer sheet overlaps the adjacent panels, see page 4.

5. End lap sealant
Two beads of Class A 6x5mm cross linked butyl mastic, pale coloured, position max 25mm above and below fixing line. If a third seal at the tail of the end lap is required, gun grade silicone (ISO11600-F-25LM) should be used.

6. FAIR alignment
FAIRs must be seated on the purlin/extension plate by a nominal 40mm (min 30mm) at the up slope lap, this ensures full support for internal reinforcement and is essential for non-fragility.

7. Purlin extension plates
Purlin extension plates are recommended to ensure correct support and alignment at lap positions, where on-site steelwork tolerances cause variations from the nominal position.

8. Hardpak fillers
It is essential to ensure the Hardpak fillers are located directly over the purlin/extension plate at the up slope end and intermediate positions to allow the fixing of main fasteners into the purlin.

Typical fastener references

	SFS	EJOT
Main fasteners	SXC5-S29-5.5 x length	CF29-JT3-D-6H-5.5 x length
Crown fix fasteners	SXC5-S29-5.5 x length + CA-Type-E-RAL 2002	CF29-JT3-D-6H-5.5 x length + Storm Washer
Side-stitch fasteners	SL2-S-S16-6.3x28	CF15-JT3-2H-5.5x30

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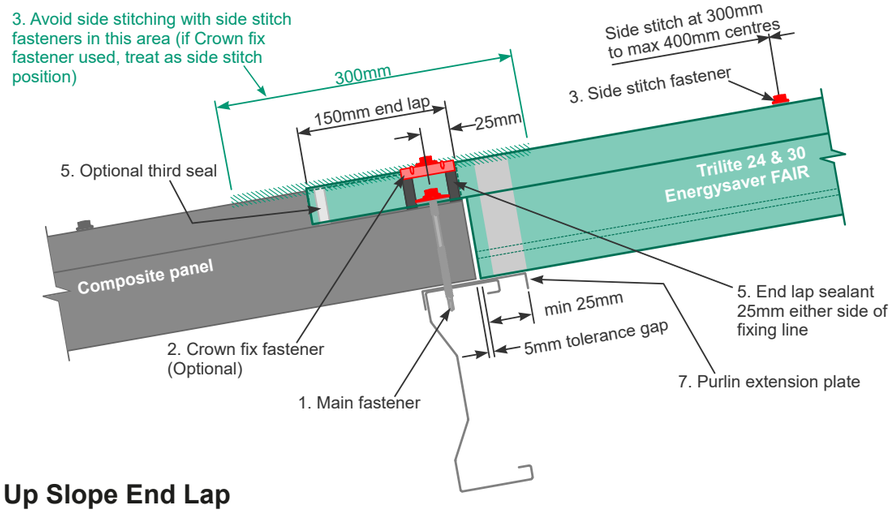
EnergySaver FAIRs

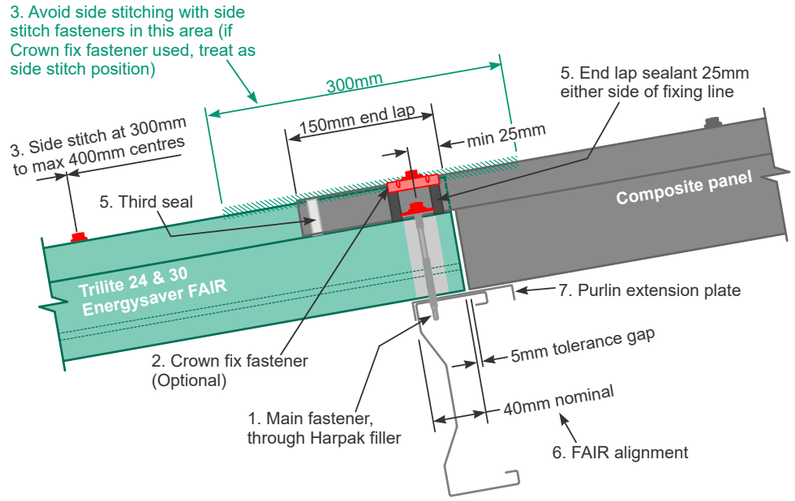
TB125

Installation - Trilite 24 & 30 Energysaver FAIR (150mm Endlap) All U Values

Down Slope End Lap



Up Slope End Lap



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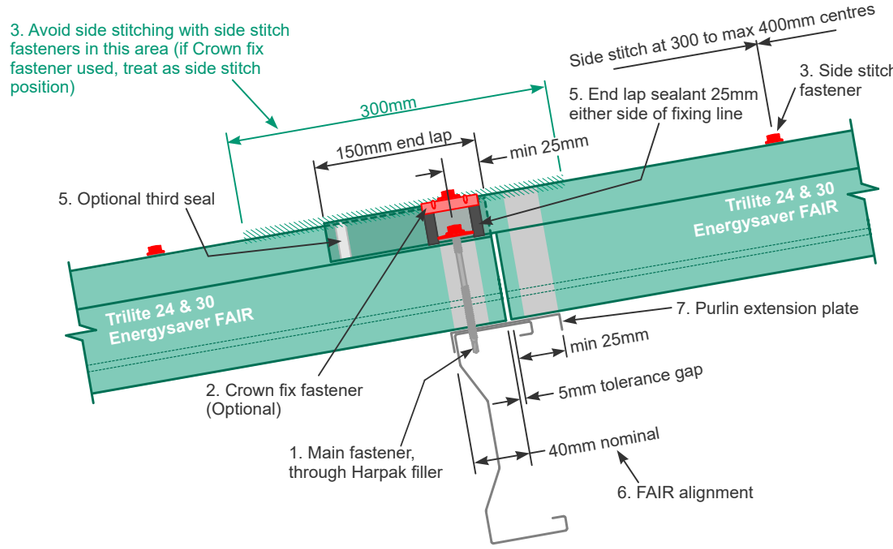
EnergySaver FAIRs

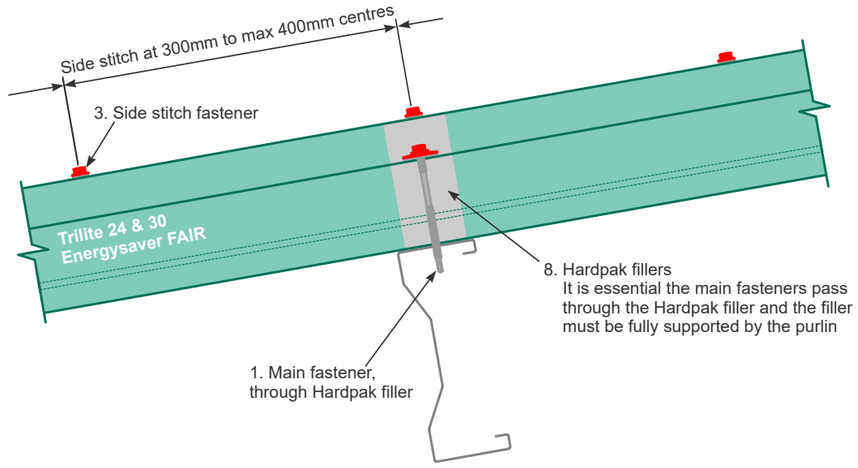
TB125

Installation - Trilite 24 & 30 Energysaver FAIR (150mm Endlap) All U Values

FAIR to FAIR End Lap



Intermediate Purlin Position



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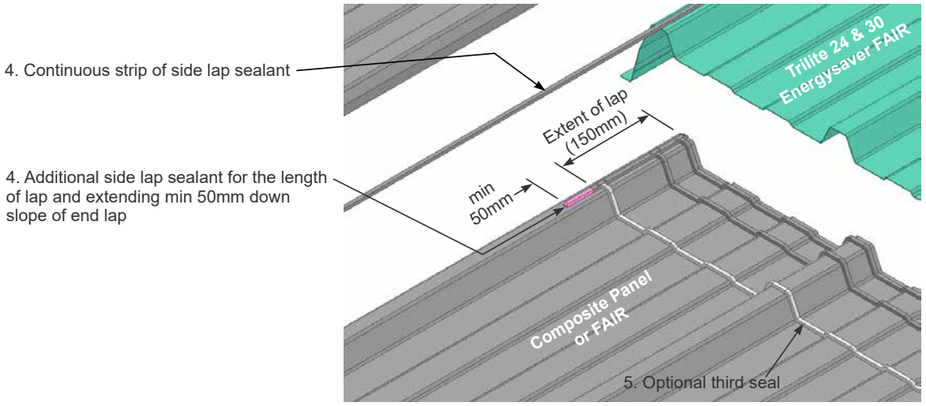
ENERGYSAVER FAIRS

EnergySaver FAIRs

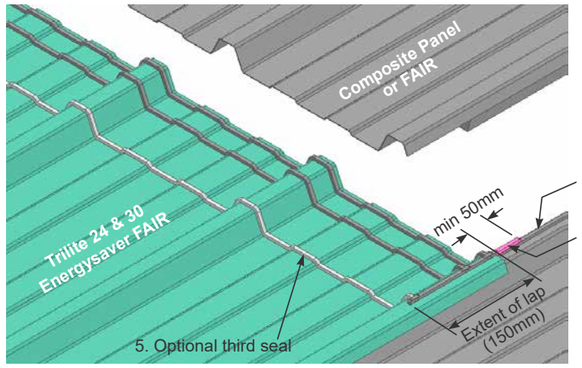
TB125

Installation - Trilite 24 & 30 Energysaver FAIR (150mm Endlap) All U Values

Down Slope End Lap - Additional Sealing Requirements



Up Slope End Lap - Additional Sealing Requirements



4. Continuous strip of side lap sealant

4. Additional sidelap sealant over the Trilite Energysaver FAIR - placed on the length of the end lap and extends a minimum of 50mm up the slope.

MINIMUM ROOF PITCH Minimum design roof pitch 5.5° (finished roof pitch 4°)*

CORRECT HANDLING OF FAIRS IS CRITICAL full guidance given in TB154

DO NOT over drive fasteners

ONLY use good quality assured fasteners

***Minimum Roof Pitch**

Trilite Energysaver FAIRs are recommended for a minimum a minimum design pitch of 5.5 degrees, to ensure a minimum finished roof pitch of 4 degrees after allowing for tolerances and on site variations in accordance with BS5427 "Code of practice for the use of profiled sheet for roof and wall cladding on buildings (see BS5427:2016 section 5.1.3). If these rooflights 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 leaks at endlaps or fixings occurring due to small variations in installation details (see BS5427, Note 3 to 5.1.3). Heavyweight Trilite 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.

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Trilite GRP

Trilite GRP site assembled profiled rooflights offer a wide range of options and choice of product performance and is Europe's largest range of rooflight sheeting. Quick and easy to install into the surrounding corrugated sheeting, all sheets achieve the highest levels of profile accuracy and cover a range of safety levels, U values and fire ratings. Single, double and triple skin rooflights are available for a huge variety of applications. Our entire range of GRP site assembled rooflights have been BBA approved.

Key Features

- **Profiles**: Wide and growing selection of over 1,000 corrugated profiles in 6 weights and 3 fire grades to match corrugated metal cladding
- **UV Protection:** All weather sheets supplied with Superlife™ enhanced UV surface protection. Optional Diamond protection for protection against weathering, UV degradation and chemical attack
- **Thermal Performance:** U-value from 5.7 W/m²k (single skin) down to 0.9 W/m²k
- **Light Transmission:** Excellent diffused natural light transmission levels
- **Durability:** Life span up to 20 years in normal industrial conditions in the Middle East environment
- **Fragility:** Class B non-fragile options available
- **Fire Grade:** SAB class 3 and SAA class 1 to BS 476 parts 3 & 7
- **Certification:** Entire range of GRP site assembled rooflights BBA approved, DCL certification & UAE Fire Code

Applications

Trilite GRP site assembled rooflights provide high quality natural daylight for metal clad industrial buildings. There are a huge variety of applications from stadia, warehouses and distribution depots to commercial premises and farm buildings.

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Trilite GRP

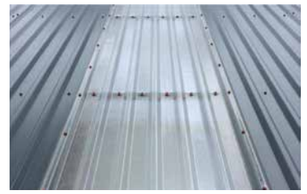
TB424

Product Data Sheet

Trilite 18 Corrugated GRP sheet (CE18 & CE18E) (ME)

Product Description
Trilite 18 rooflights are corrugated translucent GRP sheets; they weigh 1.8 kg/m², and are approximately 1.0mm thick. Typically supplied with fire ratings SAB to BS476 part 3 and Class 3 to BS476 part 7, they are also available with fire ratings of SAA, Class 1 or Class 0.

Trilite 18 rooflights are available to match most corrugated profiles for roof or wall, and are typically used in site assembled applications in combination with other grades of Trilite GRP sheet. They have full BBA approval certified under 04/4114.



Durability
Trilite 18 rooflights have a typical life span of 15 to 20 years when used in standard industrial applications in the Middle East environment. They have Superlife™ surface protection and UV stabilised resin system to resist discolouration (yellowing)[1] and degradation which would otherwise be caused by UV exposure, although some discolouration is likely in this environment, (life span may also be reduced in more aggressive environments).

Safety Requirements / Non-Fragility
Trilite 18 rooflights can achieve Class B non-fragility to ACR[M]001 in combination with other rooflight skins. The strength of the rooflight sheet itself will be retained in the long term; however, non-fragility is a function of a fully installed assembly which can become fragile even if there has been no deterioration of the rooflight sheet itself.

Rooflight Assembly	Classification [2]	Expected period of non-fragility [3]
As single skin or liner only	Fragile	-
In combination with Trilite 24 [4]	Class B	When new [5]
In combination with Trilite 30 [6]	Class B	10 Years

PLEASE REFER TO NARM NTD03 FOR FULL DETAILS & CONDITIONS

Non-fragile rooflight assemblies which include Trilite 18 rooflights (as detailed above) will resist loads typically created by foot-traffic or a falling person without failure, although such impacts may result in damage. Appropriate precautions should be used when installing and accessing these rooflights to ensure they are not subjected to impact or foot traffic. Damaged rooflights, whether from impact, foot traffic or other cause, must be replaced.

Composition & Appearance
Trilite 18 GRP is manufactured from polyester based resins (containing UV inhibitors, fire retardant and process additives) and chopped strand glass fibre reinforcement, with 33% glass content and are classified CE18[7]; outer sheets also incorporate our Superlife UV protective surface and are classified CE18E[7].

Manufacture
Trilite 18 GRP is manufactured to EN 1013 under ISO 9001 Quality Management System.

Tolerances
Sheet weight: ± 10%
Sheet length: -0 +20mm (for sheets <2.5m)
-0% +0.8% (for sheets >2.5m)
Cover width: ± 0.8%
Squareness: 0.5% of cover width

Installation
Full installation details can be found in Technical Bulletin 156 or CAD drawing HC225.

Maintenance, Handling & Storage
For full maintenance, handling and site storage details see separate data sheet - COSHH Data Sheet 01.

[1] performance proven by accelerated weathering test on rooflight outer sheets (typically SAB class 3 grade), showing delta E less than 10 and light transmission reduced by less than 12% after 3000 hours exposure to QUV testing, comprising cycles of 4 hours of UVA340nm at 60°C and 4 hours condensation at 40°C

[2] when installed at purlin centres of 0.6 - 2.0m with a roof system which has been determined (without rooflights) to achieve an equal or better non-fragility classification

[3] when all other components have been specified accordingly and it has been demonstrated that the roof system (without rooflights) will retain the same non-fragile classification for the same period

[4] as Trilite 18 liner (fragile) underneath Trilite 24 outer, or as Trilite 18 outer over Trilite 24 liner (where Trilite 24 liner is Class C non-fragile)

[5] the installed assembly may remain non-fragile in the long term but a range of external factors can affect non-fragility, and deterioration of any aspect of the installation may render the installed assembly fragile at any point, typically any time in the first 10 years, even if there has been no deterioration of the rooflight sheets themselves

[6] Trilite 18 outer over Trilite 30 liner (where liner will be class B non-fragile), or Trilite 18 liner (fragile) underneath Trilite 30 outer

[7] as defined in National Annex to BS EN 1013

Brett Martin

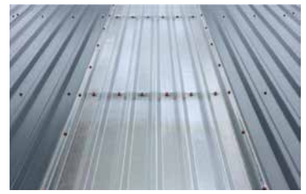
brettmartin.com

Trilite GRP

TB423

Product Data Sheet
Trilite 24 Corrugated GRP sheet (CE24 & CE24E) (ME)

Product Description
Trilite 24 rooflights are corrugated translucent GRP sheets; they weigh 2.4 kg/m², and are approximately 1.3mm thick. Typically supplied with fire ratings SAB to BS476 part 3 and Class 3 to BS476 part 7, they are also available with fire ratings of SAA, Class 1 or Class 0.



Trilite 24 rooflights are available to match most corrugated profiles for roof or wall, and are typically used in site assembled applications in combination with other grades of Trilite GRP sheet. They have full BBA approval certified under 04/4114.

Durability
Trilite 24 rooflights have a typical life span of 15 to 20 years when used in standard indusrial applicaions in the Middle East environment. They have Superlife™ surface protection and UV stabilised resin system to resist discolouration (yellowing)[1] and degradation which would otherwise be caused by UV exposure, although some discolouration is likley in this environment, (life span may also be reduced in more aggressive environments).

Safety Requirements / Non-Fragility
Trilite 24 rooflights can achieve Class B non-fragility to ACR[M]001 in combination with other rooflight skins. The strength of the rooflight sheet itself will be retained in the long term; however, non-fragility is a function of a fully installed assembly which can become fragile even if there has been no deterioration of the rooflight sheet itself.

Rooflight Assembly	Classification [2]	Expected period of non-fragility [3]
As single skin or liner only	Fragile	-
In combination with Trilite 18 [4]	Class B	When new [5]
In combination with Trilite 24 [6]	Class B	10 Years

PLEASE REFER TO NARM NTD03 FOR FULL DETAILS & CONDITIONS

Non-fragile rooflight assemblies which include Trilite 24 rooflights (as detailed above) will resist loads typically created by foot-traffic or a falling person without failure, although such impacts may result in damage. Appropriate precautions should be used when installing and accessing these rooflights to ensure they are not subjected to impact or foot traffic. Damaged rooflights, whether from impact, foot traffic or other cause, must be replaced.

Composition & Appearance
Trilite 24 GRP is manufactured from polyester based resins (containing UV inhibitors, fire retardant and process additives) and chopped strand glass fibre reinforcement, with 33% glass content and are classified CE24[7]; outer sheets also incorporate our Superlife UV protective surface and are classified CE24E[7].

Manufacture
Trilite 24 GRP is manufactured to EN 1013 under ISO 9001 Quality Management System.

Tolerances
Sheet weight: ± 10%
Sheet length: -0 +20mm (for sheets <2.5m)
-0% +0.8% (for sheets >2.5m)
Cover width: ± 0.8%
Squareness: 0.5% of cover width

Installation
Full installation details can be found in Technical Bulletin 156 or CAD drawing HC225.

Maintenance, Handling & Storage
For full maintenance, handling and site storage details see separate data sheet - COSHH Data Sheet 01.

[1] performance proven by accelerated weathering test on rooflight outer sheets (typically SAB class 3 grade), showing delta E less than 10 and light transmission reduced by less than 12% after 3000 hours exposure to QUV testing, comprising cycles of 4 hours of UVA340nm at 60°C and 4 hours condensation at 40°C

[2] when installed at purlin centres of 0.6 - 2.0m with a roof system which has been determined (without rooflights) to achieve an equal or better non-fragility classification

[3] when all other components have been specified accordingly and it has been demonstrated that the roof system (without rooflights) will retain the same non-fragile classification for the same period

[4] as Trilite 18 liner (fragile) underneath Trilite 24 outer, or as Trilite 18 outer over Trilite 24 liner (where Trilite 24 liner is Class C non-fragile if typical liner profile)

[5] the installed assembly may remain non-fragile in the long term but a range of external factors can affect non-fragility, and deterioration of any aspect of the installation may render the installed assembly fragile at any point, typically any time in the first 10 years, even if there has been no deterioration of the rooflight sheets themselves

[6] Trilite 24 outer over Trilite 24 liner (where the Trilite 24 liner is Class C non-fragile if typical liner profile)

[7] as defined in National Annex to BS EN 1013

Brett Martin

brettmartin.com

Trilite GRP

TB424

Product Data Sheet
Trilite 18 Corrugated GRP sheet (CE18 & CE18E) (ME)

Fire Ratings
We are able to supply 3 grades of fire rated Trilite GRP sheets each of which are rated to both BS476 parts 3 & 7, as follows:

Sheet rating	BS476 pt3	BS476 pt7	
SAB Class 3	**SAB**	Class 3	
SAA Class 1	SAA	**Class 1**	

(Certificates from independent laboratories are available to confirm these fire ratings)

For full details see Technical Bulletin 106.

The fire rating of Trilite GRP rooflight sheets is printed on each rooflight; in addition a coloured tracer is incorporated to identify the fire rating:
- SAB Class 3 are identified with a blue tracer
- SAA Class 1 are identified with a red tracer

Transmission Values

Rooflight Application	U Value	Tv Visible Light Transmission	G Value Total Solar Transmittance	Shading Coefficient
Triple Skin - Site Assembled (Trilite 18 / Cleartherm / Trilite 24	1.3 W/m² K	0.58	0.55	0.63
Triple Skin - Site Assembled (Trilite 30 / Cleartherm / Trilite 18)	1.3 W/m² K	0.55	0.51	0.58

Physical Properties

TENSILE STRENGTH
90 MPa

FLEXURAL STRENGTH
180 MPa

BARCOL HARDNESS
40 - 50

FIXING PULL-OUT LOAD
29mm washer: 700 N

COEFFICIENT OF LINEAR EXPANSION
30 X 10^{-6}/°C

SERVICE TEMPERATURE
-20°C TO 80°C

FLEXURAL MODULUS
6600 MPa

GLASS CONTENT
33%

Brett Martin

brettmartin.com

Trilite GRP

TB423

Product Data Sheet

Trilite 24 Corrugated GRP sheet (CE24 & CE24E) (ME)

Fire Ratings
We are able to supply 3 grades of fire rated Trilite GRP sheets each of which are rated to both BS476 parts 3 & 7, as follows:

Sheet rating	BS476 pt3	BS476 pt7	
SAB Class 3	**SAB**	Class 3	
SAA Class 1	SAA	**Class 1**	

(Certificates from independent laboratories are available to confirm these fire ratings)

For full details see Technical Bulletin 106.

The fire rating of Trilite GRP rooflight sheets is printed on each rooflight; in addition a coloured tracer is incorporated to identify the fire rating:
- SAB Class 3 are identified with a blue tracer
- SAA Class 1 are identified with a red tracer

Transmission Values

Rooflight Application	U Value	Tv Visible Light Transmission	G Value Total Solar Transmittance	Shading Coefficient
Single Skin	5.7 W/m² K	0.81	0.79	0.91
Triple Skin - Site Assembled (Trilite 24 / Cleartherm / Trilite 18	1.3 W/m² K	0.58	0.55	0.63
Triple Skin - Site Assembled (Trilite 24 / Cleartherm / Trilite 24)	1.3 W/m² K	0.56	0.53	0.60

Physical Properties

TENSILE STRENGTH
90 MPa

FIXING PULL-OUT LOAD
29mm washer: 930 N

FLEXURAL MODULUS
6600 MPa

FLEXURAL STRENGTH
180 MPa

COEFFICIENT OF LINEAR EXPANSION
30 X 10^{-6}/°C

GLASS CONTENT
33%

BARCOL HARDNESS
40 - 50

SERVICE TEMPERATURE
-20°C TO 80°C

Brett Martin

brettmartin.com

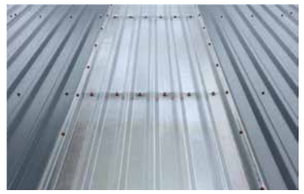
Trilite GRP

TB422

Product Data Sheet

Trilite 30 Corrugated GRP (CE30 & CE30E) (ME)

Product Description
Trilite 30 rooflights are corrugated translucent GRP sheets; they weigh 3.0 kg/m², and are approximately 1.7mm thick. Typically supplied with fire ratings SAB to BS476 part 3 and Class 3 to BS476 part 7, they are also available with fire ratings of SAA, Class 1 or Class 0.



Trilite 30 rooflights are available to match most corrugated profiles for roof or wall, and are typically used in site assembled applications in combination with other grades of Trilite GRP sheet. They have full BBA approval certified under 04/4114.

Durability
Trilite 30 rooflights have a typical life span of 15 to 20 years when used in standard industrial applications in the Middle East environment. They have Superlife™ surface protection and a UV stabilised resin system to resist discolouration (yellowing)[1] and degradation which would otherwise be caused by UV exposure, although some discolouration is likely in this environment, (life span may also be reduced in more aggressive environments).

Safety Requirements / Non-Fragility
Trilite 30 rooflights can achieve Class B non-fragility to ACR[M]001 as a single skin rooflight and in combination with other rooflight skins. The strength of the rooflight sheet itself will be retained in the long term; however, non-fragility is a function of a fully installed assembly which can become fragile even if there has been no deterioration of the rooflight sheet itself.

Rooflight Assembly	Classification [2]	Expected period of non-fragility [3]
As single skin or liner only [4]	Class B	When new [5]
In combination with Trilite 18 [6] (or higher)	Class B	10 Years

PLEASE REFER TO NARM NTD03 FOR FULL DETAILS & CONDITIONS

Non-fragile rooflight assemblies which include Trilite 30 rooflights (as detailed above) will resist loads typically created by foot-traffic or a falling person without failure, although such impacts may result in damage. Appropriate precautions should be used when installing and accessing these rooflights to ensure they are not subjected to impact or foot traffic. Damaged rooflights, whether from impact, foot traffic or other cause, must be replaced.

[1] performance proven by accelerated weathering test on rooflight outer sheets (typically SAB class 3 grade), showing delta E less than 10 and light transmission reduced by less than 12% after 3000 hours exposure to QUV testing, comprising cycles of 4 hours of UVA340nm at 60°C and 4 hours condensation at 40°C

[2] when installed at purlin centres of 0.6 - 2.0m with a roof system which has been determined (without rooflights) to achieve an equal or better non-fragility classification

[3] when all other components have been specified accordingly and it has been demonstrated that the roof system (without rooflights) will retain the same non-fragile classification for the same period

Composition & Appearance
Trilite 30 GRP is manufactured from polyester based resins (containing UV inhibitors, fire retardant and process additives) and chopped strand glass fibre reinforcement, with 33% glass content and are classified CE30[7]. Outer sheets also incorporate our Superlife UV protective surface and are classified CE30E[7].

Manufacture
Trilite 30 GRP is manufactured to EN 1013 under ISO 9001 Quality Management System.

Tolerances

Sheet weight:	± 10%
Sheet length:	-0 +20mm (for sheets <2.5m)
	-0% +0.8% (for sheets >2.5m)
Cover width:	± 0.8%
Squareness:	0.5% of cover width

Installation
Full installation details can be found in Technical Bulletin 156 or CAD drawing HC225.

Maintenance, Handling & Storage
For full maintenance, handling and site storage details see separate data sheet - COSHH Data Sheet 01.

[4] if sinusoidal profile to suit Fibre Cement sheet, the expected period of non-fragility will be 10 years.

[5] the installed assembly may remain non-fragile in the long term but a range of external factors can affect non-fragility, and deterioration of any aspect of the installation may render the installed assembly fragile at any point, typically any time in the first 10 years, even if there has been no deterioration of the rooflight sheets themselves

[6] Trilite 18 liner (fragile) with Trilite 30 outer, or Trilite 18 outer over Trilite 30 liner (where the liner will be Class B non-fragile)

[7] as defined in National Annex to BS EN 1013

Brett Martin

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Trilite GRP

TB422

Product Data Sheet
Trilite 30 Corrugated GRP (CE30 & CE30E) (ME)

Fire Ratings
We are able to supply 3 grades of fire rated Trilite GRP sheets each of which are rated to both BS476 parts 3 & 7, as follows:

Sheet rating	BS476 pt3	BS476 pt7	
SAB Class 3	**SAB**	Class 3	
SAA Class 1	SAA	**Class 1**	

(Certificates from independent laboratories are available to confirm these fire ratings)

For full details see Technical Bulletin 106.

The fire rating of Trilite GRP rooflight sheets is printed on each rooflight; in addition a coloured tracer is incorporated to identify the fire rating:
- SAB Class 3 are identified with a blue tracer
- SAA Class 1 are identified with a red tracer

Transmission Values

Rooflight Application	U Value	Tv Visible Light Transmission	G Value Total Solar Transmittance	Shading Coefficient
Single Skin	5.7 W/m² K	0.78	0.76	0.87
Triple Skin - Site Assembled (Trilite 30 / Cleartherm / Trilite 18)	1.3 W/m² K	0.55	0.51	0.58

Physical Properties

TENSILE STRENGTH
90 MPa

FLEXURAL STRENGTH
180 MPa

BARCOL HARDNESS
40 - 50

FIXING PULL-OUT LOAD
29mm washer: 1160 N

COEFFICIENT OF LINEAR EXPANSION
30 X 10^{-6}/°C

SERVICE TEMPERATURE
-20°C TO 80°C

FLEXURAL MODULUS
6600 MPa

GLASS CONTENT
33%

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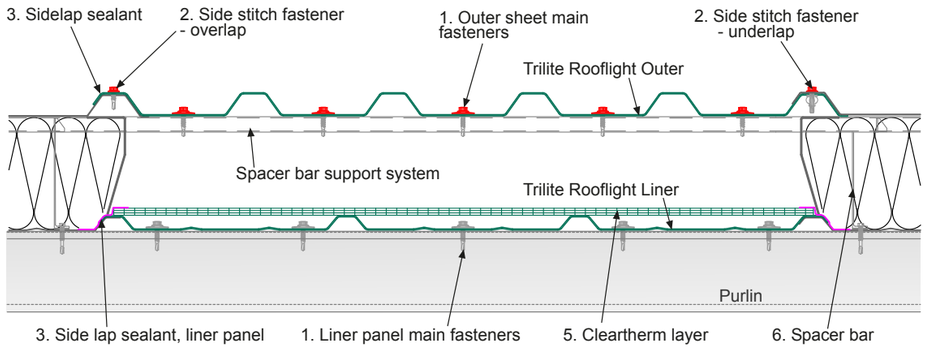
Trilite GRP

TB156

Installation - In-Plane Site Assembled GRP Rooflights
Triple Skin with Cleartherm - Trilite 18, 24 & 30

Main Fasteners - End Lap & Intermediate Purlin



General Arrangement
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). Alternatively, spacer bar brackets can be positioned as normal within the rooflight area (avoiding the need for longer spacer bars). In this case Cleartherm sheets should 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.

Fixing Sequence
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. Note: Cleartherm sheets should not be exposed to weather before the outer sheet is fitted. The Cleartherm sheet can also 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.

1. Main Fasteners
Stainless steel Ø5.5/6mm with min Ø29mm sealing washer with soft bonded seal, typically poppy red. Min 5 fasteners per purlin, fitted in the trough, max 200mm apart. For profiles >200mm pitch use two fasteners per trough, located either side of the main corrugations.
Outer Sheet - fasteners located in the centre of the top flange of the spacer bar.
Liner Panel - The panel should extend a min 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.
See over for typical fastener references.

2. Side Stitch Fasteners
Brett Martin Daylight Systems recommend GRP overlaps the metal on both sides if possible to reduce the cost and number of fastener types on site, and improve ease of installation.
Stainless steel side stitch fastener with Ø15/19mm sealing washer, typically poppy red; fix at 300mm to max 400mm centres and evenly spaced about all end laps - not through the end lap joint. If it is necessary for the GRP to underlap the metal on one side, use expanding rubber bolts. See over for typical fastener references.

3. Side Lap Sealant
Outer Sheet - One run of Class A 6x5mm cross linked butyl mastic, pale coloured, positioned on the crown of the sidelap corrugation, on the weather side of the side stitch fasteners.
Liner Panel - Both sides should lap over the adjacent metal sheet. Apply 50mm wide film backed butyl tape over laps to prevent opening, improve resistance to impact, airtightness and vapour control.

4. End Lap Sealant
Outer Sheet - Two beads of Class A 6x5mm cross linked butyl mastic, pale coloured, positioned max 25mm above and below fixing line. If a third seal at the tail of the end lap is required, gun grade silicon (ISO11600-F-25LM) should be used.

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Trilite GRP

TB156

Installation - In-Plane Site Assembled GRP Rooflights
Triple Skin with Cleartherm - Trilite 18, 24 & 30

4. End Lap Sealant (Cont.)
Liner Panel - One bead of Class A 6x5mm cross linked butyl mastic, pale coloured, position inside the lap, along the line of the fasteners or alternatively with 50mm wide film backed butyl tape over the lap.

5. Cleartherm layer
Simply secured with 50mm film backed butyl tape along each side lap. Alternatively, 9x3mm sealant can be applied to the crown of each side corrugation of the liner panel and the Cleartherm layer placed on top.

6. Spacer bar bracket positioning
Generally, spacer brackets are positioned outside of the area of rooflight, necessitating the use of 3m spacer bars. Alternatively, spacer bar brackets can be positioned as normal within the rooflight area (avoiding the need for longer spacer bars), but this will require Cleartherm sheets to 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.

Correct installation of rooflights is important to ensure they achieve the correct level of safety performance and give long term weather tightness.

Typical fastener references

Main Fasteners - Outer Sheet		Side Stitch Fasteners - Overlapping	
SFS	**EJOT**	**SFS**	**EJOT**
SX3/15-S29-6 x 40	CF29-JT3-3-5.5 x 32	SXP3/12-A16-6 x 35	CF15-JT3-2H-5.5 x 30

Main Fasteners - Liner Panel		Side Stitch Fasteners - Underlapping	
SFS	**EJOT**	**SFS**	**EJOT**
SX3/9-S29-6 x 29	CF29-JT3-3-5.5 x 32	LL-S-S16-9.5 x 25 + cap	-

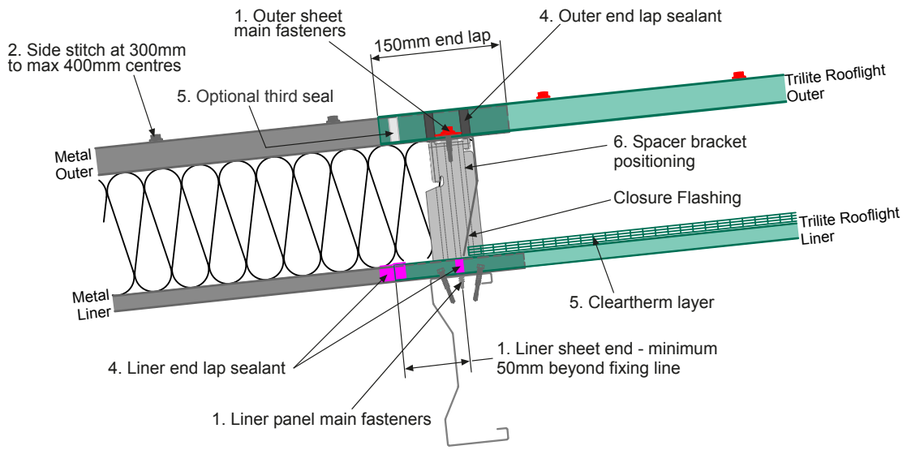
⚠ **MINIMUM ROOF PITCH** Minimum design roof pitch 5.5° (finished roof pitch 4°) *See page 3

⚠ **CORRECT HANDLING OF GRP IS CRITICAL** - full guidance given in TB154

⚠ **DO NOT** over drive fasteners

⚠ **ONLY** use good quality assured fasteners

Down Slope End Lap - Rooflight Over Cladding



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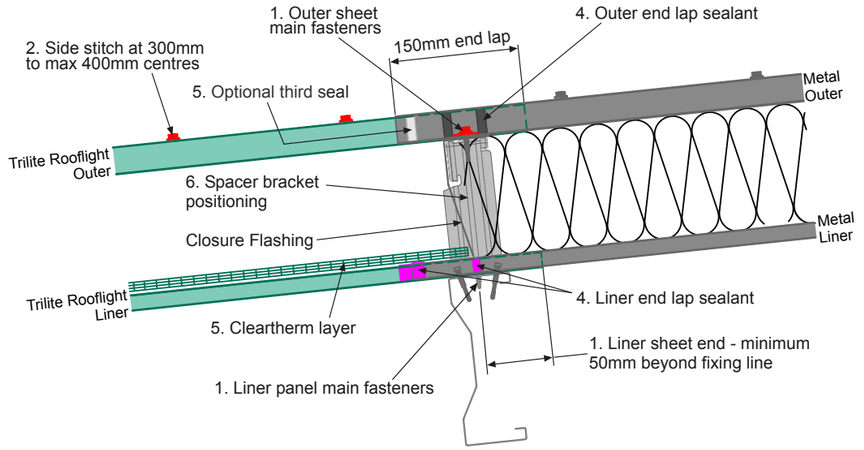
Trilite GRP

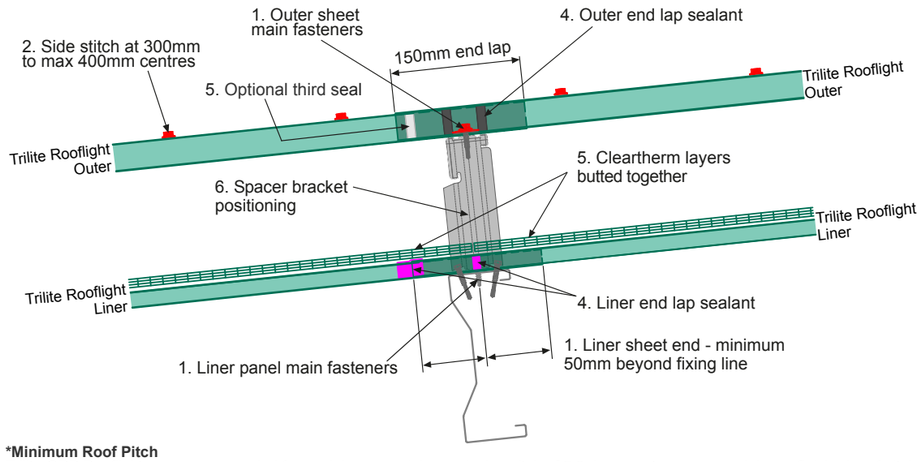
TB156

Installation - In-Plane Site Assembled GRP Rooflights
Triple Skin with Cleartherm - Trilite 18, 24 & 30

Up Slope End Lap - Cladding Over Rooflight



End Lap - Rooflight To Rooflight



***Minimum Roof Pitch**
Trilite GRP Rooflights are recommended for a minimum a minimum design pitch of 5.5 degrees, to ensure a minimum finished roof pitch of 4 degrees after allowing for tolerances and on site variations in accordance with BS5427 "Code of practice for the use of profiled sheet for roof and wall cladding on buildings (see BS5427:2016 section 5.1.3). If these rooflights 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 leaks at end laps or fixings occurring due to small variations in installation details (see BS5427, Note 3 to 5.1.3). Heavyweight Trilite rooflights are more rigid, providing more even compression of sealants and less localised deflection around fasteners, thus reducing risk of leaks at end laps or fixings.

Brett Martin

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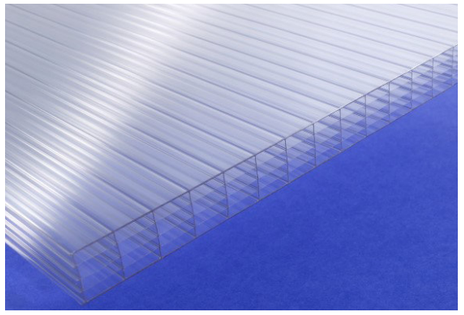
Brett Martin Daylight Systems operates a policy of continuous product improvement, and reserves the right to alter specifications at any time without notice. Every effort has been taken to ensure all details contained in this document are correct at the time of going to press but this document should be used only as a guide and does not in any way form part of a contract or warranty. It is the customer's responsibility to ensure that the product is suitable for the actual conditions of use, which are beyond the control of Brett Martin Daylight Systems.

Cleartherm

TB292
Product Data Sheet
Cleartherm Intermediate Rooflight Layer (ME)

Product Description

Cleartherm is a light weight 10mm thick 4 wall structured polycarbonate sheet used as an intermediate rooflight layer to create a thermally efficient triple skin skylight.



It has been are specifically designed to improved thermal efficiency whilst maintaining high light transmission and with minimal cost.

Cleartherm is typically used between a profiled in-plane GRP/FRP skylight liner sheet and a separate rooflight outer (either a profiled in-plane outer sheet, or a barrel vault outer sheet). Cleartherm is easily installed by laying directly onto the GRP/FRP liner, secured with film backed butyl tape (or onto butyl strip sealant within the joint). Cleartherm can also be used as the intermediate layer within our Trilite Energysaver FAIRs.

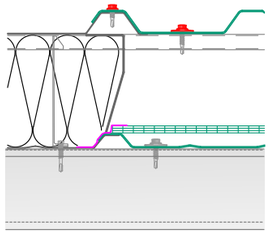
Cleartherm has full BBA (British Board of Agrément) approval when used in conjunction with Trilite GRP skylights and is certified under 04/4114.

Cleartherm also holds Attestation of Conformity from the Dubai Central Laboratory Department when used in conjunction with Trilite GRP skylights and is certified under attestation number VA17060001.

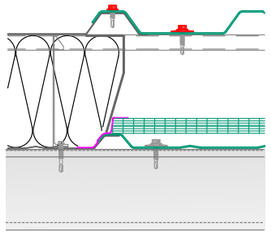
Cleartherm has a life expectancy in excess of 10 years, and when installed in conjunction with Trilite profiled GRP sheets is included within the scope of the Trilite 10 year warranty.

Product Options

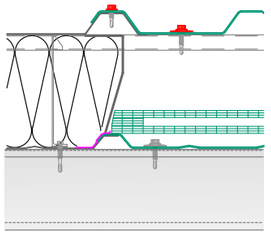
Single layer - 1.3 W/m² K



Double layer - 1.0 W/m² K



Cassette - 0.9 W/m² K



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CLEARTHERM

Cleartherm

TB292
Product Data Sheet
Cleartherm Intermediate Rooflight Layer (ME)

Performance Characteristics

Outer Sheet Weight	Cleartherm Type	U Value	Light Transmission	G Value	Shading Coefficient
Trilite 24	Single	1.3	0.58	0.52	0.60
	Double	1.0	0.53	0.44	0.51
	Cassette	0.9	0.53	0.44	0.51
Trilite 30	Single	1.3	0.55	0.51	0.58
	Double	1.0	0.50	0.43	0.49
	Cassette	0.9	0.50	0.43	0.49
Trilite 36	Single	1.3	0.53	0.50	0.57
	Double	1.0	0.47	0.41	0.47
	Cassette	0.9	0.47	0.41	0.47

Overall performance data for triple skin skylight comprising Trilite outer sheet, Cleartherm intermediate and Trilite 1.8 liner

Capital Sheet	Manufacture	Service Temperature	Maintenance, Handling & Storage
Trilite 24	Cleartherm is manufactured to EN 16153:2008 with a Quality Management System independently accredited to ISO9001:2015.	-10°C to 80°C	For full maintenance, handling and site storage details see separate data sheet - COSHH Data Sheet 07.
Trilite 30			
Trilite 36			

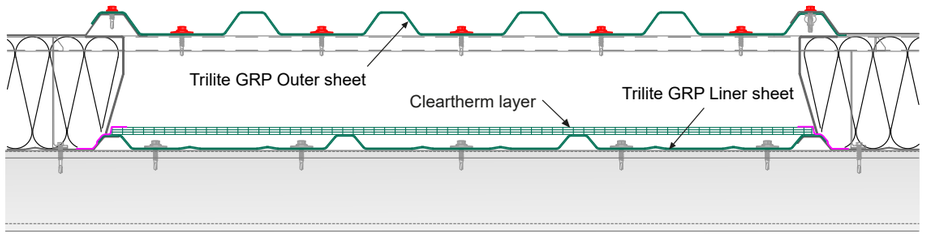
Product Dimensions:

	Weight	Thickness	Width	Max Length
Single	1.00kg/m²	10mm$_{+-0.5mm}$	1.0m$_{-6mm+2mm}$	6.0m$_{+-5mm}$
Double	2.00kg/m²	20mm$_{+-0.5mm}$	1.0m$_{-6mm+2mm}$	6.0m$_{+-5mm}$
Cassette	2.05kg/m²	32mm$_{(Overall)}$	1.0m$_{-6mm+2mm}$	3.5m$_{+-5mm}$

Typical Installation Details

Installation
Full details of installation between profiled in-plane Trilite GRP sheets can be found in Technical Bulletin 156 or CAD drawing HC225.

Cross Section



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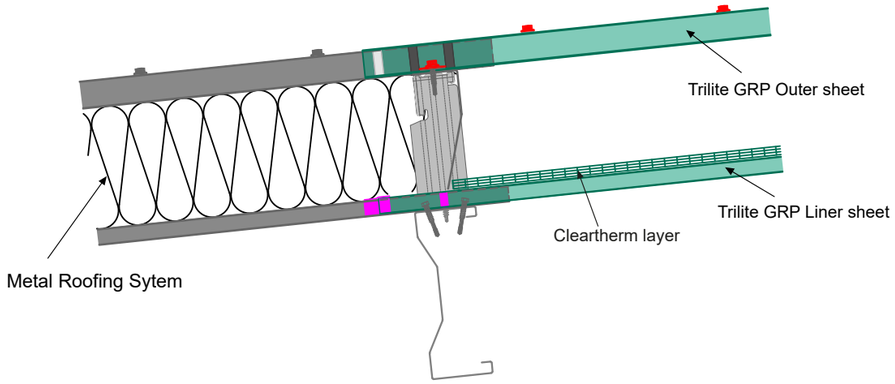
OCTOBER 2022

PAGE 3 OF 3

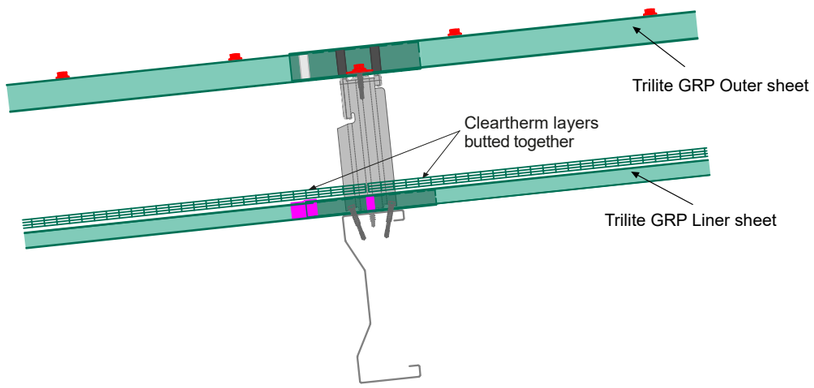
Cleartherm

TB292
Product Data Sheet
Cleartherm Intermediate Rooflight Layer (ME)

Down Slope Lap



Rooflight to Rooflight Lap



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Multivault SSR

Multivault SSR is a high quality, site assembled profiled polycarbonate vault rooflight designed for use with standing seam roofs. Multivault SSR utilises standard standing seam verge components to act as the kerb in installation and where a secret fix style system is required.

The Multivault SSR system consists of a GRP liner, Cleartherm layer and Multivault SSR polycarbonate barrel vault outer and forms a completely watertight roof covering. The design is approved by leading standing seam manufacturers.

Key Features

- **UV Protection:** manufactured with a co-extruded UV protective surface to resist discolouration and degradation
- **Glazing:** available in clear
- **Thermal Performance:** Triple skin U-value 1.3W/m²K
- **Light Transmission:** Standard triple skin achieves 62% transmission of diffused daylight
- **Width:** 1200mm nominal width (to fit opening left by 3 x 400mm wide standing seam cladding sheets).
- **Run length:** Modular units for unlimited run lengths
- **Durability:** Life span up to 20 years in normal industrial conditions in the Middle East environment
- **Fragility:** Class B non-fragility to ACR[M]001
- **Fire Rating:** SSR outer achieves B-s1,d0 to EN 13501-1 and according to UK building regulations can therefore be regarded as BROOF(t4) to EN 13501-5

Applications

Multivault SSR can be incorporated into new or refurbished roofs in a wide range of building types including distribution warehouses, factories, aircraft hangars and colleges.

Multivault SSR

TB420
Product Data Sheet
Multivault SSR (ME)

Product Description
Multivault SSR is a site assembled barrel vaulted rooflight specifically for low pitch standing seam roof applications and are nominally 1200mm wide - to fit the opening left by 3 x 400mm wide standing seam cladding sheets.
The SSR outer is thermo-formed from 2mm thick polycarbonate.

The rooflight assembly consists of a GRP liner; Cleartherm layer and Multivault SSR polycarbonate barrel vault outer, the GRP liner and Cleartherm layer are available in variable lengths to suit the application,the barrel vault outer units available are:

- 250mm Downslope End Unit
- 1000mm Continuation Units (also available as: 750mm; 500mm & 250mm run lengths)
- 250mm Upslope End Unit
- 250mm Upslope Ridge End Unit (for terminating the run at the ridge flashing)
- 500mm Crown Units (for curved roof applications, fitted with 250mm Downslope End Units at both ends)

For full installation and layout details see Technical Bulletin 173.

Durability
Multivault SSR have a typical life span of 15 to 20 years when used in standard industrial applications in the Middle East environment. They are manufactured with a UV protective co-extruded outer layer containing high levels of UV absorber on the top surface to protect against discolouration (yellowing)[1] and degredation which would otherwise be caused by UV exposure, although some discolouration is likely in this environment, (life span may also be reduced in more aggressive environments).

Safety Requirements / Non Fragility
Multivault SSR barrel vault rooflights achieve Class B non-fragility to ACR[M]001 when fully installed (in accordance with the principles of NARM Technical Document NTD03):

Rooflight Assembly	Classification [2]	Expected period of non-fragility [3]
Multivault SSR (over Trilite 3.0 GRP liner)	Class B	10 Years

PLEASE REFER TO NARM NTD03 FOR FULL DETAILS & CONDITIONS

Multivault SSR rooflight assembly when fully fixed will resist loads typically created by foot-traffic or a falling person without failure, although such impacts may result in damage. Rooflights should not be subjected to impact or foot traffic. Damaged rooflights, whether from impact, foot traffic or other cause, must be replaced.

Composition & Appearance
The Multivault SSR barrel vault rooflight is manufactured from polycarbonate with a co-extruded UV protective surface to resist discolouration and degradation caused by UV exposure.

Design Features
The Multivault SSR rooflight is designed for simple installation in conjunction with typical standing seam cladding systems. They include an angled side detail to ensure the main fasteners have sufficient water run off and rigid corrugations over the arc of the rooflight adding rigidity and lapping detail. They are suitable for runs of unlimited length.

Manufacture
Multivault SSR is manufactured to EN 14963 under ISO 9001 Quality Management System.

Tolerances (where applicable)
Cover width: ± 0.8%
Squareness: 0.5% of cover width

Installation
Full installation details can be found in Technical Bulletin 173 or CAD drawing HC220.

Maintenance, Handling & Storage
For full maintenance, handling and site storage details see separate data sheet:
- COSHH Data Sheet 04 - Multivault SSR
- COSHH Data Sheet 07 - Cleartherm layer
- COSHH Data Sheet 01 - GRP liner

[1] performance proven by accelerated weathering test, showing light transmission reduced by less than 1.5% after 2000 hours exposure to QUV testing.

[2] when installed with a roof system which has been determined (without rooflights) to achieve an equal or better non-fragility classification.

[3] when all other components have been specified accordingly and it has been demonstrated that the roof system (without rooflights) will retain the same non-fragile classification for the same period.

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Multivault SSR

TB420
Product Data Sheet
Multivault SSR (ME)

Fire Ratings
Standard Multivault SSR rooflights are supplied with the following fire ratings:

Sheet	EN13501 pt1	EN13501 pt5	
Polycarbonate Outer Sheet	B-s1,d0	B_{ROOF}(t4)*	

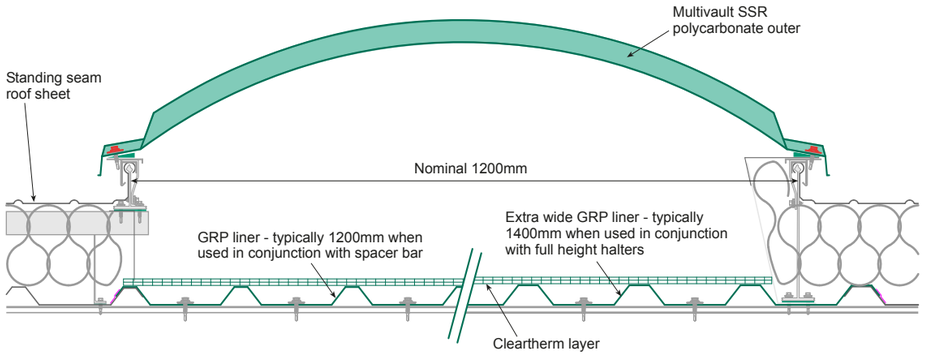
*Can also be regarded as being B_{ROOF}(t4) (See Approved Document B paragraph 14.7)
(Certificates from independent laboratories are available to confirm these fire ratings)

See seperate Technical Bulletin 106 for GRP liner fire ratings.
For full details regarding Polycarbonate fire ratings see Technical Bulletin 413.

Transmission Values

Rooflight Application	U Value	Tv Visible Light Transmission	G Value Total Solar Transmittance	Shading Coefficient
Multivault SSR Triple Skin (Over Trilite 30 liner & Cleartherm layer)	1.3 W/m² K	0.62	0.58	0.67

Typical Cross Section



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Multivault SSR

TB173
Installation Instructions
Multivault SSR Triple Skin

Introduction

This Multivault SSR rooflight is specifically design to fit with standing seam cladding systems and are nominally 1200mm wide - to fit the opening left by 3 x 400mm wide standing seam cladding sheets. The rooflight assembly consists of a GRP liner; Cleartherm layer and Multivault SSR polycarbonate barrel vault outer, the GRP liner and Cleartherm layer are available in variable lengths to suit the application - the barrel vault outer units available are:

250mm Downslope End Unit
1000mm Continuation Units (also available as: 750mm; 500mm & 250mm for specific run lengths)
250mm Upslope End Unit or
250mm Upslope Ridge End Unit (for terminating the run at the ridge flashing & shown in this bulletin)

Also available are **500mm Crown Units** for curved roof applications, this unit changes the direction of lap and should be used at the apex of the roof, runs incorporating this unit should be fitted with **250mm Downslope End Units** at both ends.

Kerb Requirements for Barrel Vault Outers

The SSR barrel vault outers require side kerbs and end kerbs to be installed on, these are usually components of the standing seam cladding system and not supplied by BMDS.

Installation Instructions

Multivault SSR rooflights should be installed to the following instructions. The details below are to be read in conjunction with the following installation drawings in this Technical Bulletin.

1 Multivault SSR Outer fasteners
Main fasteners: stainless steel fitted with large diameter washer & bonded seal (eg. SX3/15-A32-6.0x40) fitted every 250mm by corrugation.
Lap joint fasteners: stainless steel fitted with standard diameter washer & bonded seal (e.g. SX5/38-S16-5.5x63) fitted at lap joints only.

2 Self Adhesive Kerb Filler
Fitted continuously along the kerbs, note: also required on the end kerbs.

3 Kerb Sealant
Two strips of 9x3mm section UV stable pale coloured, cross linked mastic (BMDS: Class A) positioned approx 50mm apart along the full length of all kerbs.

4 Multivault SSR Outer End Lap Sealant
Single strip of 8mm dia bead UV stable pale coloured, cross linked mastic (BMDS: Class A) positioned centrally in the joint and along the edge at the unit at the sides as shown.

5 Cleartherm Side Lap Sealant
One strip of 9x3mm section UV stable pale coloured butyl mastic (BMDS: Class A) positioned along both side laps of the liner.

6 GRP Liner Fasteners
Stainless steel 5.5mm diameter fitted with large diameter washer & bonded seal (eg. SX3/9-A32-6.0x29), or passing through bracket. Five required at every purlin position, please note: the fasteners must be at least 50mm from the end of the sheet. Spacer bar bracket or halter can be regarding as one fastener.

7 GRP Liner End Lap Vapour Check Sealant
End laps to be sealed with a single strip of 6x5mm pale coloured butyl mastic (BMDS: Class A) inside the lap joint along the fixing line (or alternatively with 50mm wide film backed butyl tape over the lap).

8 GRP Liner Side Lap Vapour Check Sealant
Both sides of the liner should overlap the adjacent metal sheets. Apply 50mm wide film backed butyl tape over side laps to: prevent opening; improve resistance to impact; achieve good air tightness and vapour check.

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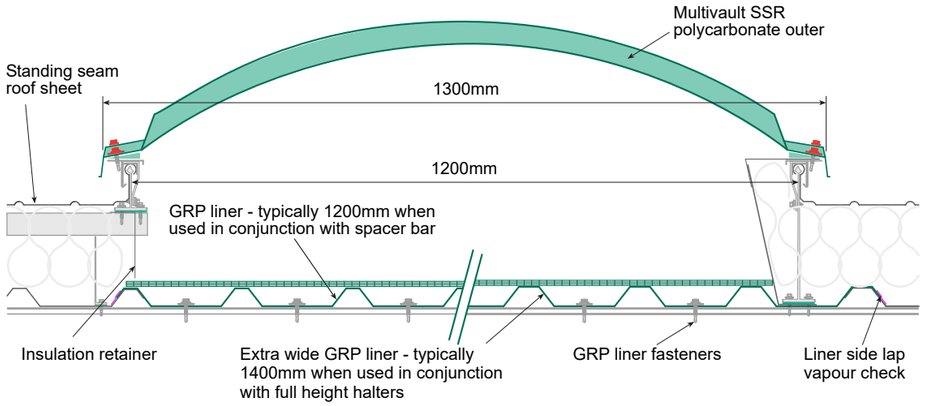
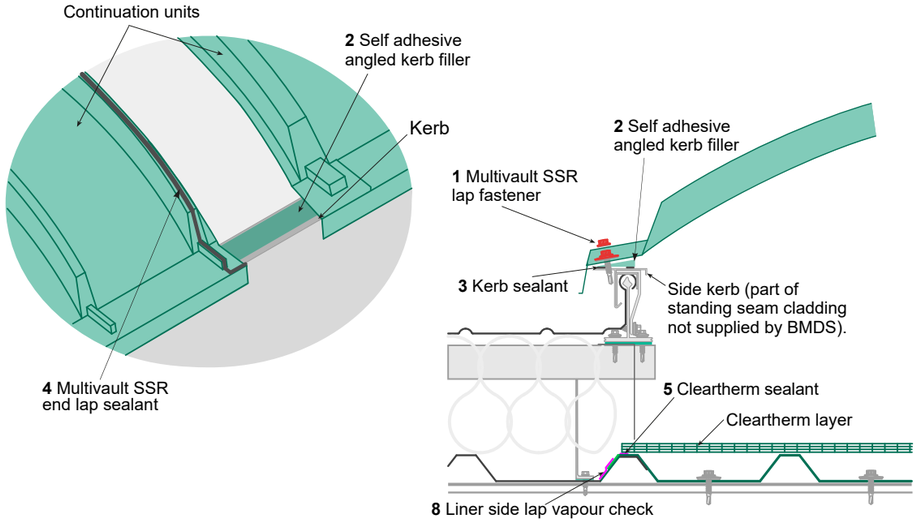
Multivault SSR

TB173
Installation Instructions
Multivault SSR Triple Skin

Multivault SSR Cross Section & Kerb Detail





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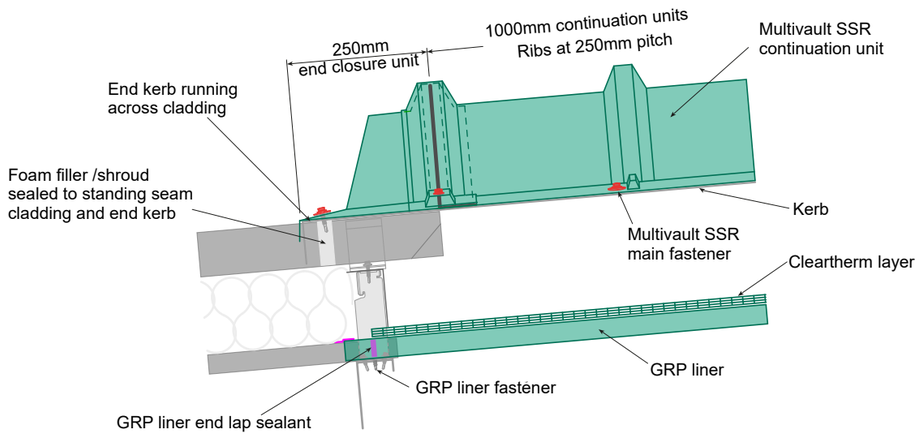
Multivault SSR

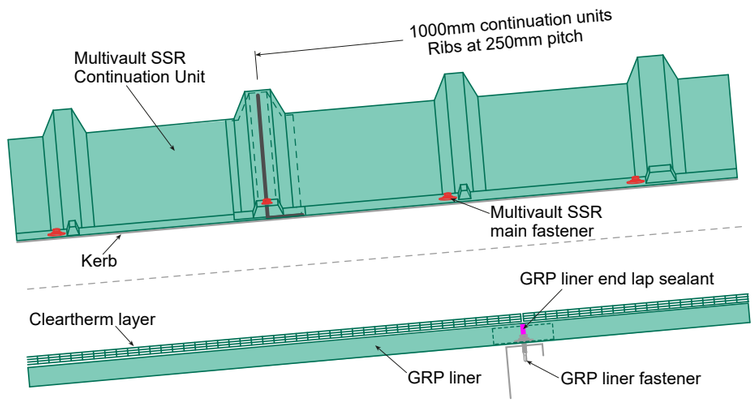
TB173
Installation Instructions
Multivault SSR Triple Skin

Down Slope End Unit Fixing Detail



GRP liner

Mid Span Continuation Unit Fixing Detail



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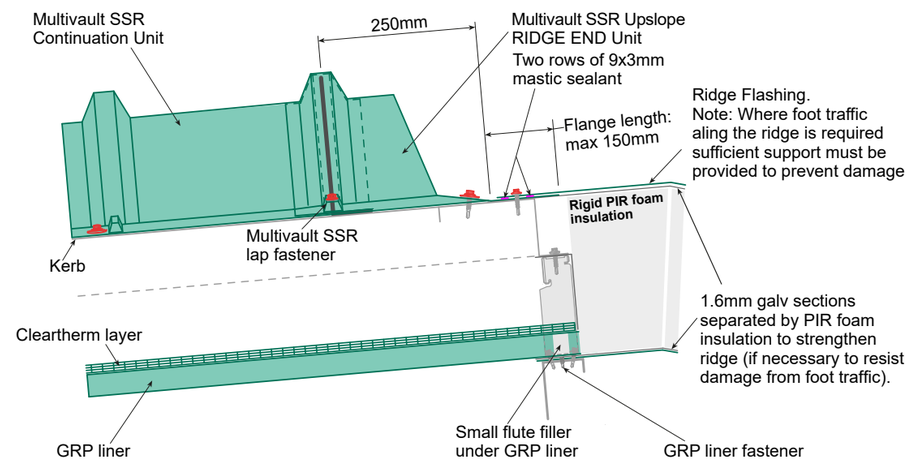
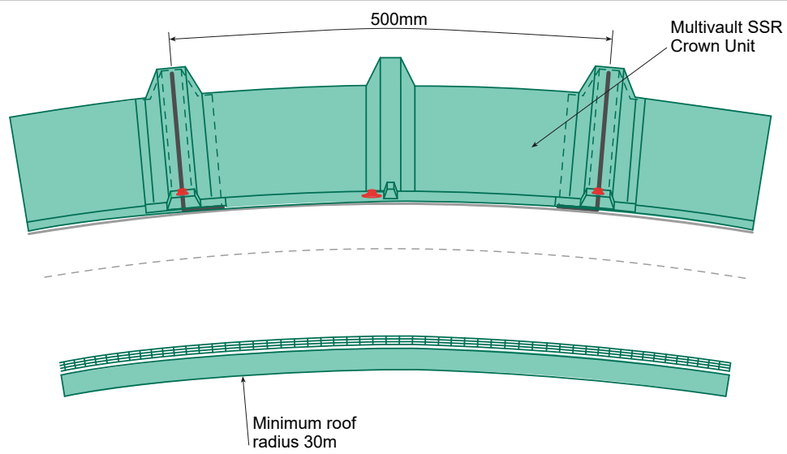
Multivault SSR

TB173
Installation Instructions
Multivault SSR Triple Skin

Upslope Ridge End Unit Fixing Detail



Crown unit fixing detail (curved roof applications only)



Brett Martin

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Multivault GRP

Multivault GRP is a vaulted rooflight which laps together to form unlimited length with spanning capabilities up to 4 metres.

Multivault GRP is delivered to site in a factory assembled form, ready to install. Multivault GRP is ideal for all roof types and are fitted onto separate kerbs, without any fixings penetrating the roof covering to preserve the principle of secret fix. The integrated aluminium bar and the well fitting insulated aluminium end closures makes Multivault GRP a robust rooflight option.

Key Features

- **UV Protection:** manufactured with a UV protective surface to resist discolouration and degradation
- **Thermal Performance:** Triple Skin U-value 1.3W/m²K
- **Light Transmission:** Triple Skin 58%
- **Span Width:** available in 1000mm to 4000mm widths
- **Run length:** modular units for unlimited run lengths
- **Durability:** Life span up to 20 years in normal industrial conditions in the Middle East environment
- **Fragility:** Class B non-fragility to ACR[M]001
- **Fire Grade:** SAB Class 3 outer BS 476 Part 3, SSA Class 1 liner BS 476 Part 3 and 7

Applications

Multivault GRP is particularly suited to daylighting flat or very low pitch roofs in a variety of building types such as; factories, airport infrastructure and other industrial buildings.

Brett Martin

JUNE 2022

Multivault GRP

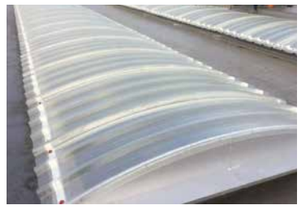
TB419

Product Data Sheet
Multivault GRP (ME)

Product Description
Multivault GRP is a factory assembled insulating barrel vaulted rooflight specifically for low pitch roof applications and are available in widths from 1000mm to 4000mm.
They comprise of a corrugated curved translucent GRP outer; optional intermediate Cleartherm layer and GRP liner bonded together with Hardpak internal spacers, typically supplied as triple skin (with Cleartherm mid layer) or double skin over separate GRP liner. The outer weighs 2.165 kg/m², and is approximately 1.3mm thick.

Multivault GRP are manufactured in modular lengths of 1020mm long (±4mm), overall run lengths should to be designed as multiples of 1020mm where possible. Modified downslope end units which are multiples of 255mm can be provided where necessary. They are suitable for both straight roof and curved roof applications (to a minimum radius of 50m). Continuous runs are built up using:
- 1020mm Downslope End Unit (with integral end closure)
- 1020mm Continuation Units
- 1020mm Upslope End Unit (with integral end closure)

Also available are 1020mm Crown Units for curved roof applications.



Durability
Multivault GRP have a typical life span of 15 to 20 years when used in standard industrial applications in the Middle East environment. They have Superlife™ surface protection and UV stabilised resin system to resist discolouration (yellowing)[1] and degradation which would otherwise be caused by UV exposure, although some discolouration is likely in this environment, (life span may also be reduced in more aggressive environments).

Safety Requirements / Non Fragility
Multivault GRP barrel vault rooflights achieve Class B non-fragility to ACR[M]001 when fully installed (in accordance with the principles of NARM Technical Document NTD03):

Rooflight Assembly	Classification [2]	Expected period of non-fragility [3]
Multivault GRP	Class B	10 Years

PLEASE REFER TO NARM NTD03 FOR FULL DETAILS & CONDITIONS

Multivault GRP when fully fixed will resist loads typically created by foot-traffic or a falling person without failure, although such impacts may result in damage. Rooflights should not be subjected to impact or foot traffic. Damaged rooflights, whether from impact, foot traffic or other cause, must be replaced.

Composition & Appearance
Multivault GRP is manufactured from polyester based resins (containing UV inhibitors, fire retardant and process additives) and chopped & continuous strand glass fibre reinforcement, with 33% glass content. The outer sheets also incorporate our Superlife UV protective surface.

Design Features
All Multivault GRP rooflight include Hardpak side fillers providing greater support for fasteners ensuring a more reliable installation. They also include a water managed aluminium section as standard in all under lap corrugations for added rigidity and to allow standard stitch fasteners at each joint when required. Downslope and Upslope end units include an integral end closure flashing made from stucco aluminium. (Notched on site as necessary to suit cladding).

Manufacture
Multivault GRP is manufactured to EN 14963 under ISO 9001 Quality Management System.

Tolerances (where applicable)

Sheet weight:	± 10%
Cover width:	± 0.8%
Squareness:	0.5% of cover width

Installation
Full installation details can be found in Technical Bulletin 170 or CAD drawing HC217 / HC218.

Maintenance, Handling & Storage
For full maintenance, handling and site storage details see separate data sheet - COSHH Data Sheet 08.

[1] performance proven by accelerated weathering test, showing delta E less than 10 and light transmission reduced by less than 12% after 3000 hours exposure to QUV testing, comprising cycles of 4 hours of UVA340nm at 60°C and 4 hours condensation at 40°C.

[2] when installed with a roof system which has been determined (without rooflights) to achieve an equal or better non-fragility classification.

[3] when all other components have been specified accordingly and it has been demonstrated that the roof system (without rooflights) will retain the same non-fragile classification for the same period

Brett Martin

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Multivault GRP

TB419
Product Data Sheet
Multivault GRP (ME)

Fire Ratings
Standard Multivault GRP rooflights are supplied with the following fire ratings:

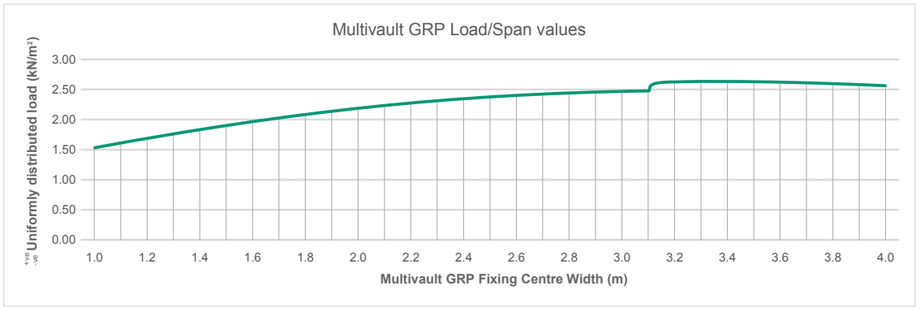
Sheet	EN13501 pt 5	BS476 pt3	BS476 pt7	
Outer Sheet	**B_{roof}(t4)**	-	-	
Liner Panel	-	SAA	**Class 1**	

(Certificates from independent laboratories are available to confirm these fire ratings)

Transmission Values

Rooflight Application	U Value	Tv Visible Light Transmission	G Value Total Solar Transmittance	Shading Coefficient
Multivault GRP Triple Skin (with internal Cleartherm layer)	1.3 W/m² K	0.58	0.55	0.63
Multivault GRP Double Skin over GRP liner	2.2 W/m² K	0.55	0.57	0.66

Load/Span Values



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Multivault GRP

TB170
Installation
Multivault GRP

GRP Multivault Widths
The size of a Multivault GRP unit is defined by the **Fixing Centre Width**, this is the only dimension required to specify width of the units required. They can be made to any **Fixing Centre Width** between 1m and 4m.

Typical sizes: if planning to fit Multivault GRP with standard 1m wide cladding the **Fixing Centre Width** will need to be typically 1100mm to ensure the fasteners are clear of the rooflight opening and penetrate only the kerb and not through the roof.

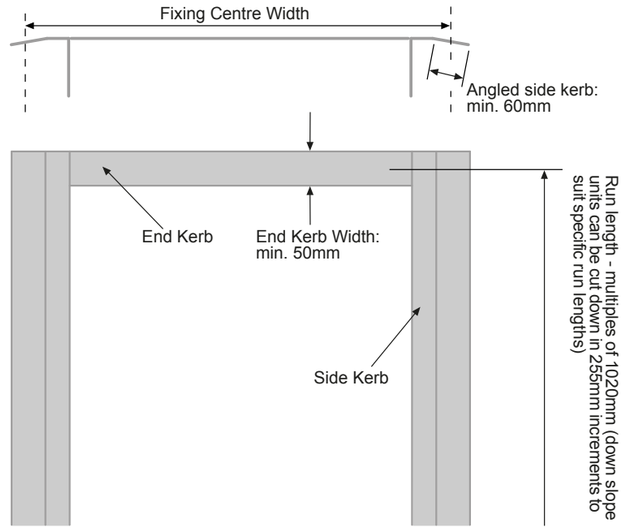
Multivault GRP Run Lengths
Multivault GRP are manufactured in modular lengths of 1020mm long (±4mm), so overall run lengths should to be designed as multiples of 1020mm where possible (with provision to incorporate overall length tolerance). Modified downslope end units which are multiples of 255mm can be provided where necessary. They are suitable for both straight roof and curved roof applications (to a minimum radius of 50m). Continuous runs are built up using:
- 1020mm Downslope End Unit (with integral end closure)
- 1020mm Continuation Units
- 1020mm Upslope End Unit (with integral end closure)
Also available are 1020mm Crown Units for curved roof applications, this unit changes the direction of lap, runs incorporating this unit should be fitted with Downslope End Units at both ends.

Kerb Requirements
Multivault GRP require kerbs all round to ensure a safe and weather tight fix, these kerbs are not designed or supplied by BMDS.
- SIDE KERBS, these should be substantial enough to withstand all loadings expected. The kerb should incorporate an angled 60mm flange (shown below); the distance between the centres of the angled flanges should be the **Fixing Centre Width** of the rooflight.
- END KERBS - horizontal kerbs are required at each end of the rooflight run to allow a full air tight seal to be achieved. It also gives the designer an opportunity to create a water tight dam against the cladding if desired.

Kerb Layout for Multivault GRP

KERB CROSS SECTION

KERB PLAN VIEW



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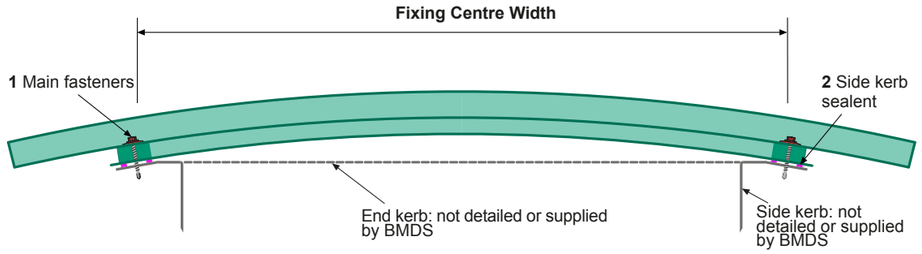
Multivault GRP

TB170
Installation
Multivault GRP

Installation



1. Main Fastener
Stainless steel 6mm diameter fitted with large diameter washer with soft (40 shore hardness) bonded seal eg. SFS SX5/38-S29-5.5x61. To be fixed in every trough through the integral Hardpak filler and into kerb, two fasteners in outer troughs and one in centre troughs.

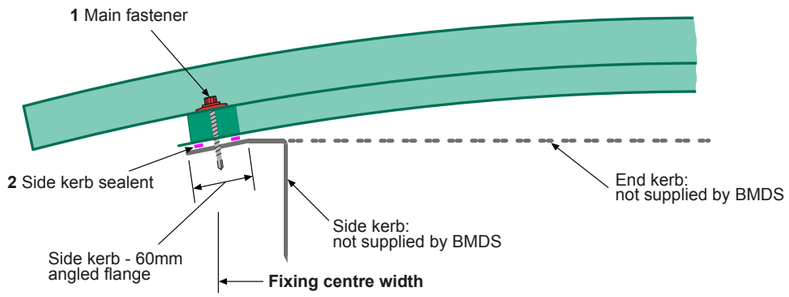
2. Side Kerb Sealant
Two strips of 9x3mm section UV stable pale coloured, cross linked butyl mastic (BMDS:GCA) positioned approx. 50mm apart along the full length of each angled kerb.

3. Additional Kerb & End Lap Sealant
Silicone bead run on the inner lap and at each end of the laps to ensure full seal, using clear silicone.

4. End Kerb Sealant
A single strip of 9x3mm section UV stable pale coloured, cross linked butyl mastic (BMDS:GCA) is required applied along the end kerb, lining up with the end of the unit.

5. End Laps
To seal the end laps a single strip of 9x3mm section UV stable pale coloured cross linked butyl mastic (BMDS:GCA) is required centrally in the lap joint. Units that are larger than 1500mm Fixing Centre Width require stainless steel stitching screws, eg: SFS SX3/9-S16-6.0x29 over the lap at 500mm centres; these fasten into the integral aluminium frame of the unit.

Side Kerb Fixing Detail



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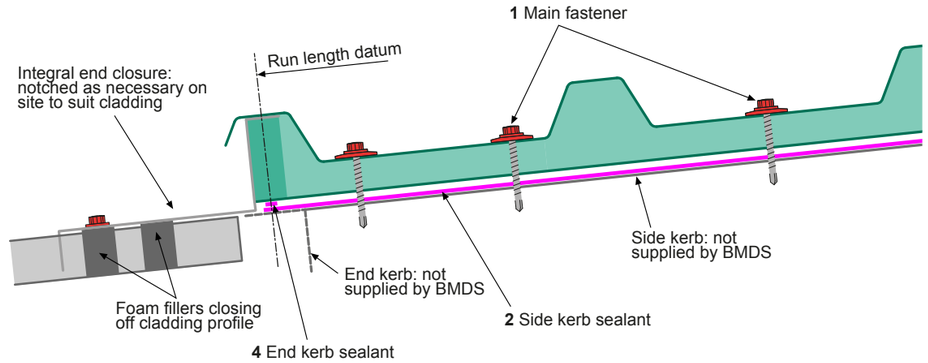
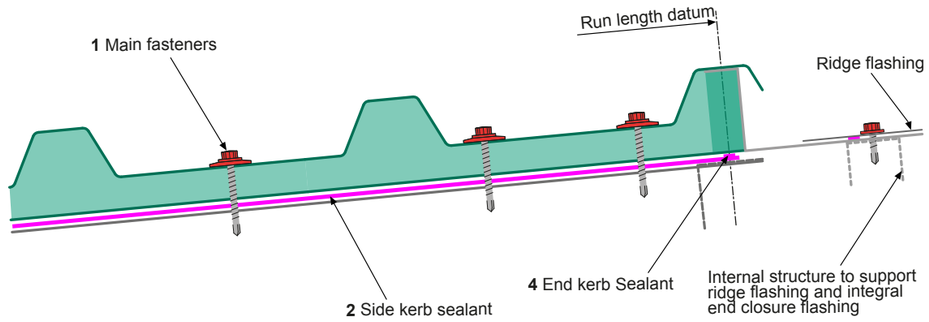
Multivault GRP

TB170
Installation
Multivault GRP

Down Slope End Unit Fixing Detail



Up Slope End Unit Fixing Detail



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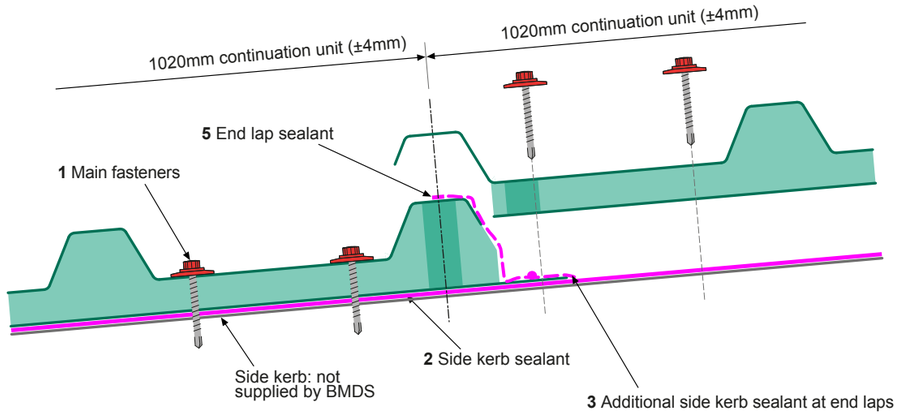
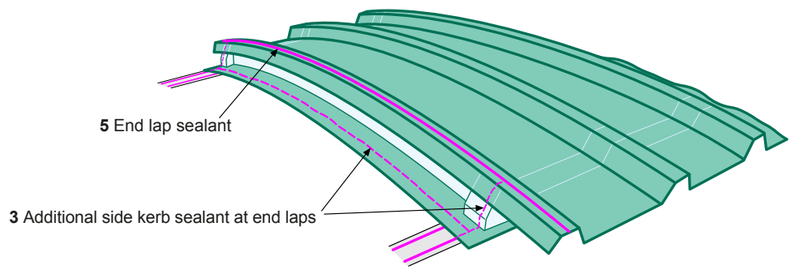
Multivault GRP

TB170
Installation
Multivault GRP

Continuation Unit Fixing Detail



Continuation Unit Fixing Detail



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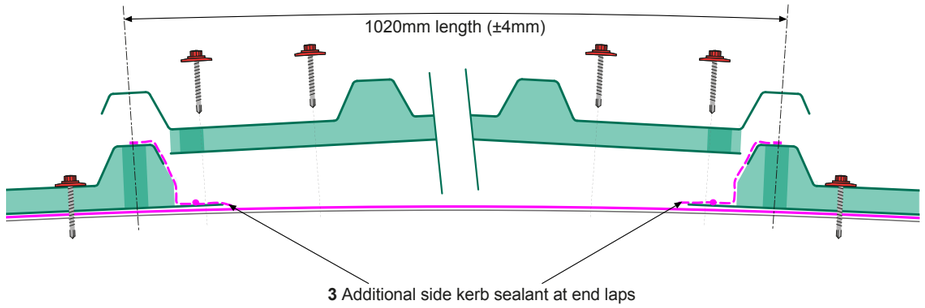
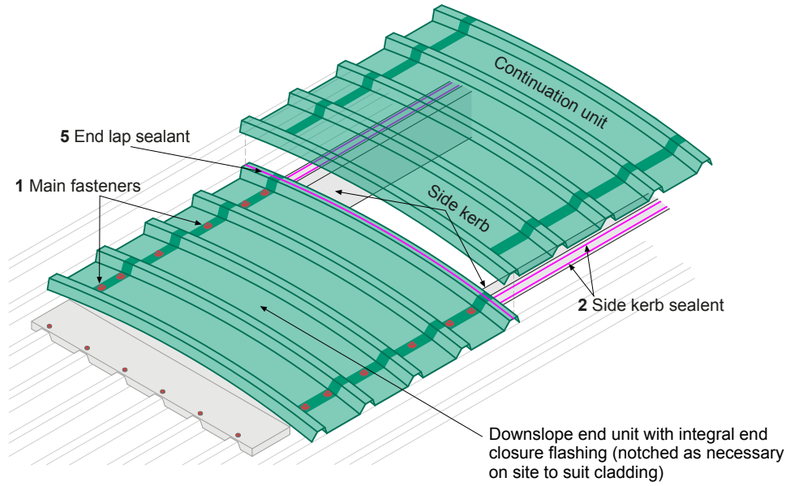
TB170
Installation
Multivault GRP

Crown Unit Fixing Detail (Curved Roof Applications Only



On curved roof applications where the rooflights run over the apex of the roof, a **Crown Unit** is required. It should be located at the apex point of the roof. This unit changes the lap direction to always ensure the up slope unit laps over the unit below.
Alignment of this is critical. To ensure a correct fit it is recommended the first slope is installed up to the **Crown Unit** and the following slope is 'backed lapped' from this position.
Minimum roof radius: 50m (subject to width restrictions - contact BMDS Technical Dept)

Overview



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Marvault

Marvault is a versatile, low-rise barrel vault rooflight system glazed in multiwall polycarbonate. The attention to detail is evident in the clean lines and minimalist styling of the Marvault framework. Daylight area is maximised through wide bay centres. Available in mill finished aluminium, or powder coated to any RAL colour, the system is suitable for use in a variety of low pitch roof applications. Marvault has hidden fixings, giving a clean, architectural appearance.

Key Features

- **Aluminium Frame:** Elegantly designed, precision engineered
- **Glazing:** 16mm 5 wall polycarbonate
- **Thermal Performance:** options available for U-values down to 1.9 W/m²K centre pane
- **Length:** rooflights of unrestricted length can be created
- **Span:** 1-3m as standard depending on glazing type
- **Durability:** Service Life of 15 - 20 years, guaranteed fit for purpose for at least 10 years
- **Fragility:** Class B non-fragility to ACR[M]001
- **Fire Rating:** Achieves B-s1,d0 to EN 13501-1 and according to UK building regulations can therefore be regarded as BROOF(t4) to EN 13501-5

Applications

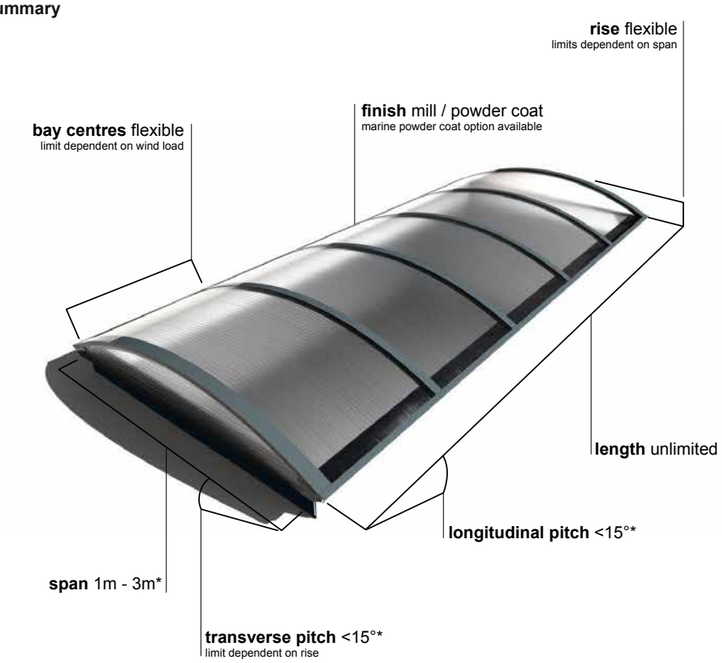
Marvault is considered to be the next generation in continuous vault rooflight systems. It's elegant framework and design features make Marvault ideal for maximising daylight in buildings from office environments and shopping centres to schools and large scale leisure facilities.

MARCH 2022

Marvault

TB418
Marvault
Datasheet (ME)

Product Summary



*Refer to Brett Martin Daylight Systems Ltd Technical Dept. for applications outside of the stated limits

Rise

- Articulated kerb allows for variable rise of up to 1/8 of span at larger spans.

Span		
1m	2m	3m
1/24	1/12	1/12 - 1/8

Vertical gable-end bars required depending on rise/span combination.

Bay Centres

Max Sheet Width	Max Bay Centres
1050mm	1073mm

Note that wind loads may restrict bay centre and rise options, and/or necessitate longitudinal tie-bars/cables

Glazing

- 16mm 5-wall polycarbonate
- Centre Pane U Value of 1.9 W/m²K
- Clear or Opal tint

Span

Min. (mm)	Max. (mm)
1000	3000

Refer to BMDS Technical Department for wider spans.

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Marvault

TB418
Marvault
Datasheet (ME)

Frame Finish
- Mill finish aluminium frame as standard
- Powder coated option available (standard or marine finish)

Non-Fragility
Marvault rooflights achieve Class B non-fragility to ACR[M]001 when new and fully installed in accordance with Brett Martin Daylight Systems' installation guides.

Airtightness (at 50Pa)
Tested to BS EN 1026
- Typically 5 - 25 $m^3/h.m^2$ of envelope area, depending on geometry

Weathertightness
Tested to BS EN 14963

Roof Pitch
- Longitudinal: <15° - refer to Technical for higher pitch applications
- Transverse: 0° - 15° dependent on rise - refer to Technical for specific guidance

CE Marking
Marvault is CE marked to BS EN 14963 and a declaration of performance is available.

Curved Roofs
Often suitable for installation on curved roofs, but always refer to Technical. Minimum radius will depend heavily on specification.

In general, narrower widths and lower rise will be suitable for use on tighter radius roofs than wider or higher rise variants. Very low rise narrow (1 metre) units may be curved to 20 metre radius or tighter, whilst wider higher rise units may only be suitable at very large radii (e.g. 200m).

In some cases, options such as narrower bay centres and shaped glazing panels, can be used to accommodate smaller roof radii at additional cost where standard products would not be suitable.

Installation
- Crash-decks not typically necessary – depends on span and configuration
- Full installation instructions available

Brett Martin

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Marlon Clickfix

Brett Martin also offer a range of modular panel glazing systems, known for versatility and ease of installation with options for a wide range of commercial and industrial applications.

The range includes **Marlon Clickfix**, a complete architectural glazing system providing natural quality light, superior thermal insulation and UV protection in addition to the impact resistance, resilience and structural strength inherent in polycarbonate.

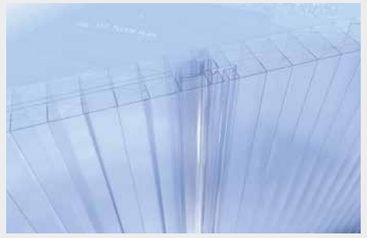
The modular design consists of interlocking polycarbonate panels which simply click and fix into place for a completely seamless façade. **Marlon Clickfix** combines with the **Marlon Clickfix VF** glazing bar system for creating seamlessly glazed facades and cladding.

Key Features

- Seamless glazing aesthetic
- Fully thermally broken system
- Integrates with Marlon Clickfix insulating polycarbonate panels
- Quick and easy to install
- Suitable for vertical glazing
- Class B Non Fragile to ACR{M]001
- Maximum airtightness
- Good acoustic performance
- 10 year performance warranty
- Certified to ASTM E283-00, E331-00 and E330/E330M-14

Applications

Suitable for both internal and external applications including:
- Vertical facades
- Cladding
- Partitioning
- Rain screens



Marlon Clickfix

Key Benefits

- 40mm 10wall modular polycarbonate glazing system
- Create dramatic seamless façades and continuous corners
- Thermally insulating, U value 0.99 W/m²K
- Superb spanning capabilities
- Suitable for vertical façades and partitions

Light Transmission

Colour	Light	Solar
Clear (g)	52%	48%
Pearlescent (PW)	44%	32%

Special colours and colour matching available on request. Minimum order quantities apply.

Panel Details & Properties

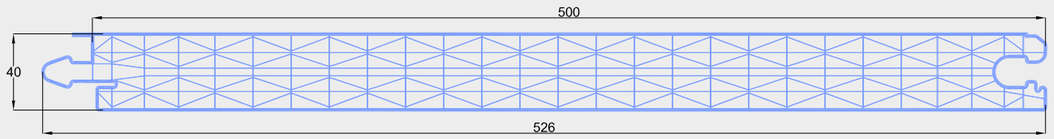
Panel Thickness	40mm
Panel Structure	10wall
Modular Width	500mm (nominal)
Overall Width	526mm (nominal)
Maximum sheet length	12m
Thermal Insulation	0.99W/m²K
Weight	4.3kg/m²
Fire Performance	B-s1,d0 to EN13501-1
Minimum Cold Curving Radius	Contact Technical Department
UV Protection	Single or double sided
Warranty	Limited warranty

Spanning Detail

Load (kN/m²)	Span (m)
0.5	2.37
1.0	1.99
1.5	1.74
2.0	1.39

All figures relate to double spanning, for additional information please contact the technical department.

Panel Structure & Dimensions



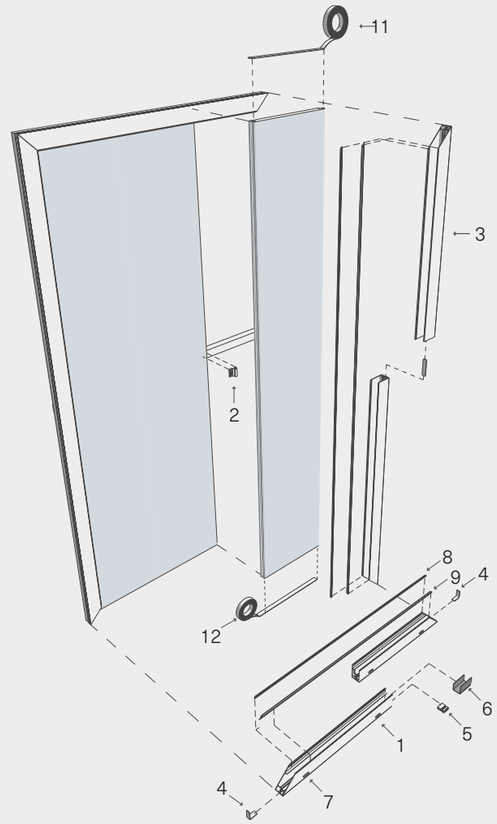
Marlon Clickfix VF90

Installation Façades up to 12m (VF90 Glazing System)

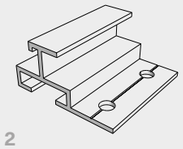
Key Features

- VF90mm profile for façades from 6m to 12m
- Fully thermally broken
- Temperature stable TPE gaskets
- Fully water managed

System Components

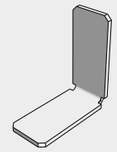


1
AC 403 BMD
Thermally broken Base Profile Slotted

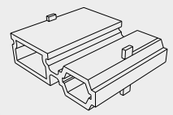


2
AC 401 E50
Purlin Clip

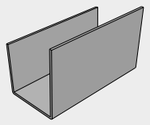
3
AC 402 BMD Thermally broken, Top & Side Profile



4
AC 402 CCB Corner Connector

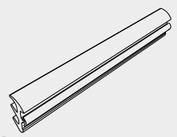


5
AC 402 MCB Straight Profile Connector

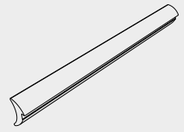


6
AC403 BBS
Butt Strap Connector

7
AC 403 BVCG Drainage Slot Vent Covers



8
AC 404 B
Interior “E” Gasket



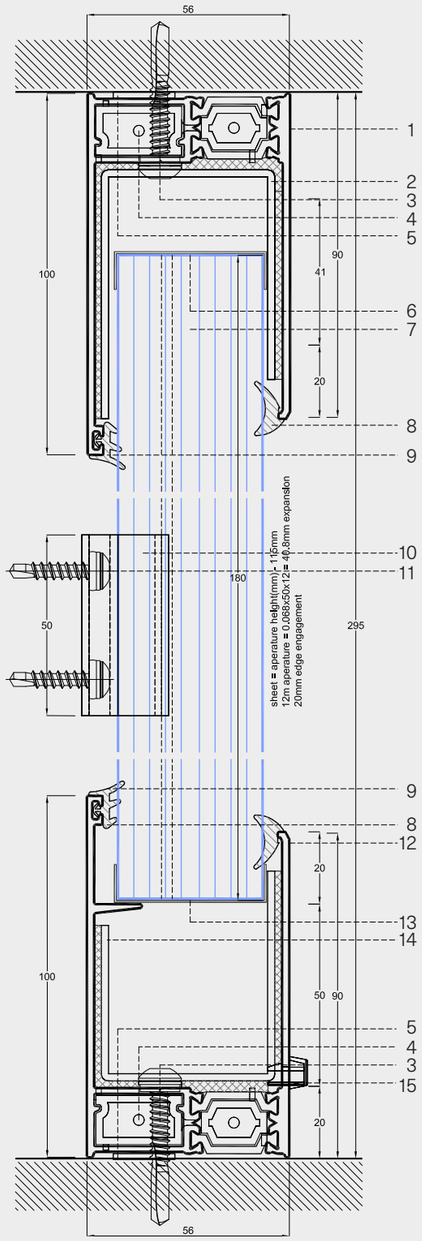
9
AC 405 B
Exterior Wedge Gasket

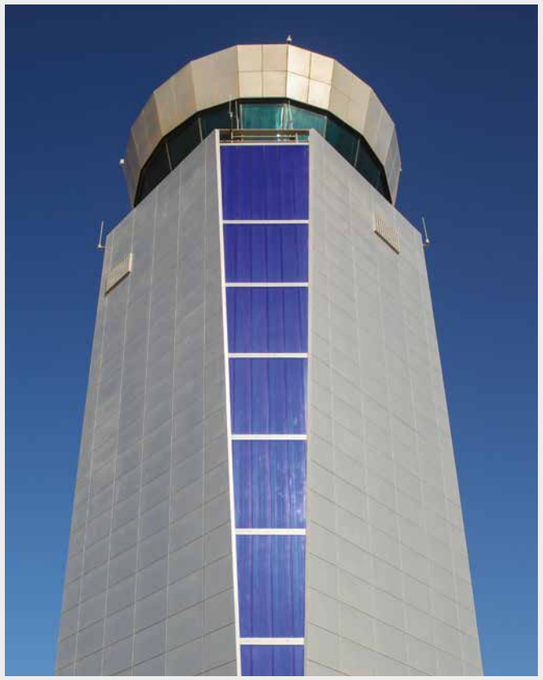
10
305 839
Click Seal Butyl Mastic

11
AC 406 E
Sealing Tape

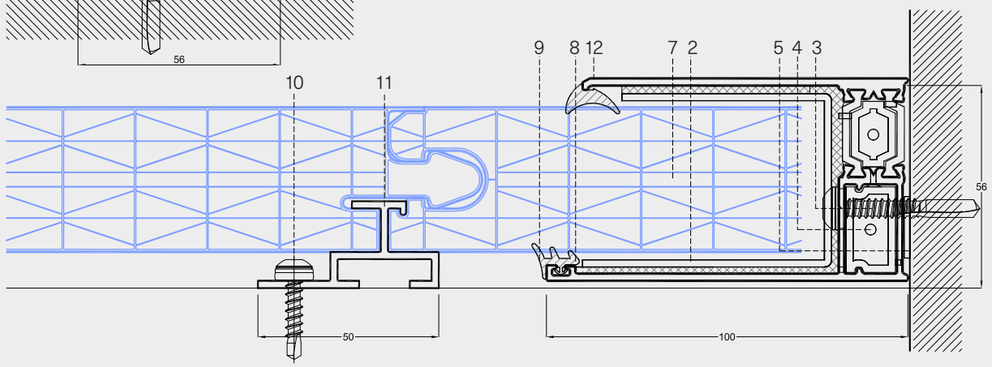
12
AC 407 E
Ventilating Tape

INSTALLATION DETAILS



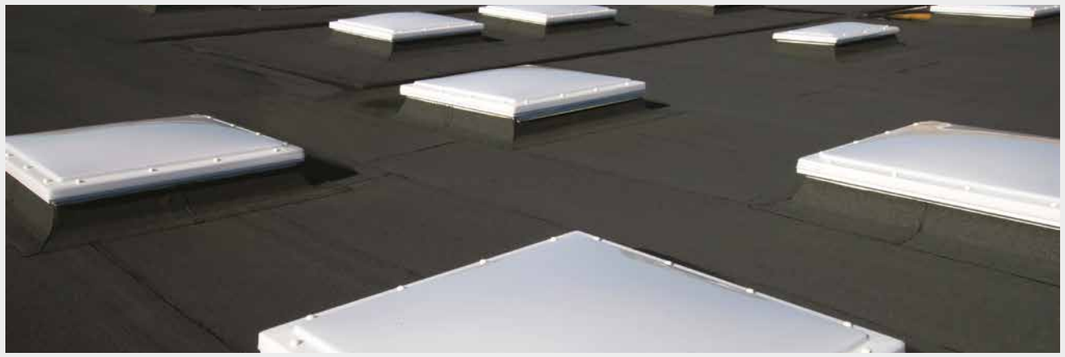


1. Thermally broken top and side profile - AC402BMD
2. Top and side profile sealing bracket - AC402TSBS
3. A4 stainless steel profile fastener - by others
4. Top and side junction bracket - AC402MCB
5. Click seal butyl tape - 305839
6. Die cut sealing tape
7. 40mm 10wall Marlon Clickfix interlocking panel
8. Exterior wedge gasket - AC405B
9. Internal E gasket - AC404B
10. 50mm Aluminium purlin clip - AC401E50
11. A4 stainless steel purlin fastener - by others
12. Thermally broken base profile - AC403BMD
13. Die cut ventilating tape
14. Base profile sealing bracket - AC403BBS
15. Drainage slot cover cap - AC403BVC



Sheet = aperture height (mm) - 115mm
12mm aperture = 0.068 x 50 x 12 = 40.8 mm expansion
20mm edge engagement

Mardome Trade



Mardome Trade has been designed for optimal use of natural light and provides stylish, contemporary looks as standard. Designed with features to ensure quick and easy installation, Mardome Trade is the ideal choice for flat roofs with options to satisfy every specification and budget. There are also a range of added extras to choose from to suit every new build or refurbishment project. Mardome Trade is available in standard sizes from 450x450mm up to 2400x1800mm with a choice of low rise dome or optional low rise pyramid shaped glazing units.

Key Features

- **UV Protection:** co-extruded with a UV protective coating to both sides
- **Glazing:** Glazed with Marlon FSX polycarbonate and available in double, triple or dome over structured units depending on the level of thermal insulation required
- **Thermal Performance:** Multiple glazing U-value options for efficient thermal performance with centre-pane U-value performance as low as 1.2 W/m²K
- **Light Transmission:** Available in clear, patterned or opal glazing depending on light transmission and lighting effect requirements
- **Size Range:** Huge range of sizes and options
- **Durability:** Life span up to 20 years in normal industrial conditions in the Middle East environment
- **Fragility:** Class B non-fragile to ACR[M]001 when new and fully fixed
- **Fire Rating:** Achieves B-s1,d0 to EN 13501-1 and according to UK building regulations can therefore be regarded as BROOF(t4) to EN 13501-5
- **Certificate:** BBA Approved

Applications

Mardome Trade are individual polycarbonate dome rooflights intended for installation on flat roofs of all modern building types to provide natural light.

Mardome Trade

TB416
Mardome Trade
Datasheet (ME)

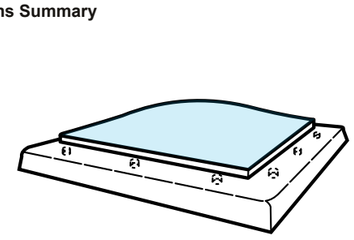
Product Description
Brett Martin Daylight Systems Mardome Trade Rooflights are individual polycarbonate dome rooflights intended for installation on flat roofs of all modern building types to provide natural light.

Mardome Rooflights are designed and manufactured under an ISO9001 approved quality system. Product options which will help to satisfy differing requirements for light transmission and thermal performance are available.

Brett Martin Daylight Systems Mardome Trade Rooflight Domes have full BBA approval and are certified under 06/4385.

Design Features
- Contemporary low rise profile (dome and pyramid options).
- Centre pane U Value as low as 1.2 W/m2K.
- Constant separation of glazing skins across full width of dome including fixing flange on triple skin and better glazing options. This avoids cold spots and minimises the risk of condensation.
- Options to satisfy requirements for light transmission and thermal performance.
- Suitable for flat roof applications with a pitch of typically 0°-15° – speak to technical for pitches greater than this.

Product Options Summary



Glazing Shape
- Dome
- Pyramid

Glazing Tint
- Clear
- Patterned
- Opal

Glazing Type
- Single Skin Polycarbonate
- Double Skin Polycarbonate
- Triple Skin Polycarbonate
- Polycarbonate Dome over Structured Polycarbonate

Appearance
Mardome Trade Rooflights provide a clean interior, and unobtrusive external appearance and therefore complement the surrounding environment. The low profile dome improves the aesthetics and also the clarity of light.

Composition
The outer dome of Mardome Trade is manufactured from 3mm impact resistant Marlon FSX Longlife polycarbonate sheet which is co-extruded with a UV protective coating to both sides. The inner domes are manufactured from 2mm impact resistant Marlon FSX Longlife polycarbonate sheeting for double and triple skin options. The polycarbonate and PVC-U which comprise the product can be recycled at the end of useful product life.

Brett Martin

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Mardome Trade

TB416
Mardome Trade
Datasheet (ME)

Durability
Mardome Trade Rooflights have a typical life span of 15 to 20 years when used in standard industrial applications in the Middle East environment. They are manufactured with a UV protective co-extruded outer layer containing high levels of UV absober on the top surface to protect against discolouration (yellowing) and degredation which would otherwise be caused by UV exposure, although some discolouration is likely in this environment. Life span may also be reduced in more aggressive environments.

Safety Requirements and CDM
Mardome Trade Rooflights achieve Class B non-fragility to ACR[M]001 when new and fully installed in accordance with Brett Martin Daylight Systems' installation guides. Foot traffic on rooflights should always be avoided; impacts such as foot traffic or a falling person may cause damage which could necessitate rooflight replacement.

Security
The design of the Mardome Trade rooflight is such that individual fixings are concealed inside security caps. Removal of these caps to gain access to the fixings is extremely difficult. In addition, polycarbonate rooflights have good resistance to impact, making breakage very difficult.

Please refer to BBA Certificate 06/4385, Section 14 for more details.

Fire Ratings
Mardome Trade Rooflights achieve Class B-s1,d0 to BS EN 13501: Part 1, and can therefore also be regarded as B_{ROOF}(t4). For more information please see TB413.

Available Sizes
Mardome Trade Rooflights are available in a domed or a pyramid profile in a range of sizes listed in the table below.

Square Size	Rectangular Size				
600 x 600	600 x 750	750 x 1650	1050 x 1500	1200 x 2400	1500 x 2400
750 x 750	600 x 900	750 x 1800	1050 x 1650	1350 x 1500	1650 x 1800
900 x 900	600 x 1050	750 x 1950	1050 x 1800	1350 x 1650	1650 x 1950
1050 x 1050	600 x 1200	900 x 1050	1050 x 1950	1350 x 1800	1650 x 2100
1200 x 1200	600 x 1350	900 x 1200	1050 x 2100	1350 x 1950	1650 x 2250
1350 x 1350	600 x 1500	900 x 1350	1050 x 2250	1350 x 2100	1650 x 2400
1500 x 1500	600 x 1650	900 x 1500	1200 x 1350	1350 x 2250	1800 x 1950
1650 x 1650	600 x 1800	900 x 1650	1200 x 1500	1350 x 2400	1800 x 2100
1800 x 1800	750 x 900	900 x 1800	1200 x 1650	1500 x 1650	1800 x 2250
	750 x 1050	900 x 1950	1200 x 1800	1500 x 1800	1800 x 2400
	750 x 1200	900 x 2100	1200 x 1950	1500 x 1950	
	750 x 1350	1050 x 1200	1200 x 2100	1500 x 2100	
	750 x 1500	1050 x 1350	1200 x 2250	1500 x 2250	

Standard Glazing Values
Mardome Trade Rooflights are available with a selection of glazing tint options depending on the required level of light transmission.

Glazing Performance							
Tint	Light Effect	Light Transmission		Shading Coefficient		Transmittance (G-Value)	
		Double Skin	Triple Skin	Double Skin	Triple Skin	Double Skin	Triple Skin
Clear	High Visibility	85%	78%	0.84	0.76	0.73	0.66
Opal	Diffused light & Solar Control	35%	32%	0.38	0.34	0.33	0.30
Patterned	Privacy	78%	72%				

Brett Martin

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Mardome Trade

TB416
Mardome Trade Datasheet (ME)

Thermal Performance
Mardome Trade units are designed for optimal thermal performance and resistance to condensation. This provides full insulation across the whole width of the rooflight (including the fixing flange), eliminating any cold spots associated with traditional methods of dome rooflight construction and giving a much higher f-factor. The elimination of cold spots means that these areas are even more resistant to condensation than the main areas of glazing, where performance is governed by U-value. See BBA certificate 06/4385 section 8 "Condensation risk" for further details.

Thermal Performance

Rooflight Variant	Centre Pane U-Value (W/m^2K)
Double Skin Polycarbonate	2.7
Triple Skin Polycarbonate	1.8
Structured Polycarbonate Inner Glazing	1.2

Acoustic Performance
Mardome Rooflights are independently tested for Rain Noise Penetration to BS EN 140-18: 2006.

Acoustic Performance

Rooflight Variant	Rain Noise Penetration (LiA)	Airborne Sound Index (Rw)
Standard Single Skin Polycarbonate		12 dB
Standard Double Skin Polycarbonate		20 dB
Standard Triple Skin Polycarbonate	61.8 dB	22 dB

10dB reduction equates to a drop of 50% in the sound level.
*Acoustic pack is only available with fixed, unventilated products.

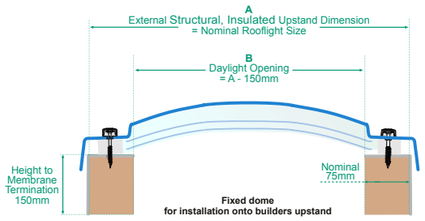
Wind and Snow Loads
Mardome Rooflights have been independently tested to show that when correctly fitted in accordance with our instructions, they will resist wind loads calculated in accordance with BS EN 1991-1-4: 2005, and imposed loads in accordance with BS EN 1873: 2005.

Please refer to BBA Certificate 06/4385, Section 9 for more info.

Resistance to Snow & Wind Loads

Rooflight Variant	Dimensions (mm)	Snow Load ($N.m^2$)	Wind Load ($N.m^2$)
Domed	1200 x 2400	1125	1500
Pyramid	1500 x 1500	1750	3000

Product Dimensions
Mardome Trade rooflights are designed to be fitted directly to an existing structural, insulated upstand.



Product Overall Weight

Nominal Size	Single Skin W (kg)	Double Skin W (kg)	Triple Skin W (kg)	Over Structured W (kg)
600 x 600	1.5	2.3	3.2	3.7
2400 x 1800	16.1	31.7	49.4	34.4

Product weight varies with rooflight size and specification, therefore a range of values are quoted in the table above. For more details contact Brett Martin Daylight Systems.

Brett Martin

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Mardome Trade

TB416
Mardome Trade Datasheet (ME)

Installation, Handling, Maintenance & Storage
Full installation details, maintenance and product care details, can be found in the relevant Technical Bulletins.

Technical Bulletins

Code	Description
TB186	Installation for Mardome Trade on 150mm, 300mm AND Direct Fix kerb
TB203	Polycarbonate Dome: Product care before & after installation
COSHH12	COSHH Data Sheet for Dome Rooflights - Product Safety and Handling Data Sheet

Brett Martin

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Mardome Reflex

Mardome Reflex is a single skin glazing only unit designed specifically for refurbishment projects where the glazing only needs to be replaced. It is available in a curved dome or pyramid profile in either clear or opal tint, or a textured glazing option. The unit is supplied with a fixing kit including weathertight washers and cover plugs. Manufactured from Marlon FSX Longlife polycarbonate, this glazing unit is up to 200 times stronger than glass. The high resistance to breakage and adverse weather conditions means Mardome Reflex is very safe and reliable.

Key Features

- **Glazing:** Glazed with Marlon FSX Longlife polycarbonate with UV protection both sides
- **Light Transmission:** Determined by glazing tint (ranging from 37% to 90%)
- **Size Range:** 450mm x 450mm up to 1800mm x 2400mm
- **Durability:** Life span up to 20 years in normal industrial conditions in the Middle East environment
- **Fragility:** Class B non-fragility to ACR[M]001
- **Fire Rating:**
  Achieves B-s1,d0 to EN 13501-1 and according to UK building regulations can therefore be regarded as BROOF(t4) to EN 13501-5

Applications

The Mardome Reflex glazing only unit is suitable for refurbishment projects on flat roofs of all modern building types.

APRIL 2022

Mardome Reflex **Mardome Circular**

TB417
Mardome Reflex & Circular
Datasheet (ME)

Product Description
Brett Martin Daylight Systems Mardome Reflex and Circular, are single skin polycarbonate dome rooflights intended for projects on flat roofs of unheated buildings to provide natural light.

Mardome Rooflights are designed and manufactured under an ISO9001 approved quality system. Product options which will help to satisfy differing requirements for light transmission are available.

Brett Martin Daylight Systems Mardome Reflex and Circular Rooflight Domes have full BBA approval and are certified under 06/4385.

Design Features
- Glazing only for refurbishment or economical circular applications.
- Contemporary design (dome and pyramid options).
- Options to satisfy requirements for light transmission.
- Suitable for flat roof applications with a pitch of typically 0°-15° – speak to technical for pitches greater than this.

Appearance
Mardome Reflex is a 'glazing only' specification dome to fit existing upstands. The low profile dome or pyramid shape improves the aesthetics and also the clarity of light. Mardome Circular domes provide an economical solution where circular rooflights are required.

Composition
The dome of Mardome Reflex and Circular is manufactured from 3mm impact resistant Marlon FSX Longlife polycarbonate sheet which is co-extruded with a UV protective coating to both sides. The polycarbonate which comprise the product can be recycled at the end of useful product life.

Durability
Mardome Reflex and Circular Rooflights have a typical life span of 15 to 20 years when used in standard industrial applications in the Middle East environment. They are manufactured with a UV protective co-extruded outer layer containing high levels of UV absober on the top surface to protect against discolouration (yellowing) and degredation which would otherwise be caused by UV exposure, although some discolouration is likely in this environment. Life span may also be reduced in more aggressive environments.

Safety Requirements and CDM
Mardome Reflex and Circular Rooflights achieve Class B non-fragility to ACR[M]001 when new and fully installed in accordance with Brett Martin Daylight Systems' installation guides. Foot traffic on all rooflights should always be avoided; impacts such as foot traffic or a falling person may cause damage which may necessitate rooflight replacement.

Security
Mardome Reflex and Circular rooflights are manufactured from polycarbonate which has an impact strength 200x greater than glass, therefore making breakage very difficult. Please refer to BBA Certificate 06/4385, Section 14 for more details.

Fire Ratings
Mardome Reflex and Circular Rooflights achieve Class B-s1,d0 to BS EN 13501: Part 1, and can therefore also be regarded as B_{ROOF}(t4). For more information please see TB413.

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Mardome Reflex Mardome Circular

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Mardome Reflex & Circular
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Available Sizes & Options
Available in 70 mm and 100 mm flat flanges, Mardome Reflex can be mechanically fixed to existing kerbs of varying dimensions.

Square	Rectangular										Circular
450 x 450	600 x 750	750 x 900	900 x 1050	1050 x 1200	1200 x 1350	1350 x 1500	1500 x 1650	1650 x 1800	1800 x 1950	600
600 x 600	600 x 900	750 x 1050	900 x 1200	1050 x 1350	1200 x 1500	1350 x 1650	1500 x 1800	1650 x 1950	1800 x 2100	750
750 x 750	600 x 1050	750 x 1200	900 x 1350	1050 x 1500	1200 x 1650	1350 x 1800	1500 x 1950	1650 x 2100	1800 x 2250	900
900 x 900	600 x 1200	750 x 1350	900 x 1500	1050 x 1650	1200 x 1800	1350 x 1950	1500 x 2100	1650 x 2250	1800 x 2400	1050
1050 x 1050	600 x 1350	750 x 1500	900 x 1650	1050 x 1800	1200 x 1950	1350 x 2100	1500 x 2250	1650 x 2400		1200
1200 x 1200	600 x 1500	750 x 1650	900 x 1800	1050 x 1950	1200 x 2100	1350 x 2250	1500 x 2400			1350
1350 x 1350	600 x 1650	750 x 1800	900 x 1950	1050 x 2100	1200 x 2250	1350 x 2400				1500
1500 x 1500	600 x 1800	750 x 1950	900 x 2100	1050 x 2250	1200 x 2400					1800
1650 x 1650										
1800 x 1800										

Standard Glazing Values
Mardome Reflex and Circular Rooflights are available with a selection of glazing tint options depending on the required level of light transmission.

Glazing Performance		
Tint	**Light Effect**	**Light Transmission**
Clear	High Visibility	90%
Opal	Diffused light & Solar Control	37%
Patterned	Privacy	84%

Wind and Snow Loads
Mardome Rooflights have been independently tested to show that when correctly fitted in accordance with our instructions, they will resist wind loads calculated in accordance with BS EN 1991-1-4: 2005, and imposed loads in accordance with BS EN 1873: 2005.

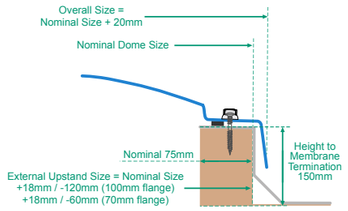
Please refer to BBA Certificate 06/4385, Section 9 for more info.

Resistance to Snow & Wind Loads			
Rooflight Variant	**Dimensions (mm)**	**Snow Load ($N.m^2$)**	**Wind Load ($N.m^2$)**
Domed	1200 x 2400	1125	1500
Pyramid	1500 x 1500	1750	3000

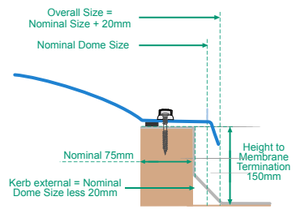
Product Dimensions
Product weight varies with rooflight size, therefore a range of values are quoted. For more details contact Brett Martin Daylight Systems.

Product Overall Weight		
Rooflight Variant	**Nominal Size**	**Weight (kg)**
Reflex Dome direct to builders upstand	450 x 450	0.9
	2400 x 1800	16.1
Circular Dome direct to builders upstand	600 x 600	1.3
	1800 x 1800	10.2

Note: Based on single skin domes.



Mardome Reflex



Mardome Circular

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Mardome Reflex Mardome Circular

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Installation, Handling, Maintenance & Storage
Full installation details, maintenance and product care details, can be found in the relevant Technical Bulletins.

Technical Bulletins	
Code	**Description**
TB185	Installation for Mardome Reflex AND Circular
TB203	Polycarbonate Dome: Product care before & after installation
COSHH12	COSHH Data Sheet for Dome Rooflights - Product Safety and Handling Data Sheet

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Brett Martin Daylight Systems operates a policy of continuous product improvement, and reserves the right to alter specifications at any time without notice. Every effort has been taken to ensure all details contained in this document are correct at the time of going to press but this document should be used only as a guide and does not in any way form part of a contract or warranty. It is the customer's responsibility to ensure that the product is suitable for the actual conditions of use, which are beyond the control of Brett Martin Daylight Systems.

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