



Daylight Systems

SITE ASSEMBLED ROOFLIGHTS - IN PLANE



marloncs
LONGLIFE

safelight

triliteultra

trilite

cleartherm2

Natural Daylight

- Improves concentration
- Leads to better productivity
- Creates environments people want to spend time in
- Saves energy, reduces CO₂ emissions & helps meet Part L

In plane site assembled rooflights provide an excellent, cost-effective way of getting natural light into a wide variety of buildings. Brett Martin Daylight Systems offers safe, effective rooflights that remain simple to install and are very cost competitive.



In Plane Site Assembled Rooflights



Daylight Systems

Site assembled rooflights from Brett Martin Daylight Systems, manufactured in both GRP and polycarbonate, offer a wide range of options and choice of product performance. Quick and easy to install into the surrounding corrugated sheeting, all sheets achieve the highest levels of profile accuracy and provide a range of safety levels, U values and fire ratings. Single, double and triple skin rooflights are available for a huge variety of applications from canopies to warehouses and factories to retail and leisure facilities.

GRP - Glass Reinforced Polyester

safelight

- Safest GRP rooflight available, can remain non-fragile for over 30 years
- Unequalled safety margins and unmatched rigidity
- With 'Diamond' long life surface protection, providing optimum weather performance and unequalled durability

trilite

- Usually meets the minimum required safety standard
- Available in weights from 1.83kg/m² (6oz) to 3.05kg/m² (10oz)
- All weather sheets supplied with 'Superlife' enhanced UV surface protection

triliteultra

LINER

- Heavyweight lining panel with a weight of 4.5kg/m²
- As this key element in providing safety is installed first, the rooflight becomes safer earlier
- The best option when the roof is lined out

triliteultra

- Range of heavyweight sheets offering significantly greater safety margins than the minimum requirement
- Advanced reinforcement provides optimum strength
- Supplied with 'Superlife' enhanced UV surface protection

cleartherm2

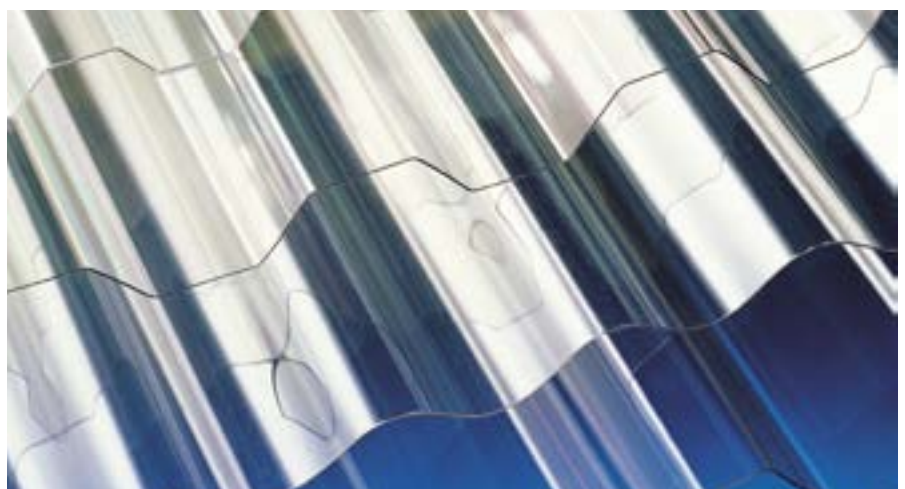
- Range of thermal insulating layer options
- Achieves standard U-value of 1.3W/m²K in both GRP and polycarbonate rooflight constructions with options of 1.0 and 0.9W/m²K

Polycarbonate

marloncs

LONGLIFE

- Provides outstanding shatter resistance
- Available in a wide range to suit profiled roofing and cladding materials
- Clear material has excellent light transmission, whilst tints allow control of light
- Co-extruded UV protection cuts out 98% of harmful UV radiation, reducing the effect of weathering



Rooflights are an excellent way of letting natural light in.



Safe Daylight

Natural daylight options with non-fragile rooflights

Safety is of paramount importance and it can be achieved with many different rooflight assemblies. With an outstanding range of rooflights available and exceptional technical expertise, Brett Martin Daylight Systems' comprehensive service ensures a correctly designed and specified non-fragile rooflight option for any building that will also meet all other criteria such as light transmission, type of light, aesthetics and budget.

Almost all Trilite rooflights can be specified to satisfy safety requirements and provide non-fragile classification, whilst options such as Safelight and Trilite Ultra have outstanding safety credentials well in excess of the minimum recommended safety margins. Correctly installed and specified Marlon CS Longlife rooflights will achieve a non-fragility rating without the need for additional safety measures.



Safety

What do I need to consider to specify a GRP rooflight with the correct level of safety for my building?

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

Safelight

Safelight provides the highest level of safety and longevity, satisfying the 'HSE' preferred option for long term non-fragility, with good light transmission and unique Diamond' surface protection. It is suitable for roofs that will require frequent and unlimited access for a number of reasons, including maintenance, access to monitoring equipment, ventilation ducts or other services, and, in the case of stadia, lighting or TV cameras. Even in situations where the roof has gantries and walkways, if people are regularly on a roof, risks will inevitably increase. In these instances, Safelight will provide the optimum level of safety.

Trilite Ultra

Trilite Ultra offers substantially increased safety margins over standard Trilite and is suitable for projects that will require regular roof access after construction. In these situations, Trilite Ultra will provide both an increased margin of safety and length of time the rooflight will remain safe.

Trilite

Correctly specified Trilite rooflights can generally achieve Class B and Class C non-fragility when new, and are available to meet industry recommendations for non-fragility for 25 years, as outlined in NARM Technical Document NTD03. These rooflights are most commonly used in simple, low cost structures where there is little or no roof access required after installation.

Brett Martin Daylight Systems recommend that you never walk on a rooflight.

Rooflight Options

Rooflight Construction	Typical Material Option	Non-Fragility Classification	Safety Level	Roof Access	Likely Period of Non-Fragility
Lining Panel Only	Trilite 2.4	Class C	Minimum	Not Suitable	Period of Construction
Lining Panel & Weather Sheet	Trilite 2.4 & Trilite 1.8	Class B	Good	Infrequent	5 - 20 years
Lining Panel & Weather Sheet	Trilite 2.4 & Trilite 2.4	Class B	Good	Infrequent	25+ years
Lining Panel & Weather Sheet	Trilite 2.4 & Trilite Ultra 36	Class B	High	Regular	25+ years
Lining Panel & Weather Sheet	Trilite 2.4 & Trilite Ultra 45	Class B	Very High	Frequent	25+ years
Lining Panel & Weather Sheet	Trilite 2.4 & Safelight	Class B	Exceptional	Frequent	30+ years

* There are numerous material combinations, only the most common have been illustrated.



Technical Support

Brett Martin Daylight Systems' Technical Bulletins provide full details on safety performance of all rooflights.

Energy Performing Buildings

Site assembled rooflights make a significant contribution to reducing a building's carbon footprint and energy costs, and to improving the overall internal environment.

Energy Saving

Rooflights have a major impact on the energy efficiency of a building. Part L and research demonstrates that installing between 15%-20% rooflights can greatly reduce a buildings CO₂ emissions.

Rooflights are performance enhancers

Rooflights don't just improve the external environment. They improve the internal environment too. People prefer natural light to electric light and there is a growing body of scientific evidence to suggest that it helps us perform better. Studies have shown that school children learn better, hospital patients recover faster, factory workers are more productive and shoppers linger longer, spending more.

Thermally efficient daylight

In order for a building to meet its CO₂ emissions targets as set out by Part L 2010 (2013 edition) a minimum performance standard for rooflights averaged over the whole roof has been set at 2.2W/m²K. Site assembled rooflights with a U value of 1.3 to 1.9W/m²K as standard significantly contribute to reducing the need for artificial lighting and ultimately reducing carbon emissions to the environment.

Sustainability

Brett Martin Daylight Systems is actively committed to implementing an environmental policy to create a 100% carbon neutral organisation:

- Developing products that last the full estimated life time of a building, therefore reducing additional usage of raw materials
- Recycle Brett Martin Daylight Systems rooflights at the end of their life
- Minimising waste and maximising re-use and recycling where possible through the Environmental Policy ISO 14001
- Minimising polluting emissions to water, air and soil

To find out more about Part L 2010 (2013 edition) and the implications for rooflights, contact our technical team.

Solar control

Independent research carried out by the De Montfort University shows that in a large volume building, with evenly distributed rooflights and moderate internal heat gains, a rooflight area up to 20% will not cause solar gain.

15%-20% roof area

Installing from between 15% to 20% of the roof area in site assembled rooflights is a practical solution to ensure the lighting levels within the building are adequate and will reduce the artificial lighting requirement. The notional building used in the Regulations assumes 12% roof area in rooflights and research demonstrates that installing less than this amount will make compliance more difficult.



i Technical Support
Further advice on Part L and De Montfort University work is available from Brett Martin Daylight Systems' technical department.



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GRP - Glass Reinforced Polyester

Brett Martin Daylight Systems' Trilite brand of GRP is used extensively to provide natural daylight into a wide range of buildings and continues to be the UK's leading brand of GRP rooflight as a result of its consistent quality, strength and high light transmission levels. GRP is a versatile, practical and cost-effective rooflight choice. It provides diffused light and minimises distracting shadows, so is ideal in sporting, commercial, industrial and retail applications. Brett Martin Daylight Systems was the first company to produce GRP rooflights with extended weathering capabilities and has been manufacturing its Trilite brand of quality GRP sheet for almost 50 years, with over 900 profiles now available.

safelight

Safelight is a heavyweight GRP sheet that provides the safest form of daylight. The sheet is approximately 3mm thick, with a weight of 5.5kg/m².

- It remains undamaged by inadvertent foot traffic and provides outstanding levels of safety
- Engineered for ultimate durability
- Unique 'Diamond' surface protection ensures maximum durability
- Drop tests show that it has unequalled safety margins that always match and often exceed surrounding metal sheets
- Suitable for roofs that require regular and unlimited roof access
- For easy identification of Safelight by roofers from above, a unique, blue 'safety' logo is incorporated deep into the heavyweight laminate
- Safelight also has excellent light transmission levels of 65% for single skin applications, 49% for double skin and 41% for triple skin
- It provides better light levels for longer than any other 'safe' rooflight
- Unmatched rigidity ensures non-fragility (Class B non-fragile to ACR[M] 001) can be retained for over 30 years, with minimal risk from poor fixing or fixing degradation
- A tight fit at laps is created by spreading the load from fixings and compressing the seals evenly, meaning less chance of leakage
- Rigid Safelight sheet also deflects less under wind-load, reducing sheet movement and subsequently causing less damage and wear to seals and fixings
- A wide range of profiles ensures that it can be specified to match almost all roof cladding systems

Brett Martin Daylight Systems' unique 'Diamond' surface protection comes as standard on Safelight.

- 'Diamond' surface protection gives excellent resistance to weathering
- It provides outstanding chemical and pollution protection
- It is suitable for use in a variety of very corrosive environments
- 'Diamond' surface protection preserves the physical properties of the sheet
- It significantly reduces UV discoloration and weathering for 30 years
- It gives the rooflight an anticipated service life of over 30 years





Argos Store
Retail Application



Cardington Hangars
Warehouse Application



London Olympic Stadium
Recreation Application



Holt Farm
Warehouse Application



City Academy
Recreation Application

triliteultra

- Trilite Ultra 45 and 36 sheets are suitable where roof access after construction is regular
- Trilite Ultra sheets are supplied as standard with the 'Superlife' enhanced UV protective finish to minimise the harmful effects of the sun and ultra-violet radiation and ensure yellowing due to UV degradation is virtually eliminated
- For increased longevity, 'Diamond' surface protection can be specified, to supply added resistance to weathering, UV degradation and aggressive environments

triliteultra45

Trilite Ultra 45 is a heavyweight, 4.5kg/m² sheet that provides significantly greater safety levels than the minimum requirements and is unaffected by loads typical of inadvertent foot traffic or a falling person.

triliteultra36

Trilite Ultra 36 is a heavyweight, 3.6kg/m² sheet that also provides significantly greater safety levels than the minimum requirements and is unaffected by loads such as inadvertent foot traffic, but large impacts such as a falling person may cause minor damage.

triliteultra LINER

Trilite Ultra Liner is a heavyweight lining panel with a weight of 4.5kg/m² that provides generous safety margins at the lining out phase, for safer working conditions. It has a life expectancy of over 30 years. It is ideal when there is a high risk of accidental foot traffic during subsequent roof construction.

trilite

- Trilite is a tried and tested GRP sheet that is cost-effective and versatile
- It is the only GRP sheet to be continuously indelibly printed for easy identification
- It provides consistent quality and strength
- The Trilite range includes profiles to suit almost all profiled roof coverings, with a choice of over 900 now available
- It also comes in a range of fire ratings - Class 0, Class 1 and Class 3 - with Class 1 being the standard for lining panels
- Trilite has light transmission levels of over 80% for 2.4kg/m² and 1.83kg/m² sheet
- Trilite weather sheets are supplied as standard with the 'Superlife' enhanced UV protective system

Trilite 3.0

With a weight of 3.0kg/m², Trilite 3.0 sheets in typical applications are resistant to damage during construction. They are suitable on projects where there is limited or controlled access needed after construction.

Trilite 2.4

Trilite 2.4 sheets have a weight of 2.4kg/m² and are the minimum requirement to achieve Class C liner non-fragility during construction for most profiles and assemblies. They are suitable for projects that will require minimal roof access.

If Trilite 3.0 and Trilite 2.4 are used as lining panels, the rooflight will become non-fragile at lining out stage.

Trilite 1.8

This 1.8kg/m² sheet is a cost-effective option but only achieves non-fragility when used in a double skin rooflight with Trilite 2.4 and above.

cleartherm2

Cleartherm2 is an internal skin of specifically engineered structured polycarbonate manufactured to be used as an intermediate skin with Safelight, Trilite and Marlon CS Longlife sheets, to create thermally efficient triple skin rooflights. Cleartherm2 offers a range of thermal insulating options by incorporating differing structural configurations within the units.

- Cleartherm2 achieves a standard U-value of 1.3W/m²K with options of 1.0 and 0.9W/m²K.
- Its use ensures better thermal performance over standard triple skin rooflights, due to Cleartherm's own inherently higher U value, deriving from its internal structure which creates the insulating air gap
- Using Cleartherm2 also gives less reduction in light transmission than other options, due to the 'glass clear' clarity of the polycarbonate used
- Easily installed into traditional double skin rooflight constructions to create a triple skin rooflight, it eliminates the need for additional spacer systems or fillers
- Its very simple installation adds little extra time or complexity to rooflight construction
- Offers 70% better insulation than current Part L Building Regulations requirements, ensuring compliance with future regulations.

roofsealants

A comprehensive range of Roof Sealants including foam fillers, available in a wide range of options, and tapes, sealants and adhesives, manufactured and sourced from the best in the industry.

Profiled Polycarbonate Sheet

Marlon CS Longlife profiled polycarbonate sheet can be used as a rooflight in single, double or triple skin form and is available in different sheet thicknesses for different applications, in a wide and increasing range to suit profiled roofing and cladding materials.

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LONGLIFE

Marlon CS Longlife has co-extruded UV protection which cuts out 98% of harmful UV radiation, protecting both people and materials under it.

- The UV protection also significantly reduces sheet weathering
- The sheet provides direct natural daylight into a building, with clear polycarbonate providing almost 90% light transmission, whilst a variety of tints allow solar control
- Heat Guard uses a specially developed pigment which transmits light but deflects solar radiation, so can reduce solar heat gain through the roof by up to 50% compared to clear material
- Shatter resistance of up to two hundred times that of glass means it is ideal where vandalism could be a problem, with the added benefit of excellent fire performance (Class 1Y in the UK)
- It can also withstand temperature extremes of -40°C to 100°C without any significant deterioration of its properties and will not degrade or yellow due to heat
- In almost every situation, correctly specified and installed Marlon CS Longlife double skin rooflights will achieve a rating of Class B non-fragility to ACR[M] 001
- Ideal where a 'glass clear' in plane rooflight is required
- Methods of installation for Marlon CS Longlife are different to installing GRP, please contact the Technical Department for further details



GRP vs Polycarbonate

Safety

Both can be specified to provide non-fragile rooflight installations - rooflights constructed from both materials can achieve Class B non-fragility to ACR[M] 001. Trilite Ultra and Safelight offer higher safety margins and increased resistance to damage from foot traffic.

Light Transmission

GRP provides diffused light, limiting glare and giving an even distribution of light at ground level, with few shadows. A single skin of 2.44kg/m² sheet will provide a light transmission of 80-85%. Superlife and Diamond surface protection limit harmful UV radiation. Clear polycarbonate offers direct light transmission of almost 90%, whilst tints offer solar control. The outer skin also has UV protection which limits harmful UV radiation.

Fire Performance

GRP is available with a range of fire ratings, does not soften and is effective in containing flames, smoke and hot gases. Polycarbonate softens at relatively low temperatures allowing fire, smoke and hot gases to escape. It is a self-venting material.

Longevity

GRP can be specified with a life expectancy of over 30 years. Polycarbonate provides high light transmission levels for at least 10 years and weatherability for over 15 years.

Service Temperature

Both can withstand both high and low service temperatures - GRP from -20°C to +80°C, polycarbonate from -20°C to +100°C.

Impact Resistance

GRP rooflights can be specified to match the non-fragility rating of the surrounding roof when new and also be specified to retain this non-fragility for 25 years, whilst many of our heavier GRP rooflights have greater safety margins and will greatly exceed this performance. Polycarbonate has exceptional shatter resistance of up to two hundred times greater than glass. Both materials are available in a range of weights and thicknesses to enable specifications to be written to Class C or Class B non-fragility.

Working with in plane site assembled rooflights

Handling

GRP and polycarbonate sheets can be damaged by incorrect handling and should be treated with care. The sheets are usually delivered in loose stacks and need to be unloaded and manoeuvred by hand. As the sheets have sharp edges and corners, they should be regarded as a hazard, and protective measures such as gloves and safety clothing should be worn. If forklifts are used, care must be taken to avoid damage and use of a separate support sheet may be necessary. Handling rooflights in windy conditions should be avoided, as they have a large surface area. Special care should also be taken when carrying across exposed rooftops.

Stacking

GRP and polycarbonate sheets should be stacked on flat ground on 100mm wide wooden battens (free from nails and debris) not more than 1.5m apart, making sure that no sharp objects are under the sheets. Different profiles in the same stack must be separated with battens, located directly above each other and maximum stack height should be 1.2m high. Tie down stacks or individual sheets to secure against wind but never put weights on rooflights.

Storage

GRP and polycarbonate sheets should not be exposed to weather before installation and should be stored indoors if possible, or kept covered with a carefully secured tarpaulin to prevent rain or sun damage.

Installation

Correct installation of rooflights is important to ensure they achieve the correct level of safety performance and give long term weather tightness. Please refer to our Technical Guides for full information. Methods of installation for GRP and Marlon CS Longlife are different, please contact the Technical Department for further details.

Maintenance

In typical UK conditions there should be no significant deterioration or yellowing of GRP rooflights for 20 years and the sheets should remain serviceable in excess of 25 years, subject to correct maintenance, with 'Diamond' surface protection increasing this to over 30 years. Polycarbonate sheets should remain serviceable in excess of 15 years. Rooflights, fixings and sealants should be inspected for damage every 2-3 years. Fixings should be re-tightened or replaced as necessary. Rooflights should not be painted over with an opaque covering, as this can be dangerous and may cause premature failure.

Cleaning

Use warm water and mild detergent to both prevent any growth that may attack the protective surface, and remove dirt that could lead to heat build up. Use of harsh chemicals or abrasive cleaners should be avoided.



Technical Support

Please contact Brett Martin Daylight Systems for further guidance, including technical bulletins on installation, handling and maintenance, COSHH data sheets, NBS product specification clauses and CPD seminars.





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