

## Statement of Verification

BREG EN EPD No.: 000346

Issue 03

This is to verify that the  
**Environmental Product Declaration**  
provided by:  
**Brett Martin Daylight Systems**



is in accordance with the requirements of:  
**EN 15804:2012+A1:2013**  
and  
**BRE Global Scheme Document SD207**

This declaration is for:  
**Site Assembled Trilite / Cleartherm / Trilite GRP Rooflight**

### Company Address

Sandford Close  
Dutton Road  
Alderman's Green Industrial Estate  
Coventry  
CV2 2QU



Signed for BRE Global Ltd

Emma Baker  
Operator

05 October 2023  
Date of this Issue

30 November 2020  
Date of First Issue

29 November 2025  
Expiry Date



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## Environmental Product Declaration

EPD Number: 000346

### General Information

| EPD Programme Operator                                                                                                                                                                                                                                                                                                                  | Applicable Product Category Rules                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| BRE Global<br>Watford, Herts<br>WD25 9XX<br>United Kingdom                                                                                                                                                                                                                                                                              | BRE Environmental Profiles 2013 Product Category Rules for Type III environmental product declaration of construction products to EN 15804:2012+A1:2013 |
| Commissioner of LCA study                                                                                                                                                                                                                                                                                                               | LCA consultant/Tool                                                                                                                                     |
| Brett Martin Daylight Systems<br>Sandford Close,<br>Dutton Road,<br>Alderman's Green Industrial Estate,<br>Coventry<br>CV2 2QU                                                                                                                                                                                                          | BRE LINA                                                                                                                                                |
| Declared/Functional Unit                                                                                                                                                                                                                                                                                                                | Applicability/Coverage                                                                                                                                  |
| 1m <sup>2</sup> of Triple Skin site assembled triple skin unit, comprising Trilite weather sheet / Cleartherm thermal interlayer / Trilite liner sheet weighing 5.67kg/m <sup>2</sup>                                                                                                                                                   | Product Average.                                                                                                                                        |
| EPD Type                                                                                                                                                                                                                                                                                                                                | Background database                                                                                                                                     |
| Cradle to Gate with options                                                                                                                                                                                                                                                                                                             | Ecoinvent v3.2 & BRE LINA database V2.0.62                                                                                                              |
| Demonstration of Verification                                                                                                                                                                                                                                                                                                           |                                                                                                                                                         |
| CEN standard EN 15804 serves as the core PCR <sup>a</sup>                                                                                                                                                                                                                                                                               |                                                                                                                                                         |
| Independent verification of the declaration and data according to EN ISO 14025:2010<br><input type="checkbox"/> Internal <input checked="" type="checkbox"/> External                                                                                                                                                                   |                                                                                                                                                         |
| (Where appropriate <sup>b</sup> )Third party verifier:<br>Pat Hermon                                                                                                                                                                                                                                                                    |                                                                                                                                                         |
| a: Product category rules<br>b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)                                                                                                                                                                          |                                                                                                                                                         |
| Comparability                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                         |
| Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A1:2013. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A1:2013 for further guidance |                                                                                                                                                         |

## Information modules covered

| Product                             |                                     |                                     | Construction                        |                                     | Use stage                      |                          |                          |                          |                          |                          |                          | End-of-life               |                          |                          |                                     | Benefits and loads beyond the system boundary |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|-------------------------------------|-----------------------------------------------|
|                                     |                                     |                                     |                                     |                                     | Related to the building fabric |                          |                          |                          |                          | Related to the building  |                          |                           |                          |                          |                                     |                                               |
| A1                                  | A2                                  | A3                                  | A4                                  | A5                                  | B1                             | B2                       | B3                       | B4                       | B5                       | B6                       | B7                       | C1                        | C2                       | C3                       | C4                                  | D                                             |
| Raw materials supply                | Transport                           | Manufacturing                       | Transport to site                   | Construction – Installation         | Use                            | Maintenance              | Repair                   | Replacement              | Refurbishment            | Operational energy use   | Operational water use    | Deconstruction demolition | Transport                | Waste processing         | Disposal                            | Reuse, Recovery and/or Recycling potential    |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>                      |

Note: Ticks indicate the Information Modules declared.

## Manufacturing site(s)

Brett Martin Daylight Systems  
 Sandford Close, Dutton Road,  
 Alderman's Green Industrial Estate,  
 Coventry  
 CV2 2QU

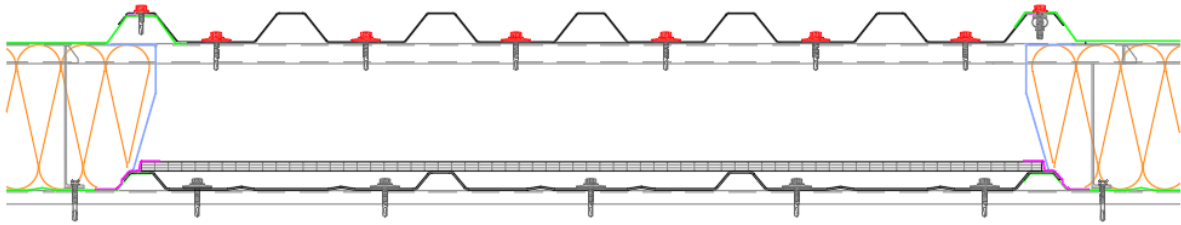
## Construction Product:

### Product Description

Trilite rooflights are corrugated translucent GRP sheets, and are 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 or Class 1. Trilite rooflights are available to match most corrugated profiles for roof or wall, and are installed in site assembled applications. Trilite rooflights are typically of width 1000mm.

### Technical Information

| Property                                                  | Value, Unit                                                                     |
|-----------------------------------------------------------|---------------------------------------------------------------------------------|
| Harmonised Technical Specification EN 1013:2012 + A1:2014 | N.B. NPD = No performance declared                                              |
| Sheet weight                                              | Up to 3.0 kg/m <sup>2</sup>                                                     |
| External fire performance (EN13501 part 5)                | B <sub>ROOF</sub> (t4)                                                          |
| Reaction to fire                                          | NPD - UK fire ratings declared separately                                       |
| Water / Air permeability                                  | Pass                                                                            |
| U-value                                                   | 1.3 W/m <sup>2</sup> K                                                          |
| Light Transmission                                        | 55% - 58%                                                                       |
| G-Value                                                   | 0.51 - 0.55                                                                     |
| Large soft body impact resistance (assembly)              | NPD. Performance to ACR(M)001 declared separately in accordance with NARM NTD03 |
| Dimensional tolerances                                    | Pass                                                                            |
| All other properties                                      | NPD                                                                             |



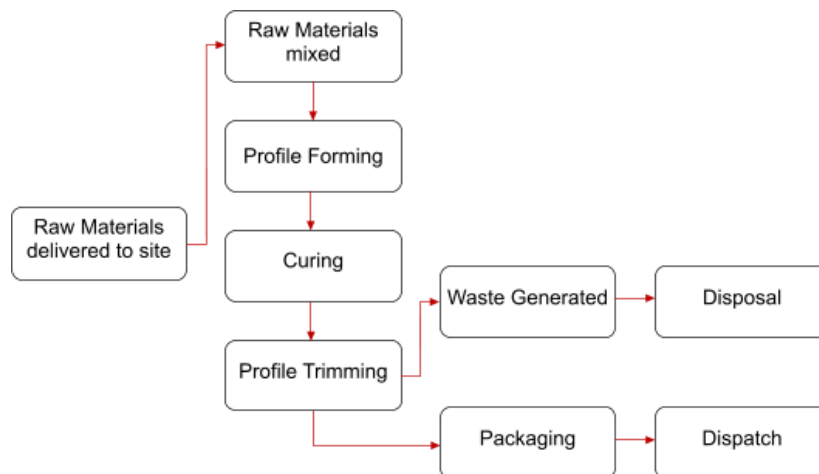
## Main Product Contents

| Material/Chemical Input       | %    |
|-------------------------------|------|
| GRP Resin                     | 50.7 |
| Glass fibre                   | 27.9 |
| Minor Chemicals               | 3.3  |
| Film                          | 0.8  |
| Cleartherm thermal interlayer | 17.3 |

## Manufacturing Process

The polyester resin and minor chemicals are mixed and deposited on a carrier film. Glass rovings are spread on top and sandwiched by a second film. The flat uncured sheet is then formed to the desired profile and passed through an oven to cure. The edges of the sheet are trimmed and sheets cut to the desired length.

## Process flow diagram



## Construction Installation

### Liner Panel

#### Main fasteners - Liner panel

Stainless Steel 5.5mm diameter fastener with a large diameter washer, minimum 5 fixings per purlin.

#### Side Laps - Liner panel

The GRP should overlap the metal on both sidelaps. 50mm wide film backed butyl tape applied over the lap joints.

#### End Laps - Liner panel

Endlaps should be sealed with a 6x5mm strip of butyl mastic inside the lap along the line of fasteners.

### Cleartherm layer

Laid in place after liner panel installed. This can be held in place with 50mm wide film back butyl tape or 9x3mm butyl sealant can be applied to the crown on each side lap of the liner panel.

### Outer Sheet

#### Main fasteners - Outer sheet

Stainless Steel 5.5mm diameter with large diameter washed with bonded seal, typically poppy red colour. Located in the top flange of ashgrid bar, zed spacer or equivalent. Minimum 5 fixings per purlin.

#### Endlap Sealant - Outer Sheet

End laps should be sealed with 2 row of 6x5mm section UV stable butyl mastic. Located above and below the line of fasteners, no more than 25mm from line of fasteners.

#### Side stitch fasteners - rooflight overlap

Standard stitching screws should be used at 300mm-400mm centres. Typically poppy red colour.

#### Side stich fasteners - rooflight underlap

Expanding rubber bolts should be fitted at 300mm-400mm centres.

#### Sidelap sealant - Outer sheet

Single strip of 6x5mm UV stable butyl mastic, positioned on crown of sheet, positioned on the crown of the sheet just outside the line of sidelap fasteners.

## Use Information

Maintenance involves cleaning and inspection after one year, then subsequently at an appropriate frequency (depending on results of previous inspections and environmental conditions), typically 2-3 years but more frequently if necessary, and never exceeding 5 years.

The general condition of GRP rooflights, and the security of fasteners and sealants should be checked periodically as part of the overall maintenance program for the structure into which they are incorporated. If a rooflight is found to be damaged it must be replaced in accordance with the original specification.

## End of Life

It is assumed that the end of life the GRP rooflights, Cleartherm layer, sealants and fixings will be disposed of via landfill, as this is the worst case outcome.

## Life Cycle Assessment Calculation Rules

### Declared / Functional unit description

1m<sup>2</sup> of Triple Skin site assembled triple skin unit, comprising Trilite weather sheet / Cleartherm interlayer / Trilite liner sheet, weighing 5.67 kg/m<sup>2</sup>.

### System boundary

This is a cradle to gate with options EPD (i.e. processes covered in the extraction and processing in modules A1 to A3), the construction stage in modules A4 and A5 and end of life scenario in module C4.

### Data sources, quality and allocation

Manufacture-specific data from Brett Martin Daylight Systems covering a production period of 1 year [01/01/2019 to 31/12/2019] from the Coventry site has been used for this EPD.

BMDS offer a range of rooflights, all manufactured at the Coventry site. For inputs where there is no alternative way to scale data, sales data for 2019 has been used to ascertain total usage for GRP production.

Once the total value (of energy or water) for the manufacture of GRP is known, then it has been scaled by production output in GRP linear metres, using the below equation.

$$\text{Usage} = \frac{\text{Total GRP usage} \times \text{Production output of product} \times 2}{\text{Total GRP production output}}$$

As BMDS run a large site, it is difficult to apportion waste correctly to the different manufacturing cells and therefore it is difficult to scale the waste correctly. The production waste element has been taken from the scrap allowances in the order processing system, which is based on historical material usage.

### Cut-off criteria

Data collected at the Coventry manufacturing site was used. The inventory process in this LCA includes all data related to raw material, packaging material and consumable items, and the associated transport to the manufacturing site. Process energy and water use and direct production waste are included. Environmental impacts due to administration of the manufacturing process are assumed to be below cut off criteria.

## LCA Results

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

| Parameters describing environmental impacts               |                                      |      | GWP                       | ODP              | AP                        | EP                                         | POCP                                    | ADPE         | ADPF                     |
|-----------------------------------------------------------|--------------------------------------|------|---------------------------|------------------|---------------------------|--------------------------------------------|-----------------------------------------|--------------|--------------------------|
|                                                           |                                      |      | kg CO <sub>2</sub> equiv. | kg CFC 11 equiv. | kg SO <sub>2</sub> equiv. | kg (PO <sub>4</sub> ) <sup>3-</sup> equiv. | kg C <sub>2</sub> H <sub>4</sub> equiv. | kg Sb equiv. | MJ, net calorific value. |
| Product stage                                             | Raw material supply                  | A1   | AGG                       | AGG              | AGG                       | AGG                                        | AGG                                     | AGG          | AGG                      |
|                                                           | Transport                            | A2   | AGG                       | AGG              | AGG                       | AGG                                        | AGG                                     | AGG          | AGG                      |
|                                                           | Manufacturing                        | A3   | AGG                       | AGG              | AGG                       | AGG                                        | AGG                                     | AGG          | AGG                      |
|                                                           | Total (of product stage)             | A1-3 | 3.73E+01                  | 2.75E-06         | 1.42E-01                  | 5.12E-02                                   | 2.42E-02                                | 6.90E-04     | 5.7E+02                  |
| Construction process stage                                | Transport                            | A4   | 9.81E-02                  | 1.87E-08         | 3.37E-04                  | 8.87E-05                                   | 6.96E-05                                | 1.65E-07     | 1.53E+00                 |
|                                                           | Construction                         | A5   | 1.51E+00                  | 3.55E-07         | 8.64E-03                  | 2.58E-03                                   | 9.97E-04                                | 3.00E-05     | 2.15E+01                 |
| Use stage                                                 | Use                                  | B1   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
|                                                           | Maintenance                          | B2   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
|                                                           | Repair                               | B3   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
|                                                           | Replacement                          | B4   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
|                                                           | Refurbishment                        | B5   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
|                                                           | Operational energy use               | B6   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
|                                                           | Operational water use                | B7   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
| End of life                                               | Deconstruction, demolition           | C1   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
|                                                           | Transport                            | C2   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
|                                                           | Waste processing                     | C3   | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |
|                                                           | Disposal                             | C4   | 6.04E-01                  | 1.66E-08         | 4.86E-04                  | 4.23E-02                                   | 1.75E-04                                | 9.35E-08     | 1.51E+00                 |
| Potential benefits and loads beyond the system boundaries | Reuse, recovery, recycling potential | D    | MND                       | MND              | MND                       | MND                                        | MND                                     | MND          | MND                      |

GWP = Global Warming Potential;  
 ODP = Ozone Depletion Potential;  
 AP = Acidification Potential for Soil and Water;  
 EP = Eutrophication Potential;

POCP = Formation potential of tropospheric Ozone;  
 ADPE = Abiotic Depletion Potential – Elements;  
 ADPF = Abiotic Depletion Potential – Fossil Fuels;

## LCA Results (continued)

| Parameters describing resource use, primary energy        |                                      |      | PERE     | PERM     | PERT     | PENRE    | PENRM    | PENRT    |
|-----------------------------------------------------------|--------------------------------------|------|----------|----------|----------|----------|----------|----------|
|                                                           |                                      |      | MJ       | MJ       | MJ       | MJ       | MJ       | MJ       |
| Product stage                                             | Raw material supply                  | A1   | AGG      | AGG      | AGG      | AGG      | AGG      | AGG      |
|                                                           | Transport                            | A2   | AGG      | AGG      | AGG      | AGG      | AGG      | AGG      |
|                                                           | Manufacturing                        | A3   | AGG      | AGG      | AGG      | AGG      | AGG      | AGG      |
|                                                           | Total (of product stage)             | A1-3 | 2.08E+01 | 8.00E-03 | 2.08E+01 | 4.02E+02 | 1.55E+02 | 5.57E+02 |
| Construction process stage                                | Transport                            | A4   | 2.32E-02 | 5.78E-08 | 2.32E-02 | 1.52E+00 | 0.00E+00 | 1.52E+00 |
|                                                           | Construction                         | A5   | 3.44E+00 | 6.69E-06 | 3.44E+00 | 2.31E+01 | 0.00E+00 | 2.31E+01 |
| Use stage                                                 | Use                                  | B1   | MND      | MND      | MND      | MND      | MND      | MND      |
|                                                           | Maintenance                          | B2   | MND      | MND      | MND      | MND      | MND      | MND      |
|                                                           | Repair                               | B3   | MND      | MND      | MND      | MND      | MND      | MND      |
|                                                           | Replacement                          | B4   | MND      | MND      | MND      | MND      | MND      | MND      |
|                                                           | Refurbishment                        | B5   | MND      | MND      | MND      | MND      | MND      | MND      |
|                                                           | Operational energy use               | B6   | MND      | MND      | MND      | MND      | MND      | MND      |
|                                                           | Operational water use                | B7   | MND      | MND      | MND      | MND      | MND      | MND      |
| End of life                                               | Deconstruction, demolition           | C1   | MND      | MND      | MND      | MND      | MND      | MND      |
|                                                           | Transport                            | C2   | MND      | MND      | MND      | MND      | MND      | MND      |
|                                                           | Waste processing                     | C3   | MND      | MND      | MND      | MND      | MND      | MND      |
|                                                           | Disposal                             | C4   | 5.71E-02 | 1.48E-07 | 5.71E-02 | 1.57E+00 | 0.00E+00 | 1.57E+00 |
| Potential benefits and loads beyond the system boundaries | Reuse, recovery, recycling potential | D    | MND      | MND      | MND      | MND      | MND      | MND      |

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;  
 PERM = Use of renewable primary energy resources used as raw materials;  
 PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;  
 PENRM = Use of non-renewable primary energy resources used as raw materials;  
 PENRT = Total use of non-renewable primary energy resource



## LCA Results (continued)

| Parameters describing resource use, secondary materials and fuels, use of water |                                      |      |          |                           |                           |                |
|---------------------------------------------------------------------------------|--------------------------------------|------|----------|---------------------------|---------------------------|----------------|
|                                                                                 |                                      |      | SM       | RSF                       | NRSF                      | FW             |
|                                                                                 |                                      |      | kg       | MJ<br>net calorific value | MJ<br>net calorific value | m <sup>3</sup> |
| Product stage                                                                   | Raw material supply                  | A1   | AGG      | AGG                       | AGG                       | AGG            |
|                                                                                 | Transport                            | A2   | AGG      | AGG                       | AGG                       | AGG            |
|                                                                                 | Manufacturing                        | A3   | AGG      | AGG                       | AGG                       | AGG            |
|                                                                                 | Total (of product stage)             | A1-3 | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | 5.59E-01       |
| Construction process stage                                                      | Transport                            | A4   | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | 3.56E-04       |
|                                                                                 | Construction                         | A5   | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | 3.07E-02       |
| Use stage                                                                       | Use                                  | B1   | MND      | MND                       | MND                       | MND            |
|                                                                                 | Maintenance                          | B2   | MND      | MND                       | MND                       | MND            |
|                                                                                 | Repair                               | B3   | MND      | MND                       | MND                       | MND            |
|                                                                                 | Replacement                          | B4   | MND      | MND                       | MND                       | MND            |
|                                                                                 | Refurbishment                        | B5   | MND      | MND                       | MND                       | MND            |
|                                                                                 | Operational energy use               | B6   | MND      | MND                       | MND                       | MND            |
|                                                                                 | Operational water use                | B7   | MND      | MND                       | MND                       | MND            |
| End of life                                                                     | Deconstruction, demolition           | C1   | MND      | MND                       | MND                       | MND            |
|                                                                                 | Transport                            | C2   | MND      | MND                       | MND                       | MND            |
|                                                                                 | Waste processing                     | C3   | MND      | MND                       | MND                       | MND            |
|                                                                                 | Disposal                             | C4   | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | 1.74E-03       |
| Potential benefits and loads beyond the system boundaries                       | Reuse, recovery, recycling potential | D    | MND      | MND                       | MND                       | MND            |

SM = Use of secondary material;  
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;  
FW = Net use of fresh water

## LCA Results (continued)

| Other environmental information describing waste categories |                                      |      |          |          |          |
|-------------------------------------------------------------|--------------------------------------|------|----------|----------|----------|
|                                                             |                                      |      | HWD      | NHWD     | RWD      |
|                                                             |                                      |      | kg       | kg       | kg       |
| Product stage                                               | Raw material supply                  | A1   | AGG      | AGG      | AGG      |
|                                                             | Transport                            | A2   | AGG      | AGG      | AGG      |
|                                                             | Manufacturing                        | A3   | AGG      | AGG      | AGG      |
|                                                             | Total (of product stage)             | A1-3 | 4.78E-01 | 1.98E+00 | 8.27E-04 |
| Construction process stage                                  | Transport                            | A4   | 5.75E-04 | 1.31E-01 | 1.06E-05 |
|                                                             | Construction                         | A5   | 8.22E-01 | 2.16E-01 | 5.01E-05 |
| Use stage                                                   | Use                                  | B1   | MND      | MND      | MND      |
|                                                             | Maintenance                          | B2   | MND      | MND      | MND      |
|                                                             | Repair                               | B3   | MND      | MND      | MND      |
|                                                             | Replacement                          | B4   | MND      | MND      | MND      |
|                                                             | Refurbishment                        | B5   | MND      | MND      | MND      |
|                                                             | Operational energy use               | B6   | MND      | MND      | MND      |
|                                                             | Operational water use                | B7   | MND      | MND      | MND      |
| End of life                                                 | Deconstruction, demolition           | C1   | MND      | MND      | MND      |
|                                                             | Transport                            | C2   | MND      | MND      | MND      |
|                                                             | Waste processing                     | C3   | MND      | MND      | MND      |
|                                                             | Disposal                             | C4   | 1.18E-03 | 5.98E+00 | 1.00E-05 |
| Potential benefits and loads beyond the system boundaries   | Reuse, recovery, recycling potential | D    | MND      | MND      | MND      |

HWD = Hazardous waste disposed;  
 NHWD = Non-hazardous waste disposed;  
 RWD = Radioactive waste disposed

## LCA Results (continued)

| Other environmental information describing output flows – at end of life |                                      |      |          |          |          |                       |
|--------------------------------------------------------------------------|--------------------------------------|------|----------|----------|----------|-----------------------|
|                                                                          |                                      |      | CRU      | MFR      | MER      | EE                    |
|                                                                          |                                      |      | kg       | kg       | kg       | MJ per energy carrier |
| Product stage                                                            | Raw material supply                  | A1   | AGG      | AGG      | AGG      | AGG                   |
|                                                                          | Transport                            | A2   | AGG      | AGG      | AGG      | AGG                   |
|                                                                          | Manufacturing                        | A3   | AGG      | AGG      | AGG      | AGG                   |
|                                                                          | Total (of product stage)             | A1-3 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              |
| Construction process stage                                               | Transport                            | A4   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              |
|                                                                          | Construction                         | A5   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              |
| Use stage                                                                | Use                                  | B1   | MND      | MND      | MND      | MND                   |
|                                                                          | Maintenance                          | B2   | MND      | MND      | MND      | MND                   |
|                                                                          | Repair                               | B3   | MND      | MND      | MND      | MND                   |
|                                                                          | Replacement                          | B4   | MND      | MND      | MND      | MND                   |
|                                                                          | Refurbishment                        | B5   | MND      | MND      | MND      | MND                   |
|                                                                          | Operational energy use               | B6   | MND      | MND      | MND      | MND                   |
|                                                                          | Operational water use                | B7   | MND      | MND      | MND      | MND                   |
| End of life                                                              | Deconstruction, demolition           | C1   | MND      | MND      | MND      | MND                   |
|                                                                          | Transport                            | C2   | MND      | MND      | MND      | MND                   |
|                                                                          | Waste processing                     | C3   | MND      | MND      | MND      | MND                   |
|                                                                          | Disposal                             | C4   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              |
| Potential benefits and loads beyond the system boundaries                | Reuse, recovery, recycling potential | D    | MND      | MND      | MND      | MND                   |

CRU = Components for reuse;  
MFR = Materials for recycling

MER = Materials for energy recovery;  
EE = Exported Energy

## Scenarios and additional technical information

| Scenarios and additional technical information |                                                                                                                                                                                                                                                                                    |                      |          |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------|
| Scenario                                       | Parameter                                                                                                                                                                                                                                                                          | Units                | Results  |
| A4 – Transport to the building site            | Weighted average site distance was found to be 95km from Brett Martin's factory in Coventry. Delivery is by Brett Martin's fleet of delivery lorries. An empty return journey is also included, to make the total distance 190km                                                   |                      |          |
|                                                | Vehicle type:                                                                                                                                                                                                                                                                      | Tonnes               | >32      |
|                                                | Distance:                                                                                                                                                                                                                                                                          | km                   | 190      |
| A5 – Installation in the building              | This scenario assumes the following energy and packaging waste are associated with the products installation on site. The scenario assumes no installation waste of the rooflight as the product is cut to the correct length in the factory and requires no on site modification. |                      |          |
|                                                | Packaging waste                                                                                                                                                                                                                                                                    | kg per F.U.          | 0.00115  |
|                                                | Diesel for crane                                                                                                                                                                                                                                                                   | MJ per F.U.          | 2.78E-03 |
|                                                | Electricity for drill battery                                                                                                                                                                                                                                                      | MJ per F.U.          | 2.59E-03 |
|                                                | Stainless Steel Screws                                                                                                                                                                                                                                                             | kg per F.U.          | 0.15     |
|                                                | Sealant                                                                                                                                                                                                                                                                            | Kg per F.U.          | 0.153    |
|                                                | Transport of Ancillary materials to site                                                                                                                                                                                                                                           | Road transport - Van | 30km     |
| C1 to C4<br>End of life,                       | Although there are recycling and energy reclamation options at end of life, the worst case situation is considered. Disposal of GRP rooflight and polycarbonate intermediate layer is assumed to be to landfill.                                                                   |                      |          |
|                                                | GRP rooflight & polycarbonate intermediate layer to landfill                                                                                                                                                                                                                       | Kg per F.U.          | 5.10     |
|                                                | Stainless steel fixings to landfill at End of Life                                                                                                                                                                                                                                 | Kg per F.U.          | 0.15     |
|                                                | Sealant waste at end of life                                                                                                                                                                                                                                                       | Kg per F.U.          | 0.153    |

## References

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