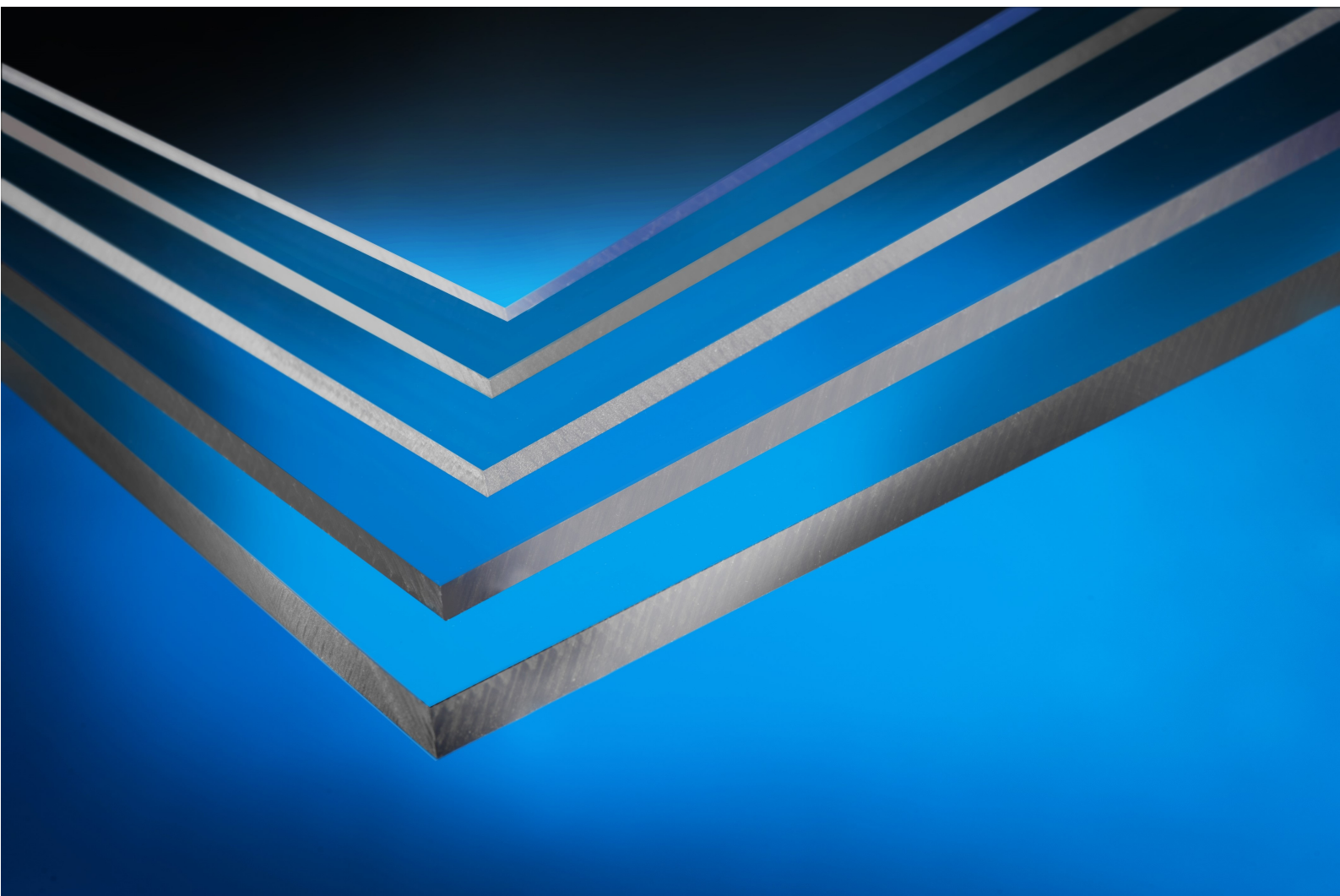


# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Marlon FSX



**Owner of the declaration:**

BRETT MARTIN LTD

**Product:**

Marlon FSX

**Declared unit:**

1 kg

**This declaration is based on Product Category Rules:**

CEN Standard EN 15804:2012+A2:2019 serves as core PCR

NPCR Part A: Construction products and services  
(application for plastic products)

**Program operator:**

EPD-Global

**Declaration number:**

NEPD-17892-22540

**Issue date:**

06.10.2026

**Valid to:**

06.10.2031

**EPD software:**

LCAno EPD generator ID: 1475113

## General information

**Product:**

Marlon FSX

**Program operator:**

EPD-Global  
Post Box 5250 Majorstuen, 0303 Oslo, Norway  
Phone: +47 977 22 020  
web: [www.epd-global.com](http://www.epd-global.com)

**Declaration number:**

NEPD-17892-22540

**This declaration is based on Product Category Rules:**

CEN Standard EN 15804:2012+A2:2019 serves as core PCR  
NPCR Part A: Construction products and services (application for plastic products)

**Statement of liability:**

The owner of the declaration shall be liable for the underlying information and evidence. EPD-Global shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

**Declared unit:**

1 kg Marlon FSX

**Declared unit with option:**

A1-A3, A4, A5, C1, C2, C3, C4, D

**Functional unit:**

Not Relevant

**General information on verification of EPD from EPD tools:**

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Global's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Global, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Global's General Programme Instructions for further information on EPD tools

**Verification of EPD tool:**

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPD-Global's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required)

**Owner of the declaration:**

BRETT MARTIN LTD  
Contact person: Stephen Keys  
Phone: 02890849999  
e-mail: [stephenkeys@brettmartin.com](mailto:stephenkeys@brettmartin.com)

**Manufacturer:**

BRETT MARTIN LTD

**Place of production:**

BRETT MARTIN LTD  
24 Roughfort Road  
BT36 4RB Mallusk, Co Antrim, United Kingdom

**Management system:**

ISO 9001:2015

**Organisation no:**

GB760 9875 85

**Issue date:**

06.10.2026

**Valid to:**

06.10.2031

**Year of study:**

2025

**Comparability:**

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not viewed in a building context.

**Development and verification of EPD:**

The declaration is created using EPD generator v2025.09, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD-Global. NEPDT242

Developer of EPD: Nyaradzo Hove

Reviewer of company-specific input data and EPD: Stephen Keys

**Approved:**

Håkon Hauan, CEO EPD-Global

## Product:

### Product description:

Marlon FSX is a flat polycarbonate sheet with dual sided UV protection which prevents 98% of damaging UV radiation from penetrating the sheet, making it perfect for external glazing applications. The UV protection layer enables longer sheet life expectancy in tough climatic conditions, prevents yellowing and guards against loss of strength.

The UV resistance offered by Marlon FSX's coating can extend the life expectancy of the plastic in its final application, thereby reducing its lifetime environmental impact.

Marlon FSX is ideally suited for a wide range of architectural and specialist glazing applications, including roof lights, barrel vaults, canopies, vertical glazing systems, external signage, bus shelters, sound barrier walls, sunrooms, and other high-performance building envelope solutions.

### Product specification:

| Materials                    | kg     | %      |
|------------------------------|--------|--------|
| Inorganic Binder             | 0.03   | 3.05   |
| Pigments                     | 0.02   | 2.03   |
| Plastic - Polycarbonate (PC) | 0.9345 | 94.92  |
| Total                        | 0.9845 | 100.00 |

| Packaging                  | kg     | %      |
|----------------------------|--------|--------|
| Packaging - Cardboard      | 0.003  | 13.57  |
| Packaging - Plastic        | 0.019  | 85.97  |
| Packaging - Plastic straps | 0.0001 | 0.4525 |
| Total incl. packaging      | 1.01   | 100.00 |

### Technical data:

Marlon FSX is a solid, light-transmitting polycarbonate (PC) sheet manufactured in accordance with EN 16240 for internal and external applications in roofing, wall, and ceiling systems.

The product offers a high strength-to-weight ratio, providing impact resistance of up to 200 times that of glass while weighing less than half as much. Marlon FSX combines dual-sided UV protection with excellent impact performance, chemical resistance, high light transmission, low weight, and a broad service temperature range, making it suitable for demanding architectural and construction applications.

Distinguished by its exceptional optical clarity, durability, and impact resistance, Marlon FSX can be cold-curved on site without compromising performance, providing enhanced design flexibility. The product is available in a range of standard dimensions and thicknesses up to 15 mm, with both clear and tinted variants to meet functional, aesthetic, and daylighting requirements.

Marlon FSX sheets are manufactured under a BS EN ISO 9001 certified Quality Management System, ensuring consistent product quality and process control. The product range complies with the requirements of REACH and RoHS legislation and has been independently tested and assessed for fire performance in accordance with relevant European standards.

| Property                        | Standard    | Value       | Unit              |
|---------------------------------|-------------|-------------|-------------------|
| Density                         | ISO 1183-1  | 1.2         | g/cm <sup>3</sup> |
| Transmission @ 3mm              | ISO 13486-1 | 90          | %                 |
| Flexural Strength               | ISO 178     | 97          | MPa               |
| Tensile Strength at Yield       | ISO 527     | 62          | MPa               |
| Heat Deflection Temperature     | ISO 75-2    | 145         | oC                |
| Thermal Expansion               | ISO 11359-2 | 0.065       | mm/moC            |
| Service Temperature - Long Term | -           | -20 to +100 | oC                |
| Service Temperature             | -           | -40 to +130 | oC                |

### Market:

Marlon FSX products are sold across the UK, EU, USA, and international markets. An EU average transport scenario has been applied based on representative sales volumes.

### Reference service life, product:

Marlon FSX is supported by a limited warranty and demonstrates long-term stability of its mechanical properties during prolonged service at temperatures of up to 100°C. Marlon FSX should be cleaned with lukewarm water and a soft cloth or sponge, avoiding dry rubbing to prevent surface damage.

Marlon FSX is 100% recyclable and reusable if separated from other materials at the end of its life cycle - contact your local recycling center for more information.

### Reference service life, building or construction works:

Not Relevant

## LCA: Calculation rules

### Declared unit:

1 kg Marlon FSX

### Cut-off criteria:

All major raw materials and all the essential energy are included. The production processes for raw materials and energy flows with very small amounts (less than 1%) may not be included. These cut-off criteria do not apply for hazardous materials and substances.

#### Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

#### Data quality:

Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

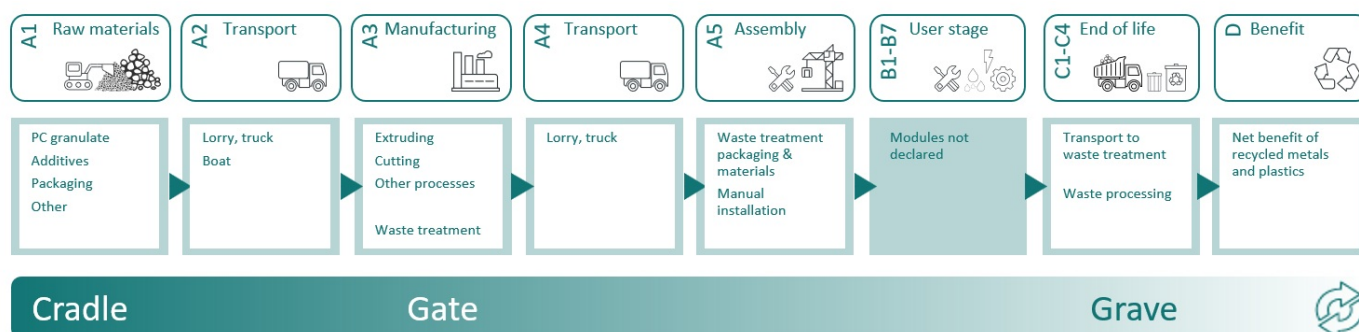
| Materials                    | Source           | Data quality | Year |
|------------------------------|------------------|--------------|------|
| Inorganic Binder             | ecoinvent 3.10.1 | Database     | 2023 |
| Packaging - Cardboard        | ecoinvent 3.10.1 | Database     | 2023 |
| Packaging - Plastic          | ecoinvent 3.11   | Database     | 2024 |
| Packaging - Plastic straps   | ecoinvent 3.10.1 | Database     | 2023 |
| Pigments                     | ecoinvent 3.10.1 | Database     | 2023 |
| Plastic - Polycarbonate (PC) | ecoinvent 3.10.1 | Database     | 2023 |

## System boundaries (X=included, MND=module not declared, MNR=module not relevant)

| Product stage |           |               | Construction installation stage |          | Use stage |             |        |             |               |                        |                       |  | End of life stage          |           |                  |          | Beyond the system boundaries        |
|---------------|-----------|---------------|---------------------------------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|--|----------------------------|-----------|------------------|----------|-------------------------------------|
| Raw materials | Transport | Manufacturing | Transport                       | Assembly | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use |  | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery- Recycling-potential |
| A1            | A2        | A3            | A4                              | A5       | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    |  | C1                         | C2        | C3               | C4       | D                                   |
| X             | X         | X             | X                               | X        | MND       | MND         | MND    | MND         | MND           | MND                    | MND                   |  | X                          | X         | X                | X        | X                                   |

### System boundary:

Includes stages A1-A5; C1-C4 and D stages.



### Additional technical information:

Marlon FSX products are typically available in thicknesses ranging from 0.5mm to 15mm. Nominal sheet weights have been used for the purposes of calculating conversion factors for the solid polycarbonate sheets.

| Sheet Thickness | Nominal weight kg/m2 | Conversion factor to declared unit - 1kg |
|-----------------|----------------------|------------------------------------------|
| 0.5mm           | 0.6                  | 1.67                                     |
| 0.75mm          | 0.9                  | 1.11                                     |
| 1mm             | 1.2                  | 0.83                                     |
| 1.5mm           | 1.8                  | 0.56                                     |
| 2mm             | 2.4                  | 0.42                                     |
| 3mm             | 3.6                  | 0.28                                     |
| 3.7mm           | 4.44                 | 0.23                                     |
| 3.75mm          | 4.5                  | 0.22                                     |
| 4mm             | 4.8                  | 0.21                                     |
| 5mm             | 6.0                  | 0.17                                     |
| 6mm             | 7.2                  | 0.14                                     |
| 8mm             | 9.6                  | 0.10                                     |
| 9.5mm           | 11.4                 | 0.09                                     |
| 10mm            | 12                   | 0.08                                     |
| 12mm            | 14.4                 | 0.07                                     |
| 15mm            | 18                   | 0.06                                     |

## LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Module A4 = The vast majority of Brett Martin products are sold within the EU. For Module A4 transport modelling, an average European transport scenario has been applied, based on representative sea and road freight distances from the Brett Martin manufacturing facility to Lyon, France.

Modules A5 = No energy use for installation has been quantified since this operation is assumed to be done with other products and should be assessed at a construction works level.

Module C1 = For both buildings and construction works, the plastic components will be taken out as part of a larger demolition. The energy use for the polycarbonate components removal compared to other heavier materials is assumed to be low. This module can therefore be included with zero impact

Module C2 = The transportation distance from the demolition site to the waste treatment facility is assumed to be 100 km and the mode of transport is assumed to be truck.

Modules C3 and C4 = Waste treatment of the end-of-life polycarbonate components is treated as 100% to the incineration in C3.

Module D = The recyclability of metals, plastics, and electronic components allows the producers a credit for the net scrap that is produced at the end of a product's life. The benefits from recycling of net scrap are described in formula from EN 15804:2012+A2:2019. Substitution of heat and electricity generated by the incineration with energy recovery of plastic insulation and other parts is also calculated in module D.

| Transport from production place to user (A4)                                                  | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit  | Value (Liter/tonne) |
|-----------------------------------------------------------------------------------------------|---------------------------------------|---------------|-------------------------|-------|---------------------|
| Ship, Freight, Transoceanic (km)                                                              | 65.0 %                                | 407.44        | 0.003                   | l/tkm | 1.22                |
| Truck, unspecified (km) - Europe                                                              | 48.7 %                                | 1264.22       | 0.051                   | l/tkm | 64.48               |
| Assembly (A5)                                                                                 | Unit                                  | Value         |                         |       |                     |
| Waste, packaging, plastic film (LDPE), to average treatment (kg)                              | kg                                    | 0.0021        |                         |       |                     |
| Waste, packaging, corrugated board box, 0 % recycled, to average treatment (kg) / correct     | kg                                    | 0.003         |                         |       |                     |
| Transport to waste processing (C2)                                                            | Capacity utilisation (incl. return) % | Distance (km) | Fuel/Energy Consumption | Unit  | Value (Liter/tonne) |
| Truck, unspecified (km) - Europe                                                              | 48.7 %                                | 100.15        | 0.051                   | l/tkm | 5.11                |
| Waste processing (C3)                                                                         | Unit                                  | Value         |                         |       |                     |
| Waste plastic, mixture   treatment of waste plastic, mixture, municipal incineration FAE (kg) | kg                                    | 1.00          |                         |       |                     |
| Benefits and loads beyond the system boundaries (D)                                           | Unit                                  | Value         |                         |       |                     |
| Substitution of electricity, in Norway (MJ)                                                   | MJ                                    | 0.0003244     |                         |       |                     |
| Substitution of thermal energy, district heating, in Norway (MJ)                              | MJ                                    | 0.0003561     |                         |       |                     |

## LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

| Environmental impact                                                              |                                  |                        |          |          |          |          |          |          |    |           |
|-----------------------------------------------------------------------------------|----------------------------------|------------------------|----------|----------|----------|----------|----------|----------|----|-----------|
| Indicator                                                                         |                                  | Unit                   | A1-A3    | A4       | A5       | C1       | C2       | C3       | C4 | D         |
|  | GWP-total                        | kg CO <sub>2</sub> -eq | 6.34E+00 | 1.99E-01 | 3.00E-03 | 0.00E+00 | 1.54E-02 | 2.37E+00 | 0  | -4.17E-06 |
|  | GWP-fossil                       | kg CO <sub>2</sub> -eq | 6.32E+00 | 1.99E-01 | 3.00E-03 | 0.00E+00 | 1.54E-02 | 2.37E+00 | 0  | -4.04E-06 |
|  | GWP-biogenic                     | kg CO <sub>2</sub> -eq | 2.15E-02 | 1.36E-04 | 5.97E-07 | 0.00E+00 | 1.07E-05 | 2.86E-05 | 0  | -5.87E-08 |
|  | GWP-luluc                        | kg CO <sub>2</sub> -eq | 5.10E-03 | 7.38E-05 | 4.27E-08 | 0.00E+00 | 5.67E-06 | 9.36E-06 | 0  | -7.93E-08 |
|  | ODP                              | kg CFC11 -eq           | 1.78E-07 | 3.82E-09 | 3.00E-12 | 0.00E+00 | 3.02E-10 | 7.53E-10 | 0  | -1.50E-07 |
|  | AP                               | mol H+ -eq             | 2.62E-02 | 9.98E-04 | 9.44E-07 | 0.00E+00 | 6.93E-05 | 5.04E-04 | 0  | -3.24E-08 |
|  | EP-FreshWater                    | kg P -eq               | 1.74E-03 | 1.34E-05 | 1.33E-08 | 0.00E+00 | 1.05E-06 | 5.65E-06 | 0  | -3.25E-10 |
|  | EP-Marine                        | kg N -eq               | 4.92E-03 | 3.74E-04 | 9.66E-07 | 0.00E+00 | 2.72E-05 | 3.00E-04 | 0  | -7.25E-09 |
|  | EP-Terrestrial                   | mol N -eq              | 5.05E-02 | 4.09E-03 | 4.37E-06 | 0.00E+00 | 2.97E-04 | 2.54E-03 | 0  | -8.21E-08 |
|  | POCP                             | kg NMVOC -eq           | 2.61E-02 | 1.44E-03 | 1.28E-06 | 0.00E+00 | 1.06E-04 | 6.34E-04 | 0  | -2.25E-08 |
|  | ADP-minerals&metals <sup>1</sup> | kg Sb-eq               | 6.95E-05 | 6.23E-07 | 4.76E-10 | 0.00E+00 | 4.90E-08 | 1.48E-07 | 0  | -1.68E-10 |
|  | ADP-fossil <sup>1</sup>          | MJ                     | 1.28E+02 | 2.83E+00 | 1.70E-03 | 0.00E+00 | 2.20E-01 | 3.55E-01 | 0  | -5.64E-05 |
|  | WDP <sup>1</sup>                 | m <sup>3</sup>         | 1.61E+00 | 1.42E-02 | 2.13E-04 | 0.00E+00 | 1.12E-03 | 1.57E-01 | 0  | -5.06E-03 |

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

"Reading example: 9.0 E-03 = 9.0\*10<sup>-3</sup> = 0.009"

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

### Remarks to environmental impacts:

The LCA results in the EPD are calculated using a specific methodological approach for accounting energy resources, see the additional requirements section for more information. In this EPD the following approach was used: Location-based approach.

Not relevant

### Additional environmental impact indicators

| Indicator                                                                                             | Unit              | A1-A3    | A4       | A5       | C1       | C2       | C3       | C4 | D         |
|-------------------------------------------------------------------------------------------------------|-------------------|----------|----------|----------|----------|----------|----------|----|-----------|
|  PM                  | Disease incidence | 2.52E-07 | 1.91E-08 | 9.00E-12 | 0.00E+00 | 1.51E-09 | 2.22E-09 | 0  | -1.00E-12 |
|  IRP <sup>2</sup>    | kgBq U235 -eq     | 6.26E-01 | 3.68E-03 | 3.31E-06 | 0.00E+00 | 2.90E-04 | 1.29E-03 | 0  | -6.77E-07 |
|  ETP-fw <sup>1</sup> | CTUe              | 2.59E+02 | 3.67E-01 | 6.73E-03 | 0.00E+00 | 2.88E-02 | 5.03E+00 | 0  | -2.83E-04 |
|  HTP-c <sup>1</sup>  | CTUh              | 6.80E-09 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.32E-10 | 0  | 0.00E+00  |
|  HTP-nc <sup>1</sup> | CTUh              | 6.28E-08 | 2.55E-09 | 8.00E-12 | 0.00E+00 | 2.01E-10 | 5.42E-09 | 0  | 0.00E+00  |
|  SQP <sup>1</sup>    | dimensionless     | 2.10E+01 | 2.09E+00 | 9.47E-04 | 0.00E+00 | 1.65E-01 | 8.60E-02 | 0  | -2.11E-04 |

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9.0 E-03 = 9.0\*10<sup>-3</sup> = 0.009"

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator
2. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

| Resource use                                                                      |       |                |          |          |          |          |          |           |   |           |
|-----------------------------------------------------------------------------------|-------|----------------|----------|----------|----------|----------|----------|-----------|---|-----------|
| Indicator                                                                         | Unit  | A1-A3          | A4       | A5       | C1       | C2       | C3       | C4        | D |           |
|  | PERE  | MJ             | 8.05E+00 | 4.94E-02 | 5.15E-05 | 0.00E+00 | 3.88E-03 | 2.22E-02  | 0 | -5.31E-04 |
|  | PERM  | MJ             | 3.83E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0 | 0.00E+00  |
|  | PERT  | MJ             | 8.08E+00 | 4.94E-02 | 5.15E-05 | 0.00E+00 | 3.88E-03 | 2.22E-02  | 0 | -5.31E-04 |
|  | PENRE | MJ             | 9.88E+01 | 2.83E+00 | 1.70E-03 | 0.00E+00 | 2.20E-01 | 3.55E-01  | 0 | -5.65E-05 |
|  | PENRM | MJ             | 2.84E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -2.76E+01 | 0 | 0.00E+00  |
|  | PENRT | MJ             | 1.27E+02 | 2.83E+00 | 1.70E-03 | 0.00E+00 | 2.20E-01 | -2.73E+01 | 0 | -5.65E-05 |
|  | SM    | kg             | 2.79E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0 | 0.00E+00  |
|  | RSF   | MJ             | 1.17E-03 | 1.55E-05 | 2.48E-08 | 0.00E+00 | 1.22E-06 | 1.36E-05  | 0 | -3.06E-07 |
|  | NRSF  | MJ             | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0 | -1.15E-05 |
|  | FW    | m <sup>3</sup> | 4.37E-02 | 3.99E-04 | 3.69E-06 | 0.00E+00 | 3.14E-05 | 2.71E-03  | 0 | -2.82E-06 |

PERE = Use of renewable primary energy excluding renewable primary energy resources 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 resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9.0 E-03 = 9.0\*10<sup>-3</sup> = 0.009"

| End of life - Waste                                                                    |      |          |          |          |          |          |          |    |           |  |
|----------------------------------------------------------------------------------------|------|----------|----------|----------|----------|----------|----------|----|-----------|--|
| Indicator                                                                              | Unit | A1-A3    | A4       | A5       | C1       | C2       | C3       | C4 | D         |  |
|  HWD  | kg   | 3.87E-01 | 4.07E-03 | 3.81E-05 | 0.00E+00 | 3.17E-04 | 0.00E+00 | 0  | -1.87E-08 |  |
|  NHWD | kg   | 1.48E+01 | 8.54E-02 | 3.02E-03 | 0.00E+00 | 6.69E-03 | 1.00E+00 | 0  | -2.77E-06 |  |
|  RWD  | kg   | 1.55E-04 | 9.16E-07 | 3.73E-10 | 0.00E+00 | 7.21E-08 | 0.00E+00 | 0  | -3.95E-10 |  |

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

"Reading example: 9.0 E-03 =  $9.0 \times 10^{-3}$  = 0.009"

| End of life - Output flow                                                             |      |          |          |          |          |          |          |    |          |  |
|---------------------------------------------------------------------------------------|------|----------|----------|----------|----------|----------|----------|----|----------|--|
| Indicator                                                                             | Unit | A1-A3    | A4       | A5       | C1       | C2       | C3       | C4 | D        |  |
|  CRU | kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0  | 0.00E+00 |  |
|  MFR | kg   | 5.32E-03 | 0.00E+00 | 3.45E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0  | 0.00E+00 |  |
|  MER | kg   | 3.56E-09 | 0.00E+00 | 2.60E-11 | 0.00E+00 | 0.00E+00 | 1.00E+00 | 0  | 0.00E+00 |  |
|  EEE | MJ   | 1.48E-05 | 0.00E+00 | 4.44E-07 | 0.00E+00 | 0.00E+00 | 3.24E-04 | 0  | 0.00E+00 |  |
|  EET | MJ   | 1.37E-05 | 0.00E+00 | 8.24E-07 | 0.00E+00 | 0.00E+00 | 3.56E-04 | 0  | 0.00E+00 |  |

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9.0 E-03 =  $9.0 \times 10^{-3}$  = 0.009"

| Biogenic Carbon Content                           |      |                     |
|---------------------------------------------------|------|---------------------|
| Indicator                                         | Unit | At the factory gate |
| Biogenic carbon content in product                | kg C | 0.00E+00            |
| Biogenic carbon content in accompanying packaging | kg C | 1.28E-03            |

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>

## Additional requirements

### Transparent energy reporting

The EPD presents environmental impact categories in the main results tables using a specific methodological approach for accounting energy resources. To ensure transparency and support informed interpretation, the table below explains the implications of the chosen methodology. It illustrates the GWP-total for energy resources used in the manufacturing stage, comparing the location-based and market-based approaches. In this EPD the following approach was used in main result tables: Location-based approach.

| Electricity mix                                                                                                                                         | Source           | Amount   | Unit | GWPtotal [kg CO <sub>2</sub> /Unit] | SUM [kg CO <sub>2</sub> ] |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|------|-------------------------------------|---------------------------|
| <b>Location-based approach.</b>                                                                                                                         |                  |          |      |                                     |                           |
| Electricity, United Kingdom, low voltage                                                                                                                | ecoinvent 3.10.1 | 5.77E-01 | kWh  | 2.61E-01                            | 1.50E-01                  |
| Electricity production, photovoltaic, 3kWp slanted-roof installation, multi-Si, panel, mounted (kWh)   electricity, low voltage - GB - ecoinvent 3.10.1 | ecoinvent 3.10.1 | 9.20E-02 | kWh  | 8.04E-02                            | 7.40E-03                  |
| Electricity, low voltage   electricity production, wind, onshore (kWh) - GB                                                                             | ecoinvent 3.10.1 | 6.58E-02 | kWh  | 1.91E-02                            | 1.26E-03                  |
| <b>Market-based approach.</b>                                                                                                                           |                  |          |      |                                     |                           |
| Electricity, United Kingdom, low voltage, residual mix                                                                                                  | ecoinvent 3.10   | 7.34E-01 | kWh  | 4.53E-01                            | 3.33E-01                  |

"Reading example: 9.0 E-03 = 9.0\*10<sup>-3</sup> = 0.009"

### Dangerous substances:

The product contains no substances on the REACH Candidate list at or above 100 ppm, 0,01 % by weight.

### Indoor environment:

Not relevant

## Additional Environmental Information

| Additional environmental impact indicators required in NPCR Part A for construction products |                        |          |          |          |          |          |          |    |           |
|----------------------------------------------------------------------------------------------|------------------------|----------|----------|----------|----------|----------|----------|----|-----------|
| Indicator                                                                                    | Unit                   | A1-A3    | A4       | A5       | C1       | C2       | C3       | C4 | D         |
| GWPIOBC                                                                                      | kg CO <sub>2</sub> -eq | 6.33E+00 | 1.99E-01 | 3.00E-03 | 0.00E+00 | 1.54E-02 | 2.37E+00 | 0  | -4.14E-06 |

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

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