



## Statement of Verification

BREG EN EPD No: 000788

Issue: 01

This is to verify that the Environmental Product Declaration provided by:

### Northern Ireland Plastics Ltd

are in accordance with the requirements of:

**EN 15804:2012+A2:2019**

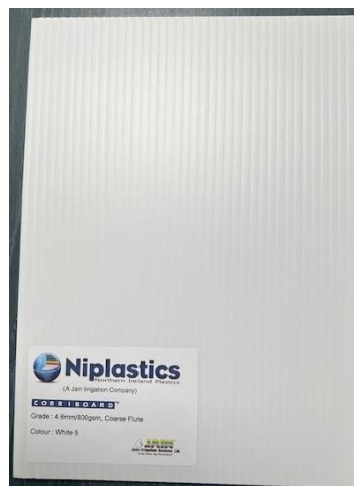
and

BRE Global Scheme Document SD207

This declaration is for:  
1 kg of Corriboard

### Company Address

Northern Ireland Plastics Ltd.  
39 Shrigley Road,  
Killyleagh,  
Co Down,  
BT30 9SR



Signed for BRE Global Limited

Hayley Thomson

Operator

03 July 2026

Date of this Issue

03 July 2026

Date of First Issue

02 July 2031

Expiry Date



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# Environmental Product Declaration

EPD Number: 000788

## General Information

| EPD Programme Operator                                                                                                                                                                                                                                                                                                                  | Applicable Product Category Rules                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BRE Global<br>Watford, Herts<br>WD25 9XX<br>United Kingdom                                                                                                                                                                                                                                                                              | BRE Environmental Profiles 2025 Product Category Rules<br>for Type III environmental product declaration of<br>construction products to EN 15804+A2 PN 514 Rev 3.2 |
| Commissioner of LCA study                                                                                                                                                                                                                                                                                                               | LCA consultant/Tool                                                                                                                                                |
| Northern Ireland Plastics Ltd.<br>39 Shrigley Road,<br>Killyleagh,<br>Co Down,<br>BT30 9SR                                                                                                                                                                                                                                              | Regina Poveda<br>BRE LINA A2                                                                                                                                       |
| Declared Unit                                                                                                                                                                                                                                                                                                                           | Applicability/Coverage                                                                                                                                             |
| 1 kg of Corriboard                                                                                                                                                                                                                                                                                                                      | Product Average                                                                                                                                                    |
| EPD Type                                                                                                                                                                                                                                                                                                                                | Background database                                                                                                                                                |
| Cradle to Gate with options                                                                                                                                                                                                                                                                                                             | Ecoinvent 3.8                                                                                                                                                      |
| 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 checked="" type="checkbox"/> Internal <input type="checkbox"/> External                                                                                                                                                                   |                                                                                                                                                                    |
| (Where appropriate <sup>b</sup> ) Third party verifier:<br>Bala Subramanian                                                                                                                                                                                                                                                             |                                                                                                                                                                    |
| 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+A2:2019. 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+A2:2019 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 checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>           |

Note: Ticks indicate the Information Modules declared.

### Manufacturing site(s)

Northern Ireland Plastics Ltd

39 Shrigley Road,  
Killyleagh,  
Downpatrick,  
BT30 9SR

## Construction Product:

### Product Description

Corriboard is a twinwall profile extrusion formed by two skins joined by a large number of flutes, giving a semi-rigid board with a good strength-to-weight ratio, with 80% air.

Corriboard is a bespoke product that can be manufactured in a range of dimensions to meet customer requirements. Example dimensions are provided in the table below for reference only and do not represent the full range of available sizes.

| Width | Length | Thickness | GSM   |
|-------|--------|-----------|-------|
| (m)   | (m)    | (mm)      | (kg)  |
| 1.000 | 1.000  | 3.8       | 0.650 |
| 1.220 | 2.440  | 3.8       | 0.650 |
| 1.150 | 2.500  | 6.0       | 1.450 |
| 0.826 | 1.212  | 2.2       | 0.300 |
| 0.710 | 0.630  | 2.2       | 0.300 |
| 0.710 | 0.630  | 2.2       | 0.300 |
| 1.200 | 2.400  | 2.8       | 0.500 |
| 1.200 | 2.400  | 2.5       | 0.350 |

Table 1. Example of Corriboard dimensions

Corriboards can be used in various applications, including P.O.S & Display, media & advertising, packaging, protection, construction, materials handling, and others. For more information, please visit Northern Ireland Plastics website at <http://www.nioplastics.com/opencontent/?itemid=51&section=APPLICATIONS>

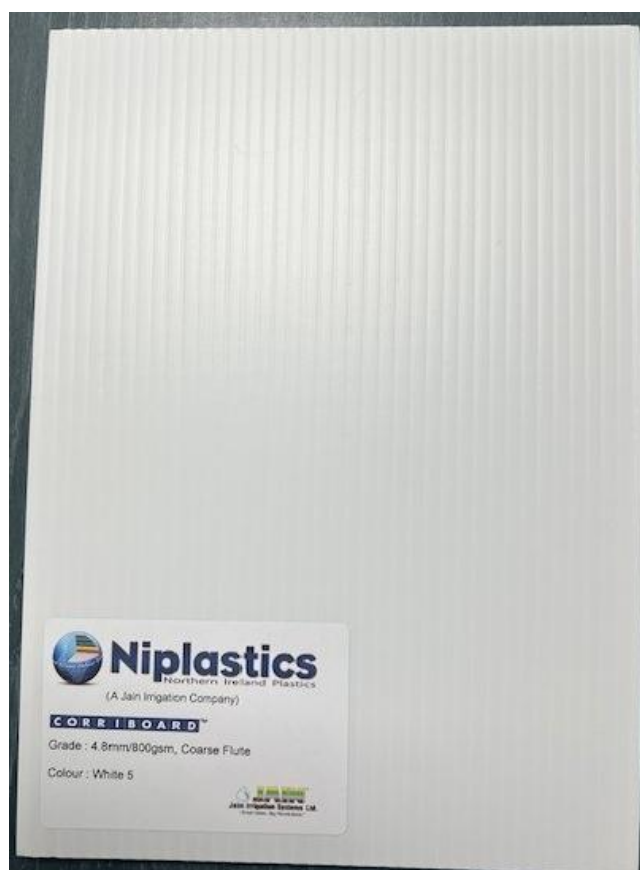
This LCA analysis has been conducted for 1 kg of Corriboard, and the results are enclosed in this EPD.

## Technical Information

| Property                                           | Value, Unit                |
|----------------------------------------------------|----------------------------|
| Standard                                           | ISO 9001:2015              |
| Length                                             | To customer specifications |
| Width                                              | Maximum 2500mm             |
| Physical properties<br>Density. ISO 1183           | 0.9 g/cm <sup>3</sup>      |
| Mechanical properties<br>Flexural modulus. ISO 178 | 1350 N/mm <sup>2</sup>     |
| Tensile strength yield. ISO R527                   | 27 N/mm <sup>2</sup>       |
| Elongated at yield. ISO R527                       | 8%                         |

Note: Technical information available in Ni-Plastics website

<http://www.nioplastics.com/opencontent/?itemid=69&section=PRODUCTS>



## Main Product Contents

### Corriboard

| Material/Chemical Input | %      |
|-------------------------|--------|
| Polymer                 | 93.23% |
| Talc                    | 4.16%  |
| Others                  | 2.61%  |

## Manufacturing Process

The polypropylene is received in bags, and it is loaded into the reservoir and piped to the machine. After loading the reservoir, the empty polymer bags and shrouds are compacted and sent to a recycling facility. The material is delivered by a gravimetric feed system to the production line, and it goes through the screw to the die headline. After this, the material is extruded through the die, where the specification is set on the control panel. Then it is calibrated, sent to the oven and slit to the pre-set width. Before passing to the guillotine to cut the pre-set length, the salvage material is cut; after this, it comes off the back of the line, and it is palletised. Once this process is complete, it is ready for distribution to the end-user.

The machines operate with electricity from the grid, and there is no water used in the production process. As per the waste produce of any cuts or salvage, which is reprocessed and reused, the only waste is from the bags of the raw materials, which are sent to a third-party reprocessing company.

## Process flow diagram





## End of Life

When Corriboard reaches its End-of-Life, the recovered Polypropylene can be 100% incinerated with energy recovery according to BRE PCR EN15804 A2, industrial scenario for Membrane (breather), polypropylene. Polypropylene calorific value is 39.7 MJ/Kg, according to the Research Institutes (<https://materials.fsri.org/materialdetail/polypropylene-pp>).

It is assumed that 100% of the Polypropylene will be recovered at the End-of-Life and the energy used for removing the Polypropylene from the final waste is considered to be negligible.



## Life Cycle Assessment Calculation Rules

### Declared unit description

1 kg of Corriboard

### System boundary

The System Boundary of the LCA is defined using the modular approach set out in EN15804:2012+A2:2019 and BRE 2025, Product Category Rules (PN 514 Rev3.2). This Cradle to Gate with options, includes the Product Stage (A1 - A3), Construction (A4 - A5), End of Life (C1 - C4) and Benefits and Loads beyond the System Boundary (D).

### Data sources, quality and allocation

The LCA analysis is based on a declared unit of 1kg of Corriboard. Corriboard is a bespoke product, with dimensions tailored to client requirements, and is the sole product manufactured at Northern Ireland plastics site.

Specific primary data derived from the bespoke Corriboard production process in the Northern Ireland Plastics Ltd( 39 Shrigley Road, Killyleagh, Downpatrick, BT30 9SR) over a 12-month data period from 01 October 2023 to 01 October 2024.

Secondary data for upstream and downstream processes outside the manufacturer's control (i.e raw material production) were sourced from the ecoinvent 3.8 database. Corriboard quantities and UK-specific scenarios were modelled using BRE LINA A2. All ecoinvent datasets are complete within the defined system boundary and comply with the requirements specified in EN15804+A2:2019.

As Corriboard is the only product manufactured at the site, all electricity, water and waste have been fully allocated to its production based on actual site data, in accordance with BRE PCR PN514 Rev 3.2 and EN 15804:2012+A2:2019. No uplift to raw material inputs was required, as it is within acceptable tolerance limits

Proxy datasets were applied when specific datasets were not available. Unspecific inorganic material has been used as a proxy for other raw materials such as FR Masterbatch and Colour masterbatch, which altogether account for 2.60% of Corriboards recipe. In the Manufacturing process, plastic waste to recycling proxy was used to model the plastic disposal route to the recycling facility.

| ISO14044 guidance.<br><b>Quality Level</b> | <b>Geographical representativeness</b> | <b>Technical representativeness</b>                                                                                                       | <b>Time representativeness</b>                                                                                                                |
|--------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Very Good                                  | Data from area under study.            | Data from processes and products under study. Same state of technology applied as defined in goal and scope (i.e., identical technology). | Less than 3 years difference between the reference year according to the documentation and the time period for which data are representative. |

There is approximately 3 years between the Ecoinvent LCI reference year, and the time period for which the LCA was undertaken.

Specific UK datasets have been selected from the ecoinvent LCI for this LCA. The quality level of geographical and technical representativeness is therefore very good. The quality level of time representativeness is very good as the background LCI datasets are based on ecoinvent v3.8 which was compiled in 2021. Therefore, there is approximately 3 years between the ecoinvent LCI reference year and the time period for which the LCA was undertaken. Data quality has been assessed using Table E.1 from EN 15804+A2, Annex E. Additionally, the LCA method applied follows the Cut-off approach in EN 15804+A2, and the characterisation factors are based on Table C.1 of the EN 15804 standard.



The manufacturer uses the UK national grid electricity for production; therefore, a location-based approach for electricity has been used in the LCA modelling (Ecoinvent 3.8): 'Electricity, medium voltage {GB}| market for | Alloc Def, U' 2022. The GWP carbon footprint for using 1 kWh of electricity, GB kWh, is 0.239 kgCO<sub>2</sub>e/kWh.

### **Cut-off criteria**

All inputs or outputs have been included and all raw materials, packaging, energy, fuels and water consumption and waste. Ancillary materials and emissions to air, water and soil and non-production waste are not included. Upstream extraction and/or processing of inputs are included within the use of background datasets within LINA.



## LCA Results

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

| Parameters describing environmental impacts               |                                      |      | GWP-total             | GWP-fossil            | GWP-biogenic          | GWP-luluc             | ODP         | AP                    | EP-freshwater                          |
|-----------------------------------------------------------|--------------------------------------|------|-----------------------|-----------------------|-----------------------|-----------------------|-------------|-----------------------|----------------------------------------|
|                                                           |                                      |      | kg CO <sub>2</sub> eq | kg CO <sub>2</sub> eq | kg CO <sub>2</sub> eq | kg CO <sub>2</sub> eq | kg CFC11 eq | mol H <sup>+</sup> eq | kg (PO <sub>4</sub> ) <sup>3-</sup> eq |
| Product stage                                             | Raw material supply                  | A1   | 1.92E+00              | 1.91E+00              | 1.03E-02              | 5.17E-04              | 3.03E-08    | 6.77E-03              | 2.42E-04                               |
|                                                           | Transport                            | A2   | 7.19E-01              | 7.18E-01              | 6.11E-04              | 2.82E-04              | 1.66E-07    | 2.93E-03              | 4.62E-05                               |
|                                                           | Manufacturing                        | A3   | 2.08E-01              | 2.50E-01              | -4.24E-02             | 2.98E-04              | 1.90E-08    | 6.13E-04              | 3.82E-05                               |
|                                                           | Total (Consumption grid)             | A1-3 | 2.85E+00              | 2.88E+00              | -3.14E-02             | 1.10E-03              | 2.15E-07    | 1.03E-02              | 3.27E-04                               |
| Construction process stage                                | Transport                            | A4   | 1.46E-02              | 1.46E-02              | 1.25E-05              | 5.74E-06              | 3.38E-09    | 5.94E-05              | 9.42E-07                               |
|                                                           | Construction                         | A5   | 6.01E-02              | 1.20E-02              | 4.81E-02              | 5.05E-06              | 9.09E-10    | 5.28E-05              | 1.74E-06                               |
| End of life                                               | Deconstruction, demolition           | C1   | 0.00E+00              | 0.00E+00              | 0.00E+00              | 0.00E+00              | 0.00E+00    | 0.00E+00              | 0.00E+00                               |
|                                                           | Transport                            | C2   | 8.32E-03              | 8.31E-03              | 7.08E-06              | 3.26E-06              | 1.92E-09    | 3.37E-05              | 5.35E-07                               |
|                                                           | Waste processing                     | C3   | 2.56E+00              | 2.56E+00              | 5.94E-05              | 8.87E-06              | 2.13E-09    | 3.37E-04              | 3.33E-06                               |
|                                                           | Disposal                             | C4   | 0.00E+00              | 0.00E+00              | 0.00E+00              | 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    | -4.63E+00             | -4.62E+00             | -7.67E-03             | -6.32E-03             | -3.13E-07   | -1.44E-02             | -7.38E-04                              |

GWP-total = Global warming potential, total;  
 GWP-fossil = Global warming potential, fossil;  
 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; and  
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment

## LCA Results (continued)

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

| Parameters describing environmental impacts               |                                      |      | EP-marine | EP-terrestrial | POCP        | ADP-mineral & metal | ADP-fossil              | WDP                              | PM                |
|-----------------------------------------------------------|--------------------------------------|------|-----------|----------------|-------------|---------------------|-------------------------|----------------------------------|-------------------|
|                                                           |                                      |      | kg N eq   | mol N eq       | kg NMVOC eq | kg Sb eq            | MJ, net calorific value | m <sup>3</sup> world eq deprived | disease incidence |
| Product stage                                             | Raw material supply                  | A1   | 1.16E-03  | 1.23E-02       | 5.79E-03    | 1.37E-05            | 6.74E+01                | 8.66E-01                         | 7.33E-08          |
|                                                           | Transport                            | A2   | 8.82E-04  | 9.64E-03       | 2.95E-03    | 2.49E-06            | 1.09E+01                | 4.88E-02                         | 6.19E-08          |
|                                                           | Manufacturing                        | A3   | 1.80E-04  | 1.97E-03       | 5.25E-04    | 1.57E-06            | 6.57E+00                | 3.07E-02                         | 5.33E-09          |
|                                                           | Total (Consumption grid)             | A1-3 | 2.22E-03  | 2.39E-02       | 9.27E-03    | 1.78E-05            | 8.49E+01                | 9.45E-01                         | 1.41E-07          |
| Construction process stage                                | Transport                            | A4   | 1.79E-05  | 1.95E-04       | 5.98E-05    | 5.09E-08            | 2.21E-01                | 9.95E-04                         | 1.26E-09          |
|                                                           | Construction                         | A5   | 1.42E-05  | 1.53E-04       | 5.20E-05    | 7.28E-08            | 3.48E-01                | 4.64E-03                         | 6.49E-10          |
| End of life                                               | Deconstruction, demolition           | C1   | 0.00E+00  | 0.00E+00       | 0.00E+00    | 0.00E+00            | 0.00E+00                | 0.00E+00                         | 0.00E+00          |
|                                                           | Transport                            | C2   | 1.02E-05  | 1.11E-04       | 3.40E-05    | 2.89E-08            | 1.26E-01                | 5.65E-04                         | 7.17E-10          |
|                                                           | Waste processing                     | C3   | 1.68E-04  | 1.71E-03       | 4.15E-04    | 7.72E-08            | 2.46E-01                | 7.13E-03                         | 1.73E-09          |
|                                                           | Disposal                             | C4   | 0.00E+00  | 0.00E+00       | 0.00E+00    | 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    | -3.41E-03 | -3.78E-02      | -9.24E-03   | -1.30E-05           | -1.23E+02               | -8.79E-01                        | -7.05E-08         |

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;  
 EP-terrestrial = Eutrophication potential, accumulated exceedance;  
 POCP = Formation potential of tropospheric ozone;  
 ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

ADP-fossil = Depletion potential of the stratospheric ozone layer;  
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and  
 PM = Particulate matter.

## LCA Results (continued)

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

| Parameters describing environmental impacts               |                                      |      | IRP                     | ETP-fw    | HTP-c     | HTP-nc    | SQP           |
|-----------------------------------------------------------|--------------------------------------|------|-------------------------|-----------|-----------|-----------|---------------|
|                                                           |                                      |      | kBq U <sup>235</sup> eq | CTUe      | CTUh      | CTUh      | dimensionless |
| Product stage                                             | Raw material supply                  | A1   | 9.83E-02                | 1.02E+01  | 5.57E-10  | 1.32E-08  | 1.81E+00      |
|                                                           | Transport                            | A2   | 5.58E-02                | 8.47E+00  | 2.74E-10  | 8.88E-09  | 7.45E+00      |
|                                                           | Manufacturing                        | A3   | 2.04E-01                | 3.03E+00  | 1.40E-10  | 2.07E-09  | 6.31E+00      |
|                                                           | Total (Consumption grid)             | A1-3 | 3.58E-01                | 2.17E+01  | 9.72E-10  | 2.41E-08  | 1.56E+01      |
| Construction process stage                                | Transport                            | A4   | 1.14E-03                | 1.73E-01  | 5.59E-12  | 1.81E-10  | 1.52E-01      |
|                                                           | Construction                         | A5   | 1.58E-03                | 9.69E-02  | 1.38E-11  | 1.28E-10  | 6.40E-02      |
| End of life                                               | Deconstruction, demolition           | C1   | 0.00E+00                | 0.00E+00  | 0.00E+00  | 0.00E+00  | 0.00E+00      |
|                                                           | Transport                            | C2   | 6.46E-04                | 9.81E-02  | 3.18E-12  | 1.03E-10  | 8.63E-02      |
|                                                           | Waste processing                     | C3   | 4.93E-04                | 6.25E-01  | 9.49E-11  | 3.48E-09  | 7.80E-02      |
|                                                           | Disposal                             | C4   | 0.00E+00                | 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    | -4.33E+00               | -5.74E+01 | -1.16E-09 | -3.30E-08 | -4.59E+01     |

IRP = Potential human exposure efficiency relative to U235;  
ETP-fw = Potential comparative toxic unit for ecosystems;  
HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and  
SQP = Potential soil quality index.

## LCA Results (continued)

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

| Parameters describing resource use, primary energy        |                                      |      | PERE      | PERM     | PERT      | PENRE     | PENRM    | PENRT     |
|-----------------------------------------------------------|--------------------------------------|------|-----------|----------|-----------|-----------|----------|-----------|
|                                                           |                                      |      | MJ        | MJ       | MJ        | MJ        | MJ       | MJ        |
| Product stage                                             | Raw material supply                  | A1   | 9.80E-01  | 0.00E+00 | 9.80E-01  | 3.61E+01  | 3.05E+01 | 6.66E+01  |
|                                                           | Transport                            | A2   | 1.53E-01  | 0.00E+00 | 1.53E-01  | 1.07E+01  | 0.00E+00 | 1.07E+01  |
|                                                           | Manufacturing                        | A3   | 1.79E+00  | 4.29E-01 | 2.22E+00  | 8.10E+00  | 4.01E-01 | 8.50E+00  |
|                                                           | Total (Consumption grid)             | A1-3 | 2.92E+00  | 4.29E-01 | 3.35E+00  | 5.49E+01  | 3.09E+01 | 8.58E+01  |
| Construction process stage                                | Transport                            | A4   | 3.12E-03  | 0.00E+00 | 3.12E-03  | 2.17E-01  | 0.00E+00 | 2.17E-01  |
|                                                           | Construction                         | A5   | -4.08E-01 | 4.21E-01 | 1.35E-02  | 2.23E-01  | 1.24E-01 | 3.47E-01  |
| End of life                                               | Deconstruction, demolition           | C1   | 0.00E+00  | 0.00E+00 | 0.00E+00  | 0.00E+00  | 0.00E+00 | 0.00E+00  |
|                                                           | Transport                            | C2   | 1.77E-03  | 0.00E+00 | 1.77E-03  | 1.23E-01  | 0.00E+00 | 1.23E-01  |
|                                                           | Waste processing                     | C3   | 5.66E-03  | 0.00E+00 | 5.66E-03  | -3.25E+01 | 3.28E+01 | 2.45E-01  |
|                                                           | Disposal                             | C4   | 0.00E+00  | 0.00E+00 | 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    | -6.21E+00 | 0.00E+00 | -6.21E+00 | -3.41E+01 | 0.00E+00 | -3.41E+01 |

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)

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

| 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   | 2.53E-03 | 0.00E+00                  | 0.00E+00                  | 2.05E-02       |
|                                                                                 | Transport                            | A2   | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | 1.21E-03       |
|                                                                                 | Manufacturing                        | A3   | 2.28E-03 | 5.31E-06                  | 0.00E+00                  | 1.73E-03       |
|                                                                                 | Total (Consumption grid)             | A1-3 | 4.80E-03 | 5.31E-06                  | 0.00E+00                  | 2.34E-02       |
| Construction process stage                                                      | Transport                            | A4   | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | 2.46E-05       |
|                                                                                 | Construction                         | A5   | 1.92E-05 | 2.12E-08                  | 0.00E+00                  | 1.14E-04       |
| End of life                                                                     | Deconstruction, demolition           | C1   | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | 0.00E+00       |
|                                                                                 | Transport                            | C2   | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | 1.40E-05       |
|                                                                                 | Waste processing                     | C3   | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | 1.69E-04       |
|                                                                                 | 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    | 0.00E+00 | 0.00E+00                  | 0.00E+00                  | -2.24E-02      |

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)

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

| Other environmental information describing waste categories |                                      |      |           |           |           |
|-------------------------------------------------------------|--------------------------------------|------|-----------|-----------|-----------|
|                                                             |                                      |      | HWD       | NHWD      | RWD       |
|                                                             |                                      |      | kg        | kg        | kg        |
| Product stage                                               | Raw material supply                  | A1   | 4.91E-02  | 1.11E+00  | 2.97E-05  |
|                                                             | Transport                            | A2   | 1.20E-02  | 2.12E-01  | 7.34E-05  |
|                                                             | Manufacturing                        | A3   | 9.47E-03  | 1.70E-01  | 5.30E-05  |
|                                                             | Total (Consumption grid)             | A1-3 | 7.05E-02  | 1.49E+00  | 1.56E-04  |
| Construction process stage                                  | Transport                            | A4   | 2.44E-04  | 4.33E-03  | 1.50E-06  |
|                                                             | Construction                         | A5   | 4.55E-04  | 3.66E-02  | 6.32E-07  |
| End of life                                                 | Deconstruction, demolition           | C1   | 0.00E+00  | 0.00E+00  | 0.00E+00  |
|                                                             | Transport                            | C2   | 1.39E-04  | 2.46E-03  | 8.50E-07  |
|                                                             | Waste processing                     | C3   | 1.85E-02  | 1.03E+00  | 3.99E-07  |
|                                                             | Disposal                             | C4   | 0.00E+00  | 0.00E+00  | 0.00E+00  |
| Potential benefits and loads beyond the system boundaries   | Reuse, recovery, recycling potential | D    | -8.21E-02 | -1.14E+00 | -3.49E-04 |

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

## LCA Results (continued)

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

| Other environmental information describing output flows – at end of life |                                      |      |          |          |          |                       |                           |                             |
|--------------------------------------------------------------------------|--------------------------------------|------|----------|----------|----------|-----------------------|---------------------------|-----------------------------|
|                                                                          |                                      |      | CRU      | MFR      | MER      | EE                    | Biogenic carbon (product) | Biogenic carbon (packaging) |
|                                                                          |                                      |      | kg       | kg       | kg       | MJ per energy carrier | kg C                      | kg C                        |
| Product stage                                                            | Raw material supply                  | A1   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              | 0.00E+00                  | 0.00E+00                    |
|                                                                          | Transport                            | A2   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              | 0.00E+00                  | 0.00E+00                    |
|                                                                          | Manufacturing                        | A3   | 0.00E+00 | 5.06E-03 | 3.93E-08 | 4.24E-03              | 0.00E+00                  | 1.33E-02                    |
|                                                                          | Total (Consumption grid)             | A1-3 | 0.00E+00 | 5.06E-03 | 3.93E-08 | 4.24E-03              | 0.00E+00                  | 1.33E-02                    |
| Construction process stage                                               | Transport                            | A4   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              | 0.00E+00                  | 0.00E+00                    |
|                                                                          | Construction                         | A5   | 0.00E+00 | 2.02E-05 | 1.57E-10 | 1.70E-05              | 0.00E+00                  | 0.00E+00                    |
| End of life                                                              | Deconstruction, demolition           | C1   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              | 0.00E+00                  | 0.00E+00                    |
|                                                                          | Transport                            | C2   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              | 0.00E+00                  | 0.00E+00                    |
|                                                                          | Waste processing                     | C3   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              | 0.00E+00                  | 0.00E+00                    |
|                                                                          | Disposal                             | C4   | 0.00E+00 | 0.00E+00 | 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    | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00              | 0.00E+00                  | 0.00E+00                    |

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            | An industrial average scenario based on BRE 2025, Product Category Rules (PCR) PN 514 Rev 3.2 has been used to calculate the transport distance to the building site. The scenario is Membrane (breather) polypropylene.                                                                                                                                                    |                   |                    |
|                                                | Fuel type/Vehicle type                                                                                                                                                                                                                                                                                                                                                      | Lorry             | 16 – 32 metric ton |
|                                                | Industrial average transport                                                                                                                                                                                                                                                                                                                                                | km                | 88                 |
|                                                | Capacity utilisation (incl. empty returns)                                                                                                                                                                                                                                                                                                                                  | %                 | 26                 |
|                                                | Bulk density of transported products                                                                                                                                                                                                                                                                                                                                        | kg/m <sup>3</sup> | 197.5              |
| A5 – Installation in the building              | It is estimated that during installation, only 0.4% of the Corriboards produce waste. No ancillary material is required in this process. The customer manages the installation waste produced.                                                                                                                                                                              |                   |                    |
|                                                | Installation wastage rate                                                                                                                                                                                                                                                                                                                                                   | %                 | 0.4                |
|                                                | Wooden pallets sent to recycling                                                                                                                                                                                                                                                                                                                                            | kg                | 0.03               |
|                                                | Polypropylene waste                                                                                                                                                                                                                                                                                                                                                         | kg                | 0.004              |
| C1 - Deconstruction                            | At the End of Life, Corriboards will be removed manually. It is assumed that the Corriboard will be 100% recovered, and that there is no energy.                                                                                                                                                                                                                            |                   |                    |
| C2 - Transport                                 | 50km by road has been modelled for module C2 as a typical distance from the demolition site to the incineration with energy recovery plant site. However, end-users of the EPD can use this information to calculate the impacts of a bespoke transport distance for module C2 if required                                                                                  | Litres per km     | 0.227              |
|                                                | Corriboard waste to an incineration facility with an average road distance of 50 km.                                                                                                                                                                                                                                                                                        | km                | 50                 |
| C3- Pre-processing                             | Corriboard cannot be separated by material composition, as they are adhered to each other. Corriboard waste will be considered as Polypropylene waste. According to BRE PCR 3.2, the industrial average scenario for Membrane (breather) polypropylene is 100% incineration for energy recovery, which has been selected as a representative EOL scenario for this product. |                   |                    |
|                                                | Polypropylene waste                                                                                                                                                                                                                                                                                                                                                         | kg                | 1                  |
| C4- Disposal                                   | No material sent to landfill                                                                                                                                                                                                                                                                                                                                                |                   |                    |

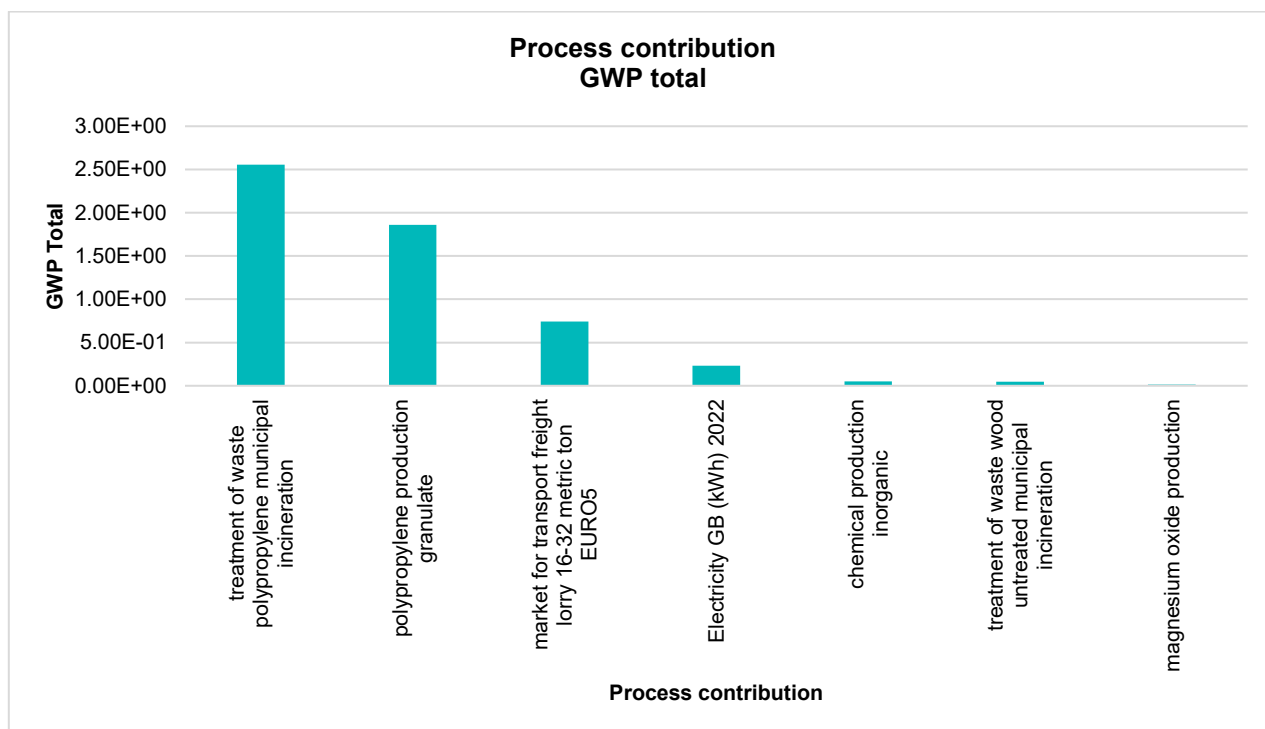
## Scenarios and additional technical information

| Scenario | Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Units | Results |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|
| Module D | <p>The dataset used to calculate the avoided impacts of electricity consumption in a future system was 'Electricity, medium voltage {GB} market for   Alloc Def, U'. This process is energy-efficient, with 37.4% of the combustion heat recovered after incineration. The efficiency rate of 37.4% has been calculated by taking the weighted average of the number of waste incineration plants available in the UK. According to the Environmental Agency's 2013 article on "CHP Ready Guidance for Combustion and Energy from Waste Power Plants" in the UK, EFW plants have an efficiency of 33%, and CHP plants have an efficiency of 55%.</p> <p>Additionally, according to Azapagic, A., &amp; Jeswani, H. K. (2016), there are currently 25 MSW incinerator with energy recovery in the UK. It is assumed that 20 plants generate heat and power at 33%, while 5 plants generate electricity at 55%. Therefore, the weighted average calculation is used to determine the efficiency, which is calculated at 37.5%.</p> <p>Calorific value of Polypropylene: 39.7 MJ/kg<br/> <a href="https://materials.fsri.org/materialdetail/polypropylene-pp">https://materials.fsri.org/materialdetail/polypropylene-pp</a><br/>           i.e 39.7 MJ/kg*0.374 efficiency rate: 14.84 kWh</p> |       |         |
|          | Benefits due to the incineration of polypropylene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Kg    | 1       |

## Interpretation

The bulk of the environmental impacts and primary energy demand are attributed to the manufacturing of polypropylene products covered by information modules A1-A3 of EN15804:2012+A2:2019. (i.e. A1).

The process that contributes to the highest GWP total is the treatment of waste polypropylene municipal incineration by 46%, followed by polypropylene production granulate (34%).



Graph 1. GWP total, process contribution for 1 kg of Corriboard.

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