



Statement of Verification

BREG EN EPD No: 000753

Issue: 01

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

Komfort Partitioning Limited

are in accordance with the requirements of:

EN 15804:2012+A2:2019

and

BRE Global Scheme Document SD207

This declaration is for:

1 m² of Komfort Double Glazed Polar 100 Screens (2x10mm) with the weight of 52.35 kg/m²

Company Address

Komfort Partitioning Limited,
Unit 501, Bentley Road South,
Wednesbury,
West Midlands,
WS10 8LQ



Hayley Thomson
Signed for BRE Global Limited

Hayley Thomson
Operator

06 January 2026
Date of this Issue

06 January 2026
Date of First Issue

05 January 2031
Expiry Date



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To check the validity of this statement of verification please, visit www.greenbooklive.com/check or contact us.

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Environmental Product Declaration

EPD Number: 000753

General Information

| EPD Programme Operator | Applicable Product Category Rules |
|---|--|
| BRE Global Watford, Herts WD25 9XX United Kingdom | BRE 2025 Product Category Rules (PN 514 Rev 3.2) for Type III environmental product declaration of construction products to EN 15804:2012+A2:2019. |
| Commissioner of LCA study | LCA consultant/Tool |
| Komfort Partitioning Limited, Unit 501, Bentley Road South, Wednesbury, West Midlands, WS10 8LQ | Bala Subramanian/BRE LINA A2 |
| Declared/Functional Unit | Applicability/Coverage |
| 1 m ² of Komfort Double Glazed Polar 100 Screens (2x10mm) with the weight of 52.35 kg/m ² | Other (please specify). Product specific |
| EPD Type | Background database |
| Cradle to Gate with options | Ecoinvent 3.8 |
| Demonstration of Verification | |
| CEN standard EN 15804 serves as the core PCR ^a | |
| Independent verification of the declaration and data according to EN ISO 14025:2010 <input checked="" type="checkbox"/> Internal <input type="checkbox"/> External | |
| (Where appropriate ^b) Third party verifier: Jiacheng (Francis) Yu | |
| a: Product category rules 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 type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Note: Ticks indicate the Information Modules declared.

Manufacturing site(s)

Komfort Partitioning Limited,
Unit 501,
Access 10,
Bentley Road South,
Wednesbury,
West Midlands,
WS10 8LQ

Construction Product:

Product Description

Komfort's Polar 100 is a 100mm wide Double-Glazed system with a range of glass configurations available, frameless bubble jointed glazing and minimal trackwork used for private and confidential office spaces with its high acoustic performance.

SYSTEM SPECIFICATION

The Polar 100 double glazed system achieves high acoustic ratings of up to 53dB (Rw) and can accommodate up to 14.8mm glass. Using the snap-in profile, this fully flexible system can also fit a third pane of glass, a mesh panel, an LED screen and more.

This system offers versatility in configuration. Polar 100 can be integrated with a stud partition with a Komfort 100 perpendicular three-way wrap around adaptor with glazing to the front, a wraparound door frame and head detail or a 100mm drywall tape and joint adaptor. There is also an optional deflection head channel with a built-in tolerance of +/-25mm available.

This system is available in a range of Kross Glaze options, from internal only, internal with applied bars and transom and mullion glazing to create a framed glazing system with individual glass panes.

The system is made in bespoke sizes, based on the requirements of the project.

The document is based on an average module size of 5.0m (W) x 2.9m (H) using 2x10mm toughened glass including head, abutment and base track. The system can be glazed with various glass thicknesses, based on the desired performance. These are 10 & 12mm toughened, 10.8, 12.8, 14.8 annealed laminate, 13.5mm



toughened laminate. The document will be based on use of a standard 2x10mm laminate glass product. To calculate the bespoke system impacts please contact Komfort Partitioning technical team.

In the manufacturing unit, the aluminium profiles lengths are painted and sent to the construction site, along with the gaskets. They are then cut to the correct length on site for installation. The Polar 100 screen is then surveyed for the glass which is then sent straight to site from the glass processors. During installation, insulation and hardware are added to the screens and doors to complete the system.

Technical Information

| Property | Polar 100 |
|------------------------|------------------|
| Dimensions | |
| Maximum Screen Height | 3000mm* |
| Maximum Module Width | 1200mm |
| Maximum Doorset Height | 3000mm* |
| Trackwork Dimensions | 100x32mm |
| Deflection Head | +/- 25mm |
| Acoustic Performance | Up to 53dB (Rw)* |
| Structural Performance | Up to 1.5kN/m* |
| Fire Performance | None |

Note: Please contact Komfort technical team for more information or visit <https://www.komfort.com/wp-content/uploads/2021/11/Polar-100-Double-Glazed-Quick-Sheet.pdf>





Main Product Contents

The calculated percentages in the composition table are based on a screen measuring 1000 mm (W) x 1000 mm (H), as used in the Komfort manufacturing facility. Aluminium is cut to the required size, while gaskets which are sent out either loose or in the original cardboard boxes/tubes and the glass is delivered straight to site from various glass processors. For more information, please contact Komfort Partitioning's technical team for further information.

| Material/Chemical Input | Polar 100 |
|-------------------------|-----------|
| Aluminium | 10-15% |
| Glass | 85-90% |
| Others | <5% |

Manufacturing Process

The process for manufacturing and assembling Komfort polar 30 screens involves multiple stages that integrate a complex supply chain and detailed production workflow.

Supply Chain:

1. **Aluminium Profiles:** Aluminium profiles are sourced from suppliers. These form the basic structural components of the screens.
2. **Powder Coating:** Powder coating materials are procured to provide a durable finish to the aluminium components.
3. **Accessories:** Gaskets are procured from the supplier.

Manufacturing and Assembly Process:

1. **Profile Finishing:** The aluminium profiles undergo finishing processes to ensure they meet quality and dimensional specifications.
2. **Powder Coating:** The finished profiles are then powder-coated to provide a protective and aesthetic surface finish.
3. **Screen Assembly:** The powder-coated profiles, along with the gaskets which are sent out either loose or in the original cardboard boxes/tubes, are sent to site for installation.
4. **Production Wastages:** Any waste materials generated during the production process are recycled which is managed appropriately to minimise environmental impact.

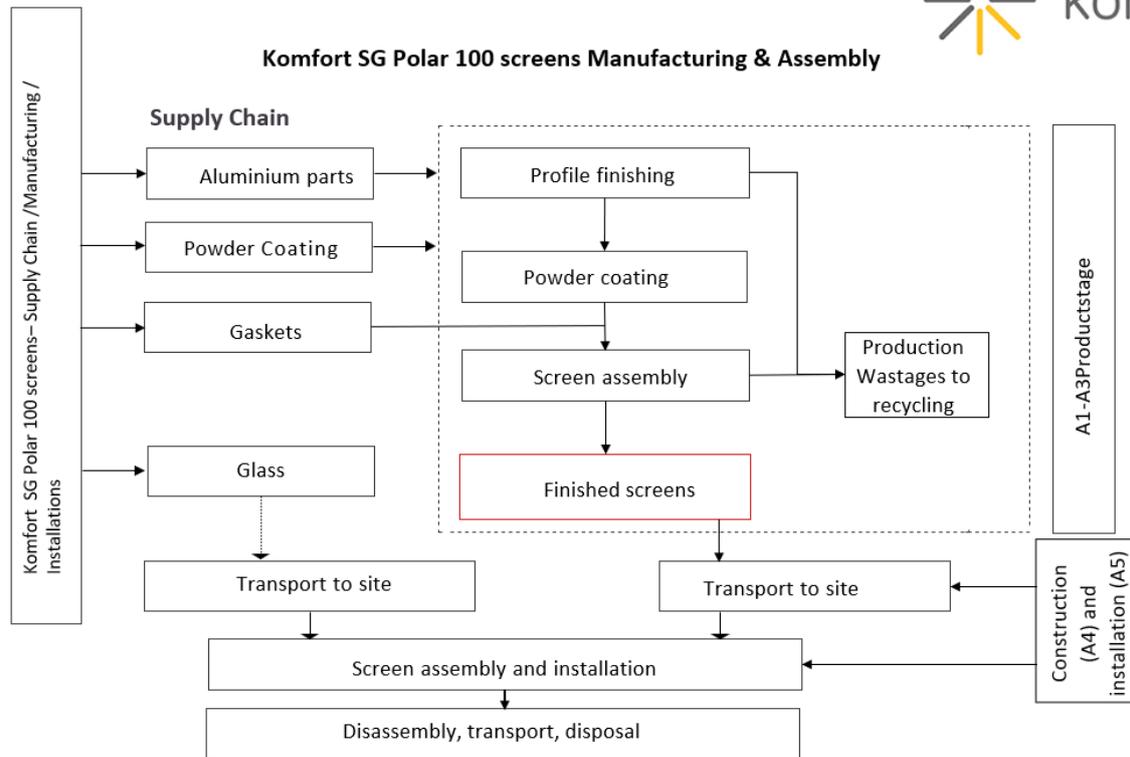
Transportation and Installation:

1. **Transport to Site:** The painted track and gaskets are transported from the manufacturing facility to the installation site.
2. **Screen Assembly and Installation:** On-site, the track and gaskets are cut to suit and installed into their designated locations, ensuring they are secure and functional.
3. **Glass survey, transportation:** Once the trackwork has been installed the glass is then surveyed, ordered and transported directly to site from the glass processors for installation.

End-of-Life Management:

1. **Disassembly, Transport, Disposal:** At the end of their lifecycle, the screens are disassembled. The components are then transported for disposal or recycling, ensuring compliance with environmental regulations.

Process flow diagram



Construction Installation

Screens are installed in to prepared opening on site. All trackwork and gaskets are cut to suit the openings on site. Any waste is either removed from site and taken back to the manufacturing facility or deposited on site in the correct recycling bin. Once the frames are fitted, the site surveyed glass is then installed and secured using the correct gaskets.

Note: Please contact Komfort Partitioning's technical team for more information

End of Life

At the end of their lifecycle, the screens are disassembled manually using hand tools. The components are then transported for disposal or recycling, ensuring compliance with environmental regulations. The energy required to dismantle the screens are not included in the analysis.



Life Cycle Assessment Calculation Rules

Declared unit description

1 m² of Komfort Double Glazed Polar 100 Screens (2x10mm) with the weight of 52.35 kg/m²

Note: The declared unit is one square metre.

The LCA is calculated on the basis of a screen of width 5.0m and height 2.9m, using 2 x 10mm toughened glass, including head and base track and wall abutments.

System boundary

This is a Cradle-to-Gate with Options EPD, reporting the production stages A1 to A3, construction stages A4-A5, and end-of-life stages C1-C4 and D in accordance with EN 15804:2012+A2:2019 and BRE 2025 Product Category Rules (PN 514 Rev 3.2).

Data sources, quality and allocation

The datasets are derived from Ecoinvent v3.8, and the LCA tool used was BRE LINA A2. The LCA analysis was conducted for 1 m² of Komfort DG Polar 100 Screens Double Glazed with the weight of 52.35 kg/m², including the total amount of aluminium, glass, and ancillary materials used to manufacture these products over a period of year (from 01/01/2024 to 31/12/2024). The total production percentage of the Komfort DG Polar 100 double-glazed screen at Komfort production factory is 17.4%. In addition to the Komfort DG Polar 100 Screens, other products are manufactured. Therefore, the allocation of electricity, fuel, waste, water consumption, and discharge are required. This allocation has been done according to the provisions of BRE PCR PN514 and EN 15804, using the mass production quantity. Site wide values for energy, water and wastewater have been taken from bills. Figures for the raw materials, ancillary materials and packaging were from actual usages. Upon data review, it was noted that the mass balance is within the range and no proxy datasets used for the analysis. Secondary data has been obtained for all other upstream and downstream processes that are beyond the control of the manufacturer (i.e. raw material production) from the ecoinvent 3.8 database. All ecoinvent datasets are complete within the context used and conform to the system boundary and the criteria for the exclusion of inputs and outputs, according to the requirements specified in EN 15804:2012+A2:2019.

| ISO14044 guidance. Quality Level | Geographical representativeness | Technical representativeness | Time representativeness |
|----------------------------------|---------------------------------|---|--|
| 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). | There is approximately less than 3 years between the Ecoinvent LCI reference year, and the time period for which the LCA was undertaken. |

Note: The above data quality exercise has been referenced from EN 15804+A2, Table E.1 – Data quality level and Criteria of the UN Environment Global Guidance on LCA data base development.

Specific UK and European datasets have been selected from the ecoinvent LCI for this LCA. Manufacturer uses the national grid electricity and natural gas for production, so therefore the location-based approach has been used for the LCA modelling (Ecoinvent 3.8). The reference year for the electricity and Natural gas dataset is 2022. The GWP carbon footprint for using 1 kWh of UK electricity, consumption mix is 0.239 kgCO₂e/kWh and for using 1 kWh of UK natural gas, at industrial furnace is 0.232 kgCO₂e. The quality level of time representativeness is also Very Good as the background LCI datasets are based on ecoinvent v3.8 which was compiled in 2021. Therefore, there is less than 5 years between the ecoinvent LCI reference year and the time period for which the LCA was undertaken.



Cut-off criteria

All raw materials and energy input to the manufacturing process have been included, except for direct emissions to air, water, and soil, which are not measured. The inventory process in this LCA includes all data related to raw material, packaging material and consumable items and manufacture has confirmed that no ancillary materials used for the production. The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks



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 ₂ eq | kg CFC11 eq | mol H ⁺ eq | kg (PO ₄) ³⁻ eq |
| Product stage | Raw material supply | A1 | 9.34E+01 | 9.26E+01 | 5.82E-01 | 1.40E-01 | 7.34E-06 | 7.83E-01 | 2.46E-02 |
| | Transport | A2 | 2.26E+00 | 2.25E+00 | 1.30E-03 | 1.11E-03 | 4.99E-07 | 2.63E-02 | 1.30E-04 |
| | Manufacturing | A3 | 1.23E+01 | 1.07E+01 | 1.65E+00 | 2.78E-03 | 8.94E-07 | 1.06E-02 | 4.96E-04 |
| | Total (Consumption grid) | A1-3 | 1.08E+02 | 1.05E+02 | 2.24E+00 | 1.44E-01 | 8.73E-06 | 8.20E-01 | 2.52E-02 |
| Construction process stage | Transport | A4 | 3.48E+00 | 3.48E+00 | 2.97E-03 | 1.37E-03 | 8.05E-07 | 1.41E-02 | 2.24E-04 |
| | Construction | A5 | 1.02E+01 | 1.01E+01 | 1.00E-01 | 1.09E-02 | 5.69E-07 | 6.22E-02 | 3.26E-03 |
| 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 | 4.36E-01 | 4.35E-01 | 3.71E-04 | 1.71E-04 | 1.01E-07 | 1.77E-03 | 2.80E-05 |
| | Waste processing | C3 | 1.83E+00 | 1.81E+00 | 1.07E-02 | 2.72E-03 | 1.28E-07 | 7.89E-03 | 4.69E-04 |
| | Disposal | C4 | 1.86E-01 | 1.84E-01 | 1.70E-03 | 1.74E-04 | 5.94E-08 | 1.62E-03 | 2.24E-05 |
| Potential benefits and loads beyond the system boundaries | Reuse, recovery, recycling potential | D | -1.36E+02 | -1.35E+02 | -8.49E-02 | -1.68E-01 | -6.08E-06 | -9.15E-01 | -4.31E-02 |

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 ³ world eq deprived | disease incidence |
| Product stage | Raw material supply | A1 | 1.26E-01 | 1.43E+00 | 3.84E-01 | 1.00E-03 | 1.06E+03 | 3.00E+01 | 1.19E-05 |
| | Transport | A2 | 6.84E-03 | 7.56E-02 | 2.06E-02 | 6.73E-06 | 3.26E+01 | 1.32E-01 | 1.61E-07 |
| | Manufacturing | A3 | 4.62E-03 | 3.92E-02 | 1.09E-02 | 1.64E-05 | 2.08E+02 | 2.26E+00 | 7.63E-08 |
| | Total (Consumption grid) | A1-3 | 1.37E-01 | 1.54E+00 | 4.16E-01 | 1.02E-03 | 1.30E+03 | 3.24E+01 | 1.21E-05 |
| Construction process stage | Transport | A4 | 4.25E-03 | 4.65E-02 | 1.42E-02 | 1.21E-05 | 5.26E+01 | 2.37E-01 | 3.00E-07 |
| | Construction | A5 | 1.11E-02 | 1.17E-01 | 3.58E-02 | 2.32E-04 | 1.16E+02 | 3.38E+00 | 8.88E-07 |
| 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 | 5.32E-04 | 5.81E-03 | 1.78E-03 | 1.51E-06 | 6.58E+00 | 2.96E-02 | 3.75E-08 |
| | Waste processing | C3 | 1.49E-03 | 1.63E-02 | 4.66E-03 | 7.23E-05 | 1.42E+01 | 3.04E-01 | 1.25E-07 |
| | Disposal | C4 | 5.65E-04 | 6.16E-03 | 1.77E-03 | 5.87E-07 | 4.44E+00 | 2.04E-01 | 3.35E-08 |
| Potential benefits and loads beyond the system boundaries | Reuse, recovery, recycling potential | D | -1.63E-01 | -1.70E+00 | -4.83E-01 | -7.06E-04 | - | - | -1.04E-05 |

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)

| | | | IRP | ETP-fw | HTP-c | HTP-nc | SQP |
|---|--------------------------------------|------|-------------------------|-----------|-----------|-----------|---------------|
| | | | kBq U ²³⁵ eq | CTUe | CTUh | CTUh | dimensionless |
| Product stage | Raw material supply | A1 | 6.63E+00 | 2.22E+03 | 1.07E-07 | 1.45E-06 | 3.27E+02 |
| | Transport | A2 | 1.62E-01 | 2.45E+01 | 1.01E-09 | 2.36E-08 | 1.84E+01 |
| | Manufacturing | A3 | 2.20E+00 | 5.43E+01 | 2.13E-09 | 3.13E-08 | 2.42E+01 |
| | Total (Consumption grid) | A1-3 | 8.99E+00 | 2.30E+03 | 1.10E-07 | 1.51E-06 | 3.70E+02 |
| Construction process stage | Transport | A4 | 2.70E-01 | 4.11E+01 | 1.33E-09 | 4.31E-08 | 3.61E+01 |
| | Construction | A5 | 7.70E-01 | 2.92E+02 | 1.75E-07 | 2.26E-07 | 5.10E+01 |
| End of life | Deconstruction, demolition | C1 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | Transport | C2 | 3.38E-02 | 5.13E+00 | 1.66E-10 | 5.38E-09 | 4.52E+00 |
| | Waste processing | C3 | 1.29E-01 | 3.83E+01 | 1.20E-09 | 4.86E-08 | 1.31E+01 |
| | Disposal | C4 | 1.96E-02 | 1.94E+02 | 1.36E-10 | 2.00E-09 | 1.11E+01 |
| Potential benefits and loads beyond the system boundaries | Reuse, recovery, recycling potential | D | -8.87E+00 | -2.96E+03 | -1.41E-07 | -4.57E-06 | -2.87E+02 |

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 | 8.57E+01 | 0.00E+00 | 8.57E+01 | 1.04E+03 | 1.14E+01 | 1.05E+03 |
| | Transport | A2 | 3.78E-01 | 0.00E+00 | 3.78E-01 | 3.04E+01 | 0.00E+00 | 3.04E+01 |
| | Manufacturing | A3 | -2.62E+00 | 1.72E+01 | 1.45E+01 | 2.33E+02 | 3.78E+00 | 2.37E+02 |
| | Total (Consumption grid) | A1-3 | 8.34E+01 | 1.72E+01 | 1.01E+02 | 1.30E+03 | 1.51E+01 | 1.32E+03 |
| Construction process stage | Transport | A4 | 7.41E-01 | 0.00E+00 | 7.41E-01 | 5.17E+01 | 0.00E+00 | 5.17E+01 |
| | Construction | A5 | 2.14E+01 | 3.67E-01 | 2.18E+01 | 1.12E+02 | 3.93E+00 | 1.16E+02 |
| 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 | 9.27E-02 | 0.00E+00 | 9.27E-02 | 6.46E+00 | 0.00E+00 | 6.46E+00 |
| | Waste processing | C3 | 1.26E+00 | 0.00E+00 | 1.26E+00 | 1.02E+01 | 0.00E+00 | 1.02E+01 |
| | Disposal | C4 | 6.12E-02 | 0.00E+00 | 6.12E-02 | 4.36E+00 | 0.00E+00 | 4.36E+00 |
| Potential benefits and loads beyond the system boundaries | Reuse, recovery, recycling potential | D | -1.03E+02 | 0.00E+00 | -1.03E+02 | -1.46E+03 | 0.00E+00 | -1.46E+03 |

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 net calorific value | MJ net calorific value | m ³ |
| Product stage | Raw material supply | A1 | 1.63E+00 | 0.00E+00 | 0.00E+00 | 7.38E-01 |
| | Transport | A2 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.28E-03 |
| | Manufacturing | A3 | 1.34E-02 | 5.51E-05 | 0.00E+00 | 6.31E-02 |
| | Total (Consumption grid) | A1-3 | 1.65E+00 | 5.51E-05 | 0.00E+00 | 8.04E-01 |
| Construction process stage | Transport | A4 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.87E-03 |
| | Construction | A5 | 8.95E-01 | 1.18E-06 | 0.00E+00 | 9.71E-02 |
| 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 | 7.33E-04 |
| | Waste processing | C3 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.49E-03 |
| | Disposal | C4 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.77E-03 |
| Potential benefits and loads beyond the system boundaries | Reuse, recovery, recycling potential | D | 0.00E+00 | 0.00E+00 | 0.00E+00 | -6.77E-01 |

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 | 9.13E+00 | 1.14E+02 | 3.31E-03 |
| | Transport | A2 | 3.59E-02 | 5.38E-01 | 9.25E+00 |
| | Manufacturing | A3 | 1.19E-01 | 3.02E+00 | 9.20E-04 |
| | Total (Consumption grid) | A1-3 | 9.29E+00 | 1.17E+02 | 9.25E+00 |
| Construction process stage | Transport | A4 | 5.80E-02 | 1.03E+00 | 3.56E-04 |
| | Construction | A5 | 7.54E+00 | 1.58E+01 | 8.42E+00 |
| End of life | Deconstruction, demolition | C1 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| | Transport | C2 | 7.25E-03 | 1.29E-01 | 4.45E-05 |
| | Waste processing | C3 | 1.35E-01 | 3.94E+00 | 4.48E-05 |
| | Disposal | C4 | 1.15E-02 | 1.13E+00 | 2.70E-05 |
| Potential benefits and loads beyond the system boundaries | Reuse, recovery, recycling potential | D | -2.09E+01 | -1.86E+02 | -8.18E-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 | 1.02E-02 | 1.91E-05 | 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 | 4.17E-01 | 7.46E-07 | 5.13E-02 | 9.57E-02 | 0.00E+00 |
| | Total (Consumption grid) | A1-3 | 0.00E+00 | 4.27E-01 | 1.99E-05 | 5.13E-02 | 9.57E-02 | 0.00E+00 |
| 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 | 9.14E-03 | 4.26E-07 | 1.10E-03 | 2.05E-03 | 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 | -3.02E-03 | -1.84E-05 | -3.06E+00 | 0.00E+00 | 0.00E+00 |

CRU = Components for reuse;
MFR = Materials for recycling

MER = Materials for energy recovery;
EE = Exported Energy

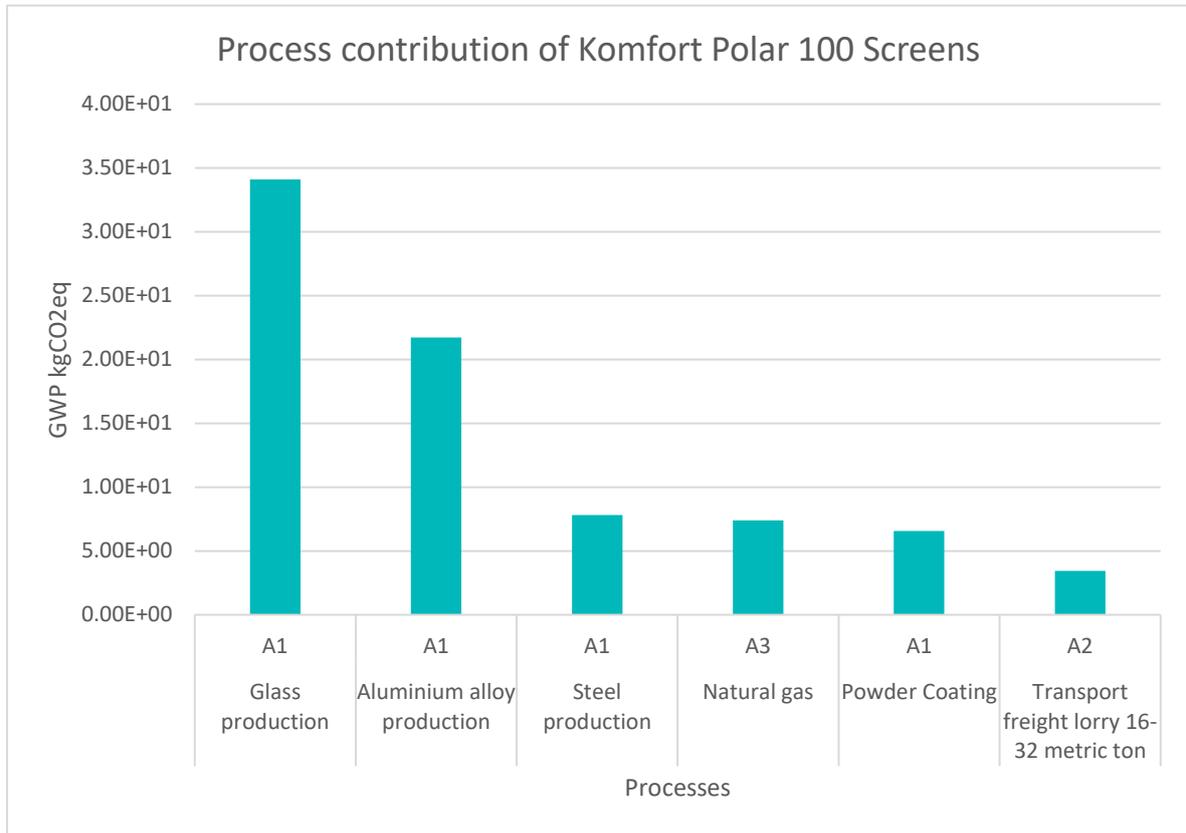
Scenarios and additional technical information

| Scenarios and additional technical information | | | |
|--|---|-------------------|---------|
| Scenario | Parameter | Units | Results |
| A4 – Transport to the building site | Transported from Wallsal to sites across the UK. Based on a worst case of 400km | | |
| | Road transport - Lorry 17.5 metric ton to sites across the UK | km | 400 |
| | Capacity utilisation (incl. empty returns) | % | 29 |
| | Fuel consumption | l/km | 0.165 |
| | Weight of the transported products | kg/m ² | 52.35 |
| A5 – Installation in the building | The finished Polar 100 screens are transported to the commercial building. Professional installers assemble and fit the screens into place. The track and gaskets are cut to suit the opening with the waste recycled but the glass is made to the correct size of the site opening with no waste. This is based on a screen size of 3000mm x 3000mm | | |
| Installation waste | 2.14% | | |
| | Packaging waste to landfill | kg | 0.117 |
| C1 - Deconstruction | At the end of their lifecycle, the Komfort polar are disassembled by using the heavy machines. The materials which are used during the product installation like a glazing media and the sealant will be associated with the product during the end of life. Therefore, the product waste is then transported for final disposal or recycling, ensuring compliance with environmental regulations. The energy required to dismantle the Komfort polar 100 screens are not included in the analysis. It's assumed as 100% of the product recovered at its end of life. | | |
| C2 – Transportation to waste processing facility | 50km by road has been modelled for module C2 as a typical distance from the demolition site to the disposal unit. However, end-users of the EPD can use this information to calculate the impacts of a bespoke transport distance for module C2 if required. | | |
| | Road transport | km | 50 |
| C3 – Pre-processing | Once the waste Polar 100 reached the waste processing facility, they will be separated from the other wastages and sent to the recycling. The sorting and separation activity is not included in the pre-processing analysis. The Polar 100 are made up of 58-90% of glass and 10-15% of aluminium, which have significant potential for recycling and reuse in other systems. An industrial average end-of-life data has been used according to BRE 2025 Product Category Rules (PN 514 Rev 3.2). This data indicates that 95% of aluminium waste will be recycled and 61% of glazing will be recycled and gasket waste to incineration. | | |
| Komfort Polar 100 screens | Aluminium waste - 95% recycling | kg | 5.84 |
| | Glass waste – 61% recycling | kg | 27.65 |
| | Gasket waste to incineration – 100% | kg | 0.15 |
| C4 – Disposal | Unrecovered waste sent to landfill i.e., 5% of aluminium waste to landfill and 39% of glass waste sent to landfill, 100% powder coating waste sent to landfill | | |
| | Aluminium waste – 5% landfill | kg | 0.307 |
| | Glass waste – 31% landfill | kg | 17.68 |

| Scenarios and additional technical information | | | |
|--|--|-------|---------|
| Scenario | Parameter | Units | Results |
| | Powder coat waste to landfill | kg | 0.71 |
| Module D | <p>Benefit and load have been calculated for the virgin aluminium and glass. In calculating the benefits of recycling steel at the end of life, the pre-existing recycled content has been removed, and the benefits have been calculated for only virgin inputs. Aluminium can be recycled indefinitely without losing its properties, making it a highly sustainable material. Recycled glass can be used as a replacement for virgin glass fibers. The waste rubber will be incinerated in the UK, so the UK electricity dataset have been selected. 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'.</p> <p>According to BRE PCR EN15804 V3.2,</p> <ul style="list-style-type: none"> Aluminium recycling percentage = 95%, <p>Secondary materials - 25.90% therefore, secondary materials = $5.84 \times 25.90\% = 1.51$ kg</p> <p>Virgin materials to calculate the benefits of recycling aluminium = 4.33 kg</p> <ul style="list-style-type: none"> Glass recycling percentage = 61%, no secondary materials <p>No secondary materials in ecoinvent 3.8 glass dataset, therefore, benefits for recycling glass calculated for 100% of the virgin materials = 17.68 kg</p> <p>It is assumed as 100% yield during the recycling process.</p> | | |
| | Products Recycled Content (Aluminium post-consumer) | kg | 1.51 |
| | Virgin Aluminium recovered for recycling | kg | 4.33 |
| | Virgin glass recovered for recycling | kg | 17.68 |
| | Gaskets recovered for energy | kg | 0.153 |

Interpretation of results:

The bulk of the environmental impacts and primary energy demand are attributed to the manufacturing phase of Komfort Polar 100 screen products, covered by information modules A1-A3 of EN15804:2012+A2:2019. Komfort Polar 100 screen have been taken as a representative to interpret the results. The chart shows the global warming potential (GWP) contributions for the production of Komfort Polar 100 Screens, measured in kgCO₂eq. Glass production (A1) is the largest contributor by a wide margin, followed by aluminium alloy production (A1). These two processes dominate the carbon footprint. The next most significant contributors—steel production (A1), natural gas use (A3), and powder coating (A1, while transport (A2) by freight lorry has a much smaller impact. Overall, the results highlight that raw material production, particularly glass and aluminium, is the primary driver of greenhouse gas emissions for this product.





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