

Environmental Product Declaration

In accordance with
EN 15804+A2
& ISO 14025 / ISO 21930

Print HPL Thin
Abet Laminati S.p.A.

EPD HUB, HUB-1564

Published on 03.07.2024, last updated on 03.07.2024, valid until 03.07.2029.

General Information

Manufacturer

| | |
|------------------------|--|
| Manufacturer | Abet Laminati S.p.A. |
| Address | Viale Industria 21, 12042 Bra (CN), Italia |
| Contact details | sga@abetlaminati.com |
| Website | abetlaminati.com |

EPD standards, scope and verification

| | |
|---------------------------|--|
| Program operator | EPD Hub, hub@epdhub.com |
| Reference standard | EN 15804+A2:2019 and ISO 14025 |
| PCR | EPD Hub Core PCR version 1.1, 5 Dec 2023 |
| Sector | Construction product |
| Category of EPD | Third party verified EPD |
| Scope of the EPD | Cradle to gate with options, A4-A5, and modules C1-C4, D |
| EPD author | Luz Sanchez |
| EPD verification | Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification |
| EPD verifier | Lucas Pedro Berman, as an authorized verifier acting for EPD Hub Limited |

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

Product

| | |
|--|---------------------------------|
| Product name | Print HPL Thin |
| Additional labels | Print HPL Thin 0,9 mm, Standard |
| Product reference | - |
| Place of production | Italy |
| Period for data | 2023 |
| Averaging in EPD | - |
| Variation in GWP-fossil for A1-A3 | - |

Environmental data summary

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|--|---|
| Declared unit | 1 m ² of Print HPL (High Pressure Laminate) Thin 0,9 mm Standard |
| Declared unit mass | 1,273 Kg |
| GWP-fossil, A1-A3 (kgCO₂e) | 4,22E+00 |
| GWP-total, A1-A3 (kgCO₂e) | 2,55+00 |
| Secondary material, inputs (%) | 0,62 |
| Secondary material, outputs (%) | 0 |
| Total energy use, A1-A3 (kWh) | 22,4 |
| Net freshwater use, A1-A3 (m³) | 0,07 |

Product and Manufacturer

About the manufacturer

Abet Laminati was founded in Bra, Italy and is one of the world's leading manufacturers of HPL (High Pressure decorative Laminates), with a global sales network. In more than sixty years of history, the company has revealed a continued commitment to the research and development of products to satisfy the market demand, operating in full respect of the environment. Abet Laminati propose a wide range of standard and customised digital print decorative laminates and permanent collaborations with renowned international architects and designers.

Product description

The decorative laminates Print HPL Thin 0,9 mm Standard are sheets composed of kraft and decorative paper impregnated with thermosetting resins, dried and pressed under high pressure ($\geq 5\text{MPa}$) at high temperatures ($\geq 120\text{ }^\circ\text{C}$). The backside of the panel is sanded to make it suitable for gluing on substrates. The final product is a stable, homogenous, non-porous, resistant and long-lasting material ($\geq 1350\text{ kg/m}^3$), easy to handle and machine. The material is also impact resistant, scratch and wear resistant, light resistant, heat resistant, and have good hygienic and anti-static properties, being easy to clean and maintain. Panels comply with the performance requirements of European standard EN 438-3.

The significant performance properties, aesthetic qualities and the rich variety of surface finishes and texture make Print HPL Thin 0,9 mm Standard suitable in a wide range of interior applications: furniture, private and residential housing, hospitals and laboratories, public buildings, airport terminals/infrastructure, transportation (marine, railways and automotive applications), hotels, schools, retail and commercial buildings, sport & recreation centres and industrial buildings.

Further information can be found at abetlaminati.com

Product raw material main composition

| Raw material category | Amount, mass- % | Material origin |
|-----------------------|-----------------|-----------------|
| Metals | - | - |
| Minerals | - | - |
| Fossil materials | 34,27 | EU |
| Bio-based materials | 65,73 | EU |

Biogenic carbon content

Product's biogenic carbon content at the factory gate

| | |
|--|-------|
| Biogenic carbon content in product, kg C | 0,392 |
| Biogenic carbon content in packaging, kg C | 0,106 |

Functional unit and service life

| | |
|------------------------|--|
| Declared unit | 1 m ² of PRINT HPL (High Pressure Laminate) Thin 0,9 mm |
| Mass per declared unit | 1,273 Kg |
| Functional unit | - |
| Reference service life | - |

Substances, reach - Very high concern

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

Product life-cycle

System boundary

This EPD covers the life-cycle modules listed in the following table.

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

Modules not declared = MND. Modules not relevant = MNR.

Manufacturing and packaging (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

Raw material sampling and acceptance

All the raw materials are purchased from external suppliers. Before the storage, papers, resins and chemical additives are subject to laboratory acceptance controls. The approved materials are stored in warehouses. The resins are stored in tanks.

Impregnation and composition

Impregnation of kraft/decorative paper is performed on continuous lines composed of unwinder systems, immersion bath, squeeze rollers, drying ovens and cutter. Paper is stretched on unwinder system, passing through an

immersion bath with phenolic/melamine resins. The resin excess is removed through squeeze rollers. At the end of the process impregnated paper is cut into sheets and stacked in pallets.

The sheets of Kraft paper impregnated with phenolic resin are assembled in packs (composition). The number of kraft sheets determines the thickness of the final panel.

The sheets of decor paper impregnated with melamine resins are stored in appropriated and controlled warehouse.

Composition and pressure

Impregnated papers and ancillary paper sheets are layered and pressed under high pressure ($\geq 5\text{MPa}$) at high temperatures ($\geq 120\text{ }^\circ\text{C}$).

During the process, the thermosetting resins flow throughout the paper fibres creating irreversibly cross-linked chemical bonds, converting the impregnated paper sheets into a single rigid laminate panel.

Squaring and sanding

After the thermal lamination, the edges of the panel are refined, and the backside is sanded to make panels suitable for gluing on substrates.

Inspection and forwarding

The finished panels are sent to final inspection for both aesthetic and dimensional characteristic controls.

As a last step, the final products are packed, identified and sent to their destination. The standard packaging is composed of polyethylene film, strapping and wood pallets. The single panel can be covered by a removable protective film.

Transport and installation (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Average distance of transportation from production plant to retailer's site is assumed as 867 Km by truck and 2694 Km by ship. Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as role of transportation emissions in total results is small, the variety in load is assumed to be negligible. To be conservative, empty returns are included in this study as implemented through an average load factor in the Ecoinvent transport datapoints. Transportation does not cause losses as product is packaged properly. Environmental impacts from installation into the building include generation of waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets packaging. The impacts of material

production, its processing and its disposal as installation waste are also assessed. Electricity consumption for installation of HPL is considered, too.

Product use and maintenance (B1-B7)

The impacts associated with use and maintenance are outside of the system boundaries and are not included in the scope of this LCA. Air, soil, and water impacts during the use phase have not been studied.

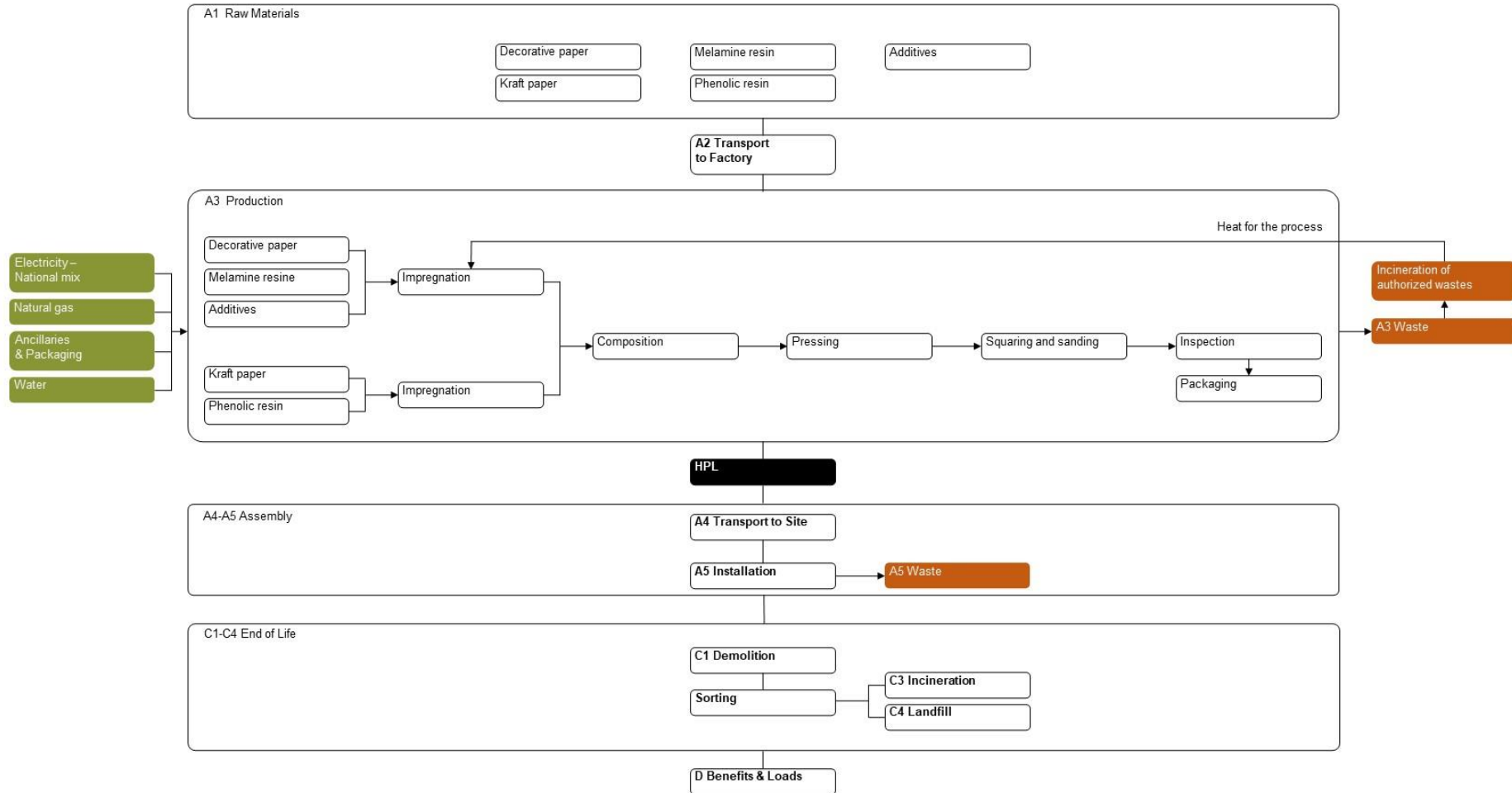
For information, the service life in standard applications can range from 20 to 50 years according to ICDLI aisbl suggestion based on expert judgment. The quantity of materials required for maintenance as water and pieces of reusable rags are considered minimal. The use phase has been considered as not relevant for the life cycle emissions of HPL Thin and is, therefore, not accounted into the assessment.

Product end of life (C1-C4, D)

It is assumed that the waste is collected separately and transported to the waste treatment facility. Transportation distance to waste treatment plant is assumed to be 50 km and the transportation method is assumed to be lorry (C2). Module C3 accounts for energy and resource inputs for incineration of the HPL. Due to the energy recovery potential of the product, and material and energy recovery potential of packaging, recycled raw materials lead to avoided virgin material production and the energy recovered from incineration replaces electricity and heat from primary sources. Benefits and loads from incineration and recycling are included in Module D.



Manufacturing process



Life-cycle assessment

Cut-off criteria

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

Allocation, estimates and assumptions

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

| Data type | Allocation |
|--------------------------------|-----------------|
| Raw materials | No allocation |
| Packaging materials | No allocation |
| Ancillary materials | Mass allocation |
| Manufacturing energy and waste | Mass allocation |

Averages and variability

| | |
|-----------------------------------|------------|
| Type of average | No average |
| Averaging method | - |
| Variation in GWP-fossil for A1-A3 | - |

There is no average result considered in this study since this EPD refers to one specific product produced in one production plant.

LCA software and bibliography

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

Environmental impact data

Core environmental impact indicators – EN 15804+A2, PEF VP-029-C

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|-------------------------------------|------------------------|-----------|----------|-----------|-----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| GWP – total ¹⁾ | kg CO ₂ e | 1,27E+00 | 1,65E-01 | 1,12E+00 | 2,55E+00 | 2,92E-01 | 4,86E-01 | MND | MND | MND | MND | MND | MND | MND | 9,30E-03 | 2,21E-02 | 1,30E+00 | 0,00E+00 | -2,91E+00 |
| GWP – fossil | kg CO ₂ e | 2,72E+00 | 1,65E-01 | 1,34E+00 | 4,22E+00 | 2,92E-01 | 9,48E-02 | MND | MND | MND | MND | MND | MND | MND | 9,28E-03 | 2,21E-02 | 4,24E-02 | 0,00E+00 | -2,66E+00 |
| GWP – biogenic | kg CO ₂ e | -1,46E+00 | 0,00E+00 | -2,16E-01 | -1,68E+00 | 0,00E+00 | 3,91E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 1,25E+00 | 0,00E+00 | -2,46E-01 |
| GWP – LULUC | kg CO ₂ e | 5,61E-03 | 8,07E-05 | 6,64E-04 | 6,35E-03 | 1,33E-04 | 3,03E-05 | MND | MND | MND | MND | MND | MND | MND | 1,95E-05 | 9,01E-06 | 1,44E-05 | 0,00E+00 | -4,42E-04 |
| Ozone depletion pot. | kg CFC ₁₁ e | 1,76E-07 | 3,67E-08 | 1,15E-07 | 3,27E-07 | 6,34E-08 | 3,07E-09 | MND | MND | MND | MND | MND | MND | MND | 3,13E-10 | 4,87E-09 | 3,50E-09 | 0,00E+00 | -1,95E-07 |
| Acidification potential | mol H ⁺ e | 1,57E-02 | 1,48E-03 | 2,64E-03 | 1,98E-02 | 2,40E-03 | 1,09E-04 | MND | MND | MND | MND | MND | MND | MND | 4,72E-05 | 9,15E-05 | 3,55E-04 | 0,00E+00 | -2,02E-02 |
| EP-freshwater ²⁾ | kg Pe | 1,37E-04 | 1,31E-06 | 2,02E-05 | 1,58E-04 | 2,26E-06 | 3,31E-07 | MND | MND | MND | MND | MND | MND | MND | 4,86E-07 | 1,86E-07 | 4,60E-07 | 0,00E+00 | -9,85E-05 |
| EP-marine | kg Ne | 3,51E-03 | 3,58E-04 | 6,51E-04 | 4,51E-03 | 6,38E-04 | 4,19E-05 | MND | MND | MND | MND | MND | MND | MND | 7,96E-06 | 2,67E-05 | 1,53E-04 | 0,00E+00 | -2,41E-03 |
| EP-terrestrial | mol Ne | 3,88E-02 | 3,97E-03 | 6,38E-03 | 4,91E-02 | 7,06E-03 | 3,94E-04 | MND | MND | MND | MND | MND | MND | MND | 8,87E-05 | 2,95E-04 | 1,58E-03 | 0,00E+00 | -2,81E-02 |
| POCP (“smog”) ³⁾ | kg NMVOCe | 1,21E-02 | 1,15E-03 | 2,31E-03 | 1,56E-02 | 1,98E-03 | 1,13E-04 | MND | MND | MND | MND | MND | MND | MND | 2,40E-05 | 8,97E-05 | 3,90E-04 | 0,00E+00 | -7,82E-03 |
| ADP-minerals & metals ⁴⁾ | kg Sbe | 2,88E-05 | 4,68E-07 | 2,04E-06 | 3,13E-05 | 9,27E-07 | 8,68E-08 | MND | MND | MND | MND | MND | MND | MND | 4,34E-08 | 7,69E-08 | 1,46E-07 | 0,00E+00 | -1,93E-06 |
| ADP-fossil resources | MJ | 5,16E+01 | 2,44E+00 | 1,66E+01 | 7,06E+01 | 4,14E+00 | 2,53E-01 | MND | MND | MND | MND | MND | MND | MND | 1,21E-01 | 3,20E-01 | 2,88E-01 | 0,00E+00 | -2,83E+01 |
| Water use ⁵⁾ | m ³ e depr. | 2,57E+00 | 1,07E-02 | 2,77E-01 | 2,86E+00 | 1,74E-02 | 1,15E-02 | MND | MND | MND | MND | MND | MND | MND | 2,54E-03 | 1,40E-03 | 8,90E-02 | 0,00E+00 | -4,72E-01 |

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Additional (optional) environmental impact indicators – EN 15804+A2, PEF

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|----------------------------------|-----------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| Particulate matter | Incidence | 1,77E-07 | 1,47E-08 | 2,41E-08 | 2,16E-07 | 2,26E-08 | 2,30E-09 | MND | MND | MND | MND | MND | MND | MND | 3,58E-10 | 1,88E-09 | 2,85E-09 | 0,00E+00 | -1,82E-07 |
| Ionizing radiation ⁶⁾ | kBq U235e | 1,85E-01 | 1,15E-02 | 4,10E-02 | 2,37E-01 | 1,92E-02 | 1,45E-03 | MND | MND | MND | MND | MND | MND | MND | 1,35E-03 | 1,49E-03 | 9,43E-04 | 0,00E+00 | -1,30E-01 |
| Ecotoxicity (freshwater) | CTUe | 6,86E+01 | 2,13E+00 | 8,88E+00 | 7,96E+01 | 3,67E+00 | 3,36E-01 | MND | MND | MND | MND | MND | MND | MND | 1,83E-01 | 2,95E-01 | 2,54E+00 | 0,00E+00 | -5,75E+01 |
| Human toxicity, cancer | CTUh | 1,10E-08 | 6,93E-11 | 2,08E-09 | 1,32E-08 | 1,19E-10 | 2,26E-11 | MND | MND | MND | MND | MND | MND | MND | 2,80E-12 | 8,28E-12 | 1,15E-10 | 0,00E+00 | -8,04E-10 |
| Human tox. non-cancer | CTUh | 3,41E-08 | 1,93E-09 | 6,79E-09 | 4,28E-08 | 3,31E-09 | 5,58E-10 | MND | MND | MND | MND | MND | MND | MND | 1,03E-10 | 2,74E-10 | 4,80E-09 | 0,00E+00 | -2,53E-08 |
| SQP ⁷⁾ | - | 2,09E+02 | 2,13E+00 | 4,17E+01 | 2,53E+02 | 2,58E+00 | 2,33E-01 | MND | MND | MND | MND | MND | MND | MND | 1,96E-02 | 2,21E-01 | 1,02E-01 | 0,00E+00 | -1,93E+01 |

6) EN 15804+A2 disclaimer for ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

Use of natural resources

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|------------------------------------|----------------|----------|----------|----------|----------|----------|-----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|-----------|----------|-----------|
| Renew. PER as energy ⁸⁾ | MJ | 2,20E+01 | 2,77E-02 | 3,76E+00 | 2,58E+01 | 4,60E-02 | 1,63E-02 | MND | MND | MND | MND | MND | MND | MND | 1,57E-02 | 3,75E-03 | 1,15E-02 | 0,00E+00 | -6,06E+00 |
| Renew. PER as material | MJ | 1,37E+01 | 0,00E+00 | 1,49E+00 | 1,52E+01 | 0,00E+00 | -3,43E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | -1,17E+01 | 0,00E+00 | 2,15E+00 |
| Total use of renew. PER | MJ | 3,57E+01 | 2,77E-02 | 5,25E+00 | 4,09E+01 | 4,60E-02 | -3,41E+00 | MND | MND | MND | MND | MND | MND | MND | 1,57E-02 | 3,75E-03 | -1,17E+01 | 0,00E+00 | -3,91E+00 |
| Non-re. PER as energy | MJ | 3,83E+01 | 2,44E+00 | 1,39E+01 | 5,47E+01 | 4,14E+00 | 2,53E-01 | MND | MND | MND | MND | MND | MND | MND | 1,21E-01 | 3,20E-01 | 2,88E-01 | 0,00E+00 | -2,83E+01 |
| Non-re. PER as material | MJ | 1,32E+01 | 0,00E+00 | 7,37E-01 | 1,39E+01 | 0,00E+00 | -2,61E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | -1,13E+01 | 0,00E+00 | 1,51E-01 |
| Total use of non-re. PER | MJ | 5,16E+01 | 2,44E+00 | 1,47E+01 | 6,86E+01 | 4,14E+00 | -2,35E+00 | MND | MND | MND | MND | MND | MND | MND | 1,21E-01 | 3,20E-01 | -1,11E+01 | 0,00E+00 | -2,82E+01 |
| Secondary materials | kg | 7,95E-03 | 8,37E-04 | 1,44E-02 | 2,32E-02 | 1,43E-03 | 1,85E-04 | MND | MND | MND | MND | MND | MND | MND | 1,11E-05 | 1,05E-04 | 4,25E-04 | 0,00E+00 | -2,33E-03 |
| Renew. secondary fuels | MJ | 1,08E-03 | 7,99E-06 | 1,18E-01 | 1,19E-01 | 1,61E-05 | 2,01E-06 | MND | MND | MND | MND | MND | MND | MND | 7,72E-08 | 1,36E-06 | 7,26E-06 | 0,00E+00 | -1,96E-05 |
| Non-re. secondary fuels | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Use of net fresh water | m ³ | 6,07E-02 | 2,93E-04 | 1,06E-02 | 7,15E-02 | 4,61E-04 | 9,14E-05 | MND | MND | MND | MND | MND | MND | MND | 7,10E-05 | 3,78E-05 | 1,58E-03 | 0,00E+00 | -2,47E-02 |

8) PER = Primary energy resources.

End of life – waste

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|---------------------|------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| Hazardous waste | kg | 2,06E-01 | 3,48E-03 | 2,73E-02 | 2,37E-01 | 5,92E-03 | 7,10E-04 | MND | MND | MND | MND | MND | MND | MND | 7,80E-04 | 4,60E-04 | 0,00E+00 | 0,00E+00 | -2,13E-01 |
| Non-hazardous waste | kg | 4,26E+00 | 5,22E-02 | 9,10E-01 | 5,22E+00 | 8,90E-02 | 2,79E-01 | MND | MND | MND | MND | MND | MND | MND | 2,09E-02 | 7,36E-03 | 1,27E+00 | 0,00E+00 | -7,86E+00 |
| Radioactive waste | kg | 7,40E-05 | 1,64E-05 | 1,95E-05 | 1,10E-04 | 2,76E-05 | 1,11E-06 | MND | MND | MND | MND | MND | MND | MND | 3,72E-07 | 2,11E-06 | 0,00E+00 | 0,00E+00 | -7,73E-05 |

End of life – output flows

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|--------------------------|------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|----------|
| Components for re-use | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Materials for recycling | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 1,17E-01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Materials for energy rec | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Exported energy | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,47E+01 | MND | MND | MND | MND | MND | MND | MND | 0,00E+00 | 0,00E+00 | 1,00E+01 | 0,00E+00 | 0,00E+00 |

Environmental impacts – EN 15804+A1, CML / ISO 21930

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|----------------------|------------------------------------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| Global Warming Pot. | kg CO ₂ e | 2,64E+00 | 1,63E-01 | 1,32E+00 | 4,12E+00 | 2,89E-01 | 1,03E-01 | MND | MND | MND | MND | MND | MND | MND | 9,08E-03 | 2,19E-02 | 4,03E-02 | 0,00E+00 | -2,61E+00 |
| Ozone depletion Pot. | kg CFC ₁₁ e | 1,53E-07 | 2,91E-08 | 9,73E-08 | 2,80E-07 | 5,02E-08 | 2,47E-09 | MND | MND | MND | MND | MND | MND | MND | 2,62E-10 | 3,86E-09 | 3,17E-09 | 0,00E+00 | -1,62E-07 |
| Acidification | kg SO ₂ e | 1,23E-02 | 1,18E-03 | 2,13E-03 | 1,56E-02 | 1,90E-03 | 8,26E-05 | MND | MND | MND | MND | MND | MND | MND | 3,93E-05 | 7,13E-05 | 2,57E-04 | 0,00E+00 | -1,73E-02 |
| Eutrophication | kg PO ₄ ³ e | 1,46E-02 | 1,74E-04 | 9,34E-04 | 1,57E-02 | 3,07E-04 | 5,26E-04 | MND | MND | MND | MND | MND | MND | MND | 1,71E-05 | 1,64E-05 | 2,02E-04 | 0,00E+00 | -4,04E-03 |
| POCP ("smog") | kg C ₂ H ₄ e | 1,32E-03 | 3,77E-05 | 2,38E-04 | 1,59E-03 | 6,08E-05 | 5,55E-06 | MND | MND | MND | MND | MND | MND | MND | 1,58E-06 | 2,90E-06 | 7,93E-06 | 0,00E+00 | -7,57E-04 |
| ADP-elements | kg Sbe | 2,85E-05 | 4,57E-07 | 1,99E-06 | 3,09E-05 | 9,05E-07 | 8,46E-08 | MND | MND | MND | MND | MND | MND | MND | 4,33E-08 | 7,50E-08 | 1,12E-07 | 0,00E+00 | -1,90E-06 |
| ADP-fossil | MJ | 5,16E+01 | 2,44E+00 | 1,66E+01 | 7,06E+01 | 4,14E+00 | 2,53E-01 | MND | MND | MND | MND | MND | MND | MND | 1,21E-01 | 3,20E-01 | 2,88E-01 | 0,00E+00 | -2,83E+01 |

Annex 1 : Product Scaling

| Print HPL Thin Standard | A1-A3 | | | |
|-------------------------|------------------|----------------------|-----------------------|-------------------------|
| | EN 15804+A1, CML | EN 15804+A2, PEF | | |
| | GWP Kg CO2e | GWP-total Kg CO2e | GWP-fossil Kg CO2e | GWP-biogenic Kg CO2e |
| 0,6 mm | 3,48E+00 | 2,34E+00 | 3,56E+00 | -1,23E+00 |
| 0,9 mm | 4,12E+00 | 2,55E+00 | 4,22E+00 | -1,68E+00 |
| 1,8 mm | 5,95E+00 | 3,44E+00 | 6,10E+00 | -2,67E+00 |

Verification statement

Verification process for this EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

This Environmental Product Declaration
The Life-Cycle Assessment used in this EPD
The digital background data for this EPD

Why does verification transparency matter? [Read more online](#)

This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

Third-party verification statement

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Lucas Pedro Berman, as an authorized verifier acting for EPD Hub Limited
03.07.2024

