INDIA EPD
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Environmental Product Declaration

ECO PLATFORM EPD VERIFIED

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Compact Laminate (2.0 mm and above)

from

Rushil Decor

EPD of multiple products based on average results of the product group

RUSHIL
DECOR LIMITED
WE'LL MAKE IT

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Licensee:	EPD India
Type of EPD:	EPD of multiple products based on average results of the product group
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General information

Programme information

Programme:	The International EPD System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14 Construction products version 2.0.1, EN 15804:2012 + A2:2019 Sustainability of Construction Works UN CPC Code – 314
PCR review was conducted by: Committee of the International EPD System. Review chair: Rob Rouwette, Review co-chair: Noa Meron. The review panel may be contacted via the Secretariat www.environdec.com/
Declaration Holder
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LCA Practitioner
SGS India Pvt Ltd. – Industries & Environment Pranav Negi, Carbon Services, SGS India Vipul Shardanandan, Carbon Services, SGS India
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☑ EPD verification by individual verifier Third-party verifier: Vijay Thakur, Eco-Assure Verification & Advisory Approved by: The International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of

PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Information about EPD Owner

Owner of the EPD: Rushil Décor Limited

Contact: Darshanraj G N – Design and Development (pd.team@rushil.com)

Description of the organisation:

Rushil Décor Limited, established in 1993, is a prominent manufacturer in the laminates and MDF panel boards industry, recognized for its strong presence both in India and across international markets. With a global footprint spanning more than 50 countries, the company has built a reputation as a preferred partner for customers seeking high-quality, design-driven surface solutions for modern interiors and architectural applications.

Since its inception, Rushil Décor has been guided by a vision to redefine living and working spaces through innovation and excellence in manufacturing. The company combines technical expertise with artistic design to deliver products that not only meet functional requirements but also enhance aesthetic appeal. Its diverse product portfolio includes decorative high-pressure laminates and MDF boards, catering to a wide range of residential, commercial, and institutional applications.
Operating six state-of-the-art manufacturing facilities, Rushil Décor has a robust production capacity of approximately 330,000 CBM of MDF and 3.49 million laminates annually. This scale enables the company to efficiently serve a broad customer base worldwide, including architects, interior designers, builders, and corporate clients. As one of the organized players in a largely unorganized industry, the company has established itself as a reliable supplier to several reputed organizations, including those in the public and government sectors.

The company's flagship brand, VIR, is widely recognized in the interior decorative market for its extensive range of laminates designed for both residential and commercial use. Known for its quality, durability, and innovative designs, the brand has earned the trust of customers across diverse sectors such as banking, healthcare, hospitality, and information technology.

Headquartered in India, Rushil Décor continues to expand its global reach while maintaining a strong focus on responsible growth and sustainable practices. Its commitment to producing environmentally conscious and high-performance products reflects its long-term vision of becoming a leading and trusted name in the global laminates and panel industry. Through continuous innovation and customer-centricity, the company strives to deliver solutions that contribute to enhanced functionality, design excellence, and sustainability in the built environment.

Rushil Décor operates in accordance with internationally recognized ISO standards, demonstrating, dedication to quality, safety, and sustainability. The ISO certifications include,

- **ISO 9001** – Quality Management System
- **ISO 14001** – Environmental Management System
- **ISO 45001** – Occupational Health and Safety Management System

More information can be found on the company website: https://www.rushil.com/index.html

Name and location of production site(s):

The product is manufactured in Gujarat, India.

Product information

Compact High Pressure Laminate (HPL) panels are durable composite materials manufactured from multiple layers of specially selected kraft paper and decorative paper, impregnated with thermosetting resins. The core layers are saturated with phenolic resin, while the surface layers are treated with melamine resin to provide enhanced aesthetic and protective properties.

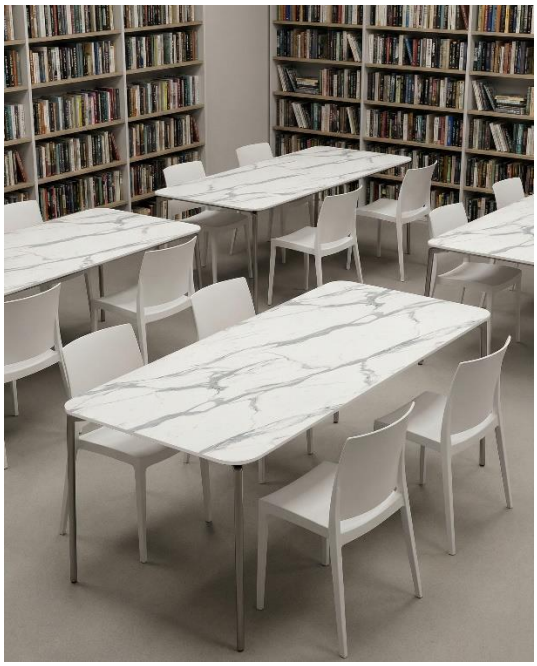

Figure 1: Compact HPL

These resin-impregnated layers are assembled and subjected to high temperature and pressure in a multi-daylight high-pressure hydraulic press. During this process, the resins undergo thermal curing, resulting in a dense, homogeneous, and non-porous material with high mechanical strength and dimensional stability.

Compact HPL panels are self-supporting and do not require additional substrates, making them suitable for a wide range of interior and exterior applications such as wall cladding, partitions, furniture, and facades. The product is characterized by its resistance to moisture, impact, chemicals, and wear, ensuring long service life and low maintenance requirements.

The product is supported by relevant certifications demonstrating compliance with quality, environmental, and sustainability standards. These include CE marking under the Constancy of Performance system, Forest Stewardship Council (FSC) certification, Programme for the Endorsement of Forest Certification (PEFC), and Green Label certification, reflecting responsible sourcing of raw materials, adherence to regulatory requirements, and reduced environmental impact.

The product under study is 1 m^2 of Compact HPL manufactured by Rushil Décor in Gujarat, India.

The UN CPC classification for the product is 314 – Boards and Panels.

The percentage of production volume of different thicknesses of laminates is provided in Table 1 .

Table 1: Production volume of various thick laminates

S.no.	Thickness (mm)	Production volume (%)	Grammage (kg/m^2)
1	2	56.105	2.9
2	2.5	20.469	3.625
3	3	12.952	4.35
4	3.5	3.798	5.075
5	4	3.724	5.8
6	5	0.314	7.25
7	6	0.573	8.7
8	8	0.348	11.6
9	10	0.103	14.5
10	12	1.344	17.4
11	13	0.224	18.85
12	14	0.023	20.3
13	18	0.024	26.1

The product is manufactured in multiple thicknesses and corresponding grammages. To derive a representative product for the EPD, a production-volume-weighted average methodology was applied. The weighted average thickness and grammage calculated from the production mix were considered representative of the overall product portfolio. The weighted average thickness for this product is 3.756 kg/m^2.

Geographical scope: India

Content Declaration

In accordance with EN 15804+A2, this section declares the material composition of the product and packaging per functional unit (FU)/declared unit, including recycled content, biogenic material content, biogenic carbon content, and information on Substances of Very High Concern (SVHC). Material quantities are reported as mass per declared unit. Recycled content is expressed as mass percentage of the respective material input.

The product consists primarily of Kraft Paper, Phenol Formaldehyde Resin, Melamine resin, and other papers of differnet grades. All raw materials are derived from virgin fossil or mineral sources and contain no recycled content.

Packaging per functional/declared unit consists of polypropylene, plastic and wooden crates. No recycled content is declared for packaging materials.

Table 2: Raw Material & Consumables Consumption per declared/functional unit of product

Product Components	Weight, kg/DU	Post-consumer recycled material, weight-%	Biogenic material, weight-%	Biogenic material, kg C/DU
Kraft Paper	2.700	0%	29.95%	1.12498
Phenol Formaldehyde Resin	0.756	0%	0%	0
Décor Paper	0.146	0%	1.70%	0.06378
Overlay Paper	0.055	0%	0.21%	0.007837
Barrier Paper	0.007	0%	0.05%	0.001875
Melamine Formaldehyde Resin	0.092	0%	0%	0
Total	**3.756**	**0%**	**31.91%**	**1.1985**

Packaging Material:

Table 3: Packaging per declared/functional unit of product

Product Components	Weight, kg/DU	Post-consumer recycled material, weight-%	Packaging mass-%	Biogenic material, kg C/DU
PP Film	0.041	0%	1.10%	0
Wrapping Film	0.0022	0%	0.06%	0
Wrapping Strip	0.0018	0%	0.05%	0
Wooden Crates	0.097	0%	2.59%	0.0480

Table 4: Biogenic Carbon Content

Biogenic Carbon Content	Quantity (kg)
Product's biogenic carbon content at the factory gate Biogenic carbon content in product, kg C	1.1985
Biogenic carbon content in packaging, kg C	0.0480

No Substances of Very High Concern (SVHC) in accordance with the Candidate List of SVHC from the European Chemicals Agency that constitutes more than 0.1% of the weight of the product is included in the product.

LCA information

Declared unit: 1 m^2 of Compact HPL

A mass conversion factor of 3.756 kg/m^2 has been considered.

Time representativeness: The data collection is related to one year of operation. The data was collected for the period January 2025 to December 2025

Database(s) and LCA software used: Ecoinvent 3.11 and SimaPro 10.2

Description of system boundaries: Cradle to gate with options A5, C1-C4, and D

Characterization factor used: EN15804+A2 based on EF 3.1 method

System diagram:

The environmental analysis covers Cradle to gate with options, A5, C1-C4, and D. Life Cycle Assessment (LCA), detailed in the below-mentioned life cycle phases, being the production of Compact HPL including raw material extraction, transport and manufacturing, installation and end-of-life (EoL).

System Boundary and Product Stages Module	Product Stage	Process Information
A1	Raw Material Supply	Extraction and production of raw material in the upstream
A2	Upstream Transport	Transport of raw material to the manufacturing site
A3	Manufacturing	Manufacturing of the product at the factory along with packaging
A5	Installation	Treatment of packaging materials
C1	Deconstruction/Demolition	Demolition of building
C2	Transport to EoL	With a collection rate of 100%, the transports are carried out by truck over 80 km
C3	Waste processing for reuse, recovery or recycling	-
C4	Disposal	Incineration is practiced
D	Reuse, recovery or recycling potential	Potential energy recovery benefits from incineration are considered

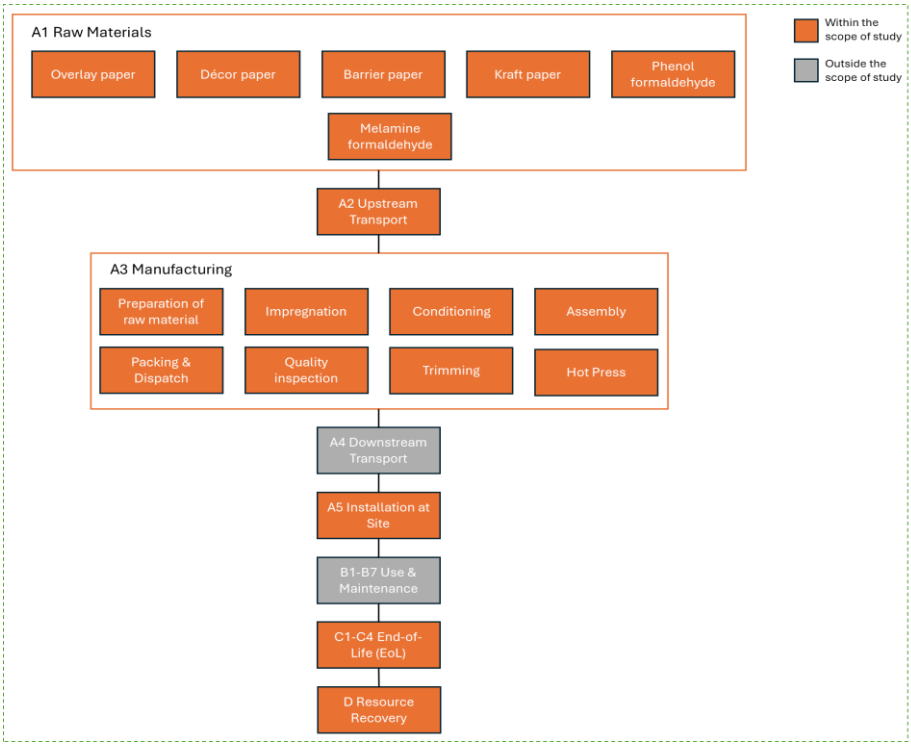

Figure 2: System Boundary for Compact HPL

	Production			Installation		Use stage							End-of-Life				Next product system
	Raw material supply (extraction, processing, recycled material)	Transport to manufacturer	Manufacturing	Transport to building site	Installation into building	Use / application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport to EoL	Waste processing for reuse, recovery or recycling	Disposal	Reuse, recovery or recycling potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules Declared	X	X	X	ND	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	IND	IND	IND	-	GLO	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
Share of specific data	25.2%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-25.72%to 149.68%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - Sites	Not Relevant			-	-	-	-	-	-	-	-	-	-	-	-	-	-

X: Module Declared ; ND: Module Not Declared

Exclusion: Compact HPL do not require any further actions or technical operations throughout the stage B1-B7. Consequently, they generate no direct environmental impacts during this phase.

Data Quality Summary

Data quality was evaluated following EN 15804:2012+A2:2019 Section 8.5.5. The weighted results indicate that time-related representativeness is fully in the 'Good' class, geographical representativeness is primarily 'Very Good' with contributions from 'Good', and technological representativeness is predominantly 'Good'. The relevant data assessed included no "poor" or "very poor" data. None of the fair category data included contributed > 30% of impacts for any of the declared indicator.

All data sets for each core environmental impact indicator have been individually assessed for:

- Time-related representativeness: Data reflect the most recent and relevant production period.
- Geographical representativeness: Data are specific to the region of production.
- Technological representativeness: Data correspond to the actual technology and processes used
- Completeness and consistency: all relevant flows and processes are included, and data are consistent across the system boundary. The assessment confirm that the majority of the environmental impacts are based on high-quality specific data.

The resulting summary is presented in the Table below:

Table 5: Data Category Information

Process	Type of Source	Source	Reference year	Data Category	Contribution to GWP GHG (%)
Raw materials	Collected data	Ecoinvent Database 3.11	2024	Secondary	0%
Generation of Electricity	Collected data	Ecoinvent Database 3.11	2024	Primary	15%
Transportation of raw materials to manufacturing site	Collected data	Ecoinvent Database 3.11	2024	Primary	10.2%
Total share of primary data of GWP-GHG results for A1-A3					**25.2%**

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories

Raw Material, A1

Raw material stage includes raw material extraction and/or preparation and pre-treatment processes before production. Raw materials consumed in production process are highlighted in the content declaration section.

Upstream Transport, A2

Upstream transport is predominantly carried out through trucks and primary data for distances has been included, wherever such data is unavailable market-based Ecoinvent datasets were selected to address the gap as they include transport.

Manufacturing, A3

The production of Compact High-Pressure Laminates (HPL) begins with **raw material preparation and impregnation**, where different grades of paper are treated with thermosetting resins to achieve the required performance characteristics. Kraft paper is impregnated with phenol formaldehyde resin to form the structural core, while décor, overlay, and barrier papers are treated with melamine formaldehyde resin to provide surface aesthetics and protection. These papers are passed through controlled drying chambers, where temperatures are carefully maintained to achieve a semi-cured state suitable for further processing.

Following impregnation, the treated papers are conditioned and stabilized under controlled temperature and humidity conditions to ensure consistency in moisture content and performance. The materials are then moved to the cutting stage, where they are cut into required dimensions for assembly.

In the **lay-up and assembly stage**, multiple layers of impregnated papers are arranged in a specific sequence. For compact laminates, several layers of phenolic resin-treated kraft paper form the core, while decorative and overlay papers are placed on both outer surfaces. A stainless steel mould plate is positioned on the top to impart the desired surface texture and finish, while the décor paper determines the visual design of the laminate.

The assembled stacks are then subjected to **high-pressure hot pressing**, where they are consolidated under controlled temperature and pressure conditions. This process enables the resin to fully cure and bond the layers into a dense, rigid, and self-supporting laminate sheet. The pressing cycle is carefully monitored to ensure optimal consolidation, dimensional stability, and mechanical strength.

After pressing, the laminate sheets undergo **cooling, trimming, and finishing operations**. Compact laminates, being self-supporting, typically do not require further sanding.

The finished products are then subjected to **comprehensive quality inspection**, where parameters such as dimensional accuracy, surface quality, color consistency, and flatness are evaluated against relevant standards. Sheets are sorted and graded based on quality criteria to ensure only conforming products proceed further.

Finally, in the **packaging and dispatch stage**, protective measures such finish-specific coverings are applied to prevent surface damage. The laminates are securely packed in crates and prepared for distribution. This structured and controlled manufacturing process ensures that Compact HPL products deliver high durability, structural integrity, and superior aesthetic performance across a wide range of applications.

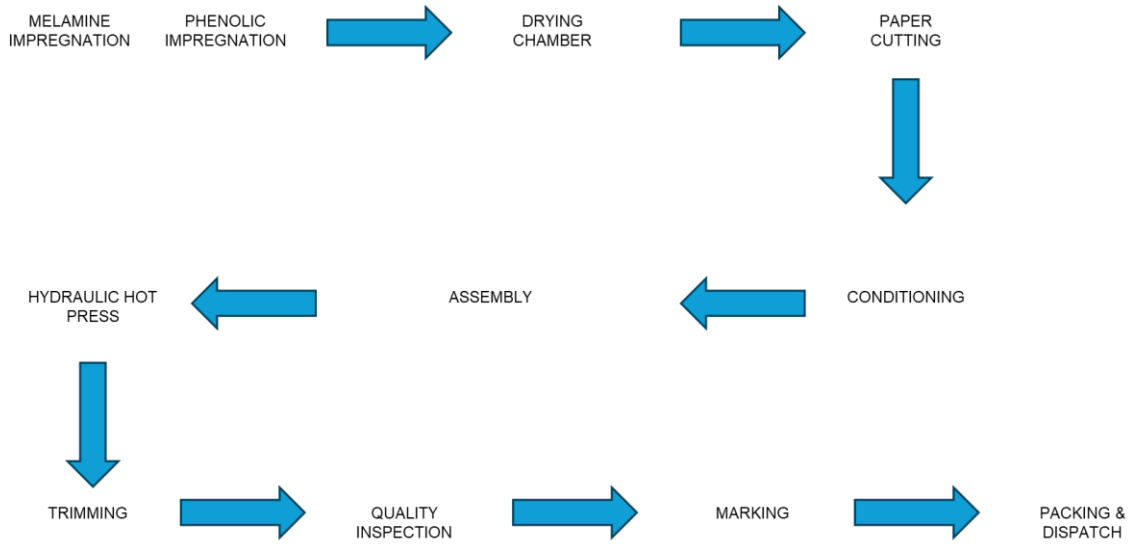

Figure 3: Process Flow Diagram for Compact HPL manufacturing

Fuels and Energy used in the processes comes from grid electricity. Climate impact for the electricity as calculated using database is considered 1.45 kgCO2 eq. /kWh. The source used is a regional grid for India as IN – Western with a reference year 2024.

Installation into Building, A5
No additional energy is required for installation. Packaging material treatment is considered.

Use and Maintenance Phase, B1 – B7
Once installation has been completed, no technical operations are required during the reference service life of the Compact HPL. The product does not require maintenance, repair, replacement, or refurbishment. Consequently, the Compact HPL is considered to have no relevant environmental impacts during the use stage (Modules B1–B7) until the end-of-life stage.

Deconstruction/Demolition, C1
At the end of the reference service life, Compact HPL is assumed to be dismantled manually as part of the general deconstruction or demolition activities of the building. No special tools or energy-intensive processes are required beyond conventional building dismantling operations. The environmental impacts of this process are considered negligible.

Transport to EoL, C2
Following removal, the panels are transported to appropriate waste management facilities assuming an average transport distance of 80 km.

Waste processing for reuse, recovery or recycling, C3
No waste processing operation takes place.

Disposal, C4
The Compact HPL is delivered directly to for incineration without further treatment or processing.

Reuse, recovery or recycling potential, D
Module D includes the potential benefits and loads beyond the system boundary associated with energy recovery from the incineration of waste treated in Module C4. These benefits result from the substitution of conventional energy by electricity and/or thermal energy recovered during the waste-to-energy process.

Additional Information About EPD

This EPD provides information concerning the production of Compact HPL manufactured at manufacturing plant in Gujarat,India.

Cut-off criteria

All relevant and known processes and materials have been included. The below processes are excluded in the study as the contribution to the different environmental effects is expected to be lower than 1%:

- Maintenance and the use of auxiliary materials and equipment, with exception of such processes that are included in the Ecoinvent background processes.
- Capital goods and infrastructure processes.

Exclusion

- The assessment does not include the production and maintenance of capital goods, such as buildings, facilities, and infrastructure, or the manufacture of production equipment.
- Activities related to company operations and personnel are excluded, such as daily commuting of employees, business travel, office work, and other administrative activities.
- Use phase is not in the scope of the study.

Allocation

The production process has no other by products, hence there is no requirement of allocation. The project involves only one production site and thus there is no allocation among the plants.

Multiple products are manufactured at the production facility, product-specific primary data for the declared product was available. Therefore, no allocation of inputs, outputs, or environmental burdens between products was required, and no allocation procedures were applied in the study.

Environmental Performance

Environmental Impact for per declared unit of Compact HPL are given in Table 6. While other Resource use indicators, waste categories and other indicators/parameters are given from Table 8 to Table 10. EN 15804 reference package based on EF 3.1 (Environmental Footprint) has been used. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

Table 6: Environmental Impact per declared unit of product

Environmental Impacts Indicators	Unit	A1-A3	A5	C1	C2	C3	C4	D
Climate change – total	kg CO2 eq.	4.76E+00	1.78E-01	0.00E+00	3.22E-02	0.00E+00	4.45E+00	-1.01E+00
Climate change - fossil	kg CO2 eq.	9.24E+00	2.04E-03	0.00E+00	3.22E-02	0.00E+00	5.75E-02	-1.01E+00
Climate change - biogenic	kg CO2 eq.	-4.50E+00	1.76E-01	0.00E+00	5.14E-06	0.00E+00	4.39E+00	-2.84E-04
Climate change - luluc	kg CO2 eq.	1.78E-02	7.21E-07	0.00E+00	1.52E-05	0.00E+00	1.60E-05	-2.73E-03
Ozone Depletion	kg CFC-11 eq.	1.28E-07	3.05E-11	0.00E+00	4.76E-10	0.00E+00	6.48E-10	-9.20E-09
Acidification	Mole of H+ eq.	7.04E-02	8.42E-06	0.00E+00	8.53E-05	0.00E+00	6.06E-04	-1.78E-02
Eutrophication aquatic freshwater	kg P eq.	5.85E-03	8.74E-07	0.00E+00	3.58E-06	0.00E+00	2.61E-05	-3.84E-04
Eutrophication aquatic marine	kg N eq.	2.40E-02	5.66E-05	0.00E+00	2.14E-05	0.00E+00	3.22E-04	-7.47E-03
Eutrophication terrestrial	Mole of N eq.	2.54E-01	3.52E-05	0.00E+00	2.31E-04	0.00E+00	3.09E-03	-8.33E-02
Photochemical ozone formation	kg NMVOC eq.	7.38E-02	1.45E-05	0.00E+00	1.25E-04	0.00E+00	7.76E-04	-2.13E-02
Depletion of abiotic resources - minerals and metals[1]	kg Sb eq.	5.05E-05	2.22E-09	0.00E+00	9.21E-08	0.00E+00	1.01E-07	-4.90E-06
Depletion of abiotic resources - fossil fuels[1]	MJ	1.53E+02	2.68E-02	0.00E+00	4.78E-01	0.00E+00	5.17E-01	-1.29E+01
Water use[1]	m^3 world equiv.	5.63E+00	-1.76E-02	0.00E+00	2.48E-03	0.00E+00	2.42E-02	-6.45E-01
Disclaimer 1	The results of environmental impact indicators shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator							

Table 7: GWP-GHG Indicator per declared unit of product

Environmental impact indicators	Unit	A1-A3	A5	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq.	9.26E+00	2.04E-03	0.00E+00	3.22E-02	0.00E+00	5.76E-02	-1.01E+00

The GWP-GHG indicator is calculated by excluding the biogenic CO_2 emissions associated with product & packaging from the GWP-total value, effectively setting the characterisation factor for biogenic CO_2 to zero. This approach allows for a clear separation of fossil and biogenic carbon effects in the climate impact assessment.

Table 8: Resource use indicators per declared unit of product

Indicators	Unit	A1-A3	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	[MJ]	1.05E+02	3.46E-04	0.00E+00	6.40E-03	0.00E+00	3.07E+01	-2.79E+01
Primary energy resources used as raw materials (PERM)	[MJ]	3.07E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-3.07E+01	0.00E+00
Total use of renewable primary energy resources (PERT)	[MJ]	1.36E+02	3.46E-04	0.00E+00	6.40E-03	0.00E+00	1.30E-02	-2.79E+01
Use of non-renewable primary energy (PENRE)	[MJ]	1.30E+02	2.68E-02	0.00E+00	4.78E-01	0.00E+00	2.31E+01	-1.29E+01
Non-renewable primary energy resources used as raw materials (PENRM)	[MJ]	2.26E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-2.26E+01	0.00E+00
Total use of non-renewable primary energy resources (PENRT)	[MJ]	1.53E+02	2.68E-02	0.00E+00	4.78E-01	0.00E+00	5.17E-01	-1.29E+01
Input of secondary material (SM)	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels RSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels (NRSF)	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water (FW)	[m3]	1.45E-01	-4.09E-04	0.00E+00	7.36E-05	0.00E+00	7.57E-04	-1.68E-02

Table 9: Output flows and waste categories per declared unit of product

Parameter	Unit	A1-A3	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	[kg]	3.44E-02	5.25E-07	0.00E+00	1.44E-05	0.00E+00	3.08E-02	-1.75E-02
Non-Hazardous waste disposed (NHWD)	[kg]	1.27E+00	1.11E-01	0.00E+00	4.00E-02	0.00E+00	3.79E+00	-2.06E-01
Radioactive waste disposed (RWD)	[kg]	9.76E-05	5.31E-09	0.00E+00	1.01E-07	0.00E+00	1.48E-07	-1.82E-05
Components for reuse (CRU)	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MFR)	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for energy recovery (MER)	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported electrical energy (EEE)	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.54E+00	0.00E+00
Exported thermal energy (EET)	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.31E+01	0.00E+00

Table 10: Additional Parameters per declared unit of product

Other Indicators	Unit	A1-A3	A5	C1	C2	C3	C4	D
Particulate matter emissions	Disease incidences	9.88E-07	1.95E-10	0.00E+00	3.09E-09	0.00E+00	6.83E-09	-5.97E-07
Ionising radiation[1]	kBq U235 eq.	3.94E-01	2.17E-05	0.00E+00	4.11E-04	0.00E+00	5.93E-04	-7.49E-02
Eco-toxicity (freshwater)[2]	CTUe	9.35E+01	4.57E-02	0.00E+00	7.73E-02	0.00E+00	4.04E-01	-6.17E+00
Human toxicity, cancer effects[2]	CTUh	1.95E-08	3.38E-13	0.00E+00	5.27E-12	0.00E+00	1.09E-10	-4.27E-09
Human toxicity, non-cancer effects[2]	CTUh	1.25E-07	3.14E-11	0.00E+00	3.03E-10	0.00E+00	7.31E-09	-3.65E-08
Land use related impacts/ Soil quality potential[2]	Pt	9.43E+02	6.36E-02	0.00E+00	4.73E-01	0.00E+00	1.46E-01	-1.98E+02
Disclaimer 1	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							

Disclaimer 2	The results of environmental impact indicators shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator

Variations:

The environmental impacts presented in this EPD are calculated using a single weighted average grammage factor of 3.756 kg/m², representing the average product configuration. As compact HPL panels are manufactured in different thicknesses, the product mass per unit area varies, resulting in proportional variations in the environmental impacts. The table below presents the minimum and maximum panel thicknesses and their corresponding grammage factors . The percentage variation shown below is applicable uniformly across all environmental impact categories.

Thickness (mm)	Grammage (kg/m²)	Variation %
2	2.9	-25.72%
18	26.1	149.68%

Disclaimer:

- *It should be noted that the mentioned impact categories represent potential impacts. These are approximations of environmental effects that could occur if the emissions follow the specified impact pathway and meet certain conditions in the receiving environment. Additionally, the inventory captures only the portion of the total environmental load that corresponds to the declared unit (a relative approach). Therefore, LCIA results are relative expressions and do not predict actual impacts, threshold exceedances, safety margins, or risks.*
- *The results of this environmental impact indicator shall be used with care as the uncertainties of the results are high and as there is limited experience with the indicator.*

Version History

Original version of the EPD. This is the first publication of the Environmental Product Declaration for the product, developed in accordance with the applicable Product Category Rules (PCR).
Version date: 2026/06/30

Abbreviations

ADP	Abiotic Depletion Potential
AP	Acidification Potential
CML	Centre of Environmental Science at Leiden
ELCD	European Life Cycle Database
EoL	End-of-Life
EP	Eutrophication Potential
EPD	Environmental Product Declaration
GHG	Greenhouse Gas
GWP	Global Warming Potential
ILCD	International Cycle Data System
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
LCI	Life Cycle Inventory
LCIA	Life Cycle Impact Assessment
NMVOC	Non-Methane Volatile Organic Compound
ODP	Ozone Depletion Potential
PED	Primary Energy Demand
POCP	Photochemical Ozone Creation Potential
QC	Quality Check
SFP	Smog Formation Potential
VOC	Volatile Organic Compound

References

[1] ISO (2006a) ISO 14040:2006(E) Environmental management — Life cycle assessment — Principles and framework.
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[3] Ecoinvent: Ecoinvent Database version 3.11
[4] WULCA. AWARE methodology. http://www.wulca-waterlca.org/aware.html
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[6] PCR 2019:14 Construction products version 2.0.1
[7] GPI/ General Programme Instructions of the International EPD System. Version 5.0.1
[8] EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental product declarations -Core rules for the product category of construction products
[9] ISO 14020:2022 Environmental statements and programmes for products: Principles and general requirements
[10] ISO 14025:2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures

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