Environmental Product Declaration

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

High Pressure Laminates

from

Samrat Plywood Limited

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Licensee:	International EPD System India
Type of EPD:	EPD of multiple products, based on a representative product
EPD registration number:	EPD-IES-0024224
Version date:	2025-10-03
Validity date:	2030-10-02

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com

GENERAL INFORMATION

Programme Information		
Programme:	The International EPD® System	EPD India
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden	EPD India, a licensee of the International EPD® System 422, Midas, Sahar Plaza Mumbai, India- 400059
Website:	www.environdec.com,	www.environdecindia.com
E-mail:	support@environdec.com,	info@environdecindia.com

Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): Construction products, 2019:14, version 2.0.1
PCR review was conducted by: *The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com*
c-PCR, if applicable: **Not applicable**

Third-party Verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

☒ **EPD process certification* without a pre-verified LCA/EPD tool**

Third-party verifier:

Third-party verifier: Eurocert S.A.

89 Chlois St. & Likoviriseos, 14452, Greece
Email: info@eurocert.gr
www.eurocert.gr

Accredited by: Eurocert S.A is an approved certification body accountable for the third-party verification. The certification body is accredited by: Hellenic Accreditation System (E.S.Y.D.), Accreditation number 21-8

*EPD process certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.envrondec.com.

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 published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); 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: Samrat Plywood Limited
Address: Village- Birplassi, Nalagarh, Solan, Himachal Pradesh
Contact: Puneet Singhal, puneetsinghal@samratply.in
Address and contact information of the LCA practitioner commissioned by the EPD owner, if applicable: **Nirantara Ecoventures Private Limited, ganesh@nirantara.solutions**
Description of the organisation: Samrat Plywood Limited is a distinguished Indian company specializing in the production and distribution of premium plywood and wood-based products. The company offers a diverse range of solutions, including plywood, laminates, VHDHMR, and high- pressure laminates (HPL), serving industries such as furniture, interior design, and construction.

The company's plywood is extensively used in furniture manufacturing, construction, and interior decoration, while its decorative laminate products are widely recognized for their excellence in surface finishing for furniture and interior design projects.

Product-related or management system-related certifications: Samrat Plywood has achieved several esteemed certifications, including California Air Resources Board (CARB), Forest Stewardship Council (FSC), Green Rating for Integrated Habitat Assessment (GRIHA), and Green Product Certification (GREEN PRO). Additionally, the company holds certifications for International Organization for Standardization (ISO) such as ISO 45001, ISO 14001, ISO 9001 , Indian Standards Institute (ISI) such as BIS IS 710, BIS IS 2202, BIS IS 303, BIS IS 1659, and BIS IS 5509, European Standard for plywood (EN 636), as well as the lowest formaldehyde emission level (E0) (using BS EN 717-1 Method), alongside Anti-Viral and Anti-Microbial certifications.

PRODUCT INFORMATION

Product name: High Pressure Laminates
Product identification: Phenol-formaldehyde- Melamine based High pressure Laminates
Visual representation (e.g., an image) of the product

UN CPC code: 3141

Product description: Samrat Plywood offers an extensive and evolving range of premium laminates, continually introducing new designs to meet market trends. Manufactured using absorbent kraft paper derived from virgin pulp and high-quality decorative paper, our laminates are impregnated with phenolic and melamine resins and cured under heat and high pressure for superior durability. To ensure an exceptional surface finish, we utilize Italian mold plates.

Our laminate collection is available in a variety of sizes and thicknesses, ranging from 0.5 mm to 20 mm, catering to diverse application needs.

Our product range includes varieties that are highly resistant to moisture, abrasion, scratches, heat, impact, and stains. Select variants also offer enhanced wear and tear resistance.
Our Exterior Cladding HPL (ECH) laminates are specifically engineered for superior UV resistance, weather resistance, ease of cleaning, fire retardancy, and cost-effectiveness. They are designed with advanced mechanical and physical properties, including resistance to scratching, absorption, cigarette burns, heat, and offer antistatic properties up to electrical dissipation levels. In terms of chemical performance, our ECH laminates exhibit exceptional resistance to staining, chemical attacks, organic solvents, steam, and boiling water. We are proud to offer a Service Life of a minimum of 20 years for our ECH category products, ensuring long-term durability and performance.

All products undergo rigorous, standardized testing protocols, including evaluations for *moisture content*, *water resistance (covering delamination and glue shear strength), ply adhesion, specific gravity, appearance, boiling water resistance, high-temperature resistance, and water absorption*.

Select laminate varieties, depending on their specific applications, are further subjected to specialized testing, including *thickness tolerance (EN 438-2.5), length and width (EN 438-2.6), straightness of edges (EN 438-2.7), squareness (EN 438-2.8), flatness (measured on a full-size sheet) (EN 438-2.9), radiant heat resistance, and wear resistance cycles*.

The Technical Datasheet and Safety Data Sheet are available at: https://www.samratply.in/E-Catalogs?type=resources

Name and location of production site(s): The group operates an office in Chandigarh and oversees two manufacturing units: a plywood facility in Yamuna Nagar, Haryana, and a High- Pressure Laminate (HPL) unit in Nalagarh, Himachal Pradesh.

CONTENT DECLARATION

- The mass (weight) of one unit of a product, as purchased or per declared unit: The highest-selling and most representative product, measuring 2500mm*1200mm with a thickness of 6 mm, has a weight of 23 kg per unit.
- Content of the product in the form of a list of materials and substances, and their mass:

Raw Material	Unit	Consumption/ kg
Craft Paper	Kg	0.848
Phenol	Kg	0.217
Formaldehyde	Kg	0.298
Melamine	Kg	0.019
Design Paper	Kg	0.022
Tissue Paper	Kg	0.002

Table 1: Material composition for 1 kg of the product

- Information on the environmental and hazardous/toxic properties of a substances contained in the product: The product is free from substances listed or eligible for inclusion in the Candidate

List of Substances of Very High Concern (SVHC) for Authorization. The LCA identified a higher concentration of formaldehyde (over 0.1% of the product) in the raw material inputs. The EPD owner has committed to exploring suitable alternatives or implementing measures to reduce the use of this hazardous substance in future manufacturing processes. Progress on this commitment will be reviewed and reported during the subsequent annual audit

- Other information on substances with hazardous and toxic properties: Not Applicable
- The declared share of biogenic/recycled materials: < 5%

Product components	**Mass, kg**	**Weight, %**	**Post-consumer material, weight-%**	**Biogenic material, weight-% and kg C/kg**
Kraft Paper	0.848	56.798	0	0.424
Phenol	0.217	14.564	0	0
Formaldehyde	0.298	19.952	0	0
Melamine	0.019	1.258	0	0
Design Paper	0.022	1.456	0	0.011
Tissue Paper	0.002	0.146	0	0.01

Packaging materials	**Mass, kg**		**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Packaging film	5.87E-05		3.93E-03	0
Wood pellet	2.37E-06		1.59E-04	1.185E-06
Paper sack	1.69E-04		1.13E-02	8.45E-05
Iron Straps	3.93E-06		2.63E-04	0
Fuels & resources for manufacturing				
Electricity (Grid)	1.31E-03 (kWh)			
Diesel	2.03E-03 (kg)			
Pet Coke	2.03E-03 (kg)			
Water	8.57E-03 (ltr)			

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO_2.

Table 2: Raw materials used for 1 kg of High-Pressure laminates manufacturing

LCA INFORMATION

Declared unit: The laminate under evaluation is manufactured from composite paper comprising both virgin and recycled fibers, bonded with a chemical resin. For the purpose of this assessment, a declared unit of 1 kg of average High-Pressure Laminate has been selected.

This mass-based declared unit has been chosen to ensure consistency, transparency, and accuracy in the environmental impact assessment. Given that the density of laminate products can vary significantly due to differences in material composition and manufacturing processes, a mass-based approach offers a more robust and equitable basis for comparison. It accurately reflects the environmental burden per unit of material and facilitates meaningful benchmarking across similar kraft paper-based laminate products

Reference service life: Not applicable for this EPD
Time representativeness: This Environmental Product Declaration (EPD) is developed using site-specific primary data collected from the Nalagarh, Solan, Himachal Pradesh, covering the complete operational period from January 2024 to December 2024. The data has been verified to ensure accuracy, completeness, and representativeness of the production processes during the reference year

Geographical scope: The Laminates are produced at our manufacturing facility in Nalagarh, Solan, Himachal Pradesh, India, with raw materials sourced from various regions across the country. The finished products are then exported to both domestic and international markets.

Database(s) and LCA software used: The generic data has been modeled utilizing SimaPro software (version 9.6.0.1) and the Ecoinvent database (version 3.10). Allocation procedures— whether physical, economic, or energy-based—have been applied in full compliance with the requirements of EN 15804. The declared product represents an average derived from the production volumes of the manufacturing facility. The dataset comprehensively includes information on raw materials, energy and water consumption, packaging materials, by- products, waste streams, and all relevant transportation processes.

Description of system boundaries:
Cradle to gate with options

Type b) EPD: Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). The additional modules may be one or more selected from A4–A5 and/or B1–B7

This Life Cycle Assessment (LCA) has been conducted using a Cradle-to-Gate with Distribution scope, complemented by the inclusion of Modules C1–C4 and D. The Cradle-to- Gate with Distribution modules have been given the highest priority, as the activities within these stages are either directly managed or substantially influenced by the EPD owner. Module B has been excluded from the current assessment due to the considerable uncertainty associated with its data. All other modules incorporated in this LCA are fully aligned with the requirements of PCR 2019:14 Construction Products (version 2.0.1).

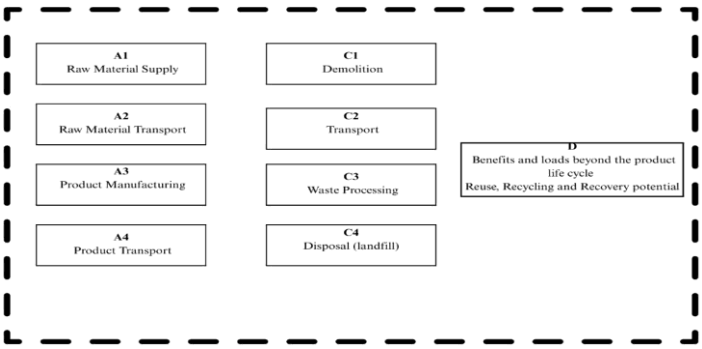


Figure 1: System boundary included in the study

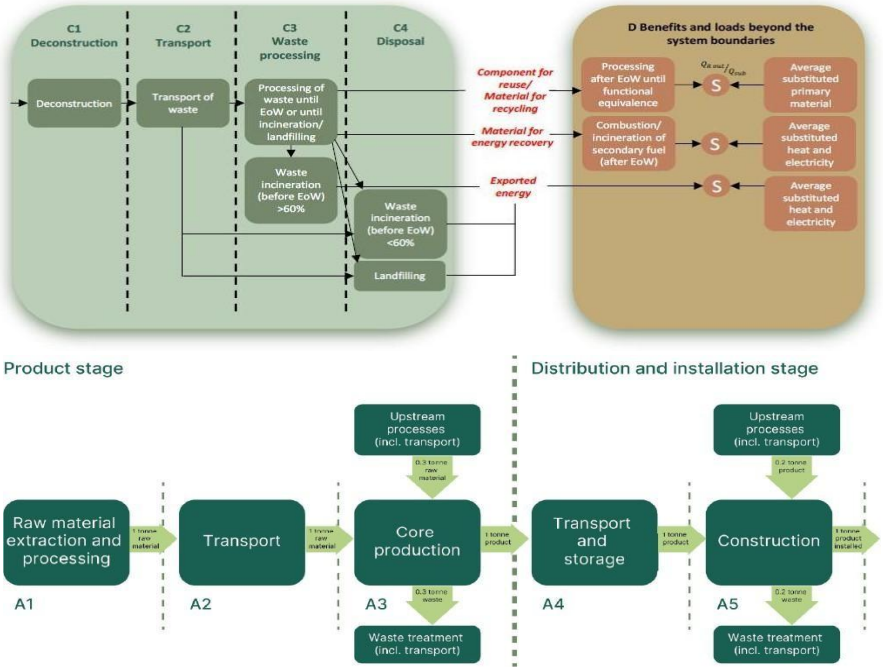
Activities outside the scope of the LCA

Activity	Reason for exclusion
Maintenance and operation of equipment	It is expected that these impacts will be very small when allocated across the full production
Installation of the equipment	Installed equipment for cutting, cooling and drying chambers
Human labor and employee transport	These aspects are not the central focus of the LCA and are not easily attributable to product impacts
Use phase of the product	No maintenance/consumption during use phase

Table 3: Activities outside the scope of the LCA

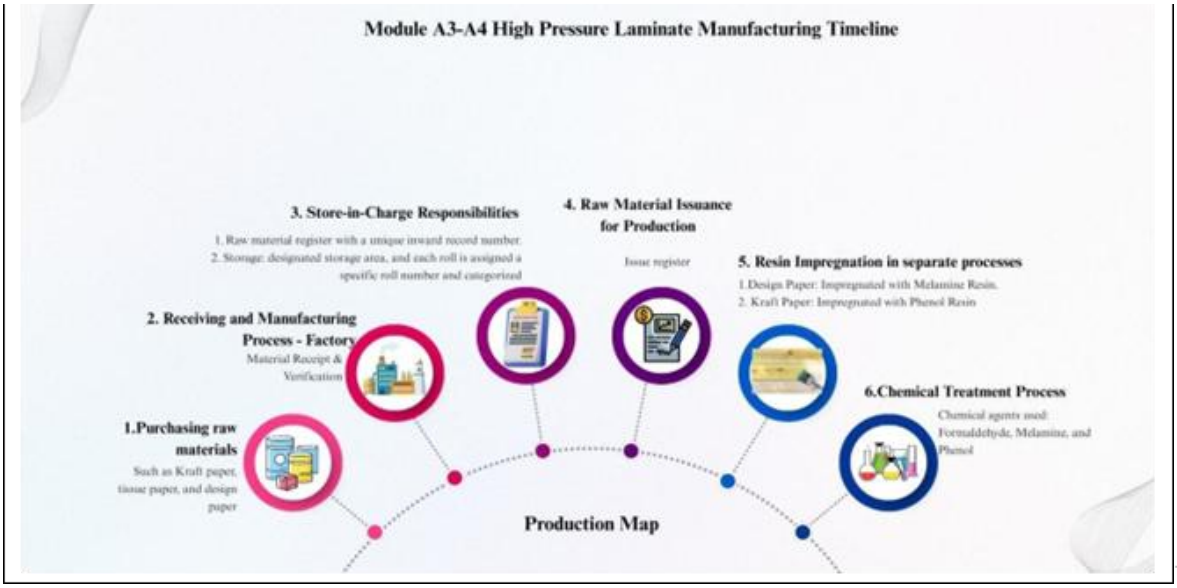
Assumptions

1. In alignment with PCR 2019:14 Construction Products (v 2.0.1), the figure 1 system boundaries are established for manufacturing the product. The assessment excludes the manufacturing processes of capital goods, spare parts, and maintenance activities. Environmental impacts associated with infrastructure, construction, production equipment, and tools not directly consumed during production are not included in the Life Cycle Inventory (LCI). Historically, capital equipment and buildings contribute less than a few percent to most LCIs, a margin typically smaller than the inherent error within inventory data. Accordingly, for this project, the contribution of capital equipment is considered negligible.
2. The environmental impacts associated with infrastructure related to general management, office operations, and headquarters—both upstream and downstream— are not considered.
3. In accordance with PCR 2019:14 Construction Products (v 2.0.1), the following system boundaries are applied to employees. Impacts from personnel activities, including workplace operations, business travel, and commuting, are excluded from the LCI. Employee-related impacts are omitted on the basis that, if not employed in this function, individuals would be employed elsewhere, making allocation of personal life impacts impractical. Accordingly, employee impacts are excluded from this project's assessment.
4. The processes linked to fuel production are inherently captured within the indicators provided by the Ecoinvent database utilized for the LCA.
5. The environmental impact of external transportation has been calculated using lorries from the Ecoinvent 3.10 database, compliant with EURO 6 standards. These vehicles were selected to represent the most realistic operational scenario


C1 Deconstruction
C2 Transport
C3 Waste processing
C4 Disposal
Deconstruction
Transport of waste
Processing of waste until EoW or until incineration/ landfilling
Waste incineration (before EoW) >60%
Waste incineration (before EoW) <60%
Landfilling
Component for reuse/ Material for recycling
Material for energy recovery
Exported energy
D Benefits and loads beyond the system boundaries
Processing after EoW until functional equivalence
Combustion/ incineration of secondary fuel (after EoW)
Average substituted primary material
Average substituted heat and electricity
Average substituted heat and electricity
Product stage
Distribution and installation stage
Upstream processes (incl. transport)
Raw material extraction and processing
Transport
Core production
Transport and storage
Construction
Upstream processes (incl. transport)
Waste treatment (incl. transport)
Waste treatment (incl. transport)
A1
A2
A3
A4
A5

Product stage	A1 Raw material extraction and upstream production
	A2 Transport to manufacturer
	A3 Manufacturing
Distribution/ installation stage	A4 Transport and storage
	A5 Distribution and installation
Use stage	B1 Use
	B2 Maintenance
	B3 Repair
	B4 Replacement
	B5 Refurbishment
	B6 Operational energy use
	B7 Operational water use
End of life stage	C1 Deconstruction/demolition/deinstallation
	C2 Transport to waste processing and/or disposal
	C3 Waste processing for reuse, recovery and/or recycling
	C4 Waste disposal
Beyond system boundary	D Benefits and loads beyond the system boundary

Process flow diagram:



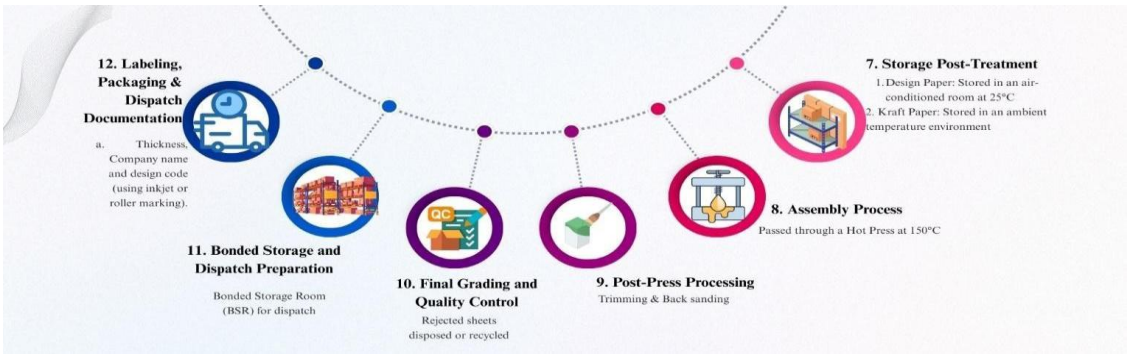


Figure 2: System diagram illustrating the manufacturing process from A3 and A4, highlighting the activities conducted during the A3 module

More information:

Module description:

Module A1: This module focuses on the extraction and processing of all raw materials prior to the laminate manufacturing process. Specifically, it addresses the supply of raw materials for the production of melamine, phenolic and formaldehyde resin, as well as the supply of kraft and decorative paper used in laminate production.

Module A2: Transport to manufacturer

This module addresses the transportation of raw materials to the manufacturing facility, primarily via truck. It incorporates key data, including the approximate distance traveled to source the raw materials and the number of trips made during the reporting period.

Module A3: The third module encompasses the entire laminate manufacturing process, including energy consumption, emissions produced during production, and the treatment of waste generated (such as waste resins, paper, and laminate). It also covers the necessary processing steps to cut and adjust the laminate size according to specific project requirements.

The plant specific manufacturing process is as follows. The Commercial Manager initiates the purchase order with all essential specifications, including material category, description, quantity, and price. Upon arrival, the raw material is verified and logged into the raw material register with a unique inward record number. The paper is unloaded in a designated area, assigned a specific roll number, and categorized accordingly. The rolls are issued and recorded in the issue register. The issued paper then undergoes resin impregnation, with the design paper being impregnated with melamine resin and kraft paper with phenol resin in separate processes. Chemical agents such as formaldehyde, melamine, and phenol are used for impregnation.

After treatment, the design paper is stored in an air-conditioned room at 25°C, while the kraft paper is kept at ambient temperature. These materials are then assembled and passed through a hot press at 150°C to bond the composite material, depending on the thickness of the final product. Post-pressing, the laminate sheets are moved to the finishing area for trimming and back sanding. The manufactured products are subjected to grading and quality control, with any rejected sheets either disposed of or sent for recycling. The approved laminates are then stored in a bonded storage room, labelled with thickness, company name, and design code using inkjet or roller marking in compliance with Indian Standards Institute requirements. Finally, the product is packaged, and dispatch documentation is prepared.

Module A4 includes the actual monthly dispatch records for consignments sent to domestic buyers and the nearest export port, outlining the mode of transportation and the average distance covered. This data is integrated within the system boundary, providing a clear representation of practical transportation metrics.

The assessment focuses on the end-of-life stage (Modules C1–D) and follows the **EN 15804 +A2** methodology. We used **SimaPro** with the **Ecoinvent** and **Environmental Footprint v3.1** databases to evaluate all relevant environmental performance indicators.

For this analysis, **Module C1** is excluded. As laminates is typically non-structural and can be disassembled with minimal effort, its removal has a negligible environmental impact. In line with **EN 15804**, negligible modules may be omitted when justified; therefore, no deconstruction materials or energy were considered under the cut-off rule.

To complete the model End-of-Life alternatives, a few cautious assumptions were applied:

- Percentage contributions for Modules C1–D were informed by EPDs for comparable products.
- For **Module C2**, an **80 km** transport distance is assumed for laminate.
- For **Module C3**, for **1 kg** of laminate, we assume **87% incineration**
- For Module C4, for 1 kg laminate we assume **13% landfill**, and **0%** allocated to **recycling (Module D)**.

All the scenarios considered for the project report are representative scenarios that are in current use. The data for Modules C1–C4 and D in this LCA have been sourced from the global database Ecoinvent v3.10. The US region has been considered the farthest geographical boundary, in alignment with previously published EPDs.

The share of material actually "C" i.e. Reused, recycled or incinerated is kept below 100% to reflect a more realistic and practical scenario. In "D" stage we have considered 0% recycled. Additionally, for each scenario in the C3 phase (i.e., recycling, incineration, and secondary fuel), the 1 kg declared unit has been modeled separately for each 100% scenario.

Although certain uncertainties exist due to regional variability, disposal practices, and other unforeseen circumstances, these factors have been duly accounted for to ensure compliance with PCR 2019:14 Construction Products (version 2.0.1).

The LCI data for biogenic CO_2 provided by the LCA software were not balanced within each module, as the software and databases are not designed for that calculation. We also chose not to adjust uptake and release of biogenic CO_2 manually, to remain transparent and reflect the actual scenario within the EPD owner's control and influence

Biogenic emissions carry inherent uncertainty—such as variation in raw material composition, production quality, plant location, and supplier inputs. Accordingly, using dedicated databases that account for biogenic carbon in both the product and its packaging, we applied the best- available values for **1 kg of average High-Pressure Laminate (declared unit)**. Similarly, biogenic carbon at end-of-life and in **Module D (recycling)** was assessed for 1 kg of declared unit, based on the most probable scenarios and corresponding database values.

Cut-off criteria: - The cut-off rule permits the exclusion of material or energy flows deemed insignificant to the emission calculation of a unit process, provided they are clearly reported as data exclusions.

In this EPD, all raw materials and resources have been fully accounted for, achieving 100% coverage of elementary flows without applying cutoff criteria. Any omissions comply with the cut-off rule defined in EN 15804+A2.

All available product system data has been included in the LCA. Where specific data was unavailable, credible generic data from databases or literature was used. Data gaps were addressed through conservative assumptions and expert judgment to ensure full alignment with the defined criteria

Data Quality

All manufacturing information is based on operational data and direct measurements, ensuring high data quality. Assumptions were made regarding the average transport distances for raw material supply and product distribution to various regions. Specific primary data were collected for Craft Paper, Phenol, Formaldehyde, Melamine, Design Paper, Tissue Paper and Pet Coke consumption, regional electricity usage, transport distances, and distribution routes, based on 2024 production data from Samrat Laminates manufacturing facility.

Generic data were used for internal market transport and background processes, primarily sourced from the Ecoinvent v3.10 database, with adaptations made for country-specific electricity grids where relevant. Primary data are fully traceable to Samrat Laminates internal departmental records, aligned with the objectives and scope of the LCA study. Secondary data supplement the analysis where needed, following the data quality requirements outlined in EN 15804 and ISO 14044 (ISO, 2006b).

To achieve the defined goal and scope of this life cycle assessment, comprehensive specific and generic data were collected. The data set includes producer-specific information, covering business, product, and process details wherever available, based on one-year average data from January 2024 to December 2024. The selected generic data incorporate the most probable

technological and geographical considerations to accurately reflect the physical reality of the product and production processes. Country-specific references were prioritized from the database where available; otherwise, region-specific references were utilized.

The methodology has been consistently applied across all components of the analysis, with no modifications to the system boundary or quality requirements at any stage of the study. As a result, the study is fully reproducible with access to the underlying data sources.

Allocation method

This Life Cycle Assessment (LCA) applies an allocation approach aligned with co-production practices. Allocation has been performed to distribute the materials utilized in the production process. A mass-based allocation method has been employed, as multiple products are generated within a single unit process, requiring the division of input and output flows between the primary product under study and associated co-products. Furthermore, as the composition of the various laminate types considered in this LCA is uniform, there is no necessity to allocate specific raw materials or energy separately.

Accordingly, in line with EN 15804:2012+A2:2019, Section 6.4.3.2, mass allocation has been applied as the allocation method due to the minimal difference in revenue. Additionally, all inputs and outputs,

including energy consumption during the manufacturing process, have been normalized against the total production quantities.

The types of waste generated and their end-of-life treatment during the manufacturing process are allocated on a mass basis, in line with the "*polluter pays*" principle applied to each waste type. For background processes, allocation is based on the default cut-off and classification approach, following the parameters set by the Ecoinvent® database.

In terms of end-of-life (EOL) allocation, this EPD and LCA adhere to the polluter-pays principle for foreground processes, ensuring that the product system responsible for generating waste assumes responsibility for its management up to the end-of-waste point. In this methodology, the environmental burdens and benefits associated with recycled or reused materials and recovered energy are attributed to the product system that consumes these resources, rather than the system providing them. These are quantified based on the recycled content of the material under study.

This EPD and LCA encompass a range of product sizes. However, since density, raw material composition, and manufacturing methods remain largely consistent across the range, the environmental impact per kilogram of product does not vary

Variation product:
The laminate production process involves variations in size and density, with the A1 module allocation determined based on the tonnage utilized, as tracking by paper type is not feasible. In Module A2, allocation is similarly based on tonnage, further refined by the density of the paper used. For Module A3, the laminate manufacturing process remains consistent across all size variations, with differences arising only in the number of layers required.

Additional Information on Product variability / representativeness
The results disclosed in this Environmental Product Declaration (EPD) for the laminate product group are based on a representative product: a laminate sheet measuring 2500 mm X 1200 mm X 6 mm, selected due to its highest sales volume within the group. Other products within the EPD category differ only in size and corresponding material quantities, while raw materials, manufacturing processes, and end-of-life scenarios remain identical. As the environmental impacts scale proportionally with mass, the declared results are considered representative for the full product range Since the only distinction among product variants is dimensional, the results are consistent across all variants when normalized to a per-kilogram basis, with no significant variation.

Additional Information about EPD
The EPD owner holds sole ownership, liability, and full responsibility for the EPD. For two EPDs to be considered comparable, the following conditions must be met:

- They must be developed under the same PCR (including the same version) or under fully aligned PCRs or versions.
- They must cover products with identical functions, technical performance, and use (e.g., identical declared or functional units).
- They must have equivalent system boundaries and consistent data descriptions.
- They must apply equivalent data quality requirements, data collection methods, and allocation procedures.
- They must use identical cut-off rules and impact assessment methodologies (including the same version of characterization factors).

- They must present equivalent content declarations.

EPDs registered under different programs or not compliant with EN 15804: A2, even if within the same product category, may not be comparable. For detailed information on EPD comparability, refer to EN 15804: A2 and ISO 14025

The modelling of downstream stages and Module D has been carried out using insights from published literature, with references provided in the project report. Certain assumptions have not been publicly disclosed in order to respect the confidentiality of the EPD owner's export data.

The characterization method used for Normalization and weighting factor is EF 3.1 of EN 15804+A2 (adapted)

Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Distribution / installation stage		Use stage							End-of-life stage				Beyond product life cycle
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	Transport	Waste processing	Disposal	Reuse-Recovery-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	x	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	IND	IND	IND	IND	-	-	-	-	-	-	-	-	GLO	GLO	GLO	GLO	GLO
Share of primary data	54%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<5%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation– sites	0			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 4: Declared modules, geographical scope, specific data share (in GWP-GHG results), and data

variation (in GWP-GHG results)

#Disclaimer: The environmental performance results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks

#Disclaimer: The results of the end-of-life stage (module C) should be considered when using the results of the production stage (modules A1-A3).

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1- A3
Manufacturing of raw material	Database	Ecoinvent v3.10	2024	Primary data & Secondary data	3%
Generation of electricity used in manufacturing of product	Database	Ecoinvent v3.10	2024	Primary data & Secondary data	3%
Transport of raw material to manufacturing site	Invoices	EPD Owner	2024	Primary data & Secondary data	5%
Production of final Product	Internal registers	EPD Owner	2024	Primary data & Secondary data	30%
Manufacturing of packaging materia	Database	Ecoinvent v3.10	2024	Primary data & Secondary data	3%
Other processes including steam generation, waste treatment from product manufacturing	Databases	Ecoinvent v3.10	2024	Secondary data	10%
Total share of primary data, of GWP-GHG results for A1-A3					54%

*Raw Material consists of use of craft paper, phenol, formaldehyde, melamine, design paper, tissue paper, pet coke, diesel.

The reported share of primary data is associated with uncertainty, as an EPD used as data source lack information on the share of primary data

#Disclaimer: The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that do not capture all relevant aspects of data quality. The indicator is not comparable across product categories.

#Disclaimer: The reported share of primary data is associated with uncertainty, as an EPD [or: several EPDs] used as data source lack information on the share of primary data.

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

Mandatory impact category indicators according to EN 15804

Results per 1 kg of HPL								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	1.70E+00	7.29E-02	0.00E+00	1.58E+01	1.29E+00	1.14E-02	0.00E+00
GWP-fossil	kg CO_2 eq.	2.98E+00	7.28E-02	0.00E+00	1.58E+01	1.33E-02	1.41E-03	0.00E+00
GWP-biogenic	kg CO_2 eq.	- 1.28E+00	2.12E-06	0.00E+00	5.24E-03	1.27E+00	1.00E-02	0.00E+00
GWP-luluc	kg CO_2 eq.	3.53E-03	2.96E-05	0.00E+00	7.25E-03	3.70E-06	8.46E-07	0.00E+00
ODP	kg CFC 11 eq.	4.84E-08	1.08E-09	0.00E+00	2.14E-07	1.50E-10	3.59E-11	0.00E+00
AP	mol H^+ eq.	1.32E-02	1.67E-04	0.00E+00	3.80E-02	1.40E-04	9.86E-06	0.00E+00
EP-freshwater	kg P eq.	1.89E-03	5.76E-06	0.00E+00	1.73E-03	6.04E-06	1.12E-06	0.00E+00
EP-marine	kg N eq.	3.50E-03	3.87E-05	0.00E+00	8.72E-03	7.46E-05	4.61E-05	0.00E+00

EP-terrestrial	mol N eq.	3.34E-02	4.19E-04	0.00E+00	9.41E-02	7.16E-04	4.13E-05	0.00E+00
POCP	kg NMVOC eq.	1.31E-02	2.34E-04	0.00E+00	5.13E-02	1.80E-04	1.71E-05	0.00E+00
ADP-Minerals & metals*	kg Sb eq.	1.54E-05	2.38E-07	0.00E+00	5.29E-05	2.35E-08	2.61E-09	0.00E+00
ADP-fossil*	MJ	5.13E+01	1.02E+00	0.00E+00	2.19E+02	1.20E-01	3.15E-02	0.00E+00
WDP*	m^3	9.90E-01	4.66E-03	0.00E+00	1.03E+00	5.61E-03	-2.07E-02	0.00E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-LULUC = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP- minerals & metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption							

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

* *Disclaimer: The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks."*

* *Disclaimer: 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).*

Additional mandatory and voluntary impact category indicators

Results per 1 kg of HPL								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
PM	Disease incidence	1.75E-07	6.33E-08	0.00E+00	1.15E-06	1.58E-09	2.29E-10	0.00E+00
IRP	kBq U- 235 eq	1.17E-01	9.92E-03	0.00E+00	1.79E-01	1.37E-04	2.54E-05	0.00E+00
HTC	CTUh	2.74E-08	3.83E-10	0.00E+00	2.60E-09	2.52E-11	3.57E-13	0.00E+00
HTNC	CTUh	2.15E-08	6.41E-10	0.00E+00	1.37E-07	1.69E-09	2.64E-11	0.00E+00
HTCI	CTUh	2.71E-10	5.32E-12	0.00E+00	1.16E-09	1.99E-11	1.59E-13	0.00E+00
HTCO	CTUh	2.72E-08	3.77E-10	0.00E+00	1.45E-09	5.24E-12	1.97E-13	0.00E+00
HTNCI	CTUh	1.95E-08	6.03E-10	0.00E+00	1.29E-07	1.69E-09	1.32E-11	0.00E+00
HTNCO	CTUh	2.03E-09	3.86E-11	0.00E+00	8.13E-09	3.17E-12	1.32E-11	0.00E+00
ETF	CTUe	1.58E+01	2.00E-01	0.00E+00	4.04E+01	9.36E-02	1.45E-02	0.00E+00
ETFI	CTUe	2.88E+01	1.80E-01	0.00E+00	3.93E+01	9.29E-02	1.43E-02	0.00E+00
ETFO	CTUe	8.67E+00	8.95E-02	0.00E+00	1.08E+00	7.57E-04	2.49E-04	0.00E+00
LU	Pt	2.15E+02	7.23E+00	0.00E+00	1.31E+02	3.38E-02	7.48E-02	0.00E+00
Acronyms	PM= Particulate matter, IRP= Ionizing radiation, HTC=Human toxicity, cancer, HTNC= Human toxicity, non-cancer, HTCI= Human toxicity, cancer – inorganics, HTCO= Human toxicity, cancer – organics, HTNCI= Human toxicity, non-cancer – inorganics, HTNCO= Human toxicity, non- cancer – organics, ETF= Ecotoxicity, freshwater, ETFI= Ecotoxicity, freshwater – inorganics, ETFO= Ecotoxicity, freshwater – organics, LU=Land Use							

Resource use indicators

Results per 1 kg of HPL								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	5.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERM	MJ	7.73E-01	0.00E+00	0.00E+00	0.00E+00	9.52E+00	0.00E+00	0.00E+00
PERT	MJ	6.57E+00	0.00E+00	0.00E+00	0.00E+00	9.52E+00	0.00E+00	0.00E+00
PENRE	MJ	2.82E+01	1.02E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRM	MJ	1.88E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	3.00E+01	1.02E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.16E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non- renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non- renewable secondary fuels; FW = Use of net fresh water							

Waste indicators

Results per 1 kg of HPL								
Indicator	**Unit**	**A1-A3**	**A4**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	2.22E-04	0.00E+00	0.00E+00	1.60E+00	2.50E-03	1.25E-04	0.00E+00
Non-hazardous waste disposed	kg	4.04E-01	0.00E+00	0.00E+00	3.04E+01	9.03E-01	8.57E-01	0.00E+00
Radioactive waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Output flow indicators

Results per 1 kg of HPL								
Indicator	**Unit (Kg)**	**A1-A3**	**A4**	**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	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional LCA results (other environmental performance results) of the product(s)

Alternative end-of-waste scenario for per 1 kg of HPL
The results for Module C are based on the assumed end-of-life mix of **C3: 87% incineration** and **C4: 13% landfilling**.

The table below also presents the results for each module under separate **100% end-of-life scenarios**, where the material is assumed to be **reused, recycled, or incinerated** in Module C3, **landfilled** in Module C4—each scenario modelled independently.

The assumptions for Modules **C1 and C2** remain unchanged and are consistent with those used in the main Module C modelling in all cases.

Impact category	Unit	100 % Reuse/ Recycle (Module C3)	100% Secondary Fuel (Module C3)	100% Incineration (Module C3)	100% Landfilling (Module C4)
AP	mol H+ eq	7.84E-05	3.10E-03	1.56E-03	9.86E-06
GWP-Total	kg CO2 eq	1.80E-01	2.07E+00	1.60E+00	1.14E-02
GWP-biogenic	kg CO2 eq	1.73E-01	2.00E+00	1.56E+00	1.00E-02
GWP-fossil	kg CO2 eq	6.99E-03	7.09E-02	3.17E-02	1.41E-03
GWP-luluc	kg CO2 eq	4.31E-06	1.25E-04	0.00E+00	8.46E-07
ETF	CTUe	3.64E-02	5.46E-01	4.31E-01	1.45E-02
ETFI	CTUe	3.58E-02	5.41E-01	1.45E-01	1.43E-02
ETFO	CTUe	5.97E-04	5.49E-03	2.85E-01	2.49E-04
PM	disease inc.	1.09E-09	3.17E-08	1.07E-09	2.29E-10
EP-marine	kg N eq	6.65E-05	1.44E-03	7.82E-04	4.61E-05
EP-fresh water	kg P eq	2.31E-06	3.37E-05	5.41E-06	1.12E-06
EP-terrestrial	mol N eq	3.79E-04	1.61E-02	8.56E-03	4.13E-05
HTC	CTUh	6.01E-12	1.75E-10	9.93E-10	3.57E-13
HTCI	CTUh	3.06E-12	3.70E-11	2.27E-10	1.59E-13
HTCO	CTUh	2.95E-12	1.38E-10	7.66E-10	1.97E-13
HTNC	CTUh	3.19E-10	6.59E-09	2.70E-08	2.64E-11
HTNCI	CTUh	3.03E-10	6.54E-09	2.66E-08	1.32E-11
HTNCO	CTUh	1.56E-11	5.02E-11	4.13E-10	1.32E-11

IRP	kBq U-235 eq	1.86E-04	7.76E-03	0.00E+00	2.54E-05
LU	Pt	9.76E-02	1.86E-01	0.00E+00	7.48E-02
ODP	kg CFC11 eq	1.02E-10	4.43E-10	0.00E+00	3.59E-11
POCP	kg NMVOC eq	1.04E-04	3.89E-03	4.22E-03	1.71E-05
ADP-fossil	MJ	9.62E-02	7.85E-01	0.00E+00	3.15E-02
ADP-minerals & metals	kg Sb eq	2.05E-08	4.03E-07	0.00E+00	2.61E-09
WDP	m^3 depriv.	-1.43E-02	9.86E-03	0.00E+00	-2.07E-02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP- terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals & metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption, PM= Particulate matter, IRP= Ionizing radiation, HTC=Human toxicity, cancer, HTNC= Human toxicity, non-cancer, HTCI= Human toxicity, cancer – inorganics, HTCO= Human toxicity, cancer – organics, HTNCI= Human toxicity, non-cancer – inorganics, HTNCO= Human toxicity, non-cancer – organics, ETF= Ecotoxicity, freshwater, ETFI= Ecotoxicity, freshwater – inorganics, ETFO= Ecotoxicity, freshwater – organics, LU=Land Use			

Additional LCA results (other environmental performance results) of the product(s)

The laminate product with dimensions 2500 mm × 1200 mm and a thickness of 6 mm has been selected as the representative sample, as it accounts for the highest production volume. The LCA results for one declared unit (1 kg of laminate) are then modelled for products with the same composition and the same length and breadth, but with different thicknesses. The thickness range considered is 0.5 mm to 20 mm

LCA result of one kg of laminate product (A-C)	Unit	Min	% difference between Representative and Minimum	Representative	Max (Worst Case)	% Difference between Representative and Worst case
AP	mol H+ eq	5.09E-02	-1.10%	5.15E-02	5.21E-02	1.20%
GWP-Total	kg CO2 eq	1.87E+01	-1.30%	1.89E+01	1.91E+01	1.00%
GWP-biogenic	kg CO2 eq	5.21E-03	-0.60%	5.24E-03	5.27E-03	0.60%
GWP-fossil	kg CO2 eq	1.86E+01	-1.40%	1.89E+01	1.91E+01	1.10%
GWP-luluc	kg CO2 eq	1.07E-02	-0.70%	1.08E-02	1.09E-02	0.80%
ETF	CTUe	5.65E+01	0.0%*	5.65E+01	5.65E+01	0.0%*
PM	disease inc.	1.36E-06	-1.80%	1.39E-06	1.42E-06	1.90%
EP-marine	kg N eq	1.23E-02	-1.00%	1.24E-02	1.25E-02	1.00%
EP- freshwater	kg P eq	3.60E-03	-0.80%	3.63E-03	3.66E-03	0.70%
EP-terrestrial	mol N eq	1.28E-01	-1.10%	1.29E-01	1.30E-01	1.00%
HTC	CTUh	3.02E-08	-0.50%	3.04E-08	3.06E-08	0.50%
HTNC	CTUh	1.60E-07	-0.60%	1.61E-07	1.62E-07	0.60%
IRP	kBq U-235 eq	3.01E-01	-1.50%	3.06E-01	3.10E-01	1.40%
LU	Pt	3.51E+02	-0.50%	3.53E+02	3.55E+02	0.50%
ODP	kg CFC11 eq	2.61E-07	-1.20%	2.64E-07	2.67E-07	1.30%
POCP	kg NMVOC eq	6.38E-02	-1.60%	6.48E-02	6.58E-02	1.60%

ADP-fossil	MJ	2.66E+02	-1.70%	2.71E+02	2.76E+02	1.80%
ADP-minerals & metals	kg Sb eq	6.81E-05	-0.70%	6.86E-05	6.91E-05	0.70%
WDP	m3 depriv.	2.00E+00	-1.00%	2.01E+00	2.03E+00	1.20%
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP- minerals & metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption, PM= Particulate matter, IRP= Ionizing radiation, HTC=Human toxicity, cancer, HTNC= Human toxicity, non-cancer, ETF=Ecotoxicity, freshwater, LU=Land Use					

Discussion

We have conducted a comprehensive Life Cycle Inventory (LCI) assessment based on the EN 15804 + A2 methodology.

This rigorous assessment ensures a comprehensive understanding of the environmental impacts across various categories. However, the environmental performance results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

The manufacturing process currently depends on a single energy source, electricity from the Indian grid, with a climate impact of 1.3 kg CO2 eq./kWh. At this stage, the plant does not utilize any renewable energy sources for production, but efforts are underway to source its energy needs from renewable alternatives available in the region. For the waste generated indicator, we have excluded the C1-C4 and D modules due to the significant uncertainty associated with these at the given geographical scale.

We analyzed the Cradle to Gate with distribution system boundary, as this system category offers the greatest control and influence by the EPD owner to enhance manufacturing efficiency.

Conclusion

Samrat Laminate completed a thorough Life Cycle Assessment (LCA) with a cradle-to-gate system boundary, which included the distribution phase. The analysis determined that producing 1 kg of laminate at their facility results in a climate change impact of 1.770 kg CO2 equivalent. A detailed breakdown of the impact sources reveals that raw material transportation accounts for 0.19%, the manufacturing process contributes 3.63%, and product distribution represents 3.99%. Notably, raw material extraction emerges as the most significant stage, offering the highest potential for emissions reduction at 92.19%.

The environmental footprint of Samrat laminates manufacturing process was assessed through a Life Cycle Assessment (LCA), with a focused cradle-to-gate with distribution approach.

For example, The A1–A3 biogenic carbon values are primarily derived from primary data and processes directly influenced by the EPD owner. This provides a more practical and realistic basis for analyzing improvement opportunities and understanding the product's environmental footprint within the owner's control.

The End-Of-Life (EOL) scenarios—where the EPD owner has limited influence—are currently modelled based on assumptions for 1 kg of product, its raw-material composition, and global database values. As the EOL scope becomes clearer in the future, the biogenic carbon modelling will be refined to rely less on assumptions and more on reliable data, ensuring alignment with the mass-balance approach

This methodology effectively highlights impact categories linked to activities under the organization's direct control or influence. The analysis is grounded in high-quality primary data collected on-site, minimizing uncertainty and enhancing reliability. By adopting this approach, Samrat laminates can accurately identify the environmental risks and opportunities inherent in its current operations. Moving forward, the company will act on these insights to implement targeted improvements and reduce its environmental footprint across its value chain.

LIFE CYCLE INVENTORY

To develop the life cycle inventory, specific primary data for the reference year was gathered from reliable sources, including delivery notes for supplied materials, invoices, and product data sheets.

Additional environmental information

Samrat Plywood Limited (SPL) upholds a robust and proactive sustainability profile, demonstrating a steadfast commitment to continuously enhancing our environmental performance. We systematically integrate regional and international best practices within our operations and extend our influence across our supply chain, wherever direct control or substantial impact is possible. We remain dedicated to fostering continuous improvement throughout all facets of our business activities.

The traceability of our products is of paramount importance. Through rigorous risk assessments, third-party certifications, and ongoing monitoring measures, SPL ensures that all raw materials are sourced exclusively from responsibly managed resources.

We maintain partnerships solely with suppliers who consistently meet our exacting environmental standards. Furthermore, our products are registered within recognized environmental assessment databases, facilitating transparency and enabling customers to select products with proven environmental integrity.

A significant proportion of our suppliers are based in India, a country characterized by tropical and subtropical ecosystems with high biodiversity value. We engage exclusively with reputable, conscientious producers who can substantiate the origin of their raw materials through verifiable traceability certifications.

Moreover, SPL is proactively addressing the environmental impacts associated with product transportation. We are investing in operational efficiency enhancements, cultivating environmental awareness among our employees and supply chain partners, and systematically identifying and mitigating environmental inefficiencies. We are also expanding our focus to evaluate and address social and environmental risks and opportunities beyond the immediate scope of our operations.

Additional social and economic information
At SPL, we are deeply committed to ensuring safe and equitable working conditions for everyone associated with our operations, including our suppliers. We expect our suppliers to uphold the same core values we champion, such as promoting gender equality and fair treatment. As part of our due diligence, all suppliers are required to sign our Code of Conduct prior to entering into any form of collaboration. Additionally, we conduct regular on-site visits to verify that our standards are consistently maintained.

Differences versus previous versions
No previous version for this EPD.

VERSION HISTORY
Original version of the EPD

ABBREVIATIONS

Abbreviations	
CARB	California Air Resources Board
EOL	End-Of-Life
ECH	Exterior Cladding HPL
FSC	Forest Stewardship Council
GRIHA	Green Rating for Integrated Habitat Assessment
HPL	high-pressure laminates
ISI	Indian Standards Institute
ISO	International Organization for Standardization
LCI	Life Cycle Inventory
SPL	Samrat Plywood Limited
SVHC	Substances of Very High Concern

REFERENCES

a) ISO (2006b), ISO 14040:2006, Environmental management – Life cycle assessment – Principles and framework
b) ISO (2006c), ISO 14044: 2006, Environmental management – Life cycle assessment – Requirements and guidelines.
c) SimaPro version 9.6.0.1.
d) Ecoinvent database version 3.10
e) EPD International (2025) General Programme Instructions (GPI) for the International EPD® System, version 5.0.1
f) EPD International (2025) Product Category Rules: construction products. PCR 2019:14, version 2.0.1
g) European Committee for Standardization (2021), EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works - Environmental Product Declarations - Corerules for the product category of construction products
h) Ecoinvent, 2023. LCA database published by the ecoinvent association originally known as the ecoinvent Centre, the Swiss Centre for Life Cycle Inventories. Since June 2013 ecoinvent is a not-for-profit association founded by institutes of the ETH Domain and the Swiss Federal Offices. The version 3.9.1 was used
i) ISO (2006a). ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures

INDIA EPD

INTERNATIONAL EPD SYSTEM

INDIA EPD

INTERNATIONAL EPD SYSTEM

EPD