

# Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019

## Thin High Pressure Laminates



<b>EPD registration number:</b>	
<b>Publication date:</b>	2023-00-00
<b>Validity date:</b>	2028-00-00
<b>Geographical scope:</b>	Global

## **1. Introduction**

Greenlam Industries Limited is one of the top manufacturers of Laminates and top in Asia. With over two decades of experience in the surface décor space, Greenlam has been the pioneer in introducing the international décor trend, in India & to the international markets. The company has the wide network of suppliers across more than 100 countries. The products have been used in beautifying internal spaces by years and years. The strengths of the company are to create, Innovate and Beautify. The company is investing in business sustainability and the continuity followed by the responsible manufacturing practices. The overall goal of the company is to keep delighting the customers with the best of designs, textures, colours and processes.

For the purpose of this EPD, the life cycle assessment study is conducted based on ISO 14040:2006 and ISO 14044:2006 standard, in accordance with Product Category Rules for 'CONSTRUCTION PRODUCTS' Version 1.2.5, 2019:14 for preparation of Environmental Product Declaration (EPD) of construction products. The EPD is in accordance with ISO 14025 and EN 15804+A2. EPD of construction products may not be comparable if they do not comply with EN 15804+A2.

## 2. General Informations

### 2.1 EPD, PCR, LCA Information

Table 1: EPD Information

<b>Programme</b>	The International EPD® System <a href="http://www.environdec.com">www.environdec.com</a>	
<b>Program operator</b>	EPD International AB Box 210 60, SE-100 31 Stockholm, Sweden.	Indian Regional Hub <a href="http://www.envirodecindia.com">www.envirodecindia.com</a>
<b>Declaration holder<sup>1</sup></b>	Devendra Gupta Greenlam Industries Limited 2nd Floor, West Wing, Worldmark 1, Aerocity IGI Airport Hospitality District, New Delhi, 110037 India. Contact No: Email: <a href="mailto:devendra.gupta@greenlam.com">devendra.gupta@greenlam.com</a> Website: <a href="https://www.greenlam.co.in/">https://www.greenlam.co.in/</a>	
<b>Product</b>	High Pressure Laminates (HPL)	
<b>CPC Code</b>	314	
<b>Reference standards</b>	ISO 14025:2006, ISO 14040/44, EN 15804:2012 +A2:2019	

Table 2: PCR Information

Reference PCR	PCR CONSTRUCTION PRODUCTS' Version 1.2.5, 2019:14
Date of Issue	2022-11-01

Table 3: Verification Information

Demonstration of verification	
Third party verifier	

Table 4: LCA Information

Title	Environmental Product Declaration of Greenlam's HPL Product
Preparer	Dr. Rajesh Kumar Singh Sphera Solutions 707, Meadows, Sahar Plaza, Andheri Kurla Road, Andheri East, Mumbai - 400059, India. Email: <a href="mailto:rsingh@sphera.com">rsingh@sphera.com</a>
Reference standards	ISO 14040/44 standard

<sup>1</sup> EPD owner has the sole ownership, liability, and responsibility for the EPD

## 2.2 Reference Period of EPD Data

The reference period for the data used within this EPD is for the year April 2022-March 2023.

## 2.3 Geographical Scope of EPD Application

The geographical scope of this EPD is Global.

## 2.4 Additional Information about EPD

This EPD provides information concerning the production of High Pressure Laminates (HPL) at Greenlam Industries Limited. Product Category Rules (PCR) for the assessment of the environmental performance of High-Pressure Laminates is 'Construction products, 2019:14, version 1.2.5' and complying with the standard EN 15804. Product classification is UN CPC 314 Boards and panels 2013:02 Version 1.02. This PCR is applicable to the product "High Pressure Laminates". EPD of construction products may not be comparable if they do not comply with EN15804. The environmental impacts were calculated based on the functional unit wherein each flow related to material consumption, energy consumption, emissions, is scaled to the reference flow.

## 3. Product Description and System Boundaries

### 3.1 Product Identification and Usage

HPL is a composite material composed of papers and resins. The product is made by the saturation of multiple layers of paper with phenolic resin and melamine resin by the use of thermal energy and electricity. Greenlam manufactures HPL at three manufacturing locations Behror, Nalagarh and Prantij plant. HPL are both exported and made inhouse. The percentage of production volume of various thin laminates produced at various production site is provided in Table 3-1

Table 3-1 Percentage of Production volume of various thin laminates

Sr no	Thickness	Production Volume (%)
1	0.5	9%
2	0.55	0%
3	0.65	2%
4	0.7	23%
5	0.75	1%
6	0.8	20%
7	0.9	1%
8	1	37%
9	1.2	1%
10	1.25	0%
11	1.3	0%
12	1.5	0%
13	1.6	0%
14	1.8	6%
15	2	0%

The study is conducted for weighted average of different thin laminates provided in Table 3-1 which is scaled to 0.8 mm thickness.

### 3.2 System boundaries

The system boundary is considered as 'Cradle to Gate' with modules C1-C4 and D, detailed in the below-mentioned life cycle phases. The production includes raw material extraction, transport, manufacturing, followed by end-of-life stage.

Table 3-2 System Boundary and Product Stages

EPD Module	Life Cycle Stages	Life Cycle Sub-stages	Definitions
A1	Materials	Primary raw material production	Raw materials: chemicals and paper
A2	Upstream Transport	-	Transport of raw material to the manufacturing site
A3	Manufacturing		Manufacturing of final product
A5	Installation	-	Treatment of packaging materials
C1	Demolition	-	-
C2	Transport	-	With a collection rate of 100%, the transports are carried out by truck over 100 km
C3	Waste Processing		Incineration is preferred for product, cutting wastes and packaging waste
C4	Disposal		Landfilling of the waste HPL product
D	EOL	-	Benefits and Loads beyond the Building Life Cycle (D) credits

**Exclusions:**

Table 3-3 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.
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

## 4. LCA

### 4.1 Information Sources and Data Quality

It is important that data quality is in accordance with the requirements of the declaration's goal and scope. This is essential to the reliability of the declaration and achievement of the intended application. The quality of the LCI data for modelling the life cycle stages have been assessed according to ISO 14044 (ISO, 2006b). Data quality is judged by its quality (measured, calculated or estimated), completeness (e.g. are there unreported emissions), consistency (degree of uniformity of the methodology applied on a study serving as a data source) and representativeness (geographical, time period, technology). To cover these requirements and to ensure reliable results, first-hand industry data in combination with consistent, upstream LCA information is used. The datasets have been used in LCA-models worldwide for several years in industrial and scientific applications for internal as well as critically reviewed studies. In the process of providing these datasets, they have been crosschecked with other databases and values from industry and science.

Greenlam Industries Limited provides the most accurate and representative data for HPL production. For all data requirements, primary data were used where possible, and finally upstream LCA data from LCA (FE) 10.6 professional database was used.

## 4.2 Methodological Details

### 4.2.1 Declared unit

The declared unit for the EPD is 1 m<sup>2</sup> of product.

### 4.2.2 Selection of application of LCIA categories

A list of relevant impact categories indicators is defined and associated with the inventory data. The methods that have been selected for evaluation of environmental impacts are mentioned in (Table 4-1). These indicators are scientifically and technically valid.

The environmental impact per declared unit for the following environmental impact categories were reported in the EPD according to the mentioned PCR in modular format of A-D. EN 15804:2012+A2:2019. The same has been used and documented below.

Table 4-1 Environmental Impacts Indicators for EN15804+A2:2019

Impact category	Indicator	Unit
Climate change – total	Global Warming Potential total (GWP-total)	kg CO <sub>2</sub> eq.
Climate change - fossil	Global Warming Potential fossil fuels (GWP-fossil)	kg CO <sub>2</sub> eq.
Climate change - biogenic	Global Warming Potential biogenic (GWP-biogenic)	kg CO <sub>2</sub> eq.
Climate change - luluc	Global Warming Potential land use and land use change (GWP-luluc)	kg CO <sub>2</sub> eq.
Ozone Depletion	Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.
Acidification	Acidification potential, Accumulated Exceedance (AP)	Mole of H <sup>+</sup> eq.
Eutrophication aquatic freshwater	Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater)	kg P eq.
Eutrophication aquatic marine	Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine)	kg N eq.
Eutrophication terrestrial	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	Mole of N eq.
Photochemical ozone formation	Formation potential of tropospheric ozone (POCP)	kg NMVOC eq.
Depletion of abiotic resources - minerals and metals	Abiotic depletion potential for non-fossil resources (ADP- minerals & metals)	kg Sb eq.
Depletion of abiotic resources - fossil fuels	Abiotic depletion for fossil resources potential (ADP-fossil)	MJ

Water use	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	m <sup>3</sup> world equiv.
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Table 4-2 Resources Use Parameters

Parameter	Unit
Renewable primary energy as energy carrier (PERE)	MJ
Renewable primary energy resources as material utilization (PERM)	MJ
Total use of renewable primary energy resources (PERT)	MJ
Non-renewable primary energy as energy carrier (PENRE)	MJ
Non-renewable primary energy as material utilization (PENRM)	MJ
Total use of non-renewable primary energy resources (PENRT)	MJ
Use of secondary material (SM)	kg
Use of renewable secondary fuels (RSF)	MJ
Use of non-renewable secondary fuels (NRSF)	MJ
Net freshwater Use (FW)	m <sup>3</sup>

Table 4-3 Output flows and waste categories parameters

Parameter	Unit
Hazardous waste disposed (HWD)	kg
Non-hazardous waste disposed (NHWD)	kg
Radioactive waste disposed (RWD)	kg
Components for re-use (CRU)	kg
Materials for recycling (MFR)	kg
Materials for energy recovery (MER)	kg
Exported electrical energy (EEE)	MJ
Exported thermal energy (EET)	MJ

Table 4-4 Biogenic carbon content

Parameter	Unit
Biogenic carbon content in product	kg
Biogenic carbon content in packaging	kg

Table 4-5 Additional Parameters

Impact category	Indicator	Unit
Particulate matter emissions	Potential incidence of disease due to PM emissions (PM)	Disease incidences
Ionising radiation	Potential Human exposure efficiency relative to U235 (IRP)	kBq U235 eq.

Eco-toxicity (freshwater)	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	CTUe
Human toxicity, cancer effects	Potential Comparative Toxic Unit for humans (HTP-c)	CTUh
Human toxicity, non-cancer effects	Potential Comparative Toxic Unit for humans (HTP-nc)	CTUh
Land use related impacts/ Soil quality potential	Potential soil quality index (SQP)	Pt

#### 4.3 Cut-off Criteria

No cut-off criteria are defined for this study. The system boundary was defined based on relevance to the goal of the study. For the processes within the system boundary, all available energy and material flow data have been included in the model.

#### 4.4 Allocation

No allocation has been done. As no co-products are produced, the flow of materials and energy and the associated release of substances and energy into the environment is related exclusively to the product manufactured.

#### 4.5 System Boundaries

The system boundary for HPL represents a Cradle-to-Gate with options, which covers production and End of life phase. The production phase includes the raw material extraction, upstream transportation, manufacturing process of the final product. End of life phase includes incineration of the product.

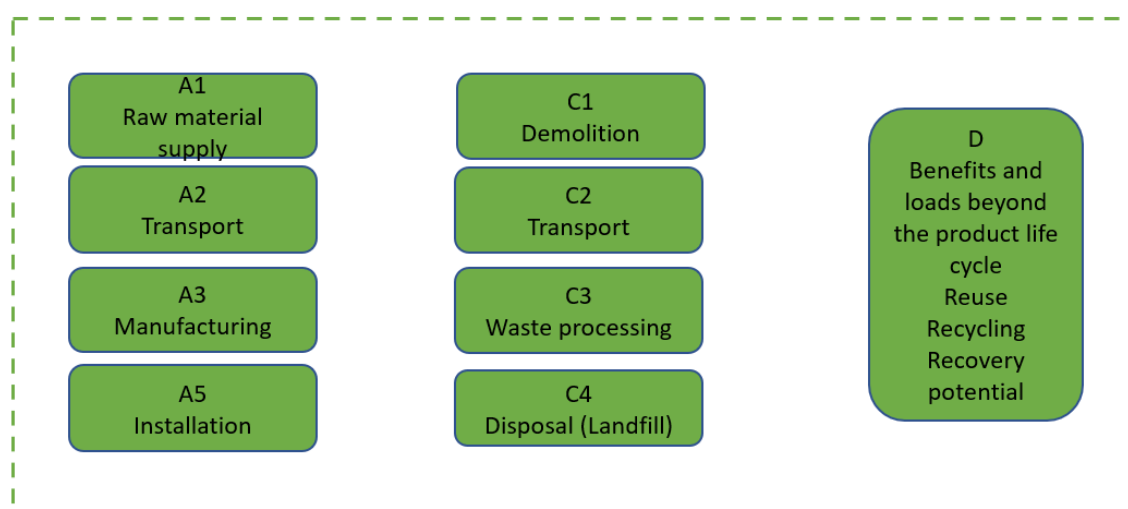


Figure 4 -1 System boundary included in the study



#### **4.5.1 Geographic System Boundaries**

The geographical coverage of the study covers manufacturing in India. Country specific boundaries wherever possible have been adapted and others dataset were chosen from EU and GLO if no regional datasets were available.

#### **4.5.2 Temporal System Boundaries**

The data collection is related to one year of operation, and the year of the data is indicated in the questionnaire for each data point. The data is collected from year April 2022- March 2023 and is believed to be representative of production of HPL product in India.

#### **4.5.3 Technology coverage**

The exact technological configuration was used for the HPL product for minimizing environmental impacts. It was assumed that secondary data from databases that were used for this assessment, were temporally and technologically comparable to that of primary data and within the temporal coverage already addressed.

#### **4.6 Software and database**

The LCA model was created using the LCA (FE) 10.6 Software system for life cycle engineering, developed by Sphera Solutions. The LCA (FE) database provides the life cycle inventory data for several of the raw and process materials obtained from the upstream system. Detailed database documentation for GaBi datasets can be accessed at <http://www.gabi-software.com/international/support/gabi/gabi-database-2021-lci-documentation>. Detailed database documentation for LCA (FE) datasets can be accessed at [http://www.LCA\(FE\)-software.com/international/support/LCA\(FE\)/LCA\(FE\)-database-2021-lci-documentation](http://www.LCA(FE)-software.com/international/support/LCA(FE)/LCA(FE)-database-2021-lci-documentation).

#### **4.7 Comparability**

According to the standards, EPDs do not compare the environmental performance of products in the sector. Any comparison of the declared environmental performance of products lies outside the scope of these standards and is suggested to be feasible only if all compared declarations follow equal standard provisions.

"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 characterization factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025."

4.8 Results

Modules of the life cycle included as per PCR is given in Table 4-6.

Table 4-6 Modules of Production life cycle included (X= Declared Module; MND = Module not declared)

Production			Installation		Use Stage								End of Life				Next Product System
Raw material supply (extraction, processing, recycled material)	Transport to manufacturer	Manufacturing	Transport to site	Treatment of packaging products	Use / application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Demolition	Transport to EoL	Incineration	Disposal	Credits from incineration	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
X	X	X	MND	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X	

#### 4.8.1 LCIA and LCI Result

The LCIA results for The LCIA results for 1 m<sup>2</sup> of 0.8 mm HPL are given in Table 4-7 to Table 4-11

4-7 Environmental impacts for 1 m<sup>2</sup> of 0.8 mm HPL

Environmental impact indicators	Unit	A1-A3	A5	C1	C2	C3	C4	D
Climate Change - total	kg CO <sub>2</sub> eq.	4.01E+00	3.50E-02	0.00E+00	1.28E-02	1.87E+00	0.00E+00	-8.12E-01
Climate Change, fossil	kg CO <sub>2</sub> eq.	2.56E+00	3.50E-02	0.00E+00	1.28E-02	3.62E-02	0.00E+00	-8.07E-01
Climate Change, biogenic	kg CO <sub>2</sub> eq.	1.43E+00	4.89E-06	0.00E+00	3.42E-05	1.83E+00	0.00E+00	-4.60E-03
Climate Change, land use and land use change	kg CO <sub>2</sub> eq.	1.35E-02	5.80E-07	0.00E+00	1.62E-07	3.93E-06	0.00E+00	-5.22E-05
Ozone depletion	kg CFC -11 eq.	5.40E-12	6.85E-15	0.00E+00	1.94E-16	1.87E-13	0.00E+00	-6.32E-12
Acidification	Mole of H <sup>+</sup> eq.	2.43E-02	4.36E-06	0.00E+00	1.45E-04	9.05E-04	0.00E+00	-1.00E-03
Eutrophication, freshwater	kg P eq.	2.64E-05	1.84E-09	0.00E+00	2.62E-09	4.86E-08	0.00E+00	-1.30E-06
Eutrophication, marine	kg N eq.	5.89E-03	1.18E-06	0.00E+00	7.15E-05	4.30E-04	0.00E+00	-2.93E-04
Eutrophication, terrestrial	Mole of N eq.	6.41E-02	2.00E-05	0.00E+00	7.84E-04	4.98E-03	0.00E+00	-3.13E-03
Photochemical ozone formation, human health	kg NMVOC eq.	8.93E-01	3.40E-06	0.00E+00	1.33E-04	1.11E-03	0.00E+00	-8.15E-04
Resource use, mineral and metals	kg Sb eq.	4.22E-07	6.08E-11	0.00E+00	6.74E-11	1.76E-09	0.00E+00	-5.95E-08
Resource use, fossils	MJ	4.32E+01	1.56E-02	0.00E+00	1.74E-01	5.56E-01	0.00E+00	-1.47E+01
Water use	m <sup>3</sup> world equiv.	4.96E-01	3.32E-03	0.00E+00	1.46E-05	0.00E+00	1.64E+00	0.00E+00

4-8 Resource use Indicators for 1 m<sup>2</sup> of 0.8 mm HPL

Resource use indicators	Unit	A1-A3	A5	C1	C2	C3	C4	D
Use of renewable primary energy (PERE)	MJ	2.26E+01	3.75E-03	0.00E+00	3.62E-04	1.17E-01	0.00E+00	-4.32E+00
Primary energy resources used as raw materials (PERM)	MJ	1.59E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources (PERT)	MJ	3.85E+01	3.75E-03	0.00E+00	3.62E-04	1.17E-01	0.00E+00	-4.32E+00
Use of non-renewable primary energy (PENRE)	MJ	4.27E+01	6.04E-01	0.00E+00	1.74E-01	5.56E-01	0.00E+00	-1.47E+01
Non-renewable primary energy resources used as raw materials (PENRM)	MJ	5.89E-01	-5.89E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources (PENRT)	MJ	4.33E+01	1.56E-02	0.00E+00	1.74E-01	5.56E-01	0.00E+00	-1.47E+01
Input of secondary material (SM)	kg	2.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels (RSF)	kg	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)	m <sup>3</sup>	2.80E-01	7.91E-05	0.00E+00	4.63E-07	4.50E-03	0.00E+00	-3.50E-03

4-9 Waste Categories and other Indicators for 1 m<sup>2</sup> of 0.8 mm HPL

Output flows and waste categories	Units	A1-A3	A5	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	2.11E-07	1.24E-13	0.00E+00	1.51E-14	3.69E-11	0.00E+00	-7.72E-10
Non-hazardous waste disposed (NHWD)	kg	7.05E-02	3.23E-03	0.00E+00	2.45E-06	1.39E-02	0.00E+00	-7.20E-03
Radioactive waste disposed (RWD)	kg	4.37E-04	5.59E-07	0.00E+00	1.93E-08	2.63E-05	0.00E+00	-1.15E-03
Components for re-use (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	4.00E-04	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	1.64E+00	6.36E-02	0.00E+00	0.00E+00	2.11E+00	0.00E+00	0.00E+00
Exported thermal energy (EET)	MJ	2.92E+00	1.14E-01	0.00E+00	0.00E+00	3.75E+00	0.00E+00	0.00E+00

4-10 Biogenic Carbon content of 1 m<sup>2</sup> of 0.8 mm HPL

Biogenic carbon content	Unit	A1-A3	A5	C1	C2	C3	C4	D
Biogenic carbon content in product [kg]	kg	4.03E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content in packaging [kg]	kg	4.85E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

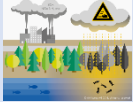

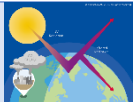


4-11 Additional Parameters for 1 m<sup>2</sup> of 0.8 mm HPL

Optional indicators	Unit	A1-A3	A5	C1	C2	C3	C4	D
<b>Optional indicators detailed</b>								
Particulate matter	Disease incidences	1.00E+00	0.00E+00	0.00E+00	8.00E-10	2.71E-09	0.00E+00	-8.52E-09
Ionising radiation, human health	kBq U235 eq.	6.48E-02	0.00E+00	0.00E+00	1.76E-06	4.19E-03	0.00E+00	-1.90E-01
Ecotoxicity, freshwater	CTUe	1.92E+02	0.00E+00	0.00E+00	7.11E-02	2.06E-01	0.00E+00	-3.25E+00
Human toxicity, cancer	CTUh	1.32E-05	0.00E+00	0.00E+00	1.20E-12	1.33E-11	0.00E+00	-1.64E-10
Human toxicity, non-cancer	CTUh	7.44E-07	0.00E+00	0.00E+00	5.76E-11	4.58E-10	0.00E+00	-5.08E-09
Land Use	Pt	2.17E+02	0.00E+00	0.00E+00	1.73E-04	1.39E-01	0.00E+00	-2.84E+00

#### 4.9 Interpretation

The interpretation of the results of 1 m<sup>2</sup> of 0.8 mm HPL are presented in Table 4-11.

4-11 Interpretation of most significant contributors to life cycle parameters (1 m<sup>2</sup> of HPL Products)

Parameter		Most significant contributor
<b>Acidification Potential (AP)</b>		The Cradle to gate (A1-A3) Acidification Potential (AP) is 0.024 Mole of H <sup>+</sup> eq. The contribution by the manufacturing stage is 61% while the raw material stage (A1) contribution is 25%, while the raw material transportation stage (A2) contributes to 14%
<b>Eutrophication Potential (EP)</b>		The Cradle to Gate Eutrophication potential (EP) is 2.64E-05 kg P eq. The contribution by the raw material stage is 67% while the manufacturing stage (A3) contributes 33%.
<b>Global Warming Potential (GWP 100 years)</b>		The Cradle to gate Climate change total (GWP) is 4.01 kg CO <sub>2</sub> eq. The contribution from the manufacturing stage (A3) is 63% followed by raw material stage (A1) which contributes 29%
<b>Photochemical Ozone Creation Potential (POCP)</b>		The Cradle to Gate Photochemical ozone creation potential (POCP) is 0.893 kg NMVOC eq. The major contribution is from manufacturing stage (A3) which is around 99%
<b>Abiotic depletion potential (ADP) - Fossil</b>		The total resource use fossil is 43.2 MJ. The major contribution is from raw material stage (A1) which is around 63% and from the manufacturing stage it is around 28%

Concluding, the study provides fair understanding of environmental impacts during the various life cycle stages of HPL product production. It also identifies the hot spots in the value chain where improvement activities can be prioritised and accordingly investment can be planned. The scope covers the ecological information to be divided into raw material production (A1), transportation (A2) and Manufacturing (A3) along with the end of life (C1-C4).

## 5. LCA Terminology

Cradle to Gate	Scope of study extends from mining of natural resources to the completed product ready for shipping from the manufacturing dispatch “gate”, known as Modules A1-A3.
Cradle to Grave	Scope of study extends from mining of natural resources to manufacture, use and disposal of products at End of Life, including all Modules A-D.
End of life	Post-use phase life cycle stages involving collection and processing of materials (e.g., scrap) and recycling or disposal, known as Modules C and D.

## 6. Other Environmental Information

The constituent materials used within our products are responsibly sourced and we apply the principles of Sustainable Development and of Environmental Stewardship as a standard business practice in our operations. Protecting the environment by preserving non-renewable natural resources, increasing energy efficiency, reducing the environmental emissions, limiting the impact of materials transportation to and from our operations is part of our way in doing business.

Products do not contain any substances that can be included in “Candidate List of Substances of Very High Concern for Authorization” and raw materials used are not part of the EU REACH regulation.

## 7. References

- LCA (FE) 10.6\_2022: Dokumentation der LCA (FE)-Datensätze der Datenbank zur Ganzheitlichen Bilanzierung. LBP, Universität Stuttgart und Sphera Solutions Pvt Ltd GmbH
- LCA (FE) 10\_2021: Software und Datenbank zur Ganzheitlichen Bilanzierung. LBP, Universität Stuttgart und Sphera Solutions Pvt Ltd GmbH
- ISO 14020:2000 Environmental labels and declarations - General principles
- ISO 14025:2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- ISO 14040:2006 Environmental management- Life cycle assessment - Principles and framework
- ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines
- PCR 2019:14, Product Category Rules (PCR) for 'CONSTRUCTION PRODUCT' Version 1.2.5