

Environmental Product Declaration

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

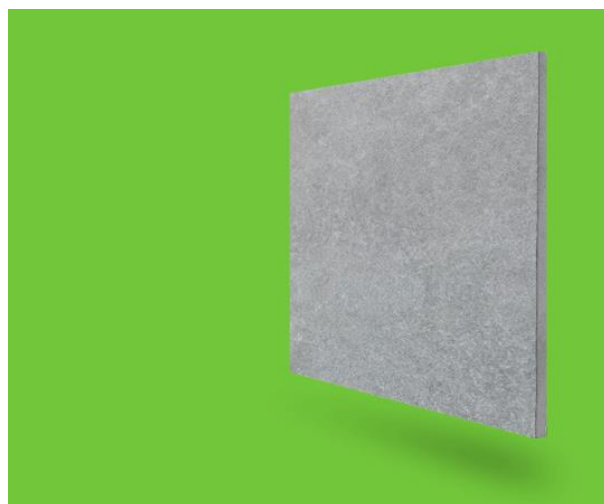
Vnext- Fiber Cement Boards

From

Visaka Industries Limited



Vboard – Fiber Cement Boards



Programme:

Programme operator:

EPD registration number:

Publication date:

Valid until:

The International EPD System, Indian Regional Hub, www.environdec.com
www.environdecindia.com

EPD International

S-P-06083

2022-07-28

2027-07-27

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
E-mail:	info@environdec.com

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 1.11
PCR review was conducted by: The Technical Committee of the International EPD system. Chair of the PCR Review : Claudia A.Pena, The Review panel may be contacted via info@environdec.com
Life Cycle Assessment (LCA)
LCA accountability: Mr.Shyam Chandra V Sr.Manager- Sustainable Development Susnomics Engineering Systems Pvt Ltd 202, Matrix Synergy West Maredpally Secunderabad, 500026, 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: Mr.Sunil Kumar CS, Chakra4 Sustainability Consulting Services <u>signature of the third-party verifier</u> Approved by: The International EPD® System

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

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Visaka Industries Limited, Vnext Division

Contact: Mr KVE Prasad, Sr. Vice President-Technical, Vnext Division

Description of the organisation:

The company was established by Dr G Vivekanand in 1981 and is presently stewarded by Mr G Vamsi Krishna son of Dr. G. Vivekanand and Mrs. Saroja Vivekanand. Over the last four decades, the Company has established itself as one of the leading building construction material providers and a dependable synthetic yarns manufacturer in India. The company is engaged in the manufacture of cement fibre roofing sheets, Fiber Cement Boards and panels, value added textile yarns, Solar roofing products. Head-quartered in Hyderabad, Visaka has a total of 14 manufacturing locations across India.

Visaka has 8 manufacturing locations across India for the production of Cement fibre roofing sheet. Our production facility possess an annual production capacity of 8,02,000 tonnes of cement roofing sheets.

Visaka has 4 manufacturing plants across India for the production of Vboards (Fiber cement boards) and 3 manufacturing plants for the production of Vpanels in total. Our Boards / Panels / Planks are marketed under the V Next brand. Our production facility possess an annual production capacity of 2,40,000 tonnes of fiber cement board products.

Visaka has 1 manufacturing plant for its flagship product called ATUM solar (patented) which helps in sustainable energy generation using solar PV as well as a roofing solution for buildings. This products holds a major advantage due to its area efficiency factor compared to the installation of conventional solar PV. Our integrated solar panel roofing is offered under the ATUM brand.

Yarn production by use of recycled PET bottles is spinning plant possesses an annual production capacity of 2,752 twin air-jet spinning positions equivalent to 82,560 ring spindles. Our synthetic blended yarn is marketed under the Wonder Yarn brand.

Product-related or management system-related certifications: ISO 9001- Quality Management Systems

Name and location of production site(s): Vnext- Fiber Cement Boards are manufactured in three factories in India-

1. Vnext Miryalaguda, Telangana.
2. Vnext Jhajjar, Haryana.
3. Vnext Daund, Maharashtra.

Product information

Product name: Vnext- Fiber Cement Boards

Product identification: Vnext- Fiber Cement Boards by Visaka Industries Limited

Product description:

Vboard (Fibre cement board) product is generally made by mixing the raw materials like silica, cellulose fibre, cement, Fly ash, additives etc. with water to form a slurry as per IS:14862- 2000. The sheet is made by the use of a laminar process method. This method gives the sheet an uniform thickness. Upon producing the sheet, it is then pre- dried and auto-claved to gain the required material (physical & mechanical) strength. The Vboards are manufactured in range of different size and thickness ranging from 4mm-25mm

The Vboard has a wide range of applications like Fire rated acoustic partitions, Acoustic partitions, Wall panelling, Grid false ceiling, seamless false ceiling, mezzanine flooring, kitchen cabinets, Wardrobes, etc.

The present declaration is conducted for 1 m2 of fibre cement board product manufactured at Miryalaguda, Jhajjar & Daund locations of Visaka Industries Limited.

UN CPC code: UN CPC 3752

Geographical scope: The Geographic scope of the product is India.

Vnext- Fiber Cement Boards			
Thickness (mm)	Locations & Properties		
	MLG *	JJR*	DND*
	Standard weight (kg/m ²)	Standard weight (kg/m ²)	Standard weight (kg/m ²)
4	5	5	5
5	6	6	6
6	8	8	8
8	10	10	10
9	-	11	11
10	13	13	13
12	15	15	15
14	18	18	18
16	20	20	20
18	23	23	23
20	25	25	25
22	-	28	28
25	31	31	31

MLG * - Miryalaguda, Telangana

JJR* - Jhajjar, Haryana

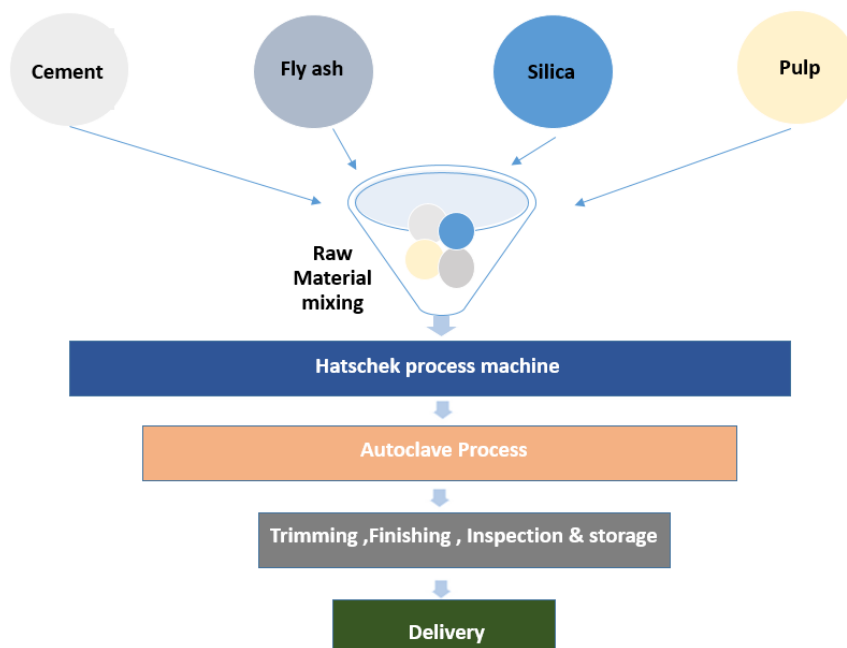
DND* - Daund, Maharashtra

Content Declaration

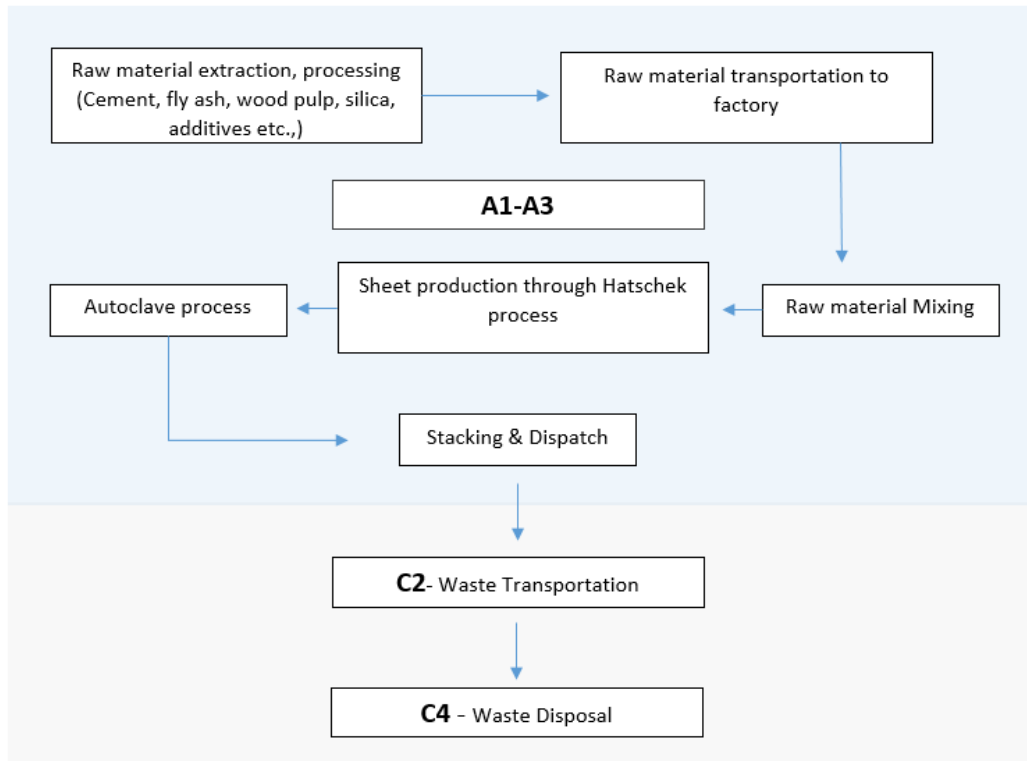
Material	% of mass per declared functional unit
Cement	38-40%
Fly ash	23-25%
Wood pulp	5%
Silica powder	22-25%
Ceramic powder	3-4%

No substance, listed in the Candidate List of Substances of Very High Concern for Authorisation under the REACH Regulations are used in this product, either above the threshold limit or above 0.1% (wt/wt).

Process diagram:



System diagram:



LCA information:

Declared unit: The declared unit for the EPD is 1m² of Vnext- Fiber Cement Boards of various thickness.

Time representativeness: The reference period of EPD data is used for the year of Jan 2021 to Dec 2021.

Database(s) and LCA software used: The primary data for this particular product is collected from the manufacturing plants in India (Miryalaguda, Jhajjar and Daund). The relevant secondary datasets are taken from ecoinvent 3.8 database and OpenLCA software is used to carry out the assessment. The impact models used are those indicated in EN 15804:2012+A2:2019.

Impact assessment method and Impact categories

CML IA Impact assessment method is used primarily for all core impact indicators. The impact categories involved are as follows,

1. Global warming potential (GWP)- kg CO₂-eq
2. Depletion potential of the stratospheric ozone layer- kg CFC 11-eq
3. Acidification potential of land and water- kg SO₂-eq
4. Eutrophication potential- kg PO₄ 3—eq
5. Photochemical oxidation- kg C₂H₄ eq
6. Abiotic depletion potential for nonfossil resources- kg Sb-eq
7. Abiotic depletion potential for fossil resources- MJ
8. Particulate matter emission - Disease incidence
9. Ionizing radiation human health - kBq U235 eq.
10. Freshwater ecotoxicity - FETP100- CTUe
11. Human toxicity – cancer- CTUh

12. Human toxicity - non cancer effects- CTUh
13. Land Use related impact – dimensionless
14. Water use- m3
15. Non-renewable, fossil- MJ
16. Non-renewable, biomass - MJ
17. Non-renewable, nuclear - MJ
18. Renewable, biomass - MJ
19. Renewable, water - MJ
20. Renewable, wind, solar, geoth - MJ
21. Non-hazardous waste kg
22. Hazardous waste kg
23. Radioactive waste kg

System boundaries:

The LCA model of Vnext- Fiber Cement Boards board represents a cradle-to-gate with modules C and D, starting from raw materials extraction, transportation of raw material, manufacturing of Vnext- Fiber Cement Boards(A1 to A3), transport of waste (C2) and end of life- disposal of waste (C4).

Module	Life cycle stages	Descriptions
A1	Raw material extraction and processing	Extraction, production of the raw materials such Cement, flyash, silica, wood pulp etc.,
A2	Transport raw materials	Road and ship transport of raw materials
A3	Product Manufacturing	Manufacturing of V next boards in factory- includes energy consumed, water consumed and other fuels required for manufacturing and processing
C1	Deconstruction/Demolition	The product is dismantled and landfilled along with other construction materials. So it is not considered.
C2	Transport of waste	It is considered the waste is transported 50kms in road for Disposal.
C3	Waste processing	the product is 0% recycled
C4	Disposal of waste	The waste is 100% landfill, the impact is calculated for 1m ² declared unit.
D	Reuse, Recovery, recycling potential	Despite the fact that module D has been considered, there are no recycling benefits since all the product is disposed of in a landfill as a mixture of construction products. 100% of the weight is sent to landfill.

All the module stage inputs and outputs are based on weighted average of percentage of production and total weightage of respective product in the time period of Jan 2021 to Dec 2021.

Data sources and quality requirements:

Data characterising the core processes (Jan 2021 to Dec 2021), were checked to ensure that, sufficient materials and water are included as inputs to account for all products, wastes and emissions.

All primary data were collected from Visaka factories. Secondary data were collected from the Ecoinvent 3.8 database. All related factors such as time, geography and technology were checked and confirmed.

Electricity used in the manufacturing plant is supplied from both state electricity grid and from the onsite solar PV system. The basic data from the Ecoinvent 3.8 database were used for fuel, energy, transportation and auxiliary materials.

Data from stages (A1-A3) in the life cycle were gathered from Visaka factories through structured data collection formats. The data included in the study are measurable and recordable and were supplied by the factories.

The scenarios included are currently in use, and are representative to the most likely scenario alternatives.

Allocation procedure:

The allocation is avoided as far as possible, it is done by dividing the unit process to be allocated into two or more sub-processes and collecting the input and output data related to these sub-processes.

Cut-off criteria:

The collected data covers all raw materials, consumables, associated transport to the manufacturing site, process energy, water use and environmental significance. All inputs and output such as total mass flow, energy flow and environmental significance are considered. All waste outputs are < 1% by mass, so it remains a part of the cut off criteria

Description of System boundaries (X-Included in LCA, NA- Not Assessed)

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	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	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	X	NA	X	NA

All primary data have been obtained from Visaka factories. Secondary data have been obtained from the Ecoinvent 3.8 database.

The below processes have not been included since its impact is not significant:

- Manufacture of equipment used in production, buildings or any other capital good;
- Transportation of personnel to the plant;
- Transportation of personnel within the plant;
- Research and development activities.

Environmental Information

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 4mm V board manufactured at MLG plant					
S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	4.126312048	0.042965918	0.01261912
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	1.57669E-07	7.6496E-09	6.3104E-09
3	Acidification potential of land and water	kg SO2-eq	0.02612425	0.000217464	9.0795E-05
4	Eutrophication potential	kg PO4 3--eq	0.008093016	5.14981E-05	1.7652E-05
5	Photochemical oxidation	kg C2H4 eq	0.001025806	6.55535E-06	3.9424E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000133157	1.48016E-07	5.3203E-08
7	Abiotic depletion potential for fossil resources	MJ	41.86012044	0.637237776	0.5513469

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 4 mm manufactured at MLG plant					
S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	2.45247E-07	4.33903E-09	1.3636E-09
2	Ionizing radiation human health	kBq U235 eq.	0.185652969	0.002941024	0.002483711
3	freshwater ecotoxicity - FETP100	CTUe	146.3555348	0.540925875	0.320534537
4	human toxicity - cancer	CTUh	2.79548E-09	2.63472E-11	7.4999E-12
5	human toxicity - non cancer effects	CTUh	1.08492E-07	6.54988E-10	1.70229E-10
6	Land Use related impact	dimensionless	26.15221577	0.390968064	1.367241348
7	Water use	m3	1.781011849	0.002911614	0.033290652

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 4mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	44.65575975	0.677257222	0.586199864
2	Non-renewable, biomass	MJ	0.008737	2.72431E-05	0.000126083
3	Non-renewable, nuclear	MJ	2.401789663	0.007703841	0.006151145
4	Renewable, biomass	MJ	2.606688701	0.002156029	0.001397674
5	Renewable, water	MJ	1.251143276	0.004155719	0.002678294
6	Renewable, wind, solar, geothe	MJ	1.892353538	0.0010733	0.000733576

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 4 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	0.55587933	0.032477192	0.003482014
2	Hazardous waste	kg	0.0001122	1.68007E-06	6.41662E-07
3	Radioactive waste	kg	9.9969E-05	4.18809E-06	3.63346E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 5mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	5.149356476	0.051559102	0.01568864
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	1.96922E-07	9.17952E-09	7.8453E-09
3	Acidification potential of land and water	kg SO2-eq	0.032616107	0.000260957	0.00011288
4	Eutrophication potential	kg PO4 3--eq	0.010094651	6.17977E-05	2.1946E-05
5	Photochemical oxidation	kg C2H4 eq	0.001280697	7.86641E-06	4.9014E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000166405	1.77619E-07	6.6145E-08
7	Abiotic depletion potential for fossil resources	MJ	52.20813968	0.764685331	0.6854583

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 5 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	3.06265E-07	5.20684E-09	1.69529E-09
2	Ionizing radiation human health	kBq U235 eq.	0.231715027	0.003529228	0.003087857
3	freshwater ecotoxicity - FETP100	CTUe	182.6510002	0.64911105	0.398502398
4	human toxicity - cancer	CTUh	3.48865E-09	3.16166E-11	9.3242E-12
5	human toxicity - non cancer effects	CTUh	1.35442E-07	7.85985E-10	2.11635E-10
6	Land Use related impact	dimensionless	32.67589122	0.469161677	1.699813567
7	Water use	m3	2.224658101	0.003493937	0.041388379

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 5mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	55.69573332	0.812708666	0.72878902
2	Non-renewable, biomass	MJ	0.010918368	3.26917E-05	0.000156752
3	Non-renewable, nuclear	MJ	2.996508931	0.009244609	0.007647369
4	Renewable, biomass	MJ	3.257193305	0.002587235	0.001737649
5	Renewable, water	MJ	1.561543777	0.004986863	0.003329771
6	Renewable, wind, solar, geothe	MJ	2.344457305	0.00128796	0.000912014

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 5 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	0.693589	0.03897263	0.004328991
2	Hazardous waste	kg	0.00014002	2.01608E-06	7.97742E-07
3	Radioactive waste	kg	0.00012484	5.02571E-06	4.51727E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 6mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	6.174524629	0.068745469	0.01875815
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	2.36066E-07	1.22394E-08	9.3803E-09
3	Acidification potential of land and water	kg SO2-eq	0.039122642	0.000347943	0.00013497
4	Eutrophication potential	kg PO4 3--eq	0.01211124	8.23969E-05	2.6239E-05
5	Photochemical oxidation	kg C2H4 eq	0.001536251	1.04886E-05	5.8604E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000199644	2.36825E-07	7.9086E-08
7	Abiotic depletion potential for fossil resources	MJ	62.63539937	1.019580441	0.81956971

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 6mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	3.67275E-07	6.94246E-09	2.02698E-09
2	Ionizing radiation human health	kBq U235 eq.	0.277995878	1.54471E-08	0.003692003
3	freshwater ecotoxicity - FETP100	CTUe	219.0903869	0.8654814	0.476470258
4	human toxicity - cancer	CTUh	4.18478E-09	4.21554E-11	1.11485E-11
5	human toxicity - non cancer effects	CTUh	1.62483E-07	1.04798E-09	2.53042E-10
6	Land Use related impact	dimensionless	39.16089324	0.625548903	2.032385787
7	Water use	m3	2.668971303	0.004658583	0.049486105

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 6mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	66.81955802	1.083611554	0.871378176
2	Non-renewable, biomass	MJ	0.013097301	4.35889E-05	0.000187421
3	Non-renewable, nuclear	MJ	3.596332897	0.012326146	0.009143594
4	Renewable, biomass	MJ	3.90563188	0.003449647	0.002077623
5	Renewable, water	MJ	1.873551226	0.00664915	0.003981248
6	Renewable, wind, solar, geothe	MJ	2.820497608	0.001717279	0.001090451

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 6 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	0.83174673	0.051963507	0.005175967
2	Hazardous waste	kg	0.00016806	2.68811E-06	9.53822E-07
3	Radioactive waste	kg	0.00014968	6.70094E-06	5.40108E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 8mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	8.227092327	0.085931836	0.02387401
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	3.14585E-07	1.52992E-08	1.1939E-08
3	Acidification potential of land and water	kg SO2-eq	0.052136084	0.000434929	0.00017177
4	Eutrophication potential	kg PO4 3--eq	0.016105058	0.000102996	3.3395E-05
5	Photochemical oxidation	kg C2H4 eq	0.0020463	1.31107E-05	7.4587E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000266226	2.96031E-07	1.0065E-07
7	Abiotic depletion potential for fossil resources	MJ	83.42153599	1.274475552	1.04308872

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 8mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	4.88867E-07	8.67807E-09	2.57979E-09
2	Ionizing radiation human health	kBq U235 eq.	0.36928069	0.005882047	0.004698913
3	freshwater ecotoxicity - FETP100	CTUe	291.9474031	1.08185175	0.606416692
4	human toxicity - cancer	CTUh	5.57729E-09	5.26943E-11	1.4189E-11
5	human toxicity - non cancer effects	CTUh	2.16632E-07	1.30998E-09	3.22054E-10
6	Land Use related impact	dimensionless	52.03708517	0.781936129	2.58667282
7	Water use	m3	3.555428825	0.005823228	0.062982315

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 8mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	88.99302017	1.354514443	1.109026769
2	Non-renewable, biomass	MJ	0.017462045	5.44862E-05	0.000238536
3	Non-renewable, nuclear	MJ	4.772306047	0.015407682	0.011637301
4	Renewable, biomass	MJ	5.178113485	0.004312059	0.002644248
5	Renewable, water	MJ	2.488825099	0.008311438	0.005067043
6	Renewable, wind, solar, geothe	MJ	3.756831603	0.002146599	0.001387847

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 8 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.10928624	0.064954384	0.006587595
2	Hazardous waste	kg	0.00022405	3.36014E-06	1.21396E-06
3	Radioactive waste	kg	0.00019927	8.37618E-06	6.87411E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 10mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	10.28727075	0.111711387	0.03069516
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	3.93414E-07	1.9889E-08	1.535E-08
3	Acidification potential of land and water	kg SO2-eq	0.065188923	0.000565407	0.00022085
4	Eutrophication potential	kg PO4 3--eq	0.020161259	0.000133895	4.2937E-05
5	Photochemical oxidation	kg C2H4 eq	0.002559338	1.70439E-05	9.5897E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000332732	3.84841E-07	1.2941E-07
7	Abiotic depletion potential for fossil resources	MJ	104.3337376	1.656818217	1.34111407

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 10mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	6.11765E-07	1.12815E-08	3.31688E-09
2	Ionizing radiation human health	kBq U235 eq.	0.462586913	0.007646661	0.00604146
3	freshwater ecotoxicity - FETP100	CTUe	365.045447	1.406407274	0.779678604
4	human toxicity - cancer	CTUh	6.97314E-09	6.85026E-11	1.8243E-11
5	human toxicity - non cancer effects	CTUh	2.70807E-07	1.70297E-09	4.14069E-10
6	Land Use related impact	dimensionless	65.1809886	1.016516967	3.325722197
7	Water use	m3	4.4468076	0.007570197	0.080977262

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 10mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	111.3027142	1.760868776	1.42589156
2	Non-renewable, biomass	MJ	0.021828259	7.0832E-05	0.000306689
3	Non-renewable, nuclear	MJ	5.98122703	0.020029987	0.014962244
4	Renewable, biomass	MJ	6.495238412	0.005605676	0.003399747
5	Renewable, water	MJ	3.117627594	0.010804869	0.006514769
6	Renewable, wind, solar, geothe	MJ	4.698452441	0.002790579	0.001784375

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 10 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.3869761	0.084440699	0.008469765
2	Hazardous waste	kg	0.00028006	4.36818E-06	1.5608E-06
3	Radioactive waste	kg	0.00024933	1.0889E-05	8.83814E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 12mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	12.34716097	0.128897755	0.03410574
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	4.72239E-07	2.29488E-08	1.7055E-08
3	Acidification potential of land and water	kg SO2-eq	0.078231064	0.000652393	0.00024539
4	Eutrophication potential	kg PO4 3--eq	0.024204982	0.000154494	4.7708E-05
5	Photochemical oxidation	kg C2H4 eq	0.0030718	1.9666E-05	1.0655E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000399271	4.44047E-07	1.4379E-07
7	Abiotic depletion potential for fossil resources	MJ	125.1797289	1.911713328	1.49012675

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 12mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	7.347E-07	1.30171E-08	3.68542E-09
2	Ionizing radiation human health	kBq U235 eq.	0.555575561	0.008823071	0.006712733
3	freshwater ecotoxicity - FETP100	CTUe	438.0895662	1.622777624	0.86630956
4	human toxicity - cancer	CTUh	8.37241E-09	7.90415E-11	2.027E-11
5	human toxicity - non cancer effects	CTUh	3.24956E-07	1.96496E-09	4.60077E-10
6	Land Use related impact	dimensionless	78.36227627	1.172904193	3.695246885
7	Water use	m3	5.336943615	0.008734843	0.089974736

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 12mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	133.5424397	2.031771665	1.584323956
2	Non-renewable, biomass	MJ	0.026198092	8.17293E-05	0.000340766
3	Non-renewable, nuclear	MJ	7.184320936	0.023111524	0.016624716
4	Renewable, biomass	MJ	7.812057243	0.006468088	0.003777497
5	Renewable, water	MJ	3.744514057	0.012467157	0.007238633
6	Renewable, wind, solar, geothe	MJ	5.616009383	0.003219899	0.001982639

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 12 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.6641762	0.097431576	0.00941085
2	Hazardous waste	kg	0.00033578	5.04021E-06	1.73422E-06
3	Radioactive waste	kg	0.00029932	1.25643E-05	9.82015E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 14mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	14.41770654	0.154677305	0.04263217
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	5.5124E-07	2.75385E-08	2.1319E-08
3	Acidification potential of land and water	kg SO2-eq	0.09129892	0.000782872	0.00030674
4	Eutrophication potential	kg PO4 3--eq	0.028262467	0.000185393	5.9635E-05
5	Photochemical oxidation	kg C2H4 eq	0.003584769	2.35992E-05	1.3319E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000465571	5.32856E-07	1.7974E-07
7	Abiotic depletion potential for fossil resources	MJ	146.1705505	2.294055993	1.86265843

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 14mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	8.57273E-07	1.30171E-08	3.68542E-09
2	Ionizing radiation human health	kBq U235 eq.	0.648558552	0.008823071	0.006712733
3	freshwater ecotoxicity - FETP100	CTUe	511.3510702	1.622777624	0.86630956
4	human toxicity - cancer	CTUh	9.76923E-09	7.90415E-11	2.027E-11
5	human toxicity - non cancer effects	CTUh	3.79184E-07	1.96496E-09	4.60077E-10
6	Land Use related impact	dimensionless	91.4583505	1.172904193	3.695246885
7	Water use	m3	6.225820643	0.008734843	0.089974736

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 14mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	155.9340189	2.438125998	1.980404945
2	Non-renewable, biomass	MJ	0.030551349	9.80751E-05	0.000425957
3	Non-renewable, nuclear	MJ	8.387081563	0.027733828	0.020780894
4	Renewable, biomass	MJ	9.114459533	0.007761706	0.004721871
5	Renewable, water	MJ	4.37054194	0.014960588	0.009048291
6	Renewable, wind, solar, geothe	MJ	6.568858894	0.003863879	0.002478298

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 14 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.94295596	0.116917891	0.011763562
2	Hazardous waste	kg	0.00039085	6.04825E-06	2.16778E-06
3	Radioactive waste	kg	0.00034943	1.50771E-05	1.22752E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 16mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	16.45744454	0.171863673	0.05047649
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	6.29194E-07	3.05984E-08	2.5241E-08
3	Acidification potential of land and water	kg SO2-eq	0.104198531	0.000869857	0.00036318
4	Eutrophication potential	kg PO4 3--eq	0.032252786	0.000205992	7.0607E-05
5	Photochemical oxidation	kg C2H4 eq	0.004090837	2.62214E-05	1.577E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000531247	5.92063E-07	2.1281E-07
7	Abiotic depletion potential for fossil resources	MJ	166.8787686	2.548951103	2.20538759

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 16mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	9.78125E-07	1.73561E-08	5.45442E-09
2	Ionizing radiation human health	kBq U235 eq.	0.739862611	0.011764094	0.009934845
3	freshwater ecotoxicity - FETP100	CTUe	583.6576512	2.163703499	1.282138149
4	human toxicity - cancer	CTUh	1.11484E-08	1.05389E-10	2.99996E-11
5	human toxicity - non cancer effects	CTUh	4.32718E-07	2.61995E-09	6.80914E-10
6	Land Use related impact	dimensionless	104.3161185	1.563872257	5.46896539
7	Water use	m3	7.105753863	0.011646457	0.133162609

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 16mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	178.024038	2.709028886	2.344799455
2	Non-renewable, biomass	MJ	0.034859898	0.000108972	0.000504333
3	Non-renewable, nuclear	MJ	9.566275584	0.030815365	0.024604579
4	Renewable, biomass	MJ	10.39260396	0.008624118	0.005590696
5	Renewable, water	MJ	4.985300138	0.016622876	0.010713176
6	Renewable, wind, solar, geothe	MJ	7.506183028	0.004293199	0.002934305

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 16 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.21770001	0.129908767	0.013928058
2	Hazardous waste	kg	0.00044731	6.72028E-06	2.56665E-06
3	Radioactive waste	kg	0.00039879	1.67524E-05	1.45338E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 18mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	18.53804786	0.197643224	0.05627446
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	7.08596E-07	3.51881E-08	2.8141E-08
3	Acidification potential of land and water	kg SO2-eq	0.117373166	0.001000336	0.0004049
4	Eutrophication potential	kg PO4 3--eq	0.036340588	0.000236891	7.8718E-05
5	Photochemical oxidation	kg C2H4 eq	0.00460849	3.01546E-05	1.7581E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000598414	6.80872E-07	2.3726E-07
7	Abiotic depletion potential for fossil resources	MJ	187.9571208	2.931293769	2.45870913

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 18mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.10197E-06	1.99596E-08	6.08094E-09
2	Ionizing radiation human health	kBq U235 eq.	0.833838814	0.013528709	0.011076009
3	freshwater ecotoxicity - FETP100	CTUe	657.4155643	2.488259024	1.429410775
4	human toxicity - cancer	CTUh	1.25564E-08	1.21197E-10	3.34455E-11
5	human toxicity - non cancer effects	CTUh	4.8742E-07	3.01294E-09	7.59127E-10
6	Land Use related impact	dimensionless	117.5643586	1.798453096	6.097157361
7	Water use	m3	8.003657057	0.013393426	0.148458314

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 18mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	200.5110602	3.115383219	2.614134527
2	Non-renewable, biomass	MJ	0.039267697	0.000125318	0.000562263
3	Non-renewable, nuclear	MJ	10.78397105	0.035437669	0.027430781
4	Renewable, biomass	MJ	11.71665423	0.009917735	0.00623287
5	Renewable, water	MJ	5.61907803	0.019116307	0.011943744
6	Renewable, wind, solar, geothe	MJ	8.460504881	0.004937178	0.003271354

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 18 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.4976373	0.149395083	0.015527902
2	Hazardous waste	kg	0.00050386	7.72832E-06	2.86147E-06
3	Radioactive waste	kg	0.00044921	1.92652E-05	1.62032E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 20mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	20.58617476	0.214829591	0.06445984
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	7.87128E-07	3.8248E-08	3.2234E-08
3	Acidification potential of land and water	kg SO2-eq	0.130418096	0.001087322	0.00046379
4	Eutrophication potential	kg PO4 3--eq	0.040335386	0.00025749	9.0168E-05
5	Photochemical oxidation	kg C2H4 eq	0.00512006	3.27767E-05	2.0138E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000665471	7.40078E-07	2.7177E-07
7	Abiotic depletion potential for fossil resources	MJ	208.7429905	3.186188879	2.81633955

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 20mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.22388E-06	2.16952E-08	6.96544E-09
2	Ionizing radiation human health	kBq U235 eq.	0.925323805	0.014705118	0.012687065
3	freshwater ecotoxicity - FETP100	CTUe	730.3588846	2.704629374	1.637325069
4	human toxicity - cancer	CTUh	1.39561E-08	1.31736E-10	3.83103E-11
5	human toxicity - non cancer effects	CTUh	5.41786E-07	3.27494E-09	8.69546E-10
6	Land Use related impact	dimensionless	130.4194699	1.954840322	6.984016613
7	Water use	m3	8.893611306	0.014558071	0.170052251

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 20mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	222.6855714	3.386286108	2.994372277
2	Non-renewable, biomass	MJ	0.043660326	0.000136215	0.000644047
3	Non-renewable, nuclear	MJ	11.96362069	0.038519206	0.031420712
4	Renewable, biomass	MJ	12.98819585	0.010780147	0.007139469
5	Renewable, water	MJ	6.23603745	0.020778595	0.013681016
6	Renewable, wind, solar, geothe	MJ	9.386512705	0.005366498	0.003747187

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 20 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.77555731	0.162385959	0.017786506
2	Hazardous waste	kg	0.00055936	8.40034E-06	3.27768E-06
3	Radioactive waste	kg	0.00049881	2.09404E-05	1.85601E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 25mm V board manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	25.64305448	0.266388693	0.07844319
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	9.84103E-07	4.74275E-08	3.9227E-08
3	Acidification potential of land and water	kg SO2-eq	0.162676858	0.001348279	0.0005644
4	Eutrophication potential	kg PO4 3--eq	0.050236367	0.000319288	0.00010973
5	Photochemical oxidation	kg C2H4 eq	0.006388539	4.06431E-05	2.4507E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000832032	9.17697E-07	3.3072E-07
7	Abiotic depletion potential for fossil resources	MJ	259.7977519	3.95087421	3.42729152

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 25mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.53042E-06	2.6902E-08	8.47646E-09
2	Ionizing radiation human health	kBq U235 eq.	1.154316008	0.018234346	0.015439286
3	freshwater ecotoxicity - FETP100	CTUe	910.6159733	3.353740424	1.992511989
4	human toxicity - cancer	CTUh	1.7438E-08	1.63352E-10	4.6621E-11
5	human toxicity - non cancer effects	CTUh	6.76194E-07	4.06092E-09	1.05818E-09
6	Land Use related impact	dimensionless	163.2660524	2.424001999	8.499067836
7	Water use	m3	11.10945478	0.018052008	0.206941893

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 25mm manufactured at MLG plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	277.1619057	4.198994774	3.643945099
2	Non-renewable, biomass	MJ	0.054591621	0.000168907	0.000783761
3	Non-renewable, nuclear	MJ	14.90812178	0.047763815	0.038236846
4	Renewable, biomass	MJ	16.27675256	0.013367382	0.008688243
5	Renewable, water	MJ	7.783947657	0.025765458	0.016648855
6	Renewable, wind, solar, geothe	MJ	11.71140283	0.006654458	0.004560069

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 25 mm manufactured at MLG plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	3.46391269	0.20135859	0.021644954
2	Hazardous waste	kg	0.00070017	1.04164E-05	3.98871E-06
3	Radioactive waste	kg	0.00062297	2.59661E-05	2.25863E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 4mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	4.039624454	0.042965918	0.012619122
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	1.64192E-07	7.6496E-09	6.31035E-09
3	Acidification potential of land and water	kg SO2-eq	0.026147317	0.000217464	9.07948E-05
4	Eutrophication potential	kg PO4 3--eq	0.007500288	5.14981E-05	1.76519E-05
5	Photochemical oxidation	kg C2H4 eq	0.001014391	6.55535E-06	3.94243E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000131158	1.48016E-07	5.32033E-08
7	Abiotic depletion potential for fossil resources	MJ	36.7086387	0.637237776	0.551346896

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 4 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	2.39631E-07	4.33903E-09	1.3636E-09
2	Ionizing radiation human health	kBq U235 eq.	0.187756877	0.002941024	0.002483711
3	freshwater ecotoxicity - FETP100	CTUe	134.5525413	0.540925875	0.320534537
4	human toxicity - cancer	CTUh	2.9431E-09	2.63472E-11	7.4999E-12
5	human toxicity - non cancer effects	CTUh	1.09365E-07	6.54988E-10	1.70229E-10
6	Land Use related impact	dimensionless	27.48897366	0.390968064	1.367241348
7	Water use	m3	1.678680849	0.002911614	0.033290652

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 4mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	39.23617843	0.677257222	0.586199864
2	Non-renewable, biomass	MJ	0.008775689	2.72431E-05	0.000126083
3	Non-renewable, nuclear	MJ	2.39836873	0.007703841	0.006151145
4	Renewable, biomass	MJ	2.532984903	0.002156029	0.001397674
5	Renewable, water	MJ	1.237991134	0.004155719	0.002678294
6	Renewable, wind, solar, geothe	MJ	0.657376612	0.0010733	0.000733576

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 4 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	0.662917429	0.032477192	0.003482014
2	Hazardous waste	kg	8.60129E-05	1.68007E-06	6.41662E-07
3	Radioactive waste	kg	0.000102881	4.18809E-06	3.63346E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 5mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	4.995670653	0.051559102	0.015688638
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	2.0126E-07	9.17952E-09	7.8453E-09
3	Acidification potential of land and water	kg SO2-eq	0.032293564	0.000260957	0.00011288
4	Eutrophication potential	kg PO4 3--eq	0.009252407	6.17977E-05	2.19456E-05
5	Photochemical oxidation	kg C2H4 eq	0.001251935	7.86641E-06	4.9014E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000164249	1.77619E-07	6.61446E-08
7	Abiotic depletion potential for fossil resources	MJ	45.38113802	0.764685331	0.685458304

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 5 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	2.92513E-07	5.20684E-09	1.69529E-09
2	Ionizing radiation human health	kBq U235 eq.	0.232658904	0.003529228	0.003087857
3	freshwater ecotoxicity - FETP100	CTUe	165.3223132	0.64911105	0.398502398
4	human toxicity - cancer	CTUh	3.41346E-09	3.16166E-11	9.3242E-12
5	human toxicity - non cancer effects	CTUh	1.32422E-07	7.85985E-10	2.11635E-10
6	Land Use related impact	dimensionless	34.19892989	0.469161677	1.699813567
7	Water use	m3	2.089031415	0.003493937	0.041388379

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 5mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	48.50892278	0.812708666	0.72878902
2	Non-renewable, biomass	MJ	0.010889919	3.26917E-05	0.000156752
3	Non-renewable, nuclear	MJ	2.987492004	0.009244609	0.007647369
4	Renewable, biomass	MJ	3.166196809	0.002587235	0.001737649
5	Renewable, water	MJ	1.538476071	0.004986863	0.003329771
6	Renewable, wind, solar, geothe	MJ	0.824671763	0.00128796	0.000912014

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 5mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	0.78027869	0.03897263	0.004328991
2	Hazardous waste	kg	0.000107381	2.01608E-06	7.97742E-07
3	Radioactive waste	kg	0.000127551	5.02571E-06	4.51727E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 6mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	5.992717263	0.068745469	0.018758154
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	2.41379E-07	1.22394E-08	9.38026E-09
3	Acidification potential of land and water	kg SO2-eq	0.038731576	0.000347943	0.000134965
4	Eutrophication potential	kg PO4 3--eq	0.011098771	8.23969E-05	2.62393E-05
5	Photochemical oxidation	kg C2H4 eq	0.001501428	1.04886E-05	5.86037E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000196909	2.36825E-07	7.90859E-08
7	Abiotic depletion potential for fossil resources	MJ	54.45041734	1.019580441	0.819569711

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 6 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	3.33676E-07	6.94246E-09	2.02698E-09
2	Ionizing radiation human health	kBq U235 eq.	0.261871436	1.54471E-08	0.003692003
3	freshwater ecotoxicity - FETP100	CTUe	193.437369	0.8654814	0.476470258
4	human toxicity - cancer	CTUh	3.96682E-09	4.21554E-11	1.11485E-11
5	human toxicity - non cancer effects	CTUh	1.54648E-07	1.04798E-09	2.53042E-10
6	Land Use related impact	dimensionless	38.83961112	0.625548903	2.032385787
7	Water use	m3	2.411502242	0.004658583	0.049486105

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 6mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	58.20277683	1.083611554	0.871378176
2	Non-renewable, biomass	MJ	0.013056265	4.35889E-05	0.000187421
3	Non-renewable, nuclear	MJ	3.583020179	0.012326146	0.009143594
4	Renewable, biomass	MJ	3.795717498	0.003449647	0.002077623
5	Renewable, water	MJ	1.844733913	0.00664915	0.003981248
6	Renewable, wind, solar, geothe	MJ	0.983405401	0.001717279	0.001090451

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 6mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	0.935987219	0.051963507	0.005175967
2	Hazardous waste	kg	0.000128687	2.68811E-06	9.53822E-07
3	Radioactive waste	kg	0.000152995	6.70094E-06	5.40108E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 8mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	7.985743046	0.085931836	0.023874015
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	3.21878E-07	1.52992E-08	1.19385E-08
3	Acidification potential of land and water	kg SO2-eq	0.051649007	0.000434929	0.000171774
4	Eutrophication potential	kg PO4 3--eq	0.014784493	0.000102996	3.33954E-05
5	Photochemical oxidation	kg C2H4 eq	0.002002055	1.31107E-05	7.45865E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000262779	2.96031E-07	1.00655E-07
7	Abiotic depletion potential for fossil resources	MJ	72.56700844	1.274475552	1.043088723

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 8 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	4.448E-07	8.67807E-09	2.57979E-09
2	Ionizing radiation human health	kBq U235 eq.	0.349017802	0.005882047	0.004698913
3	freshwater ecotoxicity - FETP100	CTUe	257.7836581	1.08185175	0.606416692
4	human toxicity - cancer	CTUh	5.29247E-09	5.26943E-11	1.4189E-11
5	human toxicity - non cancer effects	CTUh	2.0614E-07	1.30998E-09	3.22054E-10
6	Land Use related impact	dimensionless	51.76136972	0.781936129	2.58667282
7	Water use	m3	3.21483308	0.005823228	0.062982315

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 8mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	77.56815459	1.354514443	1.109026769
2	Non-renewable, biomass	MJ	0.017422351	5.44862E-05	0.000238536
3	Non-renewable, nuclear	MJ	4.771567805	0.015407682	0.011637301
4	Renewable, biomass	MJ	5.053697465	0.004312059	0.002644248
5	Renewable, water	MJ	2.457619339	0.008311438	0.005067043
6	Renewable, wind, solar, geothe	MJ	1.309923037	0.002146599	0.001387847

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 8mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.248729182	0.064954384	0.006587595
2	Hazardous waste	kg	0.000171707	3.36014E-06	1.21396E-06
3	Radioactive waste	kg	0.000203939	8.37618E-06	6.87411E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 9mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	8.996430454	0.09452502	0.027284588
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	3.62386E-07	1.68291E-08	1.3644E-08
3	Acidification potential of land and water	kg SO2-eq	0.058131136	0.000478422	0.000196313
4	Eutrophication potential	kg PO4 3--eq	0.016659593	0.000113296	3.81662E-05
5	Photochemical oxidation	kg C2H4 eq	0.002253434	1.44218E-05	8.52417E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000295456	3.25634E-07	1.15034E-07
7	Abiotic depletion potential for fossil resources	MJ	81.73252155	1.401923107	1.192101398

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 9 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	5.00288E-07	9.54588E-09	2.94833E-09
2	Ionizing radiation human health	kBq U235 eq.	0.392733832	0.006470252	0.005370186
3	freshwater ecotoxicity - FETP100	CTUe	290.0179944	1.190036925	0.693047648
4	human toxicity - cancer	CTUh	5.95129E-09	5.79637E-11	1.6216E-11
5	human toxicity - non cancer effects	CTUh	2.31814E-07	1.44097E-09	3.68062E-10
6	Land Use related impact	dimensionless	58.252827	0.860129742	2.956197508
7	Water use	m3	3.61523471	0.006405551	0.071979789

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 9mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	87.36465863	1.489965887	1.267459165
2	Non-renewable, biomass	MJ	0.019591832	5.99348E-05	0.000272613
3	Non-renewable, nuclear	MJ	5.377369018	0.016948451	0.013299772
4	Renewable, biomass	MJ	5.697534258	0.004743265	0.003021998
5	Renewable, water	MJ	2.768794409	0.009142582	0.005790906
6	Renewable, wind, solar, geoth	MJ	1.480945103	0.002361259	0.001586111

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 9mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.404987343	0.071449822	0.00752868
2	Hazardous waste	kg	0.000193171	3.69615E-06	1.38738E-06
3	Radioactive waste	kg	0.000229674	9.21379E-06	7.85612E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 10mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	9.967525974	0.111711387	0.030695162
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	4.01386E-07	1.9889E-08	1.53495E-08
3	Acidification potential of land and water	kg SO2-eq	0.064367455	0.000565407	0.000220852
4	Eutrophication potential	kg PO4 3--eq	0.018436066	0.000133895	4.2937E-05
5	Photochemical oxidation	kg C2H4 eq	0.002494238	1.70439E-05	9.58969E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000326967	3.84841E-07	1.29413E-07
7	Abiotic depletion potential for fossil resources	MJ	90.52671274	1.656818217	1.341114072

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 10 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	5.56115E-07	1.12815E-08	3.31688E-09
2	Ionizing radiation human health	kBq U235 eq.	0.436351131	0.007646661	0.00604146
3	freshwater ecotoxicity - FETP100	CTUe	322.2873909	1.406407274	0.779678604
4	human toxicity - cancer	CTUh	6.61705E-09	6.85026E-11	1.8243E-11
5	human toxicity - non cancer effects	CTUh	2.57754E-07	1.70297E-09	4.14069E-10
6	Land Use related impact	dimensionless	64.69679693	1.016516967	3.325722197
7	Water use	m3	4.019284722	0.007570197	0.080977262

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 10mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	96.76307514	1.760868776	1.42589156
2	Non-renewable, biomass	MJ	0.021681291	7.0832E-05	0.000306689
3	Non-renewable, nuclear	MJ	5.943922887	0.020029987	0.014962244
4	Renewable, biomass	MJ	6.2946602	0.005605676	0.003399747
5	Renewable, water	MJ	3.061051633	0.010804869	0.006514769
6	Renewable, wind, solar, geothe	MJ	1.63485019	0.002790579	0.001784375

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 10mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.556705838	0.084440699	0.008469765
2	Hazardous waste	kg	0.000213767	4.36818E-06	1.5608E-06
3	Radioactive waste	kg	0.000254323	1.0889E-05	8.83814E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 12mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	11.97626577	0.128897755	0.034105735
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	4.82825E-07	2.29488E-08	1.7055E-08
3	Acidification potential of land and water	kg SO2-eq	0.077444863	0.000652393	0.000245391
4	Eutrophication potential	kg PO4 3--eq	0.022150193	0.000154494	4.77078E-05
5	Photochemical oxidation	kg C2H4 eq	0.003001164	1.9666E-05	1.06552E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000394072	4.44047E-07	1.43793E-07
7	Abiotic depletion potential for fossil resources	MJ	108.8303706	1.911713328	1.490126747

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 12 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	6.67482E-07	1.30171E-08	3.68542E-09
2	Ionizing radiation human health	kBq U235 eq.	0.52391549	0.008823071	0.006712733
3	freshwater ecotoxicity - FETP100	CTUe	386.9526972	1.622777624	0.86630956
4	human toxicity - cancer	CTUh	7.94244E-09	7.90415E-11	2.027E-11
5	human toxicity - non cancer effects	CTUh	3.09389E-07	1.96496E-09	4.60077E-10
6	Land Use related impact	dimensionless	77.68395681	1.172904193	3.695246885
7	Water use	m3	4.823753252	0.008734843	0.089974736

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 12mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	116.3292698	2.031771665	1.584323956
2	Non-renewable, biomass	MJ	0.026121537	8.17293E-05	0.000340766
3	Non-renewable, nuclear	MJ	7.142705482	0.023111524	0.016624716
4	Renewable, biomass	MJ	7.556113493	0.006468088	0.003777497
5	Renewable, water	MJ	3.679946235	0.012467157	0.007238633
6	Renewable, wind, solar, geothe	MJ	1.97411058	0.003219899	0.001982639

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 12mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.872132641	0.097431576	0.00941085
2	Hazardous waste	kg	0.00025764	5.04021E-06	1.73422E-06
3	Radioactive waste	kg	0.000305798	1.25643E-05	9.82015E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 14mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	13.98681571	0.154677305	0.042632169
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	5.635E-07	2.75385E-08	2.13188E-08
3	Acidification potential of land and water	kg SO2-eq	0.090388298	0.000782872	0.000306739
4	Eutrophication potential	kg PO4 3--eq	0.025893984	0.000185393	5.96347E-05
5	Photochemical oxidation	kg C2H4 eq	0.003503645	2.35992E-05	1.3319E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000459521	5.32856E-07	1.79741E-07
7	Abiotic depletion potential for fossil resources	MJ	127.0635437	2.294055993	1.862658434

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 14 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	7.78488E-07	1.30171E-08	3.68542E-09
2	Ionizing radiation human health	kBq U235 eq.	0.610858855	0.008823071	0.006712733
3	freshwater ecotoxicity - FETP100	CTUe	451.1992258	1.622777624	0.86630956
4	human toxicity - cancer	CTUh	9.26474E-09	7.90415E-11	2.027E-11
5	human toxicity - non cancer effects	CTUh	3.60832E-07	1.96496E-09	4.60077E-10
6	Land Use related impact	dimensionless	90.59355329	1.172904193	3.695246885
7	Water use	m3	5.624972108	0.008734843	0.089974736

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 14mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	135.81946	2.438125998	1.980404945
2	Non-renewable, biomass	MJ	0.030468617	9.80751E-05	0.000425957
3	Non-renewable, nuclear	MJ	8.356692965	0.027733828	0.020780894
4	Renewable, biomass	MJ	8.853023226	0.007761706	0.004721871
5	Renewable, water	MJ	4.303496248	0.014960588	0.009048291
6	Renewable, wind, solar, geothe	MJ	2.304440725	0.003863879	0.002478298

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 14mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.184708718	0.116917891	0.011763562
2	Hazardous waste	kg	0.00030045	6.04825E-06	2.16778E-06
3	Radioactive waste	kg	0.000357092	1.50771E-05	1.22752E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 16mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	15.9695675	0.171863673	0.050476488
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	6.43297E-07	3.05984E-08	2.52414E-08
3	Acidification potential of land and water	kg SO2-eq	0.103177537	0.000869857	0.000363179
4	Eutrophication potential	kg PO4 3--eq	0.029556555	0.000205992	7.06075E-05
5	Photochemical oxidation	kg C2H4 eq	0.003999015	2.62214E-05	1.57697E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000524338	5.92063E-07	2.12813E-07
7	Abiotic depletion potential for fossil resources	MJ	145.077767	2.548951103	2.205387586

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 16 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	8.89631E-07	1.73561E-08	5.45442E-09
2	Ionizing radiation human health	kBq U235 eq.	0.698228568	0.011764094	0.009934845
3	freshwater ecotoxicity - FETP100	CTUe	515.59659	2.163703499	1.282138149
4	human toxicity - cancer	CTUh	1.05876E-08	1.05389E-10	2.99996E-11
5	human toxicity - non cancer effects	CTUh	4.12256E-07	2.61995E-09	6.80914E-10
6	Land Use related impact	dimensionless	103.5420414	1.563872257	5.46896539
7	Water use	m3	6.427674961	0.011646457	0.133162609

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 16mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	155.0738886	2.709028886	2.344799455
2	Non-renewable, biomass	MJ	0.034768896	0.000108972	0.000504333
3	Non-renewable, nuclear	MJ	9.534961991	0.030815365	0.024604579
4	Renewable, biomass	MJ	10.09866729	0.008624118	0.005590696
5	Renewable, water	MJ	4.910251225	0.016622876	0.010713176
6	Renewable, wind, solar, geoth	MJ	2.630146858	0.004293199	0.002934305

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 16mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.495200257	0.129908767	0.013928058
2	Hazardous waste	kg	0.000342867	6.72028E-06	2.56665E-06
3	Radioactive waste	kg	0.000407618	1.67524E-05	1.45338E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 18mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	17.97235947	0.197643224	0.056274463
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	7.23598E-07	3.51881E-08	2.81408E-08
3	Acidification potential of land and water	kg SO2-eq	0.116145651	0.001000336	0.000404896
4	Eutrophication potential	kg PO4 3--eq	0.033248518	0.000236891	7.87178E-05
5	Photochemical oxidation	kg C2H4 eq	0.004501242	3.01546E-05	1.75811E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000590578	6.80872E-07	2.37258E-07
7	Abiotic depletion potential for fossil resources	MJ	163.2199363	2.931293769	2.458709133

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 18 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.00125E-06	1.99596E-08	6.08094E-09
2	Ionizing radiation human health	kBq U235 eq.	0.785633392	0.013528709	0.011076009
3	freshwater ecotoxicity - FETP100	CTUe	580.3249682	2.488259024	1.429410775
4	human toxicity - cancer	CTUh	1.19098E-08	1.21197E-10	3.34455E-11
5	human toxicity - non cancer effects	CTUh	4.64011E-07	3.01294E-09	7.59127E-10
6	Land Use related impact	dimensionless	116.5456849	1.798453096	6.097157361
7	Water use	m3	7.236113732	0.013393426	0.148458314

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 18mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	174.4665573	3.115383219	2.614134527
2	Non-renewable, biomass	MJ	0.039155346	0.000125318	0.000562263
3	Non-renewable, nuclear	MJ	10.72354506	0.035437669	0.027430781
4	Renewable, biomass	MJ	11.35497571	0.009917735	0.00623287
5	Renewable, water	MJ	5.523812572	0.019116307	0.011943744
6	Renewable, wind, solar, geothe	MJ	2.956738928	0.004937178	0.003271354

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 18mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.807896981	0.149395083	0.015527902
2	Hazardous waste	kg	0.000385991	7.72832E-06	2.86147E-06
3	Radioactive waste	kg	0.000458469	1.92652E-05	1.62032E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 20mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	19.98883909	0.214829591	0.06445984
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	8.05373E-07	3.8248E-08	3.2234E-08
3	Acidification potential of land and water	kg SO2-eq	0.129199172	0.001087322	0.00046379
4	Eutrophication potential	kg PO4 3--eq	0.037014667	0.00025749	9.01677E-05
5	Photochemical oxidation	kg C2H4 eq	0.005008407	3.27767E-05	2.01384E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000656874	7.40078E-07	2.71768E-07
7	Abiotic depletion potential for fossil resources	MJ	181.6109225	3.186188879	2.816339552

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 20 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.11166E-06	2.16952E-08	6.96544E-09
2	Ionizing radiation human health	kBq U235 eq.	0.872508848	0.014705118	0.012687065
3	freshwater ecotoxicity - FETP100	CTUe	644.3322455	2.704629374	1.637325069
4	human toxicity - cancer	CTUh	1.32284E-08	1.31736E-10	3.83103E-11
5	human toxicity - non cancer effects	CTUh	5.15103E-07	3.27494E-09	8.69546E-10
6	Land Use related impact	dimensionless	129.4179179	1.954840322	6.984016613
7	Water use	m3	8.031233324	0.014558071	0.170052251

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 20mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	194.1263561	3.386286108	2.994372277
2	Non-renewable, biomass	MJ	0.043556568	0.000136215	0.000644047
3	Non-renewable, nuclear	MJ	11.94755198	0.038519206	0.031420712
4	Renewable, biomass	MJ	12.65842726	0.010780147	0.007139469
5	Renewable, water	MJ	6.152423696	0.020778595	0.013681016
6	Renewable, wind, solar, geothe	MJ	3.289008608	0.005366498	0.003747187

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 20mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	3.123336123	0.162385959	0.017786506
2	Hazardous waste	kg	0.00042942	8.40034E-06	3.27768E-06
3	Radioactive waste	kg	0.000510373	2.09404E-05	1.85601E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 22mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	21.97443962	0.240609142	0.068211471
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	8.85251E-07	4.28377E-08	3.411E-08
3	Acidification potential of land and water	kg SO2-eq	0.141982964	0.0012178	0.000490783
4	Eutrophication potential	kg PO4 3--eq	0.040672578	0.000288389	9.54155E-05
5	Photochemical oxidation	kg C2H4 eq	0.005503244	3.67099E-05	2.13104E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000721686	8.28888E-07	2.87585E-07
7	Abiotic depletion potential for fossil resources	MJ	199.6085054	3.568531545	2.980253494

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 22 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.22223E-06	2.42986E-08	7.37084E-09
2	Ionizing radiation human health	kBq U235 eq.	0.959115344	0.016469732	0.013425466
3	freshwater ecotoxicity - FETP100	CTUe	708.4926077	3.029184899	1.732619121
4	human toxicity - cancer	CTUh	1.45452E-08	1.47544E-10	4.054E-11
5	human toxicity - non cancer effects	CTUh	5.66455E-07	3.66793E-09	9.20154E-10
6	Land Use related impact	dimensionless	142.2630795	2.18942116	7.390493771
7	Water use	m3	8.831101613	0.01630504	0.179949472

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 22mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	213.3627846	3.792640441	3.168647912
2	Non-renewable, biomass	MJ	0.047853433	0.000152561	0.000681531
3	Non-renewable, nuclear	MJ	13.12321336	0.043141511	0.033249431
4	Renewable, biomass	MJ	13.9023731	0.012073765	0.007554994
5	Renewable, water	MJ	6.758349536	0.023272026	0.014477265
6	Renewable, wind, solar, geothe	MJ	3.613756263	0.006010478	0.003965277

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 22mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	3.432398122	0.181872274	0.018821699
2	Hazardous waste	kg	0.000471827	9.40839E-06	3.46844E-06
3	Radioactive waste	kg	0.000560949	2.34533E-05	1.96403E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V board of thickness 25mm V board manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	24.98101301	0.266388693	0.078443192
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	1.00658E-06	4.74275E-08	3.92265E-08
3	Acidification potential of land and water	kg SO2-eq	0.161485499	0.001348279	0.0005644
4	Eutrophication potential	kg PO4 3--eq	0.046249557	0.000319288	0.000109728
5	Photochemical oxidation	kg C2H4 eq	0.006259676	4.06431E-05	2.4507E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000821221	9.17697E-07	3.30723E-07
7	Abiotic depletion potential for fossil resources	MJ	226.9617066	3.95087421	3.427291519

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 25 mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.39008E-06	2.6902E-08	8.47646E-09
2	Ionizing radiation human health	kBq U235 eq.	1.090880405	0.018234346	0.015439286
3	freshwater ecotoxicity - FETP100	CTUe	805.5957258	3.353740424	1.992511989
4	human toxicity - cancer	CTUh	1.65406E-08	1.63352E-10	4.6621E-11
5	human toxicity - non cancer effects	CTUh	6.44111E-07	4.06092E-09	1.05818E-09
6	Land Use related impact	dimensionless	161.7978343	2.424001999	8.499067836
7	Water use	m3	10.04288082	0.018052008	0.206941893

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 25mm manufactured at JJR plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	242.6025586	4.198994774	3.643945099
2	Non-renewable, biomass	MJ	0.054451165	0.000168907	0.000783761
3	Non-renewable, nuclear	MJ	14.92630866	0.047763815	0.038236846
4	Renewable, biomass	MJ	15.81578141	0.013367382	0.008688243
5	Renewable, water	MJ	7.687236127	0.025765458	0.016648855
6	Renewable, wind, solar, geothe	MJ	4.112407661	0.006654458	0.004560069

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 25mm manufactured at JJR plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	3.903499751	0.20135859	0.021644954
2	Hazardous waste	kg	0.000536843	1.04164E-05	3.98871E-06
3	Radioactive waste	kg	0.000637817	2.59661E-05	2.25863E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 4mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	3.532365969	0.042965918	0.012619122
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	1.51798E-07	7.6496E-09	6.31035E-09
3	Acidification potential of land and water	kg SO2-eq	0.023370033	0.000217464	9.07948E-05
4	Eutrophication potential	kg PO4 3--eq	0.006158551	5.14981E-05	1.76519E-05
5	Photochemical oxidation	kg C2H4 eq	0.000901885	6.55535E-06	3.94243E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000126608	1.48016E-07	5.32033E-08
7	Abiotic depletion potential for fossil resources	MJ	30.56957314	0.637237776	0.551346896

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 4 mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	2.17713E-07	4.33903E-09	1.3636E-09
2	Ionizing radiation human health	kBq U235 eq.	0.158398451	0.002941024	0.002483711
3	freshwater ecotoxicity - FETP100	CTUe	118.6471639	0.540925875	0.320534537
4	human toxicity - cancer	CTUh	2.57971E-09	2.63472E-11	7.4999E-12
5	human toxicity - non cancer effects	CTUh	9.7999E-08	6.54988E-10	1.70229E-10
6	Land Use related impact	dimensionless	25.46737584	0.390968064	1.367241348
7	Water use	m3	1.595665041	0.002911614	0.033290652

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 4mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	32.70706657	0.677257222	0.586199864
2	Non-renewable, biomass	MJ	0.00841322	2.72431E-05	0.000126083
3	Non-renewable, nuclear	MJ	1.932664951	0.007703841	0.006151145
4	Renewable, biomass	MJ	2.409415984	0.002156029	0.001397674
5	Renewable, water	MJ	1.052745305	0.004155719	0.002678294
6	Renewable, wind, solar, geothe	MJ	0.319658812	0.0010733	0.000733576

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 4 mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	0.58069014	0.032477192	0.003482014
2	Hazardous waste	kg	7.9835E-05	1.68007E-06	6.41662E-07
3	Radioactive waste	kg	9.2674E-05	4.18809E-06	3.63346E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 5mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	4.381882848	0.051559102	0.015688638
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	1.88605E-07	9.17952E-09	7.8453E-09
3	Acidification potential of land and water	kg SO2-eq	0.029004323	0.000260957	0.00011288
4	Eutrophication potential	kg PO4 3--eq	0.007648018	6.17977E-05	2.19456E-05
5	Photochemical oxidation	kg C2H4 eq	0.001119466	7.86641E-06	4.9014E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000156995	1.77619E-07	6.61446E-08
7	Abiotic depletion potential for fossil resources	MJ	37.95035758	0.764685331	0.685458304

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 5 mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	2.7042E-07	5.20684E-09	1.69529E-09
2	Ionizing radiation human health	kBq U235 eq.	0.196811477	0.003529228	0.003087857
3	freshwater ecotoxicity - FETP100	CTUe	147.182285	0.64911105	0.398502398
4	human toxicity - cancer	CTUh	3.20262E-09	3.16166E-11	9.3242E-12
5	human toxicity - non cancer effects	CTUh	1.21552E-07	7.85985E-10	2.11635E-10
6	Land Use related impact	dimensionless	31.62908552	0.469161677	1.699813567
7	Water use	m3	1.982361685	0.003493937	0.041388379

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 5mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	40.60396366	0.812708666	0.72878902
2	Non-renewable, biomass	MJ	0.010437631	3.26917E-05	0.000156752
3	Non-renewable, nuclear	MJ	2.401237679	0.009244609	0.007647369
4	Renewable, biomass	MJ	2.999383529	0.002587235	0.001737649
5	Renewable, water	MJ	1.30750768	0.004986863	0.003329771
6	Renewable, wind, solar, geothe	MJ	0.397085293	0.00128796	0.000912014

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 5 mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	0.72253451	0.03897263	0.004328991
2	Hazardous waste	kg	9.9071E-05	2.01608E-06	7.97742E-07
3	Radioactive waste	kg	0.00011516	5.02571E-06	4.51727E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 6mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	5.279108859	0.068745469	0.018758154
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	2.27248E-07	1.22394E-08	9.38026E-09
3	Acidification potential of land and water	kg SO2-eq	0.035005021	0.000347943	0.000134965
4	Eutrophication potential	kg PO4 3--eq	0.009217116	8.23969E-05	2.62393E-05
5	Photochemical oxidation	kg C2H4 eq	0.001351332	1.04886E-05	5.86037E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000189959	2.36825E-07	7.90859E-08
7	Abiotic depletion potential for fossil resources	MJ	45.73590963	1.019580441	0.819569711

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 6 mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	3.26276E-07	6.94246E-09	2.02698E-09
2	Ionizing radiation human health	kBq U235 eq.	0.23735825	1.54471E-08	0.003692003
3	freshwater ecotoxicity - FETP100	CTUe	177.5751624	0.8654814	0.476470258
4	human toxicity - cancer	CTUh	3.86132E-09	4.21554E-11	1.11485E-11
5	human toxicity - non cancer effects	CTUh	1.46796E-07	1.04798E-09	2.53042E-10
6	Land Use related impact	dimensionless	38.10403927	0.625548903	2.032385787
7	Water use	m3	2.393494112	0.004658583	0.049486105

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 6mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	48.93528019	1.083611554	0.871378176
2	Non-renewable, biomass	MJ	0.012620604	4.35889E-05	0.000187421
3	Non-renewable, nuclear	MJ	2.897101675	0.012326146	0.009143594
4	Renewable, biomass	MJ	3.613942932	0.003449647	0.002077623
5	Renewable, water	MJ	1.577919484	0.00664915	0.003981248
6	Renewable, wind, solar, geothe	MJ	0.47870835	0.001717279	0.001090451

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 6mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	0.86986726	0.051963507	0.005175967
2	Hazardous waste	kg	0.00011976	2.68811E-06	9.53822E-07
3	Radioactive waste	kg	0.00013877	6.70094E-06	5.40108E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 8mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	7.035417256	0.085931836	0.023874015
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	6.81694E-08	1.52992E-08	1.19385E-08
3	Acidification potential of land and water	kg SO2-eq	0.046658303	0.000434929	0.000171774
4	Eutrophication potential	kg PO4 3--eq	0.012286369	0.000102996	3.33954E-05
5	Photochemical oxidation	kg C2H4 eq	0.000164028	1.31107E-05	7.45865E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000253183	2.96031E-07	1.00655E-07
7	Abiotic depletion potential for fossil resources	MJ	60.96295544	1.274475552	1.043088723

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 8mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	4.34955E-07	8.67807E-09	2.57979E-09
2	Ionizing radiation human health	kBq U235 eq.	0.316400111	0.005882047	0.004698913
3	freshwater ecotoxicity - FETP100	CTUe	236.6853435	1.08185175	0.606416692
4	human toxicity - cancer	CTUh	5.15211E-09	5.26943E-11	1.4189E-11
5	human toxicity - non cancer effects	CTUh	1.95697E-07	1.30998E-09	3.22054E-10
6	Land Use related impact	dimensionless	50.7826292	0.781936129	2.58667282
7	Water use	m3	3.190239625	0.005823228	0.062982315

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 8mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	65.22771866	1.354514443	1.109026769
2	Non-renewable, biomass	MJ	0.016822489	5.44862E-05	0.000238536
3	Non-renewable, nuclear	MJ	3.862067936	0.015407682	0.011637301
4	Renewable, biomass	MJ	4.817434674	0.004312059	0.002644248
5	Renewable, water	MJ	2.103385193	0.008311438	0.005067043
6	Renewable, wind, solar, geothe	MJ	0.638116796	0.002146599	0.001387847

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 8mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.16005051	0.064954384	0.006587595
2	Hazardous waste	kg	0.00015962	3.36014E-06	1.21396E-06
3	Radioactive waste	kg	0.00018497	8.37618E-06	6.87411E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 9mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	7.916587903	0.09452502	0.027284588
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	3.40764E-07	1.68291E-08	1.3644E-08
3	Acidification potential of land and water	kg SO2-eq	0.052473715	0.000478422	0.000196313
4	Eutrophication potential	kg PO4 3--eq	0.013823786	0.000113296	3.81662E-05
5	Photochemical oxidation	kg C2H4 eq	0.002025725	1.44218E-05	8.52417E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000284591	3.25634E-07	1.15034E-07
7	Abiotic depletion potential for fossil resources	MJ	68.58561464	1.401923107	1.192101398

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 9mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	4.89178E-07	9.54588E-09	2.94833E-09
2	Ionizing radiation human health	kBq U235 eq.	0.355937958	0.006470252	0.005370186
3	freshwater ecotoxicity - FETP100	CTUe	266.2210854	1.190036925	0.693047648
4	human toxicity - cancer	CTUh	5.79281E-09	5.79637E-11	1.6216E-11
5	human toxicity - non cancer effects	CTUh	2.20033E-07	1.44097E-09	3.68062E-10
6	Land Use related impact	dimensionless	57.1486077	0.860129742	2.956197508
7	Water use	m3	3.587345531	0.006405551	0.071979789

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 9mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	73.38316925	1.489965887	1.267459165
2	Non-renewable, biomass	MJ	0.018911022	5.99348E-05	0.000272613
3	Non-renewable, nuclear	MJ	4.344664245	0.016948451	0.013299772
4	Renewable, biomass	MJ	5.42063435	0.004743265	0.003021998
5	Renewable, water	MJ	2.365995744	0.009142582	0.005790906
6	Renewable, wind, solar, geothe	MJ	0.717966889	0.002361259	0.001586111

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 9mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.3045374	0.071449822	0.00752868
2	Hazardous waste	kg	0.00017945	3.69615E-06	1.38738E-06
3	Radioactive waste	kg	0.00020809	9.21379E-06	7.85612E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 10mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	8.792672766	0.111711387	0.030695162
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	3.78684E-07	1.9889E-08	1.53495E-08
3	Acidification potential of land and water	kg SO2-eq	0.058326816	0.000565407	0.000220852
4	Eutrophication potential	kg PO4 3--eq	0.015356946	0.000133895	4.2937E-05
5	Photochemical oxidation	kg C2H4 eq	0.002251826	1.70439E-05	9.58969E-06
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000316545	3.84841E-07	1.29413E-07
7	Abiotic depletion potential for fossil resources	MJ	76.19542014	1.656818217	1.341114072

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 10mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	5.43781E-07	1.12815E-08	3.31688E-09
2	Ionizing radiation human health	kBq U235 eq.	0.395512497	0.007646661	0.00604146
3	freshwater ecotoxicity - FETP100	CTUe	295.8611718	1.406407274	0.779678604
4	human toxicity - cancer	CTUh	6.44101E-09	6.85026E-11	1.8243E-11
5	human toxicity - non cancer effects	CTUh	2.44676E-07	1.70297E-09	4.14069E-10
6	Land Use related impact	dimensionless	63.47091575	1.016516967	3.325722197
7	Water use	m3	3.984956076	0.007570197	0.080977262

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 10mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	81.52596234	1.760868776	1.42589156
2	Non-renewable, biomass	MJ	0.021032675	7.0832E-05	0.000306689
3	Non-renewable, nuclear	MJ	4.827746846	0.020029987	0.014962244
4	Renewable, biomass	MJ	6.021478759	0.005605676	0.003399747
5	Renewable, water	MJ	2.629408712	0.010804869	0.006514769
6	Renewable, wind, solar, geothe	MJ	0.797572924	0.002790579	0.001784375

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 10mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.45054022	0.084440699	0.008469765
2	Hazardous waste	kg	0.00019957	4.36818E-06	1.5608E-06
3	Radioactive waste	kg	0.00023121	1.0889E-05	8.83814E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 12mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	10.55929105	0.128897755	0.034105735
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	4.54575E-07	2.29488E-08	1.7055E-08
3	Acidification potential of land and water	kg SO2-eq	0.07001721	0.000652393	0.000245391
4	Eutrophication potential	kg PO4 3--eq	0.018437139	0.000154494	4.77078E-05
5	Photochemical oxidation	kg C2H4 eq	0.002702985	1.9666E-05	1.06552E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000379921	4.44047E-07	1.43793E-07
7	Abiotic depletion potential for fossil resources	MJ	91.48608658	1.911713328	1.490126747

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 12mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	6.52652E-07	1.30171E-08	3.68542E-09
2	Ionizing radiation human health	kBq U235 eq.	0.47474806	0.008823071	0.006712733
3	freshwater ecotoxicity - FETP100	CTUe	355.2048909	1.622777624	0.86630956
4	human toxicity - cancer	CTUh	7.73098E-09	7.90415E-11	2.027E-11
5	human toxicity - non cancer effects	CTUh	2.93673E-07	1.96496E-09	4.60077E-10
6	Land Use related impact	dimensionless	76.20888085	1.172904193	3.695246885
7	Water use	m3	4.787241742	0.008734843	0.089974736

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 12mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	97.88597348	2.031771665	1.584323956
2	Non-renewable, biomass	MJ	0.025242951	8.17293E-05	0.000340766
3	Non-renewable, nuclear	MJ	5.79473414	0.023111524	0.016624716
4	Renewable, biomass	MJ	7.227430092	0.006468088	0.003777497
5	Renewable, water	MJ	3.156097045	0.012467157	0.007238633
6	Renewable, wind, solar, geothe	MJ	0.957483163	0.003219899	0.001982639

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 12mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	1.74049961	0.097431576	0.00941085
2	Hazardous waste	kg	0.00023952	5.04021E-06	1.73422E-06
3	Radioactive waste	kg	0.00027756	1.25643E-05	9.82015E-06
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 14mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	12.31455976	0.154677305	0.042632169
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	5.30196E-07	2.75385E-08	2.13188E-08
3	Acidification potential of land and water	kg SO2-eq	0.081656181	0.000782872	0.000306739
4	Eutrophication potential	kg PO4 3--eq	0.021504298	0.000185393	5.96347E-05
5	Photochemical oxidation	kg C2H4 eq	0.003152364	2.35992E-05	1.3319E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000443001	5.32856E-07	1.79741E-07
7	Abiotic depletion potential for fossil resources	MJ	106.6980612	2.294055993	1.862658434

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 14mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	7.61234E-07	1.30171E-08	3.68542E-09
2	Ionizing radiation human health	kBq U235 eq.	0.553704141	0.008823071	0.006712733
3	freshwater ecotoxicity - FETP100	CTUe	414.2367881	1.622777624	0.86630956
4	human toxicity - cancer	CTUh	9.01873E-09	7.90415E-11	2.027E-11
5	human toxicity - non cancer effects	CTUh	3.4253E-07	1.96496E-09	4.60077E-10
6	Land Use related impact	dimensionless	88.87869709	1.172904193	3.695246885
7	Water use	m3	5.582693159	0.008734843	0.089974736

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 14mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	114.1619038	2.438125998	1.980404945
2	Non-renewable, biomass	MJ	0.029437083	9.80751E-05	0.000425957
3	Non-renewable, nuclear	MJ	6.758490864	0.027733828	0.020780894
4	Renewable, biomass	MJ	8.430897193	0.007761706	0.004721871
5	Renewable, water	MJ	3.680921823	0.014960588	0.009048291
6	Renewable, wind, solar, geothe	MJ	1.116812464	0.003863879	0.002478298

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 14mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.03095275	0.116917891	0.011763562
2	Hazardous waste	kg	0.00027931	6.04825E-06	2.16778E-06
3	Radioactive waste	kg	0.00032371	1.50771E-05	1.22752E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 16mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	14.06815029	0.171863673	0.050476488
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	6.05399E-07	3.05984E-08	2.52414E-08
3	Acidification potential of land and water	kg SO2-eq	0.093286129	0.000869857	0.000363179
4	Eutrophication potential	kg PO4 3--eq	0.024571044	0.000205992	7.06075E-05
5	Photochemical oxidation	kg C2H4 eq	0.003601492	2.62214E-05	1.57697E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000506088	5.92063E-07	2.12813E-07
7	Abiotic depletion potential for fossil resources	MJ	121.864462	2.548951103	2.205387586

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 16mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	8.69844E-07	1.73561E-08	5.45442E-09
2	Ionizing radiation human health	kBq U235 eq.	0.632624659	0.011764094	0.009934845
3	freshwater ecotoxicity - FETP100	CTUe	473.2387893	2.163703499	1.282138149
4	human toxicity - cancer	CTUh	1.03054E-08	1.05389E-10	2.99996E-11
5	human toxicity - non cancer effects	CTUh	3.91291E-07	2.61995E-09	6.80914E-10
6	Land Use related impact	dimensionless	101.573616	1.563872257	5.46896539
7	Water use	m3	6.378824509	0.011646457	0.133162609

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 16mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	130.3899685	2.709028886	2.344799455
2	Non-renewable, biomass	MJ	0.033630406	0.000108972	0.000504333
3	Non-renewable, nuclear	MJ	7.723759196	0.030815365	0.024604579
4	Renewable, biomass	MJ	9.637329098	0.008624118	0.005590696
5	Renewable, water	MJ	4.206452081	0.016622876	0.010713176
6	Renewable, wind, solar, geothe	MJ	1.275829029	0.004293199	0.002934305

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 16mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.3203801	0.129908767	0.013928058
2	Hazardous waste	kg	0.00031902	6.72028E-06	2.56665E-06
3	Radioactive waste	kg	0.00036967	1.67524E-05	1.45338E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 18mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	15.84028312	0.197643224	0.056274463
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	6.81882E-07	3.51881E-08	2.81408E-08
3	Acidification potential of land and water	kg SO2-eq	0.10503088	0.001000336	0.000404896
4	Eutrophication potential	kg PO4 3--eq	0.027661909	0.000236891	7.87178E-05
5	Photochemical oxidation	kg C2H4 eq	0.004054778	3.01546E-05	1.75811E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000569885	6.80872E-07	2.37258E-07
7	Abiotic depletion potential for fossil resources	MJ	137.2414686	2.931293769	2.458709133

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 18mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	9.79095E-07	1.99596E-08	6.08094E-09
2	Ionizing radiation human health	kBq U235 eq.	0.71232685	0.013528709	0.011076009
3	freshwater ecotoxicity - FETP100	CTUe	532.8343847	2.488259024	1.429410775
4	human toxicity - cancer	CTUh	1.15936E-08	1.21197E-10	3.34455E-11
5	human toxicity - non cancer effects	CTUh	4.40493E-07	3.01294E-09	7.59127E-10
6	Land Use related impact	dimensionless	114.3455087	1.798453096	6.097157361
7	Water use	m3	7.181041743	0.013393426	0.148458314

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 18mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	146.8421815	3.115383219	2.614134527
2	Non-renewable, biomass	MJ	0.037864859	0.000125318	0.000562263
3	Non-renewable, nuclear	MJ	8.695322427	0.035437669	0.027430781
4	Renewable, biomass	MJ	10.84652493	0.009917735	0.00623287
5	Renewable, water	MJ	4.735500592	0.019116307	0.011943744
6	Renewable, wind, solar, geother	MJ	1.436757189	0.004937178	0.003271354

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 18mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.61050449	0.149395083	0.015527902
2	Hazardous waste	kg	0.00035929	7.72832E-06	2.86147E-06
3	Radioactive waste	kg	0.00041639	1.92652E-05	1.62032E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 20mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	17.5869729	0.214829591	0.06445984
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	7.57132E-07	3.8248E-08	3.2234E-08
3	Acidification potential of land and water	kg SO2-eq	0.116581809	0.001087322	0.00046379
4	Eutrophication potential	kg PO4 3--eq	0.030711865	0.00025749	9.01677E-05
5	Photochemical oxidation	kg C2H4 eq	0.004500646	3.27767E-05	2.01384E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.00063226	7.40078E-07	2.71768E-07
7	Abiotic depletion potential for fossil resources	MJ	152.364527	3.186188879	2.816339552

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 20mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.08697E-06	2.16952E-08	6.96544E-09
2	Ionizing radiation human health	kBq U235 eq.	0.790765925	0.014705118	0.012687065
3	freshwater ecotoxicity - FETP100	CTUe	591.4692344	2.704629374	1.637325069
4	human toxicity - cancer	CTUh	1.28762E-08	1.31736E-10	3.83103E-11
5	human toxicity - non cancer effects	CTUh	4.88934E-07	3.27494E-09	8.69546E-10
6	Land Use related impact	dimensionless	126.9647378	1.954840322	6.984016613
7	Water use	m3	7.97075226	0.014558071	0.170052251

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 20mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	163.0226058	3.386286108	2.994372277
2	Non-renewable, biomass	MJ	0.042016086	0.000136215	0.000644047
3	Non-renewable, nuclear	MJ	9.652131839	0.038519206	0.031420712
4	Renewable, biomass	MJ	12.04313866	0.010780147	0.007139469
5	Renewable, water	MJ	5.256494096	0.020778595	0.013681016
6	Renewable, wind, solar, geothe	MJ	1.594788262	0.005366498	0.003747187

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 20mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	2.89971694	0.162385959	0.017786506
2	Hazardous waste	kg	0.00039868	8.40034E-06	3.27768E-06
3	Radioactive waste	kg	0.0004623	2.09404E-05	1.85601E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 22mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	19.33860089	0.240609142	0.068211471
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	1.9045E-07	4.28377E-08	3.411E-08
3	Acidification potential of land and water	kg SO2-eq	0.128203317	0.0012178	0.000490783
4	Eutrophication potential	kg PO4 3--eq	0.033764304	0.000288389	9.54155E-05
5	Photochemical oxidation	kg C2H4 eq	0.000472637	3.67099E-05	2.13104E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000695327	8.28888E-07	2.87585E-07
7	Abiotic depletion potential for fossil resources	MJ	167.5406581	3.568531545	2.980253494

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 22mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.19512E-06	2.42986E-08	7.37084E-09
2	Ionizing radiation human health	kBq U235 eq.	0.869298526	0.016469732	0.013425466
3	freshwater ecotoxicity - FETP100	CTUe	650.4126754	3.029184899	1.732619121
4	human toxicity - cancer	CTUh	1.41587E-08	1.47544E-10	4.054E-11
5	human toxicity - non cancer effects	CTUh	5.377E-07	3.66793E-09	9.20154E-10
6	Land Use related impact	dimensionless	139.5681655	2.18942116	7.390493771
7	Water use	m3	8.764136121	0.01630504	0.179949472

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 22mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	179.2599452	3.792640441	3.168647912
2	Non-renewable, biomass	MJ	0.046206651	0.000152561	0.000681531
3	Non-renewable, nuclear	MJ	10.60936001	0.043141511	0.033249431
4	Renewable, biomass	MJ	13.23717247	0.012073765	0.007554994
5	Renewable, water	MJ	5.778382269	0.023272026	0.014477265
6	Renewable, wind, solar, geothe	MJ	1.753224703	0.006010478	0.003965277

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 22mm manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	3.18929319	0.181872274	0.018821699
2	Hazardous waste	kg	0.00043844	9.40839E-06	3.46844E-06
3	Radioactive waste	kg	0.00050833	2.34533E-05	1.96403E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

Core Environmental impact indicators- LCIA for 1 m2 of V panel of thickness 25mm V board manufactured at DND plant

S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Global warming potential (GWP)	kg CO2-eq	21.98700309	0.266388693	0.078443192
2	Depletion potential of the stratospheric ozone layer	kg CFC 11-eq	9.46674E-07	4.74275E-08	3.92265E-08
3	Acidification potential of land and water	kg SO2-eq	0.145776012	0.001348279	0.0005644
4	Eutrophication potential	kg PO4 3--eq	0.038399092	0.000319288	0.000109728
5	Photochemical oxidation	kg C2H4 eq	0.005627842	4.06431E-05	2.4507E-05
6	Abiotic depletion potential for nonfossil resources	kg Sb-eq	0.000790681	9.17697E-07	3.30723E-07
7	Abiotic depletion potential for fossil resources	MJ	190.4981086	3.95087421	3.427291519

Additional Environmental impact indicators- LCIA for 1 m2 of V board of thickness 25mm manufactured at DND plant

S.no	Impact category	Reference unit	Total Module (A1-A3)	Module C2	Module C4
1	Particulate matter emission	Disease incidence	1.35924E-06	2.6902E-08	8.47646E-09
2	Ionizing radiation human health	kBq U235 eq.	0.988761778	0.018234346	0.015439286
3	freshwater ecotoxicity - FETP100	CTUe	739.5549968	3.353740424	1.992511989
4	human toxicity - cancer	CTUh	1.61003E-08	1.63352E-10	4.6621E-11
5	human toxicity - non cancer effects	CTUh	6.1142E-07	4.06092E-09	1.05818E-09
6	Land Use related impact	dimensionless	158.7326304	2.424001999	8.499067836
7	Water use	m3	9.966802927	0.018052008	0.206941893

Parameter describing resource use- LCIA for 1 m2 of V Board of thickness 25mm manufactured at DND plant

S.no	Impact category	Reference unit	Module (A1-A3)	Module C2	Module C4
1	Non renewable, fossil	MJ	203.8239522	4.198994774	3.643945099
2	Non-renewable, biomass	MJ	0.052543699	0.000168907	0.000783761
3	Non-renewable, nuclear	MJ	12.06907572	0.047763815	0.038236846
4	Renewable, biomass	MJ	15.05814827	0.013367382	0.008688243
5	Renewable, water	MJ	6.572865192	0.025765458	0.016648855
6	Renewable, wind, solar, geothe	MJ	1.994050102	0.006654458	0.004560069

Waste categories & output flows LCIA for 1 m2 of V Board of thickness 25mm manufactured at DND plant

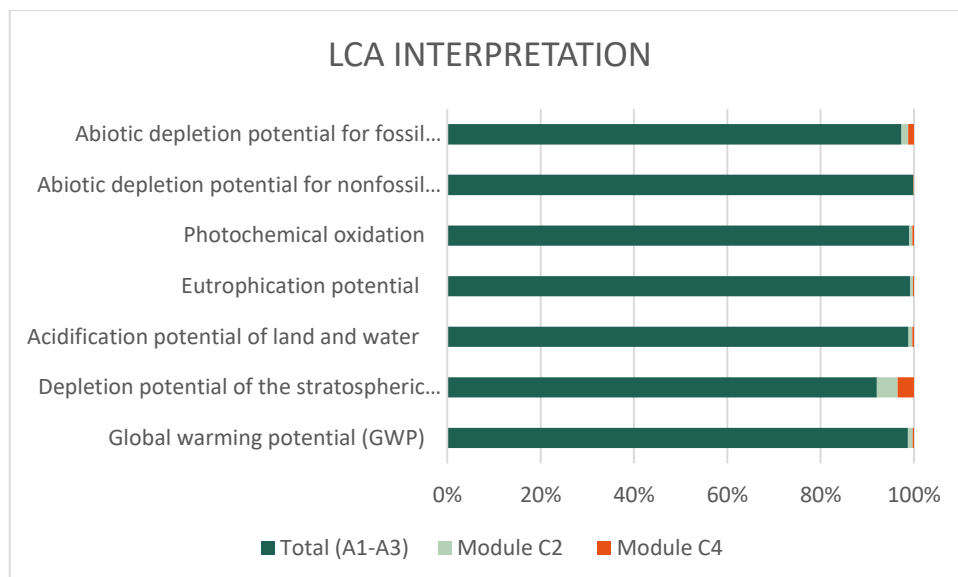
S.no	Impact category	Reference unit	Total (A1-A3)	Module C2	Module C4
1	Non-hazardous waste	kg	3.62616458	0.20135859	0.021644954
2	Hazardous waste	kg	0.00049857	1.04164E-05	3.98871E-06
3	Radioactive waste	kg	0.00057803	2.59661E-05	2.25863E-05
4	Components for re-use	kg	0	0	0
5	Materials for recycling	kg	0	0	0
6	Materials for energy recovery	kg	0	0	0
7	Exported energy	MJ	0	0	0

LCA Interpretation

8mm V next board manufactured at MLG is considered for the below study.

As we can see in from the graph, the product stage (A1-A3) is the Life Cycle Stage has the largest impact for all the impact categories analysed, representing 98% of the total impact of the product life cycle.

The C2 represents an intermediate impact for all the impact categories analysed. C2 and C4 indicates shows considerable impact in depletion potential of the stratospheric ozone layer.



Glossary:

1. Life Cycle Assessment (LCA):

Life cycle assessment is a methodology for assessing environmental impacts associated with all the stages of the life cycle of a commercial product, process, or service.

2. Cut-off criteria:

Specification of the amount of material or energy flow or the level of environmental significance associated with unit processes or product system to be excluded from a study.

3. Life cycle inventory analysis result (LCI result):

Outcome of a life cycle inventory analysis that catalogues the flows crossing the system boundary and provides the starting point for life cycle impact assessment.

4. Allocation:

Partitioning the input or output flows of a process or a product system between the product system under study and one or more other product systems

5. The International EPD[®] System

A programme for Type III environmental declarations, maintaining a system to verify and register EPDs as well as keeping a library of EPDs and PCRs in accordance with ISO 14025. (www.environdec.com).

6. REACH Regulation:

European Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals.

References

7. General Programme Instructions of the International EPD® System. Version 3.01.
8. PCR 2019:14 Construction Products Version 1.11
9. EN15804:2012+A2:2019
10. ISO 14025: 2006 (Environmental labels and declarations — Type III environmental declarations — Principles and procedures)
11. ISO 14040: 2006 (Environmental management — Life cycle assessment — Principles and framework),
12. ISO 14044: 2006 (Environmental management — Life cycle assessment — Requirements and guidelines)

Information related to Sector EPD

Individual EPD®.

Differences versus previous versions

First version of EPD®.

