LATIN AMERICA EPD®

EPD®
THE INTERNATIONAL EPD® SYSTEM

ECO PLATFORM EPD VERIFIED

# Environmental Product Declaration

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

## SELEX® Plywood 9mm

from

**CMPC**

| | |
|---|---|
| Programme: | The International EPD® System<br>EPD registered through the fully aligned regional programme:<br>Hub EPD® Latin America |
| Programme operator: | EPD International AB,<br>Regional Hub: EPD Latin America |
| EPD registration number: | S-P-02011 |
| Publication date: | 2022-12-20 |
| Valid until: | 2027-12-19 |

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com*

# General information

## Programme information

| | |
|---|---|
| **Programme:** | The International EPD® System www.environdec.com<br><br>EPD registered through the fully aligned regional programme:Hub EPD® Latin America www.epd-americalatina.com |
| **Programme Operator** | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br><br>Sweden<br><br>EPD Latin America<br>Chile office: Alonso de Ercilla 2996, Ñuñoa, Santiago.<br>Mexico office: Av. Convento de Actopan 24 Int. 7ª, Colonia Jardines de Santa Mónica. Tlalnepantla de Baz, Estado de México, México. C.P. 54050. |

| |
|---|
| CEN standard EN 15804 serves as the Core Product Category Rules (PCR) |
| Product category rules (PCR): PCR 2019:14 Construction Products VERSION 1.11*, 2021-02-05, UN CPC 315* |
| PCR review was conducted by: *Technical Committee of the International EPD® System* |
| Independent third-party verification of the declaration and data, according to ISO 14025:2006:<br><br>☐ EPD process certification ☒ EPD verification |
| Third party verifier: *Ruben Carnerero*<br>*Email: r.carnerero@ik-ingenieria.com*<br>*Approved by: The International EPD® System* |
| Procedure for follow-up of data during EPD validity involves third party verifier:<br><br>☒ Yes ☐ No |
| Developed by: EDGE Chile<br>*Email: contacto@edgechile.com*<br>*Web: www.edgeenvironment.com* |

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.

# What is an EPD?

An Environmental Product Declaration (EPD) is an independently verified and registered document that communicates transparent and comparable information about the life-cycle environmental impact of products.

The following EPD has been developed by CMPC for its SELEX® Plywood products.

# Company information

## Owner of the EPD

CMPC
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Address: Agustinas 1343, P.4, Santiago- Santiago, Chile

## Description of the organization

CMPC Companies is a forestry and paper holding of global presence, controlled by the Matte family, founded in 1920 as “Compañía Manufacturera de Papeles y Cartones”. Currently the company has over 17000 direct employees, distributed between their industrials plants and forestry operations in 11 countries.

In present days, the company has the second forestry heritage in Chile, with over 1.300.000 hectares in Chile, Brazil and Argentina.

The company’s business is the production and commercialization of timber, cellulose, packaging, paper, tissues and personal care products, which come from sustainable forest certified operations. Given its structure, the main business is cellulose, which is approximately 49% of its consolidated sales. This is divided in Pulp, Timber and Forestry. Following cellulose there is the Softys branch, which represents 35% of sales. Biopackaging is in third place with 16% of sales.

The company’s mission is to produce and commercialize- from plantations stablished by men- timber, cellulose, packaging, paper, tissues and personal care products, sustainable in time, of superior quality and competitive, innovating and adding value to shareholders and clients, and creating development opportunities for workers and local communities. Sustainability is seek to reach good economic performance, through the respect of stakeholders and care for the environment.

To fulfill the mission, everyone working in CMPC are action orientated, according to 5 fundamental values of the company:

1. Respect for people
2. Care for the environment
3. Compliance with strict legal norms
4. Loyalty to compete

5. Consideration for neighbor's needs

The corporate purpose- Create, Coexist, and Conserve-, the 3C's, is comprehensive of its way to make business and guide the corporate role towards a sustainable future.

## Sustainability

Following its Mission, Values and corporate Purpose, CMPC integrates sustainability in an strategic way, oriented to the future in each business unit, with their respective branches and subsidiaries, as well as in every operation and influence territory, and with each stakeholder. This approach is based on the following fundamental components:

- Commitment to UN's Sustainable Development Goals – 2030 Agenda.
- Positive and negative impacts identified through ESG Materiality Assessment across the value chain.
- Risks to which the company is exposed and its role in the society.
- Sustainability Targets.
- Disclosure and transparency.

Through the implementation, action and recognition of UN Global Compact's 10 principals, which focus on topics going from human rights, work relationships, anti- corruption, to environmental issues, CMPC seeks to reflect in its act, processes and final products, sustainability attributes and environmental impacts, where tools and certifications, such as type III environmental declarations allow to inform, communicate and assess different products under sustainability standards.

## Name and location of production site(s):

CMPC Maderas
Plywood plant- Avenida Jorge Alessandri s/n. Collipulle, Araucanía, Chile

# Product information

## Product name

The products included in this EPD are CMPC's SELEX® Plywood products

## Product identification and description

UN CPC code: 315

CMPC's SELEX® Plywood products included in this EPD are presented below. The variation of impact across products is lower than +/- 10%, therefore the results will be presented for the average product. A variation of each product to this average will be presented in Appendix A.

### SELEX® Plywood A/C

SELEX® Plywood A/C is a product free of knots and open defects, with high visual quality, strength, and versatility. Main applications include furniture and carpentry, decorative projects, laminate base, wall and ceiling veneer, industrial applications. Table 1 presents the main characteristics, while Illustration 1 has a visualisation of the product.

**Table 1-** SELEX® Plywood A/C main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 |
|---|---|
| Thickness (mm) | 9 |
| Thickness (inches) | 11/32 |
| Nº of layers | 3 |
| Density | 480 - 550 kg / m³ |
| Sanding grain | 150 grits on front and 120 grits on back |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. |
| Moisture content | 8% to 12% |
| Structural certification | PS1-19 by TP & EN 13986 (CE2 +) by HFB |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 1-** SELEX® Plywood A/C

### SELEX® Plywood B/B Deco

SELEX® Plywood B/B Deco is a high visual quality on both sides, assuring a high resistance. This product features aesthetic value and a solid surface on both sides. Main applications include furniture and carpentry, lamination base, decorative projects, and transportation industry. Table 2 presents the main characteristics, while Illustration 2 has a visualisation of the product.

**Table 2-** SELEX® Plywood B/B Deco main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 |
|---|---|
| Thickness (mm) | 9 |
| Thickness (inches) | 11/32 |
| Nº of layers | 3 |
| Density | 480 - 550 kg / m³ |
| Sanding grain | 150 grits on front and 120 grits on back |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. |

| | |
|---|---|
| Moisture content | 8% to 12% |
| Structural certification | PS1-19 by TP & EN 13986 (CE2 +) by HFB |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 2-** SELEX® Plywood B/B Deco

### SELEX® Plywood B/Cp

SELEX® Plywood B/Cp are panels of high visual quality, with great dimensional stability and with excellent physical-mechanical resistance. Main applications include furniture and carpentry, concrete forming and various applications in construction. Table 3 presents the main characteristics, while Illustration 3 has a visualisation of the product.

**Table 3-** SELEX® Plywood B/Cp main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 |
|---|---|
| Thickness (mm) | 9 |
| Thickness (inches) | 11/32 |
| Nº of layers | 3 |
| Density | 480 - 550 kg / m³ |
| Sanding grain | 150 grits on front and 120 grits on back |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. |
| Moisture content | 8% to 12% |
| Structural certification | PS1-19 by TP & EN 13986 (CE2 +) by HFB |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 3-** SELEX® Plywood B/Cp

### SELEX® Plywood B/C

SELEX® Plywood B/C present high visual quality, high strength, and high versatility. Main applications include furniture and carpentry, decorative projects, industrial projects, DIY projects and construction. Table 4 presents the main characteristics, while Illustration 4 has a visualisation of the product.

**Table 4-** SELEX® Plywood B/C main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 |
|---|---|
| Thickness (mm) | 9 |
| Thickness (inches) | 11/32 |
| Nº of layers | 3 |
| Density | 480 - 550 kg / m³ |
| Sanding grain | 150 grits on front and 120 grits on back |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. |
| Moisture content | 8% to 12% |
| Structural certification | PS1-19 by TP & EN 13986 (CE2 +) by HFB |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 4- SELEX® Plywood B/C**

### SELEX® ® Plywood B/D Structural AUS

SELEX® Plywood B/D Structural AUS is structurally tested and AS/NZS229-standard approved, with a high-quality appearance, great resistance, and broad versatility. Main applications include furniture and carpentry, interior veneers, decorative projects, industrial projects, DIY projects and construction. Table 5 presents the main characteristics, while Illustration 5 has a visualisation of the product.

**Table 5-** SELEX® Plywood B/D Structural AUS main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 |
|---|---|
| Thickness (mm) | 9 |
| Degrees F's (structural) | F11 |
| Nº of layers | 3 |
| Density | 480 - 550 kg / m³ |
| Sanding grain | 150 grits on front and 120 grits on back |
| Adhesive | Phenol-formaldehyde that complies with the E0 emission standard. |
| Moisture content | 8% to 12% |
| Structural certification | AS/NZS 2269 |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 5-** SELEX® Plywood B/D Structural AUS

### SELEX® Plywood Cp/C

SELEX® Plywood Cp/C are panels with great dimensional stability and with excellent physical-mechanical resistance. Main applications include concrete forming and general applications for construction. Table 6 presents the main characteristics, while Illustration 6 has a visualisation of the product.

**Table 6-** SELEX® Plywood Cp/C main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 |
|---|---|
| Thickness (mm) | 9 |
| Thickness (inches) | 11/32 |
| Nº of layers | 3 |
| Density | 480 - 550 kg / m³ |
| Sanding grain | 150 grits on front and 120 grits on back |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. |
| Moisture content | 8% to 12% |
| Structural certification | EN 13986 (CE2 +) by HFB |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 6-** SELEX® Plywood Cp/C

### SELEX® Plywood C/D

SELEX® Plywood C/D panels are intended for use in construction, with high dimensional stability. Their excellent mechanical and physical resistance to bending, shearing, and compression allows it to be used both indoors and outdoors. Applications include roofing, structural walls, floor support structure, perimeter closures and packaging. Table 7 presents the main characteristics, while Illustration 7 has a visualisation of the product.

**Table 7-** SELEX® Plywood C/D main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 |
|---|---|
| Thickness (mm) | 9 |
| Thickness (inches) | 11/32 |
| Nº of layers | 3 |
| Density | 480 - 550 kg / m³ |
| Sanding grain | 150 grits on front and 120 grits on back |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission standard. |
| Moisture content | 8% to 12% |
| Structural certification | PS1 - 19 por TP & EN 13986 (CE2+) by HBF |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 7-** SELEX® Plywood C/D

### SELEX® Plywood CD No Structural AUS

SELEX® Plywood CD No Structural AUS has a variety of uses throughout the construction industry, particularly when structural characteristics are not required, whether that means not bearing weight or in cases where there is no requirement to meet the construction codes of Australia or New Zealand. Main applications include fences, non-structural packaging, kennels, mailboxes, dollhouses, DIY projects and general applications. Table 8 presents the main characteristics, while Illustration 8 has a visualisation of the product.

**Table 8-** SELEX® Plywood CD No Structural AUS main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 |
|---|---|
| Thickness (mm) | 9 |
| Thickness (inches) | 11/32 |
| Nº of layers | 3 |
| Density | 480 - 550 kg / m³ |
| Sanding grain | 150 grits on front and 120 grits on back |
| Adhesive | Phenol-formaldehyde that complies with Super E0 emission standard. |
| Moisture content | 8% to 12% |
| Structural certification | PS1 - 19 por TP & EN 13986 (CE2+) by HBF |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 8-** SELEX® Plywood CD No Structural AUS

### SELEX® Plywood Siding

SELEX® Plywood Siding panels have excellent visual quality, perfect for use in interior uses and various design projects, offering an attractive solution serving for multiple applications. Main applications include interior, ceilings, decorative projects, exterior, shed and barn walls, and soffit. Table 9 presents the main characteristics, while Illustration 9 has a visualisation of the product.

**Table 9-** SELEX® Plywood Siding main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 |
|---|---|
| Thickness (mm) | 9 |
| Thickness (inches) | 11/32 |
| Nº of layers | 3 |
| Density | 480 - 550 kg / m³ |
| Sanding grain | 150 grits on front and 120 grits on back |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. |
| Moisture content | 8% to 12% |
| Structural certification | ANSI-APA PRP 210 & EN 13986 (CE2+) by HFB |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 9-** SELEX® Plywood Siding

### SELEX® Plywood CAB

This product is very similar to SELEX® Plywood B/C, and is mostly sold in the US market for cabinet making.

### SELEX® Plywood RECH

This is usually rejected product used for a wide range of uses, mostly carpentry and furniture.

## Content information

Table 10 presents the composition of CMPC SELEX® Plywood products, as well as packaging materials. No dangerous substances from the candidate list of SVHC are included in the product.

**Table 10- Product components**

| Product components | Weight, kg | Post-consumer material, weight-% | Renewable material, weight-% |
|---|---|---|---|
| Pine | 228 | - | 100% |
| Water | 41-61 | - | - |
| Adhesive | 56-69 | - | - |
| Others | 0-6 | - | - |
| TOTAL | 495-521 | - | 77% |

| Packaging materials | Weight, kg | Weight-% (versus the product) |
|---|---|---|
| LDPE | 0.467 | 0.09% |
| Polyester | 0.051 | 0.01% |
| Low alloyed steel | 0.266 | 0.05% |
| Cardboard | 0.005 | 0.001% |
| TOTAL | 0.197 | 0.16% |

| Dangerous substances from the candidate list of SVHC for Authorisation | EC No. | CAS No. | Weight-% per functional or declared unit |
|---|---|---|---|
| Not applicable | | | |

# LCA information

A life cycle assessment is a technique for assessing the environmental aspects and potential impacts associated with a product. By considering potential impacts throughout the life cycle of a product (upstream and downstream), the analysis avoids the shifting of burdens from one type of environmental impact to another, from one political region to another and from one stage to the other.

An Environmental Product Declaration (EPD) is an independently verified and registered document that communicates transparent and comparable information about the life cycle environmental impacts of products. The following information describes the scope and methodology of this EPD for CMPC's SELEX® Plywood products.

## Declared unit

This EPD has a cradle to gate with options approach, with a declared unit of 1 $m^3$ of plywood products produced in Chile and installed across different countries across the world.

## Reference service life

Given the scope of the analysis (cradle to gate with options) no reference service life is relevant.

## Geographial scope

The geographical scope of this EPD is global.

## Time representativeness

The information collected for the analysis is 2020, considering the production of all products in this year.

## Database(s) and LCA software used

The inventory data for the process are entered in SimaPro LCA program and linked to the pre-existing data for the upstream feedstocks and services. Data were selected per geographic relevance from ecoinvent 3.6 database (Ecoinvent Centre, 2019).

## Description of system boundaries

This EPD is cradle to gate grave, however, given that some of the modules are not applicable for CMPC SELEX® Plywood products, the scope is cradle to gate with options[1]. Table 11 has the detail of the modules included.

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

**Table 11- Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation**

| | 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 | x | x | ND | ND | ND | ND | ND | ND | ND | x | x | x | x | x |
| Geography | Suppliers mostly from Chile | | Chile | Global | | ND | ND | ND | ND | ND | ND | ND | Global | | | | Global |
| Specific data used | 100% | | | | | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – products | 10% max variation between each product and the average | | | | | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – sites | Not applicable, only one production site | | | | | - | - | - | - | - | - | - | - | - | - | - | - |

## System diagram

Figure 1 presents the system diagram for plywood manufacturing process. This is described below:

- **Reception:** reception of logs that go into the process.
- **Debarking:** the bark is separated from the logs.
- **Log yard:** yard where debarked logs wait to start the manufacturing process. The logs are sprayed with water and chemicals.
- **Conditioning:** the logs go to chambers of hot water for the plasticization of the fibers in the wood.
- **Peeling:** the logs go to a lathe that spins them against a blade to produce a sheet of timber.
- **Drying:** drying to obtain an optimal level of humidity.
- **Composer:** any fixing of individual sheets with glue.
- **Gluing & lay-up:** the sheets receive adhesive and the boards are formed.
- **Pre-pressing & pressing:** pressing of the boards to give enough consistency to them and allow them to forge.
- **Automatic and manual repairing:** the repairing of the boards allows for an increase in the quality, by eliminating defects.
- **Trimming:** the boards are given their proper dimensions.
- **Sanding:** sanding for calibration and finishing.
- **Other finishing (if applicable):** include the creation of the siding, cutting and painting, depending on the product.
- **Packaging:** packaging of the products

- **Storage:** final products go to the warehouse of finished products to await for their shipment.

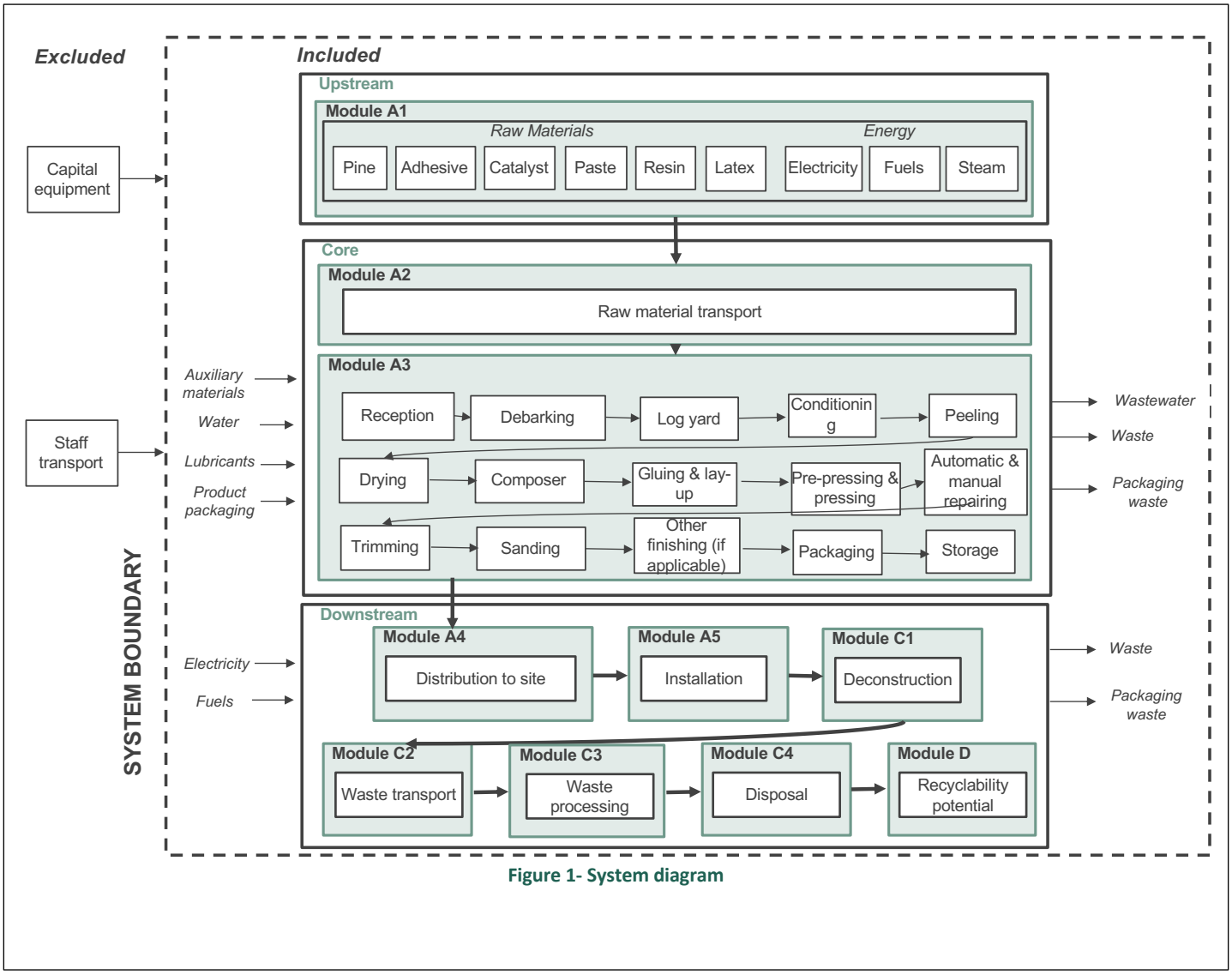


Figure 1- System diagram

## Foreground data sources and quality

Foreground data on raw material requirements, manufacture and distribution was provided by CMPC for the year 2020. Background data was retrieved from ecoinvent 3.6, which dates from 2019, for processes occurring in Chile and countries supplying raw materials. In compliance with the relevant PCR, generic processes were used for feedstock materials.

Data quality is considered medium to good. More details in Table 12 below.

**Table 12- Foreground data sources and quality**

| | Product data | Module A1 | Module A2 | Module A3 | Module A4 | Module A5 | Module C | Module D |
|---|---|---|---|---|---|---|---|---|
| Data | Range and physical properties | Raw material inputs<br>Energy inputs | Transportation from national suppliers to CMPC's installations | Water inputs<br>Consumable inputs<br>Waste outputs | Distribution information | Ancillary materials and energy for installation | End of life of products | Recyclability potential |
| Source | Collected by CMPC staff for 2020 | Collected by CMPC staff for 2020 | Supplier locations provided by CMPC staff for 2020. Distances calculated with online tool. Transport specifications assumed from ecoinvent 3.6 processes. | Collected by CMPC staff for 2020 | Collected by CMPC staff for 2020 | Estimations based on products description and use made by CMPC staff | Estimations based on types of waste treatment for each country of product sales | Estimations based on types of waste treatment for each country of product sales |
| Geographical representativeness | | Very good | | | Very good | Fair | Good | Good |
| Technical representativeness | | Very good | | | Very good | Fair | Good | Good |
| Time representativeness | | Very good | | | Very good | Fair | Good | Good |

## Exclusion of small amounts and cut off criteria

Environmental impacts relating to personnel, infrastructure, and production equipment not directly consumed in the process are excluded from the system. All other reported data were incorporated and modelled using the best available life cycle inventory data.

No other cut offs were necessary for the modules included in this EPD.

## Allocation

Due to price differences, economic allocation was performed for wood co- products generated in the process, such as dust, trimmings, chips, etc. according to PCR guidelines.

# Environmental Information

*Potential environmental impacts*

- Module A1+A2 (raw materials and energy) has the highest impact contribution to most environmental impacts (13 out of 14 indicators). Within these impacts, A1+A2 has the highest contribution in fresh and marine water eutrophication, both with 100% contribution. The pine is mostly responsible for eutrophication.
- Module A1+A2 also present an important sequestration of carbon in biomass, which can be seen in biogenic global warming potential indicator. In contrast, this biogenic carbon is released back to the atmosphere or capture by the following life cycle in module C.
- On average, Module A4 (distribution to markets) has the second highest impact contribution due to the long distances to reach the main markets. This is particularly relevant for ozone depletion potential (43% contribution), abiotic depletion potential (mineral and metals) (37% contribution), and terrestrial eutrophication (37% contribution).
- The manufacturing process (Module A3) has a low impact contribution across indicators, although it achieves a 28% contribution to water depletion potential due to the water used in the process, particularly for cleaning the logs.
- Module D has a positive effect on the results across impact indicators, although it is low because still roughly 40% of the product still goes to landfill.

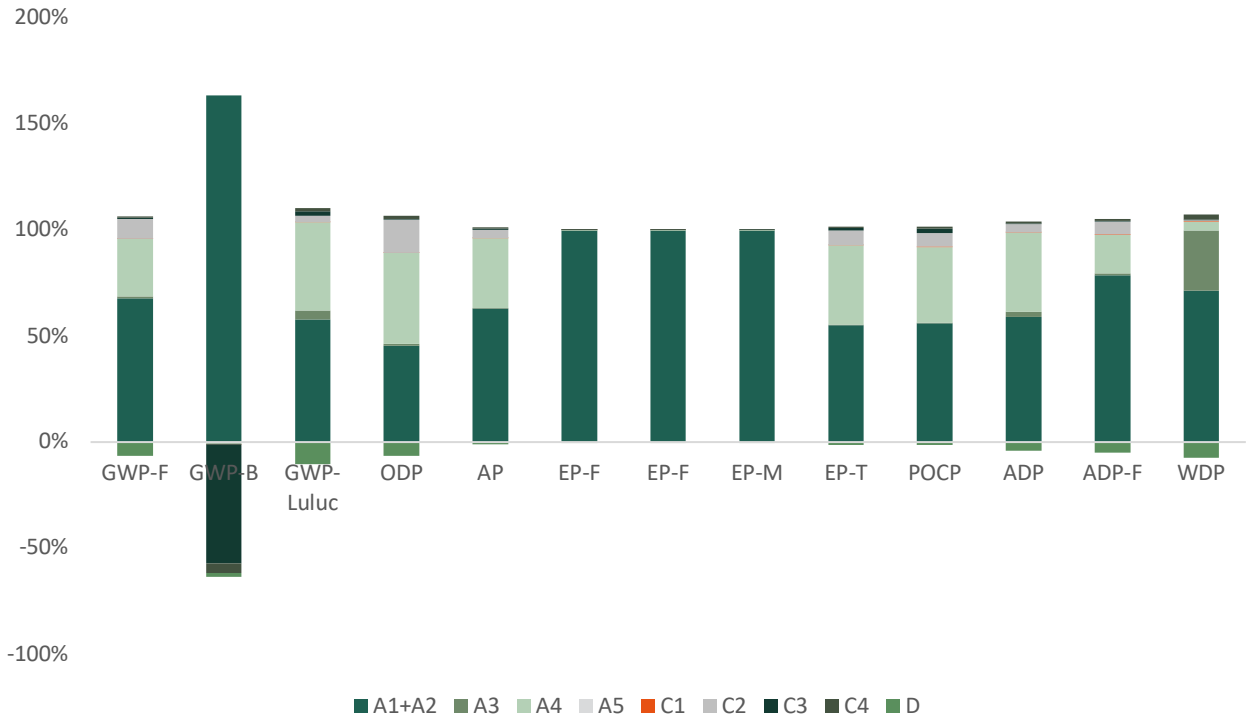


**Figure 2** Percentage contribution of life cycle stages to the different potential environmental impact categories for the average plywood products manufactured by CMPC.

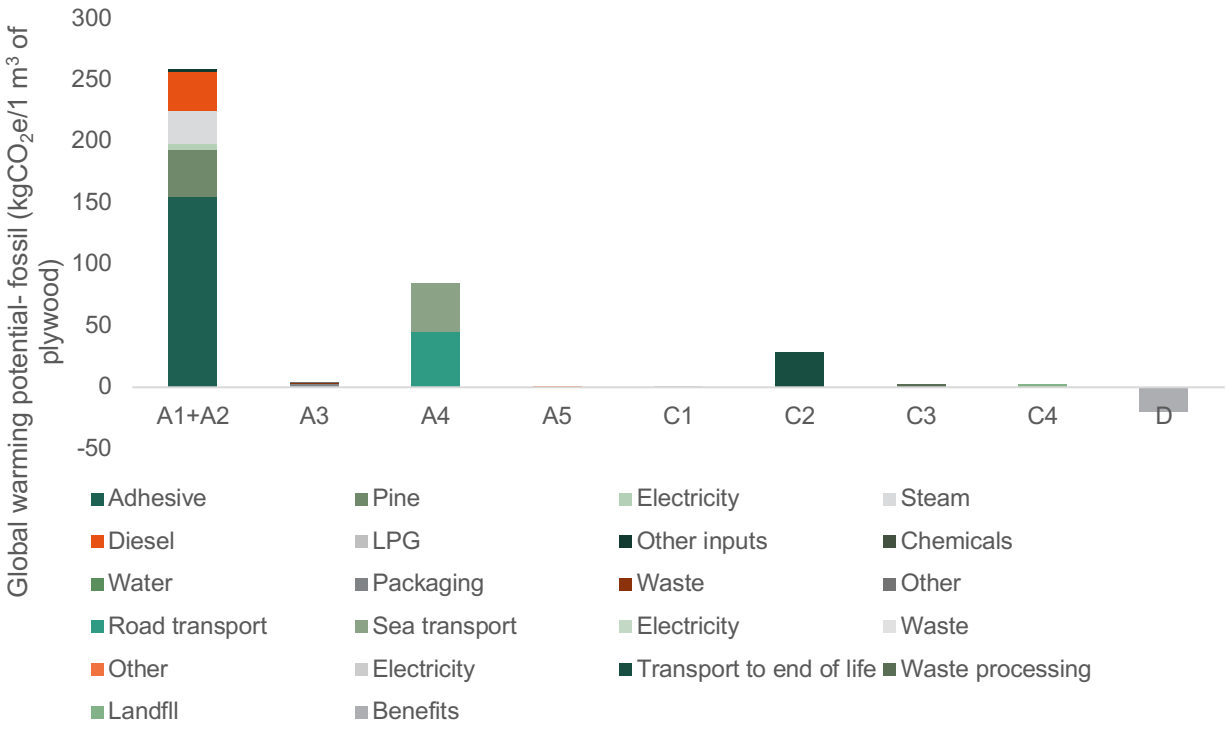


**Figure 3 -** Contribution of main inputs and outputs to fossil global warming potential by module

*Resource use*

- Module A1+A2 (raw materials and energy) has the highest use of resources in all indicators, although some of these can be considered positive impact, such as use of renewable primary energy resources as raw materials through the pine wood.
- Module A1+A2 also presents the highest contribution to total non- renewable primary energy, with adhesive contributing to a 52% of the module.
- Module A3 (manufacturing) only has relevant contribution (32%) to use of fresh water due to the water use in the process.
- Module A4 (distribution to markets) has a small contribution across impacts, only relevant for use of non- renewable energy (18%) due to the burning of fossil fuel.

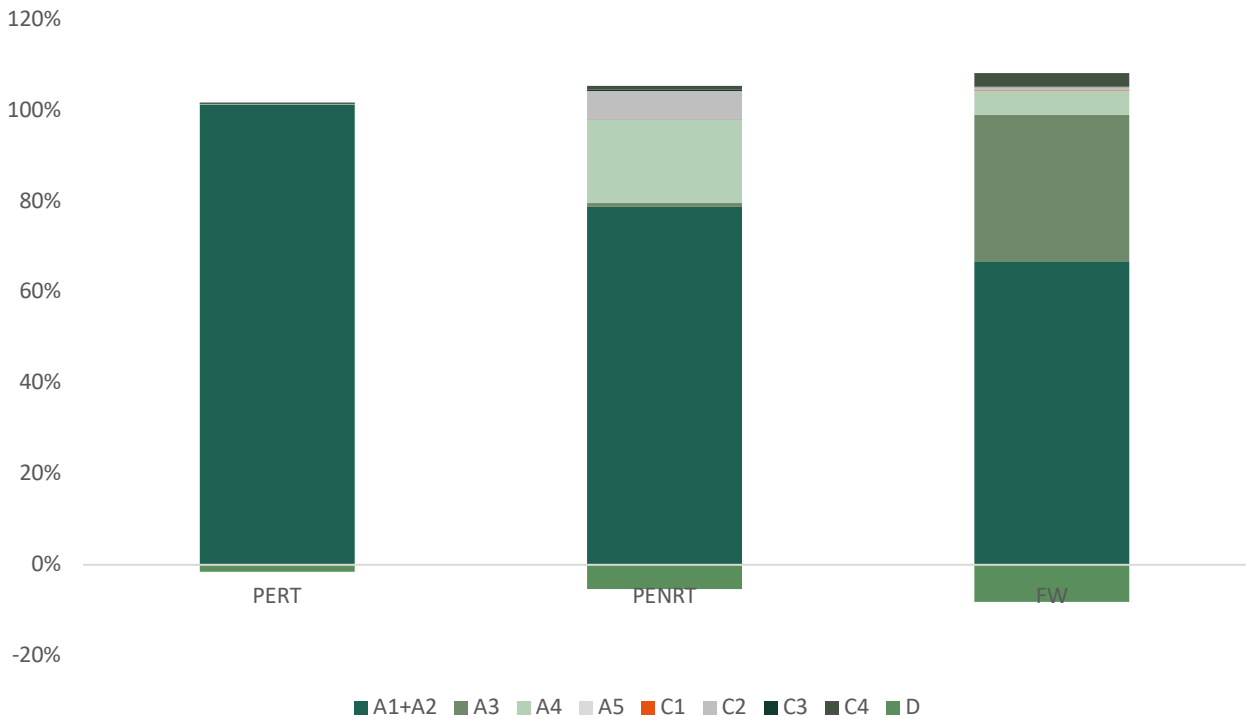


**Figure 4** Percentage contribution of life cycle stages to the different resource use impact categories for the average plywood products manufactured by CMPC.

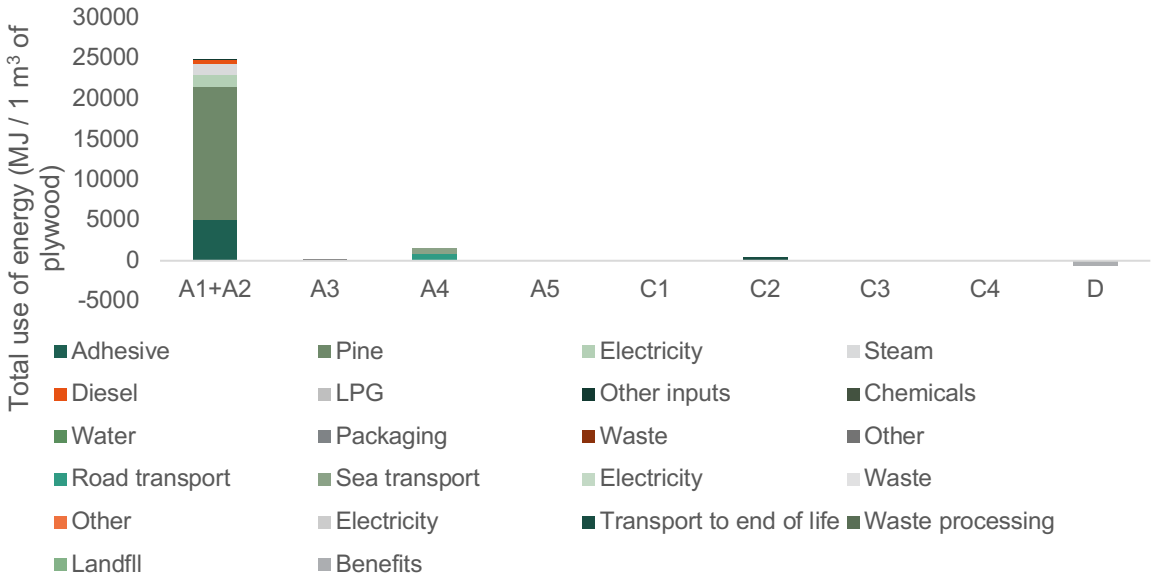


**Figure 5-** Contribution of main inputs and outputs of total energy use by module

*Waste and Output flows*

- Wood going to landfill (Module C4) has the highest contribution to non- hazardous waste disposed (80%).
- Use of energy in Module A1+A2 and transport (Module A4) have the highest contribution to hazardous waste (47%) and radioactive waste (41%), respectively. These modules also have the highest contribution to radioactive waste disposed

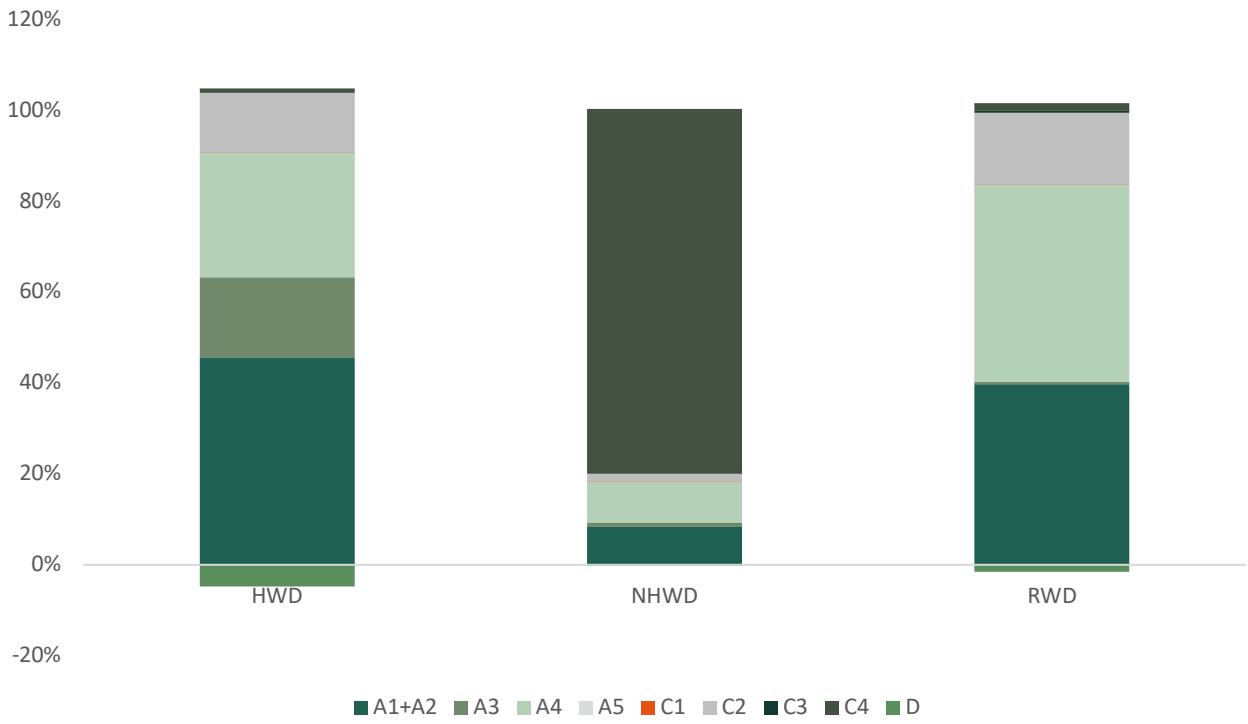


**Figure 6-** Percentage contribution of life cycle stages to waste flows impact categories for the average plywood products manufactured by CMPC

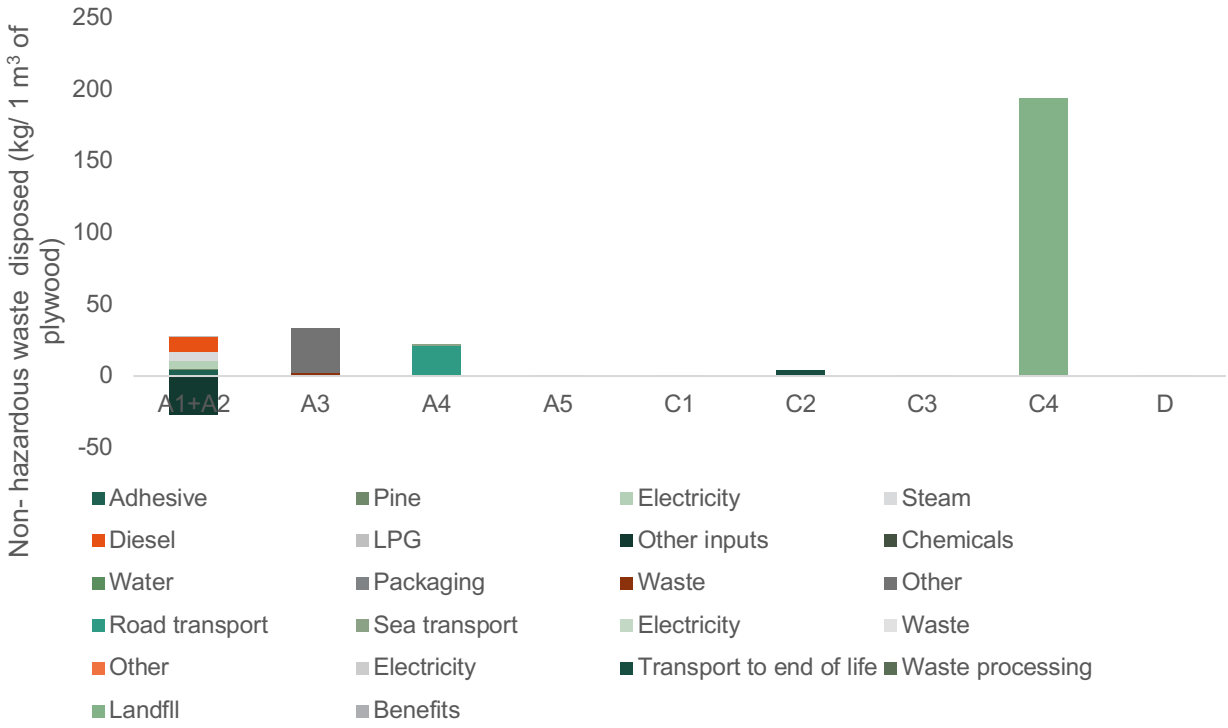


**Figure 7-** Contribution of main inputs and outputs of non – hazardous waste by module

## SELEX® Plywood products

**Table 13- Potential environmental impact – mandatory indicators according to EN 15804**

| Results per 1 $m^3$ of CMPC 9mm SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-fossil | kg $CO_2$ eq. | 2.28E+02 | 3.10E+01 | 3.64E+00 | 2.62E+02 | 1.04E+02 | 2.62E-01 | 1.06E-01 | 3.49E+01 | 2.46E+00 | 2.57E+00 | -2.44E+01 |
| GWP-biogenic | kg $CO_2$ eq. | -8.46E+02 | 9.13E-02 | 4.59E+00 | -8.41E+02 | 1.73E-01 | 2.06E-02 | 1.24E-03 | 3.59E-02 | 2.90E+02 | 2.41E+01 | 9.17E+00 |
| GWP-luluc | kg $CO_2$ eq. | 7.83E-02 | 1.92E-02 | 7.06E-03 | 1.05E-01 | 6.98E-02 | 4.04E-05 | 1.29E-05 | 5.08E-03 | 3.40E-03 | 2.67E-03 | -1.73E-02 |
| GWP-total | kg $CO_2$ eq. | -5.51E+02 | 3.12E+01 | 8.23E+00 | -5.12E+02 | 1.04E+02 | 2.83E-01 | 1.07E-01 | 3.49E+01 | 2.93E+02 | 2.66E+01 | -1.52E+01 |
| ODP | kg CFC 11 eq. | 1.58E-05 | 6.31E-06 | 3.69E-07 | 2.25E-05 | 2.09E-05 | 8.57E-09 | 2.73E-09 | 7.59E-06 | 6.55E-08 | 7.67E-07 | -3.22E-06 |
| AP | mol $H^+$ eq. | 3.33E+00 | 1.24E-01 | 1.68E-02 | 3.48E+00 | 1.81E+00 | 1.07E-03 | 8.44E-04 | 2.11E-01 | 3.58E-02 | 2.17E-02 | -6.22E-02 |
| EP-freshwater | kg $PO_4^{3-}$ eq. | 3.21E+00 | 3.13E-03 | 1.43E-03 | 3.21E+00 | 7.15E-03 | 8.38E-05 | 7.65E-05 | 8.65E-04 | 1.07E-03 | 5.61E-04 | -2.19E-03 |
| EP-freshwater | kg P eq. | 1.15E+02 | 2.13E-02 | 6.10E-03 | 1.15E+02 | 1.76E-01 | 4.88E-04 | 3.03E-04 | 3.10E-02 | 1.42E-02 | 3.92E-02 | -1.37E-02 |
| EP-marine | kg N eq. | 2.38E+02 | 3.32E-02 | 4.53E-03 | 2.38E+02 | 4.51E-01 | 5.96E-04 | 2.00E-04 | 8.31E-02 | 1.50E-02 | 9.00E-02 | -1.82E-02 |
| EP-terrestrial | mol N eq. | 6.99E+00 | 3.62E-01 | 3.57E-02 | 7.39E+00 | 5.00E+00 | 2.93E-03 | 2.09E-03 | 9.12E-01 | 1.63E-01 | 8.07E-02 | -2.01E-01 |
| POCP | kg NMVOC eq. | 1.83E+00 | 9.05E-02 | 1.01E-02 | 1.93E+00 | 1.22E+00 | 7.48E-04 | 5.05E-04 | 2.22E-01 | 7.60E-02 | 2.54E-02 | -5.11E-02 |
| ADP-minerals&metals* | kg Sb eq. | 4.39E-04 | 1.84E-04 | 2.43E-05 | 6.47E-04 | 3.94E-04 | 4.00E-07 | 2.94E-07 | 4.10E-05 | 3.77E-06 | 8.46E-06 | -4.14E-05 |
| ADP-fossil* | MJ | 5.67E+03 | 4.44E+02 | 6.24E+01 | 6.18E+03 | 1.41E+03 | 1.74E+00 | 1.25E+00 | 4.80E+02 | 2.56E+01 | 5.98E+01 | -3.93E+02 |
| WDP | $m^3$ | 6.91E+01 | 1.88E+00 | 2.81E+01 | 9.90E+01 | 4.31E+00 | 7.16E-02 | 6.21E-02 | 5.70E-01 | 9.05E-02 | 2.58E+00 | -7.33E+00 |
| Acronyms | GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption | | | | | | | | | | | |

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

**Table 14- Potential environmental impact – additional mandatory and voluntary indicators**

| Results per 1 $m^3$ of CMPC 9mm SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-GHG[2] | kg $CO_2$ eq. | 2.28E+02 | 3.10E+01 | 3.64E+00 | 2.62E+02 | 1.04E+02 | 2.62E-01 | 1.06E-01 | 3.49E+01 | 2.46E+00 | 2.57E+00 | -2.44E+01 |
| *Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017* | | | | | | | | | | | | |

**Table 15- Use of resources**

| Results per 1 $m^3$ of CMPC 9mm SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | MJ | 8.86E+02 | 7.25E+00 | 3.43E+00 | 8.97E+02 | 1.71E+01 | 4.06E-01 | 3.90E-01 | 2.33E+00 | 3.28E+00 | 1.09E+00 | -2.03E+02 |
| PERM | MJ | 1.28E+04 | 0.00E+00 | 6.68E-05 | 1.28E+04 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PERT | MJ | 1.37E+04 | 7.25E+00 | 3.43E+00 | 1.37E+04 | 1.71E+01 | 4.06E-01 | 3.90E-01 | 2.33E+00 | 3.28E+00 | 1.09E+00 | -2.03E+02 |
| PENRE | MJ | 6.09E+03 | 4.71E+02 | 6.16E+01 | 6.63E+03 | 1.50E+03 | 1.85E+00 | 1.33E+00 | 5.10E+02 | 2.71E+01 | 6.36E+01 | -4.33E+02 |
| PENRM | MJ. | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PENRT | MJ | 6.09E+03 | 4.71E+02 | 6.16E+01 | 6.63E+03 | 1.50E+03 | 1.85E+00 | 1.33E+00 | 5.10E+02 | 2.71E+01 | 6.36E+01 | -4.33E+02 |
| SM | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| RSF | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| NRSF | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | $m^3$ | 8.02E-01 | 2.78E-02 | 3.97E-01 | 1.23E+00 | 6.45E-02 | 8.70E-04 | 6.32E-04 | 8.34E-03 | 2.34E-03 | 3.62E-02 | -1.00E-01 |
| Acronyms | PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water | | | | | | | | | | | |

[2] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

### Table 16- Waste production

| Results per 1 $m^3$ of CMPC 9mm SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| Hazardous waste disposed | kg | 3.59E-03 | 1.21E-03 | 1.76E-03 | 6.57E-03 | 2.74E-03 | 2.81E-06 | 1.40E-06 | 1.30E-03 | 1.48E-05 | 9.29E-05 | -4.81E-04 |
| Non-hazardous waste disposed | kg | 1.30E+01 | 1.44E+01 | 2.39E+00 | 2.97E+01 | 2.71E+01 | 1.72E-02 | 8.39E-03 | 5.26E+00 | 2.34E-01 | 2.40E+02 | -7.39E-01 |
| Radioactive waste disposed | kg | 6.31E-03 | 2.75E-03 | 1.09E-04 | 9.16E-03 | 9.23E-03 | 3.11E-06 | 3.82E-07 | 3.35E-03 | 9.80E-05 | 3.55E-04 | -3.32E-04 |

### Table 17- Output flows

| Results per 1 $m^3$ of CMPC 9mm SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| Components for re-use | kg | 0 | 0 | 3.32E+01 | 3.32E+01 | 0 | 0 | 0 | 0 | 1.37E-02 | 0 | 0 |
| Material for recycling | kg | 0 | 0 | 4.22E+02 | 4.22E+02 | 0 | 0 | 0 | 0 | 1.16E+02 | 0 | 0 |
| Materials for energy recovery | kg | 0 | 0 | 3.98E+02 | 3.98E+02 | 0 | 0 | 0 | 0 | 2.11E+01 | 0 | 0 |
| Exported energy, electricity | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exported energy, thermal | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

### Table 18- Information on biogenic carbon content

| Results for 1 $m^3$ of CMPC 9mm SELEX® Plywood Products | | |
|---|---|---|
| **BIOGENIC CARBON CONTENT** | **Unit** | **QUANTITY** |
| Biogenic carbon content in product | kg C | -332 |
| Biogenic carbon content in packaging | kg C | -0.004 |

*Note: 1 kg biogenic carbon is equivalent to 44/12 kg $CO_2$.*

# Additional information

The end-of-life modelling is based on the most realistic scenario, using average values for waste treatment in the different countries where CMPC's plywood is sold. Figure 8 below presents the modelled scenario.

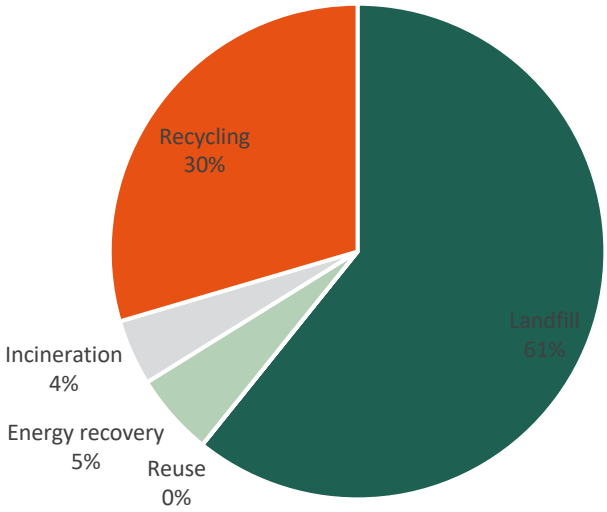


**Figure 8-** End of life modelled scenario.

Given the end-of-life scenarios of plywood, module D was modelled with the following assumptions:

- Energy recovery: since most of the energy recovery happens in Europe, the assumption is made that plywood to recovery avoids the production of heat through natural gas. The specific energy avoided is based on the calorific value of wood pellets (17MJ/kg of product).
- Reuse: assumes the product is used without any modification, therefore the production of plywood is avoided.
- Recycling: it assumes that plywood converts into wood chips, with a loss of quality of the product. The correction factor is estimated at 0.2.

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# Appendix A. Impact variation across products

| Impact indicator | A/C-9 | B/B Deco-9 | B/Cp-9 | B/C-9 | B/D Estructural AUS-9 | Cp/C-9 | C/D-9 | CD No Estructural AUS-9 | RANURADOS-9 | CAB-9 | RECH-9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP-fossil | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| GWP-biogenic | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| GWP-luluc | 0% | 1% | 0% | 0% | 0% | 0% | -1% | 0% | 1% | 0% | 0% |
| GWP-total | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| ODP | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| AP | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| EP-freshwater | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| EP-freshwater2 | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| EP-marine | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| EP-terrestrial | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| POCP | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| ADP-minerals&metals* | 0% | -3% | 2% | 2% | 0% | 2% | -2% | 2% | -3% | 0% | 0% |
| ADP-fossil* | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| WDP | 0% | -2% | 1% | 1% | 0% | 1% | -1% | 1% | -2% | 0% | 0% |
| GWP-GHG[1] | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| PERE | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| PERM | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| PERT | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| PENRE | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| PENRM | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| PENRT | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| SM | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| RSF | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| NRSF | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| FW | 0% | -2% | 1% | 1% | 0% | 1% | -1% | 1% | -2% | 0% | 0% |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Hazardous waste disposed** | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 0% | 0% |
| **Non-hazardous waste disposed** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Radioactive waste disposed** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Components for re-use** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Material for recycling** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Materials for energy recovery** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Exported energy, electricity** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Exported energy, thermal** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

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# Environmental Product Declaration

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

## SELEX® Plywood

from

**CMPC**

| | |
|---|---|
| Programme: | The International EPD® System<br>EPD registered through the fully aligned regional programme:<br>Hub EPD® Latin America |
| Programme operator: | EPD International AB,<br>Regional Hub: EPD Latin America |
| EPD registration number: | S-P-02010 |
| Publication date: | 2022-12-20 |
| Valid until: | 2027-12-19 |

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com*

# General information

## Programme information

| | |
|---|---|
| **Programme:** | The International EPD® System www.environdec.com<br><br>EPD registered through the fully aligned regional programme:Hub EPD® Latin America www.epd-americalatina.com |
| **Programme Operator** | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br><br>Sweden<br><br>EPD Latin America<br>Chile office: Alonso de Ercilla 2996, Ñuñoa, Santiago.<br>Mexico office: Av. Convento de Actopan 24 Int. 7ª, Colonia Jardines de Santa Mónica. Tlalnepantla de Baz, Estado de México, México. C.P. 54050. |

| |
|---|
| CEN standard EN 15804 serves as the Core Product Category Rules (PCR) |
| Product category rules (PCR): PCR 2019:14 Construction Products VERSION 1.11*, 2021-02-05, UN CPC 315* |
| PCR review was conducted by: *Technical Committee of the International EPD® System* |
| Independent third-party verification of the declaration and data, according to ISO 14025:2006:<br><br>☐ EPD process certification ☒ EPD verification |
| Third party verifier: *Ruben Carnerero*<br>*Email: r.carnerero@ik-ingenieria.com*<br>*Approved by: The International EPD® System* |
| Procedure for follow-up of data during EPD validity involves third party verifier:<br><br>☒ Yes ☐ No |
| Developed by: EDGE Chile<br>*Email: contacto@edgechile.com*<br>*Web: www.edgeenvironment.com* |

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.

# What is an EPD?

An Environmental Product Declaration (EPD) is an independently verified and registered document that communicates transparent and comparable information about the life-cycle environmental impact of products.

The following EPD has been developed by CMPC for its SELEX® Plywood products.

# Company information

## Owner of the EPD

CMPC
Web: https://cmpcmaderas.com/en-us

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Nicolás Gordon – CMPC Sustainability and Enviroment Manager - nicolas.gordon@cmpc.cl

Address: Agustinas 1343, P.4, Santiago- Santiago, Chile

## Description of the organization

CMPC Companies is a forestry and paper holding of global presence, controlled by the Matte family, founded in 1920 as “Compañía Manufacturera de Papeles y Cartones”. Currently the company has over 17000 direct employees, distributed between their industrials plants and forestry operations in 11 countries.

In present days, the company has the second forestry heritage in Chile, with over 1.300.000 hectares in Chile, Brazil and Argentina.

The company’s business is the production and commercialization of timber, cellulose, packaging, paper, tissues and personal care products, which come from sustainable forest certified operations. Given its structure, the main business is cellulose, which is approximately 49% of its consolidated sales. This is divided in Pulp, Timber and Forestry. Following cellulose there is the Softys branch, which represents 35% of sales. Biopackaging is in third place with 16% of sales.

The company’s mission is to produce and commercialize- from plantations stablished by men- timber, cellulose, packaging, paper, tissues and personal care products, sustainable in time, of superior quality and competitive, innovating and adding value to shareholders and clients, and creating development opportunities for workers and local communities. Sustainability is seek to reach good economic performance, through the respect of stakeholders and care for the environment.

To fulfill the mission, everyone working in CMPC are action orientated, according to 5 fundamental values of the company:

1. Respect for people
2. Care for the environment
3. Compliance with strict legal norms
4. Loyalty to compete

5. Consideration for neighbor's needs

The corporate purpose- Create, Coexist, and Conserve-, the 3C's, is comprehensive of its way to make business and guide the corporate role towards a sustainable future.

## Sustainability

Following its Mission, Values and corporate Purpose, CMPC integrates sustainability in an strategic way, oriented to the future in each business unit, with their respective branches and subsidiaries, as well as in every operation and influence territory, and with each stakeholder. This approach is based on the following fundamental components:

- Commitment to UN's Sustainable Development Goals – 2030 Agenda.
- Positive and negative impacts identified through ESG Materiality Assessment across the value chain.
- Risks to which the company is exposed and its role in the society.
- Sustainability Targets.
- Disclosure and transparency.

Through the implementation, action and recognition of UN Global Compact's 10 principals, which focus on topics going from human rights, work relationships, anti- corruption, to environmental issues, CMPC seeks to reflect in its act, processes and final products, sustainability attributes and environmental impacts, where tools and certifications, such as type III environmental declarations allow to inform, communicate and assess different products under sustainability standards.

## Name and location of production site(s):

CMPC Maderas
Plywood plant- Avenida Jorge Alessandri s/n. Collipulle, Araucanía, Chile

# Product information

## Product name

The products included in this EPD are CMPC's SELEX® Plywood products

## Product identification and description

UN CPC code: 315

CMPC's SELEX® Plywood products included in this EPD are presented below. The variation of impact across products is lower than +/- 10%, therefore the results will be presented for the average product. A variation of each product to this average will be presented in Appendix A.

### SELEX® Plywood A/C

SELEX® Plywood A/C is a product free of knots and open defects, with high visual quality, strength, and versatility. Main applications include furniture and carpentry, decorative projects, laminate base, wall and ceiling veneer, industrial applications. Table 1 presents the main characteristics, while Illustration 1 has a visualisation of the product.

**Table 1-** SELEX® Plywood A/C main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 | | | | | | |
|---|---|---|---|---|---|---|---|
| Thickness (mm) | 6.5 | 12 | 15 | 18 | 21 | 25 | 30 |
| Thickness (inches) | 1/4" | 15/32 | 19/32 | 23/32 | 13/16 | 1'' | 1 3/16 |
| Nº of layers | 3 | 5 | 5 | 6/7 | 7 | 9 | 11 |
| Density | 480 - 550 kg / m³ | | | | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | | | | |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. | | | | | | |
| Moisture content | 8% to 12% | | | | | | |
| Structural certification | PS1-19 by TP & EN 13986 (CE2 +) by HFB | | | | | | |
| Forestry certification | FSC® and PEFC™ certified products | | | | | | |

**Illustration 1-** SELEX® Plywood A/C

### SELEX® Plywood B/B Deco

SELEX® Plywood B/B Deco is a high visual quality on both sides, assuring a high resistance. This product features aesthetic value and a solid surface on both sides. Main applications include furniture and carpentry, lamination base, decorative projects, and transportation industry. Table 2 presents the main characteristics, while Illustration 2 has a visualisation of the product.

**Table 2-** SELEX® Plywood B/B Deco main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 | | | | | | |
|---|---|---|---|---|---|---|---|
| Thickness (mm) | 6.5 | 12 | 15 | 18 | 21 | 25 | 30 |
| Thickness (inches) | 1/4” | 15/32 | 19/32 | 23/32 | 13/16 | 1’’ | 1 3/16 |
| Nº of layers | 3 | 5 | 5 | 6/7 | 7 | 9 | 11 |
| Density | 480 - 550 kg / m³ | | | | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | | | | |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. | | | | | | |

| | |
|---|---|
| Moisture content | 8% to 12% |
| Structural certification | PS1-19 by TP & EN 13986 (CE2 +) by HFB |
| Forestry certification | FSC® and PEFC™ certified products |

**Illustration 2-** SELEX® Plywood B/B Deco

### SELEX® Plywood B/Cp

SELEX® Plywood B/Cp are panels of high visual quality, with great dimensional stability and with excellent physical-mechanical resistance. Main applications include furniture and carpentry, concrete forming and various applications in construction. Table 3 presents the main characteristics, while Illustration 3 has a visualisation of the product.

**Table 3-** SELEX® Plywood B/Cp main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 | | | | | |
|---|---|---|---|---|---|---|
| Thickness (mm) | 6.5 | 12 | 15 | 18 | 21 | 25 |
| Thickness (inches) | 1/4” | 15/32 | 19/32 | 23/32 | 13/16 | 1’’ |
| Nº of layers | 3 | 5 | 5 | 6/7 | 7 | 9 |
| Density | 480 - 550 kg / m³ | | | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | | | |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. | | | | | |
| Moisture content | 8% to 12% | | | | | |
| Structural certification | PS1-19 by TP & EN 13986 (CE2 +) by HFB | | | | | |
| Forestry certification | FSC® and PEFC™ certified products | | | | | |

**Illustration 3-** SELEX® Plywood B/Cp

### SELEX® Plywood B/C

SELEX® Plywood B/C present high visual quality, high strength, and high versatility. Main applications include furniture and carpentry, decorative projects, industrial projects, DIY projects and construction. Table 4 presents the main characteristics, while Illustration 4 has a visualisation of the product.

**Table 4-** SELEX® Plywood B/C main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 | | | | | | |
|---|---|---|---|---|---|---|---|
| Thickness (mm) | 6.5 | 12 | 15 | 18 | 21 | 25 | 30 |
| Thickness (inches) | 1/4” | 15/32 | 19/32 | 23/32 | 13/16 | 1’’ | 1 3/16 |
| Nº of layers | 3 | 5 | 5 | 6/7 | 7 | 9 | 11 |
| Density | 480 - 550 kg / m³ | | | | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | | | | |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. | | | | | | |
| Moisture content | 8% to 12% | | | | | | |
| Structural certification | PS1-19 by TP & EN 13986 (CE2 +) by HFB | | | | | | |
| Forestry certification | FSC® and PEFC™ certified products | | | | | | |

**Illustration 4- SELEX® Plywood B/C**

### SELEX® ® Plywood CONSTRUCTION T&G

SELEX® Plywood CONSTRUCTION T&G is a panel specially made for construction. Suitable for structural applications such as roofing, flooring and wall sheathing. Table 5 presents the main characteristics, while Illustration 5 has a visualisation of the product.

**Table 5-** SELEX® Plywood CONSTRUCTION T&G

| Dimensions (mm) | 1200x2400 | | | |
|---|---|---|---|---|
| Thickness (mm) | 12 | 15 | 18 | 21 |
| Nº of layers | 5 | 5 | 7 | 7 |
| Density | 480 - 550 kg / m³ | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission standard. | | | |
| Moisture content | 8% to 12% | | | |
| Structural certification | EN 13986 (CE2 +) by HFB | | | |
| Forestry certification | FSC® and PEFC™ certified products | | | |

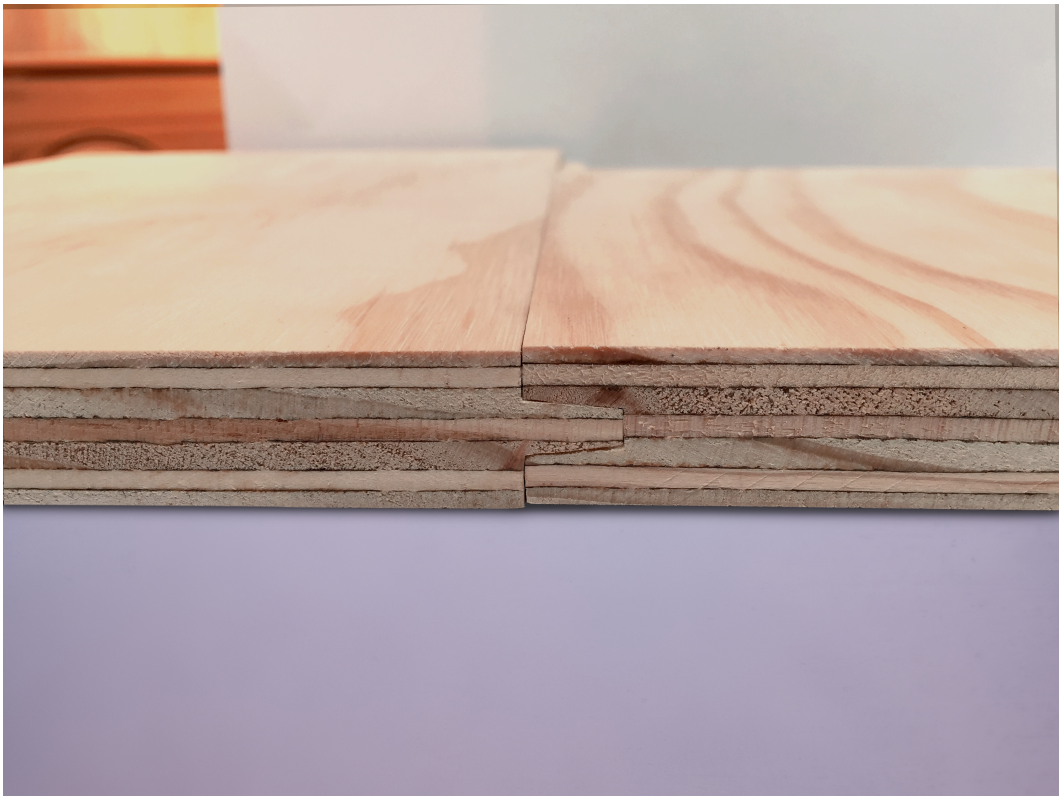

**Illustration 5-** SELEX® Plywood CONTRUCTION T&G

### SELEX® ® Plywood B/D Structural AUS

SELEX® Plywood B/D Structural AUS is structurally tested and AS/NZS229-standard approved, with a high-quality appearance, great resistance, and broad versatility. Main applications include furniture and carpentry, interior veneers, decorative projects, industrial projects, DIY projects and construction. Table 6 presents the main characteristics, while Illustration 6 has a visualisation of the product.

**Table 6-** SELEX® Plywood B/D Structural AUS main characteristics

| Dimensions (mm) | 1200x2400 | | | | | |
|---|---|---|---|---|---|---|
| Thickness (mm) | 7 | 12 | 15 | 18 | 21 | 25 |
| Degrees F's (structural) | F8 | F8 | F11 | F11 | F8 | F8 |
| Nº of layers | 3 | 5 | 5 | 6/7 | 7 | 9 |
| Density | 480 - 550 kg / m³ | | | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | | | |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission standard. | | | | | |
| Moisture content | 8% to 12% | | | | | |
| Structural certification | AS/NZS 2269 | | | | | |
| Forestry certification | FSC® and PEFC™ certified products | | | | | |

**Illustration 6-** SELEX® Plywood B/D Structural AUS

### SELEX® Plywood Easy wall

SELEX® Plywood easy wood  is a product with significant advantages and recognized for its quality, strength, and versatility. Main application is wall. Table 7 presents the main characteristics, while Illustration 7 has a visualisation of the product.

**Table 7-** SELEX® Plywood Easy Wall main characteristics

| Dimensions (mm) | 618 x2440 | |
|---|---|---|
| Thickness (mm) | 12 | 15 |
| Thickness (inches) | 15/32 | 19/32 |
| Nº of layers | 5 | 5 |
| Density | 480 - 550 kg / m³ | |
| Sanding grain | 150 grits on front and 120 grits on back | |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission. | |
| Moisture content | 8% to 12% | |
| Structural certification | EN 13986 – EN 596 – EN 12871 | |
| Forestry certification | FSC® and PEFC™ certified products | |

**Illustration 7-** SELEX® Plywood Easy Wall

### SELEX® Plywood Cp/C

SELEX® Plywood Cp/C are panels with great dimensional stability and with excellent physical-mechanical resistance. Main applications include concrete forming and general applications for construction. Table 8 presents the main characteristics, while Illustration 8 has a visualisation of the product.

**Table 8-** SELEX® Plywood Cp/C main characteristics

| Dimensions (mm) | 1220x2440 and 1200x2400 | | | | | | |
|---|---|---|---|---|---|---|---|
| Thickness (mm) | 6.5 | 12 | 15 | 18 | 21 | 25 | 30 |
| Thickness (inches) | 1/4” | 15/32 | 19/32 | 23/32 | 13/16 | 1” | 1 3/16 |
| Nº of layers | 3 | 5 | 5 | 6/7 | 7 | 9 | 11 |
| Density | 480 - 550 kg / m³ | | | | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | | | | |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission and CARB standard. | | | | | | |
| Moisture content | 8% to 12% | | | | | | |
| Structural certification | EN 13986 (CE2 +) by HFB | | | | | | |
| Forestry certification | FSC® and PEFC™ certified products | | | | | | |

**Illustration 8-** SELEX® Plywood Cp/C

### SELEX® Plywood C/D

SELEX® Plywood C/D panels are intended for use in construction, with high dimensional stability. Their excellent mechanical and physical resistance to bending, shearing, and compression allows it to be used both indoors and outdoors. Applications include roofing, structural walls, floor support structure, perimeter closures and packaging. Table 9 presents the main characteristics, while Illustration 9 has a visualisation of the product.

**Table 9-** SELEX® Plywood C/D main characteristics

| Dimensions (mm) | 1220x2440 | | | | | | |
|---|---|---|---|---|---|---|---|
| Thickness (mm) | 6.5 | 12 | 15 | 18 | 21 | 25 | 30 |
| Thickness (inches) | 1/4” | 15/32 | 19/32 | 23/32 | 13/16 | 1’’ | 1 3/16 |
| Nº of layers | 3 | 5 | 5 | 6/7 | 7 | 9 | 11 |
| Density | 480 - 550 kg / m³ | | | | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | | | | |
| Adhesive | Phenol-formaldehyde that complies with the E1 emission standard. | | | | | | |
| Moisture content | 8% to 12% | | | | | | |
| Structural certification | PS1 - 19 por TP & EN 13986 (CE2+) by HBF | | | | | | |
| Forestry certification | FSC® and PEFC™ certified products | | | | | | |

**Illustration 9-** SELEX® Plywood C/D

### SELEX® Plywood CD No Structural AUS

SELEX® Plywood CD No Structural AUS has a variety of uses throughout the construction industry, particularly when structural characteristics are not required, whether that means not bearing weight or in cases where there is no requirement to meet the construction codes of Australia or New Zealand. Main applications include fences, non-structural packaging, kennels, mailboxes, dollhouses, DIY projects and general applications. Table 10 presents the main characteristics, while Illustration 10 has a visualisation of the product.

**Table 10-** SELEX® Plywood CD No Structural AUS main characteristics

| Dimensions (mm) | 1200x2400 | | | | | | |
|---|---|---|---|---|---|---|---|
| Thickness (mm) | 6.5 | 12 | 15 | 18 | 21 | 25 | 30 |
| Thickness (inches) | 1/4” | 15/32 | 19/32 | 23/32 | 13/16 | 1’’ | 1 3/16 |
| Nº of layers | 3 | 5 | 5 | 6/7 | 7 | 9 | 11 |
| Density | 480 - 550 kg / m³ | | | | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | | | | |
| Adhesive | Phenol-formaldehyde that complies with Super E0 emission standard. | | | | | | |
| Moisture content | 8% to 12% | | | | | | |
| Forestry certification | FSC® and PEFC™ certified products | | | | | | |

**Illustration 10-** SELEX® Plywood CD No Structural AU

### SELEX® Plywood Siding

SELEX® Plywood Siding panels have excellent visual quality, perfect for use in interior uses and various design projects, offering an attractive solution serving for multiple applications. Main applications include interior, ceilings, decorative projects, exterior, shed and barn walls, and soffit. Table 11 presents the main characteristics, while Illustration 11 has a visualisation of the product.

**Table 11-** SELEX® Plywood Siding main characteristics

| Dimensions (mm) | 1220x2440 | |
|---|---|---|
| Thickness (mm) | 12 | 15 |
| Thickness (inches) | 15/32 | 19/32 |
| Nº of layers | 5 | 5 |
| Density | 480 - 550 kg / m³ | |
| Sanding grain | 150 grits on front and 120 grits on back | |
| Adhesive | Phenol-formaldehyde that complies with E1 emission standard. | |
| Moisture content | 8% to 12% | |
| Structural certification | ANSI-APA PRP 210 & EN 13986 (CE2+) by HFB | |
| Forestry certification | FSC® and PEFC™ certified products | |

**Illustration 11-** SELEX® Plywood Siding

### SELEX® Plywood T&G

SELEX® Plywood T&G panels have a tongue and groove configuration that facilitates installation and provides greater stability and rigidity at the time of installation in construction applications. Main applications include construction of floors and ceilings, and walls. Table 12 presents the main characteristics, while Illustration 12 has a visualisation of the product.

**Table 12-** SELEX® Plywood T&G main characteristics

| Dimensions (mm) | 1220x2440 | | | |
|---|---|---|---|---|
| Thickness (mm) | 12 | 15 | 18 | 21 |
| Thickness (inches) | 15/32 | 19/32 | 23/32 | 13/16 |
| Nº of layers | 5 | 5 | 6/7 | 7 |
| Density | 480 - 550 kg / m³ | | | |
| Sanding grain | 150 grits on front and 120 grits on back | | | |
| Adhesive | Phenol-formaldehyde that complies with E1 emission standard. | | | |
| Moisture content | 8% to 12% | | | |
| Structural certification | PS1-19 by TP & EN 13986 (CE2 +) by HFB | | | |
| Forestry certification | FSC® and PEFC™ certified products | | | |

**Illustration 12-** SELEX® Plywood T&G

### SELEX® Plywood CAB

This product is very similar to SELEX® Plywood B/C, and is mostly sold in the US market for cabinet making.

### SELEX® Plywood RECH

This is usually rejected product used for a wide range of uses, mostly carpentry and furniture.

## Content information

Table 13 presents the composition of CMPC SELEX® Plywood products, as well as packaging materials. No dangerous substances from the candidate list of SVHC are included in the product.

**Table 13- Product components**

| Product components | Weight, kg | Post-consumer material, weight-% | Renewable material, weight-% |
|---|---|---|---|
| Pine | 382-399 | - | 100% |
| Water | 41-61 | - | - |
| Adhesive | 56-69 | - | - |
| Others | 0-6 | - | - |
| TOTAL | 495-521 | - | 77% |
| **Packaging materials** | **Weight, kg** | **Weight-% (versus the product)** | |
| LDPE | 0.467 | 0.09% | |
| Polyester | 0.051 | 0.01% | |
| Low alloyed steel | 0.266 | 0.05% | |
| Cardboard | 0.005 | 0.001% | |
| TOTAL | 0.197 | 0.16% | |

| Dangerous substances from the candidate list of SVHC for Authorisation | EC No. | CAS No. | Weight-% per functional or declared unit |
|---|---|---|---|
| Not applicable | | | |

# LCA information

A life cycle assessment is a technique for assessing the environmental aspects and potential impacts associated with a product. By considering potential impacts throughout the life cycle of a product (upstream and downstream), the analysis avoids the shifting of burdens from one type of environmental impact to another, from one political region to another and from one stage to the other.

An Environmental Product Declaration (EPD) is an independently verified and registered document that communicates transparent and comparable information about the life cycle environmental impacts of products. The following information describes the scope and methodology of this EPD for CMPC's SELEX® Plywood products.

## Declared unit

This EPD has a cradle to gate with options approach, with a declared unit of 1 $m^3$ of plywood products produced in Chile and installed across different countries across the world.

## Reference service life

Given the scope of the analysis (cradle to gate with options) no reference service life is relevant.

## Geographial scope

The geographical scope of this EPD is global.

## Time representativeness

The information collected for the analysis is 2020, considering the production of all products in this year.

## Database(s) and LCA software used

The inventory data for the process are entered in SimaPro LCA program and linked to the pre-existing data for the upstream feedstocks and services. Data were selected per geographic relevance from ecoinvent 3.6 database (Ecoinvent Centre, 2019).

## Description of system boundaries

This EPD is cradle to gate grave, however, given that some of the modules are not applicable for CMPC SELEX® Plywood products, the scope is cradle to gate with options[1]. Table 14 has the detail of the modules included.

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

**Table 14- Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation**

| | 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 | x | x | ND | ND | ND | ND | ND | ND | ND | x | x | x | x | x |
| Geography | Suppliers mostly from Chile | | Chile | Global | | ND | ND | ND | ND | ND | ND | ND | Global | | | | Global |
| Specific data used | 100% | | | | | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – products | 10% max variation between each product and the average | | | | | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – sites | Not applicable, only one production site | | | | | - | - | - | - | - | - | - | - | - | - | - | - |

## System diagram

Figure 1 presents the system diagram for plywood manufacturing process. This is described below:

- **Reception:** reception of logs that go into the process.
- **Debarking:** the bark is separated from the logs.
- **Log yard:** yard where debarked logs wait to start the manufacturing process. The logs are sprayed with water and chemicals.
- **Conditioning:** the logs go to chambers of hot water for the plasticization of the fibers in the wood.
- **Peeling:** the logs go to a lathe that spins them against a blade to produce a sheet of timber.
- **Drying:** drying to obtain an optimal level of humidity.
- **Composer:** any fixing of individual sheets with glue.
- **Gluing & lay-up:** the sheets receive adhesive and the boards are formed.
- **Pre-pressing & pressing:** pressing of the boards to give enough consistency to them and allow them to forge.
- **Automatic and manual repairing:** the repairing of the boards allows for an increase in the quality, by eliminating defects.
- **Trimming:** the boards are given their proper dimensions.
- **Sanding:** sanding for calibration and finishing.
- **Other finishing (if applicable):** include the creation of the siding, cutting and painting, depending on the product.
- **Packaging:** packaging of the products
- **Storage:** final products go to the warehouse of finished products to await for their shipment.

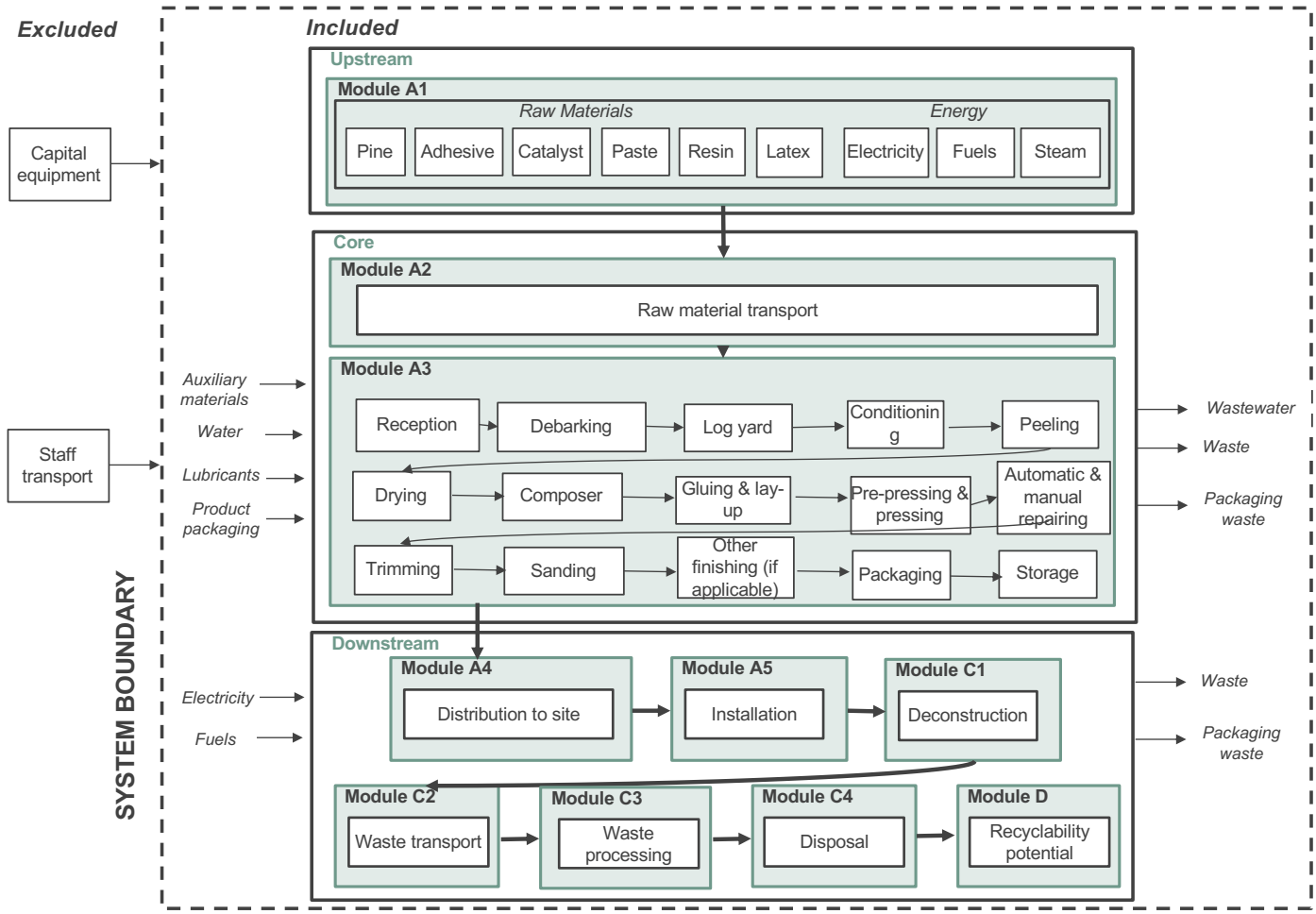


Figure 1- System diagram

## Foreground data sources and quality

Foreground data on raw material requirements, manufacture and distribution was provided by CMPC for the year 2020. Background data was retrieved from ecoinvent 3.6, which dates from 2019, for processes occurring in Chile and countries supplying raw materials. In compliance with the relevant PCR, generic processes were used for feedstock materials.

Data quality is considered medium to good. More details in Table 15 below.

Table 15- Foreground data sources and quality

| | Product data | Module A1 | Module A2 | Module A3 | Module A4 | Module A5 | Module C | Module D |
|---|---|---|---|---|---|---|---|---|
| Data | Range and physical properties | Raw material inputs<br>Energy inputs | Transportation from national suppliers to CMPC's installations | Water inputs<br>Consumable inputs<br>Waste outputs | Distribution information | Ancillary materials and energy for installation | End of life of products | Recyclability potential |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Source | Collected by CMPC staff for 2020 | Collected by CMPC staff for 2020 | Supplier locations provided by CMPC staff for 2020. Distances calculated with online tool. Transport specifications assumed from ecoinvent 3.6 processes. | Collected by CMPC staff for 2020 | Collected by CMPC staff for 2020 | Estimations based on products description and use made by CMPC staff | Estimations based on types of waste treatment for each country of product sales | Estimations based on types of waste treatment for each country of product sales |
| Geographical representativeness | | Very good | | | Very good | Fair | Good | Good |
| Technical representativeness | | Very good | | | Very good | Fair | Good | Good |
| Time representativeness | | Very good | | | Very good | Fair | Good | Good |

## Exclusion of small amounts and cut off criteria

Environmental impacts relating to personnel, infrastructure, and production equipment not directly consumed in the process are excluded from the system. All other reported data were incorporated and modelled using the best available life cycle inventory data.

No other cut offs were necessary for the modules included in this EPD.

## Allocation

Due to price differences, economic allocation was performed for wood co- products generated in the process, such as dust, trimmings, chips, etc. according to PCR guidelines.

# Environmental Information

*Potential environmental impacts*

- Module A1+A2 (raw materials and energy) has the highest impact contribution to most environmental impacts (13 out of 14 indicators, with an average 56% contribution among them). Within these impacts, A1+A2 has the highest contribution in fresh and marine water eutrophication, both with 100% contribution. The pine is responsible for most of the freshwater eutrophication impact (98%).
- Module A1+A2 also present an important sequestration of carbon in biomass, which can be seen in biogenic global warming potential indicator. In contrast, this biogenic carbon is released back to the atmosphere or capture by the following life cycle in module C.
- On average, Module A4 (distribution to markets) has the second highest impact contribution due to the long distances to reach the main markets. This is particularly relevant for ozone depletion potential (48% contribution), abiotic depletion (minerals and metals) (40% contribution), and terrestrial eutrophication (40% contribution).
- The manufacturing process (Module A3) has a low impact contribution across indicators, although it achieves a 29% contribution to water depletion potential due to the water used in the process, particularly for cleaning the logs.
- Module D has a positive effect on the results across impact indicators, although it is low because still roughly 40% of the product still goes to landfill.

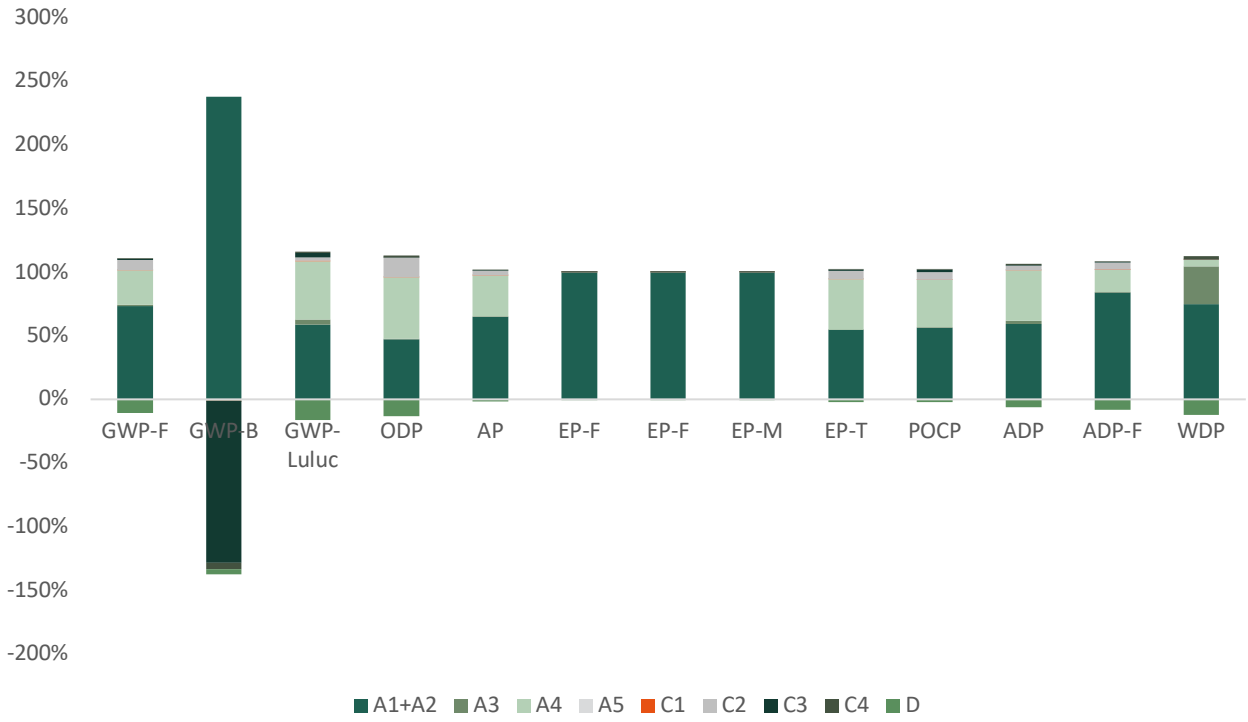


**Figure 2** Percentage contribution of life cycle stages to the different potential environmental impact categories for the average plywood products manufactured by CMPC.

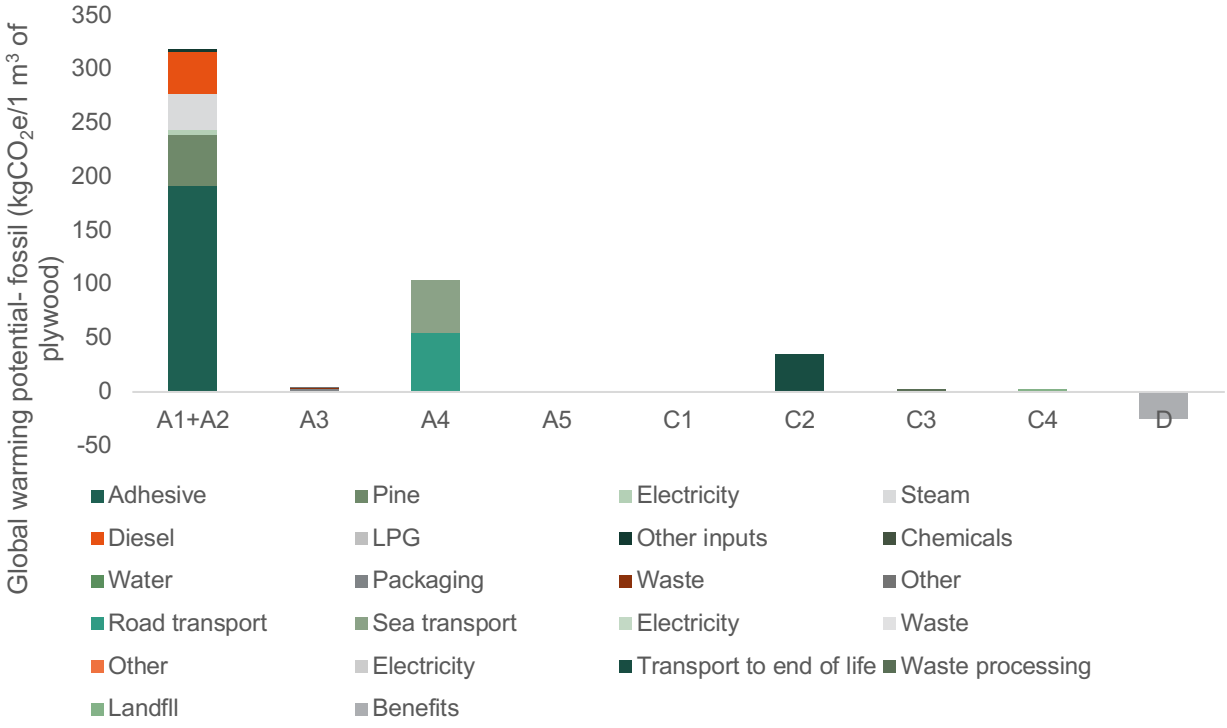


**Figure 3 -** Contribution of main inputs and outputs to fossil global warming potential by module

*Resource use*

- Module A1+A2 (raw materials and energy) has the highest use of resources in all indicators, although some of these can be considered positive impact, such as use of renewable primary energy resources as raw materials through the pine wood.
- Module A1+A2 also presents the highest contribution to total non- renewable primary energy, with adhesive contributing to 61% of the overall impact.
- Module A3 (manufacturing) only has relevant contribution (33%) to use of fresh water due to the water use in the process.
- Module A4 (distribution to markets) has a small contribution across impacts, only relevant for use of non- renewable energy (17%) due to the burning of fossil fuel.

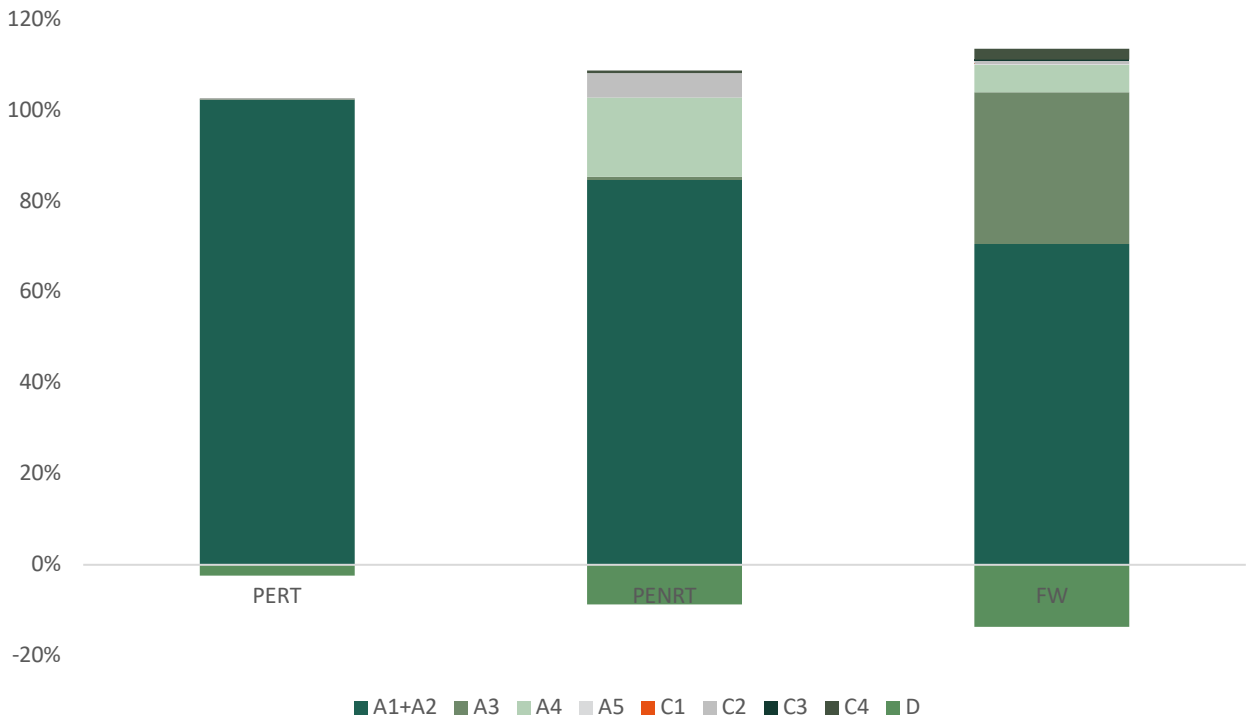


**Figure 4** Percentage contribution of life cycle stages to the different resource use impact categories for the average plywood products manufactured by CMPC.

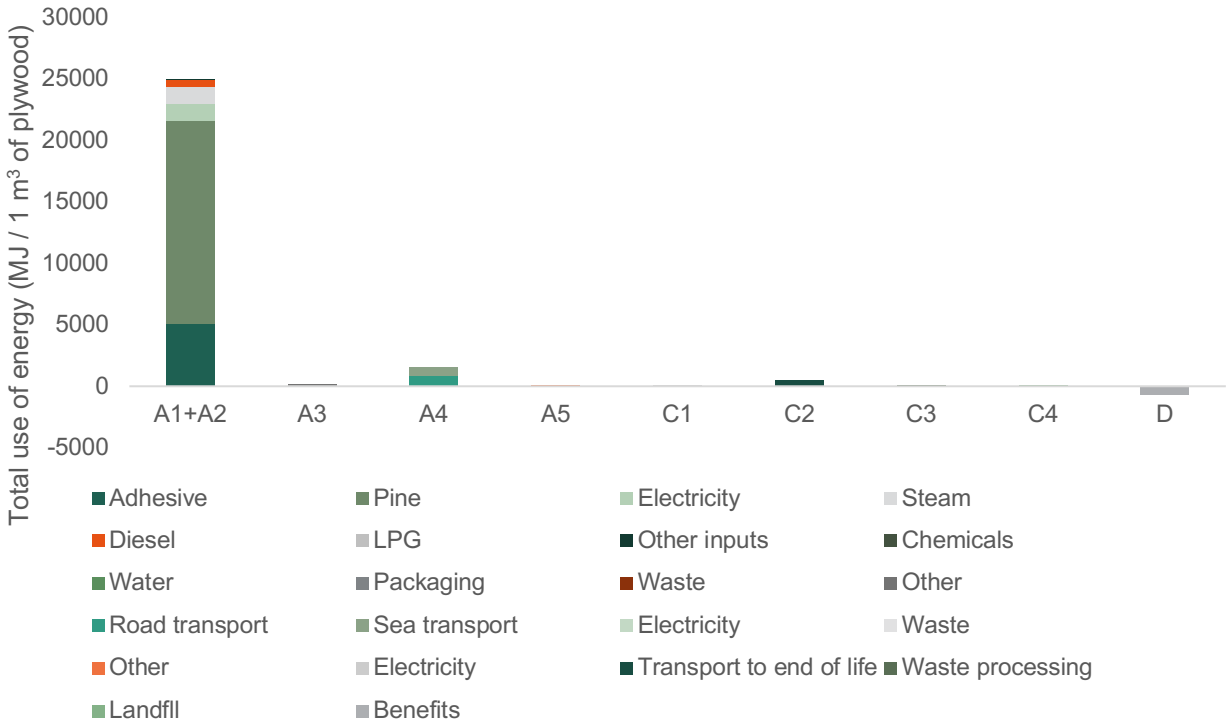


**Figure 5-** Contribution of main inputs and outputs of total energy use by module

*Waste and Output flows*

- Wood going to landfill (Module C4) has the highest contribution to non- hazardous waste disposed (74%).

- Use of energy in Module A1+A2 and transport (Module A4) have the highest contribution to hazardous waste (49%) and radioactive waste (41%), respectively.

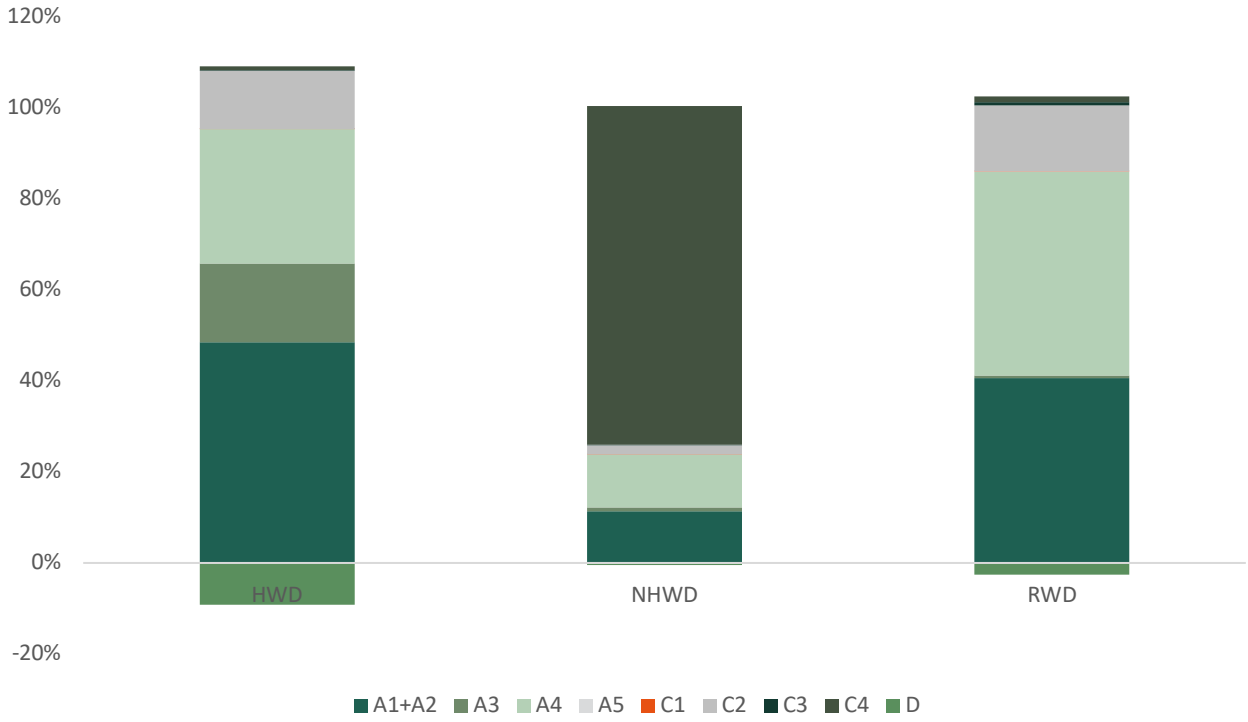


**Figure 6-** Percentage contribution of life cycle stages to waste flows impact categories for the average plywood products manufactured by CMPC

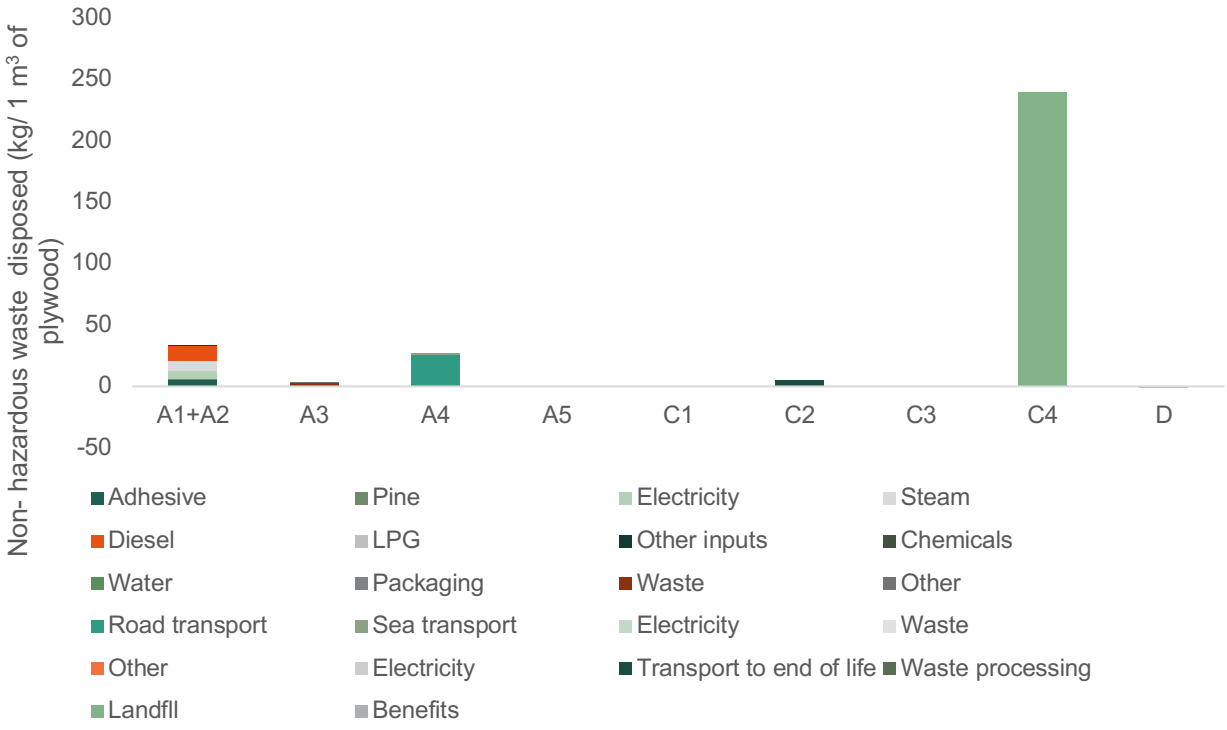


**Figure 7-** Contribution of main inputs and outputs of non – hazardous waste by module

## SELEX® Plywood products

**Table 16-** Potential environmental impact – mandatory indicators according to EN 15804

| Results per 1 $m^3$ of CMPC SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-fossil | kg $CO_2$ eq. | 2.82E+02 | 3.44E+01 | 3.64E+00 | 3.20E+02 | 1.16E+02 | 2.66E-01 | 1.06E-01 | 3.49E+01 | 3.55E+00 | 2.04E+00 | -4.65E+01 |
| GWP-biogenic | kg $CO_2$ eq. | -8.46E+02 | 1.01E-01 | 4.59E+00 | -8.41E+02 | 1.89E-01 | 2.06E-02 | 1.24E-03 | 3.59E-02 | 4.51E+02 | 1.91E+01 | 1.44E+01 |
| GWP-luluc | kg $CO_2$ eq. | 7.85E-02 | 2.12E-02 | 7.06E-03 | 1.07E-01 | 7.82E-02 | 4.71E-05 | 1.29E-05 | 5.08E-03 | 5.55E-03 | 2.12E-03 | -2.76E-02 |
| GWP-total | kg $CO_2$ eq. | -4.97E+02 | 3.46E+01 | 8.23E+00 | -4.54E+02 | 1.17E+02 | 2.87E-01 | 1.07E-01 | 3.50E+01 | 4.55E+02 | 2.11E+01 | -3.21E+01 |
| ODP | kg CFC 11 eq. | 1.59E-05 | 7.00E-06 | 3.69E-07 | 2.32E-05 | 2.34E-05 | 8.82E-09 | 2.73E-09 | 7.59E-06 | 1.07E-07 | 6.08E-07 | -6.32E-06 |
| AP | mol $H^+$ eq. | 3.99E+00 | 1.38E-01 | 1.68E-02 | 4.15E+00 | 2.07E+00 | 1.09E-03 | 8.44E-04 | 2.12E-01 | 3.78E-02 | 1.72E-02 | -1.06E-01 |
| EP-freshwater | kg $PO_4^{3-}$ eq. | 3.21E+00 | 3.47E-03 | 1.43E-03 | 3.22E+00 | 7.89E-03 | 8.57E-05 | 7.65E-05 | 8.65E-04 | 1.67E-03 | 4.45E-04 | -3.54E-03 |
| EP-freshwater | kg P eq. | 1.15E+02 | 2.36E-02 | 6.10E-03 | 1.15E+02 | 2.00E-01 | 4.96E-04 | 3.03E-04 | 3.10E-02 | 1.50E-02 | 3.11E-02 | -2.26E-02 |
| EP-marine | kg N eq. | 2.38E+02 | 3.69E-02 | 4.53E-03 | 2.38E+02 | 5.15E-01 | 6.03E-04 | 2.00E-04 | 8.32E-02 | 1.42E-02 | 7.14E-02 | -3.08E-02 |
| EP-terrestrial | mol N eq. | 7.41E+00 | 4.02E-01 | 3.57E-02 | 7.84E+00 | 5.70E+00 | 2.97E-03 | 2.09E-03 | 9.13E-01 | 1.53E-01 | 6.40E-02 | -3.41E-01 |
| POCP | kg NMVOC eq. | 2.01E+00 | 1.00E-01 | 1.01E-02 | 2.12E+00 | 1.39E+00 | 7.59E-04 | 5.05E-04 | 2.22E-01 | 6.84E-02 | 2.02E-02 | -8.69E-02 |
| ADP-minerals&metals* | kg Sb eq. | 4.42E-04 | 2.04E-04 | 2.43E-05 | 6.71E-04 | 4.33E-04 | 4.23E-07 | 2.94E-07 | 4.10E-05 | 6.14E-06 | 6.71E-06 | -6.80E-05 |
| ADP-fossil* | MJ | 7.06E+03 | 4.92E+02 | 6.24E+01 | 7.61E+03 | 1.58E+03 | 1.79E+00 | 1.25E+00 | 4.80E+02 | 4.17E+01 | 4.74E+01 | -7.56E+02 |
| WDP | $m^3$ | 6.94E+01 | 2.08E+00 | 2.81E+01 | 9.95E+01 | 4.75E+00 | 7.41E-02 | 6.21E-02 | 5.71E-01 | 1.48E-01 | 2.04E+00 | -1.18E+01 |
| Acronyms | GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption | | | | | | | | | | | |

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

**Table 17-** Potential environmental impact – additional mandatory and voluntary indicators

| Results per 1 $m^3$ of CMPC SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-GHG[2] | kg $CO_2$ eq. | 2.82E+02 | 3.44E+01 | 3.64E+00 | 3.20E+02 | 1.16E+02 | 2.66E-01 | 1.06E-01 | 3.49E+01 | 3.55E+00 | 2.04E+00 | -4.65E+01 |
| *Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017* | | | | | | | | | | | | |

**Table 18-** Use of resources

| Results per 1 $m^3$ of CMPC SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | MJ | 8.87E+02 | 8.04E+00 | 3.43E+00 | 8.98E+02 | 1.89E+01 | 4.09E-01 | 3.90E-01 | 2.34E+00 | 5.35E+00 | 8.65E-01 | -3.21E+02 |
| PERM | MJ | 1.28E+04 | 0 | 6.68E-05 | 1.28E+04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 1.37E+04 | 8.04E+00 | 3.43E+00 | 1.37E+04 | 1.89E+01 | 4.09E-01 | 0.00E+00 | 2.34E+00 | 0.00E+00 | 8.65E-01 | -3.21E+02 |
| PENRE | MJ | 7.59E+03 | 5.22E+02 | 6.16E+01 | 8.17E+03 | 1.68E+03 | 1.91E+00 | 1.33E+00 | 5.10E+02 | 4.42E+01 | 5.04E+01 | -8.34E+02 |
| PENRM | MJ. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 7.59E+03 | 5.22E+02 | 6.16E+01 | 8.17E+03 | 1.68E+03 | 1.91E+00 | 0.00E+00 | 5.10E+02 | 0.00E+00 | 5.04E+01 | -8.34E+02 |
| SM | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| RSF | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NRSF | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| FW | $m^3$ | 8.06E-01 | 3.08E-02 | 3.97E-01 | 1.23E+00 | 7.12E-02 | 9.32E-04 | 6.32E-04 | 8.35E-03 | 3.82E-03 | 2.87E-02 | -1.61E-01 |
| Acronyms | PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water | | | | | | | | | | | |

[2] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

**Table 19-** Waste production

| Results per 1 m³ of CMPC SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| Hazardous waste disposed | kg | 3.60E-03 | 1.34E-03 | 1.76E-03 | 6.71E-03 | 3.02E-03 | 2.96E-06 | 1.40E-06 | 1.30E-03 | 2.41E-05 | 7.37E-05 | -9.36E-04 |
| Non-hazardous waste disposed | kg | 1.30E+01 | 1.59E+01 | 2.39E+00 | 3.13E+01 | 2.96E+01 | 1.92E-02 | 8.39E-03 | 5.27E+00 | 3.81E-01 | 1.90E+02 | -1.22E+00 |
| Radioactive waste disposed | kg | 6.32E-03 | 3.04E-03 | 1.09E-04 | 9.47E-03 | 1.03E-02 | 3.26E-06 | 3.82E-07 | 3.36E-03 | 1.60E-04 | 2.82E-04 | -6.01E-04 |

**Table 20-** Output flows

| Results per 1 m³ of CMPC SELEX® Plywood Products | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1** | **A2** | **A3** | **Tot.A1-A3** | **A4** | **A5** | **C1** | **C2** | **C3** | **C4** | **D** |
| Components for re-use | kg | 0 | 0 | 3.32E+01 | 3.32E+01 | 0 | 0 | 0 | 0 | 7.41E-02 | 0 | 0 |
| Material for recycling | kg | 0 | 0 | 4.22E+02 | 4.22E+02 | 0 | 0 | 0 | 0 | 1.81E+02 | 0 | 0 |
| Materials for energy recovery | kg | 0 | 0 | 3.98E+02 | 3.98E+02 | 0 | 0 | 0 | 0 | 4.25E+01 | 0 | 0 |
| Exported energy, electricity | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exported energy, thermal | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Table 21-** Information on biogenic carbon content

| Results per 1 m³ of CMPC SELEX® Plywood Products | | |
|---|---|---|
| **BIOGENIC CARBON CONTENT** | **Unit** | **QUANTITY** |
| Biogenic carbon content in product | kg C | -332 |
| Biogenic carbon content in packaging | kg C | -0.004 |

*Note: 1 kg biogenic carbon is equivalent to 44/12 kg $CO_2$.*

# Additional information

The end-of-life modelling is based on the most realistic scenario, using average values for waste treatment in the different countries where CMPC's plywood is sold. Figure 8 below presents the modelled scenario.

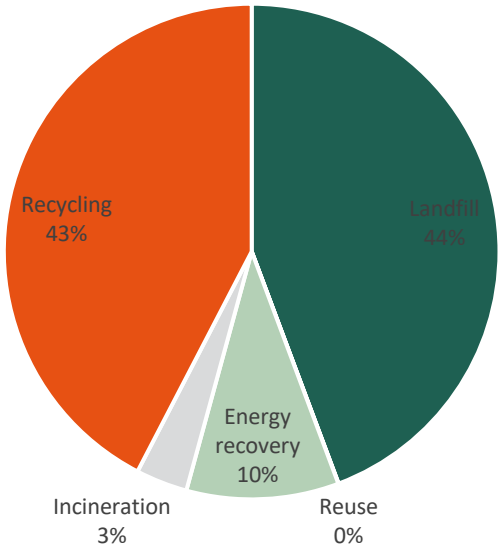


**Figure 8-** End of life modelled scenario.

Given the end-of-life scenarios of plywood, module D was modelled with the following assumptions:

- Energy recovery: since most of the energy recovery happens in Europe, the assumption is made that plywood to recovery avoids the production of heat through natural gas. The specific energy avoided is based on the calorific value of wood pellets (17MJ/kg of product).
- Reuse: assumes the product is used without any modification, therefore the production of plywood is avoided.
- Recycling: it assumes that plywood converts into wood chips, with a loss of quality of the product. The correction factor is estimated at 0.2.

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# Appendix A. Impact variation across products

| | GWP-fossil | GWP-biogenic | GWP-luluc | GWP-total | ODP | AP | EP-freshwater | EP-freshwater2 | EP-marine | EP-terrestrial | POCP | ADP-minerals&metals* | ADP-fossil* | WDP | GWP-GHG[1] | PERE | PERM | PERT | PENRE | PENRM | PENRT | SM | RSF | NRSF | FW | Hazardous waste disposed | Non-hazardous waste disposed | Radioactive waste disposed | Components for re-use | Materials for recycling | Exported energy, electricity | Exported energy, thermal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A/C-6.5 | 4% | -1% | 2% | -5% | 2% | 4% | 0% | 0% | 0% | 2% | 3% | 4% | 4% | 3% | 4% | 3% | 0% | 0% | 4% | 0% | 4% | - | - | 0% | 2% | 1% | 3% | 2% | 0% | 0% | 0% | 0% |
| A/C-12 | 9% | 0% | 1% | -6% | 2% | 8% | 0% | 0% | 0% | 3% | 4% | 2% | 9% | 1% | 9% | 0% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | 1% | 1% | 3% | 2% | 0% | 0% | 0% | 0% |
| A/C-15 | -6% | 0% | -2% | 5% | -2% | -6% | 0% | 0% | 0% | -2% | -3% | -2% | -7% | -1% | -6% | -1% | 0% | 0% | -7% | 0% | -7% | 0% | 0% | 0% | -1% | -1% | -2% | -2% | 0% | 0% | 0% | 0% |
| A/C-18 | 2% | 0% | -1% | -1% | 0% | 2% | 0% | 0% | 0% | 0% | 1% | 0% | 3% | 0% | 2% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| A/C-21 | -2% | 0% | -1% | 1% | 0% | -2% | 0% | 0% | 0% | -1% | -1% | -1% | -2% | 0% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | 0% | -1% | -1% | 0% | 0% | 0% | 0% | 0% |
| A/C-25 | 5% | 1% | -1% | -1% | 0% | 5% | 0% | 0% | 0% | 1% | 2% | -1% | 6% | -1% | 5% | -2% | 0% | 0% | 6% | 0% | 6% | 0% | 0% | 0% | -1% | -1% | 0% | 0% | 0% | 0% | 0% | 0% |
| A/C-30 | 9% | 0% | 1% | -7% | 2% | 8% | 0% | 0% | 0% | 3% | 5% | 2% | 9% | 1% | 9% | 1% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | 1% | 1% | 3% | 2% | 0% | 0% | 0% | 0% |
| B/B Deco-6.5 | 4% | -1% | 4% | -5% | 2% | 4% | 0% | 0% | 0% | 2% | 3% | -1% | 4% | 0% | 4% | 3% | 0% | 0% | 4% | 0% | 4% | 0% | 0% | 0% | 0% | 1% | 3% | 2% | 0% | 0% | 0% | 0% |
| B/B Deco-12 | 9% | 0% | 2% | -6% | 1% | 8% | 0% | 0% | 0% | 3% | 4% | -2% | 9% | -2% | 9% | 0% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | -2% | 1% | 3% | 2% | 0% | 0% | 0% | 0% |
| B/B Deco-15 | -7% | 0% | -1% | 5% | -2% | -6% | 0% | 0% | 0% | -2% | -3% | -5% | -7% | -3% | -7% | -1% | 0% | 0% | -7% | 0% | -7% | 0% | 0% | 0% | -3% | -1% | -2% | -1% | 0% | 0% | 0% | 0% |
| B/B Deco-18 | 2% | 0% | 0% | -1% | 0% | 2% | 0% | 0% | 0% | 0% | 1% | -4% | 2% | -2% | 2% | -1% | 0% | 0% | 2% | 0% | 2% | 0% | 0% | 0% | -2% | -1% | 0% | 0% | 0% | 0% | 0% | 0% |
| B/B Deco-21 | -2% | 0% | 0% | 1% | -1% | -2% | 0% | 0% | 0% | -1% | -1% | -4% | -2% | -2% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | -2% | -1% | 0% | 0% | 0% | 0% | 0% | 0% |
| B/B Deco-25 | 5% | 1% | 0% | -1% | -1% | 4% | 0% | 0% | 0% | 1% | 2% | -4% | 5% | -3% | 5% | -2% | 0% | 0% | 5% | 0% | 5% | 0% | 0% | 0% | -3% | -1% | 0% | 0% | 0% | 0% | 0% | 0% |
| B/B Deco-30 | 9% | 0% | 2% | -6% | 1% | 8% | 0% | 0% | 0% | 3% | 4% | -1% | 9% | -1% | 9% | 1% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | -1% | 1% | 3% | 2% | 0% | 0% | 0% | 0% |
| B/Cp-6.5 | 4% | -1% | 3% | -5% | 3% | 4% | 0% | 0% | 0% | 3% | 3% | 6% | 4% | 3% | 4% | 3% | 0% | 0% | 4% | 0% | 4% | 0% | 0% | 0% | 3% | 2% | 3% | 2% | 0% | 0% | 0% | 0% |
| B/Cp-12 | 9% | 0% | 2% | -6% | 2% | 8% | 0% | 0% | 0% | 3% | 5% | 4% | 10% | 1% | 9% | 0% | 0% | 0% | 10% | 0% | 10% | 0% | 0% | 0% | 2% | 1% | 3% | 2% | 0% | 0% | 0% | 0% |
| B/Cp-15 | -6% | 0% | -1% | 5% | -1% | -6% | 0% | 0% | 0% | -2% | -3% | 0% | -6% | 0% | -6% | -1% | 0% | 0% | -6% | 0% | -6% | 0% | 0% | 0% | 0% | -1% | -2% | -1% | 0% | 0% | 0% | 0% |
| B/Cp-18 | 3% | 0% | 0% | -1% | 0% | 2% | 0% | 0% | 0% | 1% | 1% | 2% | 3% | 0% | 3% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B/Cp-21 | -2% | 0% | 0% | 1% | 0% | -2% | 0% | 0% | 0% | 0% | -1% | 1% | -2% | 1% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| B/C-6.5 | 4% | -1% | 3% | -5% | 3% | 4% | 0% | 0% | 0% | 3% | 3% | 6% | 4% | 3% | 4% | 3% | 0% | 0% | 4% | 0% | 4% | 0% | 0% | 0% | 3% | 2% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| B/C-12 | 9% | 0% | 2% | -6% | 2% | 8% | 0% | 0% | 0% | 3% | 5% | 4% | 10 % | 1% | 9% | 0% | 0% | 0% | 10 % | 0% | 10 % | 0% | 0% | 0% | 2% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| B/C-15 | -6% | 0% | -1% | 5% | -1% | -6% | 0% | 0% | 0% | -2% | -3% | 0% | -6% | 0% | -6% | -1% | 0% | 0% | -6% | 0% | -6% | 0% | 0% | 0% | 0% | -1% | -2% | -1% | 0% | 0% | 0% | 0% | 0% |
| B/C-18 | 3% | 0% | 0% | -1% | 0% | 2% | 0% | 0% | 0% | 1% | 1% | 2% | 3% | 0% | 3% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| B/C-21 | -2% | 0% | 0% | 1% | 0% | -2% | 0% | 0% | 0% | 0% | -1% | 1% | -2% | 1% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| B/C-25 | 6% | 1% | -1% | -2% | 0% | 5% | 0% | 0% | 0% | 1% | 2% | 1% | 6% | -1% | 6% | -2% | 0% | 0% | 6% | 0% | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| B/C-30 | 9% | 0% | 2% | -7% | 2% | 8% | 0% | 0% | 0% | 3% | 5% | 4% | 10 % | 1% | 9% | 1% | 0% | 0% | 10 % | 0% | 10 % | 0% | 0% | 0% | 1% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| B/D Estructural AUS-7 | -1% | -1% | 1% | -1% | 1% | -1% | 0% | 0% | 0% | 0% | 0% | 2% | -1% | 2% | -1% | 2% | 0% | 0% | -1% | 0% | -1% | 0% | 0% | 0% | 2% | 0% | 1% | 1% | 0% | 0% | 0% | 0% | 0% |
| B/D Estructural AUS-12 | 9% | 0% | 1% | -6% | 2% | 8% | 0% | 0% | 0% | 3% | 4% | 2% | 9% | 1% | 9% | 0% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | 1% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| B/D Estructural AUS-15 | -6% | 0% | -2% | 5% | -2% | -6% | 0% | 0% | 0% | -2% | -3% | -2% | -7% | -1% | -6% | -1% | 0% | 0% | -7% | 0% | -7% | 0% | 0% | 0% | -1% | -1% | -2% | -2% | 0% | 0% | 0% | 0% | 0% |
| B/D Estructural AUS-18 | 2% | 0% | -1% | -1% | 0% | 2% | 0% | 0% | 0% | 0% | 1% | 0% | 3% | 0% | 2% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| B/D Estructural AUS-21 | -2% | 0% | -1% | 1% | 0% | -2% | 0% | 0% | 0% | -1% | -1% | -1% | -2% | 0% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | 0% | -1% | -1% | 0% | 0% | 0% | 0% | 0% | 0% |
| B/D Estructural AUS-25 | 5% | 1% | -1% | -1% | 0% | 5% | 0% | 0% | 0% | 1% | 2% | -1% | 6% | -1% | 5% | -2% | 0% | 0% | 6% | 0% | 6% | 0% | 0% | 0% | -1% | -1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cp/C-6.5 | 4% | -1% | 3% | -5% | 3% | 4% | 0% | 0% | 0% | 3% | 3% | 6% | 4% | 3% | 4% | 3% | 0% | 0% | 4% | 0% | 4% | 0% | 0% | 0% | 3% | 2% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| Cp/C-12 | 9% | 0% | 2% | -6% | 2% | 8% | 0% | 0% | 0% | 3% | 5% | 4% | 10 % | 1% | 9% | 0% | 0% | 0% | 10 % | 0% | 10 % | 0% | 0% | 0% | 2% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| Cp/C-15 | -6% | 0% | -1% | 5% | -1% | -6% | 0% | 0% | 0% | -2% | -3% | 0% | -6% | 0% | -6% | -1% | 0% | 0% | -6% | 0% | -6% | 0% | 0% | 0% | 0% | -1% | -2% | -1% | 0% | 0% | 0% | 0% | 0% |
| Cp/C-18 | 3% | 0% | 0% | -1% | 0% | 2% | 0% | 0% | 0% | 1% | 1% | 2% | 3% | 0% | 3% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cp/C-21 | -2% | 0% | 0% | 1% | 0% | -2% | 0% | 0% | 0% | 0% | -1% | 1% | -2% | 1% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Cp/C-25 | 6% | 1% | -1% | -2% | 0% | 5% | 0% | 0% | 0% | 1% | 2% | 1% | 6% | -1% | 6% | -2% | 0% | 0% | 6% | 0% | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

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| C/D-6.5 | 4% | -1% | 2% | -5% | 2% | 4% | 0% | 0% | 0% | 2% | 3% | 1% | 4% | 1% | 4% | 3% | 0% | 0% | 4% | 0% | 4% | 0% | 0% | 0% | 1% | 5% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| C/D-12 | 9% | 0% | 1% | -6% | 1% | 8% | 0% | 0% | 0% | 3% | 4% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | 0% | 4% | 2% | 2% | 0% | 0% | 0% | 0% | 0% |
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| C/D-18 | 2% | 0% | -1% | -1% | 0% | 2% | 0% | 0% | 0% | 0% | 1% | -2% | 3% | -1% | 2% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | -1% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| C/D-21 | -2% | 0% | -1% | 1% | -1% | -2% | 0% | 0% | 0% | -1% | -1% | -3% | -2% | -1% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | -1% | 2% | -1% | -1% | 0% | 0% | 0% | 0% | 0% |
| C/D-25 | 5% | 1% | -2% | -1% | -1% | 5% | 0% | 0% | 0% | 1% | 2% | -3% | 6% | -2% | 5% | -2% | 0% | 0% | 6% | 0% | 6% | 0% | 0% | 0% | -2% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| C/D-30 | 9% | 0% | 1% | -6% | 1% | 8% | 0% | 0% | 0% | 3% | 5% | 0% | 9% | 0% | 9% | 1% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | 0% | 4% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| CD No Estructural AUS-6.5 | 4% | -1% | 3% | -5% | 3% | 4% | 0% | 0% | 0% | 3% | 3% | 6% | 4% | 3% | 4% | 3% | 0% | 0% | 4% | 0% | 4% | 0% | 0% | 0% | 3% | 2% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| CD No Estructural AUS-12 | 9% | 0% | 2% | -6% | 2% | 8% | 0% | 0% | 0% | 3% | 5% | 4% | 10 % | 1% | 9% | 0% | 0% | 0% | 10 % | 0% | 10 % | 0% | 0% | 0% | 2% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| CD No Estructural AUS-15 | -6% | 0% | -1% | 5% | -1% | -6% | 0% | 0% | 0% | -2% | -3% | 0% | -6% | 0% | -6% | -1% | 0% | 0% | -6% | 0% | -6% | 0% | 0% | 0% | 0% | -1% | -2% | -1% | 0% | 0% | 0% | 0% | 0% |
| CD No Estructural AUS-18 | 3% | 0% | 0% | -1% | 0% | 2% | 0% | 0% | 0% | 1% | 1% | 2% | 3% | 0% | 3% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| CD No Estructural AUS-21 | -2% | 0% | 0% | 1% | 0% | -2% | 0% | 0% | 0% | 0% | -1% | 1% | -2% | 1% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| CD No Estructural AUS-25 | 6% | 1% | -1% | -2% | 0% | 5% | 0% | 0% | 0% | 1% | 2% | 1% | 6% | -1% | 6% | -2% | 0% | 0% | 6% | 0% | 6% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| CD No Estructural AUS-30 | 9% | 0% | 2% | -7% | 2% | 8% | 0% | 0% | 0% | 3% | 5% | 4% | 10 % | 1% | 9% | 1% | 0% | 0% | 10 % | 0% | 10 % | 0% | 0% | 0% | 1% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| RANURADOS-12 | 9% | 0% | 2% | -6% | 1% | 8% | 0% | 0% | 0% | 3% | 4% | -2% | 9% | -2% | 9% | 0% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | -2% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| RANURADOS-15 | -7% | 0% | -1% | 5% | -2% | -6% | 0% | 0% | 0% | -2% | -3% | -5% | -7% | -3% | -7% | -1% | 0% | 0% | -7% | 0% | -7% | 0% | 0% | 0% | -3% | -1% | -2% | -1% | 0% | 0% | 0% | 0% | 0% |

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| SELEX® PLYWOOD T&G-12 | 9% | 0% | 1% | -6% | 2% | 8% | 0% | 0% | 0% | 3% | 4% | 2% | 9% | 1% | 9% | 0% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | 1% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| SELEX® PLYWOOD T&G-15 | -6% | 0% | -2% | 5% | -2% | -6% | 0% | 0% | 0% | -2% | -3% | -2% | -7% | -1% | -6% | -1% | 0% | 0% | -7% | 0% | -7% | 0% | 0% | 0% | -1% | -1% | -2% | -2% | 0% | 0% | 0% | 0% | 0% |
| SELEX® PLYWOOD T&G-18 | 2% | 0% | -1% | -1% | 0% | 2% | 0% | 0% | 0% | 0% | 1% | 0% | 3% | 0% | 2% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| SELEX® PLYWOOD T&G-21 | -2% | 0% | -1% | 1% | 0% | -2% | 0% | 0% | 0% | -1% | -1% | -1% | -2% | 0% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | 0% | -1% | -1% | 0% | 0% | 0% | 0% | 0% | 0% |
| CAB-7 | -1% | -1% | 1% | -1% | 1% | -1% | 0% | 0% | 0% | 0% | 0% | 2% | -1% | 2% | -1% | 2% | 0% | 0% | -1% | 0% | -1% | 0% | 0% | 0% | 2% | 0% | 1% | 1% | 0% | 0% | 0% | 0% | 0% |
| CAB-12 | 9% | 0% | 1% | -6% | 2% | 8% | 0% | 0% | 0% | 3% | 4% | 2% | 9% | 1% | 9% | 0% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | 1% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |
| CAB-18 | 2% | 0% | -1% | -1% | 0% | 2% | 0% | 0% | 0% | 0% | 1% | 0% | 3% | 0% | 2% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| RECH-7 | -1% | -1% | 1% | -1% | 1% | -1% | 0% | 0% | 0% | 0% | 0% | 2% | -1% | 2% | -1% | 2% | 0% | 0% | -1% | 0% | -1% | 0% | 0% | 0% | 2% | 0% | 1% | 1% | 0% | 0% | 0% | 0% | 0% |
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| RECH-15 | -6% | 0% | -2% | 5% | -2% | -6% | 0% | 0% | 0% | -2% | -3% | -2% | -7% | -1% | -6% | -1% | 0% | 0% | -7% | 0% | -7% | 0% | 0% | 0% | -1% | -1% | -2% | -2% | 0% | 0% | 0% | 0% | 0% |
| RECH-18 | 2% | 0% | -1% | -1% | 0% | 2% | 0% | 0% | 0% | 0% | 1% | 0% | 3% | 0% | 2% | -1% | 0% | 0% | 3% | 0% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| RECH-21 | -2% | 0% | -1% | 1% | 0% | -2% | 0% | 0% | 0% | -1% | -1% | -1% | -2% | 0% | -2% | 0% | 0% | 0% | -2% | 0% | -2% | 0% | 0% | 0% | 0% | -1% | -1% | 0% | 0% | 0% | 0% | 0% | 0% |
| RECH-25 | 5% | 1% | -1% | -1% | 0% | 5% | 0% | 0% | 0% | 1% | 2% | -1% | 6% | -1% | 5% | -2% | 0% | 0% | 6% | 0% | 6% | 0% | 0% | 0% | -1% | -1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| RECH-30 | 9% | 0% | 1% | -7% | 2% | 8% | 0% | 0% | 0% | 3% | 5% | 2% | 9% | 1% | 9% | 1% | 0% | 0% | 9% | 0% | 9% | 0% | 0% | 0% | 1% | 1% | 3% | 2% | 0% | 0% | 0% | 0% | 0% |

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