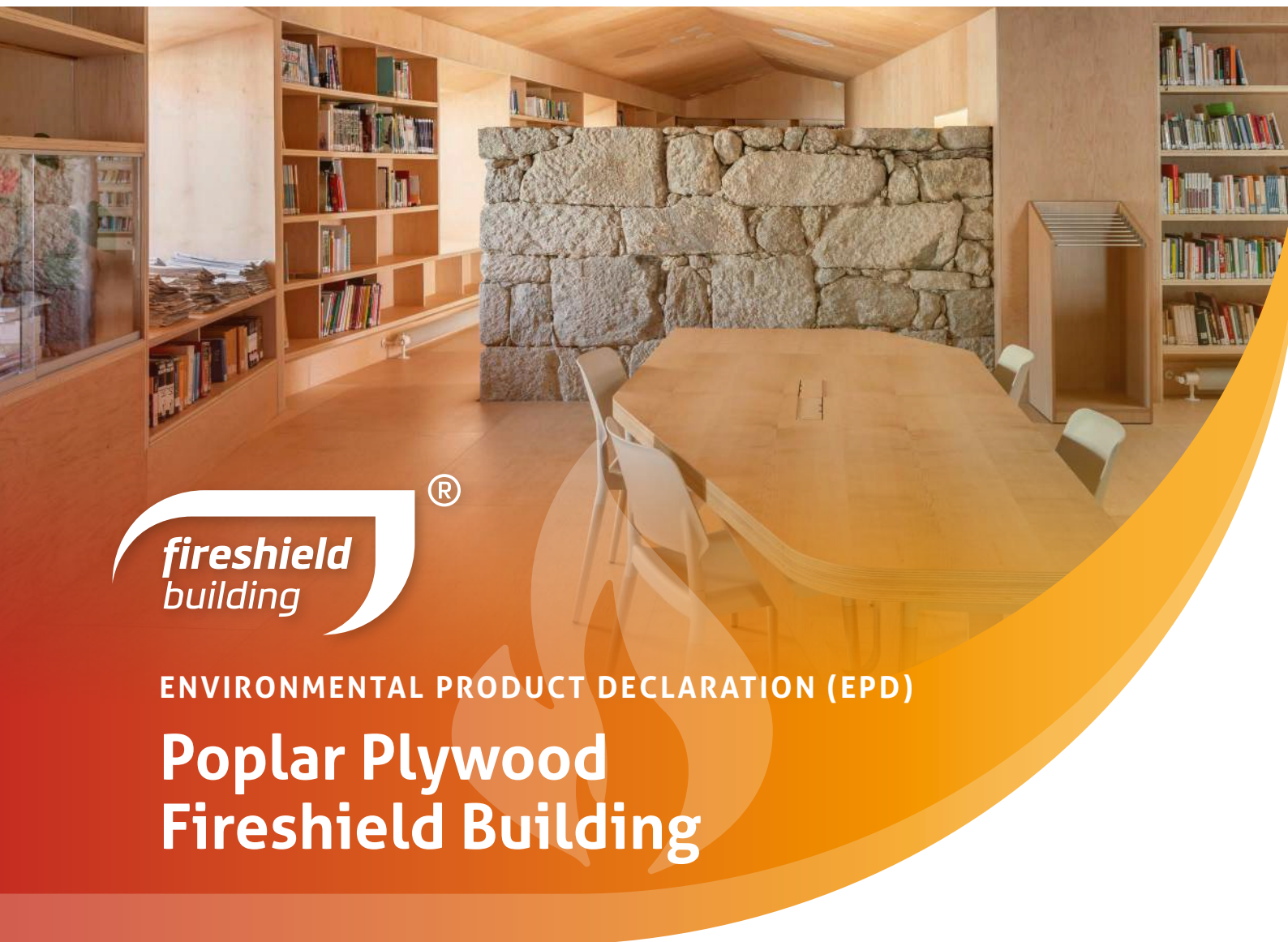




ENVIRONMENTAL PRODUCT DECLARATION (EPD)

Poplar Plywood Fireshield Building

EPD

Programme: The International EPD System
www.environdec.com

Programme operator: EPD International

EPD registration number: S-P-05373

Registration date: 2022-01-14

Revision date: 2022-07-07

Validity: 2026-12-26

Geographical scope: Global

EPD OWNER

GRUPO GARNICA PLYWOOD S.A.U.

Web: www.garnica.one

E-mail: quality@garnica.one

Complete report:



In accordance
with **ISO 14025**
and **EN 15804**

PCR 2012:01 FOR
CONSTRUCTION PRODUCTS
AND CONSTRUCTION
SERVICES (V 2. 33), CPC 314
BOARDS AND PANELS from:

garnica

Challenge the ordinary

ABOUT GARNICA

Introduction



A benchmark in the market

Garnica is a global leader in the plywood industry. Our goal is to surprise our clients, wherever they are in the world, with an outstanding product using a unique production model based on sustainability and innovation.



Challenging the ordinary since 1941

Since its founding in 1941 as a sawmill in La Rioja (Spain), Garnica has been a pioneer in exploring new ways to manage and use natural resources intelligently and to manufacture exceptional plywood solutions. Garnica has come a long way in that time, always in search of excellence, steadily progressing without losing sight of the future.



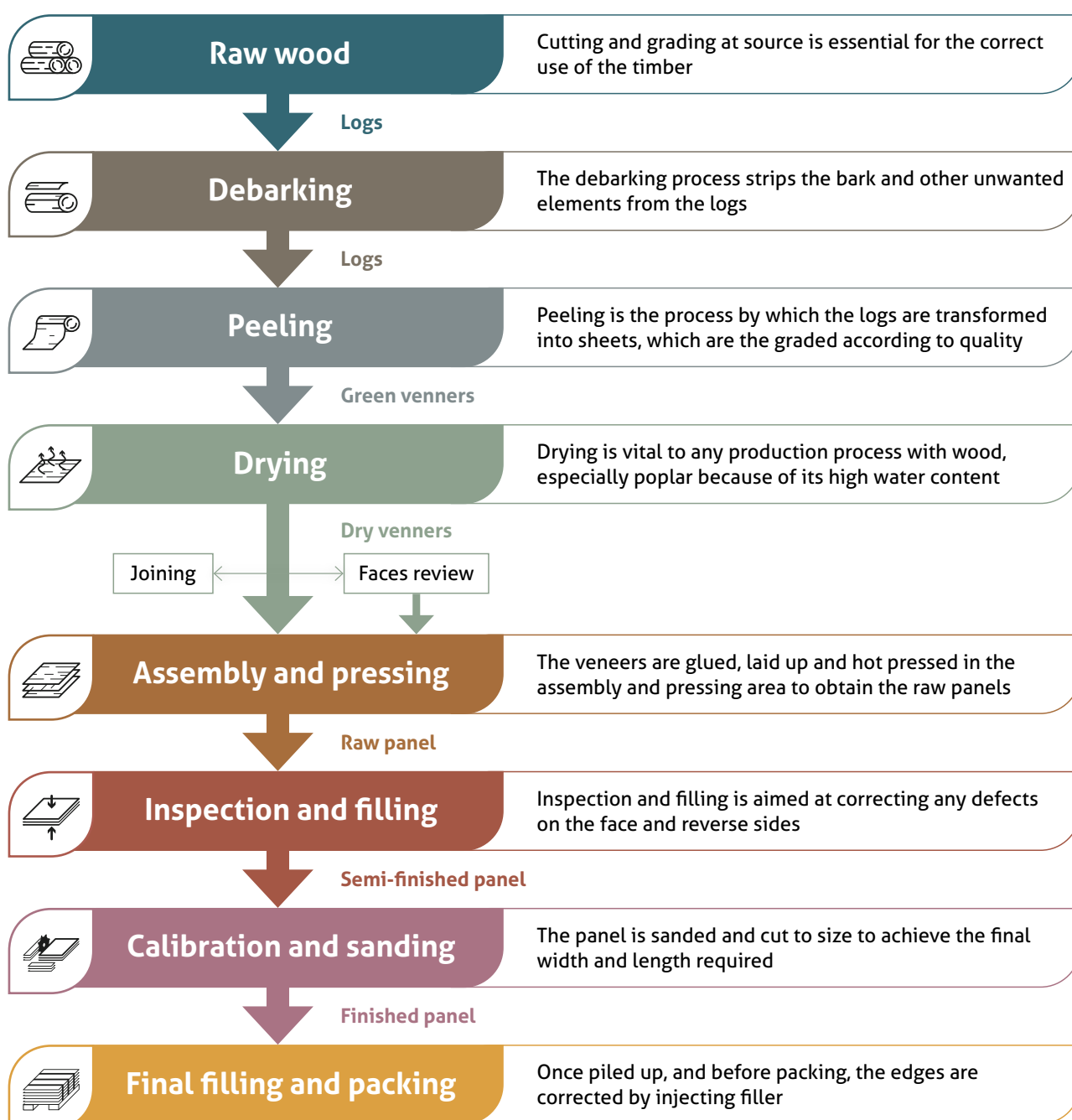
European manufacturer

Garnica is strategically located near five of Europe's largest poplar plantations. It has central headquarters and seven production centres, five in Spain and two in France.

POPLAR PLYWOOD PRODUCTION PROCESS

How we do it?

This document applies to interior use lightweight panels made entirely from sustainably planted European poplar panels manufactured by Garnica.



FIRESHIELD BUILDING

Product definition

Fire rated plywood for construction modified with an innovative treatment that makes the entire panel exceptionally fire-resistant, even after sanding or machining. Its Euroclass B-s1-d0, ASTM E-84 Class A & CAN/ULC S102-10 –the highest for wood– confirm its excellent fire resistance results, since it significantly reduces the rate of carbonization, smoke generation and flame propagation, with no flaming particle fallout. Maximum sustainability and lightness thanks to its composition based on fast-growing European plantation wood.



Gluing: Class I (interior use) according to EN 636

Emissions: Class E1 according to EN 13986

Planned applications

It is intended for indoor use:

- Public construction projects: structures, floors, walls, ceilings, furniture.
- Restaurant construction projects
- Auditoriums, schools and other public buildings.
- Exhibitions, shopfitting.
- DIY projects.
- Euroclass B-S1-d0, ASTM E-84 Class A & CAN/ULC S102-10 accredit its excellent fire resistance tests.



FUNCTIONAL UNIT

The functional unit is 1 m³ of wood panels, including packaging.

SYSTEM BOUNDARIES

Cradle to gate with options. Modules A1 to A3.

TIME REPRESENTATIVENESS

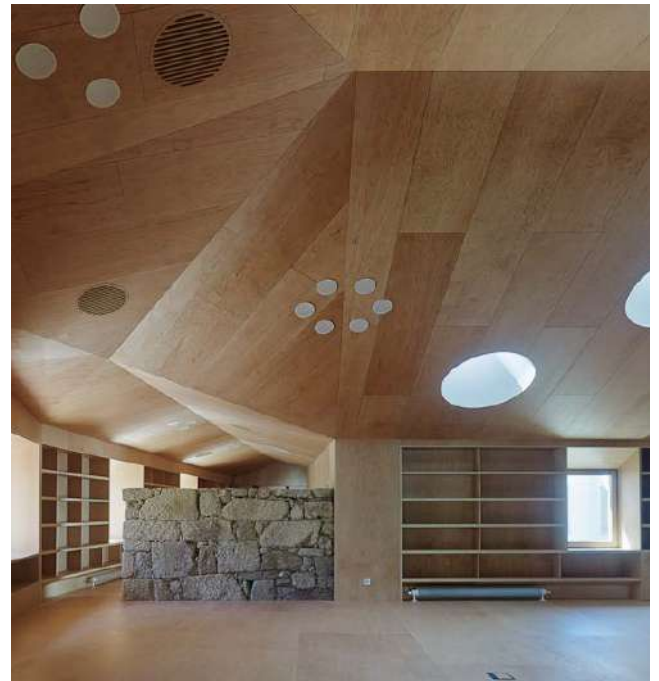
The inventory of the LCA study is based on the 2019 production for wood panels.

ALLOCATIONS

Allocation criteria are based on volume.

DATABASE AND LCA SOFTWARE USED

The LCA was modelled with SimaPro 8.0.5 LCA software using the impact factors and the Ecoinvent database (V3.01).



ENVIRONMENTAL PRODUCT DESIGN

LCA calculation

The limits that have been selected for the system cover the manufacture of wood panels, including the production of raw materials up to the point of the final packed product at the factory gate (life cycle designated from Cradle to Gate), following the guidelines of PCR 2012: 01 for construction products and services.

MATERIALS AND ADDITIVES

Wood panels with a thickness of 15 mm and an average density of 450 kg/m^3 , have the following composition:

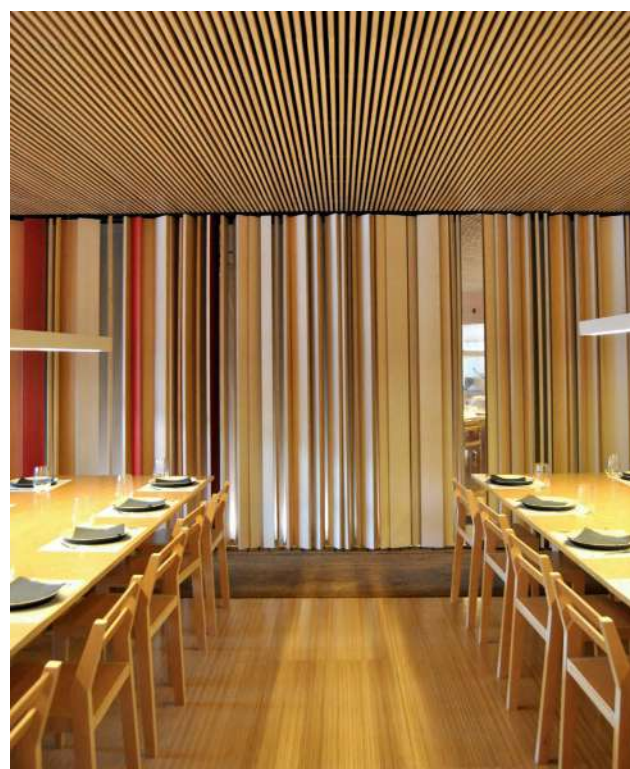
- **Wood (poplar wood):** 80-88%
- **Adhesive:** mix of different organic and inorganic substances containing melamine urea-formaldehyde resin (MUF), water, etc.
- **Inorganic salts solution** for fire rating treatment

The limits that have been selected for the system cover the manufacture of wood panels, including the production of raw materials up to the point of the final packed product at the factory gate (life cycle designated from Cradle to Gate), following the guidelines of PCR 2012: 01 for construction products and services.

A1) Raw material supply

A2) Transport to the manufacturer

A3) Manufacturing



The life cycle model that was chosen is “Cradle to Gate”, covering all operations required for manufacturing the panels, from felling the timber and cutting the wood until the fully finished product is obtained.

The data that feed the calculation process represent the manufacturing process of wooden panels for the production period. This is primary data for the most part, collected directly from reliable sources that can be divided into the following categories:

- Delivery notes from delivered or supplied material.
- Map distances.
- Invoices.
- Direct measurements.
- Counters.
- Product data sheets.

The Environmental performance considered for the evaluation of impact associated with the production under 2012 v 2.33 PCR are as follows:

GWP - Global warming potential
ODP - Ozone layer depletion
AP - Acidification potential
EP - Eutrophication potential
POCP - Photochemical oxidant formation potential
ADPE - Abiotic depletion potential – Elements
ADPF - Abiotic depletion potential – Fossil
WDP - Water Scarcity Footprint
HT - Human toxicity

IMPACT CATEGORY	UNIT	Impact assessment per functional unit (1 m ³)	Impact assessment per unit of board panel
GWP	kg CO ₂ eq	2,25E+02	1,03E+01
ODP	kg CFC-11 eq	3,31E-05	1,51E-06
AP	kg SO ₂ eq	1,21E+00	5,55E-02
EP	kg PO ₄ ³⁻ eq	4,78E-01	2,19E-02
POCP	kg C ₂ H ₄ eq.	6,80E-01	3,11E-02
ADPE	kg Sb eq	3,42E-04	1,56E-05
ADPF	MJ	3,27E+03	1,49E+02
WDP	m ³	5,14E+00	2,35E-01
HT	kg 1,4-DB eq	2,76E+01	1,26E+00

ADDITIONAL INFORMATION

CO₂ stored

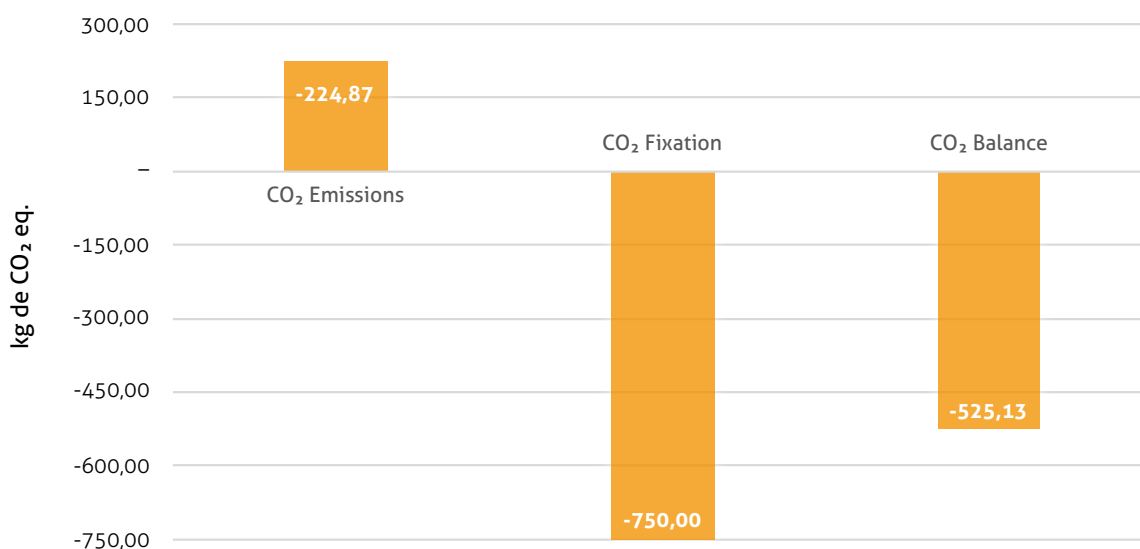
The amount of CO₂ stored in the product was considered for achieving this balance, according to EN 16449. The formula used for calculating this CO₂ content is indicated in point 5 of EN 16449:2014 Wood and wood-based products - Calculation of the biogenic carbon content of wood and conversion to carbon dioxide.

The CO₂ balance in manufacturing 1 m³ of Fireshield board [A1+A2+A3] generates 224.87 kg of CO₂ per m³. A total of 750 kg of CO₂ per m³ is the biogenic carbon content (according to EN 16449) in Fireshield board and the overall balance is -525.13 kg CO₂ eq.

This calculation can also be performed based on a standard panel in order to know its environmental performance values in this impact category. The company's standard panel is understood as the panel with

dimensions of 2500 x 1220 x 15 mm. 1 unit of Fireshield panel [A1+A2+A3] generates 10.28 kg of CO₂ per unit. A total of 34.29 kg of CO₂ per unit is the biogenic carbon content (according to EN 16449) in Fireshield panel and the overall balance is -24.01 kg CO₂ eq.

Figure 1. CO₂ Balance in Garnica Fireshield panel



Verification

This verification has been made under PCR 2012:01 Construction products and Construction services v2.33 and the Environdec's Program General Instructions.

The declaration is complete and contains:

- *Product definition and physical data related to manufacturing.*
- *Details of inputs and their origin.*
- *Description of how the product is manufactured.*
- *Data on the conditions of use, and the final phase of life.*
- *Results of the evaluation of the life cycle.*
- *Evidence, verification and testing.*

Independent verification according to ISO 14025:2006

☐

EPD process certification

☒

EPD verification

Procedure for follow-up of data during EPD validity involves third party verifier:

☐

Yes

☒

No

Third party verifier:

Anxo Mourelle-Álvarez

EPD International Verifier - Spain

Signature:





EPD

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