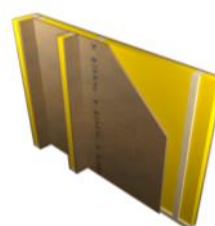


ENVIRONMENTAL PRODUCT DECLARATION (EPD)



ENVIRONMENTAL PRODUCT DECLARATION FOR PANNER FOR PARTITION AND WALL USE





PCR 2012:01 CONSTRUCTION PRODUCTS AND CONSTRUCTION SERVICES
CPC 314 BOARDS AND PANELS

 FINSA <i>soluciones en madera</i>	PANNER <small>engineered by FINSA</small>	Company: Website:	FINANCIERA MADERERA S.A www.finsa.com , www.panner.es
		Registration no.: Revision Date: Validity:	S-P- 01023 2019-01-16 2022-01-26
		ECO EPD Reference number	00000498

This environmental product declaration has been prepared in accordance with ISO 14025 and EN 15804. The geographical scope of this EPD is international. The verifier and the program operator are not responsible for any claims about the product or the legality of the product.

GENERAL INFORMATION

Summary Environmental product declaration	
EPD® International System Anxo Mourelle Álvarez. EPD Verifier	Verified by
FINANCIERA MADERERA S.A. National Road N-550 km 57 15890 Santiago de Compostela (A Coruña) Spain	Owners declaration by
<p>The products to be verified herein are the raw wood based particleboards, commercially designated as PANNER.</p> <p>The present environmental product declaration complies with standard ISO 14025 and describes the environmental value of the construction product described in the present document.</p> <p>Its purpose is to promote compatible and sustainable environmental development of related construction methods.</p> <p>All relevant environmental data are disseminated in the present declaration which shall be submitted for validation.</p> <p>Reference PCR document: PCR 2012:01 Construction products and Construction services V 2.01 DATE 2016-03-09.</p>	Declaration as construction products
<p>26th January 2022⁽¹⁾</p> <p>⁽¹⁾ Note: unless there is a variation greater than 10% on the environmental effects in any of the categories of impact.</p>	Validity
<p>This declaration is complete in itself and contains the following:</p> <ul style="list-style-type: none"> - The product definition and physical data related to the construction - Details on the base materials and on the origins thereof - Descriptions on how the product is manufactured - Instructions on how to process the product - Data on the conditions of use, unusual effects, and on the end of the product's life cycle - The results of the life cycle analysis - Evidence, verifications and tests 	Contents of the declaration
26 January 2017	Issuing date
Sergio Blanco. FINSA Business Unit Director	Manufacturer
Anxo Mourelle Álvarez. EPD Verifier	Verified by
 	Signatures
<p>Sergio Blanco. FINSA Business Unit Director</p> <p>Anxo Mourelle Álvarez. EPD Verifier</p>	

<p>Raw particleboards are panel-like products that comply with standards EN 312. They are regarded as reliable products used as raw material for the construction of walls. There are different commercial thicknesses for the Panner board:</p> <ul style="list-style-type: none"> - PANNER® 12 mm - PANNER® 15 mm - PANNER® 18 mm 	Product description
<p>Particleboards have a smooth and homogeneous surface that tolerates any type of coating. Forty years in the market endorse it as a reliable raw material in all those applications.</p>	Applications
<p>The Life Cycle Analysis (LCA) was carried out according to standards ISO 14025, ISO 14040, ISO 14044 and EN 15804. Both specific data from the production of the product under analysis as well as the following data bases were used: Ecoinvent 3.1. The methods used for calculating the categories of impact were CML-IA BASELINE 4.7 (January 2016) and the Environmental Design of Industrial Products Method (EDIP) 2003.</p> <p>The life cycle analysis covers the production of raw materials and energy; the transportation of raw materials; and the actual manufacturing stage, all the way up to the expedition stage. The functional unit under consideration is 1 m2 of particleboard panel for partition and wall use for different thicknesses:</p> <ul style="list-style-type: none"> - 12mm - 15mm - 18mm 	Scope of application of the LCA
<p>In addition, the environmental product declaration also considers:</p> <ul style="list-style-type: none"> - That formaldehyde complies with standard EN ISO 12460-5 (Aitim Certification) - The CARB P2 Certification 	Other evidence and verifications
<p>2019-01-16:</p> <ul style="list-style-type: none"> - section 5.4 about the considered EOL scenario rewritten for better clarification. - Module C4 identified as "MND" (module not declared), instead of "0", for better understanding of the real scope of our LCA. 	Update & revisions

RESULTS

Environmental impact of 1m2 of PANNER 12 mm thick

PANNER (per m2 of 12 mm thick)

Category	Unit	Product stage [A1/A2/A3]	Construction process stage [A4]	Use Stage [B1/B2/B3/B4 /B5/B6/B7]	End of life [C1/C3]	TOTAL
Global warming, (GWP100)	kg CO2 eq/m2	3,55E+00	3,29E-01	0	0	3,88E+00
Ozone depletion	kg CFC 11 eq/m2	2,13E-03	5,71E-08	0	0	2,13E-03
Acidification of land and water	kg SO2/m2	7,49E-02	1,00E-03	0	0	7,59E-02
Eutrophication	kg PO43- eq/m2	1,42E-02	1,91E-04	0	0	1,44E-02
Photochemical ozone creation	kg C2H4 eq/ m2	1,57E-03	5,62E-05	0	0	1,62E-03
Depletion of abiotic resources (elements)	kg Sb/m2	3,94E+01	7,63E-07	0	0	3,94E+01
Depletion of abiotic resources (fossil)	MJ/m2	4,91E+01	5,42E+00	0	0	5,45E+01

Environmental impact of 1m2 of PANNER 15 mm thick

PANNER (per m2 of 15 mm thick)

Category	Unit	Product stage A1/A2/A3	Construction process stage A4	Use Stage B1/B2/B3/B4 /B5/B6/B7	End of life C1/C3	TOTAL
Global warming, (GWP100)	kg CO2 eq/m2	4,44E+00	4,11E-01	0	0	4,85E+00
Ozone depletion	kg CFC 11 eq/m2	2,67E-03	7,14E-08	0	0	2,67E-03
Acidification of land and water	kg SO2/m2	9,36E-02	1,25E-03	0	0	9,49E-02
Eutrophication	kg PO43- eq/m2	1,78E-02	2,39E-04	0	0	1,80E-02
Photochemical ozone creation	kg C2H4 eq/ m2	1,96E-03	7,02E-05	0	0	2,03E-03
Depletion of abiotic resources (elements)	kg Sb/m2	4,92E+01	9,54E-07	0	0	4,92E+01
Depletion of abiotic resources (fossil)	MJ/m2	6,14E+01	6,77E+00	0	0	6,82E+01

Environmental impact of 1m2 of PANNER 18 mm thick

PANNER (per m2 of 18 mm thick)

Category	Unit	Product stage A1/A2/A3	Construction process stage A4	Use Stage B1/B2/B3/B 4/B5/B6/B7	End of life C1/C3	TOTAL
Global warming, (GWP100)	kg CO2 eq/m2	5,32E+00	4,94E-01	0	0	5,82E+00
Ozone depletion	kg CFC 11 eq/m2	3,20E-03	8,57E-08	0	0	3,20E-03
Acidification of land and water	kg SO2/m2	1,12E-01	1,50E-03	0	0	1,14E-01
Eutrophication	kg PO43- eq/m2	2,13E-02	2,86E-04	0	0	2,16E-02
Photochemical ozone creation	kg C2H4 eq/ m2	2,35E-03	8,43E-05	0	0	2,44E-03
Depletion of abiotic resources (elements)	kg Sb/m2	5,90E+01	1,14E-06	0	0	5,90E+01
Depletion of abiotic resources (fossil)	MJ/m2	7,37E+01	8,13E+00	0	0	8,18E+01

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1. DESCRIPTION OF THE MANUFACTURING COMPANY

1.1 Tradition and innovation

Finsa is a pioneering company in manufacturing particleboards and MDF boards on the Iberian Peninsula.

The company, founded in 1931 as a small sawmill, has kept up sustainable growth even since.

FINSA currently manufactures a wide variety of wood-based products. Over the last few years, investment has focused mostly on expanding the company's international presence and on increasing its production capacity, especially in products with high added value within the technical wood processing chain: particle boards and melamine-coated MDF boards, plywood, veneered wood, frames, kitchen modules, components for furniture, laminate floors, etc.

Thanks to this, FINSA is now a world leader in the sector.

With great enthusiasm grounded in years of experience in the development of wood-based products, we would like you to take advantage of the opportunity to use technical wood boards in your projects and share our investment in the future of this material.



1.2 Entrepreneurial experience

Backed by 60 years dedicated to wood-based products, we are one of the leading companies in Europe.

We have twenty production centres and the most advanced technology in order to ensure the highest level of quality.

We boast a highly qualified human capital who identify with our company's values.



1.3 Future vision

A strong investment in innovation and an environmental policy based on sustainable development.

1.4 Focus on the customer

A swift and reliable logistics network: 450 vehicles out on the road daily.

Wood solutions designs that adapt to the needs of the market.

An entrepreneurial spirit: ready to learn, to improve and to take up new challenges in order to offer greater value to our customers every day.

1.5 Social responsibility

FINSA's commitment towards sustainable growth extends beyond the limits of our manufacturing facilities.

From Nature we get wood, our main raw material, and so our obligation is to respect it and protect it.

We develop initiatives regarding the collaboration with other public and private organizations that foster the protection and efficient management of forests.

1.6 The environment

Through our Environmental Policy we are actively committed to environmental protection.

We want the environmental impact of our manufacturing processes to be as small as possible.

As a result, we are one of the cleanest industries: we generate more energy than we consume processing our products.

Our production processes are optimized in order to achieve the maximum level of energy savings through cogeneration (by taking advantage of the energy and heat produced by the production facilities themselves) and achieve a minimum level of waste.



In addition, the waste generated by our activity and which has no other use is used for generating energy through our biomass production facilities, both in our own production processes in the plant as well as during the stage of use.

The life cycle model is the model specified below:



1.7 Scope of application of the Declaration

The present document applies to raw particleboards for construction of partitions and walls (PANNER) for different

thicknesses (12mm, 15mm and 18mm), manufactured by the Finsa Group.

Most representative plants located at:

FINANCIERA MADERERA, S.A.

Carretera N-550 km 57

Aptdo. 127

15707 Santiago de Compostela (A
Coruña)

Spain

&

Estrada Nacional 234, Km 92.7

Aptdo. 23

3524-952 Nelas (Portugal)

2. PRODUCT DEFINITION

2.1 Product definition

Particleboards are products manufactured from carefully selected wood. The most appreciated features are their smooth surface and the homogeneity of their inner layer. The most common applications are found in the furniture and construction industries.

These boards are made of three layers of chipped wood bonded together by synthetic resins through flat pressing at high temperatures, and are then sanded.

The particleboards comply with standards EN 312.

Particleboards can easily be coated with decorative paper impregnated with melamine by resorting to simple technologies.

Particleboards are classified into different types according to the requirements set forth under standard EN 312.

Boards are initially classified according to their use, as structural or non structural; and according to the environment where they are used, as dry and humid.

2.2 Planned applications

Particleboards have a smooth and homogeneous surface that tolerates any type of coating.

This type of board is a significant reference in the construction of interior wall and in general for any indoor use in dry environments. Forty years in the market endorse it has a reliable raw material in all those applications.

2.3 Main product standards

UNE-EN 312:2010 – Particleboards. Specifications.

UNE-EN 13986:2006+A1:2015 - Wood-based panels for use in construction. Characteristics, evaluation of conformity and marking.

2.4 Accreditations and certifications

CE marking according to standard EN 13986 –AENOR certification, if applicable.

AITIM Quality Certification:

Aitim Certification 2-4-02 / E1 - Particleboards for furniture and wood finishings

Certification of the chain of custody PEFC/14-35-00006

Certification of the chain of custody FSC: Certificate Code: TT-COC-003279

CARB Phase 2 Certification

EN ISO 14001 – IQNet & AENOR

2.5 Tests and verifications

Formaldehyde:

Particleboards have AITIM quality certification confirming that they comply with all Class E1 requirements (according standard EN ISO 12460-5) defined under European Standard EN 312:2010.

AITIM Quality Certification:

Aitim Certification 2-4-02 / E1 Particleboards for furniture and wood finishings

E-Z-quality particleboards have Certificates of Conformity with phase 2 CARB formaldehyde emissions, based on standard ASTM E 1333-96 (2002). In addition, the formaldehyde contents of these boards is less than or equal to 3 mg/100 g of dry boards, according to standard EN ISO 12460-5.

Certificate of conformity: Formaldehyde Emissions Standard: Phase 2 (0.09 ppm)

In compliance with the provisions of the California Code Regulation 93120 concerning Airborne Toxic Control Measures to reduce Formaldehyde Emissions from Composite Products.

3. RAW MATERIALS

3.1 Primary and secondary materials, and additives

Particleboards with thicknesses 12mm, 15mm and 18 mm and with an average density of 700 kg /m³ have the following composition:

Wood: pine and eucalyptus wood are used for manufacturing particleboards; a small percentage consists of recycled material from recuperated packages (wooden pallets), waste from industrial processes and from contaminant-free wood finishings (80-88%).

Recycled material is identified in accordance with the standard EN 14021.

Resin: melamine-urea-formaldehyde (or others): board (6-10%)

Water: 5-9%

Paraffin emulsion: a paraffin emulsion is added to the formulation during the bonding process, thus enhancing water resistance (0.2-0.6 %).

During the board-pressing process, resin fully hardens and produces a hard and resistant surface.

NOTE: FINSA raw materials do not require registration under the REACH Regulation.

3.2 Extraction and origin of raw materials

Wood comes predominantly from regional forest areas. This wood (including recycled wood) comes from woods situated within a radius of approx. 100 km from the production site. Transportation distances tend to be small in order to keep logistics costs as low as possible with the purchase

of raw materials. Preference is given to woods certified according to the FSC or PEFC standards in the wood selection process.

PEFC- and FSC-certified products can be supplied under request.



The adhesive agents and impregnation resins or, if such is the case, the raw materials for their production, come from suppliers located no more than 150 km from the production site.

3.3 Local and general availability of raw materials

The wood used in the production of particleboards is obtained, first and mainly, from sustainably managed forests. The forest areas from where wood is collected can be areas owned by the company or private forest areas situated close to the wood board production facilities. Wood selection includes green timber from forest clearing and from forestry, as well as waste from sawmills (wood chips), and a small percentage is recycled wood from the recovery of packages, waste from industrial processes and from contaminant-free wood finishings. All resin used, as well as paraffin emulsion, are synthesized in manufacturing facilities belonging to the Group.

4. MANUFACTURING PROCESS. KEY PROCESS (CORE BUSINESS).

4.1 The different stages of the manufacturing process

Manufacture of plain particleboards:

1. Debarking the wood trunks
2. Splinting and grinding the wood
3. Chipping
4. Sifting
5. Drying – generation of the wood mix
6. Classification, sieving
7. Refining mills
8. Bonding
9. Formation of the wood sheet
10. Pressing
11. Mechanical cooling
12. Cut to size
13. Sanding of the upper and lower surfaces

All the waste generated during the production process (waste from cutting the boards, chip waste, and debarking or sanding waste) and which can no longer be reused in the process, are, with no exceptions, forwarded to a thermal reusing process.

4.2 Health and safety during production

Measures for preventing health risks during the manufacturing process:

Due to the conditions of the production process it is not necessary to adopt safety and health measures beyond those required by the regulations in force.

Regarding control of emissions, in all cases the measurements obtained are well below the limit values that are established.

Particleboards can be normally sawn and perforated using common tools. The corresponding IPEs should be employed, for instance, a mask in case hand tools are used without a dust-extracting device.

4.3 Environmental protection throughout the process

Air: The exhaust air resulting from the production processes is cleansed according to the legal requirements. All emissions are well below the limits.

Water / soil: No water or soil contaminants are produced. All waste is collected by type and is managed and transported by duly authorized waste management operators. Waste waters from the production process are processed internally and are re-circulated into the production line or diverted into the municipal water collector, in compliance with legal requirements.

Noise protection measurements show that all readings, both within and outside the production plant, are below the required limit levels.

5. CONDITIONS FOR USE

5.1 Components

The components of particleboards and their fractions correspond to those in the makeup of the material as "raw material". The bonding agents are chemically inert and are strongly bonded to the wood. Formaldehyde emissions are negligible (at least all boards manufactured by FINSA comply with class E1).

5.2 Environment–Health interactions

Environmental protection:

According to the present state of knowledge, with the appropriate use of the product described there are no risks to water, air and soil.

Health protection:

Health aspects: No damage or limitations are expected to health under normal conditions of use corresponding to the use expected for particleboards.

Natural substances present in natural wood could be released in small amounts. With the exception of small amounts of formaldehyde, which are harmless to health, no emissions of contaminants are detected.

5.3 Useful life

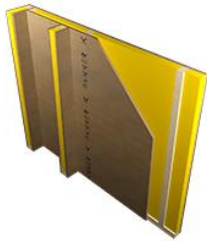
Useful life under conditions of common use is defined through the application class (P1–P7) according to standard EN 312.

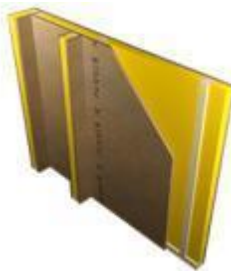
5.4 End of life of the product

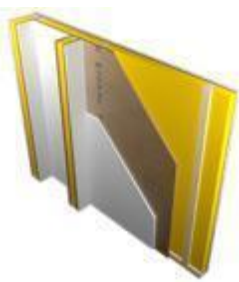
We design our boards and work with onsite operators to assure the correct deinstallation of the board to maintain its value for reuse. So at the end of a stage of a building, a selective deconstruction and separation of components has been considered. This correct disaggregation and separation allows to the reuse of the boards for the same application.

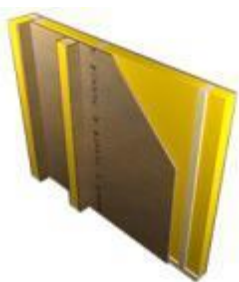
6. PARTITIONS AND WALL CONSTRUCTION SYSTEMS

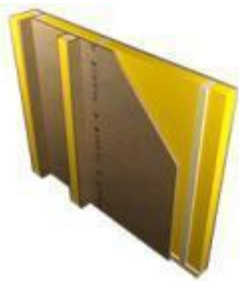
6.1 Internal partition. Single wood stud framework:

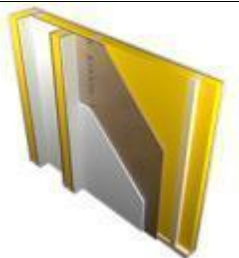
PANNER 80M			
m2		PANNER® 80M _80/600 [15+50+15] LM40	
		<p>Single wood stud partition PANNER® 80 M: 80/600 [15 + 50 + 15] LM40, made with PANNER® particleboards, 15 mm thick, screwed directly onto both sides of self-supporting pine wood framework, treated for Use Class 2, consisting of studs of 38x50 mm, separated between axes 600 mm. Thermal-acoustic insulation by semi-rigid mineral wool panel 40 mm thick in the core. Total partition thickness of 80 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc..</p>	
Material		Quantity	Unit
PANNER® 15 mm		2,1	m2
Wood stud treated Use Class 2, 38x50 mm		3	m
Perimetral acoustic band 50x3 mm		1,2	m
Hammerfix assembled anchor, saw-tooth thread 8x80 mm		2,2	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm		24	units
Stone wool thermal and acoustic insulation panel, 40 mm thickness		1,05	m2
Micro-perforated paper jointing tape		3,2	m
Adhesive filler in powder form for jointing tapered edge		0,81	kg
Corner guard tape		0,7	m

PANNER 86M			
m2		PANNER® 86M _86/600 [18+50+18] LM 40	
		<p>Single wood stud partition PANNER® 86 M: 86/600 [18+50+18] LM40, made with PANNER® particleboards, 18 mm thick, screwed directly onto both sides of self-supporting pine wood framework, treated for Use Class 2, consisting of studs of 38x50 mm, separated between axes 600 mm. Thermal-acoustic insulation by semi-rigid mineral wool panel 40 mm thick in the core. Total partition thickness of 86 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
Material		Quantity	Unit
PANNER® 18 mm		2,1	m2
Wood stud treated Use Class 2, 38x50 mm		3	m
Perimetral acoustic band 50x3 mm		1,2	m
Hammerfix assembled anchor, saw-tooth thread 8x80 mm		2,2	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm		24	units
Stone wool thermal and acoustic insulation panel, 40 mm thickness		1,05	m2
Micro-perforated paper jointing tape		3,2	m
Adhesive filler in powder form for jointing tapered edge		0,81	kg
Corner guard tape		0,7	m

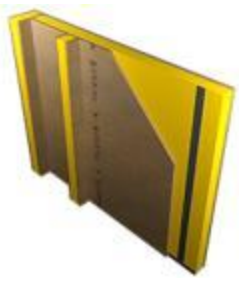
PANNER 99M+PYL		
m2	PANNER® 99M+PYL 99/600 [12,5PYL+12+50+12+12,5PYL] LM 40	
	<p>Single wood stud partition PANNER® 99 M +PYL: 99/600 [12,5PYL+12+50+12+12,5PYL] LM40, made with PANNER® particleboards, 12 mm thick, screwed directly onto both sides of self-supporting pine wood framework, treated for Use Class 2, consisting of studs of 38x50 mm, separated between axes 600 mm. With a finishing layer of gypsum plasterboard 12.5 mm thick, both sides. Thermal-acoustic insulation by semi-rigid mineral wool panel 40 mm thick in the core. Total partition thickness of 99 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
Material	Quantity	Unit
PANNER® 12 mm	2,1	m2
Wood stud treated Use Class 2, 38x70 mm	3	m
Perimetral acoustic band 50x3 mm	1,2	m
Hammerfix assembled anchor, saw-tooth thread 8x80 mm	2,2	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm	24	units
Screw 3.5 mm, 25 mm long	16	units
Stone wool thermal and acoustic insulation panel, 40 mm thickness	1,05	m2
Gypsum Plasterboard 12.5 mm thick	2,1	m2
Micro-perforated paper jointing tape	3,2	m
Adhesive filler in powder form for jointing tapered edge	0,81	kg
Corner guard tape	0,7	m

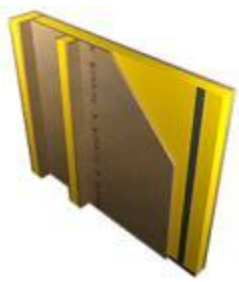
PANNER 100M		
m2	PANNER® 100M _100/600[15+70+15] LM60	
	<p>Single wood stud partition PANNER® 100M: 100/600 [15+70+15] LM60, made with PANNER® particleboards, 15 mm thick, screwed directly onto both sides of self-supporting pine wood framework, treated for Use Class 2, consisting of studs of 38x70 mm, separated between axes 600 mm. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core. Total partition thickness of 100 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
Material	Quantity	Unit
PANNER® 15 mm	2,1	m2
Wood stud treated Use Class 2, 38x70 mm	3	m
Perimetral acoustic band 70x3 mm	1,2	m
Hammerfix assembled anchor, saw-tooth thread 8x80 mm	2,2	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm	24	units
Stone wool thermal and acoustic insulation panel, 60 mm thickness	1,05	m2
Micro-perforated paper jointing tape	3,2	m
Adhesive filler in powder form for jointing tapered edge	0,81	kg
Corner guard tape	0,7	m

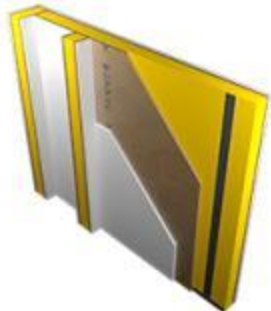
PANNER 106M			
m2	PANNER® 106M _106/600[18+70+18] LM60		
	<p>Single wood stud partition PANNER® 106M: 106/600 [18+70+18] LM60, made with PANNER® particleboards, 18 mm thick, screwed directly onto both sides of self-supporting pine wood framework, treated for Use Class 2, consisting of studs of 38x70 mm, separated between axes 600 mm. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core. Total partition thickness of 106 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>		
	Material	Quantity	Unit
	PANNER® 18 mm	2,1	m2
	Wood stud treated Use Class 2, 38x70 mm	3	m
	Perimetral acoustic band 70x3 mm	1,2	m
	Hammerfix assembled anchor, saw-tooth thread 8x80 mm	2,2	units
	High-performance chipboard screw yellow zinc-plated 3.5x45 mm	24	units
	Stone wool thermal and acoustic insulation panel, 60 mm thickness	1,05	m2
	Micro-perforated paper jointing tape	3,2	m
	Adhesive filler in powder form for jointing tapered edge	0,81	kg
	Corner guard tape	0,7	m

PANNER 119M+PYL			
m2	PANNER® 119M+PYL 119/600 [12,5PYL+12+70+12+12,5PYL] LM 60		
	<p>Single wood stud partition PANNER® 119 M +PYL: 119/600 [12,5PYL+12+70+12+12,5PYL] LM60, made with PANNER® particleboards, 12 mm thick, screwed directly onto both sides of self-supporting pine wood framework, treated for Use Class 2, consisting of studs of 38x70 mm, separated between axes 600 mm. With a finishing layer of gypsum plasterboard 12.5 mm thick, both sides. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core. Total partition thickness of 119 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>		
	Material	Quantity	Unit
	PANNER® 18 mm	2,1	m2
	Wood stud treated Use Class 2, 38x70 mm	3	m
	Perimetral acoustic band 70x3 mm	1,2	m
	Hammerfix assembled anchor, saw-tooth thread 8x80 mm	2,2	units
	High-performance chipboard screw yellow zinc-plated 3.5x45 mm	24	units
	Screw 3.5 mm, 25 mm long	16	units
	Stone wool thermal and acoustic insulation panel, 60 mm thickness	1,05	m2
	Gypsum Plasterboard 12.5 mm thick	2,1	m2
	Micro-perforated paper jointing tape	3,2	m
	Adhesive filler in powder form for jointing tapered edge	0,81	kg
	Corner guard tape	0,7	m

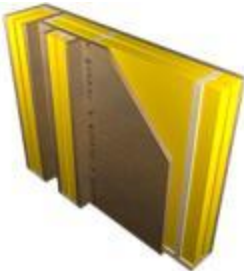
6.2 Internal partition. Single steel stud framework:

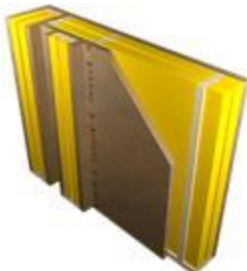
PANNER 100A@600		
m2	PANNER® 100A _100/600[15+70+15] LM60	
	<p>Single steel stud partition PANNER® 100A: 100/600 [15+70+15] LM60, made with PANNER® particleboards, 15 mm thick, screwed directly onto both sides of galvanized steel frame, consisting of floor & ceiling steel channels and studs, 70 mm width, separated between axes 600 mm. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core. Total partition thickness of 100 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
Material	Quantity	Unit
PANNER® 15 mm	2,1	m2
Floor & ceiling nogging steel channel "U", 70 mm width	0,9	m
Frame "C" steel stud, 70 mm width	2,1	m
Perimetral acoustic band 70x3 mm	1,2	m
Hammerfix assembled anchor, saw-tooth thread 5x50 mm	2,2	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm	20	units
Stone wool thermal and acoustic insulation panel, 60 mm thickness	1,05	m2
Micro-perforated paper jointing tape	3,2	m
Adhesive filler in powder form for jointing tapered edge	0,81	kg
Corner guard tape	0,70	m

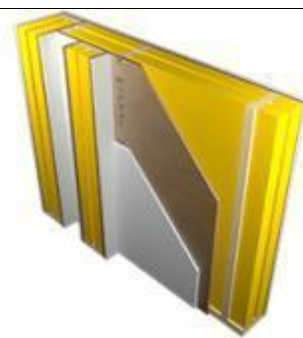
PANNER 106A@600		
m2	PANNER® 106A _106/600[18+70+18] LM60	
	<p>Single steel stud partition PANNER® 106A: 106/600 [18+70+18] LM60, made with PANNER® particleboards, 18 mm thick, screwed directly onto both sides of galvanized steel frame, consisting of floor & ceiling steel channels and studs, 70 mm width, separated between axes 600 mm. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core. Total partition thickness of 106 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
Material	Quantity	Unit
PANNER® 18 mm	2,1	m2
Floor & ceiling nogging steel channel "U", 70 mm width	0,9	m
Frame "C" steel stud, 70 mm width	2,1	m
Perimetral acoustic band 70x3 mm	1,2	m
Hammerfix assembled anchor, saw-tooth thread 5x50 mm	2,2	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm	20	units
Stone wool thermal and acoustic insulation panel, 60 mm thickness	1,05	m2
Micro-perforated paper jointing tape	3,2	m
Adhesive filler in powder form for jointing tapered edge.	0,81	kg
Corner guard tape	0,7	m

PANNER119A+PYL@600		
m2	PANNER® 119A+PYL 119/600[12.5PYL+12+70+12+12.5PYL] LM60	
	<p>Single steel stud partition PANNER® 119 A +PYL: 119/600 [12,5PYL+12+70+12+12,5PYL] LM60, made with PANNER® particleboards, 12 mm thick, screwed directly onto both sides of galvanized steel frame, consisting of floor & ceiling steel channels and studs, 70 mm width, separated between axes 600 mm. With a finishing layer of gypsum plasterboard 12.5 mm thick, both sides. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core. Total partition thickness of 119 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
Material	Quantity	Unit
PANNER® 12 mm	2,1	m2
Floor & ceiling nogging steel channel "U", 70 mm width	0,9	m
Frame "C" steel stud, 70 mm width	2,1	m
Perimetral acoustic band 70x3 mm	1,2	m
Hammerfix assembled anchor, saw-tooth thread 5x50 mm	2,2	units
High-performance chipboard screw yellow zinc-plated 3.5x45mm	24	units
Screw 3.5 mm, 25 mm long	16	units
Stone wool thermal and acoustic insulation panel, 60 mm thickness	1,05	m2
Gypsum Plasterboard 12.5 mm thick	2,1	m2
Micro-perforated paper jointing tape	3,2	m
Adhesive filler in powder form for jointing tapered edge	0,81	kg
Corner guard tape	0,7	m

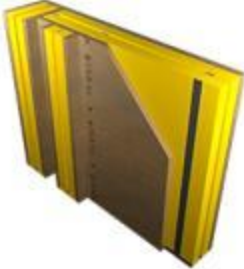
6.3 Separating walls. Twin wood stud framework:

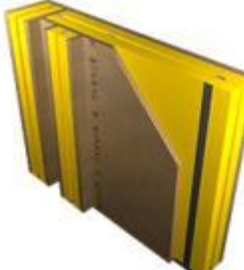
PANNER 210M		
m2	PANNER® 210M _210/600[2x15+70+(10)+70+2x15] LM2x60	
	<p>Twin wood stud separating wall PANNER® 210M: 210/600 [2x15+70+(10)+70+2x15] LM 2x60, made with two layers of PANNER® particleboards, 15 mm thick, screwed directly onto both sides of twin pine wood stud frames, treated for Use Class 2, consisting of studs of 38x70 mm, separated between axes 600 mm. At least 10 mm gap between frames. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core of both frames. Total wall thickness of 210 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
Material	Quantity	Unit
PANNER® 15 mm	4,2	m2
Wood stud treated Use Class 2, 38x70 mm	6	m
Perimetral acoustic band 70x3 mm	2,4	m
Hammerfix assembled anchor, saw-tooth thread 8x80 mm	4,4	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm	48	units
Stone wool thermal and acoustic insulation panel, 60 mm thickness	2,1	m2
Micro-perforated paper jointing tape	6,4	m
Adhesive filler in powder form for jointing tapered edge	1,62	kg
Corner guard tape	0,7	m

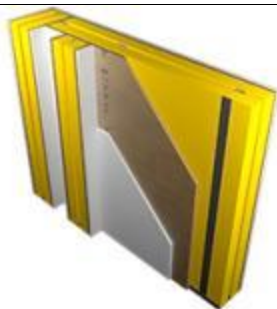
PANNER 222M		
m2	PANNER® 222M _222/600[2x18+70+(10)+70+2x18] LM2x60	
	<p>Twin wood stud separating wall PANNER® 222M: 222/600 [2x18+70+(10)+70+2x18] LM 2x60, made with two layers of PANNER® particleboards, 18 mm thick, screwed directly onto both sides of twin pine wood stud frames, treated for Use Class 2, consisting of studs of 38x70 mm, separated between axes 600 mm. At least 10 mm gap between frames. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core of both frames. Total wall thickness of 222 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
Material	Quantity.	Unit
PANNER® 18 mm	4,2	m2
Wood stud treated Use Class 2, 38x70 mm	6	m
Perimetral acoustic band 70x3 mm	2,4	m
Hammerfix assembled anchor, saw-tooth thread 8x80 mm	4,4	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm	48	units
Stone wool thermal and acoustic insulation panel, 60 mm thickness	2,1	m2
Micro-perforated paper jointing tape	6,4	m
Adhesive filler in powder form for jointing tapered edge	1,62	kg
Corner guard tape	0,7	m

PANNER 205M+PYL		
m2	PANNER® 205M 205/600[12.5PYL+15+70+(10)+70+15+12.5PYL] LM2x60	
	<p>Twin wood stud separating wall PANNER® 205M: 205/600 [12,5PYL+15+70+(10)+70+15+12.5PYL] LM2x60, made with two layers of PANNER® particleboards, 15 mm thick, screwed directly onto both sides of twin pine wood stud frames, treated for Use Class 2, consisting of studs of 38x70 mm, separated between axes 600 mm. At least 10 mm gap between frames. With a finishing layer of gypsum plasterboard 12.5 mm thick, both sides. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core of both frames. Total wall thickness of 205 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
Material	Quantity	Unit
PANNER® 15 mm	2,1	m2
Wood stud treated Use Class 2, 38x70 mm	6	m
Perimetral acoustic band 70x3 mm	2,4	m
Hammerfix assembled anchor, saw-tooth thread 8x80 mm	4,4	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm	48	units
Screw 3.5 mm, 25 mm long	16	units
Stone wool thermal and acoustic insulation panel, 60 mm thickness	2,1	m2
Gypsum Plasterboard 12.5 mm thick	2,1	m2
Micro-perforated paper jointing tape	6,4	m
Adhesive filler in powder form for jointing tapered edge	1,6	kg
Corner guard tape	0,7	m


6.4 Separating walls. Twin steel stud framework:

PANNER 210A@600			
m2	PANNER® 210A _210/600[2x15+70+(10)+70+2x15] LM2x60		
	Twin steel stud separating wall PANNER® 210A: 210/600 [2x15+70+(10)+70+2x15] LM 2x60, made with two layers of PANNER® particleboards, 15 mm thick, screwed directly onto both sides of twin galvanized steel frames, consisting of floor & ceiling steel channels and studs, 70 mm width, separated between axes 600 mm. At least 10 mm gap between frames. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core of both frames. Total wall thickness of 210 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.		
Material		Quantity	Unit
PANNER® 15 mm		4,2	m2
Floor & ceiling nogging steel channel "U", 70 mm width		1,8	m
Frame "C" steel stud, 70 mm width		4,2	m
Perimetral acoustic band 70x3 mm		2,4	m
Hammerfix assembled anchor, saw-tooth thread 8x80 mm		4,4	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm		48	units
Stone wool thermal and acoustic insulation panel, 60 mm thickness		2,1	m2
Micro-perforated paper jointing tape		6,4	m
Adhesive filler in powder form for jointing tapered edge		1,62	kg
Corner guard tape		0,7	m


PANNER 222A@600			
m2	PANNER® 222A _222/600[2x18+70+(10)+70+2x18] LM2x60		
	Twin steel stud separating wall PANNER® 222A: 222/600 [2x18+70+(10)+70+2x18] LM 2x60, made with two layers of PANNER® particleboards, 18 mm thick, screwed directly onto both sides of twin galvanized steel frames, consisting of floor & ceiling steel channels and studs, 70 mm width, separated between axes 600 mm. At least 10 mm gap between frames. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core of both frames. Total wall thickness of 222 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.		
Material		Quantity	Unit
PANNER® 18 mm		4,2	m2
Floor & ceiling nogging steel channel "U", 70 mm width		1,8	m
Frame "C" steel stud, 70 mm width		4,2	m
Perimetral acoustic band 70x3 mm		2,4	m
Hammerfix assembled anchor, saw-tooth thread 8x80 mm		4,4	units
High-performance chipboard screw yellow zinc-plated 3.5x45 mm		48	units
Stone wool thermal and acoustic insulation panel, 60 mm thickness		2,1	m2
Micro-perforated paper jointing tape		6,4	m
Adhesive filler in powder form for jointing tapered edge		1,62	kg
Corner guard tape		0,7	m

PANNER 205A+PYL @600			
m2	PANNER® 205A + PYL @600 205/600[12.5PYL+15+70+(10)+70+15+12.5PYL] LM2x60		
	Twin steel stud separating wall PANNER® 205A: 205/600 [12,5PYL+15+70+(10)+70+15+12.5PYL] LM2x60, made with PANNER® particleboard, 15 mm thick, screwed directly onto both sides of twin galvanized steel frames, consisting of floor & ceiling steel channels and studs, 70 mm width, separated between axes 600 mm. At least 10 mm gap between frames. With a finishing layer of gypsum plasterboard 12.5 mm thick, both sides. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core of both frames. Total wall thickness of 205 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.		
Material	Quantity	Unit	
PANNER® 15 mm	2,1	m2	
Floor & ceiling nogging steel channel "U", 70 mm width	1,8	m	
Frame "C" steel stud, 70 mm width	4,2	m	
Perimetral acoustic band 70x3 mm	2,4	m	
Hammerfix assembled anchor, saw-tooth thread 8x80 mm	4,4	units	
High-performance chipboard screw yellow zinc-plated 3.5x45 mm	48	units	
Screw 3.5 mm, 25 mm long	16	units	
Stone wool thermal and acoustic insulation panel, 60 mm thickness	2,1	m2	
Gypsum Plasterboard 12.5 mm thick	2,1	m2	
Micro-perforated paper jointing tape	6,4	m	
Adhesive filler in powder form for jointing tapered edge	1,62	kg	
Corner guard tape	0,7	m	

6.5 Wood framed lining systems:

PANNER TRASDOS 85M			
m2	PANNER® TRASDOS 85M		
	Wood framed lining system PANNER® TRASDOS 85 M: 85/600 [70+15] LM60, made with PANNER® particleboard, 15 mm thick, screwed directly onto one side of pine wood stud frame, treated for Use Class 2, consisting of studs of 38x70 mm, separated between axes 600 mm. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core. Total lining system thickness of 85 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.		
Material	Quantity	Unit	
PANNER® 15 mm	1,05	m2	
Wood stud treated Use Class 2, 38x70 mm	3	m	
Perimetral acoustic band 70x3 mm	1,2	m2	
Hammerfix assembled anchor, saw-tooth thread 8x80 mm	2,2	units	
High-performance chipboard screw yellow zinc-plated 3.5x45 mm	16	units	
Stone wool thermal and acoustic insulation panel, 60 mm thickness	1,05	m2	
Micro-perforated paper jointing tape	1,6	m	
Adhesive filler in powder form for jointing tapered edge	0,41	kg	
Corner guard tape	0,3	m	

6.6 Steel framed lining systems:

PANNER TRASDOS 85A		
m2	PANNER® TRASDOS 85A	
	<p>Steel framed lining system PANNER® TRASDOS 85 A: 85/600 [70+15] LM60, made with PANNER® particleboard, 15 mm thick, screwed directly onto one side of galvanized steel stud frame, treated for Use Class 2, consisting of floor & ceiling steel channels and studs, 70 mm width, separated between axes 600 mm. Thermal-acoustic insulation by semi-rigid mineral wool panel 60 mm thick in the core. Total lining system thickness of 85 mm. Even proportional part of PANNER® materials: perimetral acoustic band, perimetral anchors, screws, jointing tape, adhesive filler, etc.</p>	
	Material	Quantity Unit
	PANNER® 15 mm	1,05 m2
	Floor & ceiling nogging steel channel "U", 70 mm width	0,9 m
	Frame "C" steel stud, 70 mm width	2,1 m
	Perimetral acoustic band 70x3 mm	1,2 m
	Hammerfix assembled anchor, saw-tooth thread 5x50 mm	2,2 units
	High-performance chipboard screw yellow zinc-plated 3.5x45 mm	16 units
	Stone wool thermal and acoustic insulation panel, 60 mm thickness	1,05 m2
	Micro-perforated paper jointing tape	1,6 m
	Adhesive filler in powder form for jointing tapered edge	0,41 kg
	Corner guard tape	0,3 m

7. PRINCIPLES AND CRITERIA FOR PRODUCT LIFE CYCLE ANALYSIS (LCA)

7.1 Definition of declared unit

For this EPD, the concept of "unit declared" applies instead of "functional unit", following the guidelines established in the reference PCR, since the use phase and end of life are not included within the scope of this environmental product declaration.

The present declaration refers to the manufacture of 1 m² of raw particleboard PANNER for different thicknesses: 12 mm, 15 mm y 18 mm.

The average density is 700 kg/m³ (\pm 20 Kg, with relative humidity of around 7 %).

7.2 System limits

The limits that have been selected for the system cover the manufacture of particleboards, 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 with options), following the guidelines of PCR 2012: 01 V 2.01 for construction products and services:

Product stage			Construction process stage		Use Stage							End of life stage				Resource recovery stage
Raw materials	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
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	MND	X	X	X	X	X	X	X	X	MND	X	MND	MND

X = Declared in the EPD; MND = No declared in the EPD

The processes observed in detail were as follows:

- The forest stage, for wood procurement and transportation.
- Transportation of all relevant raw materials for the process.
- Manufacturing process of plain boards.
- Packaging and thermal use as the final closure of the life cycle.
- Transport to construction site.
- Use stage: Use, maintenance, repair, replacement, refurbishment, energy use, water use.
- Deconstruction, demolition, waste processing, disposal.
- End of life.

Infrastructure processes fall outside the scope of the system.

The stage related to the installation of the product and transport of waste processing in the end of life has not been researched in the present declaration. It is assumed that raw particleboards is a passive building product and has no requirements for maintenance, repair, replacement or refurbishment throughout the services life period. Therefore it has no impact on this stage.

According to C.T.E. (Technical Building Code, mandatory standard in Spain), the period of service of a building will be 50 years. The PANNER partition systems prove (with a European Technical Assessment (ETA), based on ETA Guideline 003), that the performances of PANNER are applicable for the use in wall and partition construction.

7.3 Inclusion of transportation and logistics

The transportation of raw materials and secondary materials that were used, the transportation of the waste that was generated, as well as transportation to construction site of the product is included. Additional information of transportation to construction site is in the table below:

ADDITIONAL TECHNICAL INFORMATION			
Scenario title	Parameter	Units (expressed per functional unit or per declared unit)	Value
A4 Transport to site	Vehicle type used for transport	truck	Articulated
	Vehicle load capacity	tonne	44
	Fuel type and consumption	Litre of fuel type per distance	Diesel consumption 38 litres per 100 km
	Distance to central warehouse or storage, if relevant	km	-
	Distance to construction site	km	500,40
	Capacity utilisation (including empty returns)	%	100% volume capacity 30% empty returns
	Bulk density of transported products	kg/m3	700
	Volume capacity utilisation factor (factor: = 1 or < 1 or ≥ 1 for compressed or nested packaged products)	Not applicable	-

7.4 Period of reference for life cycle analysis

The data used refers to actual production processes during the fiscal year 01/01/2015 to 31/12/2015. The life cycle evaluation was prepared for Spain and Portugal as the areas of reference.

7.5 Background

The global analysis software, "LCAManager" was used to model the life cycle. All the relevant data to manufacturing and waste disposal were taken from the software database, Ecoinvent 3.1.

7.6 Criteria for calculating the life cycle analysis

The results from the life cycle analysis are based on the following assumptions:
Transportation of all raw materials and / or secondary materials is calculated according to the means of transportation

that were used, using data from Ecoinvent 3.1 database.

The power supply companies and the fuel sources that were used at the production site were considered for energy supply.

All waste that is generated during production and which cannot be re-circulated into the process (cutting and milling waste) is directed towards a process of thermal use as biomass fuel.

It is assumed that the closure of the life cycle is the thermal use of waste at a biomass generation plant.

7.7 Data quality

The data used are less than 5 years old.

All data were obtained directly from the FINSA facilities where raw particleboards are produced. All input and output data from the Finsa company were made available. Thus, it can be assumed that the data are fairly representative.

Viability of all data delivered has been confirmed. All information comes from operational data and from measurements,

so data quality can be described as very good.

7.8 Allocation and interpretation criteria

Allocation refers to the allocation of input and output flows to and from a product life cycle module that is being researched /ISO 14040/.

The waste materials from the process are used as a source of energy. Combustion is calculated using the “LCAManager” software system.

Modelling the thermal use of the boards at the end of the life cycle takes place at a biomass generation plant.

Allocation of the energy produced at the incineration plant is made based on the input's heating power.

Allocation of the different factors of the categories of impact that were studied in

the case of electricity consumption was calculated based on the Spanish average for electricity sources. Calculation of emissions (for instance, CO₂, HCl, SO₂ or particles), depending upon inputs, was carried out based on the composition of the input materials. Emissions are allocated according to the volume of exhaust gases from the emission sources.

7.9 Cut-off rules

Although PCR 2012: 01 indicates that Life Cycle Inventory data for a minimum of 95% of total inflows (mass and energy) to the upstream and core module shall be included, in the present study it has not been taken into account a cutting criteria of this type.

8. RESULTS FROM THE LIFE CYCLE ANALYSIS

8.1 Life cycle inventory

The life cycle model that was chosen is called “from cradle to gate with options”, covering all the operations from cutting down the trees and cutting the wood required for manufacturing the boards, until the fully finished product is obtained, as well as the transport of the product to construction site, the use stage and the end of life stage.

SYSTEM BOUNDARIES



The CML-IA BASELINE 4.7 (January 2016), and EDIP (Environmental Design of Industrial Products) methods are used in order to assign to each data collected, the factors in all categories of impact required for fulfilling the environmental product declaration.

The sum of all data multiplied by each factor of the categories of impact result in the final figure called the ecological footprint.

The following tables show the environmental impact for manufacturing 1 m² of board PANNER for different thicknesses:

Impact Categories for manufacturing 1m² of PANNER 12 mm thick
PANNER (per m² of 12 mm thick)

Category	Product stage	Construction process stage			Use stage							End of life stage				Recovery stage	TOTAL
	A1/A2/A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
Global warming, (GWP100) [kg CO2 eq/m²]	3,55E+00	3,29E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	3,88E+00	
Ozone depletion [kg CFC 11 eq/m²]	2,13E-03	5,71E-08	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,13E-03	
Acidification of land and water [kg SO2/m²]	7,49E-02	1,00E-03	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	7,59E-02	
Eutrophication [kg PO43- eq/m²]	1,42E-02	1,91E-04	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,44E-02	
Photochemical ozone creation [kg C2H4 eq/ m²]	1,57E-03	5,62E-05	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,62E-03	
Depletion of abiotic resources (elements) [kg Sb/m²]	3,94E+01	7,63E-07	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	3,94E+01	
Depletion of abiotic resources (fossil) [MJ/m²]	4,91E+01	5,42E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	5,45E+01	

Impact Categories for manufacturing 1m² of PANNER 15 mm thick
PANNER (per m² of 15 mm thick)

Category	Product stage	Construction process stage		Use stage							End of life stage				Recovery stage	TOTAL
	A1/A2/A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Global warming, (GWP100) [kg CO2 eq/m²]	4,44E+00	4,11E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	4,85E+00
Ozone depletion [kg CFC 11 eq/m²]	2,67E-03	7,14E-08	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,67E-03
Acidification of land and water [kg SO2/m²]	9,36E-02	1,25E-03	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	9,49E-02
Eutrophication [kg PO43- eq/m²]	1,78E-02	2,39E-04	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,80E-02
Photochemical ozone creation [kg C2H4 eq/ m²]	1,96E-03	7,02E-05	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,03E-03
Depletion of abiotic resources (elements) [kg Sb/m²]	4,92E+01	9,54E-07	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	4,92E+01
Depletion of abiotic resources (fossil) [MJ/m²]	6,14E+01	6,77E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	6,82E+01

Impact Categories for manufacturing 1m² of PANNER 18 mm thick
PANNER (per m² of 18 mm thick)

Category	Product stage	Construction process stage		Use stage							End of life stage				Recovery stage	TOTAL
	A1/A2/A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Global warming, (GWP100) [kg CO2 eq/m²]	5,32E+00	4,94E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	5,82E+00
Ozone depletion [kg CFC 11 eq/m²]	3,20E-03	8,57E-08	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	3,20E-03
Acidification of land and water [kg SO2/m²]	1,12E-01	1,50E-03	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,14E-01
Eutrophication [kg PO43- eq/m²]	2,13E-02	2,86E-04	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,16E-02
Photochemical ozone creation [kg C2H4 eq/ m²]	2,35E-03	8,43E-05	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,44E-03
Depletion of abiotic resources (elements) [kg Sb/m²]	5,90E+01	1,14E-06	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	5,90E+01
Depletion of abiotic resources (fossil) [MJ/m²]	7,37E+01	8,13E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	8,18E+01

Related waste production for manufacturing 1m² of PANNER 12 mm thick
PANNER (per m² of 12 mm thick)

Category	Product stage	Construction process stage		Use stage							End of life stage				Recovery stage	TOTAL	
		A1/A2/A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
Hazardous waste disposed [kg]	5,03E-01	4,98E-01	MND	0	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,00E+00
Non-hazardous waste disposed [kg]	1,37E-03	3,11E-06	MND	0	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,38E-03
Radioactive waste disposed [kg]	5,06E-04	3,70E-05	MND	0	0	0	0	0	0	0	0	0	MND	0	MND	MND	5,43E-04

Related waste production for manufacturing 1m² of PANNER 15 mm thick
PANNER (per m² of 15 mm thick)

Category	Product stage	Construction process stage		Use stage							End of life stage				Recovery stage	TOTAL
		A1/A2/A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Hazardous waste disposed [kg]	6,29E-01	6,22E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,25E+00
Non-hazardous waste disposed [kg]	1,72E-03	3,88E-06	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,72E-03
Radioactive waste disposed [kg]	6,32E-04	4,62E-05	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	6,79E-04

Related waste production for manufacturing 1m² of PANNER 18 mm thick
PANNER (per m² of 18 mm thick)

Category	Product stage	Construction process stage		Use stage							End of life stage				Recovery stage	TOTAL	
		A1/A2/A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
Hazardous waste disposed [kg]	5,72E+00	4,94E-01	MND	0	0	0	0	0	0	0	0	0	MND	0	MND	MND	6,22E+00
Non-hazardous waste disposed [kg]	3,20E-03	8,57E-08	MND	0	0	0	0	0	0	0	0	0	MND	0	MND	MND	3,20E-03
Radioactive waste disposed [kg]	1,12E-01	1,50E-03	MND	0	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,14E-01

Use of resources for manufacturing 1m² of PANNER 12 mm thick
PANNER (per m² of 12 mm thick)

Category	Product stage	Construction process stage		Use stage							End of life stage				Recovery stage	TOTAL
		A1/A2/A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]	4,05E+00	8,11E-02	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	4,13E+00
Use of renewable primary energy resources used as raw materials [MJ]	1,66E+02	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,66E+02
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) [MJ]	1,70E+02	8,11E-02	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,70E+02
Use of non- renewable primary energy excluding non- renewable primary energy resources used as raw materials [MJ]	9,53E+01	5,67E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,01E+02
Use of non- renewable primary energy resources used as raw materials [MJ]	1,09E+01	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,09E+01
Total use of non- renewable primary energy resources (primary energy and primary energy resources used as raw materials) [MJ]	1,06E+02	5,67E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,12E+02
Use of secondary material [kg]	1,40E-03	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,40E-03
Use of renewable secondary fuels [MJ]	1,44E-02	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,44E-02
Use of non-renewable secondary fuels [MJ]	0,00E+00	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	0,00E+00
Use of net fresh water[m³]	8,66E+00	2,28E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	8,89E+00

Use of resources for manufacturing 1m² of PANNER 15 mm thick
 PANNER (per m² of 15 mm thick)

Category	Product stage	Construction process stage		Use stage							End of life stage				Recovery stage	TOTAL
	A1/A2/A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]	5,06E+00	1,01E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	5,16E+00
Use of renewable primary energy resources used as raw materials [MJ]	2,08E+02	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,08E+02
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) [MJ]	2,13E+02	1,01E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,13E+02
Use of non- renewable primary energy excluding non- renewable primary energy resources used as raw materials [MJ]	1,19E+02	7,09E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,26E+02
Use of non- renewable primary energy resources used as raw materials [MJ]	1,36E+01	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,36E+01
Total use of non- renewable primary energy resources (primary energy and primary energy resources used as raw materials) [MJ]	1,33E+02	7,09E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,40E+02
Use of secondary material [kg]	1,75E-03	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,75E-03
Use of renewable secondary fuels [MJ]	1,80E-02	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,80E-02
Use of non-renewable secondary fuels [MJ]	0,00E+00	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	0,00E+00
Use of net fresh water[m ³]	1,08E+01	2,85E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,11E+01

Use of resources for manufacturing 1m² of PANNER 18 mm thick
PANNER (per m² of 18 mm thick)

Category	Product stage	Construction process stage		Use stage							End of life stage				Recovery stage	TOTAL
	A1/A2/A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]	6,07E+00	1,22E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	6,19E+00
Use of renewable primary energy resources used as raw materials [MJ]	2,49E+02	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,49E+02
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials) [MJ]	2,55E+02	1,22E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,55E+02
Use of non- renewable primary energy excluding non- renewable primary energy resources used as raw materials [MJ]	1,43E+02	8,51E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,51E+02
Use of non- renewable primary energy resources used as raw materials [MJ]	1,63E+01	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,63E+01
Total use of non- renewable primary energy resources (primary energy and primary energy resources used as raw materials) [MJ]	1,59E+02	8,51E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,68E+02
Use of secondary material [kg]	2,10E-03	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,10E-03
Use of renewable secondary fuels [MJ]	2,16E-02	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	2,16E-02
Use of non-renewable secondary fuels [MJ]	0,00E+00	0,00E+00	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	0,00E+00
Use of net fresh water[m ³]	1,30E+01	3,42E-01	MND	0	0	0	0	0	0	0	0	MND	0	MND	MND	1,33E+01

9. OTHER ENVIRONMENTAL INFORMATION: BALANCE OF GHG EMISSIONS.

The amount of CO₂ stored in the product was considered for carrying out this balance, according to EN 16449. The used formula for calculating this content of CO₂ 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:

$$P_{CO_2} = \frac{44}{12} \times cf \times \frac{\rho_w \times V_w}{1 + \frac{\omega}{100}}$$

Where:

P_{CO₂} is the biogenic carbon oxidized as carbon dioxide emission from the product system into the atmosphere (kg)

cf is the carbon fraction of woody biomass (oven dry mass), 0,5 as the default value

ω is the moisture content of the product (5,5 %)

ρ_w is the density of woody biomass of the product at that moisture content (kg/m³)

V_w is the volume of the solid wood product at that moisture content (m³)

If for a total of -1.040,00 kg/m³ are the biogenic carbon (according to EN 16449) the amount of store for the different thicknesses of PANNER are:

12 mm: -12,48 kg CO₂ eq.

15 mm: -15,60 kg CO₂ eq.

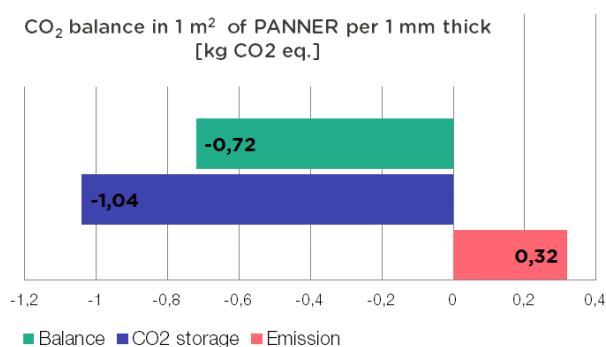
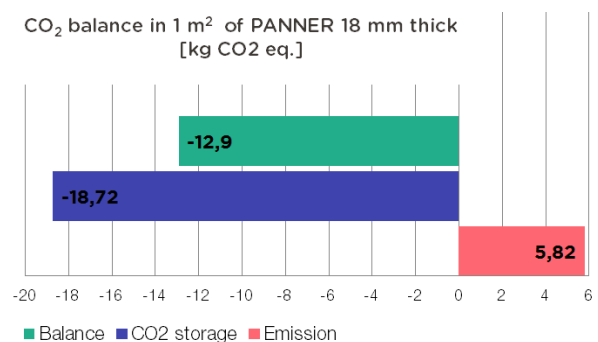
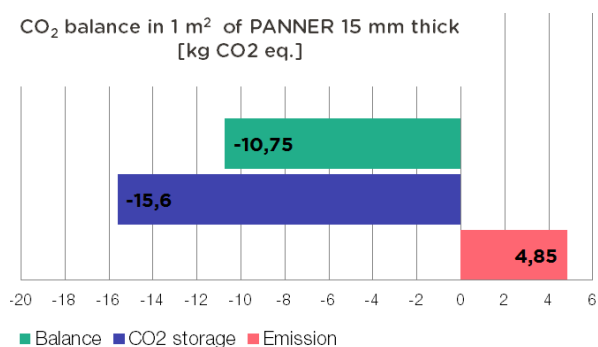
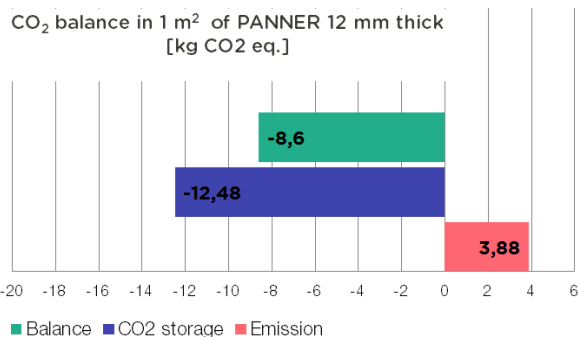
18 mm: -18,72 kg CO₂ eq.

The overall balance, for the different thicknesses, achieves a total of:

12 mm: -8,60 kg of CO₂ eq.

15 mm: -10,75 kg of CO₂ eq.

18 mm: -12,90 kg of CO₂ eq.



10. VALIDITY OF THE DECLARATION

The validity established for the environmental declaration for PANNER, is 5 years (26th January 2022). The sensitivity of former years has been tested and there are no variations higher than 10% regarding the environmental effects in any of the categories of impact.

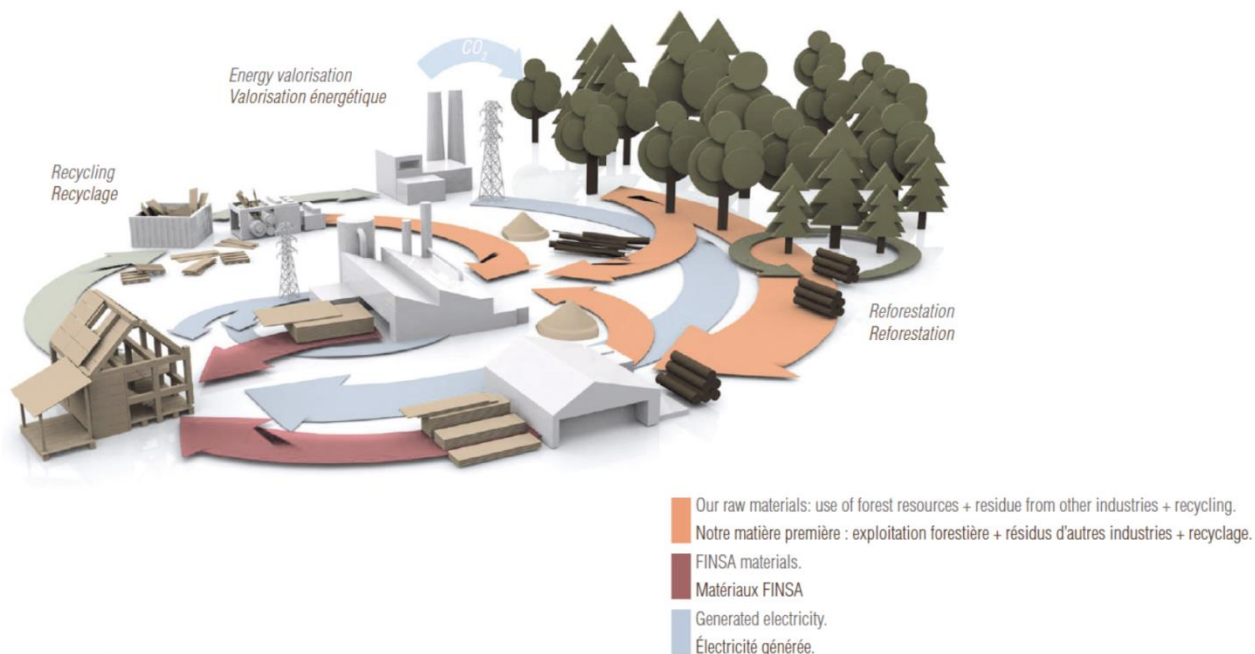
11. VERIFICATION

EPD program and operator:	The International EPD® System EPD International AB Valhallavägen 81 SE-114 27 Stockholm – Sweden
CEN standard EN 15804 served as the core PCR	
PCR:	PCR 2012:01 Construction products and Construction services, Version 2.01, 2016-03-09
PCR review was conducted by:	The Technical Committee of the International EPD® System. Chair: Massimo Marino. Contact via info@environdec.com
Independent verification of the declaration and data, according to ISO 14025:	<input type="checkbox"/> EPD process certification (Internal) <input checked="" type="checkbox"/> EPD verification (External)
Third party verifier:	Anxo Mourelle Álvarez. EPD Verifier
Accredited or approved by:	The International EPD® System

EPD of construction products may not be comparable if they do not comply with EN 15804. Environmental product declarations within the same product category from different programs may not be comparable. More information about the certification system in the Environdec website: www.environdec.com

12. ANNEXES

12.1 Life Cycle Model



12.2 REACH declaration



FINSA
 Departamento de Calidad
 Ctra. A Coruña – Tui, km. 57
 15884 Santiago de Compostela, Spain
 e-mail: p.lopez@finsa.es

03/11/2016

Re: REACH Regulation

Dear Customer,

The aim of this letter is to give you some information regarding the **EU's directive REACH** (Registration, Evaluation, Authorisation and Restriction of Chemicals), which came into effect on 1st June 2008. In accordance with the guidelines of REACH, it is obligatory for every importer or manufacturer of chemicals in the EU (in quantities of at least one tonne per year), to compile a registration report identifying and managing the risks involved with those chemicals. The legislation applies to all individual substances on their own, in preparations or in articles.

Finsa is fully committed to complying with the Regulation and **is well aware of its obligations regarding REACH**. As a producer of timber products, Finsa is considered a *Downstream User**; therefore **is not obliged to register any substance**. The registry and pre-registry of chemical products applies only to those companies who import or manufacture them.

Nevertheless, concerning the obligations of Downstream Users, Finsa is doing everything in its power to comply with the following:

- **Ensuring that its suppliers pre-register all substances used in their production process.** To guarantee this, Finsa has contacted all its suppliers, identifying what substances they use, to ensure that they do pre-register them and are working in compliance with REACH and within the guidelines set out.

Finsa only ever use raw materials that are pre-registered, registered and authorised for their specific use.

- Moreover, Finsa, as a supplier, is obliged to inform customers regarding "high-risk" substances their products may contain (in compliance with REACH Art. 33). Since Finsa does not use any such substance in its production, **it will not be necessary to give such information to customers.**

In order to streamline the information we need to give to customers, Finsa will not respond to individual questionnaires. Instead this document serves to inform all customers of the necessary information with respect to REACH and Finsa's involvement with it.

We hope you will find this information useful.
 Best regards,



* Downstream User: Those who use a substance for their own means, with the purpose of manufacturing another substance, preparation or article.

For the purpose of Regulation (EC) N° 1907/2006 REACH, **Article 3 Definitions:**

13) « *Downstream User* »: means any natural or legal person established within the Community, other than the manufacturer or the importer, who uses a substance, either on its own or in a preparation, in the course of his industrial or professional activities. A distributor or a consumer is not a downstream user. A re-importer exempted pursuant to Article 2(7)(c) shall be regarded as a downstream user;

12.3 Commitment letter



Implementation of the EU Timber Regulation *Information to our Customers*

The EU TIMBER REGULATION, EUTR

With effect from March 3, 2013 all EU member states will have brought into force national legislation to implement the EU TIMBER REGULATION.

The purpose is to prohibit the importation of illegally sourced wood products into the EU.

Any company which imports wood products from outside the EU is responsible for ensuring their legal origin by operating a robust due diligence process to verify legality. EU member states are expected to randomly test imports on a regular basis and follow up where concerns regarding possible illegality exist.

Member states will also be obliged to actively investigate the legality of any imports where "whistle blowers" have raised concerns.

Finsa Group Policy

Since 2004 Finsa Group has operated an PEFC/FSC certified system, to be able to supply certified wood products to our customers.

As a matter of principle Finsa Group has decided to avoid controversial sources (based on the FSC CONTROLLED WOOD categories) and progressively increase procurement volumes of certified FSC/PEFC certified timber in order to fulfill our own sustainability targets.

Finsa Group Policy (fulfills FSC CONTROLLED WOOD) excludes the use of:

- Illegally harvested wood;
- Wood harvested in violation of traditional and civil rights;
- Wood harvested in forests where high conservation values are threatened by management activities;
- Wood harvested in forests being converted to plantations or non-forest uses;
- Wood from forests in which genetically modified trees are planted.

The organization controls the maintenance of documentation demonstrating the origin of each of the items you buy.

Besides, FINSA has a Due Diligence System for compliance with the European Timber Regulation (EUTR) EU n°995/2010.

- The **EU Timber Regulation (EUTR)**
 Regulation (EU) No 995/2010 of the

12.4 Certificate SDD FINSA EUTR 995 2010

Certificado de Conformidad

AENOR

SDD-2016/0003

AENOR, Asociación Española de Normalización y Certificación, certifica que

FINANCIERA MADERERA, S.A.

con domicilio social en: CR A CORUÑA – TUI, KM 57

15884 SANTIAGO DE COMPOSTELA (A CORUÑA) España

dispone de un Sistema de Diligencia Debida conforme con: RP B54.01 rev. 01. Reglamento Particular para la Certificación AENOR del Sistema de Diligencia Debida de acuerdo con el Reglamento (UE) N° 995/2010.

Para el alcance: Detallado en el anexo al certificado

Fecha de primera emisión: 2016-09-06
Fecha de expiración: 2019-09-06



AENOR Asociación Española de Normalización y Certificación
Avelino BRITO MARQUINA
Director General de AENOR

AENOR Asociación Española de Normalización y Certificación

Génova, 6. 28004 Madrid. España
Tel. 902 102 201 – www.aenor.es

12.5 Managing finished products

Recommendations for storing products:

All products should always be stored under a roof and on a flat surface.

The optimal storage conditions are 65% relative humidity, and either more humid or drier environments should be avoided.

Always avoid any direct contact with water.

Runners should always be vertically aligned.

The maximum storage height is 4 bales.

If packaging gets damaged during handling, it must be repackaged for the proper conservation of the product.

Recommendations for processing the product:

Plain particleboards can be normally sawn and drilled using common tools. The corresponding IPEs should always be used, for instance, a mask when hand tools are used without a dust-extracting device.

Labour and environmental protection:

All standard safety measures should be applied when processing or installing boards. Such measures are specified in the product handbooks that are delivered to the customer.

The main effects on the environment during the preparation stage of finished products refer to dust emissions which can be prevented using conventional extraction systems.

Waste such as waste from packing the product, is non-hazardous waste that complies with the criteria set forth in the European Directive and can be handled according to the guidelines set forth in the appropriate facilities, for proper recycling (plastic waste, retractable film, strips, etc).

Waste materials:

Waste material accumulated during installation or processing work (cutting and package waste) shall be collected and separated according to their type and according to the applicable type at the point of destination. Wood components re-enter the process as fuel for biomass boiler.

Environment–Health interactions:

According to the current status of knowledge, under the appropriate use of the product described, there are no risks for water, air and soil.

In addition, no health-related damage or limitations are expected under normal conditions of use, as provided for particleboards. During their use, natural substances present in natural timber could be released in small amounts. With the exception of small amounts of formaldehyde, which is harmless to human health, no significant levels of emissions of contaminants are detected.

12.6 References

PCR 2012:01 Construction products and Construction services v2.01 Date:2016-03-09.

Requirements for Environmental Product Declarations, EPD, (MSR 1999:2), published by the Swedish Council for Environmental Management available at: www.environdedec.com

The international standards of reference are as follows:

ISO 14040:2006, Environmental management. Life cycle analysis. Principles and reference framework

ISO 14025:2006 Labels and environmental declarations. Environmental declarations type III. Principles and procedures.

ISO 14044:2006, Environmental management. Life cycle analysis. Requirements and guidelines.

EN 15804:2012-04+A1 2013: Sustainability of construction works — Environmental Product Declarations —

Core rules for the product category of construction products.

UNE-EN 14322:2004, Wood-based panels. Melamine-coated wood boards for indoor use. Definition, requirements and classification.

UNE-EN 13986:2006+A1:2015 - Wood-based panels for use in construction. Characteristics, evaluation of conformity and marking

EN 16449:2014 Wood and wood-based products - Calculation of the biogenic carbon content of wood and conversion to carbon dioxide.

ETAG003 Guideline for European Technical approval for Internal Partition Kits for use as Non-loadbearing walls (2012)

Código Técnico de la Edificación, CTE, Technical Building Code, Mandatory Standard for Building in Spain.

12.7 Product pictures



Finished product PANNER.