superPan

VapourStop

CERTIFIED COMPONENT
Passive House Institute

AIRTIGHT STRUCTURAL BOARD WITH VAPOUR BARRIER

FINSA
soluciones en madera

TABLE OF CONTENTS

THERE
ARE MANY WAYS
OF SETTING ONESELF APART

WE ONLY BELIEVE IN ONE:
BEING UNIQUE AND OFFERING
CUSTOMERS FURTHER VALUE

INNOVATORS BY TRADITION
INNOVATORS BY CONVICTION

By observing the environment, wood construction systems, construction processes and our customers' needs, small ideas and major innovations that provide added value to our materials arise. This is how we have developed superPan VapourStop, which combines the characteristics of the superPan Tech P5 and of an airtight vapour barrier.

This baseboard-barrier combination achieved following an industrial process ensures the efficiency of the vapour barrier, which is perfectly bonded to the superPan Tech P5. This avoids any breakage resulting from manual installations and facilitates the taping of joints.

Our aim: make better buildings with wood

TIMBER CONSTRUCTION

IT'S ADVANTAGES:

Circular bio-economy.

It helps sustainably maintain forests.

It ensures the social-economical sustainability of the rural environment.

It helps fight against climate change.

It is aligned with the European Union's goals for reducing greenhouse gas emissions.

It has health benefits thanks to:

- Being a hygroscopic material
- Its low thermal conductivity
- Its low acoustic reverberation

EPD®

ENVIRONMENTAL PRODUCT DECLARATION (EPD) ECOLOGICAL FOOTPRINT AND TRANSPARENCY

The EPD is a tool for conveying clear and transparent information on the impact of a given product on the environment throughout every stage of its life cycle.

With regard to superPan VapourStop, it confirms that wood is a material that keeps on capturing greenhouse gases throughout our entire production process.

LEED™ CREDITS SUSTAINABLE BUILDING

FINSA materials are manufactured from harvested wood and rapidly renewable and recyclable resources, which help obtain LEED™ credits in different areas:

- Recycled content
- Regional materials
- Rapidly renewable materials
- Certified wood
- Low-emitting materials

GBCe Materials Platform
www.gbce.es

CERTIFICATION FSC AND PEFC

The Chain of Custody certifies the route of the raw materials from the forest to the consumer/customer, including all stages of the process. In other words, it provides the customer with a guarantee that the products they buy are made with materials from sustainably managed forests.

This guarantee is materialised through the PEFC and FSC certificates, which relate to the manufacturing and marketing of products derived from wood.

A NEW GENERATION OF BOARD

INNOVATION AND TECHNOLOGY

superPan is an innovative board with a unique composition different from other conventional boards on the market.

A new generation of technical wood manufactured by FINSA through a continuous pressing process.

PATENTED

An exclusive and innovative product protected by Patent No EP1140447

(European Patent Office).

BOARD CORE

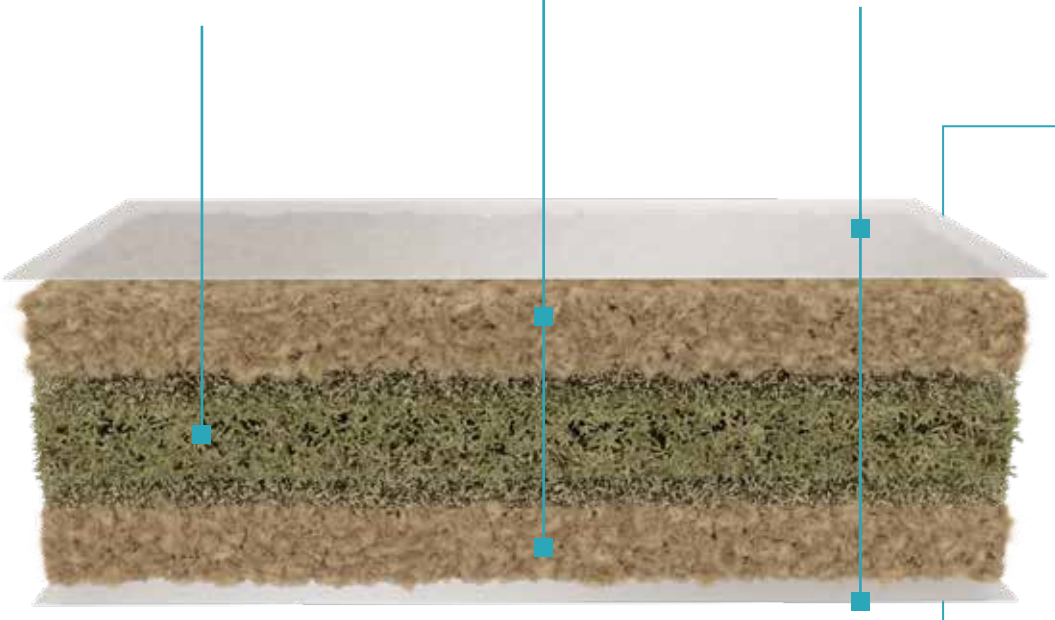
Layer of chipboard with high moisture resistance resins, allowing its use in moist environments, up to Service class 2.

WOOD FIBRE

Layer of wood fibre providing excellent airtight qualities.

MEMBRANE

Special film on the two outer faces, providing the board with water vapour diffusion resistance.



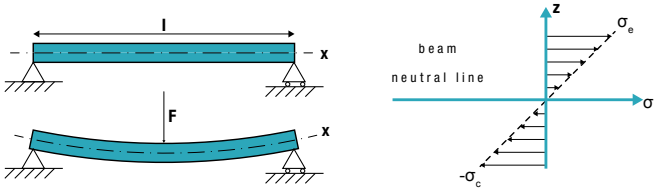
COMPOSITION

By pressing the layers together we achieve a synergy that provides the product great stability, high performance and high structural capacity.

THE BEST TECHNICAL PROPERTIES AT THE LOWEST COST

SUPERPAN VAPOURSTOP

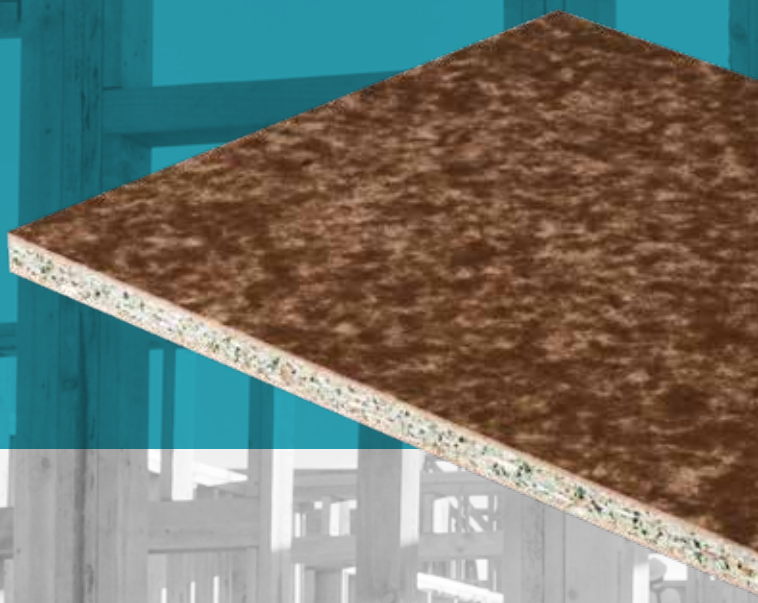
- Class A+ in VOCs and formaldehyde content.
- Resistant to xylophagous insects and mites.
- Class A Passivhaus Component for airtightness.
- Water vapour diffusion resistance (Dry cup μ=1150, Wet cup μ=240).



The material has been optimised by specifically configuring its layers, which provides a excellent performance against bending forces.

SUPERPAN VAPOURSTOP

superPan VapourStop is a wooden board ranked as a P5 technical class structural board that is especially designed to be used as a solution for enclosures and that guarantees a high level of airtightness and incorporates a vapour barrier.



OUTSTANDING CHARACTERISTICS

LOW VOC AND FORMALDEHYDE EMISSIONS

Class A+ by French standards.

HIGH VAPOUR RESISTANCE

High resistance to water vapour diffusion
No need for an additional vapour barrier.
(Dry cup μ=1150, Wet cup μ=240).

HIGH AIRTIGHTNESS

Class A certified by the Passivhaus Institute.

HIGH MECHANICAL STRENGTH

P5 structural use

OMNIDIRECTIONAL RESISTANCE

Equal resistance in any direction of the board.
Optimised use.

MOISTURE RESISTANT

Good performance in moist environments.
Service class 2.

GOOD FIXING

Good screw, staple or nail fixing.

LOWER BREAKAGE RISK

Lower risk of breakage or detachment than with membranes. Maximum efficiency of the vapour barrier due to being perfectly glued to the board.

LOWER INSTALLATION TIME

Saves on installation time. Baseboard and vapour barrier in a single product

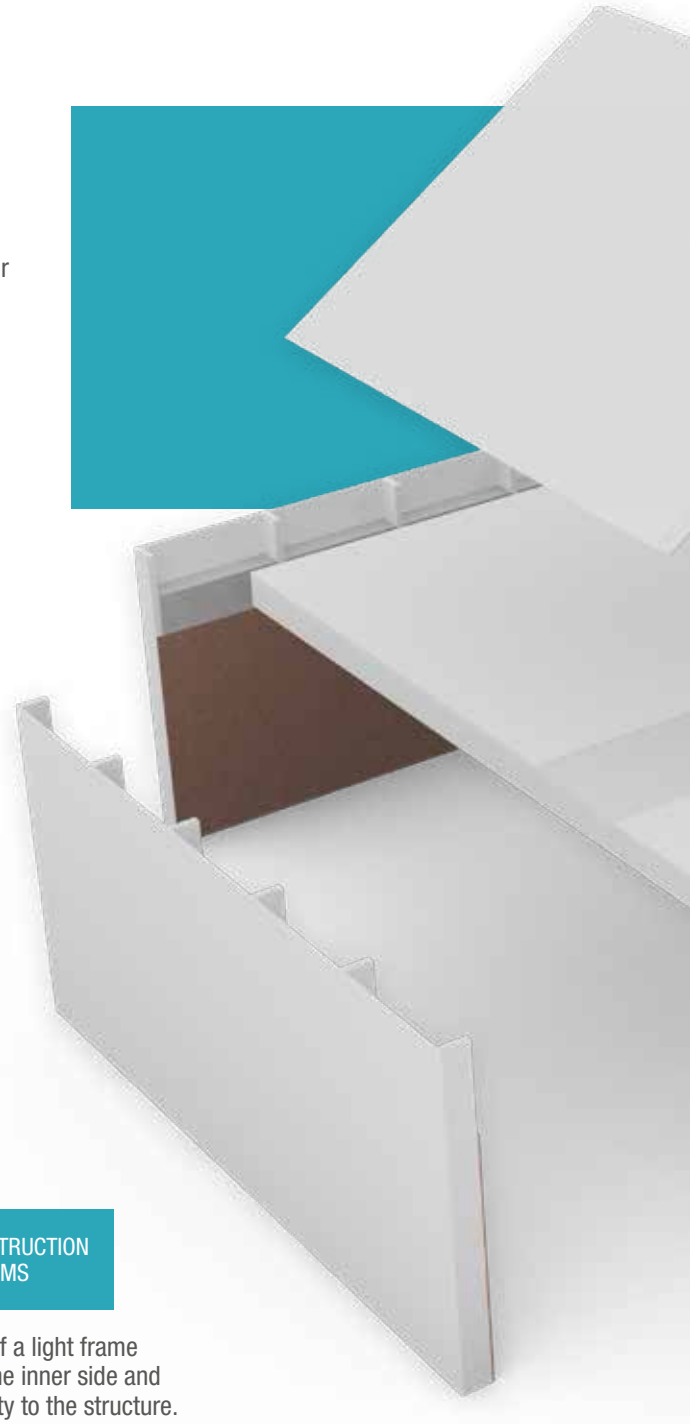
RESISTANT TO XYLOPHAGOUS INSECTS

Certified by Tecnalia.

FLEXIBILITY AND VERSATILITY

APPLICATIONS

superPan VapourStop is an ideal solution to be used inside buildings as a vapour barrier, as the board has a structural function as well as an air and vapour barrier function.

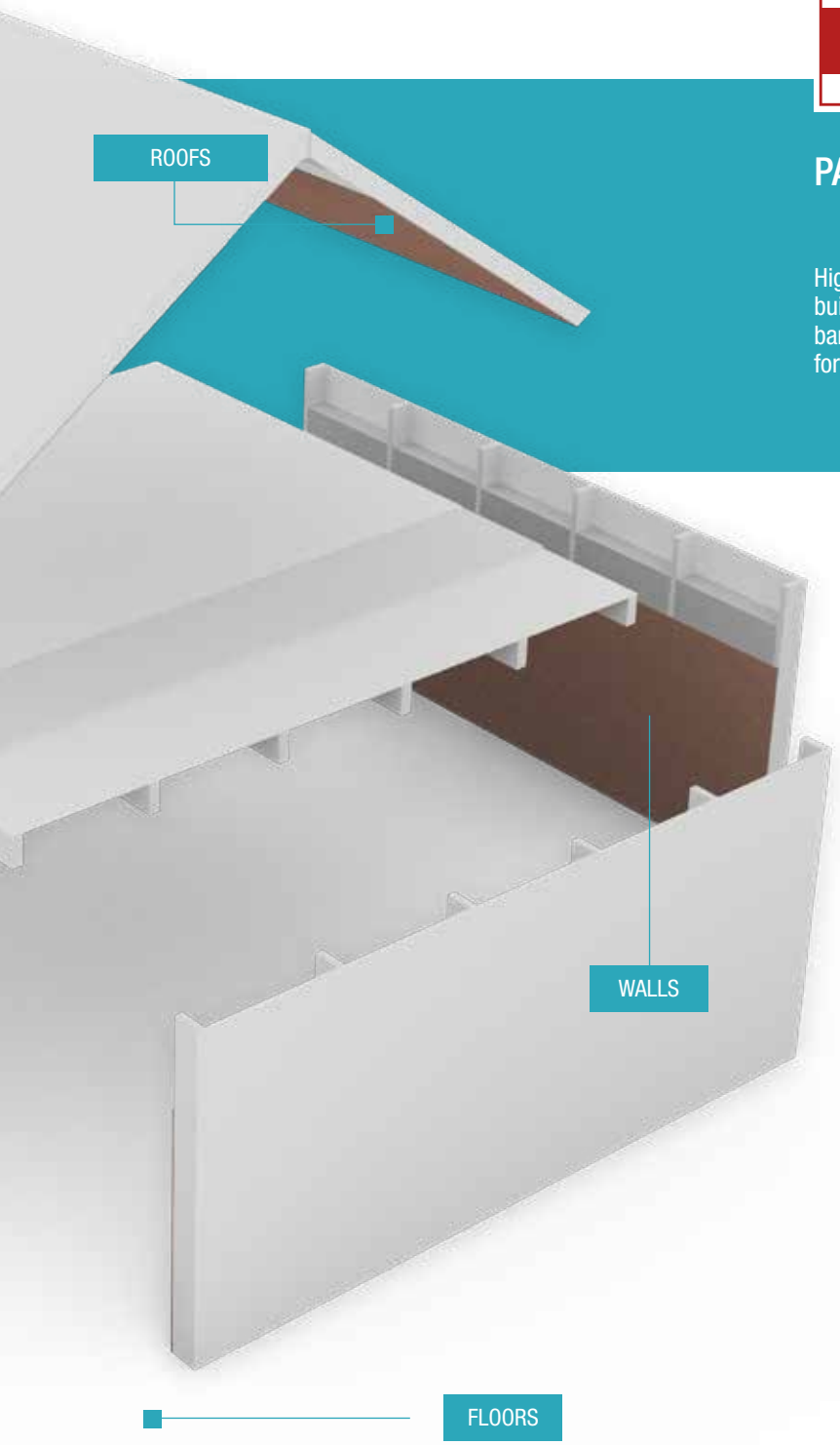


CONSTRUCTION WITH HEALTHY INTERIOR CONDITIONS

Thanks to its low VOC content, classified with the A+ ecolabel, it provides buildings with healthy interior conditions, which helps protect the health of its occupants and the environment and facilitates obtaining certifications within this scope.

WOOD CONSTRUCTION SYSTEMS

Used as part of a light frame structure on the inner side and provides rigidity to the structure.



CERTIFIED COMPONENT
Passive House Institute

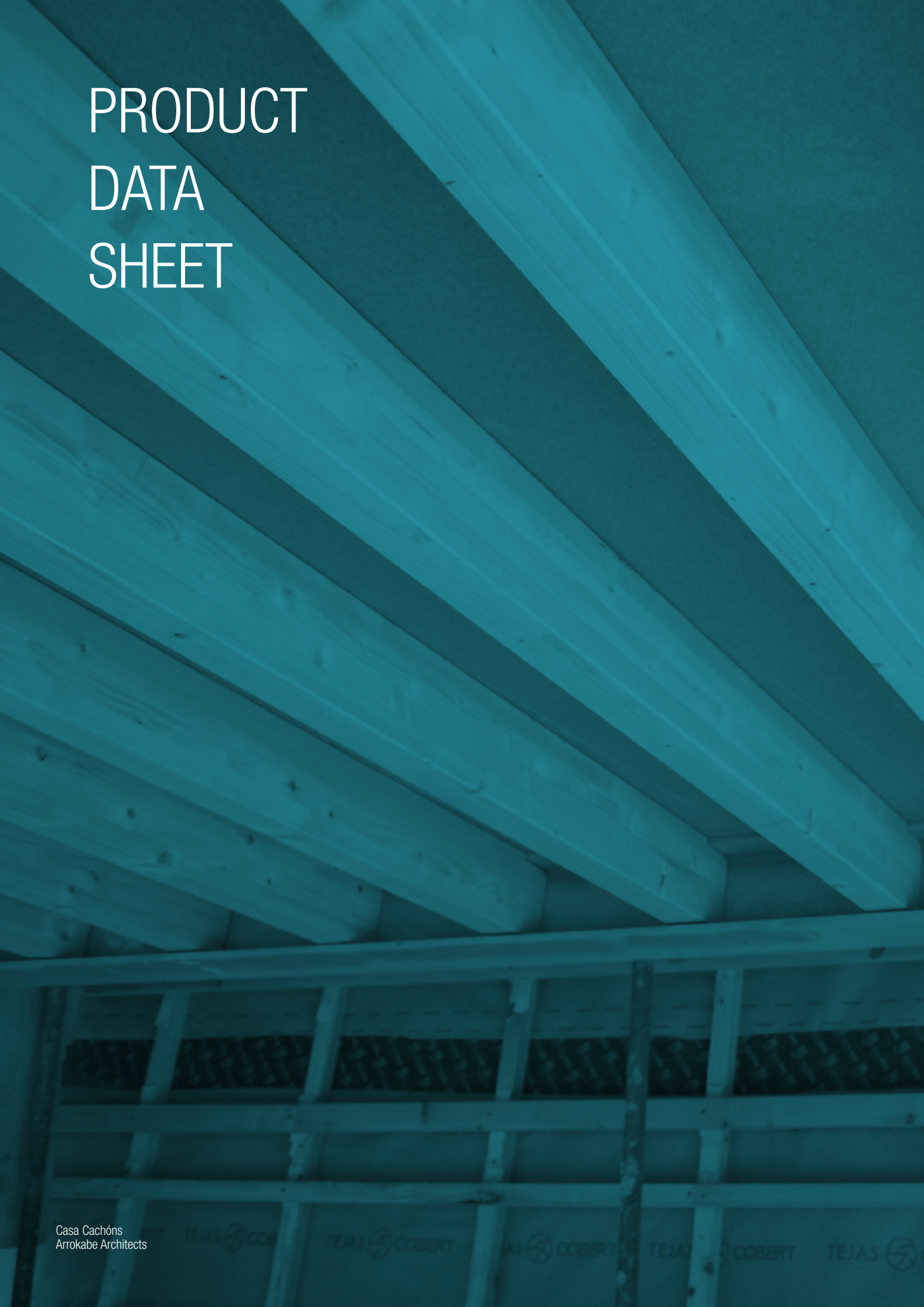
PASSIVHAUS CONSTRUCTION

Highly recommended as part of an enclosure (inner face) of a building constructed under the Passivhaus standard due to its air barrier properties, as it has a Passivhaus component certification for airtightness.

NEW CONSTRUCTION AND RESTORATION WORK

Suitable for new building projects or restoration projects that include adding a vapour barrier on the hot face.

PRODUCT DATA SHEET



Casa Cachóns
Arrokabe Architects

MAIN TECHNICAL CHARACTERISTICS:

Thickness		mm	12	15 and 18
Thermal conductivity	UNE EN 13986:2006+A1:2015	W/ (m·K)	0.15	0.14
Sound absorption coefficient (A) (250 TO 500 HZ)	UNE EN 13986:2006+A1:2015	α	0.10	0.10
Sound absorption coefficient (A) (1000 TO 2000 HZ)	UNE EN 13986:2006+A1:2015	α	0.25	0.25
Airborne sound insulation (R)	UNE EN 13986:2006+A1:2015	db	26	28
Water vapour permeability. Dry cup	UNE EN 13986:2006+A1:2015	µ	1150	1150
Water vapour permeability. Wet cup	UNE EN 13986:2006+A1:2015	µ	240	240
Reaction to fire	EN 13501-1	Class	D-s^2,d0**	D-s^2,d0***
Reaction to fire - floor coating	EN 13501-1	Class	Dfl-s1	Dfl-s1
Bending strength	UNE EN 13986:2006+A1:2015	N/mm^2	15	13.3
Compression strength	UNE EN 13986:2006+A1:2015	N/mm^2	12.7	11.8
Internal bond	EN 319	N/mm^2	0.60	0.60
Modulus of elasticity	EN 310	N/mm^2	3500	3500
Thickness swelling 24 h	EN 317	%	10	10
Accelerated ageing test (option 1). Internal bond after cyclic test.	EN 321 / EN 319	N/mm^2	0.25	0.22
Accelerated ageing test (option 1). Swelling in thickness after cyclic test.	EN 321 / EN 317	%	12	12
Formaldehyde emission class E1	EN ISO 12460-3	mg/(m^2.h)	≤ 3.5	≤ 3.5

(**)Without an air gap behind the superPan VapourStop. Mounted with a closed air gap or open air gap not more than 22mm behind the superPan VapourStop. Classification D-s2,d2. Classification E for any other condition. According to Decision 2007/348/EC.

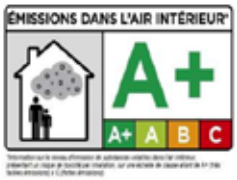
(***)Without an air gap behind the superPan VapourStop. Mounted with a closed air gap behind the superPan VapourStop for thicknesses equal or greater than 15mm or with an open air gap behind the superPan VapourStop for thicknesses equal or greater than 18mm. Mounted with a closed air gap or open air gap not more than 22mm behind the superPan VapourStop. Classification D-s2 in thicknesses between 10 and 18mm. According to Decision 2007/348/EC.

DURABILITY

superPan Tech P5 boards are suitable for Service Class 2 and Class of Use 1 and 2 according to EN 312

VOC CONTENT

The Eurofins Institute conducted tests to determine VOC (Volatile Organic Compounds) and Formaldehyde emissions, and we obtained a Class A+ by French standards.



WATER VAPOUR DIFFUSION RESISTANCE

In using superPan VapourStop as a structural board in light frame enclosures, it is relevant to know the water vapour diffusion resistance in order to calculate the condensations.

After the MPA Eberswalbe Institute conducted tests in accordance with the DIN EN ISO 12572 Standard, we can certify the following values:

MPA | Eberswalde

μ Resistance factor to water vapour diffusion	
Dry cup	Wet cup
1150	240

This value of resistance factor to water vapour diffusion is expressed in the following Sd values, for thicknesses of 12, 15 and 18mm:

Type / thickness	12mm	15mm	18mm
Sd value – Dry cup	13.80m	17.25m	20.70m
Sd value – Wet cup	2.88m	3.60m	4.32m

CERTIFICATIONS

CE MARK

superPan VapourStop has the:

CE Mark
Issued by AENOR
No 0099/CPR/A65/0036

PASSIVHAUS COMPONENT CERTIFICATION OF AIRTIGHTNESS

The 12-mm superPan VapourStop board has received the Passivhaus Component certification of Airtightness, making up a component together with the airtight SIGA Sicrall, and SIGA 60 Fentrim 20 50/85 tapes.

Obtaining the highest certification class, Class A.

CERTIFIED COMPONENT
Passive House Institute
FOR THICKNESS OF 12mm

FURTHER INFORMATION

Access the certificate by reading the QR code on your mobile phone.

TESTS CONDUCTED ON THE SuperPan TECH P5 BOARD

TEST #1

TEST BOARD RESISTANCE TO XYLOPHAGOUS INSECTS

The superPan Tech P5 board is highly resistant to mites and woodworm, as we can see in the following tests conducted by the Tecnalia Institute:

- Determination of the threshold of effectiveness against Reticulitermes according to the UNE-EN 117:2012 Standard.

Subjecting test specimens of superPan Tech P5 board to colonies of 250 mites for 8 weeks.

No mites survived at the end of this period.

- Determination of the preventive effectiveness against Hylotrupes bajulus (Linnaeus) – Part 1: It shows a larvicide effect according to the UNE-EN 46-1:2016 standard.

The result was: DURABLE.

Validity of the test:

The test is valid if the untreated three test specimens for virulence control correspond to a level-4 visual inspection and if the corresponding colonies have at least a 50% survival rate. However, not meeting this requirement by a test specimen is accepted when there is an incident that explains an abnormal behaviour of the colony.

Concentration (%)	No Test specimen	Absorption (g/test specimen)	Retention		Attack level *(0-4)	Survival		
			Test specimen (kg/m³)	Average (kg/m³)		(%) Workers	(No) Soldiers	(No) Nymphs
-	J1	-	-	-	1	0	0	0
	J2	-	-		1	0	0	0
	J3	-	-		1	0	0	0
	J4	-	-		1	0	0	0
	J5	-	-		1	0	0	0
Control	T1	-	-	-	4	98	1	4
	T2	-	-		4	95	0	6
	T3	-	-		4	98	1	4

Effectiveness threshold and attack level of mites after exposed for 8 weeks.

Test specimen	No Test specimen	Tested Concentration (%)	Product		Recovered larvae			Unrecovered larvae	Condition of the recovered larvae
			Absorption (g)	Retention (ml/m²)	Dead		Alive Having perforated		
					Not having perforated	Having perforated			
Treated	SPHC1	-	-	-	8	2	0	0	-
	SPHC2		-	-	7	3	0	0	-
	SPHC3		-	-	5	5	0	0	-
	SPHC4		-	-	8	2	0	0	-
	SPHC5		-	-	7	3	0	0	-
	SPHC6		-	-	7	2	0	1	-
Test specimen (untreated)	T1	-	-	-	2	0	7	0	OK
	T2		-	-	1	0	9	0	OK
	T3		-	-	1	0	9	0	OK

Determination of the preventive effectiveness against Hylotrupes bajulus L larvae.

TEST #2

SEISMIC TEST

Earthquake resistance of light frame systems shows excellent results with the use of superPan Tech P5.

Light frame structures have little mass compared to other structural types, making them particularly suitable for seismic risk regions.

Their lightness and flexibility allow energy to dissipate.

The superPan Tech P5 board, as a structural enclosure wall, has been subjected to cyclic loading tests, certifying its good shear behaviour in the manufacture of lightweight material walls.

These trials, conducted at the mechanical testing lab of the IVALSA Trees and Timber Institute, with the constructive system of RUBNER HAUS Spa, in accordance with EN 12512:2006 Timber structures - Test methods - Cyclic testing of joints made with mechanical fasteners, highlight the suitability of our superPan Tech P5 board for construction in seismic risk areas.

CNR-IVALSA
TREES AND TIMBER INSTITUTE

Images of the test

TEST #3

TEST TO DETERMINE RESISTANCE AND RIGIDITY TO DEFORMING

For comparative purposes, the structural performance of superPan Tech P5 (thickness of 18mm) and OSB-3 (thickness of 18mm) boards have been tested as part of a wooden light frame solution, and their resistance and rigidity to deforming has been determined at the PEMADE Laboratories.

The tests concluded the following:

· When comparing the rigidity of the superPan Tech P5 board to the OSB-3 board:

The superPan Tech P5 board shows 20% greater rigidity.

· When comparing the resistance of the superPan Tech P5 board to the OSB-3 board:

The superPan Tech P5 board shows 15% greater resistance.

Images of the test

TEST #4

WEATHERING EXPOSURE TEST

The behaviour of the superPan Tech P5 board and another two types of boards were tested at the Centro de Innovación e Servizos Tecnolóxicos da Madeira de Galicia (Timber Technological Innovation and Services Centre) following their exposure to weathering for 1 year.

The following were analysed: superPan Tech P5, OSB-3 and a water-resistant particle board.

The results obtained proved a better behaviour of the superPan Tech P5 board when compared to the OSB board.

After a year of exposure to weathering, the superPan Tech P5 board showed a lower increase of the initial percentage of moisture than in the OSB-3 board.

The OSB-3 board increased its initial moisture percentage by ten, while the superPan Tech P5 board increased by 3.

The superPan Tech P5 board experienced less swelling and a lower loss of MOR. The OSB-3 board was the most affected of all, even showing superficial lifting.

DURABILITY

superPan Tech P5 boards are suitable for Service Class 2 and Class of Use 1 and 2 according to EN 312

Images of the test

SUMMARY

SUMMARY OF THE TEST RESULTS

TEST BOARD RESISTANCE TO XYLOPHAGOUS INSECTS

Subjecting test specimens of superPan Tech P5 board to colonies of 250 mites for 8 weeks.

No mites survived at the end of this period.

Determination of the preventive effectiveness against Hylotrupes bajulus (Linnaeus)

The result was: DURABLE.

SEISMIC TEST

These trials, conducted at the mechanical testing lab of the IVALSA Trees and Timber Institute, with the constructive system of RUBNER HAUS Spa, in accordance with EN 12512:2006 Timber structures - Test methods - Cyclic testing of joints made with mechanical fasteners, highlight the **suitability of our superPan Tech P5 board for construction in seismic risk areas.**

TEST TO DETERMINE RESISTANCE AND RIGIDITY TO DEFORMING

When comparing the rigidity of the superPan Tech P5 board to the OSB 3 board: **The superPan Tech P5 board shows 20% greater rigidity.**

When comparing the resistance of the superPan Tech P5 board to the OSB-3 board: **The superPan Tech P5 board shows 15% greater resistance.**

WEATHERING EXPOSURE TEST

After a year of exposure to weathering, the superPan Tech P5 board showed a **lower increase of the initial percentage of moisture** than in the OSB-3 board.

The OSB-3 board increased its initial moisture percentage by ten, while the **superPan Tech P5 board increased by 3**.

USING VAPOURSTOP

STORAGE AND HANDLING

It is recommended that the boards are transported, stored and handled with care so as to achieve optimal conditions. They should be stored in closed dry areas, protected from the sun and rain, in compact stacks. It is not recommended to store the boards outside in the open air.

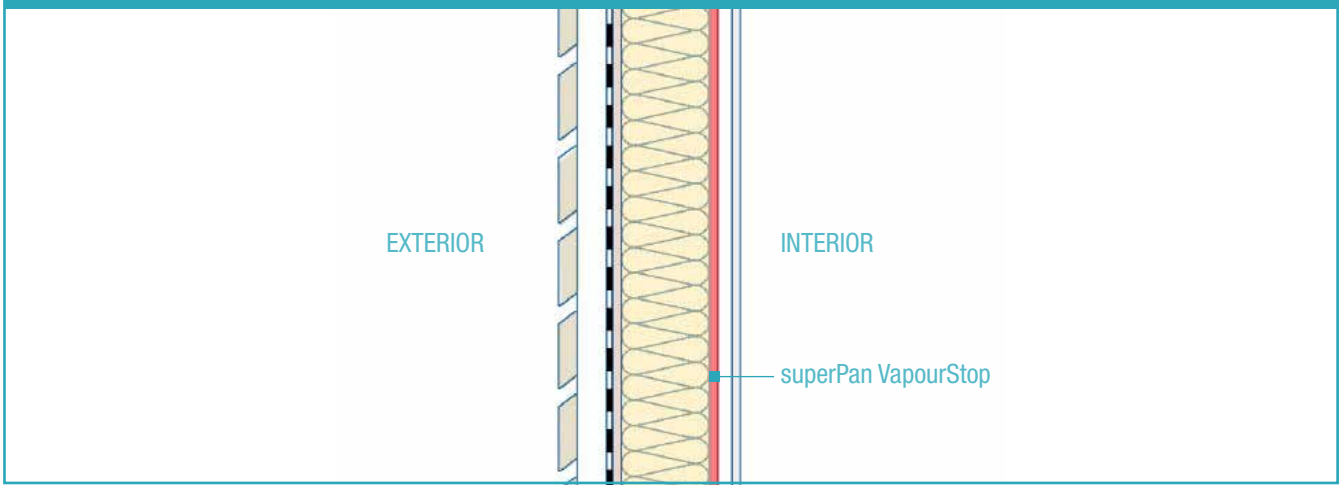
Boards should be stacked horizontally upon flat surfaces, conveniently away from the ground and with a sufficient number of supports to prevent the lower panels from overload. It is recommended that intermediate battens are placed parallel to the shorter sides and that the top of the stack be covered.

Before starting the work with the boards, it is advised that the structural elements are conditioned to the conditions of the place of application.

INSTALLATION

The structure and studs must follow the recommended dimensions and clearances, remaining levelled to ensure the proper attachment of the cladding

The superPan VapourStop must always be installed on the HOT FACE of the insulation to prevent any interstitial condensation in the enclosure's inner layers.



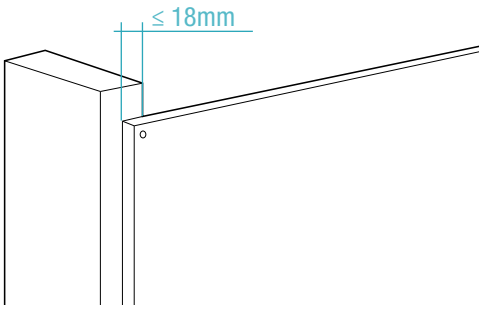
Using the superPan VapourStop board eliminates the need for additional membranes for the vapour barrier function and the airtight barrier function.

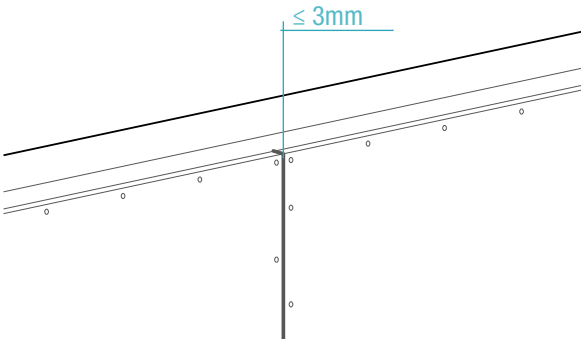
It is recommended that the edges of the panels rest on the studs at least 18mm.

Straight-edge boards require a clearance between boards and all sides should be supported on the light frame structure (studs, rafters...)

It is recommended that the joints on the smaller side of the boards be placed alternately (staggered joints).

An expansion joint of at least 3mm must be left between boards and a 2mm clearance must be left with respect to other elements throughout its perimeter.



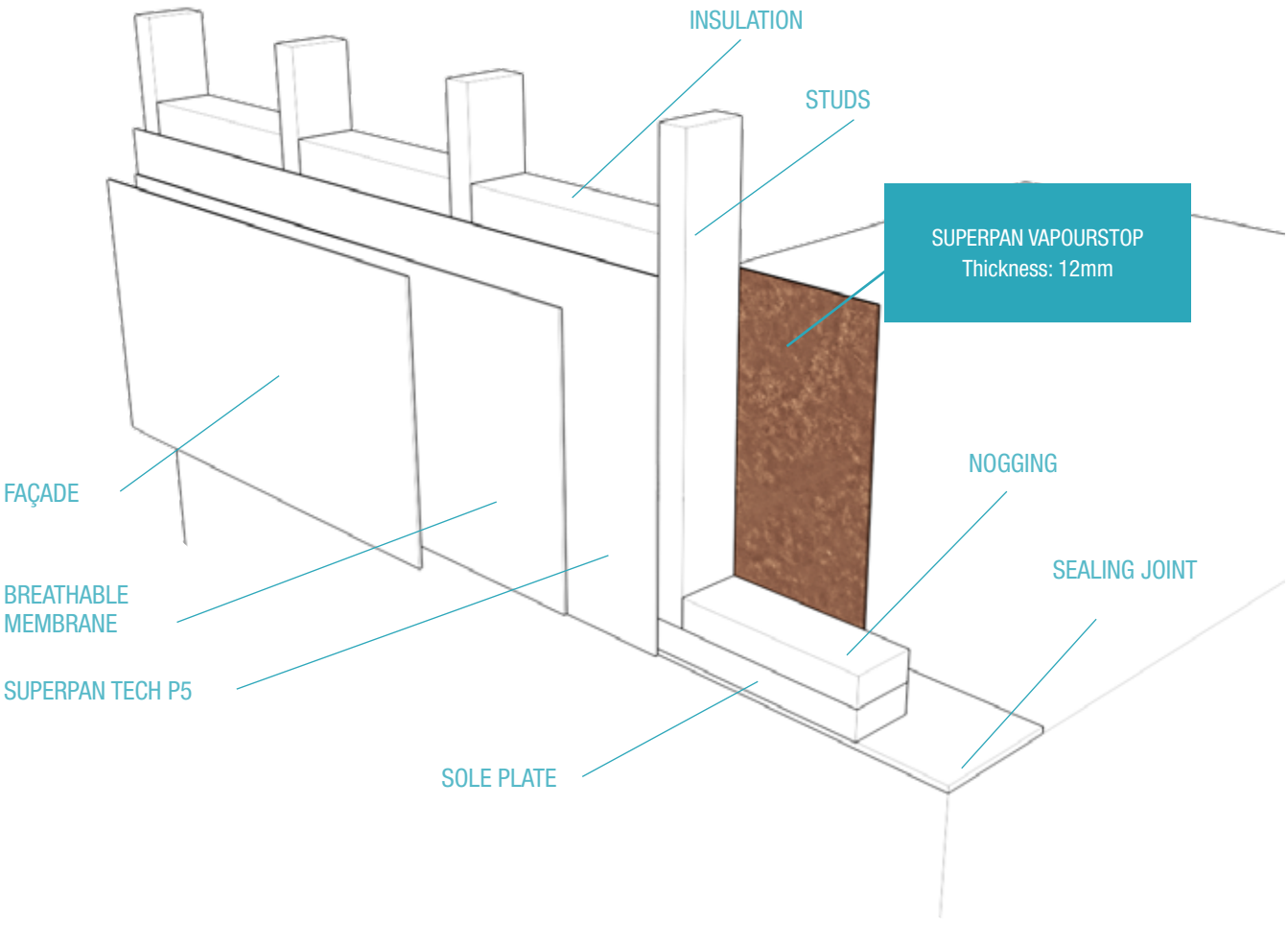


Unless structural calculations require separation or different distributions, the following maximum separations between fixing elements is recommended:

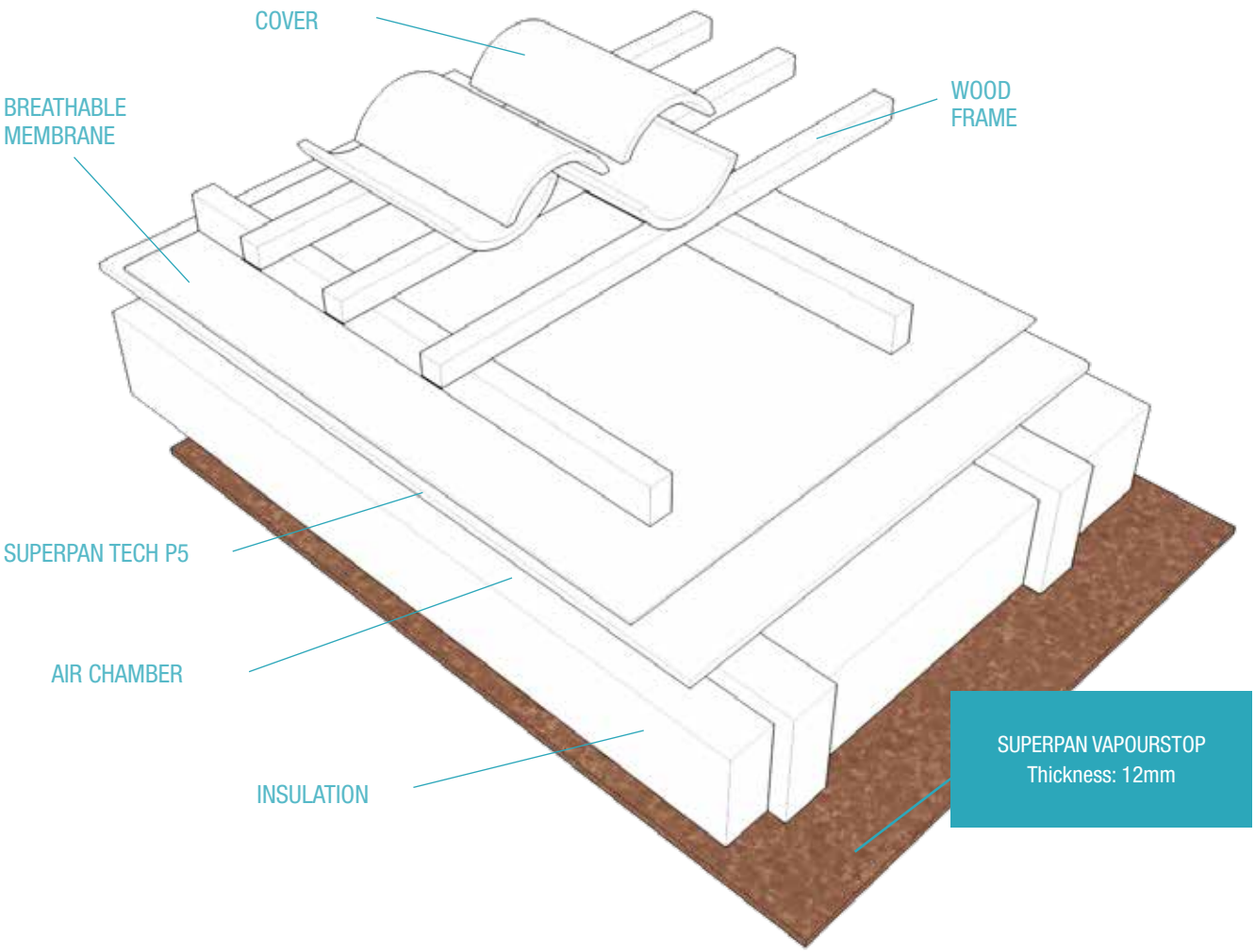
Maximum separation of fixing elements (mm)		Minimum distance to the edge of the board (mm)
Distances between fixing elements around the perimeter of the boards	Distance between fasteners on the joists, transoms or studs that work as intermediate supports for the boards	
150	300	8

To avoid distortions, the fixing elements must be placed at the top centre of the board first and then continue outwards and downwards.

DRAWING OF THE INSTALLATION OF SUPERPAN VAPOURSTOP IN VERTICAL LIGHT FRAME ENCLOSURES.



DRAWING OF THE INSTALLATION OF SUPERPAN VAPOURSTOP IN ROOFS



The joints, superficial holes and connections with other adjacent materials must be sealed with high-performance single-sided adhesive tape that guarantees airtightness and a vapour barrier.

For more information about installing tape on boards, follow the instructions included in the **Best practice airtightness guidance document**

FURTHER INFORMATION

Access the document by reading the QR code on your mobile phone.

Casa Cachóns
Arrokabe Architects

TAPES

The joints, superficial holes and connections with other adjacent materials must be sealed with high-performance single-sided adhesive tape that guarantees airtightness and a vapour barrier.

For more information about installing tape on boards, follow the instructions included in the **Best practice airtightness guidance**

pro clima®

Passivhaus Component certified tapes.

phA CERTIFIED COMPONENT Passive House Institute

TECSON VANA
Sd = 0.5m

CONTEGA SOLIDO SL
Sd = 2.8m

IMPORTANT NOTICE

This document is merely indicative.

Each installation has characteristics and conditions that cannot be taken into account in this document; consequently, a specialist must analyse and verify in each case in order to validate that the characteristics of the product are suitable to the particular work. The designer will be responsible for the calculations.

DISCLAIMER

The installation conditions of superPan Tech on site vary widely. In no case, FINSA (Financiera Maderera S.A.), nor their representatives, have knowledge about the quality of the materials, the construction methods used in the construction project and the experience of the agents involved, so according to this, they do not guarantee the technical, calculation or execution information of the superPan Tech panels in complete structures.

FINANCIERA MADERERA S.A. cannot be held responsible for damages arising from non-adherence to these recommendations, or product failures resulting from inadequate structural design or misuse of this product.

Ecological Building Systems

For full technical support for your project, please contact Ecological Building Systems or visit www.EcologicalBuildingSystems.com

ecological BUILDING SYSTEMS

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FINSA