superPan
TECH P5

AIRTIGHT PARTICLEBOARD

Best practice airtightness guidance document

FINSA

superPan
A new generation of technical wood manufactured by FINSA through a process of continuous pressing.
An innovative and exclusive product protected by patent no. PCT/EP99/09984 (European Patent Office).

superPan is made of wood fibre surfaces and an inner core of wood particles.
This unique composition sets it apart from all other boards on the market and provides superior mechanical and physical properties.

superPan TECH

The structural board by FINSA.

FINSA
FINANCIERA MADERERA S.A.
N-550, km.57
15707 Santiago de Compostela
España

www.finsa.com

info@finsa.com

superPan
TECH P5

A high-performance and high-strength wooden board. Ranked as P5 technical class, load-bearing boards for use in humid conditions, it is a unique solution in the market for structural panels and light frame construction systems for passive buildings.

superPan Tech P5 SA

TECHNICAL DATA - AVERAGE VALUES

TEST METHOD	PROPERTIES	THICKNESSES (mm)					UNITS
		10 a 13	13 a 20	20 a 25	25 a 35	32 a 40	
EN 323	Density (value to be considered as a rough guide only)	750	720	710	700	675	kg/m^3
EN 319	Internal bond	0.60	0.60	0.55	0.50	0.45	N/mm^2
EN 310	Bending strength	28	28	26	20	19	N/mm^2
EN 310	Modulus of elasticity	3500	3500	3200	3000	2800	N/mm^2
EN 317	Thickness swelling 24H	10					%
EN 318	Dimensional movement Length / Width	0.4					%
EN 318	Dimensional movement Thickness	6					%
EN 311	Surface soundness	>1.1					N/mm^2
EN 322	Moisture content	8±3					%
EN ISO 12460-5	Formaldehyde content	clase E-1 <8.0					mg/100g
EN 320	Screw holding. Edge.	800					N
EN 320	Screw holding. Surface.	1100					N
EN 13986	Reaction to fire.	D-s2,d0**	D-s2,d0***	D-s2,d0			clase
EN 321 EN 317	Swelling in thickness after cyclic test (V313)	12	12	11	10	9	%
EN 321 EN 319	Internal bond after cyclic test (V313)	0.25	0.22	0.20	0.17	0.15	N/mm^2
TOLERANCE ON NOMINAL DIMENSIONS							
EN 324-1	Thickness	± 0.30					mm
EN 324-1	Length / Width	± 5					mm
EN 324-2	Squareness	± 2					mm/m
EN 324-2	Edge straightness	± 1.5					mm/m

(**) Mounted without an air gap behind the superPan Tech P5. Mounted with a closed air gap not bigger than 22 mm behind the superPan Tech P5 classificationD-s2,d2. Classification E for any other more restrictive condition. Commission Decision 2007/348/EC

(***) Mounted without an air gap behind the superPan Tech P5, or with a closed air gap behind the superPan Tech P5 for thicknesses equal or greater than 15mm or with an open air gap behind the wuperPan Tech P5 for thicknesses equal or greater than 18 mm . Mounted with a closed air gap not bigger than 22mm behind the superPan Tech P5 classification D-s2,d2 in thicknesses between 10 and 18 mm. Commission Decision 2007/348/EC.

These physical-mechanical values improve/comply with the P5 classification established in EN 312:2010 European Standard, Tables 7 and 8. Structural boards used in moist environments (Type P5). Requirements for the specified mechanical and swelling properties. Requirements for use in humid contitions.

SuperPan Tech P5 meets Class E1 requirements (analysed according EN ISO 12460-5) as defined in EN 312:2010 European Standard.

SuperPan Tech P5 holds CE Certificate of conformity of the factory production control issed by the European Notified Body AENOR.

DURABILITY

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

PHYSICAL PROPERTIES (according to EN 13986)

Thermal conductivity λ: 0.12 W/m^{o}K.
Specific heat: 1700 J/kg^{o}K.
Resistance factor to water vapour diffusion μ: Dry-cup: 66 Wet-cup: 50

CERTIFICATIONS

Superpan Tech P5 has the following certifications:
- CE Marking Issued by AENOR No. 0099/CPD/A65/0008
- AITIM 24/04/04 quality seal

Chain of custody certification:
- PEFC number 14-35-00006
- FSC number TT-COC-003279

PEFC PEFC/14-35-00006 www.pefc.org

FSC

superPan Tech P5 SA

STORAGE AND HANDLING

It is recommended to transport, store and handle with care so that the boards are in optimal conditions before use.

To be stored in closed dry areas, protected from the sun and rain, in compact stacks. To be protected from the effects of the sun, rain and chemical splash.

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.

Intermediate battens are recommended.The battens must be placed parallel to the shorter sides and along the entire length of the stack.
It is recommended that the top of the stack be covered.

The boards should be conditioned on site, for a suitable period of time prior to installation, in order to reduce dimensional variations.

INSTALLATION

For the installation of **superPan Tech P5** in timber frame panels it is advised to arrange the structure and studs perpendicular to each other, following the recommended dimensions and distances. The studs surface and the structure must be levelled to ensure the proper attachment of the sheathing.
It is recommended that the edges of the panels rest on the studs at least 18 mm.
Straight-edge boards require a expansion gap between boards and all sides should be supported upon the structure, joists or rafters.
It is recommended that a 2 mm per meter length of wall expansion gap should be left to accommodate any movement. With stud framings at 625 mm centres or less, a 3 mm expansion gap should be left around the edges of the panels.
It is recommended to preferably use ringed or helical shank flat head nails, or other types of improved nails or screws with higher anchorage capacity.
Corrosion-resistant materials are galvanized steel or zinc, austenitic stainless steel, phosphorus bronze, and silicon bronze.
It is recommended that the minimum length of such nails or screws be 50 mm or twice the thickness of the board, in case the latter dimension is bigger.

It is recommended that the diameter of the nails or screws should be at least 0.16 times the thickness of the board.

Unless structural calculations require separation or different distributions, the following is recommended:

Maximum separation of fixation elements (mm)		Minimum distance to the edge of the board (mm)
Distances between fixation 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

In order to avoid buckling, fixings should commence at the top centre of the panel and continue outwards and downwards.

Joints, surface penetrations and junctions to adjoining structural elements must be sealed airtight with suitable air tight tape or sealing solutions.

SUPPLY

superPan Tech P5 is available in the following dimensions:

	No. of boards per package		
Thickness (mm) → Format (mmxmm) ↓	12	15	18
2500x1250	60	50	40
3050x1250		50	40

For other dimensions, the minimum order is a full truck. For other conditions, please contact our Sales Offices.

IMPORTANT NOTICE

The recommendations provided in this Technical Document for the correct use of superPan Tech P5 SA panels are specifically designed to ensure longevity and performance of this product in service. It is therefore essential that these recommendations are strictly followed. The superPan Tech P5 SA is designed to be installed by a competent contractor, experienced with this type of product.

This document is merely indicative and must not be used without the supervision of a competent professional with knowledge in the corresponding field, and in no case should rely on this document to replace any or all of the knowledge and/or experience of a competent professional.

Each installation has characteristics and conditions that can not be taken into account in this document, consequently a specialist must analyze and verify in each case these specific characteristics and conditions in order to validate that the characteristics of the product are suitable to the concrete 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 sa), 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 technical data, calculation or execution of the superPan Tech panels in complete structures.

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

Best practice airtightness guidance document

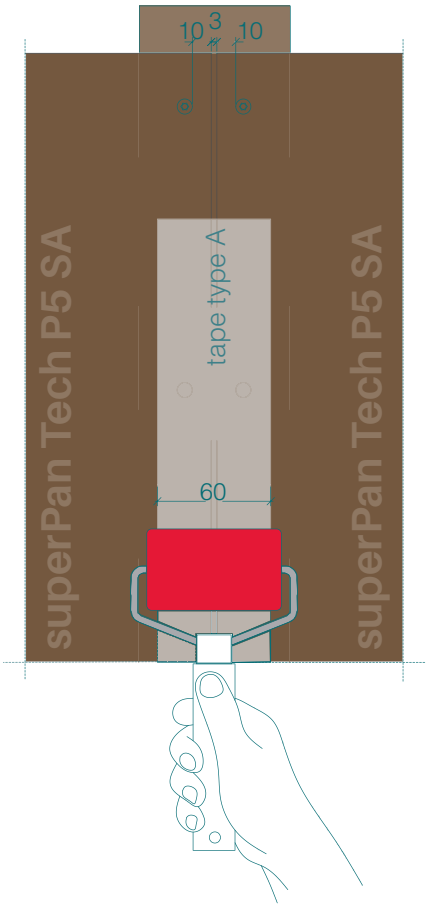
1/ Taping of junctions between panels superPan Tech P5 SA

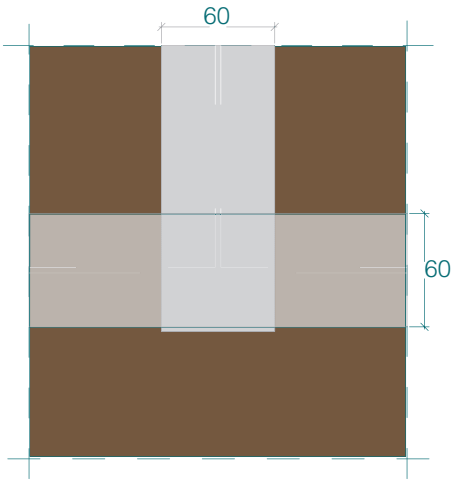
1
The timber studs, on which the superPan Tech P5 SA panels will be screwed, should be conveniently leveled and plumbed to ensure proper fixing of the panels. Panel junctions to be aligned centrallly on timber stud framing.

Fixings to be inserted at 10 mm from panel edge.
A 3 mm expansion joint to be left between all panel to panel connections, for full length of vertical connection and for horizontal panel to panel connections also.

2
A 60 mm wide airtightness tape type **A*** to be applied equally to both panels.

2.1
Remove backing strip.
2.2
Apply the tape along the centre of the joint, press it on with a hard rubber roller to improve the immediate adhesion.





Horizontal and vertical tape applications to fully overlap each other.
Dimmensions in mm.

*See tape specifications from page 14.

2/ Sealing of inside corners of superpan Tech P5 SA walls

1
Install wall panels leaving 3 mm expansion gap as before at all joints.

2
Create the 3-way corner tape first by folding and cutting tape type **B*** as follows:

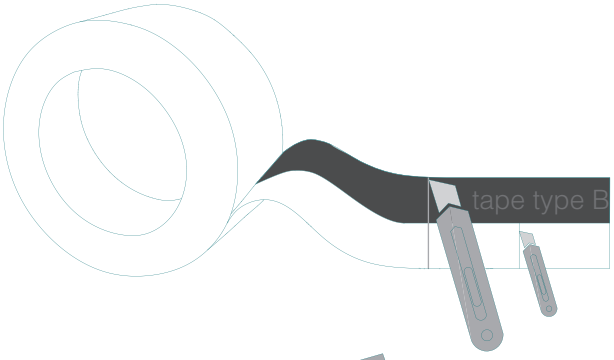
2.1
Unfold a short piece of tape type **B***.
2.2
Make a cut in centre of side without backing strip.
2.3
Fold over at a 90° angle and bond together.
2.4
Prefold to fit tightly into corner.
2.5
Fold back backing strip.
2.6

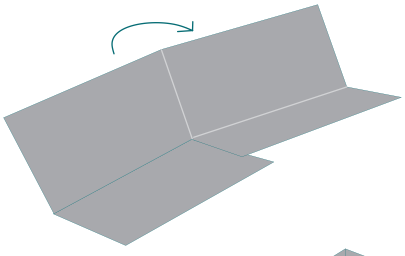
Stick down tape type **B*** corner and press on well.

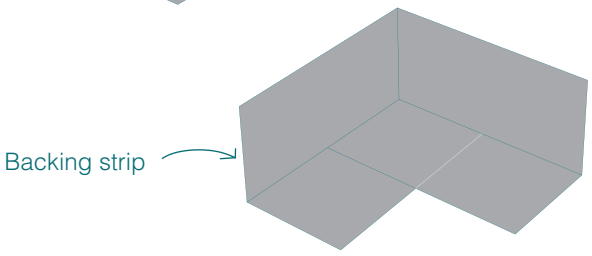
Repeat first in every inside corner.

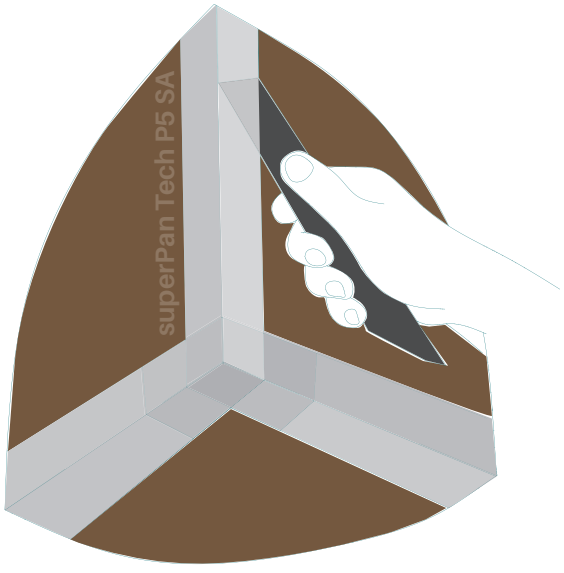
3
Then connect the inside corners:

3.1
Position tape type **B*** accurately in corner and bond side without backing strip first, pressing on firmly, pressing on firmly.
3.2
Remove backing strip and press on.



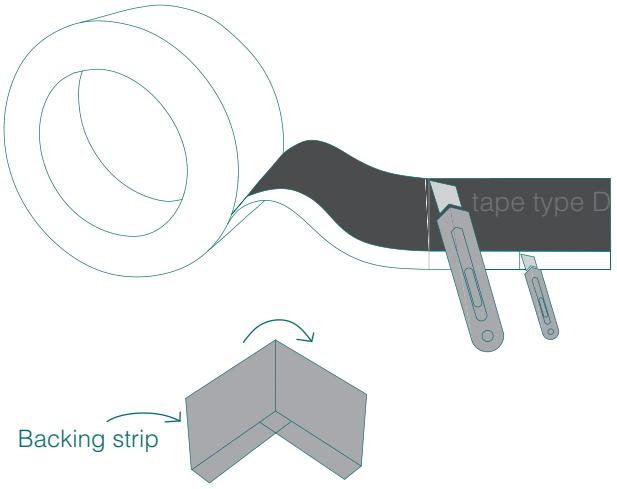






**See tape specifications from page 14.

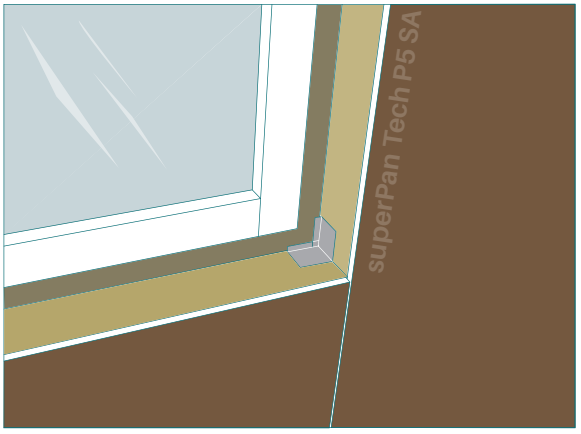
3/ Sealing of joining window to timber wall construction superPan Tech P5 SA



1
Prepare inside corners:

1.1
Cut a short piece of tape type **D*** and unfold.
1.2
Make a 12 mm cut in the centre of one side.
1.3
Fold over at a 90° angle, bond together and make a corner crease.
1.4
Remove backing strip.
1.5
Press into inside corner.
1.6
Affix 12 mm side of tape type **D*** to window frame.

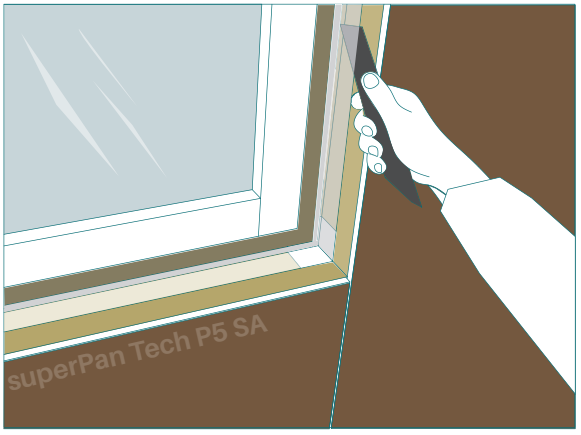
Repeat in each inside corner.



2
Then connect the inside corners:

2.1
Affix 12 mm side of tape type **D*** to window frame.
2.2
Measure and cut to the correct length.
2.3
Remove backing strip.
2.4
Unfold.
2.5
Press on.

Repeat on each side.



*See tape specifications from page 14.

4/ Sealing of outside corners of walls

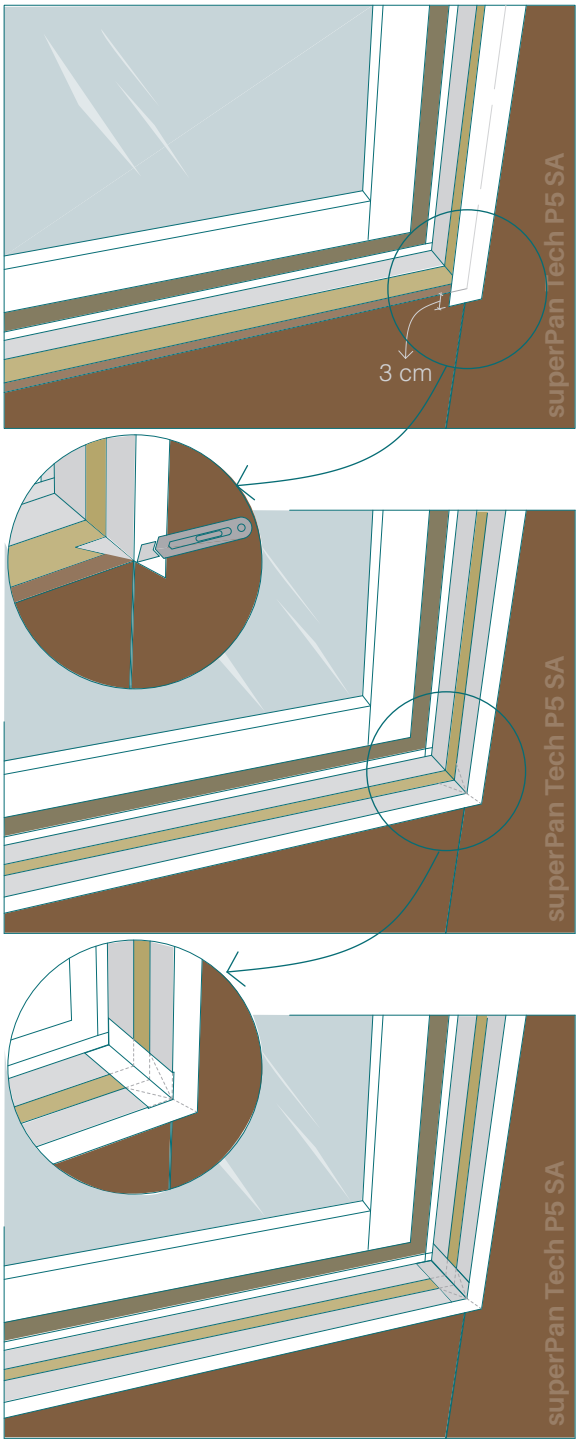
1
Sealing the edges:

1.1
Affix tape type **B*** to wall with folded edge flush against outside edge.
1.2
Add about 3 cm at each end and cut off.
1.3
Remove backing strip and unfold.
1.4
Cut into the corner from the inside out, approximately bisecting the angle. Start cut just short of the corner!
1.5
Fold around outside corner.
1.6
Press on.

Repeat on each side.

2
Fit a short piece of tape into corner.
2.1
Remove the backing strip.
2.2
Press on.

Repeat on each side.



*See tape specifications from page 14.

5/ Sealing of indoor base joint

1.1
Clean the substrates to be bonded.
1.2
Apply a covering coat with high-performance primer for strengthening sandy and fibrous substrates.

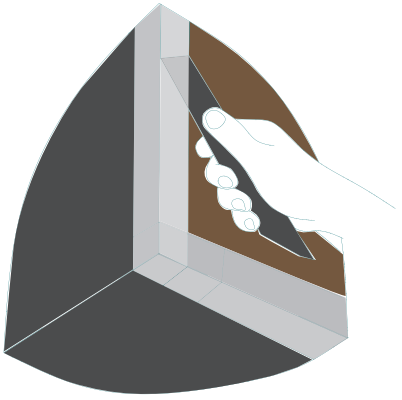
Depending on temperature and substrate, wait 5-20 minutes until the primer is transparent and sticky.

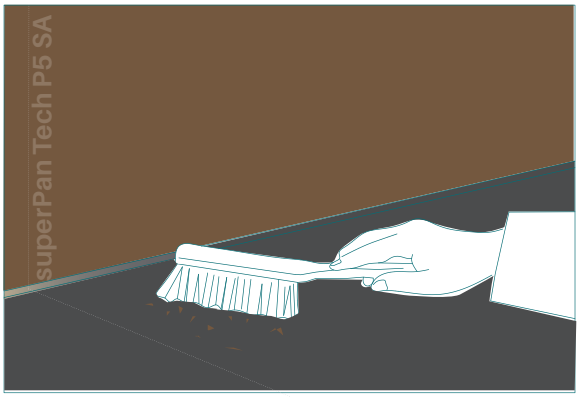
1.3
Apply tape type **C*** in the middle and align.
1.4
Peel off the slit backing strips one after another, press down.

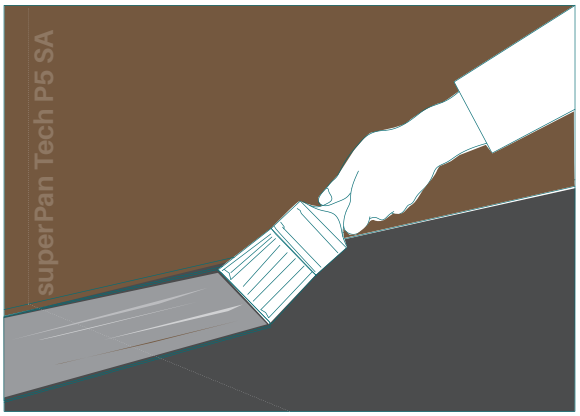
Make sure sufficient of the adhesive surface of tape type **C*** is applied to the substrates to be bonded.

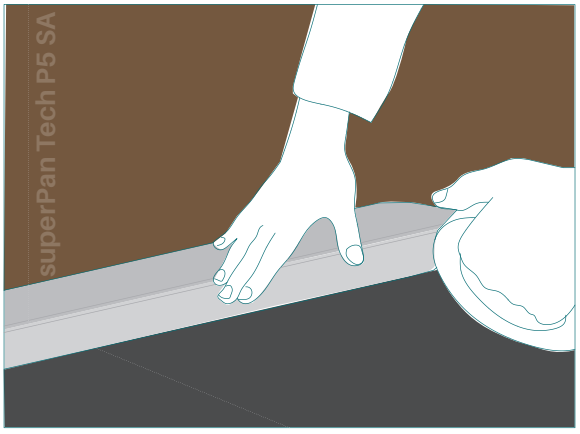
Alternatively:
1.1
Affix tape type **E*** with 50 mm side to wood-based panel.

1.2
Affix perforated 85 mm side to concrete.









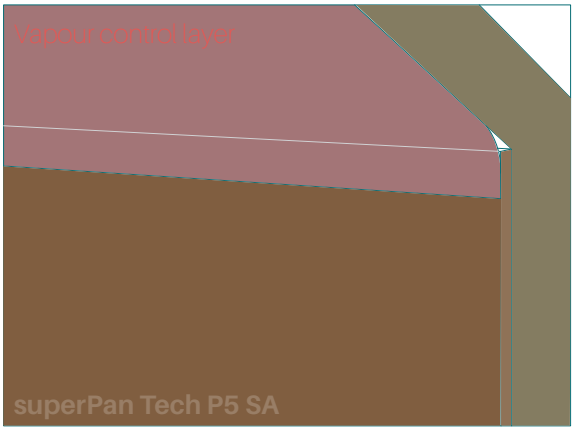
*See tape specifications from page 14.

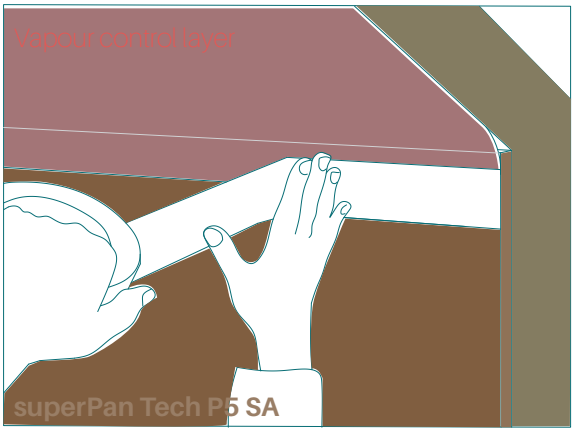
6/ Sealing of vapour control layers to timber walls superPan Tech P5 SA

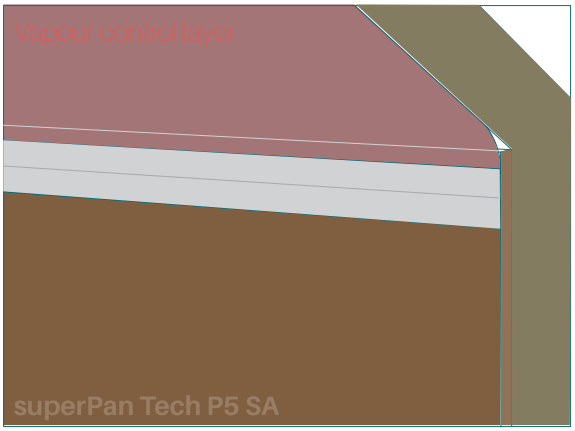
1.1
The vapour control layer should overlap the panel edge at least 50 mm.

1.2
Bond tape type **A*** in the middle and align.

1.3
Press on firmly.







*See tape specifications from page 14.

Tapes
TECHNICAL DATA

TAPE TYPE A FOR JUNCTIONS BETWEEN PANELS

DESCRIPTION
Single-sided high-performance tape for overlaps, extremely strong adhesion, sturdy carrier material and hand-tearable.

Special reinforced paper tape; splash-water resistant, with PE coating, suitable for airtight bonding.

TECHNICAL DATA
Width: 60 mm
Temperature resistance: -40°C to +100°C
Processing temperature: from -10°C
Diffusion-equivalent air layer thickness, s_d: ~8 m according to EN 1931

Airtightness:
Joint permeability coefficient, a-value: <0.1 $m^3/(hm$daPA2/3) according to EN 12114.
Linear reference air permeability: Q1000-value ≤0.25 $m^3/(mh)$ according to EN 12114.

Ageing resistance:
High permanent adhesive strength, non-drying and no-no-embrittling without caoutchouc, resin or solvent, can reliably and durably follow structural movements.

Suitability for storage: unlimited.

TRADEMARKS OF TAPES FOR THIS APPLICATION

· SIGA-Sicrall®

· PROCLIMA Tescon Vana

· AMPACK AMPACOLL® INT

· Other equivalent and proven age tested airtightness tape

TAPE TYPE B
FOR SEALING CORNERS

DESCRIPTION

High performance tape for angular penetrations, purlins, inside and outside corners and skylights; pre-folded 30/30 mm and one backing strip already removed, for simple and quick bonding and other backing strip protruding, easy to remove.
Special reinforced paper tape, splash-water resistant, with PE coating, suitable for airtight bonding.

TECHNICAL DATA

Width: 60 mm (30/30 mm)
Temperature resistance: -40°C to +100°C
Processing temperature: from -10°C
Diffusion-equivalent air layer thickness, s_d: ~8 m according to EN 1931

Airtightness:
Joint permeability coefficient, a-value: <0.1 m^3/(hmdaPA2/3) according to EN 12114.
Linear reference air permeability: Q1000-value ≤0.25 m^3/(mh) according to EN 12114.

Ageing resistance:
High permanent adhesive strength, non-drying and no-no-embrittling without caoutchouc, resin or solvent, can reliably and durably follow structural movements.

Suitability for storage: unlimited.

TRADEMARKS OF TAPES FOR THIS APPLICATION

· SIGA-Corvum® 30/30

· PROCLIMA Tescon Profil

· AMPACK AMPACOLL® XT60 (Double Slit)

· Other equivalent and proven age tested airtightness tape

TAPE TYPE C
FOR BONDING WALL ELEMENTS TO THE FLOOR AND CEILING

DESCRIPTION

High-performance tape for bonding wall elements to the floor and ceiling. Extremely strong adhesion, elastic to keep joints sealed despite structural movements and with slit backing strip, simple and quick to apply.

Special, reinforced PE film tape, elastic. The bond must not be under standing water.

TECHNICAL DATA

Width: 60, 100 and/or 150 mm.
Temperature resistance: -40°C to +100°C
Processing temperature: from -10°C
Diffusion-equivalent air layer thickness, s_d: ~40 m according to EN 1931

Airtightness:
Joint permeability coefficient, a-value: <0.1 m^3/(hmdaPA2/3) according to EN 12114.
Linear reference air permeability: Q1000-value ≤0.25 m^3/(mh) according to EN 12114.

Ageing resistance:
High permanent adhesive strength, non-drying and no-no-embrittling without caoutchouc, resin or solvent, can reliably and durably follow structural movements.

Suitability for storage: unlimited.

TRADEMARKS OF TAPES FOR THIS APPLICATION

· SIGA-Rissan®

· PROCLIMA Tescon No.1

· AMPACK AMPACOLL® INT

· Other equivalent and proven age tested airtightness tape

TAPE TYPE D
FOR WINDOW AND DOOR FRAMES

DESCRIPTION

High-performance tape for window and door frames, pre-folded 12/48 mm, invisible behind cladding, with one backing strip already removed for a simple and quick bonding and other backing strip protruding easy to remove.
Special reinforced paper tape, splash-water resistant.

TECHNICAL DATA

Width: 60 mm.Temperature resistance: -40°C to +100°C
Processing temperature: from -10°C
Diffusion-equivalent air layer thickness, s_d: ~8 m according to EN 1931

Airtightness:
Joint permeability coefficient, a-value: <0.1 m^3/(hmdaPA2/3) according to EN 12114.
Linear reference air permeability: Q1000-value ≤0.25 m^3/(mh) according to EN 12114.

Ageing resistance:
High permanent adhesive strength, non-drying and no-no-embrittling without caoutchouc, resin or solvent, can reliably and durably follow structural movements.

Suitability for storage: unlimited.

TRADEMARKS OF TAPES FOR THIS APPLICATION

· SIGA-Corvum® 12/48

· PROCLIMA Tescon Profil

· AMPACK AMPACOLL® XT 60 (Double Slit)

· Other equivalent and proven age tested airtightness tape

TAPE TYPE E
FOR PLASTERED JOINTS

DESCRIPTION

Airtight high-performance tape with perforated plastering zone for plastered joints, for indoor application, extremely high adhesive strength on entire surface; pre-folded, without backing strip and non-woven with perforated zone suited for plastering-over for strong plaster adhesion on masonry.

TECHNICAL DATA

Width: 100, 135, 150 and/or 200 mm.
Temperature resistance: -40°C to +100°C
Processing temperature: from -10°C
Diffusion-equivalent air layer thickness, s_d: ~20 m according to EN 1931

Airtightness:
Joint permeability coefficient, a-value: <0.1 m^3/(hmdaPA2/3) according to EN 12114.
Linear reference air permeability: Q1000-value ≤0.25 m^3/(mh) according to EN 12114.

Ageing resistance:
High permanent adhesive strength, non-drying and no-no-embrittling without caoutchouc, resin or solvent, can reliably and durably follow structural movements.

Suitability for storage: unlimited.

Maximum tensile strength: lengthwise 220 N/50 mm and crosswise 140 N/50 mm according to EN 12311-1.
Elongation at maximum tensile strength: lengthwise 70% and crosswise 80% according to EN 12311-1.
Reaction to fire: class E, according to EN ISO 11925-2.

TRADEMARKS OF TAPES FOR THIS APPLICATION

· SIGA-Fentrim® 20

· PROCLIMA Contega FC

· AMPACK AMPACOLL® BKF

· Other equivalent and proven age tested airtightness tape

For further information:

www.finsa.com
info@finsa.com

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TECH

The structural board by FINSA.

FINSA
FINANCIERA MADERERA S.A.
N-550, km.57
15707 Santiago de Compostela
Spain

www.finsa.com

info@finsa.com

FINSA