



**FINSA**

*solutions in wood*

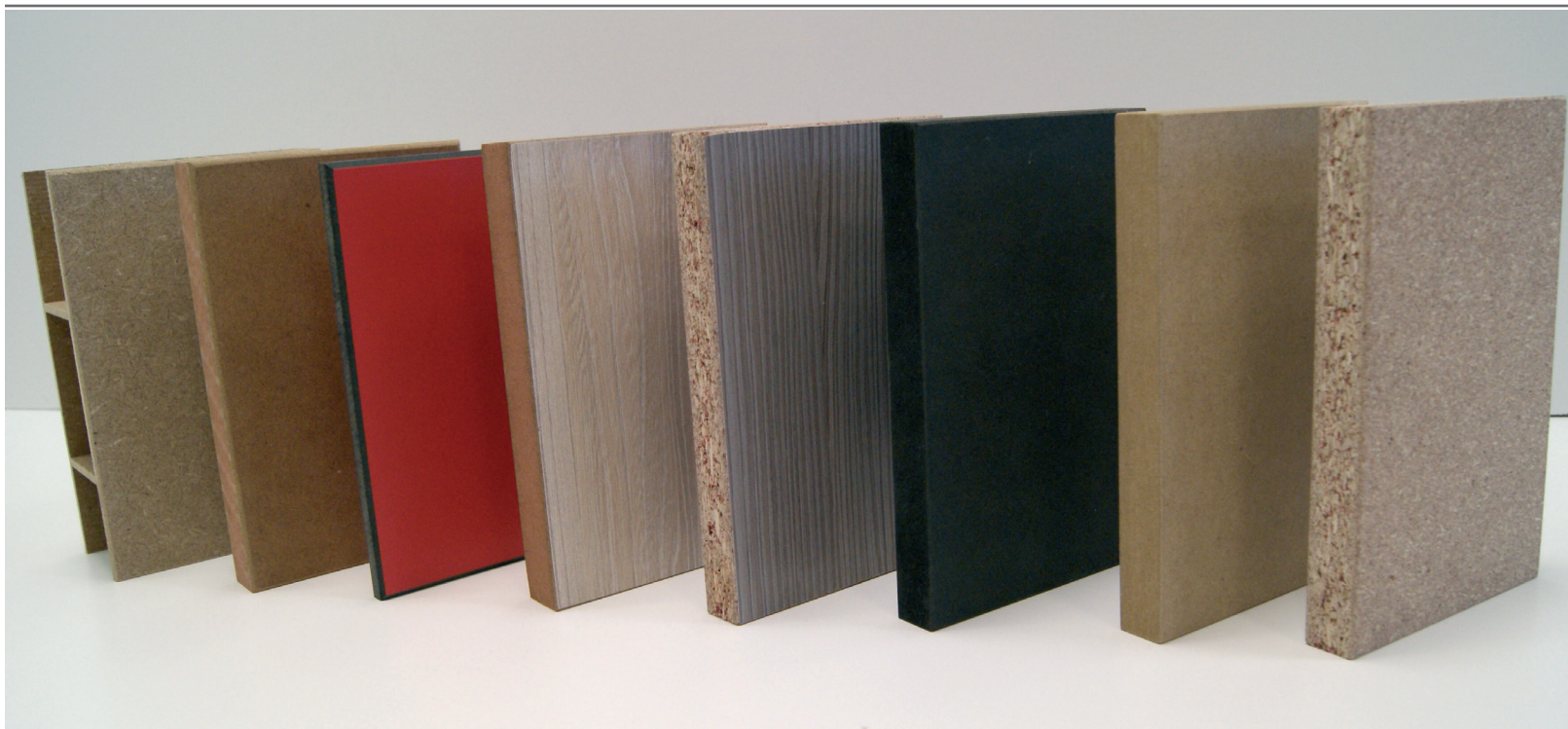
# **FIRE - RETARDANT SOLUTIONS** in wood

[for your safety]



[www.finsa.com](http://www.finsa.com)

# FIRE-RETARDANT SOLUTIONS in wood



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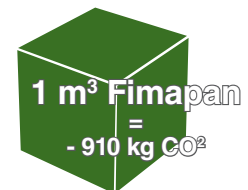
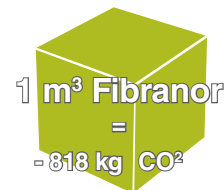
## Transparency:

Ecological product footprint

In 2011, Finsa became the first manufacturer of wood-based panels on the Iberian Peninsula that provides the Environmental Product Declaration (EPD) for its products.

The EPD is a tool for passing on clear and transparent information on the environmental impact of a certain product during all the stages in its life cycle.

In the case of our products it confirms that wood is a material that maintains its captured level of greenhouse gases throughout our production process.



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## LEED credits:

Sustainable building

Thanks to our products, it is possible to obtain **LEED credits** in the following aspects:

- Content of recycled material
- Regional material
- Quickly renewable material
- Certified wood
- Low emission material





“Sustainable building makes sense”



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## Certifications:

Wood from sustainable forests

The Chain of Custody certifies the journey of the raw materials from the forest to the consumer/customer, including all stages of the process, i.e. it guarantees the customer that the products he is buying are manufactured with materials that are sourced from sustainably managed forests.

This guarantee is provided through the PEFC and FSC certifications, which affect the manufacture and marketing of products derived from wood.

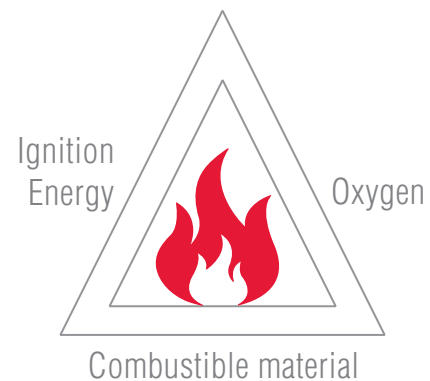


# Wood and fire safety

## Fire safety in construction

Across Europe, fires cause thousands of deaths every year, in addition to immense material damage. When designing equipment, it is vital to know what materials can retard the spread of fire, as they allow fire-fighting services to have more time, thus limiting the damage.

A fire can only start and grow if three key factors are simultaneously present: combustible material, oxygen and ignition energy. Since it is not possible to fully control the last two factors, we must redouble our efforts to choose materials that can **limit the development and spread of fire**.





## How does a fire develop?

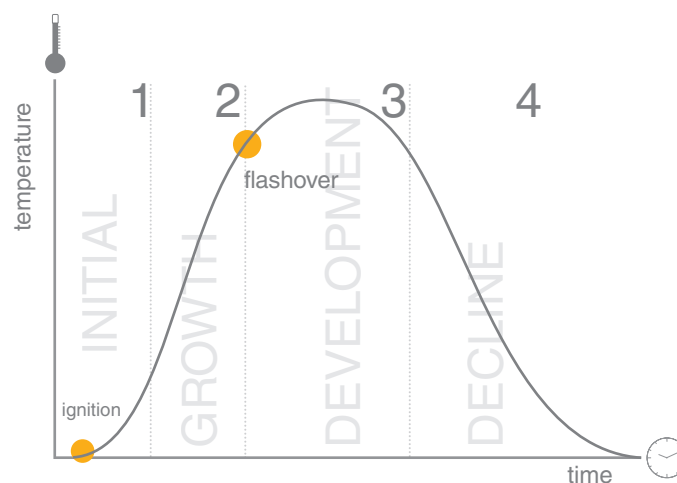
There are several distinct stages in the development of a fire:

**1) The incipient stage**, immediately after ignition, in which the fire is dormant, and only a small portion of the combustible material gets ignited.

**2) The growth stage**, in which the rate of combustion increases and the fire is kindled. By means of radiation or through direct contact with the flames and with other materials present, the fire begins to spread. Within this stage, there is a typical point called mass ignition or flashover, in which there is a sudden increase in temperature, resulting in a fully developed situation of fire.

**3) The stage of fully developed fire**, in which all combustible materials in the enclosure burn down and the maximum temperature of the fire is reached.

**4) The decline stage:** the maximum temperature begins to drop, either due to fuel consumption or due to the lack of ventilation.



**In the first two stages** (pre-flashover), the fire protection strategy consists of limiting its development, acting upon flammability and upon the contribution of the building materials, furniture, coatings, and so on, towards the fire... So the **fire performance of materials is vital**, since the growth of the fire is controlled by them.

**In the last two stages** (after flashover), the protection strategy focuses on narrowing the dimensions of the fire and protecting the structure so as not to cause its collapse. In this case the **fire resistance of the structure is absolutely critical**.

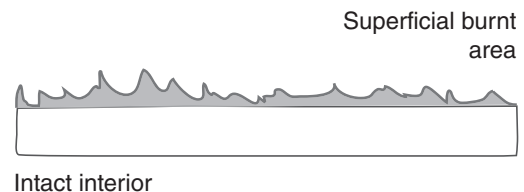
# Wood and fire safety

## How does wood behave when there is fire?

When wood is exposed to a heat source, the moisture contained within it gradually diminishes, while the piece of wood starts to shrink. As the temperature rises above  $270^{\circ}\text{C}$ , the wood pyrolysis process begins, in which it starts to decompose into flammable gases. If wood is not directly in contact with the flames, it will not start **to burn until the temperature reaches approximately  $400^{\circ}\text{C}$ .**

Once the fire starts, due to its low thermal conductivity, the combustion takes place only on the surface of the wood, resulting in charred outer insulating layer which protects the inner layers maintaining them at a much lower temperature and preserving its mechanical properties.

Therefore, wood is considered to have **good fire behavior in a fire at the full development stage.**







## How do other materials behave?

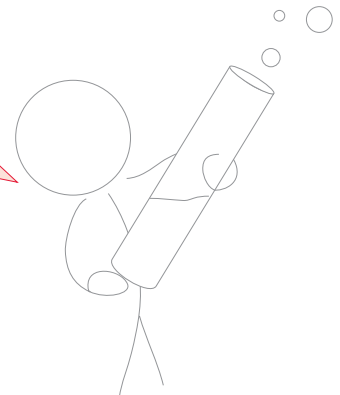


Steel, a non-combustible material, is a very good conductor of heat. When subjected to high temperatures, it begins to lose its resilience and gets deformed: at 550°C it only retains 60% of its original strength.

In the case of concrete, from 300°C the surface starts to peel off. At higher temperatures, its bearing capacity decreases because the armour loses its strength.

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In a trial, flame-retardant wood panels even when in direct contact with flames for more than 20 minutes, do not end up inflaming.



# Wood and fire safety

## Reaction to fire

Reaction to fire tests the ability of a given material to promote the development of the fire, by measuring properties such as time to ignition, flame propagation, heat emission, smoke production and flaming droplets.

In Europe, construction products are classified according to standard EN 13501-1, which specifies the classification criteria regarding their reaction to fire.



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| FINAL APPLICATION |                  | COMBUSTIBLE    | CONTRIBUTION TOWARDS FIRE |                |
|-------------------|------------------|----------------|---------------------------|----------------|
| Walls<br>Ceilings | Flooring         |                |                           |                |
| A1                | A1 <sub>fi</sub> | No             | No                        | Maximum degree |
| A2                | A2 <sub>fi</sub> | No             | No                        | Lesser degree  |
| B                 | B <sub>fi</sub>  | Yes            | Yes                       | Very limited   |
| C                 | C <sub>fi</sub>  | Yes            | Yes                       | Limited        |
| D                 | D <sub>fi</sub>  | Yes            | Yes                       | Medium         |
| E                 | E <sub>fi</sub>  | Yes            | Yes                       | High           |
| F                 | F <sub>fi</sub>  | Not classified |                           |                |





Furthermore, the tests identify the following additional classifications:

**Smoke (s)** opacity with increasing denominations s1, s2, s3 for low, medium and high smoke opacity, respectively.

**Droplets or particles (d)** with increasing denominations d0, d1, d2 for none, medium and high droplets, respectively.

Materials should be classified according to their final application. In case of application of **flooring** materials they are to be distinguished with a subscript **fl (floor)**.

Chipboard or standard fiberboard panels with a minimum density of 600 kg/m<sup>3</sup> and 9 mm thick, can be assigned the classification D-s2, d0 without further testing, by a decision of the European Commission.

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By adding flame-retardant products, we can get boards with **improved fire performance**, which must be tested and classified by accredited laboratories by an officially recognized entity and they must necessarily bear the CE mark, **accepted in any European Union country**.



# Wood and fire safety

## Fire resistance

It is a property of the final construction elements, not of the individual component materials. It measures the ability of such construction elements to withstand a fully developed fire in terms of:

**R** represents the **bearing capacity** of a structural element, i.e. its ability to withstand exposure to fire without loss of structural stability.

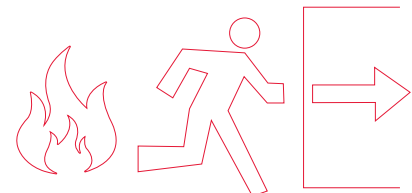
**E** represents the **integrity** of a construction element with separating functions, i.e. the ability to not give way to flames or hot gases, which may ignite the side facing the fire, or any material adjacent to that surface.

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**I** represents **isolation** of a construction element with separating functions, i.e., the ability of an element to withstand exposure to fire on one side, without exceeding a given temperature on the unexposed side.

According to Standard EN 13501-2 “Classification of fire resistance of building elements”, fire resistance is determined by exposing the construction element to increasing temperatures over time and is expressed as the time that the element is able to fulfill the function for which it has been installed. For example, an EI 60 element is able to preserve its integrity and insulation intact for 60 minutes.

To determine the fire resistance of a construction element, it is necessary to test **the entire set**.





## Building regulations

Local construction regulations establish the minimum parameters of behaviour of materials and construction elements in situations of fire. The legislation for each country:

**UK:** The building regulations. Fire safety. Approved documents B-1 and B-2.

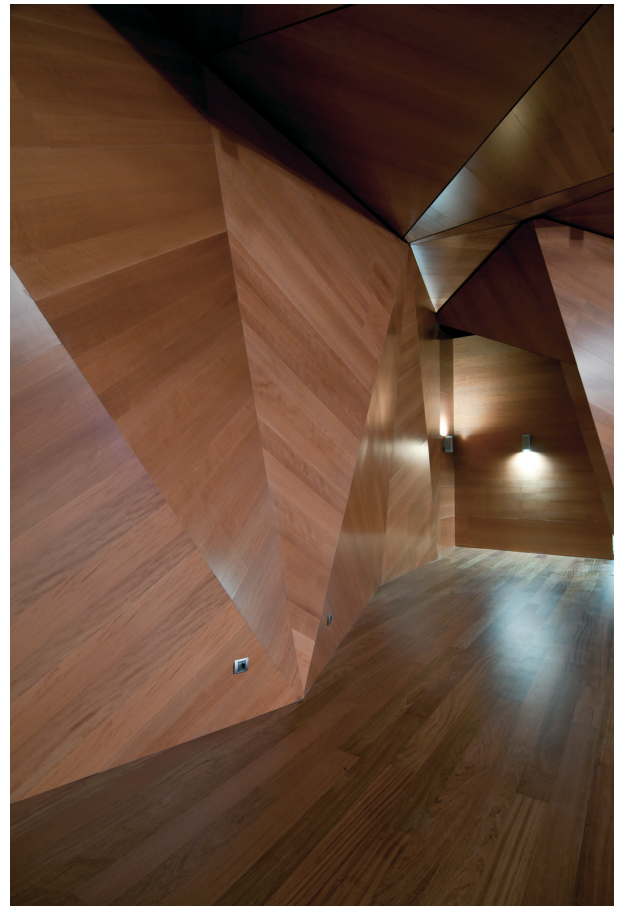
**Ireland:** Building regulations. Technical guidance document B. Fire safety.



# Use of flame-retardant boards

At Finsa, we are known for offering solutions that meet the expectations of our customers. Thus, Finsa flame-retardant boards can be used in a wide variety of applications:

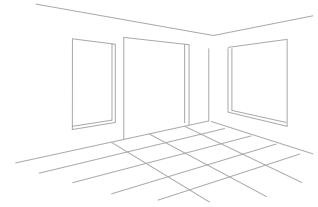
## Public buildings



**Palace of Communications Cibeles**, Madrid, Spain.

**Product:** Flame-retardant Fibrapan.

**Application:** Panelling.



**Court of appeal of Krakow, Poland.**

**Product:** Flame-retardant Fimapan.

**Applications:** Wall and ceiling coating.



**Geriatric Centre “Prado de San Gregorio”, Ciudad Real, Spain.**

**Product:** Flame-retardant Fimapan.

**Application:** Doors.



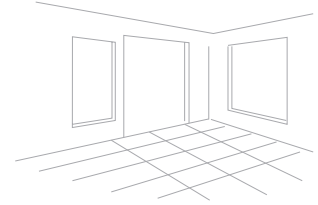
# Use of flame-retardant boards

**Hospital de Cruces (Ground Floor), Bizkaia, Spain.**

**Producto:** Flame-retardant Fibraplast.

**Aplicación:** Panelling.





## Corporate Headquarters

**Community Centre**, Hewett, Australia.

**Product:** Flame-retardant Fibrapan.

**Application:** Acoustic panels for ceilings.



**COAM**. Official architects College of Madrid, Spain.

**Product:** Flame-retardant Fibrapan.

**Application:** Movable partition walls.





# Use of flame-retardant boards

## Ephemeral architecture

**Exhibition stand.** MIPCOM Trade Show, Cannes, France.

**Product:** Flame-retardant Fibrapan.

**Application:** Exhibition stand.

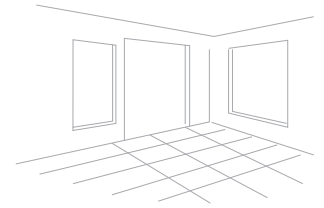


**Municipality of Bordeaux, France.**

**Product:** Flame-retardant FINSA GreenPanel.

**Application:** Ephemeral architecture.





## Buildings open to the public

**Soon business solutions offices**, Moreira da Maia, Portugal.

**Product:** Finfloor Original.

**Application:** Flooring.



**Hotel Nagari Boutique & Spa**, Vigo, Spain.

**Product:** Flame-retardant Fibrapan.

**Application:** Panelling, bed headboards and cabinet doors.



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# Use of flame-retardant boards

## Commercial buildings

**Ola Shoe store, Shopping mall “Deiland”, Lanzarote, Spain.**

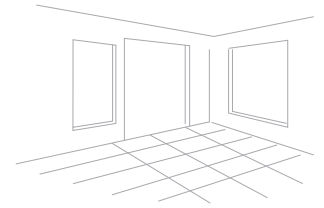
**Producto:** Finfloor Style.

**Aplicación:** Flooring.

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**"Port Łódź" Shopping center, Poland**

**Product:** Flame-retardant Fimapan and Fibrapan.

**Applications:** Wall and ceiling coating.



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**And also in:**

Sport facilities. Health centers and nursing homes. Schools. Railway equipment. Industrial facilities ...

# Special flame-retardant boards

**FIMAPAN® FLAME RETARDANT**  
**B-s2, d0**



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Particle board made with three layers bonded with synthetic resins and flame-retardant additives pressed at high temperature.

**FIBRAPAN® FLAME RETARDANT**  
**B-s2, d0**



Medium-density fibreboard bonded with synthetic resins and flame-retardant additives under pressure and heat.

|         |             | thicknesses |    |    |
|---------|-------------|-------------|----|----|
|         |             | 10          | 16 | 19 |
| formats | 2440 x 1220 | 70          | 46 | 42 |
|         | 2850 x 2100 | 56          | 36 | 28 |

|         |             | thicknesses |    |    |    |    |    |    |    |
|---------|-------------|-------------|----|----|----|----|----|----|----|
|         |             | mm          | 10 | 12 | 15 | 16 | 18 | 19 | 30 |
| formats | 2440 x 1220 | 70          | 60 | 50 | 46 | 40 | 42 | 26 |    |
|         | 2850 x 2100 | 56          |    |    |    | 36 | 32 | 28 |    |
|         | 3050 x 1220 |             |    | 50 |    |    | 40 |    |    |
|         | 3660 x 1830 | 40          |    |    |    | 24 |    | 20 |    |



**FIBRAPAN® FLAME RETARDANT E-Z**  
**B-s2, d0**



Medium-density fibreboard bonded with synthetic resins and flame-retardant additives under pressure and heat, with very low formaldehyde content ( $\leq 3$  mg/100 g dry board).

**MEDILAND® M1**  
**B-s2, d0**



Medium-density fibreboard bonded with synthetic resins and flame-retardant additives under pressure and heat, made from 100% pine from the Landes (France).

\*Check the available sizes and thicknesses with our sales network.

|         |             | thicknesses |    |    |    |    |    |    |
|---------|-------------|-------------|----|----|----|----|----|----|
| mm      |             | 10          | 12 | 16 | 19 | 22 | 25 | 30 |
| formats | 2800 x 2070 | 48          | 40 | 30 | 26 | 22 | 20 | 16 |
|         | 3660 x 2070 | 40          | 34 | 25 | 21 | 18 | 16 | 13 |



# Special flame-retardant boards

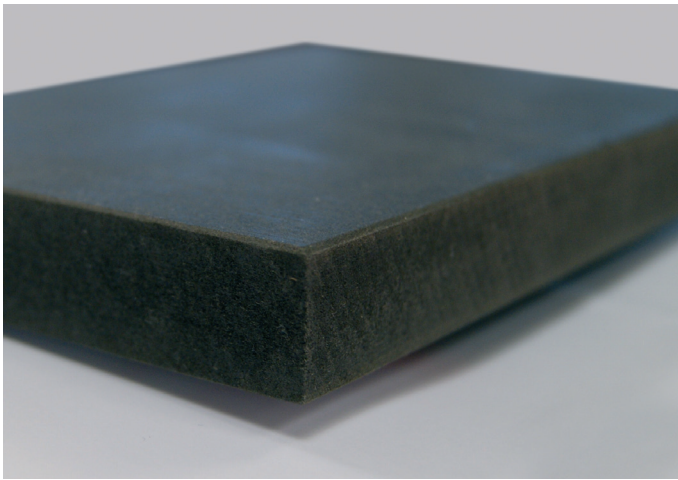
**FINSA GREENPANEL® FLAME-RETARDANT.**  
B-s2, d0



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High-strength lightweight board made up of flame-retardant MDF sides and core, the latter arranged as a grid.

**BLACK FIBRACOLOUR® FLAME-RETARDANT**  
B-s2, d0



Medium-density fibreboard coloured throughout its entire mass, with improved reaction to fire.

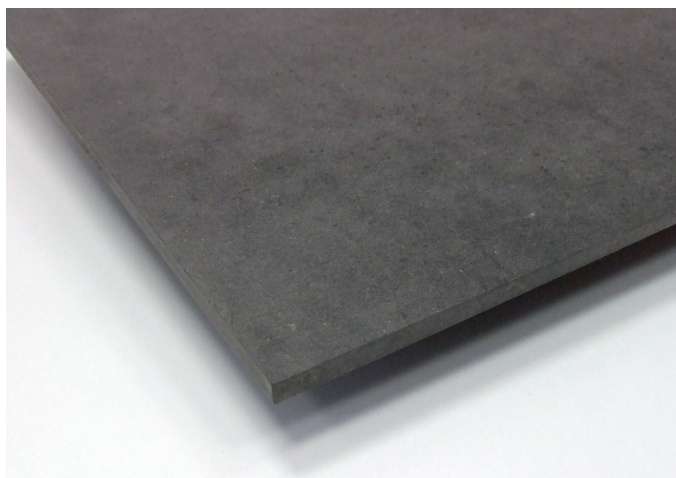
\*Check the available sizes and thicknesses with our sales network.

|                |             | <u>thicknesses</u> |
|----------------|-------------|--------------------|
|                |             | mm                 |
| <u>formats</u> | 2850 x 2100 | 19                 |
|                |             | 28                 |





**COMPAC PLUS FLAME-RETARDANT**  
**B-s1, d0**



Wood fibre compact for indoor applications that require exposure to high and persistent humidity over time, with improved reaction to fire.

**SUPERPAN® TECH P6 DECOR 38 mm**  
**B<sub>fl</sub>-s1**



High-strength structural board made up of fibre surfaces and inner wood particle core, and coated with a non-slip melamine paper finish.

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\*Check the available sizes and thicknesses with our sales network.

# Coated flame-retardant boards



**FIMAPLAST®**  
**FLAME-RETARDANT**  
B-s1, d0



Melamine-coated flame-retardant particle board.

**FIBRAPLAST®**  
**FLAME-RETARDANT**  
B-s2, d0



Melamine-coated flame-retardant MDF.

**COMPACMEL® PLUS**  
**FLAME-RETARDANT**  
B-s2, d0

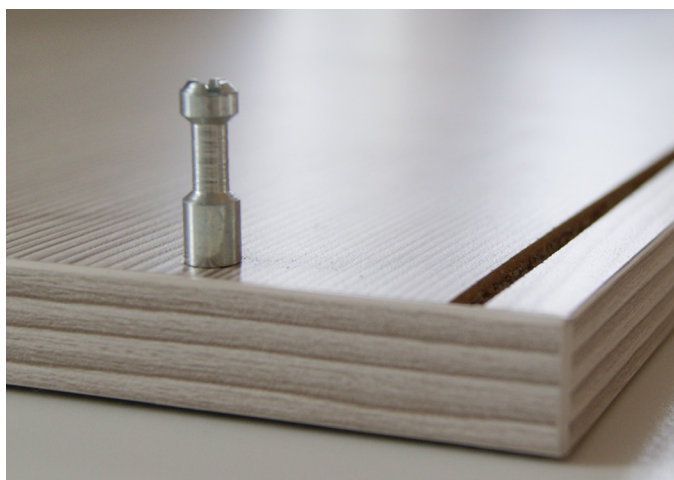


Wood fibre compact board with melamine coating and improved reaction to fire.

# Machined flame-retardant boards

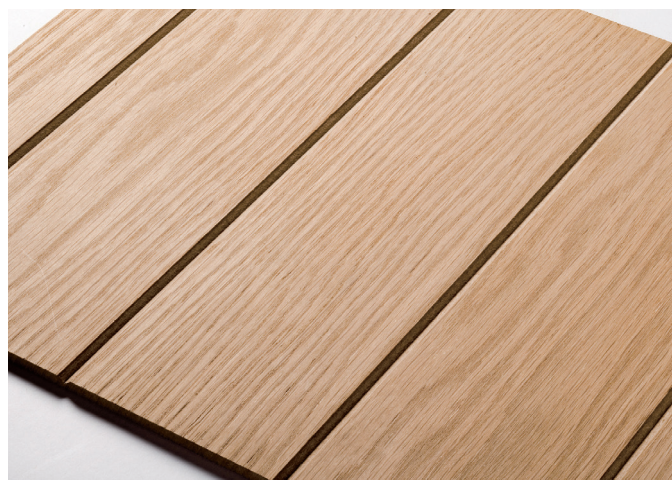


## PANELS/COMPONENTS



Machined, drilled and/or edged parts, made with any of our flame-retardant base boards.

## GROOVED



Flame-retardant board grooved on one side for decorative purposes.

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\*Check the available sizes and thicknesses with our sales network.



# Flame-retardant laminated flooring

**FINFLOOR® ORIGINAL 8 mm**

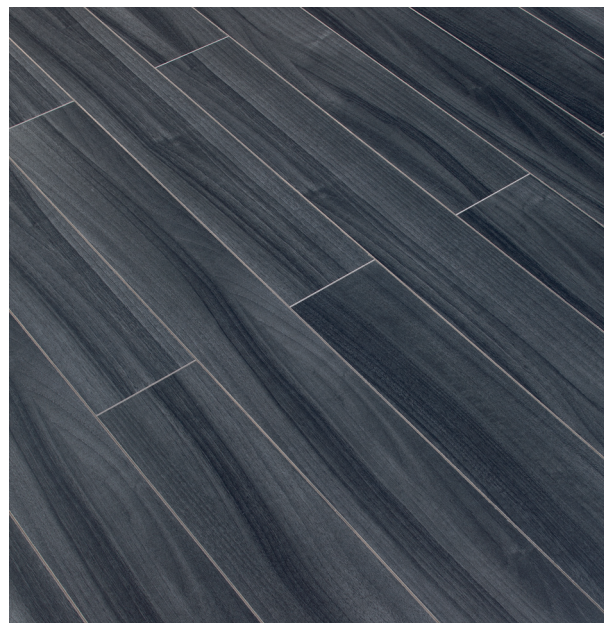
**B<sub>fl</sub>-s1**



Original Finfloor is made of 19-cm-wide and 1.20-m-long planks with more than 50 designs available.

**FINFLOOR® STYLE 8 mm**

**B<sub>fl</sub>-s1**



Finfloor Style is the range with the most stylized format. 13-cm-wide and 1.30-m-long planks in more than 30 different designs.

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Easy installation  
Produced with the technology  
protected by EP 0 843 763 and  
US 6 006 486



GENERAL COMMERCIAL  
HEAVY DOMESTIC  
According to EN 13329



Resistance to  
abrasion.



Hydro Protect.



Sealed joints.

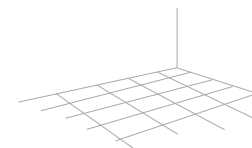


ESD Protection According  
to EN 14041/ EN 1815.



Reaction to fire Bfl s1  
According to EN 14041/  
EN 13501.





**FIESTA 7 mm**

**B<sub>f</sub>-s1**



29

The basic Finfloor range with the 14 most innovative designs.



Protect Plus.



Sealed joints.



Resistance to abrasion.



Reaction to fire Bfl s1  
According to EN 14041  
/EN 13501.



Easy installation  
Produced with the technology  
protected by  
EP 1 024 234 and US 6 490 836.



MODERATE COMMERCIAL  
HEAVY DOMESTIC  
According to EN 13329.

# Fimapan Flame-retardant Technical data



## TECHNICAL DATA

| TEST       | PROPERTIES                      | THICKNESSES (mm) |          |          |          |          | UNITS    |
|------------|---------------------------------|------------------|----------|----------|----------|----------|----------|
|            |                                 | >9/13            | >13/20   | >20/25   | >25/32   | >32/40   |          |
| EN 323     | Density (guide line values)     | 740              | 710      | 695      | 675      | 660      | kg/m³    |
| EN 319     | Internal bond                   | 0,28             | 0,24     | 0,20     | 0,17     | 0,14     | N/mm²    |
| EN 310     | Bending strength                | 10,5             | 10       | 10       | 8,5      | 7        | N/mm²    |
| EN 317     | Thickness swelling 2 h          | 6                | 6        | 6        | 6        | 6        | N/mm²    |
| EN 311     | Surface soundness               | 0,6              | 0,6      | 0,6      | 0,6      | 0,6      | N/mm²    |
| EN 322     | Moisture content                | 7+/-3            | 7+/-3    | 7+/-3    | 7+/-3    | 7+/-3    | %        |
| ISO 3340   | Grit content                    | ≤ 0.05           | ≤ 0.05   | ≤ 0.05   | ≤ 0.05   | ≤ 0.05   | %        |
| EN 120     | Formaldehyde content (class E1) | ≤ 8              | ≤ 8      | ≤ 8      | ≤ 8      | ≤ 8      | mg/100 g |
| EN 13501-1 | Reaction to fire                | B-s2, d0         | B-s2, d0 | B-s2, d0 | B-s2, d0 | B-s2, d0 |          |

## TOLERANCE ON NOMINAL DIMENSIONS

|          |                   | >9/13  | >13/20 | >20/25 | >25/32 | >32/40 |      |
|----------|-------------------|--------|--------|--------|--------|--------|------|
| EN 324-1 | Thickness         | +/-0,3 | +/-0,3 | +/-0,3 | +/-0,3 | +/-0,3 | mm   |
| EN 324-1 | Length/width      | +/-5   | +/-5   | +/-5   | +/-5   | +/-5   | mm   |
| EN 324-2 | Squareness        | +/-2   | +/-2   | +/-2   | +/-2   | +/-2   | mm/m |
| EN-324-2 | Edge straightness | +/-1,5 | +/-1,5 | +/-1,5 | +/-1,5 | +/-1,5 | mm/m |

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It Bears CE Marking certified by AENOR, number 0099/CPD/A65/0021.

# Fibrapan Flame-retardant

## Technical data



### TECHNICAL DATA

| TEST       | PROPERTIES                        | THICKNESSES (mm) |          |          |          |          |          |          |          | UNITS    |
|------------|-----------------------------------|------------------|----------|----------|----------|----------|----------|----------|----------|----------|
|            |                                   | 2,5 - 4          | >4/6     | >6/9     | >9/12    | >12/19   | >19/30   | >30/45   | >45/60   |          |
| EN 323     | Density (guide line values)       | 840              | 860      | 840/830  | 830/800  | 800/780  | 780/760  | 760/720  | 720/680  | kg/m³    |
| EN 319     | Internal bond                     | 0,65             | 0,65     | 0,65     | 0,60     | 0,55     | 0,55     | 0,55     | 0,50     | N/mm²    |
| EN 310     | Bending strength                  | 23               | 23       | 23       | 22       | 20       | 18       | 17       | 15       | N/mm²    |
| EN 310     | Modulus of elasticity             | 2700             | 2700     | 2700     | 2500     | 2200     | 2100     | 1900     | 1700     | N/mm²    |
| EN 317     | Thickness swelling 24 h           | 35               | 30       | 17       | 15       | 12       | 10       | 8        | 6        | %        |
| EN 318     | Dimensional movement length/width | 0,4              | 0,4      | 0,4      | 0,4      | 0,4      | 0,4      | 0,3      | 0,3      | %        |
|            | Dimensional movement thickness    | 6                | 6        | 6        | 6        | 6        | 5        | 5        | 5        | %        |
| EN 311     | Surface soundness                 | 1,2              | 1,2      | 1,2      | 1,2      | 1,2      | 1,2      | 1,2      | 1,2      | N/mm²    |
| EN 382-1   | Surface absorption (two faces)    | > 150            | > 150    | > 150    | > 150    | > 150    | > 150    | > 150    | > 150    | mm       |
| EN 322     | Moisture content                  | 7+/-3            | 7+/-3    | 7+/-3    | 7+/-3    | 7+/-3    | 7+/-3    | 7+/-3    | 7+/-3    | %        |
| EN 120     | Formaldehyde content (class E1)   | ≤ 8              | ≤ 8      | ≤ 8      | ≤ 8      | ≤ 8      | ≤ 8      | ≤ 8      | ≤ 8      | mg/100 g |
| EN 13501-1 | Reaction to fire                  | B-s2, d0         | B-s2, d0 | B-s2, d0 | B-s2, d0 | B-s2, d0 | B-s2, d0 | B-s2, d0 | B-s2, d0 |          |

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### TOLERANCE ON NOMINAL DIMENSIONS

|          |                   | 2,5 - 4                    | >4/6                       | >6/9                       | >9/12                      | >12/19                     | >19/30                     | >30/45                     | >45/60                     |      |
|----------|-------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|------|
| EN 324-1 | Thickness         | +/-0,20                    | +/-0,20                    | +/-0,20                    | +/-0,20                    | +/-0,20                    | +/-0,30                    | +/-0,30                    | +/-0,30                    | mm   |
| EN 324-1 | Length/width      | +/- 2 mm/m<br>max +/- 5 mm | +/- 2 mm/m<br>max +/- 5 mm | +/- 2 mm/m<br>max +/- 5 mm | +/- 2 mm/m<br>max +/- 5 mm | +/- 2 mm/m<br>max +/- 5 mm | +/- 2 mm/m<br>max +/- 5 mm | +/- 2 mm/m<br>max +/- 5 mm | +/- 2 mm/m<br>max +/- 5 mm | mm   |
| EN 324-2 | Squareness        | +/- 2 mm/m                 | +/- 2 mm/m                 | +/- 2 mm/m                 | +/- 2 mm/m                 | +/- 2 mm/m                 | +/- 2 mm/m                 | +/- 2 mm/m                 | +/- 2 mm/m                 | mm/m |
| EN-324-2 | Edge straightness | +/-1,5 mm/m                | +/-1,5 mm/m                | +/-1,5 mm/m                | +/-1,5 mm/m                | +/-1,5 mm/m                | +/-1,5 mm/m                | +/-1,5 mm/m                | +/-1,5 mm/m                | mm/m |

It bears CE Marking, certified by AENOR, numbers 0099/CPD/A65/0003 and 0099/CPD/A65/0004..

# Fibrapan E-Z Flame-retardant

## Technical information



### TECHNICAL DATA

| TEST       | PROPERTIES                        | THICKNESSES (mm) |          |          | UNITS             |
|------------|-----------------------------------|------------------|----------|----------|-------------------|
|            |                                   | 10/12            | >12/19   | >19/30   |                   |
| EN 323     | Density (guide line values)       | 830/800          | 800/780  | 780/760  | kg/m <sup>3</sup> |
| EN 319     | Internal bond                     | 0.60             | 0.55     | 0.55     | N/mm <sup>2</sup> |
| EN 310     | Bending strength                  | 22               | 20       | 18       | N/mm <sup>2</sup> |
| EN 310     | Modulus of elasticity             | 2500             | 2200     | 2100     | N/mm <sup>2</sup> |
| EN 317     | Thickness swelling 24 h           | 15               | 12       | 10       | %                 |
| EN 318     | Dimensional movement length/width | 0.4              | 0.4      | 0.4      | %                 |
| EN 318     | Dimensional movement thickness    | 6                | 6        | 6        | %                 |
| EN 311     | Surface soundness                 | 1.2              | 1.2      | 1.2      | N/mm <sup>2</sup> |
| EN 382-1   | Surface absorption (two faces)    | > 150            | > 150    | > 150    | mm                |
| EN 322     | Moisture content                  | 7+/-3            | 7+/-3    | 7+/-3    | %                 |
| EN 120     | Formaldehyde content (class E1)   | ≤ 3              | ≤ 3      | ≤ 3      | mg/100 g          |
| EN 13501-1 | Reaction to fire                  | B-s2, d0         | B-s2, d0 | B-s2, d0 |                   |

### TOLERANCE ON NOMINAL DIMENSIONS

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|          |                   | 10/12                   | >12/19                  | >19/30                  |      |
|----------|-------------------|-------------------------|-------------------------|-------------------------|------|
| EN 324-1 | Thickness         | +/-0.20                 | +/-0.20                 | +/-0.20                 | mm   |
| EN 324-1 | Length/width      | +/- 2 mm/m max +/- 5 mm | +/- 2 mm/m max +/- 5 mm | +/- 2 mm/m max +/- 5 mm | mm   |
| EN 324-2 | Squareness        | +/- 2 mm/m              | +/- 2 mm/m              | +/- 2 mm/m              | mm/m |
| EN-324-2 | Edge straightness | +/-1,5 mm/m             | +/-1,5 mm/m             | +/-1,5 mm/m             | mm/m |

It bears CE Marking, certified by AENOR, number 0099/CPD/A65/0003.



# Mediland M1 Technical information



## TECHNICAL DATA

| TEST       | PROPERTIES                        | THICKNESSES (mm) |          |          | UNITS             |
|------------|-----------------------------------|------------------|----------|----------|-------------------|
|            |                                   | >9/12            | >12/19   | >19/30   |                   |
| EN 323     | Density (guide line values)       | 740              | 700/680  | 640      | kg/m <sup>3</sup> |
| EN 319     | Internal bond                     | 0.60             | 0.55     | 0.55     | N/mm <sup>2</sup> |
| EN 310     | Bending strength                  | 22               | 20       | 18       | N/mm <sup>2</sup> |
| EN 310     | Modulus of elasticity             | 2500             | 2200     | 2100     | N/mm <sup>2</sup> |
| EN 317     | Thickness swelling 24 h           | 15               | 12       | 10       | %                 |
| EN 318     | Dimensional movement length/width | 0.6              | 0.5      | 0.4      | %                 |
| EN 318     | Dimensional movement thickness    | 5                | 5        | 4        | %                 |
| EN 311     | Surface soundness                 | 1.2              | 1.2      | 1.2      | N/mm <sup>2</sup> |
| EN 382-1   | Surface absorption (two faces)    | >150             | >150     | >150     | mm                |
| EN 322     | Moisture content                  | 7+/-3            | 7+/-3    | 7+/-3    | %                 |
| ISO 3340   | Grit content                      | ≤ 0.05           | ≤ 0.05   | ≤ 0.05   | % Peso            |
| EN 120     | Formaldehyde content (class E1)   | ≤ 8              | ≤ 8      | ≤ 8      | mg/100 g          |
| EN 13501-1 | Reaction to fire                  | B-s2, d0         | B-s2, d0 | B-s2, d0 |                   |

## TOLERANCE ON NOMINAL DIMENSIONS

|          |                   | >9/12                   | >12/19                  | >19/30                  |      |
|----------|-------------------|-------------------------|-------------------------|-------------------------|------|
| EN 324-1 | Thickness         | +/-0.20                 | +/-0.20                 | +/-0.20                 | mm   |
| EN 324-1 | Length/width      | +/- 2 mm/m max +/- 5 mm | +/- 2 mm/m max +/- 5 mm | +/- 2 mm/m max +/- 5 mm | mm   |
| EN 324-2 | Squareness        | +/- 2 mm/m              | +/- 2 mm/m              | +/- 2 mm/m              | mm/m |
| EN-324-2 | Edge straightness | +/-1,5 mm/m             | +/-1,5 mm/m             | +/-1,5 mm/m             | mm/m |

It bears CE Marking certified by FCBA, number 0380/CPD/0311.

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| TEST       | PROPERTIES                      | THICKNESSES (mm) |          |          |          |          |          | UNITS   |
|------------|---------------------------------|------------------|----------|----------|----------|----------|----------|---------|
|            |                                 | 28               | 38       | 50       | 60       | 80       | 100      |         |
| EN 323     | Density (guide line values)     | 320              | 260      | 220      | 200      | 175      | 160      | kg/m³   |
| EN 319     | Internal bond                   | 0.15             | 0.15     | 0.15     | 0.15     | 0.15     | 0.15     | N/mm²   |
| EN 310     | Bending strength                | 10               | 10       | 7        | 7        | 5        | 5        | N/mm²   |
| EN 310     | Modulus of elasticity           | 100              | 1000     | 900      | 900      | 700      | 700      | N/mm²   |
| EN 311     | Surface soundness               | 0.8              | 0.8      | 0.8      | 0.8      | 0.8      | 0.8      | N/mm²   |
| EN 362-1   | Surface absorption (two faces)  | >150             | >150     | >150     | >150     | >150     | >150     | mm      |
| EN 322     | Moisture content                | 7+/-3            | 7+/-3    | 7+/-3    | 7+/-3    | 7+/-3    | 7+/-3    | %       |
| ISO 3340   | Grit content                    | ≤ 0.05           | ≤ 0.05   | ≤ 0.05   | ≤ 0.05   | ≤ 0.05   | ≤ 0.05   | % Peso  |
| EN 120     | Formaldehyde content (class E1) | ≤ 8              | ≤ 8      | ≤ 8      | ≤ 8      | ≤ 8      | ≤ 8      | mg/100g |
| EN 13501-1 | Reaction to fire                | B-s2, d0         | B-s2, d0 | B-s2, d0 | B-s2, d0 | B-s2, d0 | B-s2, d0 |         |

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# Fibracolour Black Flame-retardant

## Technical information



### TECHNICAL DATA

| TEST       | PROPERTIES                        | THICKNESSES (mm) |          |          |          | UNITS             |
|------------|-----------------------------------|------------------|----------|----------|----------|-------------------|
|            |                                   | >6/9             | >9/12    | >12/19   | >19/30   |                   |
| EN 323     | Density (guide line values)       | 880/860          | 860/820  | 800/780  | 780/760  | kg/m <sup>3</sup> |
| EN 319     | Internal bond                     | 0,65             | 0,60     | 0,55     | 0,55     | N/mm <sup>2</sup> |
| EN 310     | Bending strength                  | 23               | 22       | 20       | 18       | N/mm <sup>2</sup> |
| EN 310     | Modulus of elasticity             | 2700             | 2500     | 2200     | 2100     | N/mm <sup>2</sup> |
| EN 317     | Thickness swelling 24 h           | 17               | 15       | 12       | 10       | %                 |
| EN 318     | Dimensional movement length/width | 0,4              | 0,4      | 0,4      | 0,4      | %                 |
| EN 318     | Dimensional movement thickness    | 6                | 6        | 6        | 6        | %                 |
| EN 311     | Surface soundness                 | 1,2              | 1,2      | 1,2      | 1,2      | N/mm <sup>2</sup> |
| EN 382-1   | Surface absorption (two faces)    | > 150            | > 150    | > 150    | > 150    | mm                |
| EN 322     | Moisture content                  | 7+/-3            | 7+/-3    | 7+/-3    | 7+/-3    | %                 |
| ISO 3340   | Grit content                      | ≤ 0,05           | ≤ 0,05   | ≤ 0,05   | ≤ 0,05   | %                 |
| EN 120     | Formaldehyde content (class E1)   | ≤8               | ≤8       | ≤8       | ≤8       | mg/100g           |
| EN 13501-1 | Reaction to fire                  | B-s2, d0         | B-s2, d0 | B-s2, d0 | B-s2, d0 |                   |

### TOLERANCE ON NOMINAL DIMENSIONS

|          |                   | >6/9                    | >9/12                   | >12/19                  | >19/30                  |      |
|----------|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|------|
| EN 324-1 | Thickness         | +/-0,20                 | +/-0,20                 | +/-0,20                 | +/-0,20                 | mm   |
| EN 324-1 | Length/width      | +/- 2 mm/m max +/- 5 mm | +/- 2 mm/m max +/- 5 mm | +/- 2 mm/m max +/- 5 mm | +/- 2 mm/m max +/- 5 mm | mm   |
| EN 324-2 | Squareness        | +/- 2 mm/m              | +/- 2 mm/m              | +/- 2 mm/m              | +/- 2 mm/m              | mm/m |
| EN-324-2 | Edge straightness | +/-1,5 mm/m             | +/-1,5 mm/m             | +/-1,5 mm/m             | +/-1,5 mm/m             | mm/m |

### COLOR

|                       |                                        |            |          |
|-----------------------|----------------------------------------|------------|----------|
| CIE 1976 (CIELAB)     | Lightness on faces (l*)                | --         | L * < 37 |
| CIE 1976 (CIELAB)     | Magenta-green coordinate on faces (a*) | --         | 0<a<0,5  |
| CIE 1976 (CIELAB)     | Yellow-blue coordinate on faces (b*)   | --         | 2<b<5    |
| ISO 2809 EN ISO 11341 | Determination of light fastness        | Blue Scale | >6       |

It bears CE Marking, certified by AENOR, number 0099/CPD/A65/0003.

# Compac Plus Flame-Retardant

## Technical information



### TECHNICAL DATA

| TEST             | PROPERTIES                               | THICKNESSES (mm) |          | UNITS             |
|------------------|------------------------------------------|------------------|----------|-------------------|
|                  |                                          | 9-12             | >12-19   |                   |
| EN 323           | Density (guide line values)              | 1050             | 1050     | kg/m <sup>3</sup> |
| EN 319           | Internal bond                            | 1,8              | 1,8      | N/mm <sup>2</sup> |
| EN 310           | Bending strength                         | 45               | 45       | N/mm <sup>2</sup> |
| EN 310           | Modulus of elasticity                    | 4000             | 4000     | N/mm <sup>2</sup> |
| EN 317           | Thickness swelling 24 h                  | 7                | 6        | %                 |
| EN 318           | Dimensional movement length/width        | 0,40             | 0,40     | %                 |
| EN 318           | Dimensional movement thickness           | 6,0              | 6,0      | %                 |
| EN 311           | Surface soundness                        | 1.7              | 1.7      | N/mm <sup>2</sup> |
| EN 382-1         | Surface absorption (two faces)           | >150             | >150     | mm                |
| EN 322           | Moisture content                         | 7 +/- 3          | 7 +/- 3  | %                 |
| ISO 3340         | Grit content                             | ≤ 0,05           | ≤ 0,05   | % Peso            |
| EN 120           | Formaldehyde content (class E1)          | <8               | <8       | mg/100 g          |
| EN 13329         | Swelling in edge                         | 15               | 15       | %                 |
| EN 1087-1/EN 319 | Internal bond after boil test (option 2) | 0,2              | 0,15     | N/mm <sup>2</sup> |
| EN 13501-1       | Reaction to fire                         | B-s1, d0         | B-s1, d0 |                   |

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### TOLERANCE ON NOMINAL DIMENSIONS

|          |                   | 9-12                    | >12-19                  |      |
|----------|-------------------|-------------------------|-------------------------|------|
| EN 324-1 | Thickness         | +/- 0,20                | +/- 0,20                | mm   |
| EN 324-1 | Length/width      | +/- 2 mm/m max +/- 5 mm | +/- 2 mm/m max +/- 5 mm | mm   |
| EN 324-2 | Squareness        | +/- 2,0                 | +/- 2,0                 | mm/m |
| EN-324-2 | Edge straightness | +/-1,5                  | +/-1,5                  | mm/m |



# Superpan Tech P6 Flame-Retardant

## Technical information



### TECHNICAL DATA

| TEST   | PROPERTIES                      | THICKNESSES (mm) |         | UNITS             |
|--------|---------------------------------|------------------|---------|-------------------|
|        |                                 | > 25/32          | > 32/40 |                   |
| EN 323 | Density (guide line values)     | 670              | 650     | kg/m <sup>3</sup> |
| EN 319 | Internal bond                   | 0.35             | 0.30    | N/mm <sup>2</sup> |
| EN 310 | Bending strength                | 22               | 20      | N/mm <sup>2</sup> |
| EN 310 | Modulus of elasticity           | 2800             | 2800    | N/mm <sup>2</sup> |
| EN 317 | Thickness swelling 24 h         | 14               | 13      | %                 |
| EN 311 | Surface soundness               | 1.0              | 1.0     | N/mm <sup>2</sup> |
| EN 322 | Moisture content                | 8 +/- 3          | 8 +/- 3 | %                 |
| EN 120 | Formaldehyde content (class E1) | ≤ 8,0            | ≤ 8,0   | mg/100 g          |

### TOLERANCE ON NOMINAL DIMENSIONS

|          |                   | >25/32  | >32/40  |      |
|----------|-------------------|---------|---------|------|
|          |                   |         |         |      |
| EN 324-1 | Thickness         | +/- 0,3 | +/- 0,3 | mm   |
| EN 324-1 | Length/width      | +/- 5   | +/- 5   | mm   |
| EN 324-2 | Squareness        | +/- 2   | +/- 2   | mm/m |
| EN 324-2 | Edge straightness | +/- 1,5 | +/- 1,5 | mm/m |

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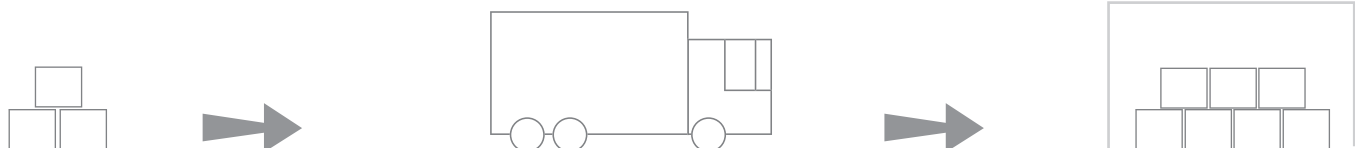
It bears CE Marking according to EN 13986 European Standard and certified by AENOR, number 0099/CPD/A65/0008.

# Specific Recommendations

## Transport, storage and handling

Wood-based boards should be carefully transported and stored in compact stacks and resting upon a suitable flat base. Check to make sure that all the runners are placed in the same position and aligned to avoid any deformation of the board. We recommend keeping the boards in their original packaging, always in a dry place, protected from contact with the floor, walls and humidity. It is recommended to pay special attention to dry strikes or falls, as they may damage the board.

- Boards should always be stored under cover and on a flat surface.
- The optimal storage conditions are 65% humidity.
- 38 Avoid environments that vary from these conditions.
- Under no circumstances may there be direct contact with water.
- Runners should be always aligned vertically.
- We do not recommend stacking the pallets more than 4 high.
- If the packaging is damaged during handling, the product must be repackaged for proper storage.
- Non-compliance with the specified stacking conditions as well as any changes in humidity or temperature in storage or processing areas can cause irreversible deformation and warping.



## Standards and certifications

### CE MARKING



Our products have CE marking according to European standard EN 13986 "Wood panels for construction, characteristics, evaluation of conformity and marking.

### Environmental certifications

Forest Management Certificate  
PEFC/1435-00006. PEFC is an independent, non-governmental, non-profit body which aims to promote sustainable forest management worldwide.

For more info: [www.pefc.org](http://www.pefc.org)

FSC certification guarantees the consumer that forest products come from forests managed in a rational manner, according to the Principles and Criteria of the Forest Stewardship Council. 39

For more info: [www.fsc.org](http://www.fsc.org)





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