Finsa

Fire retardant solutions

Fire retardant technical wood based solutions for all types of projects

Fire retardant wood based boards, all in one place

A wide variety of raw and decorative boards that combine all the potential of wood based products with improved fire retardant properties.

A solution adapted to each project, multiple combination options for all types of interiors or applications.

Index

Sustainability

01/

At Finsa we think responsibly and manufacture all our products in compliance with the most demanding environmental standards and certifications.

Certifications

Environmental Product Declaration
Document that communicates the environmental impact of a material during its life cycle, from the raw material extraction process, transport to the manufacturing plant and product manufacturing process.

Cradle to Cradle
Multi-attribute certification, directly linked to Sustainable Development Goals (SDGs), demonstrating that a product is safe and circular.

The Material Health Certificate
This is a materials analysis based on the Cradle to Cradle standard health assessment methodology. This certification seeks to promote healthier and safer products.

Forestry Certifications

PEFC
PEFC chain-of-custody certification provides a verified and independent guarantee that products with the PEFC label contain certified forest material from sustainably managed forests.

FSC®
We have implemented a FSC® chain of custody certification system that allows us to supply certified wood products to customers which are 100% recyclable and contribute greatly to the fight against climate change. This forestry certification promotes certified wood, and to this end we certify our farms and help our suppliers achieve certification.

EUTR
As a sign of transparency, we voluntarily certify compliance with EU regulation 995/2010 regarding the legal origin of wood.

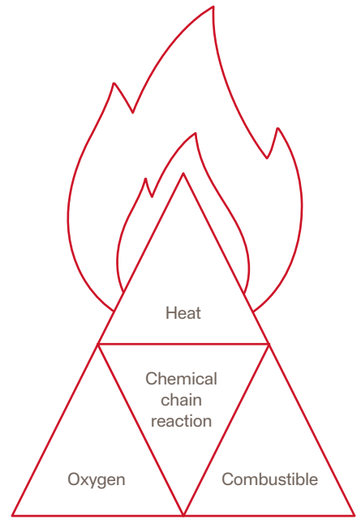
ISO 38200
This is an internationally recognised standard for the transmission of information along the supply chain of wood and wood-derived products.

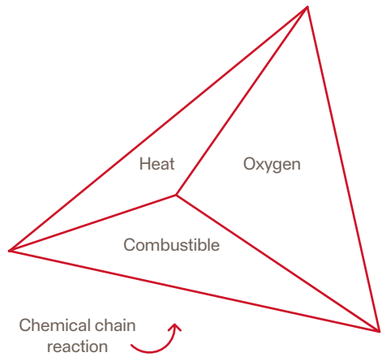
Sustainable building certifications

BREEAM, LEED, WELL and LBC
Our wood solutions help meet the requirements of sustainable building certifications.

Wood and fire safety

02/





Fire safety in construction

All over the world, fires cause a large number of human victims and considerable property damage. When designing a facility, it is important to find out what materials can slow down the spread of fires, thereby contributing towards a swift evacuation and enabling the use of extinguishing agents to minimise possible damage caused.

While designing the facilities, it is therefore crucial to select materials that limit the development and spread of fire and, consequently, mitigate all the associated risk situations.

Fire is a chemical combustion reaction, a process of rapid oxidation of a material releasing heat, flames and gases.

We normally talk about the fire triangle, which is based on the assumption that, for a fire to start and develop, three elements have to be present at the same time:

· Combustible
· Combustion agent (Oxygen)
· Activation energy: energy (heat) required for the start of the reaction.

However, another element (the chain reaction) needs to be included for this fire to spread and continue without the source of ignition The inclusion of this fourth factor results in the fire tetrahedron, which helps explain the combustion process.

How does a Fire develop?

There are several stages in the development of a fire:

1. Initial: fire is dormant. A small part of the combustible burns.

2. Growth: the rate of combustion increases and the fire is stoked. The fire starts to spread (by radiation or through direct contact with the flames).

> **Flashover:** the point where there is a sudden increase in temperature, giving rise to a fully developed fire.

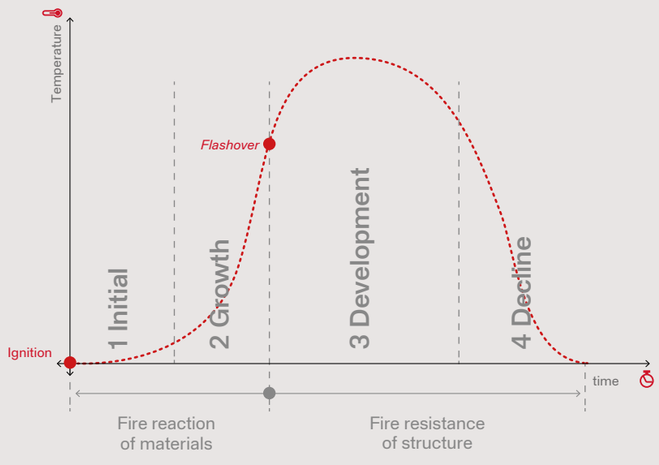
3. Development: all combustibles at the premises are burned. The fire's maximum temperature is reached.

4. Decline: this is where the temperature drops for lack of combustible (used up) or oxygen or the absence of a chain reaction.

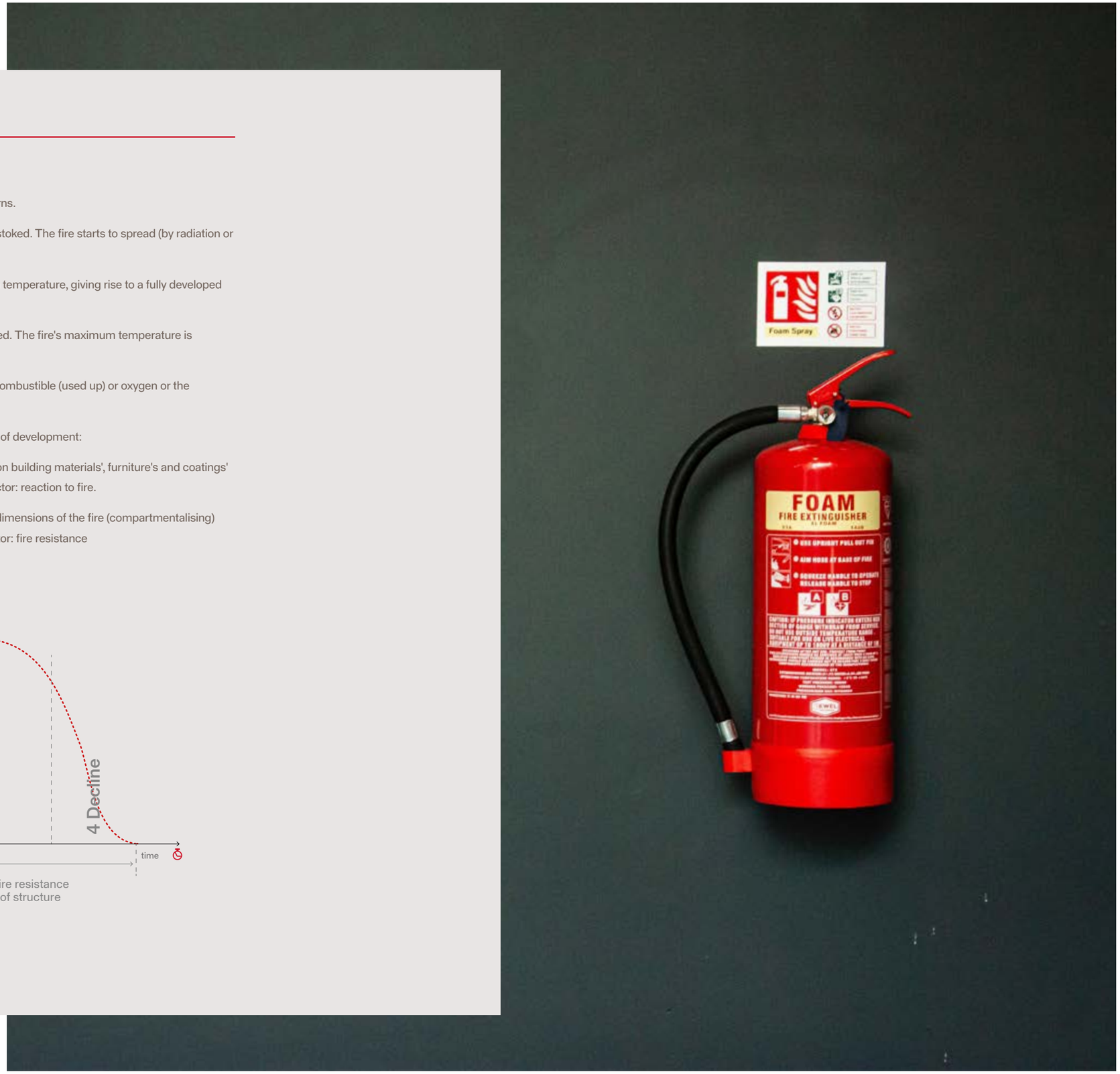
Fire protection strategies differ according to the fire's stage of development:

Prior to the flashover, its development is limited by acting on building materials', furniture's and coatings' flammability and on the way these contribute to fire. Key factor: reaction to fire.

After the flashover, the strategy focuses on delimiting the dimensions of the fire (compartmentalising) and protecting the structure to prevent its collapse. Key factor: fire resistance



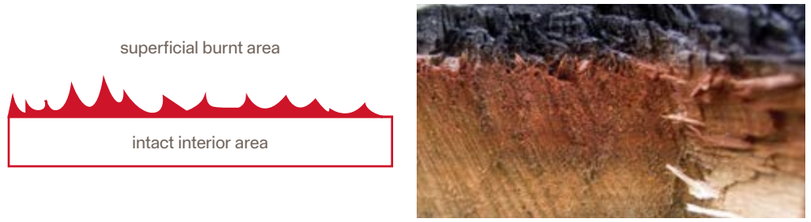
Development phases and key factors



How does wood behave when there is fire?

Fire behaviour and the stability of the structure with increased temperature will, to a large extent, depend on the material used for building it.

When a fire starts, wood's low thermal conductivity causes combustion to develop only on the surface. The charred layer acts as insulation, protecting the inner layers, keeping them at a lower temperature and preserving their mechanical properties. Wood is considered to have good fire behaviour in a fire at the full development stage.



Comparison to other materials

Steel

A non-combustible material but with little stability against fire, which starts to lose its resistance and become deformed at high temperatures, despite being a very good conductor of heat.

Concrete

Its resistance will mainly depend on the behaviour of the steel frame.

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 flame propagation, heat emission, smoke production and flaming droplets.

Nomenclature

B_{fl} - s2, d0

- B_{fl}: The capital letter represents the contribution towards fire and is the main part of the classification. The subscript fl (floor) is included when its end purpose is flooring.
- s2 (smoke): smoke production In the case of flooring, only this factor is considered.
- d0 (droplets): falling flaming droplets/particles

Euroclasses

Building products shall be classified according to Euroclasses, as per standard EN 13501-1 regarding the “classification of the reaction to fire of building materials”.

Classification according to standard EN 13501-1

	Main Classification	Combustibility	Final application		Combustible droplets	Contribution towards fire
			Walls & ceilings	Flooring		
		A1	A1	$A1_{fl}$	NO	NO	To the highest degree
		A2	A2	$A2_{fl}$	NO	NO	To a lesser degree (flame duration < 20s)
		B	B	B_{fl}	SI	SI	Very limited
		C	C	C_{fl}	SI	SI	Limited
		D	D	D_{fl}	SI	SI	Medium
		E	E	E_{fl}	SI	SI	High
		F	F	F_{fl}	Not classified		

	Additional Classifications			
	Smoke production	s1	Low speed and amount
		s2	Medium speed and amount
		s3	High speed and amount
	Flaming droplets / particles	d0	No production of droplets
		d1	No production of droplets t >10s
		d2	Not classified

Tests

The addition of fire retardant products enables improved reaction to fire, as the boards are tested and classified by accredited laboratories and they bear the CE marking, which is valid in any European Union country.

Materials are classified according to their final application, as different tests will be conducted depending on the target classification. For materials catalogued as combustible (B, C and D):

On walls and ceilings:

SBI (Single Burning Item) method according to standard EN 13823, which simulates a fire in a litter bin in the corner of a room

On flooring:

Testing on a radiating panel according to standard EN ISO 9239-1, where the covering is submitted to the action of a heat panel and flames at one end of the flooring.

Wood-based boards can be classified without the need for testing, as per Decision 2007/348/CE, according to the product type, end use conditions, minimum density and thickness, as shown in the following example:

Product	EN Standard	End use conditions	Minimum density (kg/m^3)	Minimum thickness (mm)	Class (except flooring)	Class (flooring)
MDF	EN 622-5	Con espacio de aire confinado detrás del tablero derivado de la madera	600	15	D-s2, d0	D_{fl}-s1

Fire resistance

Fire resistance measures the capacity of a building element to maintain its supporting function when a fire develops, as well as its integrity and/or thermal insulation during a given period of time.

This is a property of end building elements, and so, to determine this, testing is conducted on the entire set, which is classified according to standard EN 13501-2, by exposing the building element to rising temperatures over time.

Nomenclature

R E I t

R: Resistance, referring to maintenance of structural stability.

E: Integrity of a building element with a separating function, to prevent flames or hot gases from entering the non-exposed area or adjacent materials.

I: Insulation of a building element with a separating function, preventing fire from spreading through excessive heating of the non-exposed area.

t: Standardised time scale expressed in min. e.g.: REI 60, if the element retains said functions (REI) for 60 min.

Building regulations

Local construction regulations establish the minimum parameters of behaviour of materials and construction elements in situations of fire.

Lift standards

From 31st August 2017, all newly installed lifts shall comply with standards EN 81-20 and EN 81-50, which set forth safety regulations regarding the construction and installation of lifts, basic design requirements, and those pertaining to inspections and testing of their components.

These harmonised standards introduce important developments in terms of accessibility and safety for passengers and maintenance workers. These include introduction and compliance with the following minimum requirements for classifying reaction to fire of finishings inside the cabin, according to standard EN 13501-1, given its field of use:

Final application	Euroclass
Floors	C_{fl}-s2
Walls	C-s2, d1
Ceilings	C-s2, d0

U.S. Standard

Testing method ASTM E-84 (Standard test method for surface burning characteristics of building materials) enables evaluating how building materials contribute to fire, according to the U.S. standard. This method is primarily based on determining the flame-spread to describe the material surface's contribution to the fire, which allows establishing a three-level classification:

Classes	Flame Spread	Smoke Developed
A	0-25	0-450
B	26-75	0-450
C	76-200	0-450

Specific certifications for naval shipping

Materials intended for shipbuilding or ship repairs and vessel equipment shall meet a set of minimum safety requirements set forth in the International Convention for Safety of Life at Sea (SOLAS), adopted by the International Maritime Organisation (IMO). Therefore, the materials shall be tested in order to evaluate how they respond to fire, according to their type and end use.

The Wheelmark brand sets forth Finsa's conformity with Directive 2014/90/EU on Marine Equipment (Marine Equipment Directive or MED).

The Finsa Range includes products bearing the Wheelmark brand, such as Fibrapan MR FR E-Z, products specifically certified for use by naval material suppliers in shipbuilding.

Product range

Boards							
Type	Product	Additional properties	Clasification				
			EU				USA
			B-s1, d0	B-s2, d0	C-s1, d0	C-s2, d0	A
Baseboard							
Chipboard	Fimapan Fire Retardant E-Z	E05 CARB2	10-40 mm				10-35 mm
Superpan	Superpan Fire Retardant E-Z *	E05 CARB2	12-44 mm	8-<12 mm			
	Superpan Tech P4 Fire Retardant E-Z *	E05 CARB2	12-44 mm	8-<12 mm			
Fibreboard	Fibranor / Fibrapan Fire Retardant E-Z	E05 CARB2	10-30 mm	3-<10 mm			
	Iberpan Fire Retardant E-Z	E05		>30-50 mm			
	Mediland M1 E-Z (without colorant)	E05 CARB2	10-30 mm				
	Fibrapan Forma Fire Retardant E-Z	E05 CARB2		10-30 mm			
	Fibrapan Fire Retardant A E-Z	E05 CARB2		10-30 mm			10-30 mm
	Fibranor / Fibrapan Fire Retardant NAF	NAF E05	5-18 mm				
	Fibrapan MR FR E-Z	E05 CARB2	10-22 mm				
	Compac Plus Fire Retardant E-Z	E05 CARB2	8-19 mm				
Decorative Panels	Fibracolour Black Fire Retardant E-Z	E05 CARB2		9-19 mm			
Textured panels	Fibrapan FR E-Z Tex	E05 CARB2		10-25 mm			
With decorative paper							
Chipboard	Fimaplast Fire Retardant E-Z	E05 CARB2	10-40 mm				
Superpan	Superpan Decor Fire Retardant E-Z *	E05 CARB2	8-44 mm				
	Superpan Tech P4 Decor Fire Retardant E-Z *	E05 CARB2	8-44 mm				
Fibreboard	Fibraplast Fire Retardant E-Z	E05 CARB2	10-30 mm				
	Fibraplast MR FR E-Z	E05 CARB2		12-19 mm			
	Compacmel Plus Fire Retardant E-Z	E05 CARB2	8-19 mm				
Decorative Panels	Fibracolour Black Fire Retardant E-Z Plast	E05 CARB2	19 mm				
With natural decorative surfaces							
Fibreboard	Fibranatur Fire Retardant E-Z **	E05 CARB2			11-31 mm		
	Fibracolour Negro FR E-Z Natur**	E05 CARB2				20 mm	

* E05: only thicknesses >19 mm.
** Please check available veneers with certificates in the product data sheet.

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Flooring			
Type	Product	Properties	EU Clasification
Technical flooring for mezzanines	Superpan Tech P4 Decor Gris 1 | Anti-slip (30-38 mm)		B_{fl}-s1
	Superpan Tech P6 Decor | Anti-slip (30-40 mm) *		B_{fl}-s1
	Superpan Tech P4 Fire Retardant E-Z		B_{fl}-s1
	Superpan Tech P4 Decor Fire Retardant E-Z		B_{fl}-s1
	Superpan H Tech P5 E-Z Decor		B_{fl}-s1

* All of the colours and designs with overlay.

Applications

The broad range of Finsa fire retardant Solutions enables responding to the most demanding projects while covering numerous applications, where regulations require proper behaviour in case of fire.

We will guide you in your quest for the best solution for every application.

Structural applications

Superpan Tech P4 Fire Retardant E-Z

These boards combine, in the same product, the properties of structural boards with those of fire retardant boards.

This is especially recommended for use in office mezzanines, where fire-resistant requirements have to be combined with structural properties. The boards can also be used for mezzanine flooring and shelving, or whenever the designer requires greater reaction to fire, thereby attaining B-s1, d0 and Bfl -s1 certification.

They can be combined with a broad range of decorative paper designs and finishings, and so they also provide a decorative solution for your project.

Superpan Tech P4 Decor E-Z
Superpan Tech P6 Decor E-Z
Superpan H Tech P5 Decor E-Z

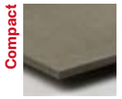
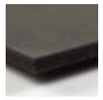
These boards are suitable for applications for applications in mezzanines and industrial shelving with a wide range of decors and with an anti-slip finish. They come with the Bfl-s1 certification, for projects calling for improved reaction to fire.

Key:

E05 E05 · CARB2 CARB2 · NAF NAF · Mass coloured · Estructural · Compact · Naval · Moisture Resistant · Light

Industrial applications

Within the range of fire-resistant boards, industrial customers can select the quality most suited to their needs. Baseboards for lacquering, painting, covering with veneer and laminate, or the use of other finishings along with certified decorative boards. Special-interest offers in industrial carpentry specialising in coating for ceilings and walls, as well as acoustic solutions, among others.

	Baseboard	Decorative surfaces	Natural decorative surfaces
Particleboard	 **Fimapan FR E-Z**	 **Fimaplast FR E-Z**	
Superpan	 **Superpan FR E-Z**	 **Superpan Decor FR E-Z**	
Fibreboard	 **Fibrapan FR E-Z**  **Mediland M1 E-Z**  **Fibraplast FR E-Z**  **Fibranatur FR E-Z** Moisture Resistant  **Fibrapan MR FR E-Z** Light  **Fibrapan Forma FR E-Z** Moisture Resistant  **Fibraplast MR FR E-Z** NAF  **Fibrapan FR NAF** Compact  **Compac Plus FR E-Z** Compact  **Compamel Plus FR E-Z** Coloured  **Fibracolour Black FR E-Z** Coloured  **Fibracolour Black FR E-Z Plast** Coloured  **Fibracolour Negro Ignífugo E-Z Natur** Textures  **Fibrapan Ignífugo E-Z Tex**	

		Industrial applications				
		Panels	Screens	Acoustic walls and ceilings	Coating baseboard	Surface machine work
Baseboard						
Particleboard	Fimapan FR E-Z		•		•	
Superpan	Superpan FR E-Z	•	•		•	
Fibreboard	Fibrapan FR E-Z	•		•	•	•
	Mediland M1 E-Z	•		•	•	•
	Fibrapan FR NAF	•		•	•	•
	Fibrapan MR FR E-Z	•		•	•	•
	Fibracolour Black FR E-Z	•	•	•	•	•
	Compac Plus FR E-Z	•		•	•	•
	Fibrapan Ignífugo E-Z Tex	•	•			
With decorative paper						
Particleboard	Fimaplast FR E-Z	•	•			
Superpan	Superpan Decor FR E-Z	•	•			
Fibreboard	Fibraplast FR E-Z	•		•		•
	Fibraplast MR FR E-Z	•		•		•
	Fibracolour Black FR E-Z Plast	•	•	•		•
	Compacmel Plus FR E-Z	•				•
With natural decorative surface						
Fibreboard	Fibranatur FR E-Z	•		•		•
	Fibracolour FR Black E-Z Natur	•	•	•		•

Finsa
Design

Duo

Get inspiration from the Duo range, designed to fit any style and trend, combining baseboards, textures and colours. Explore every possibility, and we will help you to add character and identity to your space.

Natur / Studio Natur

Finsa also makes it possible to cover its broad range of baseboards with other decorative ideas, including the option of veneers. Wood veneers add naturalness and warmth to your decorative project, and we offer a broad range of veneers while providing our assistance during the creation stage to bring your idea to life.

Superpan Decor Fire Retardant E-Z

Superpan Is Finsa's innovative and exclusive board, which combines the main advantages of MDF and particleboard. This consists of a multi-layered structure made up of a interior of particles with two outer wood fibre faces, bonded with synthetic resins under pressure and heat, while improving the boards' physical and mechanical properties, making them more versatile and suited to multiple applications.

- Environmentally friendly. Sustainable and recyclable material E05 / CARB2
- High flexural strength and high module of elasticity
- A wide variety of coatings and finishings
- Better fastening of screws and nails, even along the edges
- A perfect cut. Extends the service life of tools
- Ideal for lacquering and painting applications.
- Better quality edging

Projects

SO/Sotogrande Resort
IHP

Sotogrande
2021

Fibraplast Fire Retardant
Roble Hera Poro Arenado

Furniture, cabinets
and panelling

Hospitality

04/

Coca-Cola offices
Tetris & Stone Designs

Madrid
2017

Fibraplast Fire Retardant
Roble Aurora y Roble Rus

Furniture and panelling

Workplace

Restaurant 19.86 by Rubén Arnanz
Stone Designs

Madrid
2021

Fibraplast Fire Retardant
Castaño Rialto Atlas

Furniture, counter, divider and decorative elements

Retail

C.C. Vialia Málaga
Brodway Malyan

Málaga
2017

Fimaplast Fire Retardant
Roble Denver Atlas

Roof slats and column cladding

Retail

Industrial mezzanine in a fruit and horticultural company warehouse
Instalaciones Mecánicas Emilio Gea

El Ejido (Almería)
2019

Superpan Tech P4
Fire Retardant with anti-slip surface

Industrial mezzanine

Industrial

Children education classroon in San Prudencio school
Ricardo Aristizábal

Vitoria-Gasteiz
2022

Fibraplast Fire Retardant
E-Z Biscuit Soft III

Frieze and mouldings

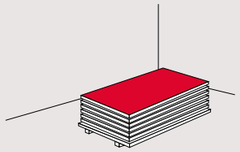
School

Technical Information

Fire retardant boards

Storage is especially critical, and so it is very important to keep the original packaging or one that is very similar, to avoid moist environments, so that all physical and mechanical properties can be preserved.

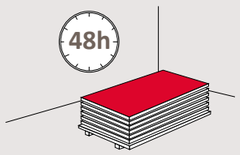
Storage



It should be stored in closed, ventilated, dry storage rooms, protected from sun, rain, frost and chemical splashes, in compact stacks. Packages shall be placed on a flat, level surface, and boards shall remain packaged in similar conditions to those of the original packaging, in order to properly retain their properties.

When packages are stacked, it is recommended that the runners be aligned vertically to prevent warping. Prevent boards from being subject to different humidity and temperature conditions on each of their sides.

Conditioning



Wood and all wooden boards, given their hygroscopic properties, capture and release moisture to surrounding environment, depending on the temperature and humidity of such environment, causing dimensional variations. Preconditioning of boards is recommended.

Before installation, it is recommended to let them get adapted to the environment for at least 2 days before use. In case of on-site use (coatings, etc.), the boards must be stabilised at the installation site, in order to achieve balance and minimise dimensional variations once installed.

05/

Handling and cleaning recommendations for decorative paper faced boards

Handling

The product shall be handled with the proper care, while avoiding hard abrasions between the faces that can produce damage to the decorative surface.

Cleaning

The product may be cleaned with a damp cloth and a neutral cleaning agent in small doses. Abrasive elements and excessively acidic or alkaline solutions should be avoided. Prolonged exposure to wet surfaces and/or direct contact with water should be avoided.

05.1/ Technical datasheets

Fimapan Fire Ignífugo E-Z

Fimapan Fire Retardant E-Z

E05 CARB2 cradle to cradle CERTIFIED PRODUCTS PROGRAM

Property	Test	Thickness (mm)					Units
		10/13	>13/20	>20/25	>25/32	>32/40	
Density (*)	En 323	740	710	695	675	660	Kg/m^3
Internal bond	En 319	0.40	0.35	0.30	0.25	0.20	N/mm^2
Bending strength	En 310	11	11	10.5	9.5	8.5	N/mm^2
Modulus of elasticity	EN 310	1800	1600	1500	1350	1200	N/mm^2
Thickness swelling 2h	En 317	6	6	6	6	6	%
Moisture content	En 322	7±3	7±3	7±3	7±3	7±3	%
Reaction to fire	En 13501-1	B-s1, d0	B-s1, d0	B-s1, d0	B-s1, d0	B-s1, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with the P2 classification established in EN 312:2010 European Standard, Table 3. Boards for indoor applications (including furniture) in dry environments (Type P2).

This product meets Class E1 requirements as defined in EN 312:2010 European Standard.

This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).

It has a Certificate of Compliance with US EPA TSCA Title VI formaldehyde emission requirements and CARB phase 2.

Fimaplast FR E-Z

Reaction to fire clasification: B-s1,d0 (thicknesses: 10 - 40 mm), according to EN 13501-1.

Superpan Ignífugo E-Z

Superpan Fire Retardant E-Z

E05 CARB2 cradle to cradle CERTIFIED PRODUCTS PROGRAM

Property	Test	Thickness (mm)						Units
		8/<12	12/20	>20/25	>25/32	>32/40	>40/44	
Density (*)	En 323	760/730	730/690	680	660	650	650	Kg/m^3
Internal bond	En 319	0.40	0.35	0.30	0.25	0.20	0.20	N/mm^2
Bending strength	En 310	14	14	13	12	11	10	N/mm^2
Modulus of elasticity	En 310	2200	2100	1800	1500	1300	1150	N/mm^2
Thickness swelling 24h	En 317	6	6	6	6	6	6	%
Moisture content	En 322	8±3	8±3	8±3	8±3	8±3	8±3	%
Reaction to fire	En 13501-1	B-s2, d0	B-s1, d0	B-s1, d0	B-s1, d0	B-s1, d0	B-s1, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with the P2 classification established in EN 312:2010 European Standard, Table 3. Boards for indoor applications (including furniture) in dry environments (Type P2).

This product meets Class E1 requirements as defined in EN 312:2010 European Standard.

This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).

Between 8-19 mm thicknesses, it has a Certificate of Compliance with the requirements of the US EPA TSCA Title VI formaldehyde emission and CARB phase 2.

Superpan Decor FR E-Z

Reaction to fire clasification: B-s1,d0 (thicknesses: 8 - 44 mm), according to EN 13501-1.

Superpan Tech P4 Ignífugo E-Z

Superpan Tech P4 Fire Retardant E-Z

E05 CARB2

Property	Test	Thickness (mm)							Units
		8/<12	12/13	>13/20	>20/25	>25/32	>32/40	>40/44	
Density (*)	EN 323	760/750	730	690	680	660	650	650	Kg/m^3
Internal bond	EN 319	0.40	0.40	0.35	0.30	0.25	0.20	0.20	N/mm^2
Bending strength	EN 310	23	23	21	20	19	18	17	N/mm^2
Modulus of elasticity	EN 310	2900	2900	2800	2500	2200	2100	2000	N/mm^2
Thickness swelling 24h	EN 317	19	16	15	15	15	14	14	%
Moisture content	EN 322	8±3	8±3	8±3	8±3	8±3	8±3	8±3	%
Reaction to fire	EN 13501-1	B-s2, d0	B-s1, d0	B-s1, d0	B-s1, d0	B-s1, d0	B-s1, d0	B-s1, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with the P4 classification established in EN 312:2010 European Standard, Table 6. Structural boards used in dry conditions (Type P4).

This product meets Class E1 requirements as defined in EN 312:2010 European Standard.

This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).
Between 8-19 mm thicknesses, it has a Certificate of Compliance with the requirements of the US EPA TSCA Title VI formaldehyde emission and CARB phase 2.

Superpan Tech P4 Decor FR E-Z

Reaction to fire clasification: B-s1,d0 (thicknesses: 8 - 44 mm), according to EN 13501-1.

Fibranor Ignífugo E-Z / Fibrapan Ignífugo E-Z Iberpan Ignífugo E-Z

Fibranor Fire Retardant E-Z / Fimapan Fire Retardant E-Z / Iberpan Fire Retardant E-Z

E05 CARB2 cradle to cradle CERTIFIED PRODUCTS PROGRAM

Property	Test	Thickness (mm)					Units
		3/4	>4/60	>6/<7	7/9	>9/<10	
Density (*)	EN 323	890/880	870/850	840/830	840/830	820/800	Kg/m^3
Internal bond	EN 319	0.65	0.65	0.65	0.65	0.60	N/mm^2
Bending strength	EN 310	23	23	23	22	20	N/mm^2
Modulus of elasticity	EN 310	2700	2700	2700	2700	2500	N/mm^2
Thickness swelling 24h	EN 317	35	30	17	17	15	%
Moisture content	EN 322	7±3	7±3	7±3	7±3	7±3	%
Reaction to fire	EN 13501-1	B-s2, d0	B-s2, d0	B-s2, d0	B-s2, d0	B-s2, d0	Euroclass

Property	Test	Espesor (mm)					Units
		10/12	>12/19	>19/30	>30/45	>45/50	
Density (*)	EN 323	830/790	790/770	770/740	760/720	720/680	Kg/m^3
Internal bond	EN 319	0.60	0.55	0.55	0.50	0.50	N/mm^2
Bending strength	EN 310	22	20	18	17	15	N/mm^2
Modulus of elasticity	EN 310	2500	2200	2100	1900	1700	N/mm^2
Thickness swelling 24h	EN 317	15	12	10	8	6	%
Moisture content	EN 322	7±3	7±3	7±3	7±3	7±3	%
Reaction to fire	EN 13501-1	B-s1, d0	B-s1, d0	B-s1, d0	B-s2, d0	B-s2, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with those established by EN 622-5:2009 European Standard, Table 3. Requirements for general purpose boards for use in dry conditions (MDF type).

This product meets Class E1 requirements as defined in EN 622-1 European Standard.

This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).
It has a Certificate of Compliance with US EPA TSCA Title VI formaldehyde emission requirements and CARB phase 2.

Fibraplast FR E-Z

Reaction to fire clasification: B-s1,d0 (thicknesses: 10 - 30 mm), according to EN 13501-1.

Fibranatur FR E-Z

Reaction to fire clasification: C-s1,d0 (thicknesses: 11 - 31 mm), according to EN 13501-1.

Mediland M1 E-Z

E05 CARB2 cradle to cradle CERTIFIED PRODUCTS PROGRAM

Property	Test	Thickness (mm)			Units
		10/12	>12/19	>19/30	
Density (*)	EN 323	820/790	790/770	760/740	kg/m^3
Internal bond	EN 319	0.60	0.55	0.55	N/mm^2
Bending strength	EN 310	22	20	18	N/mm^2
Modulus of elasticity	EN 310	2500	2200	2100	N/mm^2
Thickness swelling 24h	EN 317	15	12	10	%
Moisture content	EN 322	7±3	7±3	7±3	%
Reaction to fire	EN 13501-1	B-s1, d0	B-s1, d0	B-s1, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with those established by EN 622-5:2009 European Standard, Table 3. Requirements for general purpose boards for use in dry conditions (type MDF).

This product meets Class E1 requirements as defined in EN 622-1 European Standard.

This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).
It has a Certificate of Compliance with US EPA TSCA Title VI formaldehyde emission requirements and CARB phase 2.

Fibrapan Hidrófugo Ignífugo E-Z

Fibrapan Moisture Resistant Fire Retardant E-Z

E05 CARB2 cradle to cradle CERTIFIED PRODUCTS PROGRAM

Property	Test	Thickness (mm)			Units
		10/12	>12/19	>19/22	
Density (*)	EN 323	840/830	820/810	810/790	kg/m^3
Internal bond	EN 319	0.80	0.75	0.75	N/mm^2
Bending strength	EN 310	26	24	22	N/mm^2
Modulus of elasticity	EN 310	2500	2400	2300	N/mm^2
Thickness swelling 24h	EN 317	10	8	7	%
Moisture content	EN 322	7±3	7±3	7±3	%
Reaction to fire	EN 13501-1	B-s1, d0	B-s1, d0	B-s1, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with those established in EN 622-5:2009 European Standard, Table 4, Option 1. Requirements for boards for gereral use in humid conditions (Type MDF.H).

This product meets Class E1 requirements as defined in EN 622-1 European Standard.

This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).
It has a Certificate of Compliance with US EPA TSCA Title VI formaldehyde emission requirements and CARB phase 2.

Fibraplast MR FR E-Z

Reaction to fire clasification: B-s2,d0 (thicknesses: 12 - 19 mm), according to EN 13501-1.

Fibrapan Forma Ignífugo

Fibrapan Forma Fire Retardant

E05 | CARB2

Property	Test	Thickness (mm)			Units
		10/12	>12/19	>19/30	
Density (*)	EN 323	660	640	640	kg/m³
Internal bond	EN 319	0.45	0.45	0.45	N/mm²
Bending strength	EN 310	20	18	15	N/mm²
Modulus of elasticity	EN 310	1700	1600	1500	N/mm²
Thickness swelling 24h	EN 317	16	14	12	%
Moisture content	EN 322	7±3	7±3	7±3	%
Reaction to fire	EN 13501-1	B-s2, d0	B-s2, d0	B-s2, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with those established by EN 622-5:2009 European Standard, Table 7. Requirements for general purpose MDF lightweight boards for use in dry conditions (Type L- MDF.E1).

This product meets Class E1 requirements as defined in EN 622-1 European Standard.

This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).

It has a Certificate of Compliance with US EPA TSCA Title VI formaldehyde emission requirements and CARB phase 2.

Fibranor Ignífugo NAF / Fibrapan Ignífugo NAF

Fibranor Fire Retardant NAF / Fibrapan Fire Retardant NAF

E05 | NAF

Property	Test	Thickness (mm)				Units
		5/≤7	7/9	>9/12	>12/18	
Density (*)	EN 323	870	870/860	860/850	850/840	Kg/m³
Internal bond	EN 319	0.65	0.65	0.60	0.55	N/mm²
Bending strength	EN 310	23	23	22	20	N/mm²
Modulus of elasticity	EN 310	2700	2700	2500	2200	N/mm²
Thickness swelling 24h	EN 317	30	17	15	12	%
Moisture content	EN 322	7±3	7±3	7±3	7±3	%
Reaction to fire	EN 13501-1	B-s1, d0	B-s1, d0	B-s1, d0	B-s1, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with those established by EN 622-5:2009 European Standard, Table 3. Requirements for general purpose boards for use in dry conditions (type MDF).

This product meets Class E1 requirements as defined in EN 622-1 European Standard.

This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).

Fibrapan FR NAF is manufactured with resins without formaldehyde.

This product is NAF approved by the Air Reosurces Board of the State of California and comply with phase 2 requirements on low formaldehyde emissions and with US EPA TSCA Title VI.

Compac Plus Ignífugo E-Z

Compac Plus Fire Retardant E-Z

E05 | CARB2

Property	Test	Thickness (mm)		Units
		8/12	>12/19	
Density (*)	EN 323	1050	1050	Kg/m³
Internal bond	EN 319	1.8	1.8	N/mm²
Bending strength	EN 310	45	45	N/mm²
Modulus of elasticity	EN 310	4000	4000	N/mm²
Thickness swelling 24h	EN 317	8	6	%
Moisture content	EN 322	7±3	7±3	%
Reaction to fire	EN 13501-1	B-s1, d0	B-s1, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with those established by EN 622-5:2009 European Standard, Table 3. Requirements for general purpose boards for use in dry conditions (type MDF).

This product meets Class E1 requirements as defined in EN 622-1 European Standard. This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).

It has a Certificate of Compliance with US EPA TSCA Title VI formaldehyde emission requirements and CARB phase 2.

Compacmel Plus FR E-Z

Reaction to fire clasification: B-s1,d0 (thicknesses: 8 - 19 mm), according to EN 13501-1.

The value of thickness swelling 24h, according to EN 317, is of 2%.

Fibracolour Black Ignífugo E-Z

Fibracolour Black Fire Retardant E-Z

E05 | CARB2

Property	Test	Thickness (mm)		Units
		9/12	>12/19	
Density (*)	EN 323	860/820	800/780	kg/m³
Internal bond	EN 319	0.60	0.55	N/mm²
Bending strength	EN 310	22	20	N/mm²
Modulus of elasticity	EN 310	2500	2200	N/mm²
Thickness swelling 24h	EN 317	15	12	%
Moisture content	EN 322	7±3	7±3	%
Reaction to fire	EN 13501-1	B-s2, d0	B-s2, d0	Euroclass

(*) This information is merely indicative

These physical-mechanical values improve/comply with those established by EN 622-5:2009 European Standard, Table 3. Requirements for general purpose boards for use in dry conditions (type MDF).

This product meets Class E1 requirements as defined in EN 622-1 European Standard.

This product meets Class E1 requirements as defined in EN 622-1 European Standard. This product is a low formaldehyde emission product E05 (≤ 0.05 ppm EN 717-1).

It has a Certificate of Compliance with US EPA TSCA Title VI formaldehyde emission requirements and CARB phase 2.

Fibracolour Black FR E-Z Plast

Reaction to fire clasification: B-s1,d0 (thickness: 19 mm), according to EN 13501-1.

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