

**kronospan**

**pinepanels**



**ORIENTED STRAND BOARD**

**SOLID AS ROCK  
YET FLEXIBLE AND ECO FRIENDLY**



## ORIENTED STRAND BOARD

**Kronospan Pinepanels OSB** (Oriented Strand Board) is an engineered wood-based panel consisting of strands of wood which are bonded together with a synthetic resin; the strands are pressed together in layers. In the outer layers strands are generally oriented longitudinally in line with the panel length, whereas in the middle layers strands generally lie in a cross wise direction. Wood strands are cut tangentially from debarked logs which are held longitudinally against rotating knives. The ribbon of strands used is typically 100 mm along the grain and from 5 to 50 mm across the grain. After drying, these strands are sprayed with a formaldehyde free synthetic resin binder: isocyanate (PMDI), which is a moisture resistant binder.

**Kronospan Pinepanels OSB** varies in colour from a light straw colour to a medium brown depending on wood species used, resin system adopted and pressing conditions employed. It contains no knotholes, core voids or points of weakness. Although **OSB** is made up of relatively large strands of wood, its surface is relatively smooth and this can be further enhanced by sanding without losing the aesthetic character which is unique to **OSB**.

The main merits of **OSB** lie in the field of its mechanical performance, which is directly related to the geometry of the strands and their orientation within the panel. **Kronospan Pinepanels OSB 3 & 4** is your guarantee to 'No delamination' unlike local Plywood. Due to its high mechanical properties and the orientation of the strands within panels, **OSB** is particularly suitable for load-bearing applications in construction and is widely used for flooring, roof decking and wall panelling, but there is also a wide field of other applications where **OSB** as a wood-based panel product can be utilised.

**Kronospan Pinepanels OSB** derived from plantation wood grown in Romania is a sustainable panel product. It is a perfect solution where healthy indoor air quality, thermal comforts, airborne sound insulation, fire retardant values and structural safety are key considerations. Whether it's a hotel, hospital, industry, public building or your home, it is wonder of wood in look and feel too.

Being a high performance structural panel, Architects can rely on OSB as a perfect substitute of Plywood and Gypsum Board for most of the applications in any building. **OSB** can also be fine sanded for laminating the wall paper, melamine paper impregnated finish like a HPL or veneered to give a decorative Plywood look or simply lacquered with PU or acrylic coats to retain its natural look.



**Four grades of OSB are defined in EN 300 in terms of their mechanical performance and relative resistance to moisture. These are :**

- OSB/1 - General purpose boards & boards for interior fitments for use in dry conditions
- OSB/2 - Load-bearing boards for use in dry conditions
- OSB/3 - Load-bearing boards for use in humid conditions
- OSB/4 - Heavy-duty load-bearing boards for use in humid conditions

**OSB** with enhanced moisture resistance (OSB/3; OSB/4) is however not waterproof; the term 'moisture resistant' applies to the adhesive binder which (within limits defined by EN 300) will not break down in the presence of moisture. Physical wetting of all grades of **OSB** should however be avoided.

**Availability options :**

**OSB** is available in the sheet size of 2440mm x 1220mm and in thickness ranging from 9mm to 40mm. However, other dimensions as large as 5000mm in length or 1850mm in width can also be had with prior arrangements.

# Properties & Specifications

## THRESHOLD VALUE REQUIREMENT FOR OSB / 3 UNDER EN 300

Properties	Test method	Unit	Thickness (mm)			
			6 to 10	>10 to <18	18 to 25	
Bending strength	major axis	EN 310	N/mm2	22	20	18
	minor axis	EN 310	N/mm2	11	10	9
Modulus of elasticity in bending	major axis	EN 310	N/mm2	3500		
	minor axis	EN 310	N/mm2	1400		
Internal Bond	EN 319	N/mm2	0.34	0.32	0.30	
Swelling in thickness - 24 h	EN 317	%	15	15	15	
Screw Withdrawal	EN 320		NA	> 1000 N		

## REQUIREMENT FOR MOISTURE RESISTANCE

Bending strength after cyclic test - major axis	EN 321+ EN 310	N/mm2	9	8	7
OPTION 1 - Internal bond after cyclic test	EN 321+ EN 319	N/mm2	0.18	0.15	0.13
OPTION 2 - Internal bond after boil test	EN 1087-1+ EN 319	N/mm2	0.15	0.13	0.12

## THRESHOLD VALUE REQUIREMENT FOR OSB / 4 UNDER EN 300

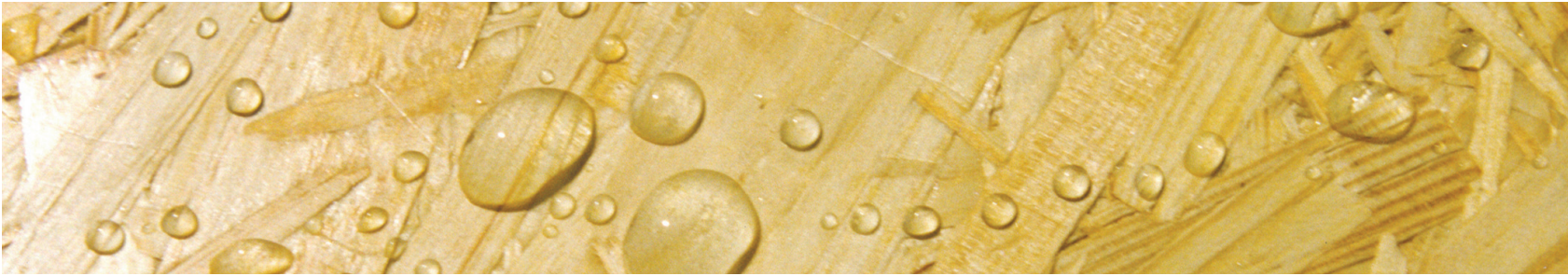
Properties	Test method	Unit	Thickness (mm)			
			6 to 10	>10 to <18	18 to 25	
Bending strength	major axis	EN 310	N/mm2	30	28	26
	minor axis	EN 310	N/mm2	16	15	14
Modulus of elasticity in bending	major axis	EN 310	N/mm2	4800		
	minor axis	EN 310	N/mm2	1900		
Internal Bond	EN 319	N/mm2	0.50	0.45	0.40	
Swelling in thickness - 24 h	EN 317	%	12	12	12	
Screw Withdrawal	EN 320		NA	> 1100 N		

## REQUIREMENT FOR MOISTURE RESISTANCE

Bending strength after cyclic test-major axis	EN 321+ EN 310	N/mm2	15	14	13
OPTION 1 - Internal bond after cyclic test	EN 321+ EN 319	N/mm2	0.21	0.17	0.15
OPTION 2 - Internal bond after boil test	EN 1087-1+ EN 319	N/mm2	0.17	0.15	0.13

## SOUND INSULATION (R) MEASURED IN dB FOR INDIVIDUAL OSB PANELS

Board thickness	9 mm	12 mm	15 mm	18 mm	22 mm	25 mm	30 mm
dB Value	23	25	26	27	28	29	30



## OSB is not, Just another wood panel



- Formaldehyde-free adhesive system
- Pre-consumer recycled wood content
- Superior physical properties to standard MDF/ Plywood/ Gypsum Board
- Truly high performance screw holding and MOR capabilities, among others
- FSC® 100% Credit Certified - available option
- Potential LEED® 2009 credit support: MRc 4, 7 and IEQc 4.4
- Meets CARB ATCM Phase 2 emission limits - CARB NAF Exempt
- Euro class D rating Flame Spread
- COC demonstration to comply with and minimise risk under EUTR 2013

# OSB stands for more than you think!

## ...WITH A UNIQUE COMBINATION OF ADVANTAGES

- **High mechanical strength** - comparable with that of equivalent grades of plywood and other structural panel
- **High rigidity** - Resistance to distortion, splitting and de-lamination
- **Excellent strength-to-weight ratio**
- **Impressive durability** - Dimensionally stable. Retains as-new performance levels throughout its long life when used in specified service conditions.
- **Precise, predictable performance** - Load bearing grades conform with exactly defined design and loading specifications in dry or humid atmospheres.
- **Easy to work** - Readily sawn, drilled, planed, routed and sanded. May be nailed, stapled or screwed close to the edge without splitting. Simple to glue, paint and stain.
- **Flaw-free** - No knotholes, core voids or points of weakness.



## OSB IS THE LOGICAL CHOICE FOR ...

- **Structural Insulated Panels**
- **Wooden House Roofing, Wall Panelling, Floor Decking & False Ceiling**
- **Interior Decoration, Work Station Partition**
- **Barricading of Construction Sites**
- **Furnitures, Wardrobes**

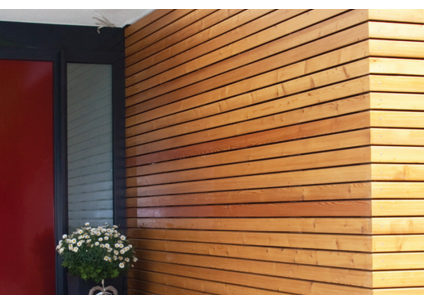
## UNIQUE PHYSICAL PROPERTIES

**Biological attack :** Typically OSB will not be attacked by wood-boring insects common in temperate climates. It can be used in hazard classes 1, 2 and 3 as defined in EN 335-1 “Durability of wood and wood-based products – Part 1: Definition of hazard classes of biological attack”. For these three hazard classes, the respective moisture content of OSB and the organisms that may attack OSB under the specified conditions are given in EN 335-3 “Durability of wood and wood-based products – Part 3 : Application to wood-based panels”.

**Water vapour permeability :** The value of the water vapour resistance factor ( $\mu$ ) for OSB having a density of  $650 \text{ kg/m}^3$ , can be taken as 30 using the ‘wet cup’ method and 50 when the ‘dry cup’ procedure is employed (EN 12524).

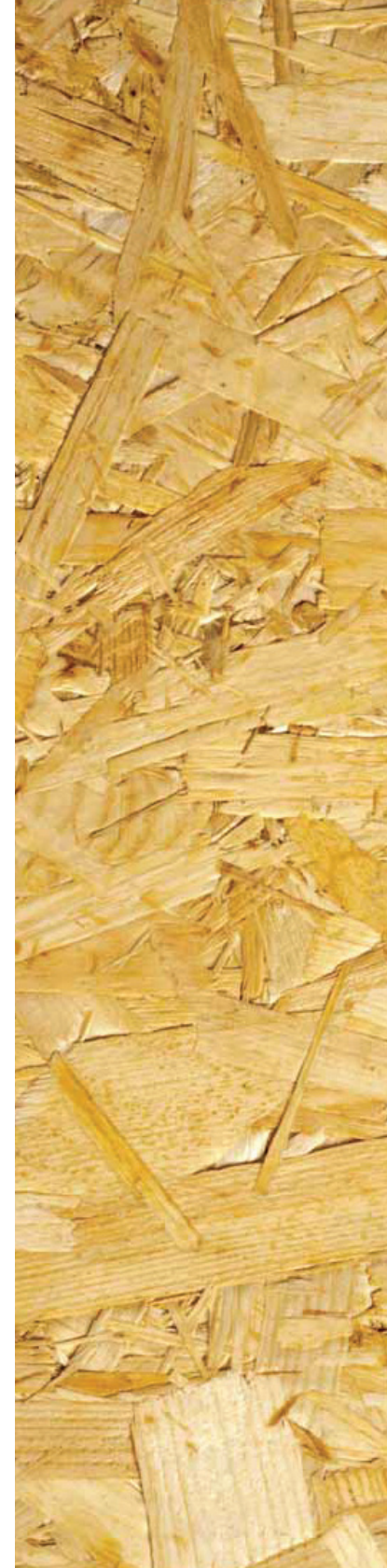
**Reaction to Fire :** OSB boards are classified as D-s2, d0 according with EN 13501-1 standard.

**Thermal conductivity :** The thermal conductivity ( $\lambda$ ) of OSB is  $0.13 \text{ W/m K}$  for a mean density of  $650 \text{ kg/m}^3$ .



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