



elka strong board

High Performance diffusion open external sheathing board, combining high racking strength, with excellent vapour permeability



### Description

Elka Strong Board is a 12mm thick, 1220 x 2440mm, high performance diffusion open, structural, wood particle board. Elka Strong Board is suitable for external or internal use. The boards are intended for use in load-bearing structural elements in humid conditions and categorised as a P5 racking board in accordance with EN 312. Elka Strong Boards are produced by Elka-Holzwerke, a wood particle board manufacturer based in Germany.



ESB boards can be applied internally & painted directly or dry-lined

## ELKA STRONG BOARD

### Product Summary

- Convenient size:
  - UK - 12mm x 1220 x 2440mm
  - Ireland - 12mm x 1200 x 2700
- Suitable for external or internal use.
- The boards are intended for use in load-bearing structural elements in humid conditions.
- 12mm Elka Strong Boards are category 1 structural boards, categorised as a P5 racking board in accordance with EN 312.
- When used externally, similar to OSB/Plywood/particle boards, it must be protected by a diffusion open membrane (e.g. SOLITEX FRONTA WA).
- Compared to figures stated on the Declarations of Performance (DOPs) of many OSB3 boards, Elka Strong Board is up to 5 times more vapour permeable with a diffusion resistance factor of only 40.
- Elka Strong Boards have such a low vapour resistance they may be installed internally in conjunction with INTELLO PLUS, and still retain "Intelligent" vapour control.
- Elka Strong Boards have considerably less risk of swelling compared to OSB3. A critical property in our humid climate
- Elka Strong Boards have a greater transverse tensile strength compared to OSB3 (approx. 40% more). This ensures superior screw and nail extraction properties.
- The bending strength and modulus of elasticity of Elka Strong Boards are the same in both directions, unlike OSB panels where the value is halved across the width.
- As the board has a high quality sanded surface finish it may be desirable for use as an internal finish. The board may be painted or varnished directly with a diffusion open finish.
- Elka Strong Boards are largely odour-neutral and support a healthy living environment.
- They are PEFC-certified, and carry the CE mark of conformity.



## Areas of Application

The boards may be applied internally or externally and are compatible with diffusion open breathable wall and roof structures.

With a  $\mu$  value of only 40, Elka Strong Boards are over 5 times more diffusion open in comparison to many OSB3 boards. This significantly increases the ability for walls and roofs to dry out in the event of unforeseen moisture entry.

In recognition of its unique hygrothermal characteristics, Elka Strong Boards material properties are also included in the material database of the advanced hygrothermal software program, WUFI ([www.WUFI.de](http://www.WUFI.de)).

Due to the board's exceptional low vapour resistance, it may be used as an internal racking board in conjunction with Intelligent Vapour Checks, such as INTELLO PLUS, without inhibiting the performance of the Intelligent membrane from a vapour diffusion perspective.

When Elka Strong Boards are applied in external applications they must be protected with a suitable membrane (e.g. SOLITEX FRONTA WA on walls or SOLITEX PLUS on pitched roofs).

While Elka Strong Boards are suitable for use in humid conditions equivalent to conventional OSB3, boards should be protected from moisture during and especially after installation. After installation the boards must be protected from any direct contact with water with suitable breathable membranes, (e.g. SOLITEX FRONTA WA on walls or SOLITEX PLUS on pitched roofs).

**Elka Strong Boards should be stored flat, on a pallet using a sufficient number of cross members. Boards should not be stored vertically, unless ground contact can be avoided.**

**The board may also be applied internally as a surface finish. Thanks to the board's sanded and virtually sealed surface, this enables water-vapour-permeable varnishes, paints and adhesives to be directly applied.**



## Technical Characteristics

Thickness (mm)	12	12 / 15
Type	ESB P5	OSB 2 / OSB3
Transverse tensile strength (N/mm <sup>2</sup> )	>0.45	>0.32
Bending strength lengthways (N/mm <sup>2</sup> )	>18	>20
Bending strength crossways (N/mm <sup>2</sup> )	>18	>10
24hr swelling (%)	<11	<20 / <15

## Strength Properties in Relation to Racking

Shear perpendicular to the panel plane (E.g. used as a racking board)	7.0N/mm <sup>2</sup>
Shear in the panel plane (E.g. used as floor decking)	1.9N/mm <sup>2</sup>

12mm Elka Strong Boards have a modulus of elasticity of 2550N/mm<sup>2</sup> in accordance with EN 310. The boards have a thermal conductivity of 0.12W/mK.

Ecological Building Systems can also supply Elka Strong Boards in a range of other dimensions and thicknesses on request.

Please contact our office for more details.

## Installation Guide

When installing Elka Strong Boards, a 4mm expansion gap should be left around the edges of the board. Like all wood based boards, they will expand/shrink under variable humidity conditions, albeit to a lesser extent compared to OSB3 boards.

The board may be installed using either screws, nails or staples. Nails or screws should be galvanised, stainless steel or have similarly durable properties. These include wire nails, clout nails, annular ring shank nails and proprietary gun driven nails with a minimum diameter of 2.8mm and a minimum length of 50mm. If used structurally, the type, size and spacing of fixings should be confirmed by the panel designer/structural engineer. The perimeter nail spacing should not exceed 150mm, but the spacing of the nails on intermediate studs can usually be increased to 300mm. The minimum recommended edge nailing distance is 8mm.

It is recommended that boards are fixed in a consistent pattern working outwards from the centre of the board. Elka strong boards are suitable for sheathing timber frame wall panels with stud framing not less than 38mm in width and at a maximum of 610mm centres. Suitable sawing, milling and drilling tools should always be used.

## Elka and the environment

As Elka Strong Boards utilise exclusively virgin green wood chips from a neighbouring sawmill minimal processing is required. This ensures the boards are practically odourless due to their low VOC emissions, which in turn contribute to a healthy indoor climate. The wood required to manufacture Elka Strong Board is sourced from sustainably managed forests.



For information and further technical support for your project please contact Ecological Building Systems or visit [www.EcologicalBuildingSystems.com](http://www.EcologicalBuildingSystems.com)

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