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Reorient your structural thinking with OSB



Successfully manufactured and used in North America and Europe for decades, oriented strand board (OSB) is a relatively recent entrant to the Australian market.

Composition

An engineered wood panel product, OSB is produced by bonding thin strands of wood with adhesive. A wax may be added to the resin to increase moisture resistance if required. The strands are generally oriented inline with the panel length in the outer layers and across it in the inner layers to provide panel dimensional stability and to optimise structural performance. Once in place, the strands form a continuous mat that is then heat and pressure cured to create a uniform finish.

Wood fibre used in OSB includes softwoods (often pine or spruce) and some hardwoods.

Appearance

OSB usually has a variegated look, ranging from light yellow to medium or dark brown, depending on the species, resins and manufacturing process parameters. Typically OSB uses large wood strands that are easily visible. The orientation of the strands may be hard to determine in smaller pieces.

Although usually used in hidden structural applications, OSB may be painted or the distinctive appearance can be featured by sanding and clear finishing.

Properties

OSB has similar properties to plywood, yet is generally more cost-effective to manufacture, it can also be similar to, but stronger than particleboard.

Design properties for OSB are proprietary so it's best to consult the supplier for the relevant specifications. These can include grading, structural properties, bond classification and product application tables.

OSB is not currently produced in Australia.

Applications

OSB is a versatile material with extensive load-bearing structural applications including:

- Underlay
- Flooring
- Bracing walls and diaphragms
- Roof sheathing
- Internal panelling
- Stair treads and risers

OSB is also used for packaging, industrial hoardings and pallet tops.

Standards

There is no Australian Standard for OSB, the European Standard is BS EN 300: Oriented Strand Boards (OSB) – Definitions, classification and specifications.

BS EN300 defines four grades that relate to relative mechanical properties and moisture resistance. These are:

- OSB/1 - General purpose boards and boards for interior fitments (including furniture) 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.

There are also OSB standards for product manufactured in other parts of the world such as the USA.

The advantages of engineered wood products

The popularity of engineered wood products (EWPs) is a result of their many advantages over other building materials.

Typically EWPs advantages include:

- Greater dimensional flexibility
- Improved structural design properties and performance
- Improved dimensional stability
- More efficient use of a valuable natural resource with less wastage

EWPs also have significant environmental advantages over building materials such as concrete and steel. Wood is a naturally renewable resource that has low embodied energy and also acts as a carbon store (up to 50% of the dry weight of wood is carbon).

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For more information on OSB and other timber products visit woodsolutions.com.au