

# **Insulspan SIPs PIB 204**

---

## **OSB Frequently Asked Questions**

## Product Information Bulletin

### OSB Frequently Asked Questions

Page 1 of 5

The purpose of this bulletin is to provide information available from the Structural Board Association (SBA) and industry organization that represents the Oriented Strand Board (OSB) (SBA). The frequently asked question (FAQ) information in this bulletin is available on the SBA website at [http://www.osbguide.com/faqs/faq\\_singlepage.html](http://www.osbguide.com/faqs/faq_singlepage.html).

#### **Q:** What is OSB?

**A:** Oriented strand board (OSB) is a performance-rated structural panel engineered for uniformity, strength, versatility and workability. It is utilized internationally in a wide array of applications including commercial and residential construction and renovation, packaging/crating, furniture and shelving, and do-it-yourself projects.

Because it is engineered, OSB can be custom manufactured to meet specific requirements in thickness, density, panel size, surface texture, strength, and rigidity. This engineering process makes OSB the most widely accepted and preferred structural panel among architects, specifiers and contractors.

This engineering process makes OSB the most widely accepted and preferred structural panel among architects, specifiers and contractors.

#### **Q:** How is OSB made?

**A:** OSB is manufactured from sustainable, fast-growing trees such as aspen poplar, southern yellow pine, mixed hardwoods, and other suitable species.

Logs are cut to length, debarked, and processed into precise strands ranging from 3 1/2" to 6" long and approximately 1" wide.

The strands are dried, sorted, and mixed with wax and a waterproof exterior-type binder and formed into large continuous mats. These mats are oriented in cross directional layers for increased strength then pressed at a high temperature and pressure to form panels.

Throughout this highly automated and fully engineered process, panels are monitored, tested, and certified to meet stringent quality standards for strength and uniformity.

**Q: Does OSB come with a performance guarantee/warranty?**

**A:** Absolutely. Each member of the Structural Board Association guarantees that its panels are manufactured in accordance with one or more of the following applicable standards:

- CSA 0437.0 and/or CSA 0325.0 (for Canada)
- PS2-92 (for the U.S.A)
- EN 300 (for Europe)
- JAS for Structural Boards (for Japan)
- TECO-PFS, APA or PSI/PTL Performance Standards (respectively NER-133, NER-PRP108 or NER-231).

This guarantee means that panels made by SBA members will perform as specified for the intended use when installed in accordance with the Installation Instructions published by the SBA member company.

The SBA Members' guarantee stipulates that should any panels not comply with the performance criteria specified in the standard(s), the SBA member will, at its option, either supply replacement panels without charge or reimburse the buyer for the full purchase price of the defective panels.

Terms of this guarantee can vary and should be confirmed with the respective companies. The SBA does not offer any specific product guarantees.

**Q: How does OSB perform in comparison to other structural panels?**

**A:** OSB is equivalent to other structural panels in its strength and rigidity, panel size and thickness, fastener performance and paintability. As a performance-rated structural panel, it meets specific end use requirements in all major building codes.

In addition, span ratings are stamped on each panel. (These ratings denote maximum recommended spacing of supports for load-bearing conditions.)

OSB also is Exposure 1 rated for durability, which means that it is designed to perform in applications where construction delays may occur. It requires no special treatment, only the same degree-of-care as other wood products. As with other structural wood panels, prolonged direct contact with rain or standing water should be avoided.

**Q: Is OSB economical to use?**

**A:** OSB's engineered manufacturing process makes it extremely economical for several reasons:

- Only trees from sustainable, fast-growing forests or woodlot thinnings are required in the manufacturing process, so there is always an abundant supply of convenient, high-quality raw materials.
- The panel is engineered for uniformity, eliminating costly surprises like core voids and knotholes, so you can use what you buy and get what you pay for.
- OSB is manufactured worldwide, meaning its abundant supply and easy access ensures economical purchasing and shipping methods.
- OSB is a better value than other structural panels.
- OSB also offers increased flexibility in selecting panel thicknesses and sizes.

**Q: Is OSB environmentally safe?**

- A:** Millions of dollars have been invested to ensure that OSB is one of the safest and most environmentally friendly structural panels available. Consider some of the facts:
- As the only truly renewable building material, wood is increasing its reserves every year.
  - OSB uses selectively prepared new wood strands during its manufacturing process and is recyclable into other products.
  - The fiber for OSB is grown in sustainable forests and tree farms.
  - OSB is safe to use.
  - Resin binders and waxes are completely cured and stabilized, so there is no measurable off-gassing from panels.
  - The manufacturing process uses nearly 90% of the log, with the balance used to supply energy.
  - It takes far more energy and resources to produce steel, concrete or other building materials than to manufacture a structural wood panel.
  - Modern mills -- costing more than US\$ 100 million -- are scientifically designed to meet or exceed strict standards for environmental compliance, set by regulatory authorities.

**Q: Does disposal of OSB in a landfill harm the environment?**

- A:** Landfilling of typical OSB is a safe practice which consumers and contractors should engage in freely if no other alternatives for disposal or recycling are available, based on present information and manufacturing technology.

Typically, OSB is 95 to 97 percent wood, and 3 to 5 percent additives like wax and resin. The characteristics of a well-managed landfill will mitigate any adverse effects to health or the environment.

**Q: Is OSB roof sheathing slippery to walk on during roof applications?**

- A:** OSB structural panels - with a textured surface - provide a safe, secure, nonslip surface for roofing installers wearing rubber-soled boots, according to comprehensive testing conducted by Forintek Canada Corp., a major Canadian independent research firm.

Tests were conducted under both wet and dry climatic conditions using OSB panels from a variety of SBA-member mills.

**Q: Are there any gaseous emissions from OSB?**

**A:** A two-phase study demonstrated that formaldehyde emissions from OSB were at or below the lower limit of sensitivity of test methods, meaning formaldehyde emissions from OSB are negligible or nonexistent. These results were found in OSB manufactured by all SBA-member mills.

The test was co-commissioned by the SBA, along with the Composite Panel Association in the United States, and Forintek Canada Corporation.

These findings support the blanket exemption given by HUD to manufacturers of phenol formaldehyde-bonded wood panel boards from the need to either test for formaldehyde emission or to attach consumer warning labels to the panels.

Tests on OSB panels have also been proven to meet the requirements of the European and Japanese emission criteria.

**Q: How vapor permeable is OSB? Should it be used with a special vapor barrier?**

**A:** The permeability of a wood panel is the rate that moisture passes through the panel under stated conditions of moisture vapor pressure. It is influenced by the density, degree of orientation, and thickness of the panel.

OSB compares favorably with other structural panels. Panels with a permeability of 1.0 perm (60 ng/Pa.s.m<sup>2</sup>) or less are considered to act as vapor barriers and panels with a permeability of 2.0 perms (12 ng/Pa.s.m<sup>2</sup>) or more are considered to pass sufficient water vapor that a wall cavity will dry out when constructed with green lumber.

For example, 5/8" (15.5mm) panels can be installed as a floor over unheated well ventilated spaces without the need of a vapor barrier, while 7/16" (11 mm), when installed as wall sheathing, will allow a wall cavity containing saturated stud lumber and glass fiber insulation to reach an equilibrium moisture content below 19 percent in approximately 60 days.

Sheathing membrane, although not always specifically mandated in some building codes under some types of claddings are recommended over OSB wall sheathing.

**Q: What are OSB's performance standards?**

**A:** OSB panels are manufactured to meet U. S. Department of Commerce Voluntary Performance Standard PS 2-92 "Performance Standard for Wood Based Structural Panels" and/or Canadian performance standard CSA 0325 "Construction Sheathing" (and/or CSA Standard 0437.0 "OSB & Waferboard").

OSB is certified to meet these standards by APA - the Engineered Wood Association, TECO (or PFS), PSI, or other major wood certification organizations. In addition, OSB is regulated in all model building code organizations - ICC, BOCA, ICBO, NBCC, CABO, and SBCCI. OSB is manufactured to meet the Exposure 1 durability classification, meaning panels are appropriate for use where construction delays may occur.

In Europe, OSB panels are manufactured to meet EN-300, Oriented Strand Boards and are certified by national certification agencies.

For Japan, OSB panels must meet JAS requirements and can be certified by recognized North American certification agencies.

**Q: How does OSB perform under high humidity conditions?**

**A:** OSB like all wood products reacts to changes in moisture and humidity conditions. OSB is required by North American Standards to maintain its strength and stiffness performance under normal humidity conditions, also referred to as "standard conditions," which are represented by a temperature of 68 degrees Fahrenheit and 65 percent relative humidity. This condition is typical of protected construction.

In addition, OSB is required to maintain its strength and stiffness performance when exposed to weather during long construction delays. OSB panels intended for construction are marked Exposure 1 for durability in accordance with voluntary product standard PS 2-92 (or Exterior Bond if stamped to meet CSA 0325).

Remember to gap OSB panels to allow for possible expansion.