

EDUCATIONAL BULLETIN

Frequently Asked Questions

WHAT IS OSB?

Oriented strand board (OSB) is a performance-rated structural wood-based panel engineered for uniformity, strength, versatility and workability. It is utilized internationally in a wide array of applications including residential and commercial 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.

HOW DOES OSB PERFORM IN COMPARISON TO OTHER STRUCTURAL PANELS?

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.

ARE THERE ANY GASEOUS EMISSIONS

FROM OSB?

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 non-existent. These results were found in OSB manufactured by all SBA member mills. The test was co-commissioned by the SBA, along with the National Particleboard 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.

HOW DOES OSB PERFORM UNDER HIGH HUMIDITY CONDITIONS?

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. Remember to gap OSB panels to allow for possible expansion.



IS OSB ENVIRONMENTALLY SAFE?

Millions of dollars have been invested to ensure that OSB is one of the safest and most environmentally friendly structural panels available. Consider some important 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 offgassing from panels. The manufacturing process uses nearly 90 percent 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 quality standards for environmental safety set by regulatory authorities.

HOW DO I INSTALL OSB AS FLOOR SHEATHING?

Select the correct thickness or span rating for the application as per local building code requirements, either a single layer combination subfloor /underlayment or a subfloor to be covered with underlayment, hardwood flooring or lightweight concrete. Lay panels across three or more supports, keeping the side marked "This Side Down" on the supports when using T&G panels. End joints must lie over the supports and should be staggered at least two supports. Lightly butt tongue and groove panel sides together and leave $\frac{1}{8}$ " (3 mm) gap at panel ends. Panel ends of single layer combination subfloor/underlayment should be lightly butted. Use 2" (50 mm) or 6d deformed shank nails, 1 $\frac{3}{4}$ " (45 mm) No. 10 wood screws or 2 $\frac{1}{2}$ " (63 mm) or 8d common nails at 6" (150 mm) o.c. along panel edges keeping fasteners $\frac{3}{8}$ " (10 mm) away from panel edges. (Drywall screws are not recommended.) Space fasteners at 10" (250 mm) o.c. on intermediate supports for single layer floors and 12" (300 mm) o.c. for subfloors. (Special instructions for fastening glued and nailed subfloors are available from manufacturers or the Structural Board Association.)

HOW DO I INSTALL OSB AS ROOF SHEATHING?

Select the correct thickness or span rating for the application as per local building code requirements. Make sure the rafters or upper truss chords are in alignment, even and straight. (Curved or uneven rafters and upper chords affect the finished roof appearance.) Panels should be installed textured side up with their long direction across the rafters or truss chords. Long panel edges should be supported or joined with edge clips where specified by the drawings or installation instructions. Leave a $\frac{1}{8}$ " (3 mm) gap at panel edges or ends to allow for movement due to changes in humidity. Panels should be staggered at least two supports, and end joints must lie over supports. Use 2 $\frac{1}{2}$ " (63 mm) common (8d) or 2" (50 mm) deformed shank or ring thread nails at 6" (150 mm) o.c. on panel edges, at 12" (300 mm) o.c. along intermediate supports and $\frac{3}{8}$ " (10 mm) minimum from panel edge. Staples may be used instead of nails – please consult your local building code for size and spacing. Stand over the trusses or rafters when nailing. The roof should be dry prior to shingling and should be shingled as soon as possible after installation of sheathing. It is essential that the area under a roof system is adequately vented with 50 percent of the venting at the ridge and 50 percent around the eaves. Vent roof as specified in the appropriate building code or as shown on the approved drawings.

HOW DO I INSTALL OSB AS WALL SHEATHING?

Select the correct thickness or span rating for the application as per local building code requirements. Ensure that wall framing is complete and ready to accept sheathing. Wall sheathing panels may be installed horizontally or vertically. Leave $\frac{1}{8}$ " (3 mm) gaps between panels, and $\frac{1}{8}$ " (3 mm) gaps around openings for windows and doors. Fasten panels with 2" (50 mm) common (6d) or 1 $\frac{3}{4}$ " (45 mm) deformed shank nails at 6" (150 mm) o.c. along edges and 12" (300 mm) o.c. along intermediate supports. Keep nails $\frac{3}{8}$ " (10 mm) away from panel edges. Blocking or diagonal bracing is not required unless specified.



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