

## Minimizing Panel Buckling

Like all wood products, Structurwood® oriented strand board (OSB) is affected by changes in environmental conditions. Proper design and installation involves attention to the dimensional changes that result from environmental changes.

High moisture conditions can cause wood panels to expand and may sometimes lead to buckling of the panels between nails or along supports. Even though such buckling does not weaken a panel's structural properties, the resulting uneven appearance can lead to callbacks and customer concern. As with most things, buckling is far easier to prevent than to correct. Builders can reduce the potential for panel buckling with moisture control methods and installation techniques that allow for moisture effects and panel expansion. For engineered wood products such as Structurwood, the primary concern is expansion as the products equilibrate to their surroundings.

### Moisture Control

At the jobsite, protect Structurwood from exposure to excessive moisture by covering bundles with tarps or plastic and keeping them away from direct contact with the ground. For detailed jobsite storage instructions, see Weyerhaeuser publication *Transportation, Storage, and Handling of Structurwood® Panels*, #G1104. During installation, cover roof sheathing with shingle underlayment and/or roofing felt as soon as possible.

To prevent the buildup of excess moisture from within the building, check that roof, attic and crawlspace ventilation is adequate and meets local building code requirements. Appliances such as clothes dryers should be working properly and

vented to the outside, not into an attic or crawlspace. Make sure insulation does not block roof or soffit vents and check for any leaks around ceiling fixtures such as lights or fans. Because they are difficult to vent, flat roofs and some wall cavities may need vapor barriers to prevent condensation buildup. For more information, see Weyerhaeuser publication *Understanding and Controlling condensation* #G1102.

### Installation and Spacing

Before attaching roof or wall sheathing, make sure that framing, rafters and trusses are level and properly aligned. Allow for any moisture-induced panel expansion by spacing panels with a 1/8" gap between panel edge joints and end joints

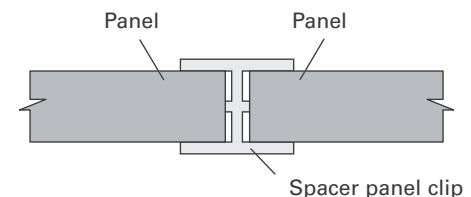


Figure 1

(Structurwood tongue-and-groove panels are sized to allow for the proper edge spacing). A spacer panel clip, as shown in Figure 1, can help to maintain the correct gap size. Attention to fasteners is also important—use recommended nail sizes and space nails at 6" on-center at edge supports and 12" on-center at intermediate supports.

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# professional tips

TIPS FOR BETTER BUILDING

## High-Risk Applications

Certain field applications involve an increased potential for buckling and require additional preventive measures. These applications include diaphragm or shear wall construction with edge nail spacing at 4" on-center or less, oversized panels (larger than 4'x8'), and multiple panels installed with strength axis parallel to the framing.

In situations where shear wall or diaphragm sheathing with a tight (4" on-center or less) nailing schedule is likely to get wet during installation, temporarily fasten the sheathing at 12" on-center at ends, edges, and intermediate supports. Then, finish nailing the panels at the specified nailing schedule after the panels have adjusted to moisture conditions, or just before covering the panels with roofing or siding.

## Troubleshooting and Repair

Before attempting to repair or correct for sheathing unevenness, make sure that the problem is actually caused by buckling. Make a thorough inspection of the structure and framing supports. Often, what appears at first glance to be a case of buckling turns out to be the result of faulty framing (warped, misaligned, etc.).

If buckling is the problem, one or more of these methods may help restore buckled panels to a more satisfactory condition or make the problem less noticeable:

- Begin with moisture control. Find out what caused, or is still causing, the high moisture condition and takes steps to eliminate it. Address ventilation problems, examine where moisture may be coming from within the building and redirect it to the outside.

- Try to speed up the drying-out process with fans or heaters to see whether sheathing material recovers sufficiently.
- Saw-kerf the edges of panels that have been installed too tightly together to allow room for expansion and to alleviate built-up pressure.
- Install blocking under buckled areas and flatten the sheathing to the blocking with nails or screws.
- If roofing is already on and panel joint is only accessible from below, screw in a cleat, as shown below in Figure 2.
- If sheathing buckles between fasteners, adding additional fasteners may help to level it out.

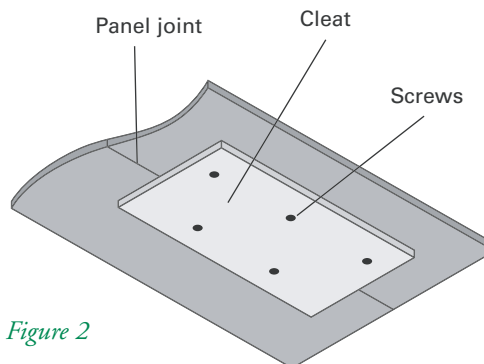


Figure 2

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