

Buckling

What is it and how can it be prevented?

Buckling is a performance condition that may be caused by improper panel installation. Delamination caused by dried out glue lines, blows, spotty bonds, under-cured glue lines and pre-cure should never be construed as buckling.

Proper spacing of panels must be followed to prevent buckling. Timber Products Inspection, TP, recommends a 1/8 inch space between end joints and panel edges. Plywood and OSB will expand or shrink with changes in moisture content. If panels are tightly butted together, then buckling can or will occur.

Buckling is one of the most common complaints received by TP and has proven to be costly and time consuming. To prevent buckling, proper spacing of panels must be allowed. A common practice for assuring the 1/8 inch spacing is to use a 10d nail to gauge the spacing. Another way to assure proper panel spacing is to use spacer panel edge clips for sheathing roof applications.

Panel spacing of 1/8 inch is a recommendation but not a requirement. Some mills manufacture panels to a reduced size of 47-7/8-inch by 95-7/8-inch to help with spacing between rafters. The panels will be labeled with a stamp that reads "SIZE FOR SPACING". Panel spacing is not a structural deficiency. Do not expect the space recommendation to be maintained once panels are acclimated. Moisture expansion of the panels should close the recommended spacing of panels for end joints and panel edges.

If the flatness of a single floor panel or a sheathing panel is acceptable, TP recommends that only roofing, siding, or finish flooring be installed as planned.

TP also recommends that roofs and floors that have been exposed to the elements be considered dry prior to installation. This will reduce the potential for buckling caused by trapped moisture in the panels.