



Floor Sheathing Installation Provisions **for Composite Action Stiffness**

Boise Cascade's BC Calc[®] sizing software gives the user the option of selecting Glue + Nail when designing BCI[®]/AJS[®] floor joists. Selecting Glue + Nail increases the joist bending stiffness, due to composite action between the joists and floor sheathing. BC Calc calculates the composite stiffness based upon the sheathing type and thickness selected by the user. In order to take the stiffness increase in BC Calc, the following installation provisions as specified by Boise Cascade and the APA – The Engineered Wood Association⁽¹⁾ must be followed:

- Use APA RATED SHEATHING or STURD-I-FLOOR[®] grade structural wood panels for floor sheathing.
- Install floor panels with the long dimension perpendicular to the BCI/AJS joists.
- Use only adhesives conforming to Performance Specification AFG-01 or ASTM D3498 (Check floor panel adhesive label for compliance). If OSB panels with sealed surfaces and edges are used, use only solvent-based glues; confirm with panel manufacturer.
- The top surface of the BCI/AJS joists shall be free of surface moisture, dirt, or any foreign material prior to application.
- Spread only enough glue to lay one or two panels at a time or follow specific recommendations of adhesive manufacturer.
- Apply a continuous line of glue (about 1/4" diameter bead) to BCI/AJS joist. Apply two glue lines where panel ends butt.
- Complete all specified nailing before adhesive sets (see adhesive manufacturer's recommendations for allowable set time).
- Fasteners: 8d or 10d common nails, minimum 6" spacing at panel edges, 12" spacing at intermediate supports. Use of structural wood screws of equal length and diameter are allowable.

Though it is recommended to apply glue to the panel tongue and groove joint (1/4" diameter bead), it is not a required provision for composite action. If floor panel adhesive is not used or installed improperly, BCI/AJS floor joists must be analyzed in BC Calc without the Glue + Nail option.

(1) *Engineered Wood Construction Guide*, pgs 35-37, APA – The Engineered Wood Association, 08/11