



Blocking for I-joist Floor Systems

I-joist floors are often installed with blocking, a rectangular piece of engineered wood or a section of I-joist that is placed between adjacent joists at various locations. For these applications blocking has three major functions:

- 1 To provide lateral support to the floor joists – to prevent them from physically “rolling over” due to lateral loads. This is accomplished by the shape and stiffness of the blocking panel.
- 2 To provide a means of transferring shear loads from the walls above to the floor/foundation below. This is accomplished by nailing into the foundation sill plate or wall top plate through the bottom flanges when I-joists are used for blocking. When APA Performance Rated Rim Boards® or I-joist-compatible structural composite lumber (SCL) are used, shear transfer is accomplished by nailing into end-grain at the top of the blocking panel and by using toenails or framing anchors at the bottom of the blocking panel.
- 3 To provide a means of transferring vertical loads from the wall above to the foundation/floor below. The blocking is used in bearing to accomplish this.

Code requirements for blocking:

While local code requirements may vary, the International Building Code (IBC) and International Residential Code (IRC) are specific in their **requirements** for blocking of floor joists.

- The IRC (Section R502.7) requires full-depth solid blocking, attachment to Rim Board/rim joist, or attachment to an adjoining stud (i.e., balloon framing) of joists at each end. In Seismic Design Categories D₀, D₁ and D₂, similar lateral restraint is required at all intermediate supports as well.
- The IBC (Section 2308.8.2) requires full-depth solid blocking, attachment to Rim Board/rim joist, or attachment to an adjoining stud (i.e., balloon framing) of joists at each end **and** at intermediate supports for all locations and all applications.

Blocking materials: Blocking panels are normally site-fabricated out of engineered wood products on hand. Sections of APA Performance Rated I-joists, APA Performance Rated Rim Boards or I-joist-compatible SCL may be used for blocking. It is essential that engineered wood products be used with an I-joist or any other engineered wood floor framing because the shrinkage anticipated with the sawn lumber would affect its ability to perform the vertical load-transfer function and could seriously impede its ability to transfer shear loads.

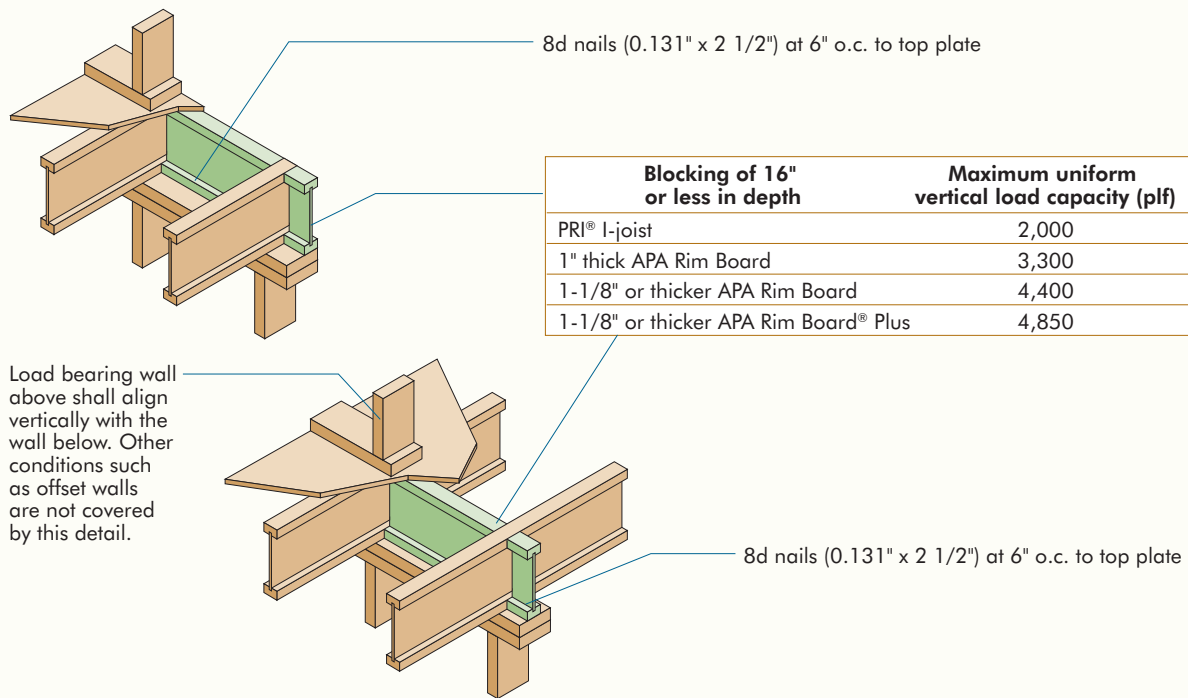
Fabricate the blocking panels from engineered wood products of I-joist-compatible sizes and cut to fit tightly between the floor joists.

Recommendations for blocking of I-joist floor systems designed in accordance with APA I-Joist Standard PRI-400:

- 1 Blocking panels are required at each end of floor joists not otherwise restrained from overturning by a band joist or rim board.
- 2 Blocking panels are required between floor joists supporting load-bearing walls running perpendicular to the joists.
- 3 Blocking panels are required between floor joists at the interior support in all locations when regulated by IBC or in Seismic Design Categories D₀, D₁ and D₂ when regulated by IRC.
- 4 For a load-bearing cantilever, blocking panels are required between floor joists at the exterior support adjacent to the cantilever.
- 5 Install blocking panels in accordance with Figure 1.

FIGURE 1

BLOCKING INSTALLATION DETAILS (I-joist blocking shown)



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