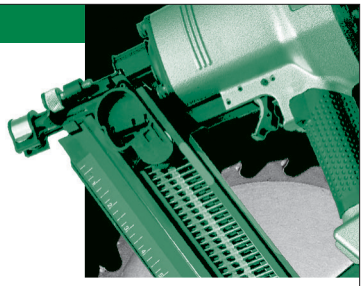
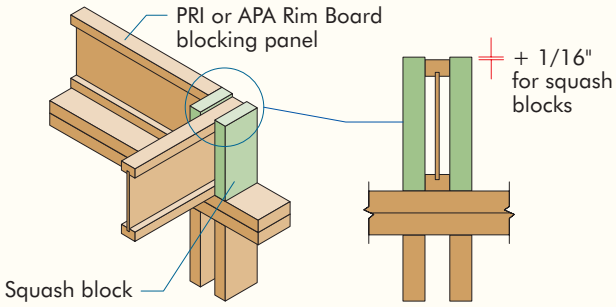


I-Joist Squash Blocks

A squash block is a block of wood, APA Rim Board,® or APA Rated Sturd-I-Floor that is installed adjacent to an I-joist to carry a point load that would otherwise be transmitted to the I-joist.

FIGURE 1

SQUASH BLOCK INSTALLATION AND CAPACITIES



Pair of Squash Blocks	Vertical load transfer capacity per pair of squash blocks (lbf)[a]	
	3-1/2" wide	5-1/2" wide
2x lumber	3800	5900
1-1/8" APA Rim Board, Rim Board Plus, C1 or better,[b] or Rated Sturd-I-Floor 48 oc	2600	4000
1" APA Rim Board, C2 or better,[b] or Rated Sturd-I-Floor 32 oc	1900	3000

(a) The squash blocks are assumed to be in full bearing on the plate below.

(b) See ANSI/APA PRR 410: *Standard for Performance-Rated Engineered Wood Rim Boards,* Form PRR-410.

Squash blocks are required in conventional platform construction where loads from above are transferred down through the floor into the wall or foundation below. This occurs where load-bearing walls fall on floors or posts supporting headers that are located within the walls. Beneath these wall and point loads, the I-joists usually do not have enough interior reaction or exterior reaction capacity remaining to safely transfer these loads without risking a web-bearing failure. The solution is to place extra load-carrying members in line with these loads and insure that these squash blocks carry the load and the I-joists do not. Blocking members are normally used for line loads like load-bearing walls, however, in the case of point loads, squash blocks are more often specified.

Squash block materials: A lumber squash block is a 2x4 or 2x6 lumber block that is oriented with the grain of the wood running parallel to the vertical axis of the web of the joist. The squash block is cut just slightly longer than the I-joist depth, usually 1/16 inch longer. This is done to insure that the block will pick up the vertical load and not the I-joist. The grain is oriented parallel to the vertical axis to minimize the impact of shrinkage by the lumber block.

The minimum grade for lumber squash blocks is Utility grade SPF (south).

APA Performance Rated Rim Board or APA Rated Sturd-I-Floor may also be used for the fabrication of squash blocks. Select a Rim Board or Sturd-I-Floor of I-joist-compatible depth, cut to width, and install as shown in Figure 1. The strength axis of the APA Rim Board and Sturd-I-Floor may be oriented either parallel or perpendicular to the vertical axis.

APA

Recommendations for I-joists designed in accordance with APA Standard PRI-400®:

1. Fully supported squash block capacities can be found in Figure 1. As squash blocks are usually placed in pairs – to minimize load eccentricity – the values given in Figure 1 are for pairs of squash blocks fully supported by the plate below. The builder should simply match the width of the squash blocks with the width of posts used from above.

For example: Assume a squash block is required to carry the load of a post above that is made up of (3) 2x4s. The total width of the post is 4-1/2 inches (3 x 1.5 inches = 4-1/2 inches). If the squash block is to be made up of 1-1/8-inch APA Rim Board, four squash blocks would be required (4 x 1-1/8 inches = 4-1/2 inches). If the squash block is to be made up of 1-inch APA Rim Board, five squash blocks would be required (5 x 1 inch = 5 inches).

2. Squash blocks are to be cut 1/16 inch longer than the depth of the I-joist to insure that the squash block carries the load and the I-joist does not.

3. Squash blocks are installed with the wide side of the block flush with the edges of the I-joist flanges. When possible, they should be fully seated on the top/sole plate below. They should be attached to the top and bottom flange of the I-joist with one 8d (0.131" x 2-1/2") nail at each location. The extra 1/16 inch of the squash block is oriented to stick up above the surface of the top flange of the I-joist. When squash blocks are not in full bearing on the top/sole plate below, the vertical load transfer capacities shown in Figure 1 should be reduced proportionally to the bearing area of the squash blocks.

4. The use of squash blocks in lieu of blocking for the entire length of a load-bearing wall is not recommended. They could be used, however, to transfer vertical loads in an occasional joist space to allow for passage of duct. The building codes, however, require blocking under load-bearing walls to provide lateral stability and prevent rollover of the joists, as well as to transfer vertical load. While the squash blocks can transfer the vertical loads, they have no ability to provide lateral stability. From an engineering perspective, leaving out an occasional blocking panel for the passage of plumbing or ventilation ducts and putting in squash blocks at this location could be justified.

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