

WIJMA – Position Statement

3/4-inch Plywood or OSB used as Rim Board



Rim boards provide basic closure and critical structural load transfer in a structure. The transfer of vertical loads includes the weight of the structure above the rim board as well as design and construction loads. Lateral forces resulting from wind or seismic loads are also transferred from the floor and roof diaphragm through the rim board.

The rim board is typically positioned directly under a load bearing wall and acts as a column, transferring these vertical loads into the supporting wall below. The vertical capacity of the rim is limited by buckling or bearing stresses. The transfer of lateral loads is dependent upon effective nailing from the sheathing to the rim, from the wall sill plate above to the rim's top edge, and from the rim into the sill plate below. This nailing transfers shear forces from the floor diaphragm and the shear wall above to the wall or foundation below. While these forces and design requirements are a prime design consideration in all coastal high wind and seismic areas, they are present in every geographic area and for every structure in North America.

The floor joist system cannot be counted on to absorb either the vertical or lateral forces. In the case of a Prefabricated Wood I-joist system, the design criteria for the floor system includes evaluation of bearing forces and stresses. These designs assume that all external loads are transferred around the joist and not through it. Applying additional loads beyond these assumptions can result in an over-stressed condition. For this reason, it is imperative that the rim board utilized with an I-joist system be the same dimensions and of similar moisture content as the joist system so that dimensional differences do not occur as the materials dry.

In response to recent high wind and seismic events, a group of industry experts worked together to develop the ICBO Acceptance Criteria for Rim Board (AC 124). It was determined that the minimum allowable vertical load supported by a rim joist should be 2000 pounds per foot and that it should be capable of laterally transferring a minimum of 180 pounds per lineal foot. Rim board meeting these loads shall be recognized as being permitted for use in structures complying with conventional construction requirements. A 3/4-inch rim board ripped from structural wood panels provides inadequate vertical transfer and is too narrow to effectively nail and therefore is not recognized as providing adequate lateral load transfer.

The Wood I-Joist Manufacturer's Association (WIJMA), a technical association comprised of every major manufacturer of prefabricated wood I-joists, has investigated the use of 3/4-inch structural wood panels with our products. WIJMA concludes that this material is suitable for use only for closure and that it cannot be counted on to provide minimum ICBO lateral structural load transfer.

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