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Technical Bulletin (TB-IJ-3)

Subject: Load-Share Blocking / Bridging for International Beams I-joists

July 2013 (Updated June 2017)

This technical bulletin is intended for use with International Beams Inc. products and offers general guidelines for topics that may not be covered in our literature. Appropriateness of details for a specific project should be evaluated by a qualified designer. This technical bulletin may be periodically updated. Check internationalbeams.com to ensure that you have the most recent version.

Full-depth joist bridging (sometimes referred to as mid-span blocking) has traditionally been used for long-span dimensional lumber as a load-sharing device. When joist bridging is properly installed, a localized load (for example, from a single person walking on the floor) can be effectively transferred to several joists at a time. This load-sharing mechanism reduces localized deflection, which can cause distress in sensitive finish materials. It also dampens vibration of the floor system, which makes the floor more comfortable for the occupant to walk on.

Mid-span blocking has to do with serviceability---building performance---not safety. There is no requirement for International Beams I-joists to have mid-span blocking. The model building codes defer to industry standards on this subject. Neither our ICC-ES report ESR-1290 (U.S.) nor our CCMC report 12768-R (Canada) require mid-span blocking. Having said that, mid-span blocking is still an option for improving floor performance beyond code minimum.

Traditionally, designers have imposed span-to-depth ratio and deflection limits in an effort to address potential floor vibration issues. These methods are helpful, but do not take into account load sharing construction methods. International Beams beam analysis software has a vibration analysis tool (mandatory in Canada, optional in the U.S.). In addition to full-depth I-joist blocking, the software includes the effects of other

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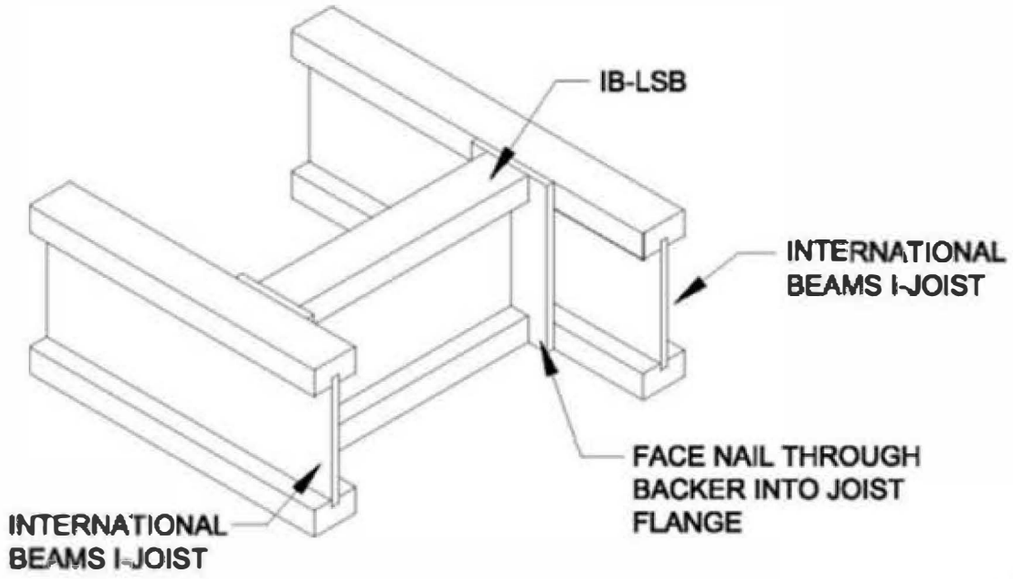
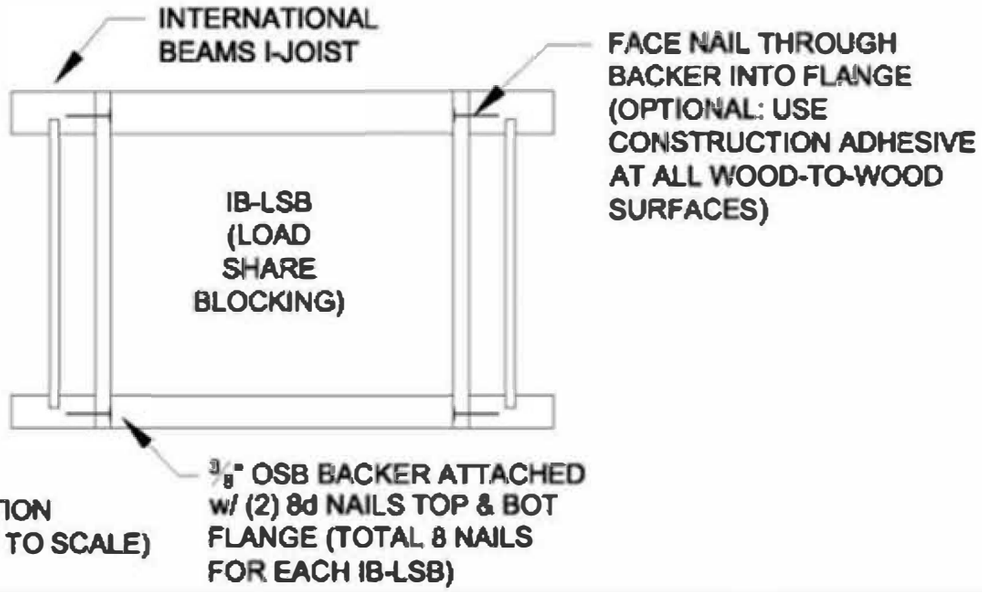
load-sharing construction such as increased subfloor thickness, 1x4 strapping, and gypsum board directly attached to bottom flange of the I-joist.

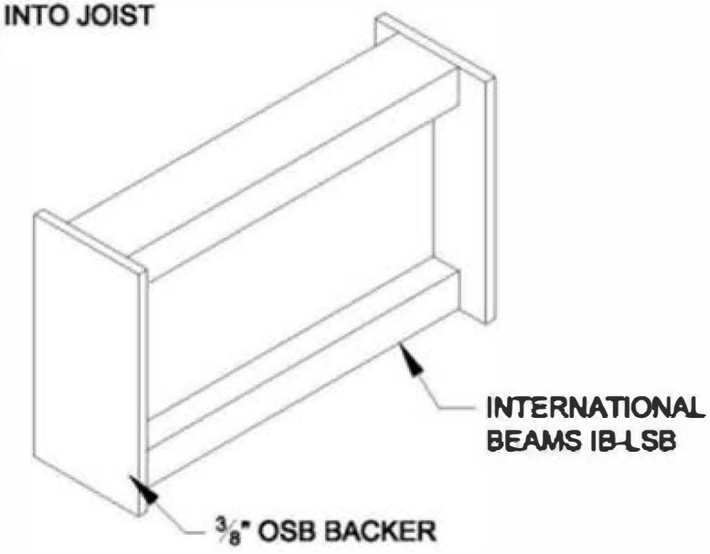
Typically, mid-span I-joist blocking is installed by toenailing 10d nails at the ends, each side of each top and bottom flange. Construction adhesive is recommended to reduce squeak from rubbing at wood-to-wood contact surfaces and at nails. The weakest link in this assembly is the nails. Better performance may be achieved with proprietary bridging products that allow for direct-nailing (face-nailing) instead of toenailing.

Illustrations A and B on the following pages show an International Beams load-share blocking product, made with IB I-joists, that is fastened to joists by direct-nailing. There are several possible applications for this product:

- Illustration A: Mid-span blocking (to reduce vibration of the floor system)
- Illustration B: Ladder blocking between joists (to support non-loadbearing partitions that would otherwise be supported only by the subfloor)







TYPICAL IB-LSB UNIT
(LOAD SHARE BLOCKING)

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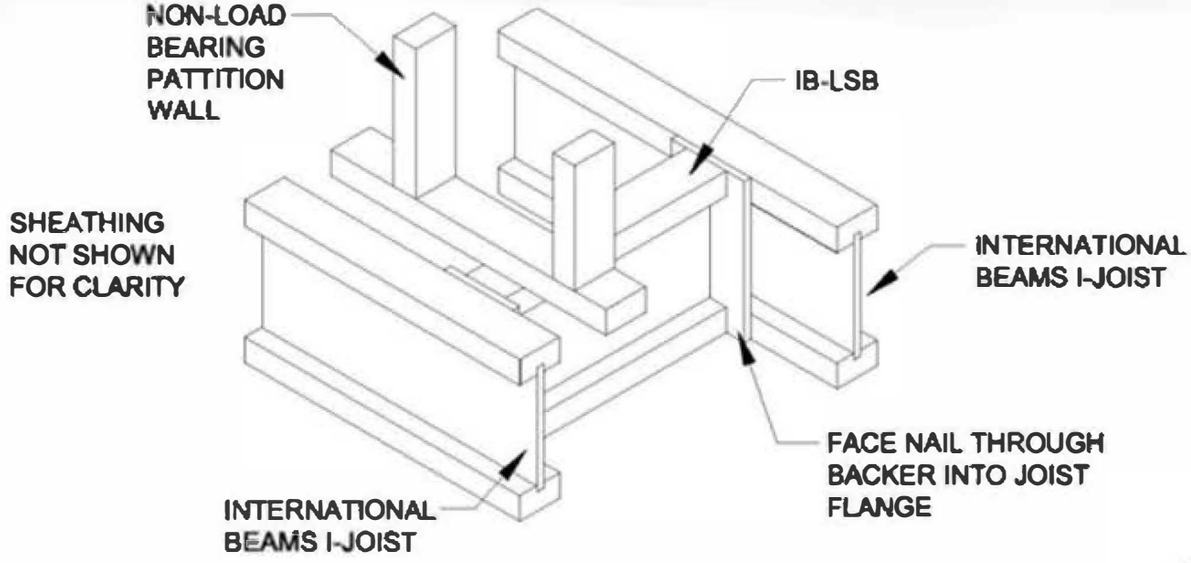
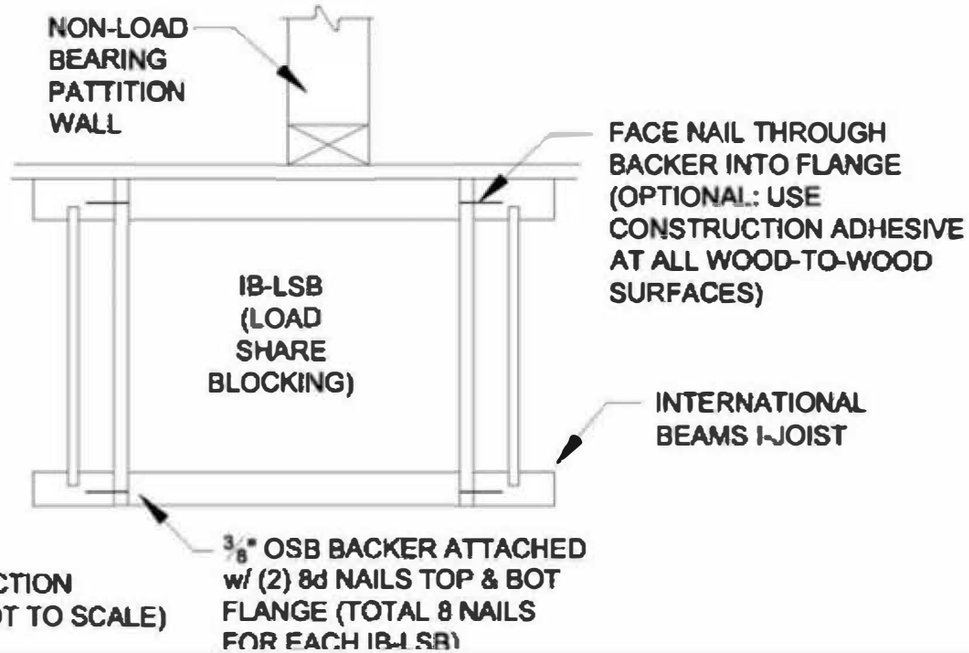
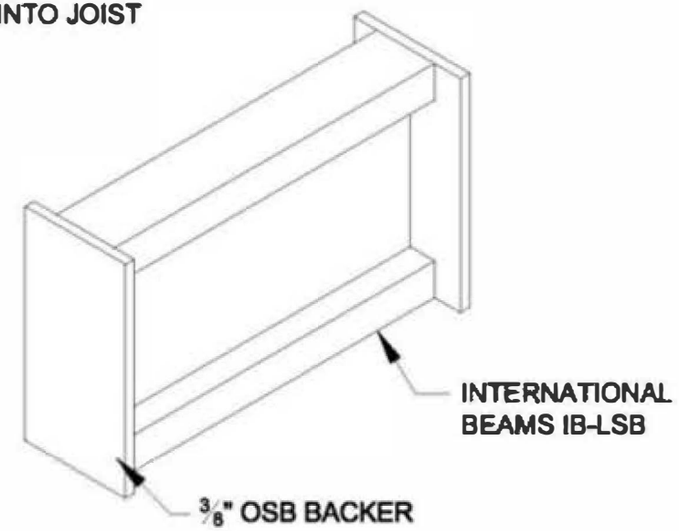
DETAIL A, MID-SPAN BLOCKING







TYPICAL IB-LSB UNIT
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DETAIL B, FOR NON-LOADBEARING PARTITIONS