I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

Avoid Accidents by following these important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joint ends. When I-joists are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.

2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.

   - Temporary bracing or strut must be at 4 ft minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2 inch nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of strutting or strut at least two I-joists.
   - On sheathing (temporary or permanent) can be nailed to the top-flange of the first 4 feet of I-joists at the end of the bay.

3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.

4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls walk only.

5. Never install a damaged I-joist.

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole size and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

Storage and Handling Guidelines:

1. Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.

2. Store, stack, and handle I-joists vertically and level only.

3. Always stack and handle I-joists in the upright position only.

4. Do not store I-joists in direct contact with the ground and/or fasteners.

5. Protect I-joists from weather, and use spacers to separate bundles.

6. Bundled units should be kept tilted until time of installation.

7. When handling I-joists with a crane on the job site, take a few simple precautions to prevent damage to the I-joists and injury to your work crew.

   - Pick I-joists in bundles as shipped by the supplier.
   - Orient the bundles so that the webs of the I-joists are vertical.
   - Pick the bundles at the 5th points, using a spreader bar if necessary.

8. Do not handle I-joists in a horizontal orientation.

9. Never use or try to repair a damaged I-joist.

Notes:

1. The tabulated clear spans are applicable to residential floor construction. The above design criteria and span ratings are based on a framing thickness of 5/8 inch for all members, or of 5/4 inch for load spanning at 24 inches.

2. The moisture-controlled span is determined using Clause 4.4.3.5 of CSA O86-19.

3. For multiple-span application, the end spans shall be an inch narrower than the adjacent spans.

4. Minimum bearing length shall be 5-1/2 inches for end bearing hangers for nailing to I-joists with 3-1/2 inch flange width.

5. Bearing stiffnesses are not required when joints are used in accordance with the table, except as required for special applications.

6. This table is based on CSA O86-19 and CBC 2000.

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## Installing Nordic I-Joists

1. Installation of Nordic I-joists shall be as shown in details 1.
2. Except for cutting to length, I-joist flanges should never be cut, drilled or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. Concentrated loads should only be applied to the top surface of the top flange. Concentrated loads should not be suspended from the bottom flange with the exception of light loads, such as ceiling fans or light fixtures.
5. I-joists must be protected from the weather prior to installation.
6. I-joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content of 15 percent or greater, such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.
7. End bearing length must be at least 1-3/4 inch. For multiple-span joists, intermediate bearing length must be at least 3-1/2 inches.
8. Ends of floor joists shall be restrained to prevent rotation. Use rim board or I-joist blocking panels.
9. I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (double blocking) to transfer gravity loads from above the floor system to the wall or foundation below.
10. For I-joists installed directly beneath bearing walls parallel to the joists or used as rim board of blocking panels, the maximum vertical load using a single I-joist is 3,300 plf. and 6,600 plf if double I-joists are used.
11. Continuous lateral support of the I-joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple-span or cantilever applications, bracing of the I-joist's bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in details 3, 4, 5, 9.
12. Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page 3.3 of the Nordic Joist Technical Guide (NS-GT).
13. Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
14. For proper temporary bracing of wood I-joists and placement of temporary construction loads, see APA Technical Note: Temporary Construction Loads over I-Joists and Floors, Form 2370.

### Typical Floor Framing and Construction Details

<table>
<thead>
<tr>
<th>Details</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Nordic I-joist blocking panel</td>
</tr>
<tr>
<td>1b</td>
<td>Load-bearing and above that align</td>
</tr>
<tr>
<td>1c</td>
<td>Blocking panel required under each joist to support the load and ensure that the conditions of Section 1 are not continued over the support. The blocking panel must be attached and properly supported with supporting elements of full-depth blocking panel (SCL) or Nordic I-joist blocking panel, per detail 1b.</td>
</tr>
<tr>
<td>1d</td>
<td>2-1/2&quot; nails 8&quot; o.c. to top plate when used for the internal transfer in bearing plates. Use one 2-1/2&quot; nail only when blocking panel is used per detail 1a.</td>
</tr>
<tr>
<td>1e</td>
<td>1x1-1/2&quot; APA Rim Board Plus 8,090</td>
</tr>
<tr>
<td>1f</td>
<td>2x4 minimum, or beam. 1/8&quot; overhang allowed</td>
</tr>
<tr>
<td>1g</td>
<td>Transfer load from above to lumber piece</td>
</tr>
<tr>
<td>1h</td>
<td>2x8 + 5/8&quot; or 3/4&quot; sheathing</td>
</tr>
<tr>
<td>1i</td>
<td>2x10 + 5/8&quot; or 3/4&quot; sheathing</td>
</tr>
<tr>
<td>1j</td>
<td>2x12 + 5/8&quot; or 3/4&quot; sheathing</td>
</tr>
</tbody>
</table>

**Notes:**
- For face-mount hangers use net joist depth minus 3-1/4 inches for joists with minimum grade for backer block material shall be S-P-F No. 2 or better. 
- For the latest version, consult nordic.ca
- Load-bearing and above that align with the flanges. Other conditions, such as effect bearing walls, are not covered by this detail.
- One occasional blocking panel may be left out for the passage of plumbing or ventilation ducts. Otherwise, a hole of not more than 2/3 of the lesser dimension of the blocking depth or length may be drilled in the blocking panel.
- Holes may be cut in web for plumbing, or ventilation ducts. Otherwise, a hole of not more than 2/3 of the lesser dimension of the blocking depth or length may be drilled in the blocking panel.
- Use factory accepted cutout in web of I-joist (total of four nails per foot). For flange width of 3-1/2 inches, use two 2-1/2" nails with nailers extended to each side of the double I-joist (total of four nails per foot). For flange width of 3-1/2 inches, use two 2-1/2" nails at 6 inches o.c. on each side of the double I-joist.
- The maximum loaded side that may be applied on one side of the double I-joist using this detail is 3,300 plf. Any additional bearing side to joint web should be at least 3" from the web side and extended to the sides of the wall or foundation below.

**This document supersedes all previous versions.**

For the latest version, consult nordic.ca or contact Nordic Structures.
1. Wood structural panel with a minimum thickness of 23/32 inch (for OSB, panel mark 48/24) required on one side of joist. Depth shall match the full height of rim board or wood structural panel closure (23-3/4" minimum thickness), attach per detail 1b.

**Notes:**
1. Blocking is required along the cantilever support.
2. Blocking is required at all supports per detail 1b.
WEB HOLE IN I-JOISTS

Rules for Cutting Holes in I-Joists:

1. The distance between the inside edge of the support and the centreline of any hole should be in compliance with the requirements of table 6.1.

2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.

3. Whenever possible, field-cut holes should be centered on the inside of the web.

4. The maximum size hole that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/4 inch should always be maintained between the top or bottom of the opening and the adjacent flange.

5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted in this table.

6. Where more than one hole is necessary, the distance between adjacent holes should equal the diameter of the largest square hole - or twice the length of the longest side of the longest rectangular hole - and each hole must be sized and located in compliance with the requirements of table 6.1.

7. Holes necessitating 1-1/2 inch or smaller shall be permitted anywhere in a conditioned section of a joist. Holes of greater size may be permitted subject to structural analysis.

8. A 1-1/2 inch hole or smaller shall be prohibited as the web is provided to ensure the capacities of the flanges above and below the hole.

9. All holes should be cut in accordance with the procedure described above and as indicated in detail.

10. Limit the maximum size holes per panel.

11. A group of round holes at approximately the same location shall be permitted if the total area of the cutting does not exceed the requirements specified for a single round hole in the same table.

12. Round and square holes shall be cut with diameters that will allow them to fit in a 1-inch x 1-inch area that has been cut in the web.

Conversion of the web dimensions to the uncut distance:

Maximum allowable hole size: 2/3 H maximum

where H is the height of the web.

RIM BOARDS

Boards to be used in conjunction with the I-joists are to be RIM boards, manufactured according to the standards of the RIM board manufacturer.

Installing the NAILED-GLUED FLOOR SYSTEM

1. Rip any wood, tile, or other floor to fit the I-joists flanges bottom to top.

2. Apply a clear 'no bleed' polyasyltone (or an equivalent polyasyltone) to the top flange edge of the I-joist, as well as to the area to be covered by the rimboard.

3. Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.

4. Tap the second row of panels into place, using a block to protect groove edges.

5. Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.

RIM BOARD PULL-OUT TESTING

One 2-1/2" x 10" nail into the floor and 1/2" under total load.

Notes:

1.4.5 Accuracy is critical for the test results to be valid. When using 1-1/2" x 10" nails, the nails should be used with the heads up or down as required.