Engineered Wood Products

INSTALLATION GUIDE FOR RESIDENTIAL FLOORS

SAFETY AND CONSTRUCTION PRECAUTIONS

- 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.

STORAGE AND HANDLING GUIDELINES

1. Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
2. For hanger resistance, see manufacturer's recommendations.
3. Verify double I-joist resistance to support concentrated loads.
4. Backer blocks must be long enough to permit required nailing without splitting.

MAXIMUM FLOOR SPANS

<table>
<thead>
<tr>
<th>Bare Joist</th>
<th>40 psf on centre spacing</th>
<th>15 psf on centre spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>22'-10&quot;</td>
<td>17'-7&quot;</td>
<td>17'-7&quot;</td>
</tr>
<tr>
<td>19'-10&quot;</td>
<td>19'-9&quot;</td>
<td>21'-6&quot;</td>
</tr>
<tr>
<td>21'-11&quot;</td>
<td>20'-2&quot;</td>
<td>18'-0&quot;</td>
</tr>
<tr>
<td>22'-1&quot;</td>
<td>22'-2&quot;</td>
<td>24'-3&quot;</td>
</tr>
</tbody>
</table>

Minimum grade for backer block material shall be S-P-F No. 2 or better

NORDIC JOIST SERIES

RESIDENTIAL SERIES

WEB STIFFENERS

1. Hangens shown illustrate the three most commonly used metal hangers to support I-joists.
2. All nailing must meet the hanger manufacturer's recommendations.
3. Hangers should be selected based on the joint depth, flange width and load capacity based on the maximum spans.
4. Web stiffeners are required when the sides of the hangers do not internally brace the top flange of the I-joists.

IMPROPER STORAGE OR INSTALLATION, FAILURE TO FOLLOW APPLICABLE BUILDING CODES, SAFETY AND CONSTRUCTION PRECAUTIONS MAY RESULT IN SERIOUS ACCIDENTS. FOLLOW THESE INSTALLATION GUIDELINES CAREFULLY.
1. Installation of Nordic I-joists shall be as shown in detail 1.
2. Exception 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 16 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 ring beam or I-joist blocking panels.
9. I-joists installed beneath bearing walls perpendicular to the I-joists shall have full-depth blocking panels, rim beam, or squash blocks (simple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
10. For I-joists installed beneath bearing walls parallel to the I-joists, use a backer block if hanger load exceeds manufacturer’s recommendations.

Notes:

1. Blocking required at bearing for lateral support, not shown for clarity.
2. Blocking panels may be of any I-joist series. Nails attaching lumber piece to I-joist flange.
3. The height of the filler block may be different from that specified in the table, but must be at least 0.128 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.

Technical Guide (NS-GT3).
### CANTILEVER – BALCONIES

1. Cantilevered joists must be properly sized to support all design loads. Refer to Table 4.1 of the Nordic Joist Technical Guide (NS-GT3).

2. Blocking is required along the cantilever support.

3. Blocking is required for holes in non-restrained-only blocking panels.

4. This detail is adequate for I-joist lateral stability. Additional lateral resistance may be required in high wind and/or seismic load areas.

5. This detail is applicable only to single family residential construction, and when the cantilever is loaded by uniform floor loads only.

### CANTILEVER – VERTICAL BUILDING OFFSET

1. Wood structural panel with a minimum thickness of 24/32 inch (for OSB, panel mark #48) required on both sides of joist. Depth shall match the full height of the joist. Nail 2-1/2" nails at 6" o.c. at top and bottom flange, offset on opposite side. Install with face grain horizontal. Attach I-joist to plate as all supports per detail 1b.

2. Attaching lumber to wood structural panel (sheathing) and each hole must be sized and located in compliance with the requirements of Table 6.1.

### SHORT CANTILEVER – VERTICAL BUILDING OFFSET

1. Additional lateral resistance may be required in high wind and/or seismic load areas. In such cases, specific design detailing shall be provided by the building designer.

2. Blocking is required along the cantilever support.

3. Blocking is required for holes in non-restrained-only blocking panels.

### Notes:

- 1-1/2 inch holes are for non-restrained-only blocking, attach per detail 1b.
- 2-1/2 inch holes are for lateral-restraint-only blocking, attach per detail 1a.
- 3-1/2 inch nails at 6" o.c. at top and bottom flange, offset on opposite side. Install with face grain horizontal.
- 3-1/2 inch nails at 6" o.c. at top and bottom flange, offset on opposite side.
- 2-1/2 inch nails are for non-restrained-only blocking.
- 3-1/2 inch nails are for lateral-restraint-only blocking.
- Wood structural panel with a minimum thickness of 23/32 inch nailed to rim board closure (23/32" minimum thickness).
- Attach to top plate with 2-1/2" Face nail at 6" o.c. (Stapler action)
- Maximum shear load: 2-1/2" o.c.
- Wood structural panel with a minimum thickness of 23/32 inch nailed to rim board closure (23/32" minimum thickness).
- 2x6 vertical block on each side, attach using four 1-1/2" or 2" nails.
- 2-1/2" nails at 6" o.c. for all steel members.
- 1-1/2 inch holes are for non-restrained-only blocking, attach per detail 1b.
- 2-1/2 inch holes are for lateral-restraint-only blocking, attach per detail 1a.
- 1-1/2 inch holes at 6" o.c. for all steel members.
- 2-1/2 inch hole at 6" o.c. for all steel members.
- 1-1/2 inch holes at 6" o.c. for all steel members.
1. The distance between the inside edge of the support and the centreline of any support shall be in accordance with the requirements of Table 6.1.

2. Holes cut into the blocking panels are subject to the following limitations:
   - The top and bottom flanges of an I-joist blocking panel must not be cut, notched or otherwise modified.
   - Both holes cut in the blocking panels are subject to the following limitations:
   - The top and bottom flanges of an I-joist blocking panel must not be cut, notched or otherwise modified.
   - Both holes cut in the blocking panels are subject to the following limitations:
   - The top and bottom flanges of an I-joist blocking panel must not be cut, notched or otherwise modified.

3. Limitations are applicable to residential floor construction meeting the above design criteria.

4. The maximum allowable hole size for a lateral-restraint-only blocking panel in accordance with the prescriptive requirements of the applicable code. APA recommends a minimum 3/8-inch panel edge distance be maintained when nailing. Calculations show that the tongue does not need to be removed for floor sheathing 7/8-inch thick or less.

5. Use only adhesives conforming to CAN/CGSB-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems, applied in accordance with the manufacturer’s recommendations.

6. The 3-1/2-inch common nails used to connect the bottom plate of the I-joist with 7/8-inch-thick floor sheathing must be spaced no more than 1/4 inch apart.

7. General notes:
   - Round thread supports shall be used if the 10-1/4-inch depth of the I-joist is required to be met.
   - Slightly rounding corners is recommended.
   - Blocking panel holes must be cut in accordance with the restrictions listed above and as illustrated in detail view.

8. Limit three maximum-size holes per span.

9. Limit three maximum-size holes per span.

10. Limit three maximum-size holes per span.

DIAGRAM CHOOSE ODD OR EVEN ROWS OF TABLE 6.2

INSTALLING THE NAILED-GLUED FLOOR SYSTEM

1. Hold any nail, tab, tablet, or other floor nail to maintain the sheathing flat.
2. Scribe a circle over the I-joist below the floor with the panel edge alignment and a box for supporting glue.
3. Spread the edge gum only glue by one or two passes or laps to the bottom of the panel before applying the next layer of glue. (See Table 6.2, 14-1/8-Inch thick I-joist.)
4. Lay the panel in place with the tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when placed with a 1/4-inch-wide and 1/16-inch-deep notch in the tongue.
5. Apply continuous line of glue about 1/3-inch wide to the face of the panel, and place 2-1/2-inch common nails, spaced no more than 1/4 inch apart in the grooves of the I-joist.
6. Apply the second layer of glue into the slots using a fixture to ensure grooves are tight.
7. Glue and nails in each succeeding course of panels. A 14-inch thick layer between one panel and 10-inch thick panels, including all edges, is recommended. Any panel thickness of 10 inches or greater should be 14-1/8-Inch thick I-joist before applying the next layer of glue.
8. Complete all nailing of each panel before glue setting. Check the installation for reinforcements for corner ties. (When necessary)
9. Lay panels in a successive course of panels. A 10-inch thick layer between one panel and 10-inch thick panels, including all edges, is recommended. Any panel thickness of 10 inches or greater should be 14-1/8-Inch thick I-joist before applying the next layer of glue.
10. Complete all nailing of each panel before glue setting. Check the installation for reinforcements for corner ties. (When necessary)

FACILITIES FOR SHEATHING AND Subflooring

<table>
<thead>
<tr>
<th>Minimum maximum hole size (in.)</th>
<th>Maximum allowable hole size (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/2&quot;</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>2&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>3&quot;</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

Table 6.1 - Location of Web Holes

Table 6.2 - Location of Depth of the Opening (in.)

Note: All tables and values are applicable to residential floor construction meeting the above design criteria.