

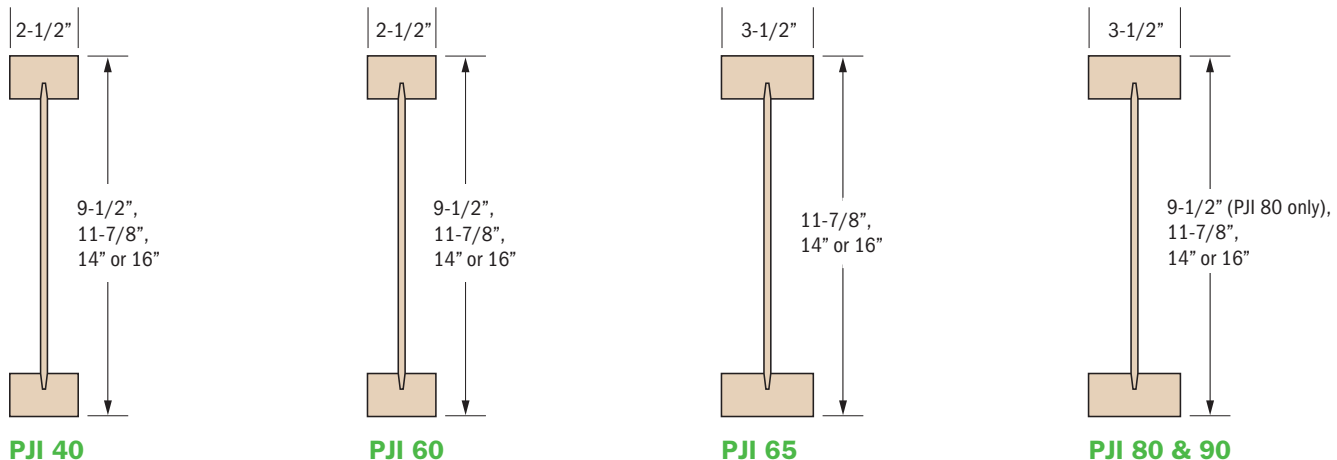
P3 JOIST

BY  **EACOM**
TIMBER CORPORATION

P3 JOIST RESIDENTIAL PRODUCT LINE



Product Description



- **Flanges** are MSR 2x3's and 2x4's.
- **Webs** are OSB, and all are classified as Exposure 1 or Exterior and are 3/8" in thickness or greater.
- All P3 Joists are assembled using exterior-type adhesives that meet ASTM D 2559 and ASTM D 7247.
- P3 Joists are available in eight depths: 9-1/2", 11-7/8", 14", 16", 18", 20" and 24".
- P3 Joists of the same depth are manufactured with various flange widths; flange width is an important design consideration when specifying hangers.
- P3 Joists are manufactured up to 64' in length. These lengths are cut to used lengths such as 16' to 36' in 2' increments for jobsite delivery. Check local supplier for availability.
- P3 Joists are listed and approved in Canada under CCMC 13053R and Ontario Minister's Ruling #07-16-174.

*For other type floor assemblies, please contact EACOM at www.eacom.ca.

See our complete install or User Guide at www.eacom.ca for detail and information not shown

Maximum Allowable Spans

The specific PJI designation needed for your application is easily determined by selecting the span needed and then by choosing the PJI that meets your span, spacing, and uniform loading criteria.

Tables 1 and 1a are for simple or multiple span applications respectively. The use of these tables will provide maximum spans for the indicated spacing and span conditions.

To illustrate the selection of a P3 Joist product, assume a design simple span of 15'-10" for 40/15 loading. For architectural reasons limit the P3 Joist depth to 11-7/8" and P3 Joist spacing to 19.2" on center with 5/8" plywood subfloor. From the 11-7/8" entry in Table 1, look down the 19.2" o.c. spacing column. Select PJI 40 11-7/8" P3 Joist.

While any of the P3 Joists shown in Tables 1 and 1a may be available in a specific market area, availability of any P3 Joist product should be verified prior to final product selection.

The allowable spans in the tables in this user guide indicate the allowable clear and multiple spans for various joist spacings under typical residential uniform floor loads (40 psf live load and 15 psf dead load) for glued-nailed systems.

Floor sheathing must be field glued to the P3 Joist flanges using approved construction adhesives to achieve the P3 Joist allowable spans.

Use of these span tables is limited to uniform load conditions and P3 Joist floor spans shall not exceed these allowable spans. P3 Joist can be used for other applications such as roofs and ceilings to support line loads or concentrated loads, etc., when properly engineered.

NOTES

1. Design in accordance with CSA 086-19 and CCMC vibration concluding report dated September 4, 1997.
2. Web stiffeners are not required for P3 Joists up to 16" deep. Joists 18" and deeper require stiffeners at each support.
3. Use in dry service conditions only.
4. Provide lateral support at points of bearing to prevent twisting of joists.
5. Uniform load deflection criteria is L/480 on live load and L/240 on total load calculated.
6. Elastomeric adhesives for gluing of the subfloor shall conform to CGSB Standard CAN-CGSB-71.26-M88
7. Minimum end bearing length to be 1-3/4" and 3-1/2" for intermediate bearing supports.
8. Vibration spans are based on 19/32" OSB or 5/8" Canadian Softwood Plywood for joist spacing of 12" to 19.2" and on 23/32" OSB or 3/4" Canadian Softwood Plywood for joists spaced at 24" o/c. No ceiling, concrete topping, or bridging elements.
9. Spans listed are clear distances between supports.

Table 1

Allowable Spans for P3 Floor Joist

Simple span only – Glued subfloor* – On center spacing

| Maximum floor span (ft) | | Glued subfloor | | | | | |
|-------------------------|------|----------------|------------|------------------------------|--------|--------|--------|
| Load | | Series | Depth (in) | On center joist spacing (in) | | | |
| Live | Dead | | | 12 | 16 | 19.2 | 24 |
| 40 | 15 | PJI 40 | 9 1/2 | 15-9" | 14-10" | 14-4" | 14-3" |
| | | | 11 7/8 | 17-7" | 16-7" | 16-1" | 16-3" |
| | | | 14 | 19-5" | 18-0" | 17-5" | 17-7" |
| | | | 16 | 21-1" | 19-7" | 18-10" | 19-0" |
| | | PJI 60 | 9 1/2 | 16-2" | 15-3" | 14-9" | 14-11" |
| | | | 11 7/8 | 18-2" | 17-1" | 16-6" | 16-8" |
| | | | 14 | 20-2" | 18-8" | 17-11" | 18-1" |
| | | | 16 | 22-0" | 20-4" | 19-6" | 19-8" |
| | | PJI 65 | 11 7/8 | 18-8" | 17-5" | 16-10" | 17-0" |
| | | | 14 | 20-9" | 19-2" | 18-5" | 18-6" |
| | | | 16 | 22-7" | 20-11" | 20-0" | 20-1" |
| | | PJI 80 | 9 1/2 | 17-1" | 16-1" | 15-6" | 15-7" |
| | | | 11 7/8 | 19-5" | 18-0" | 17-4" | 17-5" |
| | | | 14 | 21-7" | 19-11" | 19-1" | 19-2" |
| | | | 16 | 23-6" | 21-9" | 20-9" | 20-10" |
| | | | 18 | 25-4" | 23-4" | 22-4" | 22-5" |
| | | | 20 | 27-1" | 24-11" | 23-10" | 23-11" |
| | | | 24 | 30-4" | 27-11" | 26-8" | 26-9" |
| | | PJI 90 | 11 7/8 | 19-10" | 18-4" | 17-8" | 17-9" |
| | | | 14 | 22-0" | 20-4" | 19-5" | 19-6" |
| | | | 16 | 24-0" | 22-1" | 21-1" | 21-2" |
| | | | 18 | 25-10" | 23-10" | 22-9" | 22-10" |
| | | | 20 | 27-7" | 25-5" | 24-3" | 24-4" |
| | | | 24 | 30-11" | 28-6" | 27-2" | 27-3" |

Table 1 a

Allowable Spans for P3 Floor Joist

Multiple span only – Glued subfloor* – On center spacing

| Maximum floor span (ft) | | Glued subfloor | | | | | |
|-------------------------|------|----------------|------------|------------------------------|--------|--------|--------|
| Load | | Series | Depth (in) | On center joist spacing (in) | | | |
| Live | Dead | | | 12 | 16 | 19.2 | 24 |
| 40 | 15 | PJI 40 | 9 1/2 | 16-5" | 15-6" | 15-0" | 14-10" |
| | | | 11 7/8 | 18-6" | 17-4" | 16-10" | 16-11" |
| | | | 14 | 20-6" | 19-0" | 18-3" | 18-5" |
| | | | 16 | 22-4" | 20-8" | 19-10" | 20-1" |
| | | PJI 60 | 1/2 | 16-10" | 15-11" | 15-5" | 15-6" |
| | | | 11 7/8 | 19-2" | 17-10" | 17-3" | 17-5" |
| | | | 14 | 21-4" | 19-9" | 18-11" | 19-1" |
| | | | 16 | 23-3" | 21-6" | 20-7" | 20-9" |
| | | PJI 65 | 11 7/8 | 19-9" | 18-3" | 17-8" | 17-9" |
| | | | 14 | 21-11" | 20-3" | 19-5" | 19-7" |
| | | | 16 | 23-10" | 22-1" | 21-1" | 21-3" |
| | | PJI 80 | 9 1/2 | 17-10" | 16-9" | 16-2" | 16-4" |
| | | | 11 7/8 | 20-7" | 19-0" | 18-2" | 18-4" |
| | | | 14 | 22-10" | 21-1" | 20-2" | 20-3" |
| | | | 16 | 24-11" | 23-0" | 21-11" | 22-1" |
| | | | 18 | 26-9" | 24-8" | 23-7" | 23-8" |
| | | | 20 | 28-7" | 26-5" | 25-2" | 25-3" |
| | | | 24 | 32-1" | 29-7" | 28-2" | 28-3" |
| | | PJI 90 | 11 7/8 | 21-0" | 19-5" | 18-6" | 18-8" |
| | | | 14 | 23-4" | 21-6" | 20-7" | 20-8" |
| | | | 16 | 25-4" | 23-5" | 22-4" | 22-5" |
| | | | 18 | 27-4" | 25-2" | 24-0" | 24-1" |
| | | | 20 | 29-2" | 26-11" | 25-8" | 25-9" |
| | | | 24 | 32-11" | 30-2" | 28-9" | 28-9" |

Floor Framing and Construction Details

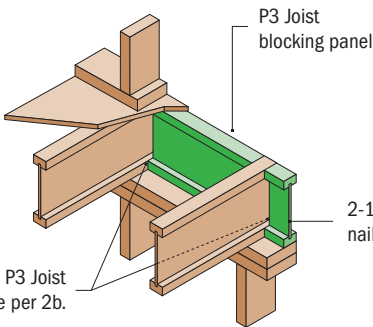
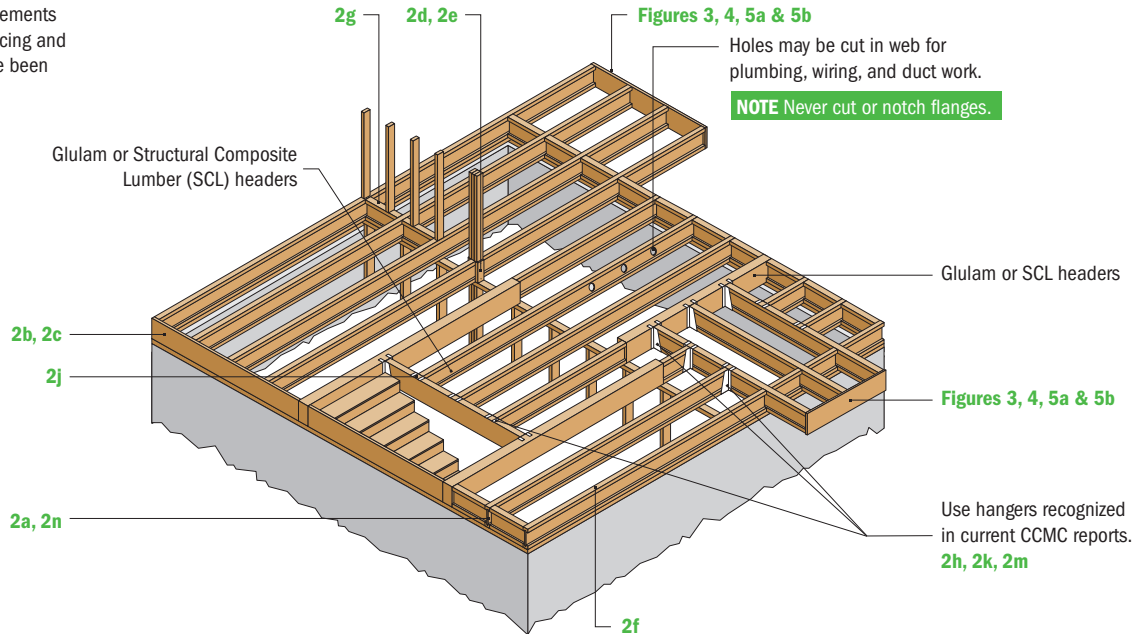
Figure 2

Typical P3 Floor Joist Framing and Construction Details

All nails shown in the details below are assumed to be common nails unless otherwise noted. Framing lumber is assumed to be Spruce-Pine-Fir. Individual components are not shown to scale for clarity.

Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.

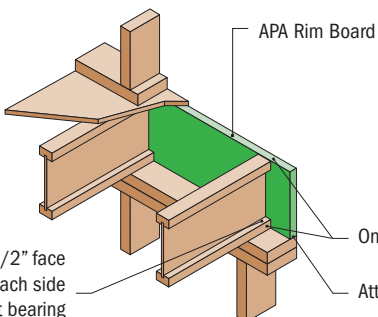
2p



2a BLOCKING PANEL AT END SUPPORT DETAIL

| Blocking Panel or Rim Joist | Maximum Factored Uniform Vertical Load* (plf) |
|-----------------------------|---|
| P3 PJI Joist (9-1/2" - 18") | 2900 |

*The uniform vertical load capacity is limited to a joist depth of 18" or less and is based on the standard term load duration. It shall not be used in the design of a bending member such as joist, header, or rafter. For concentrated vertical load transfer capacity, see 2d.



2b RIM BOARD DETAIL

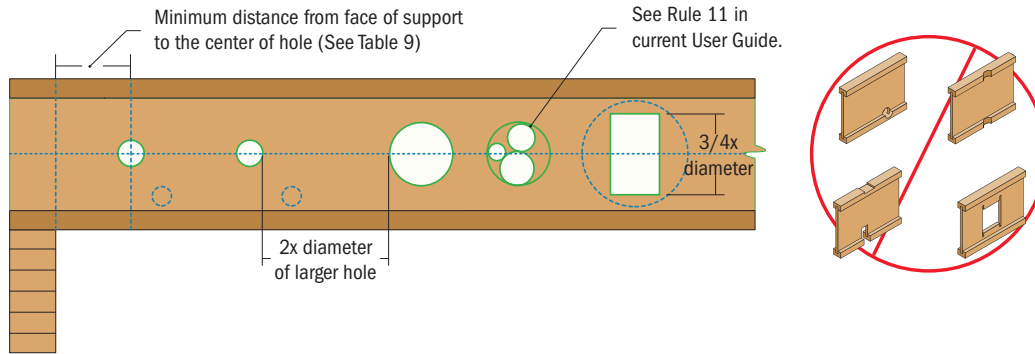
| Blocking Panel or Rim Joist | Uniform Vertical Load Transfer Capacity* (plf) |
|-----------------------------|--|
| 1-1/8" APA Rim Board Plus | 7033 |
| 1-1/8" APA Rim Board | 7033 |
| 1" APA Rim Board | 4785 |

*The uniform vertical load capacity is limited to a rim board depth of 16" or less and is based on standard term load duration. It shall not be used in the design of a bending member such as joist, header, or rafter. For concentrated vertical load transfer capacity, see 2d.

To avoid splitting flange, start nails at least 1-1/2" from end of P3 Joist. Nails may be driven at an angle to avoid splitting of bearing plate.

P3 Joist Typical Holes

FIGURE 6



Cutting the Holes

- **Never** drill, cut, or notch the flange. **Never** over-cut the web.
- Holes in webs should be cut with a sharp saw.
- For rectangular holes avoid over cutting the corners as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1" diameter hole in each of the 4 corners and then making the cuts between the holes is another good method to minimize damage to I-Joist.

Table 9

Location Of Circular Holes In P3 Joist Webs

Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf^{1,2,3,4}

| Joist Depth | Joist | Minimum distance from inside face of any support to center of hole (ft.-in.) | | | | | | | | | | | | | | | |
|-------------|--------|--|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | Round Hole Diameter (in.) | | | | | | | | | | | | | | | |
| | | SAF ⁽⁵⁾ | 2 | 3 | 4 | 5 | 6 | 6-1/4 | 7 | 8 | 8-5/8 | 9 | 10 | 10-3/4 | 11 | 12 | 12-3/4 |
| 9-1/2" | PJI-40 | 14-1" | 0'-7" | 0'-8" | 1'-3" | 2'-10" | 4'-6" | 5'-0" | - | - | - | - | - | - | - | - | - |
| | PJI-60 | 14-9" | 0'-7" | 0'-8" | 1'-8" | 3'-3" | 5'-0" | 5'-5" | - | - | - | - | - | - | - | - | - |
| | PJI-80 | 15-5" | 0'-7" | 0'-8" | 2'-2" | 3'-9" | 5'-6" | 6'-0" | - | - | - | - | - | - | - | - | - |
| 11-7/8" | PJI-40 | 16-1" | 0'-7" | 0'-8" | 0'-8" | 1'-3" | 2'-9" | 3'-1" | 4'-3" | 5'-10" | 6'-11" | - | - | - | - | - | - |
| | PJI-60 | 16-6" | 0'-7" | 0'-8" | 0'-8" | 1'-7" | 3'-0" | 3'-5" | 4'-7" | 6'-2" | 7'-3" | - | - | - | - | - | - |
| | PJI-65 | 16-10" | 0'-7" | 0'-8" | 0'-8" | 1'-9" | 3'-3" | 3'-8" | 4'-10" | 6'-5" | 7'-6" | - | - | - | - | - | - |
| | PJI-80 | 17-4" | 0'-7" | 0'-8" | 0'-8" | 2'-0" | 3'-6" | 3'-10" | 5'-0" | 6'-9" | 7'-10" | - | - | - | - | - | - |
| | PJI-90 | 17-7" | 0'-7" | 0'-8" | 0'-8" | 2'-2" | 3'-8" | 4'-1" | 5'-3" | 7'-0" | 8'-1" | - | - | - | - | - | - |
| 14" | PJI-40 | 17-5" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 1'-3" | 1'-7" | 2'-7" | 4'-0" | 4'-11" | 5'-6" | 7'-1" | 8'-5" | - | - | - |
| | PJI-60 | 17-11" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 1'-8" | 2'-0" | 3'-0" | 4'-5" | 5'-5" | 5'-11" | 7'-7" | 8'-11" | - | - | - |
| | PJI-65 | 18-4" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 1'-11" | 2'-3" | 3'-4" | 4'-9" | 5'-8" | 6'-3" | 7'-11" | - | - | - | - |
| | PJI-80 | 19-0" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 2'-1" | 2'-5" | 3'-6" | 5'-0" | 6'-0" | 6'-7" | 8'-3" | - | - | - | - |
| | PJI-90 | 19-5" | 0'-7" | 0'-8" | 0'-8" | 1'-0" | 2'-4" | 2'-8" | 3'-9" | 5'-3" | 6'-3" | 6'-10" | 8'-6" | - | - | - | - |
| 16" | PJI-40 | 18-10" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-9" | 0'-10" | 1'-4" | 2'-8" | 3'-6" | 4'-0" | 5'-5" | 6'-6" | 6'-11" | 8'-6" | - |
| | PJI-60 | 19-6" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-9" | 0'-10" | 1'-10" | 3'-1" | 4'-0" | 4'-6" | 5'-11" | 7'-1" | 7'-5" | 9'-1" | - |
| | PJI-65 | 20-0" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-10" | 1'-2" | 2'-1" | 3'-5" | 4'-4" | 4'-10" | 6'-3" | 7'-5" | 7'-10" | 9'-5" | - |
| | PJI-80 | 20-9" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-11" | 1'-3" | 2'-3" | 3'-7" | 4'-6" | 5'-0" | 6'-6" | 7'-9" | 8'-1" | 9'-10" | - |
| 18" | PJI-90 | 21-1" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 1'-2" | 1'-6" | 2'-6" | 3'-10" | 4'-9" | 5'-4" | 6'-10" | 8'-0" | 8'-5" | 10'-1" | - |
| | PJI-80 | 22-3" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-9" | 0'-10" | 0'-10" | 1'-3" | 2'-1" | 2'-8" | 4'-1" | 5'-3" | 5'-8" | 7'-3" | 8'-6" |
| 20" | PJI-90 | 22-8" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-9" | 0'-10" | 0'-10" | 1'-6" | 2'-5" | 2'-11" | 4'-5" | 5'-6" | 5'-11" | 7'-6" | 8'-9" |
| | PJI-80 | 23-9" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-9" | 0'-10" | 0'-10" | 0'-10" | 1'-4" | 1'-10" | 3'-2" | 4'-2" | 4'-6" | 6'-0" | 7'-1" |
| 24" | PJI-90 | 24-2" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-9" | 0'-10" | 0'-10" | 0'-10" | 1'-8" | 2'-2" | 3'-6" | 4'-6" | 4'-10" | 6'-3" | 7'-5" |
| | PJI-80 | 26-7" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-9" | 0'-10" | 0'-10" | 0'-10" | 0'-11" | 0'-11" | 1'-8" | 2'-7" | 2'-10" | 4'-1" | 5'-0" |
| 24" | PJI-90 | 27-1" | 0'-7" | 0'-8" | 0'-8" | 0'-9" | 0'-9" | 0'-10" | 0'-10" | 0'-10" | 0'-11" | 0'-11" | 2'-0" | 2'-11" | 3'-2" | 4'-5" | 5'-4" |

NOTES

1. Above tables may be used for P3 Joist spacing of 24" on center or less.
2. Hole location distance is measured from inside face of supports to center of hole.
3. Distances in this chart are based on uniformly loaded joists.
4. Hole sizes and/or locations that fall outside of the scope of this table may be acceptable based on analysis of actual hole size, span, spacing, and loading conditions.
5. SAF stands for Span Adjustment Factor. SAF is used as defined below.

OPTIONAL

Table 9 is based on the P3 Joist being used at their maximum span. If the P3 Joist are placed at less than their full allowable span, the maximum distance from the centerline of the hole to the face of any support (D) as given above may be reduced as follows.

$$D_{\text{reduced}} = \frac{L_{\text{actual}}}{\text{SAF}} \times D$$

Where: D_{reduced} = Distance from the inside face of any support to center of hole is reduced for less-than-maximum span applications (ft.). The reduced distance shall not be less than 6" from the face of support to edge of the hole.

L_{actual} = The actual measured span distance between the inside faces of supports (ft)

SAF = Span Adjustment Factor is given in the table above.

D = The minimum distance from the inside face of any support to center of hole from Table 9 above

If $\frac{L_{\text{actual}}}{\text{SAF}}$ is greater than 1, use 1 in the above calculation