Resolute RSI I-J oists
Resolute Engineered Wood St-Prime Limited Partnership

Resolute Engineered Wood St-Prime Limited Partnership, Rue Du Parc Industriel, St-Prime, QC G8J 1H3, Canada
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1. Basis of the product report:

- 2020 National Building Code of Canada (NBC): Clause 1.2.1.1 of Division A and Clauses 4.1, 4.3.1.1, and 9.23.4.2 of Division B
- CSA O86-19 Engineering Design in Wood
- ASTM D5055-16 recognized in CSA 086-19
- APA PRI-400 Performance Standard for Residential I-Joists (Limit States Design)
- Intertek LPI 20, LPI 20X1.7 and LPI 32 Test Report, Intertek LPI 20X1.5 Test Report, PFS LPI 23 (a.k.a. LPI 32) Test Report, APA Reports T2005M-21, T2005M-52, T2006M03, T2006M-07, T2008P-69, T2008P-97, T2008P-111, T2009P-82, T2010P-52B, T2010P-58, T2011P-08, T2013P-38, T2014P-03, T2014P-29, and T2017P-32, and other qualification data

2. Product description:

Resolute RSI I-joists are described in Table 1 in accordance with the in-plant manufacturing standard approved by APA.
3. Design properties:

Tables 2 and 3 list the factored resistances for the Resolute RSI I-joists covered by this report. The maximum spans for Resolute RSI I-joists shall be in accordance with the recommendations provided by the (www.resolutefp.com) and with APA PRI-400, Performance Standard for Residential I-Joists (Limit States Design), Form PRI-400 CA (www.apawood.org/resource-library), for depths contained in the PRI Series.
4. Product installation:

Resolute RSI I-joists covered by this report shall be installed in accordance with the recommendations provided by the manufacturer (see link above). Permissible web holes and cantilever reinforcements shall be in accordance with the recommendations provided by the manufacturer.
5. Fire-rated assemblies:

Fire-rated assemblies shall be constructed in accordance with the recommendations provided by the manufacturer (see link above), or Table 9.10.3.1.-B of the NBC.
6. Limitations:
a) Resolute RSI I-joists shall be designed in accordance with the code using the design properties specified in this report.
b) Resolute RSI I-joists are limited to dry service conditions as defined in CSA O86, at which the average equilibrium moisture content of solid-sawn lumber over a year is $15 \%$ or less and does not exceed 19\%.
c) Resolute RSI I-joists are produced at the Resolute Engineered Wood St-Prime Limited Partnership facility in St-Prime, Quebec, under a quality assurance program audited by APA.
d) This report is subject to re-examination in one year.
7. Identification:

Resolute RSI I-joists described in this report are identified by a label bearing the manufacturer's name (Resolute Engineered Wood St-Prime Limited Partnership) and/or trademark, the APA assigned plant number (1077), the I-joist series designation and depth, the APA logo, the report number PR-L341 or PR-L341(C), and a means of identifying the date of manufacture.

Table 1. Description of Resolute RSI I-Joists ${ }^{(a)}$

| Joist <br> Series | Joist Depths, mm (in.) | Flanges |  |  | Web |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Material | Dimension |  | Material | $\begin{aligned} & \text { Thicknesss }{ }^{(\mathrm{b})} \text {, } \\ & \mathrm{mm} \text { (in.) } \end{aligned}$ |
|  |  |  | Depth, mm (in.) | Width, mm (in.) |  |  |
| RSI 15 | $\begin{gathered} 225-406 \\ (8-7 / 8-16) \end{gathered}$ | Proprietary SPF | 38 (1-1/2) | 64 (2-1/2) | OSB | 9.5 (3/8) |
| RSI 25 | $\begin{gathered} 225-406 \\ (8-7 / 8-16) \end{gathered}$ | Proprietary SPF | 38 (1-1/2) | 64 (2-1/2) | OSB | 9.5 (3/8) |
| RSI $25 \times 4$ | $\begin{gathered} 241-406 \\ (9-1 / 2-16) \end{gathered}$ | MSR SPF | 38 (1-1/2) | 89 (3-1/2) | OSB | 9.5 (3/8) |
| RSI 35 | $\begin{gathered} 225-406 \\ (8-7 / 8-16) \end{gathered}$ | MSR SPF | 38 (1-1/2) | 64 (2-1/2) | OSB | 9.5 (3/8) |
| RSI 45 | $\begin{gathered} 225-610 \\ (8-7 / 8-24) \end{gathered}$ | Proprietary SPF | 38 (1-1/2) | 89 (3-1/2) | OSB | $9.5{ }^{(\mathrm{c})}(3 / 8)$ |
| RSI 55 | $\begin{gathered} 235-406 \\ (9-1 / 4-16) \end{gathered}$ | MSR SPF | 38 (1-1/2) | 89 (3-1/2) | OSB | 11 (7/16) |
| RSI 65 | $\begin{gathered} 302-406 \\ (11-7 / 8-16) \end{gathered}$ | LVL | 38 (1-1/2) | 89 (3-1/2) | OSB | 11 (7/16) |

(a) Referenced dimensions are nominal. Tolerances are as specified in the in-plant quality manual.
(b) $11-\mathrm{mm}(7 / 16$-inch) webs shall be permitted to substitute for $9.5-\mathrm{mm}$ ( $3 / 8$-inch) webs.
(c) $11-\mathrm{mm}$ ( $7 / 16$-inch) webs for joist depths exceeding 406 mm (16 inches).

Table 2. Factored Resistances and Stiffnesses for Resolute RSI I-Joists ${ }^{(a)}$

| Joist Series Designation | Joist Depth, mm (in.) | $\begin{gathered} \mathrm{El},{ }^{(\mathrm{b})} \\ 10^{6} \mathrm{kN}-\mathrm{mm}^{2} \\ \left(10^{6} \mathrm{lbf}-\mathrm{in}^{2}{ }^{2}\right) \end{gathered}$ | $\begin{gathered} \hline \mathrm{Mr}_{\mathrm{r}}{ }^{(\mathrm{c})} \\ \mathrm{kN}-\mathrm{mm} \\ (\mathrm{lbf}-\mathrm{ft}) \end{gathered}$ | $\begin{gathered} \mathrm{V}_{\mathrm{r}}{ }^{(\mathrm{d})} \\ \mathrm{kN} \\ (\mathrm{lbf}) \end{gathered}$ | $\begin{gathered} \hline \mathrm{VLC}_{\mathrm{r},}{ }^{(\mathrm{e})} \\ \mathrm{kN} / \mathrm{m} \\ \text { (plf) } \end{gathered}$ | $\begin{gathered} \mathrm{K},{ }^{(\mathrm{f})} \\ \mathrm{kN} \\ \left(10^{6} \mathrm{lbf}\right) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| RSI 15 | 225 (8-7/8) | 264 (92) | 4,972 (3,665) | 7.41 (1,665) | $40.2(2,755)$ | 17,828 (4.01) |
|  | 235 (9-1/4) | 327 (114) | 5,220 (3,850) | 7.72 (1,735) | $40.2(2,755)$ | 18,521 (4.16) |
|  | $241^{(\mathrm{g})}(9-1 / 2)$ | 407 (142) | 5,333 (3,935) | 7.93 (1,785) | $40.2(2,755)$ | 18,948 (4.26) |
|  | 286 (11-1/4) | 654 (228) | 6,573 (4,850) | 8.99 (2,020) | $37.2(2,552)$ | 22,098 (4.97) |
|  | $302{ }^{\text {(9) }}(11-7 / 8)$ | 712 (248) | 6,990 (5,155) | 9.37 (2,105) | $37.2(2,552)$ | 23,219 (5.22) |
|  | 356 (14) | 1,065 (371) | 8,388 (6,185) | 10.60 (2,385) | 33.9 (2,320) | 27,115 (6.10) |
|  | 406 (16) | 1,475 (514) | 9,539 (7,035) | 11.79 (2,650) | $25.4(1,740)$ | 30,798 (6.92) |
| RSI 25 | 225 (8-7/8) | 451 (157) | 5,818 (4,290) | 8.25 (1,855) | $40.2(2,755)$ | 17,988 (4.04) |
|  | 235 (9-1/4) | 496 (173) | 6,111 (4,505) | 8.60 (1,935) | $40.2(2,755)$ | 18,682 (4.20) |
|  | 240 | 525 (183) | 6,303 (4,650) | 8.78 (1,975) | $40.2(2,755)$ | 19,002 (4.27) |
|  | $241^{(\mathrm{h})}(9-1 / 2)$ | 531 (185) | 6,336 (4,675) | 8.85 (1,990) | $40.2(2,755)$ | 19,109 (4.30) |
|  | 286 (11-1/4) | 804 (280) | 7,689 (5,670) | 10.00 (2,250) | $37.2(2,552)$ | 22,258 (5.00) |
|  | 300 | 901 (314) | 8,422 (6,210) | 10.36 (2,330) | $37.2(2,552)$ | 23,272 (5.23) |
|  | $302{ }^{(\mathrm{h})}$ (11-7/8) | 913 (318) | 8,467 (6,245) | 10.43 (2,345) | $37.2(2,552)$ | 23,379 (5.26) |
|  | $356{ }^{(\mathrm{h})}$ (14) | 1,360 (474) | 9,922 (7,320) | 11.79 (2,650) | 33.9 (2,320) | 27,329 (6.14) |
|  | 360 | 1,400 (488) | 10,057 (7,420) | 11.94 (2,685) | $31.7(2,175)$ | 27,649 (6.22) |
|  | 400 | 1,805 (629) | 11,196 (8,260) | 12.95 (2,910) | 31.7 (2,175) | 30,584 (6.88) |
|  | $406{ }^{(h)}$ (16) | 1,871 (652) | 11,388 (8,400) | 13.13 (2,950) | $31.7(2,175)$ | 31,065 (6.98) |
| RSI $25 \times 4$ | $241^{(h)}(9-1 / 2)$ | 531 (185) | 6,336 (4,675) | 8.85 (1,990) | $40.2(2,755)$ | 19,109 (4.30) |
|  | $302{ }^{(\mathrm{h})}(11-7 / 8)$ | 913 (318) | 8,467 (6,245) | 10.43 (2,345) | $37.2(2,552)$ | 23,379 (5.26) |
|  | $356{ }^{(h)}(14)$ | 1,360 (474) | 9,922 (7,320) | 11.79 (2,650) | 33.9 (2,320) | 27,329 (6.14) |
|  | $406{ }^{(h)}$ (16) | 1,871 (652) | 11,388 (8,400) | 13.13 (2,950) | $31.7(2,175)$ | 31,065 (6.98) |
| RSI 35 | 225 (8-7/8) | 531 (185) | 7,532 (5,555) | $8.25(1,855)$ | 46.6 (3,190) | 17,988 (4.04) |
|  | 235 (9-1/4) | 594 (207) | 7,915 (5,840) | 8.60 (1,935) | 46.6 (3,190) | 18,682 (4.20) |
|  | $24{ }^{(\mathrm{i})}$ (9-1/2) | 634 (221) | 8,163 (6,020) | 8.85 (1,990) | 46.6 (3,190) | 19,109 (4.30) |
|  | 286 (11-1/4) | 950 (331) | 9,944 (7,335) | 10.00 (2,250) | 46.6 (3,190) | 22,258 (5.00) |
|  | $302{ }^{(\mathrm{i})}$ (11-7/8) | 1,076 (375) | 10,576 (7,800) | 10.43 (2,345) | 46.6 (3,190) | 23,379 (5.26) |
|  | $356{ }^{(i)}(14)$ | 1,575 (549) | 12,729 (9,390) | 11.79 (2,650) | 33.9 (2,320) | 27,329 (6.14) |
|  | $406{ }^{(\mathrm{i})}$ (16) | 2,132 (743) | 14,759 (10,885) | 13.13 (2,950) | $31.7(2,175)$ | 31,065 (6.98) |
| RSI 45 | 225 (8-7/8) | 781 (272) | 11,173 (8,240) | $8.88(1,995)$ | 46.6 (3,190) | 20,550 (4.62) |
|  | 235 (9-1/4) | 864 (301) | 11,748 (8,665) | 9.20 (2,070) | 46.6 (3,190) | 21,404 (4.81) |
|  | 240 | 910 (317) | 12,042 (8,880) | $9.37(2,105)$ | 46.6 (3,190) | 21,884 (4.92) |
|  | 241 (9-1/2) | 921 (321) | 12,120 (8,940) | 9.41 (2,115) | 46.6 (3,190) | 21,991 (4.94) |
|  | 286 (11-1/4) | 1,377 (480) | 14,770 (10,895) | $10.88(2,445)$ | 46.6 (3,190) | 26,047 (5.86) |
|  | 300 | 1,535 (535) | 15,604 (11,510) | $11.34(2,550)$ | 46.6 (3,190) | 27,382 (6.16) |
|  | $302{ }^{(\mathrm{j})}$ (11-7/8) | 1,570 (547) | 15,706 (11,585) | 11.41 (2,565) | 46.6 (3,190) | 27,489 (6.18) |
|  | $356{ }^{(0)}(14)$ | 2,301 (802) | 18,919 (13,955) | 13.16 (2,960) | 42.3 (2,900) | 32,399 (7.28) |
|  | 360 | 2,368 (825) | 19,178 (14,145) | 13.30 (2,990) | $42.3(2,900)$ | 32,773 (7.37) |
|  | 400 | 3,025 (1,054) | 21,557 (15,900) | 14.64 (3,290) | 42.3 (2,900) | 36,402 (8.18) |
|  | $406{ }^{(0)}$ (16) | 3,134 (1,092) | 21,930 (16,175) | 14.85 (3,340) | 42.3 (2,900) | 36,990 (8.32) |
|  | 457 (18) | 3,825 (1,333) | 24,805 (18,295) | $17.94(4,035)$ | 36.0 (2,465) | 51,241 (11.52) |
|  | 508 (20) | 4,844 (1,688) | 27,443 (20,240) | 19.62 (4,410) | 33.4 (2,291) | 56,952 (12.80) |
|  | 559 (22) | 5,992 (2,088) | 30,070 (22,180) | $21.27(4,785)$ | $27.5(1,885)$ | 62,610 (14.08) |
|  | 610 (24) | 7,272 (2,534) | 32,652 (24,085) | 22.96 (5,160) | 23.3 (1,595) | 68,321 (15.36) |

(Footnotes on Page 4)

Table 2. Factored Resistances and Stiffnesses for Resolute RSI I-Joists ${ }^{(a)}$ (Continued)

| Joist Series Designation | Joist Depth <br> (inches, unless otherwise noted) | $\begin{gathered} \mathrm{El},{ }^{(\mathrm{b})} \\ 10^{6} \mathrm{kN}-\mathrm{mm}^{2} \\ \left(10^{6} \mathrm{lbf}-\mathrm{in.}^{2}\right) \end{gathered}$ |  | $V_{r}{ }^{(d)}$ <br> kN <br> (lbf) | $\mathrm{VLCr}_{\mathrm{r}}{ }^{(\mathrm{e})}$ kN/m (plf) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| RSI 55 | 235 (9-1/4) | 958 (334) | 14,296 (10,545) | 12.04 (2,705) | $50.8(3,480)$ | 26,314 (5.92) |
|  | 241 (9-1/2) | 1,022 (356) | 14,747 (10,875) | 12.25 (2,755) | $50.8(3,480)$ | 27,062 (6.08) |
|  | 286 (11-1/4) | 1,518 (529) | 17,961 (13,245) | 13.87 (3,115) | $50.8(3,480)$ | 32,026 (7.20) |
|  | 302 (11-7/8) | 1,722 (600) | 19,111 (14,095) | 14.43 (3,245) | $50.8(3,480)$ | 33,787 (7.60) |
|  | 356 (14) | 2,508 (874) | 23,012 (16,975) | 16.36 (3,680) | 46.6 (3,190) | 39,872 (8.96) |
|  | 406 (16) | 3,395 (1,183) | 26,688 (19,685) | 18.15 (4,080) | 42.3 (2,900) | 45,530 (10.24) |
| RSI 65 | 302 (11-7/8) | 1,917 (668) | 22,933 (16,915) | 14.43 (3,245) | 50.8 (3,480) | 29,303 (6.59) |
|  | 356 (14) | 2,778 (968) | 27,623 (20,375) | 16.36 (3,680) | 46.6 (3,190) | 34,214 (7.69) |
|  | 406 (16) | 3,733 (1,301) | 32,032 (23,625) | 18.15 (4,080) | 40.2 (2,755) | 38,911 (8.75) |

For Imperial: $1 \mathrm{~mm}=0.0394 \mathrm{in} ., 1 \mathrm{~N}=0.2248 \mathrm{lbf}, 1 \mathrm{kN} / \mathrm{m}=5.71 \mathrm{lbf} / \mathrm{in}$.
(a) All factored resistance values include the resistance factor specified in CSA-O86. The tabulated values are for the standard term of load duration $\left(K_{D}=1.0\right)$. All values, except for $E l, V_{C}$, and $K$, shall be adjusted for other load durations in accordance with the code.
(b) Bending stiffness (EI) of the I-joist
(c) Factored moment resistance $\left(\mathrm{M}_{\mathrm{r}}\right)$ of the I-joist, which shall not be increased by any system factor $\left(\mathrm{K}_{\mathrm{H}}=1.0\right)$.
(d) Factored shear resistance $\left(\mathrm{V}_{\mathrm{r}}\right)$ of the I-joist.
(e) Factored uniform vertical load resistance (VLC $)_{r}$ ) of the I-joist.
${ }^{(f)}$ Coefficient of shear deflection (K). For calculating uniform load and center-point load deflections of the I-joist in a simple-span application, use Equations 1 and 2.

$$
\begin{array}{ll}
\text { Uniform Load: } & \delta=\frac{5 \omega L^{4}}{384 E I}+\frac{\omega L^{2}}{K} \\
\text { Center-Point Load: } & \delta=\frac{P L^{3}}{48 E I}+\frac{2 P L}{K}
\end{array}
$$

where

$$
\begin{array}{lll}
\delta=\text { calculated deflection, mm (in.), } & \omega=\text { uniform load, } \mathrm{kN} / \mathrm{mm}(\mathrm{lbf} / \mathrm{in} .), \\
\mathrm{P}=\text { concentrated load, } \mathrm{kN}(\mathrm{lbf}), & \mathrm{L} & =\text { design span, } \mathrm{mm} \text { (in.), } \\
\mathrm{EI}= & \text { bending stiffness of the } \mathrm{I} \text {-joist, } \mathrm{kN}-\mathrm{mm}^{2}\left(\mathrm{lbf}-\mathrm{in} .^{2}\right), \text { and } & \mathrm{K} \\
=\text { coefficient of shear deflection, } \mathrm{kN} \text { (lbf). }
\end{array}
$$

(g) The 241 and 302-mm RSI 15 shall be permitted to be designed as PRI-20 I-joists.
(h) The 241, 302, 356, and 406-mm RSI 25 and RSI- $25 \times 4$ shall be permitted to be designed as PRI-40 I-joists.
(i) The $241,302,356$, and $406-\mathrm{mm}$ RSI 35 shall be permitted to be designed as PRI-60 I-joists.
(j) The 302,356 , and $406-\mathrm{mm}$ RSI 45 are recognized as PRI- 80 I-joists.

Table 3. Factored Reaction Resistances for Resolute RSI I-Joists ${ }^{(\mathrm{a}, \mathrm{b}, \mathrm{c}, \mathrm{d})}$ and Specified Compressive Strength Perpendicular to Grain for Flanges

| Joist Series Designation | Joist Depth, mm (in.) | Intermediate Reaction ${ }^{(\mathrm{e})}$, kN (lbf) |  |  |  | End Reaction ${ }^{(f)} \mathrm{kN}$ (lbf) |  |  |  | Specified Compressive Strength Perpendicular to Grain ( $\mathrm{f}_{\mathrm{cp}}$ ), MPa (psi) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 89 mm (3-1/2 in.) Brg. Length |  | 140 mm ( $5-1 / 2 \mathrm{in}$.) Brg. Length |  | 38 mm (1-1/2 in.) Brg. Length |  | 102 mm (4 in.) Brg. Length |  |  |
|  |  | With Brg. Stiffeners |  | With Brg. Stiffeners |  | With Brg. Stiffeners |  | With Brg. Stiffeners |  |  |
|  |  | No | Yes | No | Yes | No | Yes | No | Yes |  |
| RSI 15 | 225 (8-7/8) | $13.62(3,060)$ | $14.71(3,305)$ | 15.20 (3,415) | 16.29 (3,660) | $6.11(1,375)$ | 6.95 (1,565) | $6.85(1,540)$ | 7.41 (1,665) | 5.3 (769) |
|  | 235 (9-1/4) | 13.76 (3,095) | 14.85 (3,340) | $15.38(3,455)$ | 16.50 (3,710) | $6.11(1,375)$ | $7.09(1,595)$ | $6.95(1,565)$ | 7.72 (1,735) |  |
|  | $241^{(\mathrm{g})}(9-1 / 2)$ | $13.87(3,115)$ | $14.99(3,370)$ | $15.48(3,480)$ | 16.64 (3,740) | $6.11(1,375)$ | 7.20 (1,620) | $6.99(1,570)$ | 7.93 (1,785) |  |
|  | 286 (11-1/4) | 14.50 (3,260) | $15.69(3,530)$ | 16.15 (3,630) | $17.55(3,945)$ | $6.11(1,375)$ | $7.79(1,750)$ | 7.23 (1,625) | 8.99 (2,020) |  |
|  | $302{ }^{(\mathrm{g})}(11-7 / 8)$ | $14.71(3,305)$ | $15.94(3,585)$ | 16.39 (3,685) | $17.87(4,015)$ | $6.11(1,375)$ | $8.04(1,805)$ | 7.30 (1,640) | $9.37(2,105)$ |  |
|  | 356 (14) | 15.48 (3,480) | 16.81 (3,780) | 17.20 (3,865) | 18.96 (4,260) | $6.11(1,375)$ | 8.81 (1,980) | 7.58 (1,705) | 10.60 (2,385) |  |
|  | 406 (16) | $16.22(3,645)$ | 17.66 (3,970) | $18.01(4,050)$ | $20.04(4,505)$ | $6.11(1,375)$ | $9.51(2,140)$ | 7.83 (1,760) | 11.79 (2,650) |  |
| RSI 25 | 225 (8-7/8) | 15.16 (3,410) | 16.36 (3,680) | 16.92 (3,805) | 18.11 (4,070) | $6.81(1,530)$ | 7.72 (1,735) | 7.62 (1,715) | $8.25(1,855)$ | 5.3 (769) |
|  | 235 (9-1/4) | $15.31(3,440)$ | 16.53 (3,715) | $17.10(3,845)$ | 18.36 (4,130) | $6.81(1,530)$ | 7.90 (1,775) | $7.72(1,735)$ | 8.60 (1,935) |  |
|  | 240 | $15.38(3,455)$ | 16.64 (3,740) | 17.17 (3,860) | 18.46 (4,150) | $6.81(1,530)$ | $7.97(1,790)$ | 7.76 (1,745) | $8.78(1,975)$ |  |
|  | $241^{(h)}(9-1 / 2)$ | 15.41 (3,465) | 16.67 (3,750) | 17.20 (3,865) | 18.50 (4,160) | $6.81(1,530)$ | 8.00 (1,800) | $7.79(1,750)$ | $8.85(1,990)$ |  |
|  | 286 (11-1/4) | 16.11 (3,620) | 17.45 (3,920) | 17.97 (4,040) | 19.52 (4,390) | $6.81(1,530)$ | 8.67 (1,950) | $8.04(1,805)$ | 10.00 (2,250) |  |
|  | 300 | 16.32 (3,670) | 17.69 (3,980) | 18.18 (4,090) | 19.83 (4,460) | $6.81(1,530)$ | 8.92 (2,005) | $8.11(1,825)$ | 10.36 (2,330) |  |
|  | $302{ }^{(\mathrm{h})}(11-7 / 8)$ | 16.36 (3,680) | 17.73 (3,985) | 18.22 (4,095) | $19.87(4,465)$ | $6.81(1,530)$ | 8.95 (2,010) | 8.14 (1,830) | 10.43 (2,345) |  |
|  | $356{ }^{(\text {(h) }}$ (14) | 17.24 (3,875) | 18.71 (4,205) | 19.13 (4,300) | $21.10(4,745)$ | $6.81(1,530)$ | 9.79 (2,200) | 8.42 (1,895) | 11.79 (2,650) |  |
|  | 360 | $17.31(3,890)$ | 18.78 (4,220) | $19.24(4,325)$ | 21.20 (4,765) | $6.81(1,530)$ | 9.86 (2,220) | 8.46 (1,900) | 11.94 (2,685) |  |
|  | 400 | $17.94(4,035)$ | $19.52(4,390)$ | 19.90 (4,475) | 22.12 (4,970) | $6.81(1,530)$ | $10.50(2,360)$ | 8.67 (1,950) | 12.95 (2,910) |  |
|  | $406{ }^{(h)}(16)$ | $18.04(4,055)$ | 19.62 (4,410) | $20.01(4,500)$ | 22.29 (5,010) | $6.81(1,530)$ | 10.60 (2,385) | $8.71(1,955)$ | 13.13 (2,950) |  |
| RSI 25x4 | 241 (9-1/2) | $15.41(3,465)$ | 16.67 (3,750) | 17.20 (3,865) | 18.50 (4,160) | $6.81(1,530)$ | $8.00(1,800)$ | 7.79 (1,750) | 8.85 (1,990) | 5.3 (769) |
|  | 302 (11-7/8) | 16.36 (3,680) | 17.73 (3,985) | $18.22(4,095)$ | $19.87(4,465)$ | 6.81 (1,530) | $8.95(2,010)$ | 8.14 (1,830) | 10.43 (2,345) |  |
|  | 356 (14) | $17.24(3,875)$ | 18.71 (4,205) | 19.13 (4,300) | 21.10 (4,745) | $6.81(1,530)$ | 9.79 (2,200) | 8.42 (1,895) | 11.79 (2,650) |  |
|  | 406 (16) | $18.04(4,055)$ | 19.62 (4,410) | $20.01(4,500)$ | 22.29 (5,010) | $6.81(1,530)$ | 10.60 (2,385) | $8.71(1,955)$ | 13.13 (2,950) |  |
| RSI 35 | 225 (8-7/8) | 15.16 (3,410) | 16.36 (3,680) | $16.92(3,805)$ | 18.11 (4,070) | $6.81(1,530)$ | $7.72(1,735)$ | 7.62 (1,715) | 8.25 (1,855) | 6.5 (943) |
|  | 235 (9-1/4) | $15.31(3,440)$ | 16.53 (3,715) | 17.10 (3,845) | 18.36 (4,130) | $6.81(1,530)$ | 7.90 (1,775) | 7.72 (1,735) | 8.60 (1,935) |  |
|  | $241^{(i)}(9-1 / 2)$ | $15.41(3,465)$ | 16.67 (3,750) | 17.20 (3,865) | 18.50 (4,160) | $6.81(1,530)$ | 8.00 (1,800) | 7.79 (1,750) | 8.85 (1,990) |  |
|  | 286 (11-1/4) | 16.11 (3,620) | 17.45 (3,920) | 17.97 (4,040) | 19.52 (4,390) | $6.81(1,530)$ | 8.67 (1,950) | $8.04(1,805)$ | 10.00 (2,250) |  |
|  | $302{ }^{(i)}(11-7 / 8)$ | 16.36 (3,680) | 17.73 (3,985) | 18.22 (4,095) | 19.87 (4,465) | $6.81(1,530)$ | 8.95 (2,010) | $8.14(1,830)$ | 10.43 (2,345) |  |
|  | $356{ }^{(1)}$ (14) | $17.24(3,875)$ | 18.71 (4,205) | 19.13 (4,300) | 21.10 (4,745) | $6.81(1,530)$ | 9.79 (2,200) | $8.42(1,895)$ | 11.79 (2,650) |  |
|  | $406{ }^{(i)}$ (16) | $18.04(4,055)$ | $19.62(4,410)$ | $20.01(4,500)$ | 22.29 (5,010) | $6.81(1,530)$ | 10.60 (2,385) | $8.71(1,955)$ | 13.13 (2,950) |  |

(Footnotes on Page 7)

Table 3. Factored Reaction Resistances for Resolute RSI I-Joists ${ }^{(\mathrm{a}, \mathrm{b}, \mathrm{c}, \mathrm{d})}$ and Specified Compressive Strength Perpendicular to Grain for Flanges (Continued)

| Joist Series Designation | Joist Depth, mm (in.) | Intermediate Reaction ${ }^{(\mathrm{e})}$, kN (lbf) |  |  |  | End Reaction ${ }^{(f)}$, kN (lbf) |  |  |  | Specified Compressive Strength Perpendicular to Grain ( $\mathrm{f}_{\mathrm{cp}}$ ), MPa (psi) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 89 mm (3-1/2 in.) Brg. Length |  | $\begin{gathered} 140 \mathrm{~mm}(5-1 / 2 \mathrm{in} .) \mathrm{Brg} . \\ \text { Length } \end{gathered}$ |  | 38 mm (1-1/2 in.) Brg. Length |  | 102 mm (4 in.) Brg. Length |  |  |
|  |  | With Brg. Stiffeners |  | With Brg. Stiffeners |  | With Brg. Stiffeners |  | With Brg. Stiffeners |  |  |
|  |  | No | Yes | No | Yes | No | Yes | No | Yes |  |
| RSI 45 | 225 (8-7/8) | 20.15 (4,530) | 21.24 (4,775) | $20.29(4,560)$ | 21.80 (4,900) | $8.21(1,845)$ | $8.88(1,995)$ | $8.71(1,955)$ | 8.88 (1,995) | 6.5 (943) |
|  | 235 (9-1/4) | 20.29 (4,560) | 21.52 (4,840) | 20.50 (4,610) | $22.19(4,990)$ | $8.28(1,865)$ | 9.20 (2,070) | 8.99 (2,020) | 9.20 (2,070) |  |
|  | 240 | 20.33 (4,570) | 21.66 (4,870) | 20.61 (4,635) | 22.36 (5,025) | 8.32 (1,870) | 9.37 (2,105) | 9.09 (2,045) | $9.37(2,105)$ |  |
|  | 241 (9-1/2) | 20.36 (4,575) | 21.73 (4,885) | 20.64 (4,640) | 22.43 (5,045) | $8.32(1,870)$ | 9.41 (2,115) | 9.16 (2,060) | 9.41 (2,115) |  |
|  | 286 (11-1/4) | 21.03 (4,725) | 22.96 (5,160) | $21.59(4,855)$ | 24.08 (5,415) | $8.64(1,940)$ | 10.29 (2,310) | $10.64(2,390)$ | $10.88(2,445)$ |  |
|  | 300 | 21.20 (4,765) | 23.41 (5,265) | 21.87 (4,915) | 24.61 (5,530) | $8.74(1,965)$ | 10.57 (2,375) | 11.13 (2,500) | 11.34 (2,550) |  |
|  | $302{ }^{\text {(i) }}$ (11-7/8) | $21.24(4,775)$ | 23.45 (5,270) | 21.90 (4,925) | 24.68 (5,550) | $8.74(1,965)$ | 10.60 (2,385) | 11.20 (2,520) | 11.41 (2,565) |  |
|  | $356{ }^{(0)}$ (14) | 22.05 (4,955) | 25.03 (5,625) | 23.03 (5,175) | 26.71 (6,005) | 9.13 (2,050) | 11.65 (2,620) | 11.20 (2,520) | 13.16 (2,960) |  |
|  | 360 | 22.12 (4,970) | 25.13 (5,650) | 23.13 (5,200) | 26.89 (6,045) | 9.16 (2,060) | 11.72 (2,635) | 11.20 (2,520) | 13.30 (2,990) |  |
|  | 400 | 22.68 (5,100) | 26.33 (5,920) | $23.98(5,390)$ | 28.40 (6,385) | 9.44 (2,125) | 12.50 (2,810) | 11.20 (2,520) | 14.64 (3,290) |  |
|  | $406{ }^{(j)}$ (16) | 22.78 (5,120) | 26.50 (5,960) | 24.12 (5,420) | 28.64 (6,440) | 9.48 (2,130) | 12.64 (2,840) | 11.20 (2,520) | 14.85 (3,340) |  |
|  | 457 (18) | $24.22(5,445)$ | 30.08 (6,765) | 27.03 (6,075) | 32.47 (7,300) | $10.53^{(k)}(2,370)^{(k)}$ | $16.18^{(k)}(3,640)^{(k)}$ | 11.87 (2,670) | $17.94(4,035)$ |  |
|  | 508 (20) | $24.22(5,445)$ | 30.96 (6,960) | 27.03 (6,075) | 33.95 (7,630) | $10.53^{(k)}(2,370)^{(k)}$ | $17.20^{(k)}(3,865)^{(k)}$ | 11.87 (2,670) | 19.62 (4,410) |  |
|  | 559 (22) | $24.22(5,445)$ | 31.80 (7,150) | 27.03 (6,075) | $35.31(7,940)$ | $10.53^{(k)}(2,370)^{(k)}$ | $18.22^{(k)}(4,095)^{(k)}$ | 11.87 (2,670) | 21.27 (4,785) |  |
|  | 610 (24) | $24.22(5,445)$ | 32.58 (7,325) | 27.03 (6,075) | 36.58 (8,225) | $10.53^{(k)}(2,370)^{(k)}$ | $18.99{ }^{(k)}(4,270)^{(k)}$ | 11.87 (2,670) | 22.96 (5,160) |  |
| RSI 55 | 235 (9-1/4) | $23.87(5,365)$ | $25.84(5,810)$ | $24.57(5,525)$ | 26.68 (6,000) | $9.34(2,100)$ | 11.44 (2,575) | 11.16 (2,510) | $12.04(2,705)$ | 6.5 (943) |
|  | 241 (9-1/2) | 23.87 (5,365) | 26.05 (5,855) | $24.68(5,550)$ | 26.96 (6,060) | $9.37(2,105)$ | 11.58 (2,605) | 11.23 (2,525) | 12.25 (2,755) |  |
|  | 286 (11-1/4) | 23.98 (5,390) | 27.56 (6,195) | $25.31(5,690)$ | 28.86 (6,485) | 9.55 (2,145) | 12.46 (2,800) | 11.69 (2,630) | 13.87 (3,115) |  |
|  | 302 (11-7/8) | $24.01(5,400)$ | 28.08 (6,315) | $25.52(5,740)$ | 29.56 (6,645) | 9.62 (2,160) | 12.78 (2,875) | 11.87 (2,670) | 14.43 (3,245) |  |
|  | 356 (14) | 24.12 (5,420) | 29.91 (6,725) | 26.29 (5,910) | 31.87 (7,165) | 9.72 (2,185) | 13.83 (3,110) | 12.95 (2,910) | 16.36 (3,680) |  |
|  | 406 (16) | $24.22(5,445)$ | 31.63 (7,110) | 27.03 (6,075) | 34.09 (7,665) | 9.83 (2,210) | $14.81(3,330)$ | $13.94(3,135)$ | 18.15 (4,080) |  |
| RSI 65 | 302 (11-7/8) | 21.98 (4,940) | $27.10(6,095)$ | $25.77(5,795)$ | 28.50 (6,410) | $8.04(1,805)$ | 11.65 (2,620) | 10.64 (2,390) | 14.43 (3,245) | 6.90 (1,001) |
|  | 356 (14) | 21.98 (4,940) | 28.47 (6,400) | 25.77 (5,795) | 30.19 (6,785) | $8.04(1,805)$ | 12.32 (2,770) | 10.78 (2,425) | 16.36 (3,680) |  |
|  | 406 (16) | 21.98 (4,940) | 29.80 (6,700) | $25.77(5,795)$ | 31.77 (7,140) | $8.04(1,805)$ | 12.95 (2,910) | 10.92 (2,455) | 18.15 (4,080) |  |

(Footnotes on Page 7)

For Imperial: $1 \mathrm{~mm}=0.0394 \mathrm{in}$., $1 \mathrm{~N}=0.2248 \mathrm{lbf}, 1 \mathrm{MPa}=145.04 \mathrm{psi}$
(a) Reaction capacity shall be limited by the tabulated I-joist reaction capacity, flange bearing capacity or the bearing capacity of the support material, whichever is less. The flange bearing capacity is based on the specified compressive strength perpendicular to grain of the I-joist flange, the net flange width and the bearing length, and may be further limited by the bearing capacity of the support material. To calculate the net flange width, subtract 6.4 mm ( 0.25 inch) from the flange width (see Table 1 ) of the RSI 15 , RSI 25 , RSI $25 \times 4$, RSI 35, RSI 45 and RSI 55 series I-joists, or subtract 2.5 mm ( 0.10 inch ) from the flange width (see Table 1 ) of the RSI 65 series I-joists.
(b) The tabulated values are for the standard term of load duration $\left(K_{D}=1.0\right)$.
(c) Interpolation between bearing lengths is permitted.
(d) Bearing stiffeners shall be installed in accordance with the recommendations provided by the manufacturer.
(e) For all depths of 241 mm ( $9-1 / 2$ inches) and greater, the intermediate reaction with a minimum bearing length of 76 mm ( 3 inches ) shall be permitted to be determined based on the intermediate reaction values with a bearing length of $89 \mathrm{~mm}(3-1 / 2$ inches) and $140 \mathrm{~mm}(5-1 / 2$ inches).
The minimum bearing length for end reactions is 38 mm (1-1/2 inches), unless otherwise noted.
The 241 and $302-\mathrm{mm}$ RSI 15 shall be permitted to be designed as PRI-20 l-joists.
(h) The $241,302,356$, and $406-\mathrm{mm}$ RSI 25 shall be permitted to be designed as PRI-40 I-joists
(i) The $241,302,356$, and $406-\mathrm{mm}$ RSI 35 shall be permitted to be designed as PRI-60 I-joists

The 302,356 , and $406-\mathrm{mm}$ RSI 45 are recognized as PRI- 80 I-joists.
(k) Minimum bearing length is 64 mm (2-1/2 inches).

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