

DESIGN PROPERTIES FOR WIDE FLANGE JOISTS

| Joist | Joist Depth | WI Weight* (lbs/ft) | GPI Weight* (lbs/ft) | EI (10 ⁶ inch ² lbs) | Moment (ft-lbs.) | Shear (lbs.) | Allowable Reactions | | C (10 ⁶ ft-lbs/in) | APA® PRI™ |
|------------------------|-------------|---------------------|----------------------|--|------------------|--------------|---------------------|--------------------|-------------------------------|-------------|
| | | | | | | | End (lbs) | Intermediate (lbs) | | |
| 40 Series WI or GPI | 9½" | 2.6 | 2.9 | 193 | 2355 | 1120 | 1080 | 2160 | 0.412 | 9½" PRI 40 |
| | 11⅞" | 2.9 | 3.1 | 330 | 3145 | 1420 | 1200 | 2500 | 0.515 | 11⅞" PRI 40 |
| | 14" | 3.3 | 3.5 | 482 | 3860 | 1710 | 1200 | 2500 | 0.607 | 14" PRI 40 |
| 60 Series WI or GPI | 9½" | 2.8 | 2.9 | 231 | 3245 | 1120 | 1080 | 2160 | 0.412 | 9½" PRI 60 |
| | 11⅞" | 3.2 | 3.1 | 396 | 4335 | 1420 | 1200 | 2500 | 0.515 | 11⅞" PRI 60 |
| | 14" | 3.4 | 3.5 | 584 | 5320 | 1710 | 1200 | 2500 | 0.607 | 14" PRI 60 |
| 80 Series WI only | 11⅞" | 3.9 | — | 547 | 6130 | 1420 | 1280 | 2760 | 0.515 | 11⅞" PRI 80 |
| | 14" | 4.2 | — | 802 | 7525 | 1710 | 1280 | 3020 | 0.607 | 14" PRI 80 |
| | 16" | 4.5 | — | 1092 | 8845 | 1970 | 1280 | 3020 | 0.693 | 16" PRI 80 |

* Weights of joists for dead load calculations. For shipping weights contact Georgia-Pacific.

For PSF dead load calculation, use weight per lineal foot divided by o.c. spacing in feet. Ex: 14" WI 60 @ 19.2 o.c. = 3.4 ÷ 1.6 = 2.1 PSF.

NOTES:

1. Allowable moment values may be increased 7% for repetitive usage (minimum 3 joists spaced at 24" o.c. or less)
2. Allowable moment, shear, and allowable reaction values are for normal duration loading and may be increased for other load durations in accordance with code.
3. Allowable end reaction is based on a minimum bearing length of 1¾" without bearing stiffeners. For a bearing length of 4", the allowable end reaction may be set equal to the tabulated shear value. Interpolation of the end reaction between 1¾" and 4" bearing is permitted. For end reaction values over 1,550 lbs, bearing stiffeners are required.
4. Allowable intermediate reaction is based on a minimum bearing length of 3½".

WIDE FLANGE JOIST CROSS SECTIONS

$$\text{APPROXIMATE DEFLECTION}^{**} \text{ (Inches)} = \frac{22.5 \times W \times L^4}{EI} + \frac{W \times L^2}{C}$$

**Constants have been adjusted to maintain unit consistency.

- W = Uniform Load (lbs/foot)
 L = Span (feet)
 EI = Stiffness Constant
 C = Shear Deflection Constant

