



American Forest & Paper Association

American Wood Council

Engineered and Traditional Wood Products

Connection Calculator

Design Method	Allowable Stress Design (ASD)
Connection Type	Lateral loading
Fastener Type	Bolt
Loading Scenario	Single Shear - Wood Main Member

Main Member Type	Southern Pine
Main Member Thickness	9.5 in.
Main Member: Angle of Load to Grain	0
Side Member Type	Steel
Side Member Thickness	1/4 in.
Side Member: Angle of Load to Grain	0
Fastener Diameter	5/8 in.
Load Duration Factor	C _D = 1.15
Wet Service Factor	C _M = 1.0
Temperature Factor	C _t = 1.0

Connection Yield Modes

Im	10498 lbs.
Is	3908 lbs.
II	4736 lbs.
IIIm	5422 lbs.
IIIs	1445 lbs.
IV	1843 lbs.

Adjusted ASD Capacity	1445 lbs.
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- Bolt bending yield strength of 45,000 psi is assumed.
- The Adjusted ASD Capacity is only applicable for bolts with adequate end distance, edge distance and spacing per NDS chapter 11.
- ASTM A36 Steel is assumed for steel side members 1/4 in. thick, and ASTM A653 Grade 33 Steel is assumed for steel side members less than 1/4 in. thick.

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the information reflects the state-of-the-art, neither the American Forest & Paper Association nor its members assume any responsibility for any particular design prepared from this on-line Connection Calculator. Those using this on-line Connection Calculator assume all liability from its use.

The Connection Calculator was designed and created by Cameron Knudson, Michael Dodson and David Pollock at Washington State University. Support for development of the Connection Calculator was provided by [AF&PA's American Wood Council](#).