

Technical Bulletin

Permitted Axial Point Loads

This Technical Bulletin provides values of permitted axial point loads for walls built with the Insulspan[®] SIP System.

Permitted axial point load was determined from tests performed on Insulspan structural insulated panels (SIPs) without vertical structural splines. Permitted axial point load based upon concentrated loads spaced at 610 mm (2 ft) on center applied concentrically to the full thickness of an Insulspan SIP wall is 19.6 kN (4,400 lbf).

For concentrated loads spaced more than 610 mm (2 ft) on center, the individual reactions cannot be greater than 19.6 kN (4,400 lbf). For concentrated loads spaced closer than 610 mm (2 ft) on center, the equivalent uniform load resulting from the individual reactions must not be greater than 32 kN/m (2,200 plf).

NOTES:

1. Values are applicable for comparison against design loads determined per Allowable Stress Design required by the International Building Code (IBC) or Limited States Design required by the National Building Code of Canada (NBC).
2. Values are for SIPs installed with a dimensional lumber top plate recessed into the core of the panel and a 2x nominal lumber cap plate having a width equal to, or greater than, the panel thickness.
3. Values are for SIPs with a single 2x dimensional lumber bottom plate recessed into the SIP core, installed over minimum 3/4-inch thick wood structural-use panel sheathing installed over floor joists at 406 mm (16 inches) on center, perpendicular to the SIP wall. Values are also applicable to SIPs installed with a recessed 2x dimensional lumber bottom plate installed over a nominal 2x lumber sill plate having a width equal to or greater than the SIP thickness.
4. For 2 x 4 and 2 x 6 plates, use spruce-pine-fir No. 2, or better and for larger lumber sizes, use hem-fir No. 2, or better.
5. For SIP walls subject to combined wind load and axial load, **bending strength check** is performed using the unity equation where the total of design wind load over allowable or specified wind load at L/180 plus design axial load over permitted axial load must be less than one.