Load/Span Table Wind Pressure Notes.

Historically there have been differences in the design wind pressures determined through different versions of the model building codes. Older versions of the codes provided service level loads (ASD) while newer versions provide strength level loads (LRFD). Since IBC 2012/ASCE 7-10 design wind pressures have been determined via strength level (LRFD) loads. The load/span tables that follow are based on service level (ASD) wind loads. Therefore, to properly use the load/span tables in this catalog, multiply the IBC 2021/ASCE 7-16 design wind pressures by 0.6 (reference section 2.4 ASCE 7-16) prior to entering the load/span tables.

Example:

- ASCE 7-16 Calculated Design Wind Pressure = 25psf (strength level loads, LRFD)
- Convert to service level load (ASD) = 25psf x 0.6 = 15psf
- Use 15psf as the Pressure Value used in this table to determine the member span

The load/span tables that follow are based on service level (ASD) wind loads. If the wind load being used meets this criterion, it does not need to be modified prior to using the tables.

Allowable wall heights—curtain wall framing.

Exterior curtain walls must be designed to withstand the highest winds anticipated for the particular construction location. Wind pressures can be found in the project's structural drawings under the "general notes" section. Please contact technical services at 888-437-3244 for help converting wind speeds (mph) to wind loads (psf).

The tables on the following pages provide allowable height limitations for exterior curtain walls subjected to lateral transverse loads. Members shown vary in depth, flange width and steel thickness. Select the studs that are right for your application, also taking into account the acceptable deflection level.

Deflection.

L/240	Length (height) of stud, in inches, divided by 240 (exterior siding or EIFS)
L/360	Length (height) of stud, in inches, divided by 360 (exterior stucco)
L/600	Length (height) of stud, in inches, divided by 600 (exterior brick)
L/720	Length (height) of stud, in inches, divided by 720 (exterior brick)

General Notes:

1 Studs are checked for simple-span deflection and stress. Stress calculations are made for mid-span fully braced moment, end shear through the unperforated section and shear moment interaction through the perforated section 10" away from the end bearing.

2 A 1/3rd stress increase is not used.

3 Limiting heights are based on continuous lateral support of each flange over the full height of the stud.

4 Listed limiting heights are based on steel properties only.

5 For bending, studs are assumed to be adequately braced to develop full allowable moment capacity. Stud distortional buckling based on an assumed $K\phi = 0$.

6 Web crippling check based on 1-inch end bearing. Web stiffeners are required when listed limiting heights are followed by "e".

7 Members marked with an ¹ have h/t > 200, and thus require end stiffeners.

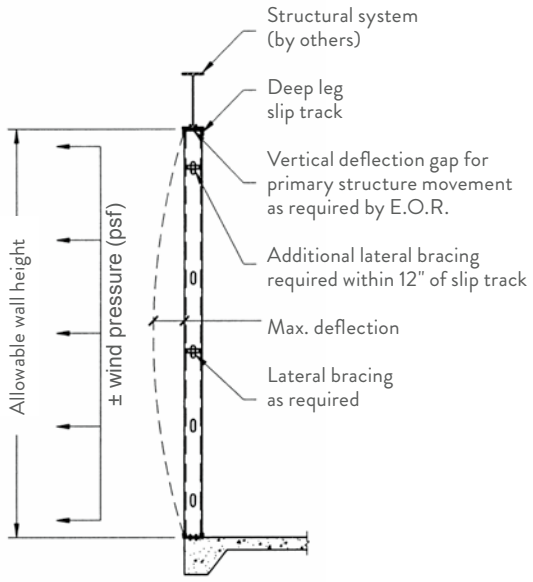
8 Capacities are calculated according to the AISI S100-16 (2020) w/S2-20. A 1-1/2" by 4" knockout spaced no closer than 24" o.c. is assumed. (3/4" for 2-1/2" studs)

9 All values are based on Fy=33ksi for 33mil and 43mil Studs, and Fy=50ksi for 54mil, 68mil and 97mil Studs.

10 For deflection calculations, 15psf and higher wind pressures have been multiplied by 0.7, in accordance with footnote "f" of IBC table 1604.3. The 5 psf pressure has not been reduced for deflection checks.

11 Lateral loads have not been modified for strength checks. Full loads are applied.

12 End reactions must be checked for web crippling separately.



Complies with AISI S100-16 (2020) w/S2-20 • IBC 2021