General - Presented in the load tables are maximum uniformly distributed specified loads.

Steel - Conforms to ASTM A653/A653M or A792/A792M. Grade 33/230; Yield stress 33 ksi/230 MPa and tensile stress 45 ksi/310 MPa. Grade 50 /345; Yield stress 50 ksi/345 MPa and tensile stress 65 ksi/450 MPa; Grade 80 /550; Yield stress 80 ksi/550 MPa and tensile stress 82 ksi/565 MPa.

Finishes - A25/ZF75, G90/Z275 or AZ50/AZM150. For heavier metallic coatings, refer to ASTM A653/A653M or A792/A792M.

Load Tables - The following information regarding the determination of the specified wind and snow loads is contained in the 2010 Edition of the National Building Code of Canada (NBCC). Importance factors are applied to both strength (ULS) and serviceability/deflection (SLS) limit state design considerations. A lower load factor for wind of 1.4, instead of 1.5 for live and snow loads, is now being used. This lower load factor for wind somewhat offsets the higher wind loads (1 in 50 year return) that are now listed in the NBCC by geographic location. The importance category of the end use of the building/structure must also be recognized, such as Normal or Low.

All of this will impact how the load tables are to be used. In an effort to help the design professional with the load tables, the information below was taken directly from Division B, Part 4 (Structural Design) of the NBCC.

Specified Wind Load

$$W = I_w \boxed{qC_eC_gC_p} \qquad [1]$$

Importance Category	Importance Factor, I_w	
	ULS	SLS
Low	***0.8***	***0.75***
Normal	***1.0***	***0.75***
High	1.15	0.75
Post-Disaster	1.25	0.75

Specified Snow Load

$$S = I_s \boxed{[S_s\,(C_b\,C_w\,C_s\,C_a) + S_r]} \qquad [2]$$

Importance Category	Importance Factor, I_w	
	ULS	SLS
Low	***0.8***	***0.9***
Normal	***1.0***	***0.9***
High	1.15	0.9
Post-Disaster	1.25	0.9

The importance factors, I_w and I_s, have been incorporated in the load tables, as well as the importance category. The parameters in the boxed-in portion of Equations [1] and [2] must be determined by the design professional in accordance with the NBCC.

Strength - The maximum uniformly distributed specified load based on strength in the load table must be equal to or greater than the ***specified live load.***

Serviceability (Deflection) - The maximum uniformly distributed specified load based on deflection in the load table must be equal to or greater than the ***specified live load.*** The effective moment of inertia for deflection determination was calculated at an assumed specified live load stress of $\boldsymbol{0.6F_y}$.

EXAMPLE (Use of Load Table)

Ultra Span Wall (Normal Importance Category)

Given: (Metric units)

(LLF = 1.4 and I_w = 0.75)
~ Deck thickness, t = 0.762 mm
~ Double span continuous, L = 2.6 m each span
~ Bearing length, N = 50 mm
~ L/240 deflection limit
~ Wind live load, LL = 1.5 kPa

The live load is the value of the boxed-in portion of the specified wind load expression [1].

Solution:

Strength "S"
1) Specified wind live load = 1.5 kPa

2) Maximum specified load (from Load Table)
   Is ***1.65 kPa***
   Since ***1.65 > 1.5 ∴ OK***

3) Check web crippling (N = 50 mm)
   a) End reaction = 0.375(1.5)2.6 = ***1.46 kN/m***
      (from section property table)
      $P_e = P_{e1} + P_{e2}$ [N/t]$^{1/2}$
      = 2.78 + 0.695[50/0.762]$^{1/2}$ = ***8.41 kN/m***
      Since ***8.41 > 1.46*** ∴ OK
   b) Interior reaction = 1.25(1.5)2.6 = ***4.88 kN/m***
      (from section property table)
      $P_i = P_{i1} + P_{i2}$ [N/t]$^{1/2}$
      = 5.29 + 0.900[50/0.762]$^{1/2}$ = ***12.6 kN/m***
      Since ***12.6 > 4.88*** ∴ OK

Deflection "D"
From table L/180 = ***3.26 kPa***
For L/240, multiply 3.26 by 180/240 = ***2.45 kPa***
Since ***2.45 > 1.5*** ∴ OK