

GeoDeck is incredibly strong. It withstands uniform loads almost 9 times higher than typical building code requirements, including safety factor, and deflection is well below ICC building code requirements.* That means whether you space your joists 12" o.c. or 16" o.c., your GeoDeck deck can withstand the heaviest of snowstorms.

**The typical uniform load building code requirement is 100 lbs./sq. ft. with a safety factor of 2.5 and ICC building code requirement for deflection should not exceed $L/180 = 0.089"$ for 16" o.c. (under 300 lbs. concentrated load – for a stringent stair tread test.)*

Traditional, S4S at 16" o.c.

TEMPERATURE 32° F

FLEXURAL STRENGTH (minimum):	2,550 psi
450,000 psi	
UNIFORM LOAD at a break point	2,680 lbs./sq. ft.*
DEFLECTION under a snow load of 500 lbs./sq. ft.:	0.046"

TEMPERATURE -20° F

FLEXURAL STRENGTH (minimum):	3,080 psi
FLEXURAL MODULUS (minimum):	623,000 psi
UNIFORM LOAD at a break point	3,230 lbs./sq. ft.
DEFLECTION under a snow load of 500 lbs./sq. ft.:	0.033"

METHODOLOGY

UNIFORM LOAD

Engineering formula for calculating the limiting uniform load at a certain flexural strength of material:

$$W = 16 \times 144 \times IS / (bhL^2)$$

W = uniform load

I = 0.800 for GeoDeck board

S = flexural strength

b = 5.5" for GeoDeck (board width)

h = 1.25" for GeoDeck (board depth)

L = span o.c. (16" o.c.).

Simplified formula for GeoDeck boards at 16" o.c.:

$$W = 1.05 \times S$$

DEFLECTION

Engineering formula for calculating deflection at a certain flexural modulus of the material:

$$D = 5xWxbL^4/(384x144xEI)$$

D = deflection (in inches)

W = uniform load

I = 0.800 for GeoDeck

E = flexural modulus

b = 5.5" for GeoDeck (board width)

L = span o.c. (16" o.c.)

Simplified formula for GeoDeck boards at 16" o.c.:

$$D = 41xW/E$$