TAYLOR METAL PRODUCTS

Long Span Series

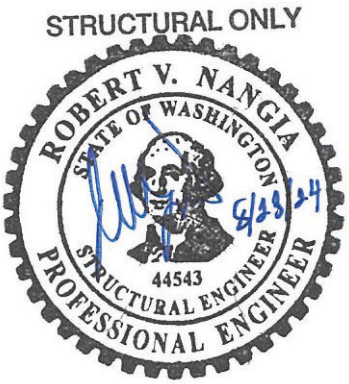
TMP 3-8-24 Roof & Wall Panel Positive-Negitive Load Charts with 3 screws

				SECTION PROPERTIES						ALLOWABLE UNIFORM LOADS, psf For various support spacings (i.e. span values)								
				Top in Compression			Bottom in Compression			Negative Load								
Width, in.	Gauge	Yield ksi	Weight psf	I_{xx} in^4/ft	$I_{xx\ (eff)}$ in^4/ft	S_{xx} in^3/ft	I_{xx} in^4/ft	$I_{xx\ (eff)}$ in^4/ft	S_{xx} in^3/ft	1'	1.5'	2'	2.5'	3'	3.5'	4'	4.5'	5'
24	24	50	1.70	0.4370	0.4310	0.1990	0.4190	0.4240	0.2240	195.0	178.8	162.5	146.3	130.0	113.8	97.5	81.3	65.0
24	22	50	2.01	0.5780	0.5710	0.2760	0.5560	0.5620	0.3190	195.0	178.8	162.5	146.3	130.0	113.8	97.5	81.3	65.0
24	20	33	2.46	0.8620	0.8330	0.4480	0.7620	0.7910	0.4620	195.0	178.8	162.5	146.3	130.0	113.8	97.5	81.3	65.0
24	18	33	3.18	1.1950	1.1580	0.6400	1.0700	1.1060	0.6830	195.0	178.8	162.5	146.3	130.0	113.8	97.5	81.3	65.0

1. Theoretical section properties for steel panels have been calculated per AISI S100 Specification for the Design of Cold-Formed Steel Structural Members.
2. $I_{xx\ (eff)}$ values are "effective" stiffness properties for positive (downward) load induced deflection determination.
3. S_{xx} values are to be used for flexural (bending) stress determination.
4. Charted Load/Span values are based on ASTM E1592-05 (2017) testing protocol.
5. Charted Load/Span values above are based on Allowable Stress Design (ASD).....Load Resistance Factor Design (LRFD) technique not recommended for charted values.
6. Charted Allowable Uniform Loads are based on the Ultimate Uniform Load (per ASTM E1592-05 testing) divided by a 2.00 Factor-of-Safety.
7. Charted Allowable Uniform Loads do not consider panel weight (Dead Load) or clip-to-substrate (structure) fastener connection strength.
8. Panel-to-substrate (structure) fastener evaluation and analysis should be performed by a licensed structural engineer.
9. Minimum recommended substrate (structure) recommendations:
   a. Open-framing (i.e. purlins) - 16 ga. (design thickness = 0.0566")
   b. Plywood/OSB - 15/32" or thicker is recommended to assure an effective degree of fastener thread engagement
   c. Metal deck - 22 ga. (design thickness = 0.0283")
10. Charted Allowable Uniform Loads cannot be increased by 1/3.
11. Tested assembly used three (3) screws per panel.

				SECTION PROPERTIES						ALLOWABLE UNIFORM LOADS, psf For various support spacings (i.e. span values)									
				Top in Compression			Bottom in Compression			Positive Load									
Width, in.	Gauge	Yield ksi	Weight psf	I_{xx} in^4/ft	$I_{xx\ (eff)}$ in^4/ft	S_{xx} in^3/ft	I_{xx} in^4/ft	$I_{xx\ (eff)}$ in^4/ft	S_{xx} in^3/ft	1'	2'	3'	4'	5'	6'	7'	8'	9'	10'
24	24	50	1.70	0.4370	0.4310	0.1990	0.4190	0.4240	0.2240	1016.4	508.2	338.8	254.1	199.0	138.2	101.5	77.7	61.4	49.8
24	22	50	2.01	0.5780	0.5710	0.2760	0.5560	0.5620	0.3190	1370.9	685.5	457.0	342.7	274.2	191.7	140.8	107.8	85.2	69.0
24	20	33	2.46	0.8620	0.8330	0.4480	0.7620	0.7910	0.4620	1293.6	646.8	431.2	323.4	258.7	207.4	152.4	116.7	92.2	74.7
24	18	33	3.18	1.1950	1.1580	0.6400	1.0700	1.1060	0.6830	2075.5	1037.7	691.8	518.9	415.1	296.3	217.7	166.7	131.7	106.7
24	0.032"	19	0.83	1.0160	1.0160	0.5632	1.0160	1.0160	0.7980	162.7	81.4	54.2	40.7	32.6	26.9	19.7	15.1	11.9	
24	0.040"	19	1.03	1.2600	1.2600	0.7290	1.2600	1.2600	0.9870	250.9	125.5	83.6	62.7	50.2	41.8	32.0	24.5	19.4	15.7
24	0.050"	19	1.28	1.5600	1.5600	0.9030	1.5600	1.5600	1.2240	382.7	191.4	127.6	95.7	76.6	63.8	49.5	37.9	29.9	24.2

1a. Theoretical section properties for steel panels have been calculated per 2020 AISI S100 Specification for the Design of Cold-Formed Steel Structural Members.
1b. Theoretical section properties for aluminum panels have been calculated per the latest edition of the Aluminum Association Design Manual.
2. $I_{xx\ (eff)}$ values are "effective" stiffness properties for positive (downward) load induced deflection determination.
3. Allowable load is calculated in accordance with 2020 AISI S100 specifications considering bending, shear, combined bending and shear and deflection. Allowable load considers a 3 or more equal span condition.
4. S_{xx} values are to be used for flexural (bending) stress determination.
5. Allowable load does not address panel weight, fasteners, connection strength or support material.
6. Allowable load includes web crippling.
7. Load/Span values are based on theoretical computations and not load testing.
8. Deflection is not considered.
9. Allowable loads do not include a 1/3 stress increase for wind.
10. When panels are installed over solid or closely fitted sheathing, the capacity is limited to the capacity of the underlying sheathing.



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