

Section Properties:		36" wide, Central States Manufacturing Panel Loc Plus						
Thickness	Aluminum	Yield	Top in Compression			Bottom in Compression		
in.	Alloy	Stress	(Positive Bending)			(Negative Bending)		
		ksi	I_{xx}	S_{xx}	M_a	I_{xx}	S_{xx}	M_a
			in ⁴ /ft	in ³ /ft	in.kips/ft	in ⁴ /ft	in ³ /ft	in.kips/ft
0.0170	3105-H24	23.0	0.0109	0.0593	0.2260	0.0109	0.0566	0.2030

Notes on Section Properties and Load Table:

- * Section properties and allowables are calculated in accordance with 2005 Aluminum Design Manual.
- * I +/- is for deflection determination & M_a is allowable bending moment.
- * All values are for one foot of panel width.
- * These loads are for panel strength. Frames, purlins, fasteners and all supports must be designed to resist all loads imposed on the panel.
- * Allowable outward loads based on stress have not been increased by 33.33 % for wind uplift.
- * Allowable loads for deflection are based on deflection limitation of span/180 or span/240.
- * For roof panels, self weight of the panel has to be deducted from the allowable inward load to arrive at the actual 'live load' carrying capacity of the panel.
- * Minimum bearing length must be checked.

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THEORETICAL ALLOWABLE LIVE AND WIND LOADS

36" wide, Central States Manufacturing Panel Loc Plus				
0.017" thick 3105-H24 Aluminum				
Single Span Condition				
SPAN	LL (S)	LL (D) L/180	LL (D) L/240	WL
(ft)	(psf)	(psf)	(psf)	(psf)
1	150.7	150.7	150.7	135.3
1.25	96.4	96.4	96.4	86.6
1.5	67.0	67.0	67.0	60.1
1.75	49.2	49.2	45.2	44.2
2	37.7	37.7	30.3	33.8
2.25	29.8	28.4	21.3	26.7
2.5	24.1	20.7	15.5	21.7
3	16.7	12.0	9.0	15.0
Two Span Condition				
0.017" thick 3105-H24 Aluminum				
SPAN	LL (S)	LL (D) L/180	LL (D) L/240	WL
(ft)	(psf)	(psf)	(psf)	(psf)
1	135.3	135.3	135.3	150.7
1.25	86.6	86.6	86.6	96.4
1.5	60.1	60.1	60.1	67.0
1.75	44.2	44.2	44.2	49.2
2	33.8	33.8	33.8	37.7
2.25	26.7	26.7	26.7	29.8
2.5	21.7	21.7	20.2	24.1
3	15.0	15.0	11.7	16.7
Three or More Span Condition				
0.017" thick 3105-H24 Aluminum				
SPAN	LL (S)	LL (D) L/180	LL (D) L/240	WL
(ft)	(psf)	(psf)	(psf)	(psf)
1	158.1	158.1	158.1	176.0
1.25	101.2	101.2	101.2	112.6
1.5	70.3	70.3	70.3	78.2
1.75	51.6	51.6	51.6	57.5
2	39.5	39.5	39.5	44.0
2.25	31.2	31.2	31.2	34.8
2.5	25.3	25.3	25.3	28.2
3	17.6	17.6	16.9	19.6

Notes:

- * Theoretical allowable loads are based on uniform span lengths.
- * LL (S) is allowable live load based on stress limitation
- * LL (D) is allowable live load based on deflection limitation of L/180 or L/240
- * WL is allowable wind load and has not been increased by 33-1/3%.

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