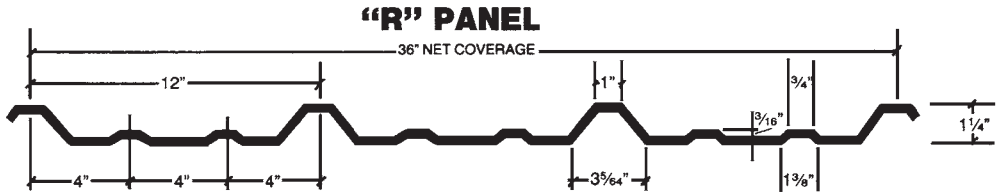


PANEL GAGE	F_y (KSI)	WEIGHT (PSF)	SECTION PROPERTIES: TOP FLAT IN COMPRESSION I_x (in.⁴/ft.)	S_x (in.³/ft.)	M_a (in.-Kips)	BOTTOM FLAT IN COMPRESSION I_x (in.⁴/ft.)	S_x (in.³/ft.)	M_a (in.-Kips)
29	80.0	0.75	0.0286	0.0255	0.9161	0.0276	0.0333	1.1973
26	80.0	0.94	0.0423	0.0388	1.3928	0.0390	0.0437	1.5698
24	50.0	1.14	0.0542	0.0518	1.5500	0.0517	0.0544	1.6296
22	50.0	1.44	0.0696	0.0704	2.1084	0.0454	0.0610	1.8253

NOTES

1. All calculations for the properties of panels are calculated in accordance with the 1986 edition of *Specifications for the Design of Light Gauge Cold Formed Steel Structural Members* - published by the American Iron and Steel Institute (A.I.S.I.).
2. I_x is for deflection determination.
3. S_x is for bending.
4. M_a is allowable bending moment.
5. All values are for one foot of panel width.

ALLOWABLE UNIFORM LIVE LOADS IN POUNDS PER SQUARE FOOT

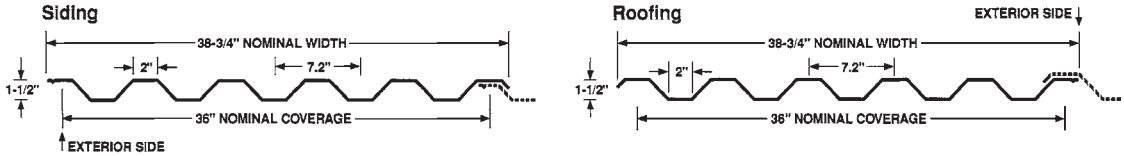
SPAN TYPE	LOAD TYPE	29 Gage (F_y = 80 KSI) SPAN IN FEET 4.0	5.0	6.0	7.0	8.0	26 Gage (F_y = 80 KSI) SPAN IN FEET 4.0	5.0	6.0	7.0	8.0
2-SPAN	POSITIVE WIND LOAD	51	33	22	17	13	78	50	34	26	19
	LIVE LOAD/DEFLECTION	43	22	13	8	6	63	32	18	12	8
3 OR MORE	POSITIVE WIND LOAD	64	41	28	21	16	97	62	43	32	24
	LIVE LOAD/DEFLECTION	54	28	16	10	7	79	40	23	15	10

SPAN TYPE	LOAD TYPE	24 Gage (F_y = 50 KSI) SPAN IN FEET 4.0	5.0	6.0	7.0	8.0	22 Gage (F_y = 50 KSI) SPAN IN FEET 4.0	5.0	6.0	7.0	8.0
2-SPAN	POSITIVE WIND LOAD	86	55	38	28	22	117	75	52	38	30
	LIVE LOAD/DEFLECTION	68	42	24	15	10	76	46	26	17	11
3 OR MORE	POSITIVE WIND LOAD	108	69	48	35	27	146	94	65	48	37
	LIVE LOAD/DEFLECTION	85	52	30	19	13	95	57	33	21	14

NOTES

1. Allowable loads are based on uniform span lengths and F_y of 80 KSI for 29 and 26 gage and F_y of 50 KSI for 24 and 22 gage.
2. Live load is allowable live load.
3. Wind load is allowable wind load and has been increased by 33⅓%.
4. Deflection loads are limited by a maximum deflection ratio of L/240 of span or maximum bending stress from live load.
5. Weight of the panel has not been deducted from allowable loads.
6. Load table values do not include web crippling requirements.
7. Minimum bearing length of 1½″ required.

FIGURE 6.4 R panel by MBCI. (*MBCI.*)



SMITH STEELITE STYLE-RIB SIDING AND ROOFING MAXIMUM SPANS

Live Load			20 PSF (98 kg/m²)		30 PSF (146 kg/m²)		40 PSF (195 kg/m²)	
Gage/Weight	Defl.	Span	Wall	Roof	Wall	Roof	Wall	Roof
GALV. STEEL **18 Gage** (0.047") 2.49 lbs./ft²	L/120	SS	11'-4" (3.45 m)	11'-3" (3.43 m)	9'-10" (3.00 m)	9'-10" (3.00 m)	9'-0" (2.74 m)	8'-11" (2.71 m)
		DS	15-2 (4.62)	14-0 (4.27)	13-1 (3.98)	11-5 (3.48)	11-4 (3.45)	9-11 (3.02)
		TS	13-11 (4.24)	13-11 (4.24)	12-2 (3.71)	12-2 (3.71)	11-1 (3.38)	11-0 (3.35)
	L/180	SS	9-10 (3.00)	9-10 (3.00)	8-7 (2.62)	8-7 (2.62)	7-10 (2.39)	7-10 (2.39)
		DS	13-3 (4.04)	13-2 (4.01)	11-7 (3.53)	11-5 (3.48)	10-6 (3.20)	9-11 (3.02)
		TS	12-2 (3.71)	12-2 (3.71)	10-8 (3.25)	10-7 (3.22)	9-8 (2.94)	7-10 (2.39)
GALV. STEEL **20 Gage** (0.036") 1.87 lbs./ft²	L/120	SS	10-3 (3.12)	10-2 (3.10)	9-0 (2.74)	8-11 (2.72)	8-2 (2.49)	8-1 (2.46)
		DS	13-5 (4.09)	11-7 (3.53)	10-11 (3.33)	9-6 (2.90)	9-6 (2.90)	8-2 (2.49)
		TS	12-8 (3.86)	12-7 (3.83)	11-1 (3.38)	10-7 (3.22)	10-1 (3.07)	9-2 (2.79)
	L/180	SS	9-0 (2.74)	8-11 (2.72)	7-10 (2.39)	7-9 (2.36)	7-1 (2.16)	7-1 (2.16)
		DS	12-0 (3.66)	11-7 (3.53)	10-6 (3.20)	9-6 (2.90)	9-6 (2.90)	8-2 (2.49)
		TS	11-1 (3.38)	11-0 (3.35)	9-8 (2.95)	9-7 (2.92)	8-9 (2.67)	8-9 (2.67)
GALV. STEEL **22 Gage** (0.030") 1.56 lbs./ft²	L/120	SS	9-7 (2.92)	9-7 (2.92)	8-5 (2.56)	8-4 (2.54)	7-7 (2.31)	7-5 (2.26)
		DS	11-10 (3.61)	10-3 (3.12)	9-8 (2.94)	8-5 (2.56)	8-4 (2.54)	7-3 (2.21)
		TS	11-10 (3.61)	11-6 (3.51)	10-4 (3.15)	9-5 (2.87)	9-4 (2.84)	8-1 (2.46)
	L/180	SS	8-5 (2.56)	8-4 (2.54)	7-4 (2.23)	7-3 (2.21)	6-8 (2.03)	6-7 (2.00)
		DS	11-3 (3.43)	10-3 (3.12)	9-8 (2.94)	8-5 (2.56)	8-4 (2.54)	7-3 (2.21)
		TS	10-4 (3.15)	10-4 (3.15)	9-1 (2.77)	9-0 (2.74)	8-3 (2.51)	8-1 (2.46)
GALV. STEEL **24 Gage** (0.024") 1.24 lbs./ft²	L/120	SS	8-10 (2.69)	8-9 (2.67)	7-8 (2.33)	7-4 (2.23)	7-0 (2.13)	6-4 (1.93)
		DS	10-2 (3.10)	8-10 (2.69)	8-4 (2.54)	7-2 (2.18)	7-2 (2.18)	6-3 (1.91)
		TS	10-10 (3.30)	9-10 (3.00)	9-4 (2.84)	8-1 (2.46)	8-1 (2.46)	7-0 (2.13)
	L/180	SS	7-8 (2.33)	7-8 (2.33)	6-9 (2.06)	6-8 (2.03)	6-1 (1.85)	6-1 (1.85)
		DS	10-2 (3.10)	8-10 (2.69)	8-4 (2.54)	7-2 (2.18)	7-2 (2.18)	6-3 (1.90)
		TS	9-6 (2.89)	9-6 (2.90)	8-3 (2.51)	8-1 (2.46)	7-6 (2.29)	7-0 (2.13)

All above weights are per net square foot.
Loads and spans for carbon steel are based on AISI Cold-Formed Steel Design Manual.
The above span tables are in accordance with the 1986 Light Steel Code with material having a yield strength of 33,000 psi (2320 kg/cm²), one-third extra strength for wind loads only.
Roof spans are for positive loading. Wall spans are for positive or negative loading.
Minimum sheet length: 2'-0" (.61m). Maximum sheet length: 40'-0" (12.19 m). Consult Smith Steelite for sheet lengths less than 2'-0" (.61 m) or greater than 40'-0" (12.19 m).
Length tolerance: maximum variation ±1/2" (12.7 mm).
Roof spans do not include dead weight of panels.

FIGURE 6.5 Style-Rib siding and roofing. (*Centria.*)

6.4.3 Fasteners

As already noted, through-fastened roofing is typically attached to purlins by self-tapping or self-drilling screws, with some manufacturers using lock rivets or proprietary fasteners (Fig. 6.7). Self-drilling screws, true to name, can be driven directly through the panels and purlins, while self-tapping screws require that pilot holes be drilled first. For the #14 self-tapping screws of Fig. 6.7, the manufacturer recommends drilling $^1/_4$-in pilot holes in the top sheet and smaller holes ($^1/_8$ in for panel-to-panel attachment) in the bottom sheet. The fastener thread is engaged only in the bottom element, and tightening the screw draws the two panels together.[13] Hex-head self-drilling screws, because of their faster installation, have largely displaced self-tapping screws in metal-to-metal attachments, but self-tapping screws are more popular in metal-to-wood connections.[14]

The size and spacing of the fasteners, usually established by the manufacturer, depends on the forces they are designed to resist. The fastener spacing may be closer in the roof areas subjected to high wind loading (as illustrated in Chap. 3) than in the field of the roof. If the building owner contemplates obtaining property insurance with a member from Factory Mutual Systems, closer fastener spacing (and sometimes stronger roofing design) may be needed.