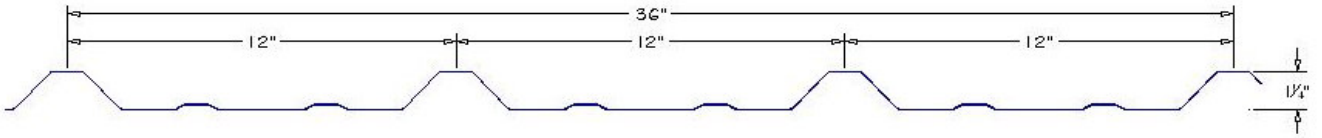
FORMA STEEL

FR ROOF PANEL



SECTION PROPERTIES (PER FOOT OF WIDTH)

	Base Steel Thickness (in.)	Weight G90 (psf)	Yield Stress (ksi)	Sec. Modulus Midspan (in^3)	Sec. Modulus Support (in^3)	Deflection Moment of Inertia (in^4)	Specified Web Crippling Data P_{e1} End (lb)	P_{e2} End (lb)	P_{i1} Interior (lb)	P_{i2} Interior (lb)
IMPERIAL	0.0135	0.711	80	0.0262	0.0212	0.0296	21.9	5.47	42.6	7.24
	0.0180	0.929	80	0.0375	0.0313	0.0415	41.6	10.4	80.6	13.7

Live load factor = 1.5; Importance factor = 0.90; Importance Category = 1.0

MAXIMUM UNIFORMLY DISTRIBUTED SPECIFIED LOADS (PSF)

SPAN LENGTH (in.)		1-SPAN BASE STEEL THICKNESS (inches)					2-SPAN BASE STEEL THICKNESS (inches)					3-SPAN BASE STEEL THICKNESS (inches)				
		0.0135	0.0180				0.0135	0.0180				0.0135	0.0180			
18	S	279	400				226	334				282	417			
	D	851	1191				2043	2859				1609	2252			
24	S	157	225				127	188				159	235			
	D	359	503				862	1206				679	950			
30	S	100	144				81	120				102	150			
	D	184	257				441	618				348	486			
36	S	70	100				56	83				71	104			
	D	106	149				255	357				201	281			
42	S	51	73				41	61				52	77			
	D	67	94				161	225				127	177			
48	S	39	56				32	47				40	59			
	D	45	63				108	151				85	119			
54	S	31	44				25	37				31	46			
	D	32	44				76	106				60	83			
60	S	25	36				20	30				25	38			
	D	23	32				55	77				43	61			
66	S	21	30				17	25				21	31			
	D	17	24				41	58				33	46			
72	S	17	25				14	21				18	26			
	D	13	19				32	45				25	35			

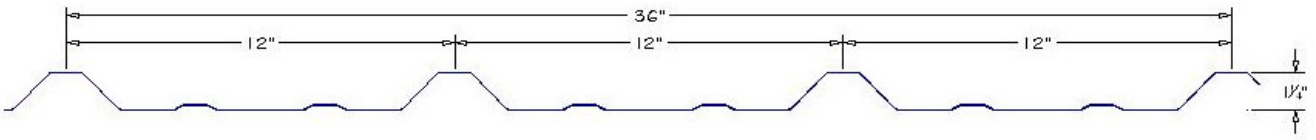
Notes:

1 Based on ASTM A 653 structural steel.
2 Values in row "S" are based on strength.
3 All values in row "D", based on deflection of 1/180th span, are controlled by strength "S".
4 Web crippling not included in strength calculations. See Example.
Limit States Design principles were used in accordance with CSA Standard S136-07

CSSBI

FORMA STEEL

FR ROOF PANEL



SECTION PROPERTIES (PER METRE OF WIDTH)

METRIC	Base Steel Thickness (mm)	Mass Z275 (kg/m^2)	Yield Stress (MPa)	Sec. Modulus Midspan ($x10^3$ mm^3)	Sec. Modulus Support ($x10^3$ mm^3)	Deflection Moment of Inertia ($x10^6 mm^4$)	Specified Web Crippling Data P_{e1} End (kN)	P_{e2} End (kN)	P_{i1} Interior (kN)	P_{i2} Interior (kN)
	0.343	3.47	550	1.41	1.14	0.0405	0.317	0.079	0.616	0.105
	0.457	4.54	550	2.02	1.69	0.0567	0.602	0.150	1.17	0.198

Live load factor = 1.5; Importance factor = 0.90; Importance Category = 1.0

MAXIMUM UNIFORMLY DISTRIBUTED SPECIFIED LOADS (kPa)

SPAN LENGTH (mm)		1-SPAN BASE STEEL THICKNESS (mm)					2-SPAN BASE STEEL THICKNESS (mm)					3-SPAN BASE STEEL THICKNESS (mm)				
		0.343	0.457				0.343	0.457				0.343	0.457			
400	S	17.3	24.8				13.9	20.7				15.8	25.9			
	D	60.9	85.2				146	205				115	161			
500	S	11.1	15.9				8.97	13.3				11.2	16.6			
	D	31.2	43.6				74.9	105				59.0	82.5			
600	S	7.70	11.0				6.23	9.21				7.79	11.5			
	D	18.1	25.3				43.3	60.6				34.1	47.7			
800	S	4.33	6.20				3.50	5.18				4.38	6.48			
	D	7.61	10.7				18.3	25.6				14.4	20.1			
1000	S	2.77	3.97				2.24	3.32				2.80	4.14			
	D	3.90	5.45				9.36	13.1				7.37	10.3			
1200	S	1.92	2.76				1.56	2.30				1.95	2.88			
	D	2.26	3.16				5.41	7.58				4.26	5.97			
1400	S	1.41	2.02				1.14	1.69				1.43	2.11			
	D	1.42	1.99				3.41	4.77				2.69	3.76			
1500	S	1.23	1.76				1.00	1.47				1.25	1.84			
	D	1.16	1.62				2.77	3.88				2.18	3.05			
1600	S	1.08	1.55				0.88	1.30				1.09	1.62			
	D	0.95	1.33				2.28	3.20				1.80	2.52			
1800	S	0.86	1.22				0.69	1.02				0.87	1.28			
	D	0.67	0.94				1.60	2.24				1.26	1.77			
2000	S		0.99				0.56	0.83				0.70	1.04			
	D		0.68				1.17	1.64				0.92	1.29			

Notes:

1. Based on ASTM A 653M structural steel.
2. Values in row "S" are based on strength.
3. All values in row "D", based on deflection of 1/180th span, are controlled by strength "S".
4. Web crippling not included in strength calculations. See Example.

Limit States Design principles were used in accordance with CSA Standard S136-07

CSSBI

FORMA STEEL Ltd.

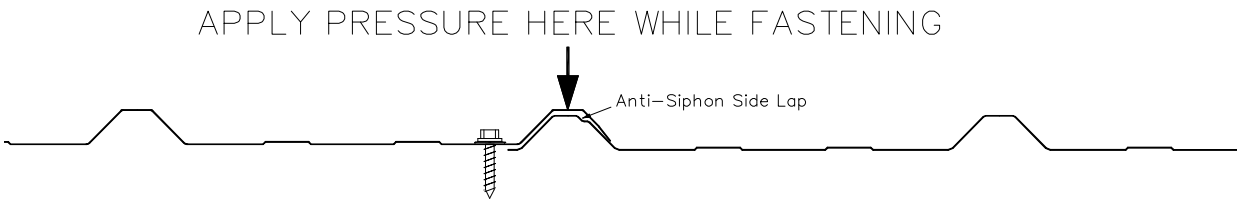
Box 1690, Fort Macleod, Alberta T0L-0Z0
Fax (403) 553-3896 Ph. (403) 553-3309

COMPLETE LINE OF STEEL SIDING AND ROOFING

FR Panel - INSTALLATION INSTRUCTIONS

FR panel metal sheeting profiles may be installed horizontally or vertically on building walls and /or roof. Special attention must be given as to how the sheets are overlapped, as seen in diagram A. First overlap the panels covering the anti siphon side lap. Next while applying pressure, fasten the overlapping side. Fasten the remainder of the sheet towards the under lap side. When the correct pressure is used, all the joints will be inconspicuous and water tight.

SIDE OVERLAP DETAIL A:



With roof and wall applications, start installing at the end of the building opposite to the direction of the prevailing wind. With horizontal wall applications, start installing the panels at ground level and work up. For maximum girt spacing for walls and roofs refer to product load tables. The minimum slope to which the FR profile steel should be applied is 1.5/12.

FR profile sheets should be no longer than 25' to minimize the effect of metal expansion and contraction. This length is also easier to handle during installation. In situations where longer lengths are required, the ends will be overlapped. On roofs, the distance of end overlap varies with the amount of slope. When the slope is from 2"-2.5" an end overlap of 12" is required, a 2.5"-4" slope requires a 9" overlap, and a 4" slope requires a 6" overlap.

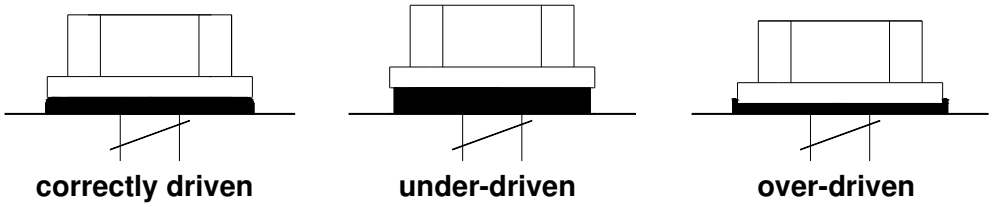
To further moisture proof the building, a recommended sealing tape or caulking may be installed on all overlapping edges. Side edge overlaps should be caulked at the top of the rib, while end overlaps should be caulked at the ends of both the top and bottom sheet.

FASTENERS:

Screw fasteners of 1" to 2" length are placed beside every high rib on the width of the sheet and at each grid or purlin as per diagram B on the reverse side of this sheet. To estimate the quantity of screw fasteners required, estimate 1 screw per square foot of cladding. Screws should be installed to firmly hold the cladding, but must not be overdriven as this will cause the washers to squeeze out or dent the cladding. Panels should always be fastened to a rigid backing, not onto a backing of old shingles or insulation for example.

DETAIL B:
FORMA FR PANEL

Proper Installation of Fasteners



CUTTING:
Because the underside is flatter, it is recommended that roofing and siding be cut from this side. A power saw, nibbler, snips or profile shear may be used. Be sure to clean metal filings from off the panels to prevent unsightly stains.

STORAGE INSTRUCTIONS:
If the panels are not going to be used immediately, they should be stored in a dry well ventilated area. If it is not possible to store the material inside, block up the panels to allow air movement around the packages. Also raise one side of the bundles to ensure positive draining, and use a good quality cover (other than plastic) anchored loosely to protect the material and still allow ventilation. Store away from aggressive substances, and any other materials that could contaminate the surface of the panels.

APPLICATION PRECAUTIONS:
Metal installed with screw fasteners should be fastened onto a solid backing. Avoid installing directly over green, damp or ACQ lumber, porous insulation or other damaging materials. The use of a moisture barrier (such as Ice & Water Shield) is recommended in such situations. Strong chemicals, fertilizers, manure, some soils, and lime may cause premature deterioration. An installation near such materials is not recommended.

WARNING:
Material is slippery and has sharp edges, use extreme caution when handling or installing. Avoid working with sheet metal products on windy days. In some areas, snow stops may need to be added to prevent snow or ice, from sliding off roofs, damaging eaves troughs or falling on objects below.