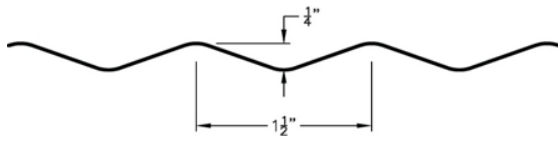
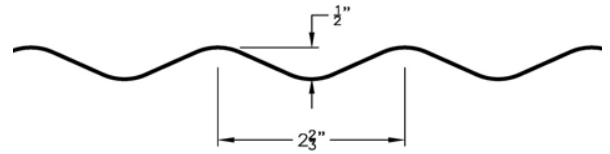


EFFECTIVE SECTION PROPERTIES FOR CORRUGATED METAL PIPE



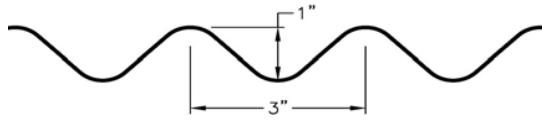
Steel CSP 1½" x ¼" Corrugation

Gage	T (in)	A (in ² /ft)	I (in ⁴ /in)	r (in)	FF _{max} (in/kip)
18	0.052	0.608	0.000344	0.0824	43
16	0.064	0.761	0.000439	0.0832	43



Steel CSP 2¾" x ½" Corrugation

Gage	T (in)	A (in ² /ft)	I (in ⁴ /in)	r (in)	FF _{max} (in/kip)
16	0.064	0.775	0.001892	0.1712	43
14	0.079	0.968	0.002392	0.1721	43
12	0.109	1.356	0.003425	0.1741	43
10	0.138	1.744	0.004533	0.1766	43
8	0.168	2.133	0.005725	0.1795	43



Steel CSP 3" x 1" Corrugation

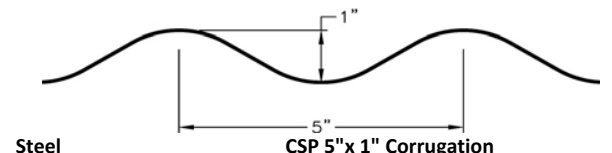
Gage	T (in)	A (in ² /ft)	I (in ⁴ /in)	r (in)	FF _{max} (in/kip)
16	0.064	0.890	0.008659	0.3417	33
14	0.079	1.113	0.010883	0.3427	33
12	0.109	1.560	0.015459	0.3448	33
10	0.138	2.008	0.020183	0.3472	33
8	0.168	2.458	0.025091	0.3499	33

Aluminum CAAP 2¾" x ½" Corrugation

Gage	T (in)	A (in ² /ft)	I (in ⁴ /in)	r (in)	FF _{max} (in/kip)
16	0.060	0.775	0.001892	0.1712	31
14	0.075	0.968	0.002392	0.1721	61
12	0.105	1.356	0.003425	0.1741	92
10	0.135	1.745	0.004533	0.1766	92
8	0.164	2.130	0.005725	0.1795	92

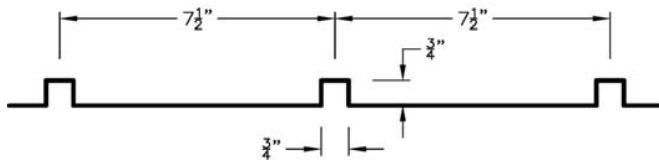
Aluminum CAAP 3" x 1" Corrugation

Gage	T (in)	A (in ² /ft)	I (in ⁴ /in)	r (in)	FF _{max} (in/kip)
16	0.064	0.890	0.008659	0.3417	60
14	0.079	1.118	0.010883	0.3427	60
12	0.109	1.560	0.015459	0.3448	60
10	0.138	2.088	0.020183	0.3472	60
8	0.168	2.458	0.025091	0.3499	60



Steel CSP 5" x 1" Corrugation

Gage	T (in)	A (in ² /ft)	I (in ⁴ /in)	r (in)	FF _{max} (in/kip)
16	0.064	0.794	0.008850	0.3657	33
14	0.079	0.992	0.011092	0.3663	33
12	0.109	1.390	0.015650	0.3677	33
10	0.138	1.788	0.020317	0.3693	33
8	0.168	2.186	0.025092	0.3711	33



Steel CSP ¾" x ¾" x 7½" Corrugation (Spiral Rib)

Gage	T (in)	A (in ² /ft)	I (in ⁴ /in)	r (in)	FF _{max, E} (in/kip)	FF _{max, T} (in/kip)
16	0.064	0.509	0.002821	0.2580	30.66	37.16
14	0.079	0.712	0.003701	0.2500	33.57	40.68
12	0.109	1.184	0.005537	0.2370	38.39	46.53
10	0.138	1.717	0.007433	0.2280	42.35	51.33

Aluminum CAAP ¾" x ¾" x 7½" Corrugation (Spiral Rib)

Gage	T (in)	A (in ² /ft)	I (in ⁴ /in)	r (in)	FF _{max, E} (in/kip)	FF _{max, T} (in/kip)
16	0.060	0.415	0.002558	0.2720	46.50	57.44
14	0.075	0.569	0.003372	0.2670	50.98	62.98
12	0.105	0.914	0.005073	0.2580	58.42	72.17
10	0.135	1.290	0.006826	0.2520	64.50	79.67

Corrugation Section Properties

T = metal thickness

A = wall area

I = moment of inertia

r = radius of gyration

E = modulus of elasticity (steel 29,000 ksi, alum 10,000 ksi)

F_y = minimum yield stress (steel 33 ksi, alum 20 ksi)

Flexibility Factor (FF)

Minimum pipe stiffness requirements for practical handling and installation without undue care or bracing have been established through experience and formulated. The resultant flexibility factor (S²/EI) limits the size of each combination of corrugation and metal thickness. Higher values can be used with special care or where experience has so proved. ASTM and AASHTO publish different values for Spiral Rib in embankment and trench installations.