



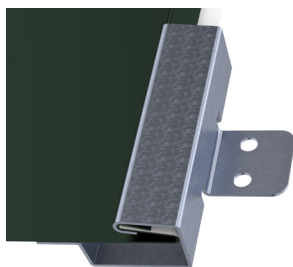
ICC
EVALUATION
SERVICE®

ICC-ES EVALUATION REPORT #5045 with CBC-CRC Supplement (Coming soon)

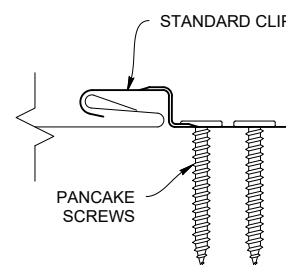
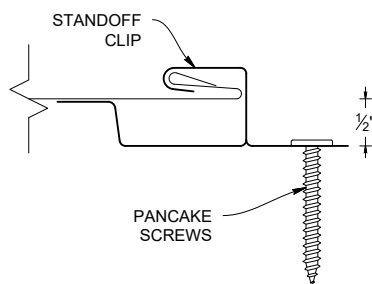
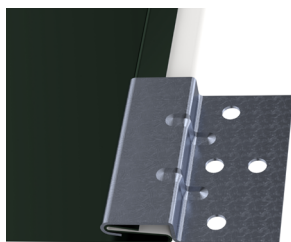


PANEL ATTACHMENT CLIP

STANDOFF CLIP



STANDARD CLIP



KEY FEATURES

- Manufactured in Salem, OR, Sacramento, CA, and Riverside, CA
- 12" panel coverage
- 24 Tru-Gauge™ steel and .032" aluminum are standard and attached with high-performance concealed clips (some profiles *may* be available with an integrated screw flange -- *please inquire*)
- Screw flange is not available in heavier gauges:
 - 22 Tru-Gauge™ steel and .040" aluminum
 - Custom 20 & 18 Tru-Gauge™ steel and .050" & .063" aluminum
- Aluminum recommended within 1000 ft of salt water (*not required*)
- 3' to 32'9" panel lengths (*Inquire for longer or shorter lengths*)
- Custom profiles available
- Vertical or horizontal wall application
- Acceptable for use as a soffit panel
- Interchangeable panel widths and configurations
- Perforated options available (*please inquire*)

TESTING

-  ICC-ESR #5045 with CBC-CRC Supplement (Coming soon)
- ASTM A653/A924 - G-90 Galvanized
- ASTM A792 - ZINCALUME®/Galvalume® AZ-50/55
- ASTM B209 - Aluminum Substrate
- ASTM D6578 - Anti-Graffiti
- ASTM E283 - Air infiltration (wall)
- ASTM E331 - Water infiltration (wall)
- ASTM E1592 - Negative structural uniform static air pressure
- ASTM E1646 - Water infiltration (roof)
- ASTM E1680 - Air infiltration (roof)

WEIGHT CHART

Cascade 2	WIDTH	24 GA STEEL	22 GA STEEL	.032" ALUM	.040" ALUM
THICKNESS		0.0236"	0.0285"	0.032"	0.040"
WEIGHT/LINFT	12"	1.459 LBS	1.702 LBS	0.691 LBS	0.835 LBS
WEIGHT/LSQFT	12"	1.459 LBS	1.702 LBS	0.691 LBS	0.835 LBS

ASTM E 1680/E283 Air Penetration	ASTM E 1646/E331 Water Penetration
12 PSF<0.01 CFM/ft²-PASS	20.5 PSF - Pass
STRUCTURAL TESTING ASTM E 1592	

NEGATIVE LOAD CHART WITH CLIP ATTACHMENT

				SECTION PROPERTIES						ALLOWABLE UNIFORM LOADS, psf For various clip spacings (i.e. span values)								
Width, in.	Gauge	Yield ksi	Weight psf	Top in Compression			Bottom in Compression			Negative Load								
				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'
12	24	50	1.42	0.0677	0.0661	0.0637	0.0621	0.0637	0.0767	140.0	125.6	111.3	96.9	82.5	68.1	53.8	39.4	25.0
12	22	50	1.70	0.0850	0.0832	0.0795	0.0789	0.0807	0.0934	140.0	125.6	111.3	96.9	82.5	68.1	53.8	39.4	25.0
12	20	33	2.07	0.1209	0.1171	0.1190	0.1078	0.1116	0.1208	140.0	125.3	110.6	95.9	81.3	66.6	51.9	37.2	22.5
12	18	33	2.68	0.1710	0.1649	0.1730	0.1500	0.1561	0.1616	140.0	125.3	110.6	95.9	81.3	66.6	51.9	37.2	22.5
12	0.032"	19	0.63	0.1190	0.1190	0.1243	0.1190	0.1190	0.2380	110.0	98.1	86.3	74.4	62.5	50.6	38.8	26.9	15.0
12	0.040"	19	0.78	0.1490	0.1490	0.1541	0.1490	0.1490	0.2931	110.0	98.1	86.3	74.4	62.5	50.6	38.8	26.9	15.0
12	0.050"	19	0.99	0.1850	0.1850	0.1906	0.1850	0.1850	0.3592	145.0	128.4	111.9	95.3	78.8	62.2	45.6	29.1	12.5

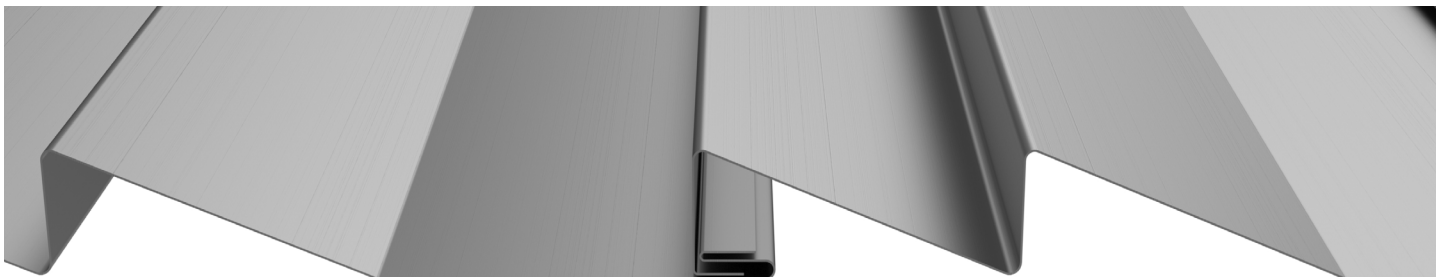
- Theoretical section properties for steel panels have been calculated per AISI S100 specification for the design of cold-formed steel structural members.
- Charted Load/Span values are based on ASTM E1592-05 (2017) testing protocol.
- Allowable uniform loads are based on the ultimate uniform load (per ASTM E1592-05 testing) divided by a 2.00 factor-of-safety.
- Allowable uniform loads do not consider panel weight (dead load) or clip-to-substrate (structure) fastener connection strength.
- Deflection limit consideration for positive (downward) loading is limited to a deflection ratio of L/180 of the span..where "L" is the span.
- Allowable uniform loads cannot be increased by 1/3.
- Minimum recommended substrate (structure) recommendations:
 - Open-framing (i.e. grits) - 16GA. (design thickness = 0.0566")
 - Plywood/OSB - 15/32" or thicker is recommended to assure an effective degree of fastener thread engagement.
 - Metal deck - 22GA. (design thickness = 0.0283")

POSITIVE LOAD CHART WITH CLIP ATTACHMENT

				SECTION PROPERTIES						ALLOWABLE UNIFORM LOADS, psf For various clip spacings (i.e. span values)									
Width, in.	Gauge	Yield ksi	Weight psf	Top in Compression			Bottom in Compression			Positive Load									
				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'
12	24	50	1.42	0.0677	0.0661	0.0637	0.0621	0.0637	0.0767	434.6	217.3	144.9	99.5	63.7	44.2	32.5	24.9	19.7	15.9
12	22	50	1.70	0.0850	0.0832	0.0795	0.0789	0.0807	0.0934	639.4	318.2	212.1	124.2	79.5	55.2	40.6	31.1	24.5	19.9
12	20	33	2.07	0.1209	0.1171	0.1190	0.1078	0.1116	0.1208	650.9	325.5	217.0	124.0	79.3	55.1	40.5	31.0	24.5	19.8
12	18	33	2.68	0.1710	0.1649	0.1730	0.1500	0.1561	0.1616	1141.8	570.9	320.4	180.2	115.3	80.1	58.8	45.1	35.6	28.8
12	0.032"	19	0.63	0.1190	0.1190	0.1243	0.1190	0.1190	0.2380	89.1	44.6	25.7	14.4						
12	0.040"	19	0.78	0.1490	0.1490	0.1541	0.1490	0.1490	0.2931	139.1	69.6	39.5	22.2	14.2					
12	0.050"	19	0.99	0.1850	0.1850	0.1906	0.1850	0.1850	0.3592	217.3	108.6	61.2	34.5	22.1	15.3	11.3			

- Theoretical section properties for steel panels have been calculated per 2020 AISI S100 North American specification for the design of cold-formed steel structural members.
- Theoretical section properties for aluminum panels have been calculated per the 2020 edition of the Aluminum Association's Design Manual.
- Allowable load includes web crippling.
- Load/Span values are based on theoretical computations and not load testing.
- Deflection is not considered
- Allowable loads do not include a 1/3 stress increase for wind.
- The Cascade 3-12 panel when installed as a three-span condition with spans of 8ft. On center for steel and 4ft. on center for Aluminum are capable of withstanding the minimum uniform distributed load of 20 psf (0.958 kPa) noted in table 1607.1 of the IBC and a minimum concentrated load of 300 lbf (1.33 kN)

PANEL ATTACHMENT



Fastener Notes:

- When possible, lap panels away from prevailing wind direction.
- Panel screws should be long enough to penetrate through the bottom of the plywood by 3/8".
- For dimensional lumber, panel screws should penetrate the lumber 1".
- All trim screws used for roof or wall applications should have EPDM sealing washers.
- Clean off working area each day to remove metal particles left from drilling fasteners. These particles, when exposed to moisture, will form rust between metal particles and the panel.

Rev. Date 08-26