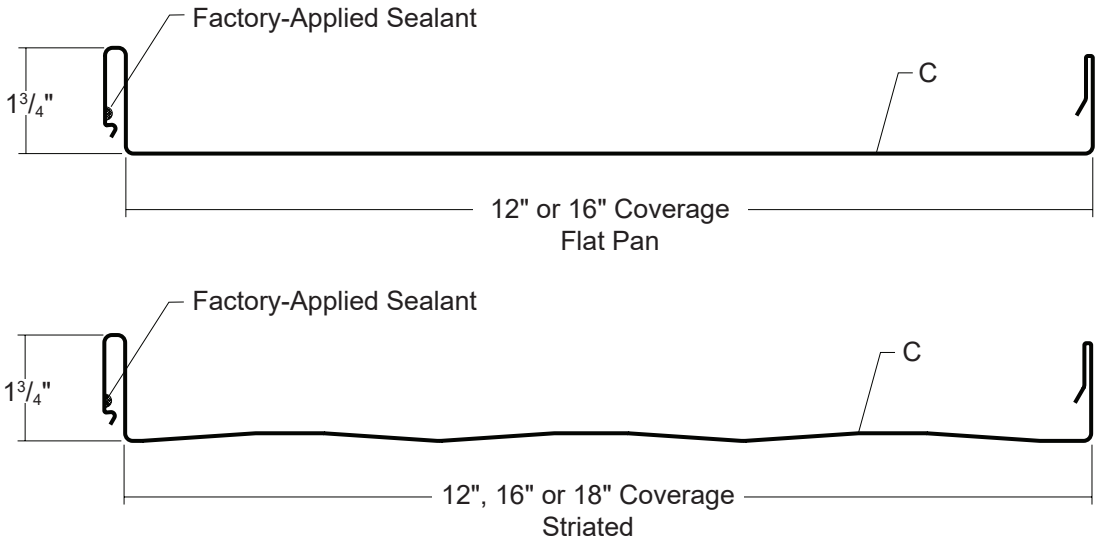
VERTICAL SEAM

Condensed Technical Reference



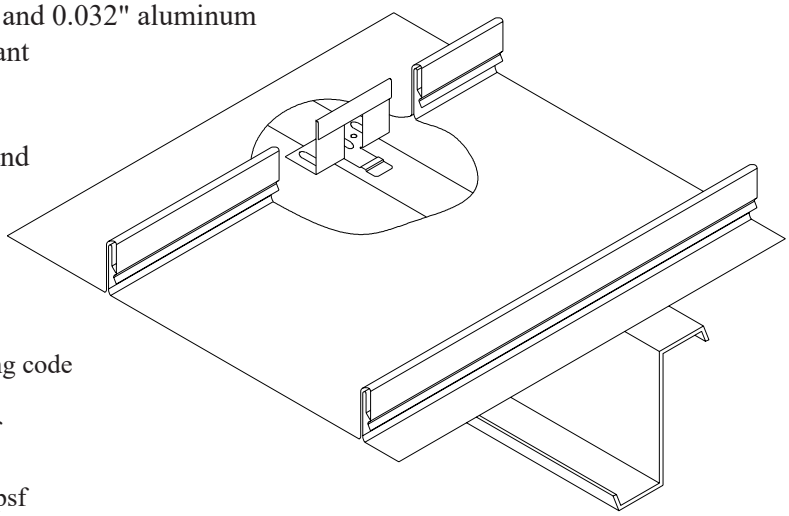
ARCHITECTURAL COMMERCIAL PANEL | **CONCEALED FASTENED** | **12", 16" or 18" COVERAGE** | **MINIMUM SLOPE 1:12*** | **OPEN FRAMING OR SOLID SUBSTRATE**

PANEL OVERVIEW

- Finishes: PVDF, MS Colorfast45® and Acrylic-Coated Galvalume®
- Corrosion Protection: AZ55 per ASTM A 792 for unpainted Galvalume®
  AZ50 per ASTM A 792 for painted Galvalume®
  G90 per ASTM A 653 for Galvanized
- Gauges: 24 ga standard; 26 ga and 22 ga optional
- 12", 16" and 18"panel coverage, 1 3/4" rib height
- Panel Length: Minimum: 5'; Maximum: 45' recommended
- Architectural, structural integral standing seam roof system
- Alternate materials include 16 and 20 oz copper and 0.032" aluminum
- Snap-together side lap with factory-applied sealant

* Minimum roof slope is 1:12 for solid substrates and 3:12 for open framing

- Flat Pan tends to have oil canning, as do wider and thinner profiles



TESTING AND APPROVALS

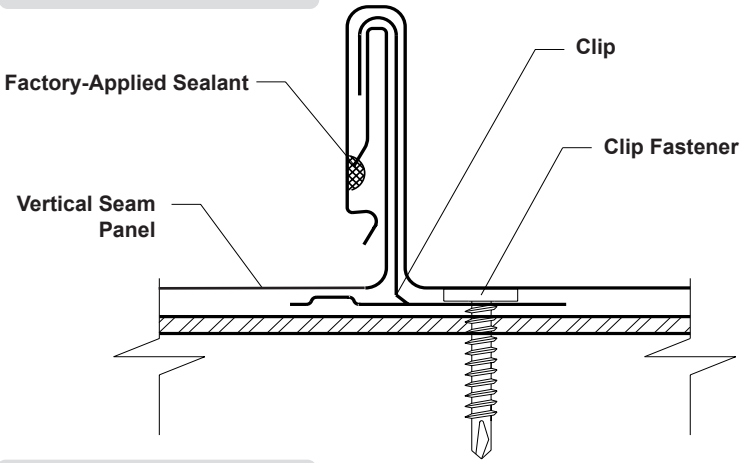
- UL 2218 Impact Resistance - Class 4
- UL 790 Fire Resistance Rating - Class A, per building code
- UL 263 Fire Resistance Rating - per assembly
- ASTM E 283 Air Leakage - 0.035 cfm/ft² at 1.57 psf
- ASTM E 331 Water Penetration - none at 12 psf
- ASTM E 1680 Air Leakage - 0.0036 cfm/ft² at 6.24 psf
- ASTM E 1646 Water Penetration - none at 6.24 psf
- ASTM E 1592 Structural Performance
- UL 580 Uplift Resistance - Class 90 Constructions: #436, #446 and #448
- Texas Windstorm - Evaluation RC-412
- 2023 FBC Approvals - FL11560.7, FL11560.8 and FL11560.9
- Miami-Dade County, Florida - NOA 24-0212.04, expires 3/8/2029
- ICC Evaluation Report - ESR-2385

MS Metal Sales™

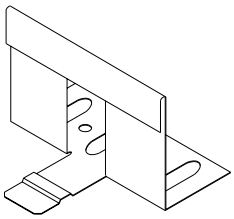
VERTICAL SEAM

Condensed Technical Reference

ATTACHMENT DETAIL



PANEL CLIP



UL90 CLIP
2 Fasteners

FASTENING INFORMATION

▶ Clips

1. Clip spacing is based upon the design loads, the spanning capacity of the panels, the fasteners and the support members.
2. Clips are 0.050" thick. G90 is standard, 304 stainless is optional. 2 fastener holes is standard,
3. Clips can accommodate practically unlimited thermal movement.

▶ Fasteners

1. Overdriven fasteners will cause panel distortions.
2. Fasteners to wood and steel should extend 1/2" or more past the inside face of the support material.

Clip Fasteners and Concealed End Fasteners:
- Attaching to Wood:
  - #10-12 Pancake Head Wood Screw
- Attaching to Steel:
  - <18 ga: 1/4"-14 Deck Screw
  - >=18 ga, <=12 ga: #10-16 Pancake Head Driller
- Attaching to Concrete:
  - 3/16" or 1/4" TapCon, Phillips Flat Head

Exposed End Fasteners:
- Attaching to Wood:
  - #10-14 XL Wood Screw
- Attaching to Steel:
  - #12-14 XL Driller

Trim Fasteners:
- 1/4"-14 x 7/8" XL Stitch Screw
- 1/8" x 3/16" Pop Rivet

SECTION PROPERTIES

ALLOWABLE UNIFORM LOADS, psf For various clip spacings

Ga	Width in	Yield ksi	Weight psf	Top In Compression		Bottom In Compression		Inward Load						Outward Load					
				Ixx in^4/ft	Sxx in^3/ft	Ixx in^4/ft	Sxx in^3/ft	1.5'	2'	2.5'	3'	3.5'	4'	1.5'	2'	2.5'	3'	3.5'	4'
26	12	50	1.06	0.0783	0.05320	0.0370	0.0405	337	193	124	87	64	49	72	65	57	50	43	36
26	16	50	0.97	0.0617	0.0403	0.0278	0.0304	253	145	93	65	48	37	72	65	57	50	43	36
24	12	50	1.38	0.1120	0.0777	0.0525	0.0554	464	265	171	119	88	67	45	45	44	43	42	41
24	16	50	1.26	0.0885	0.0590	0.0398	0.0416	348	199	128	89	66	50	43	40	38	35	32	30
24	18	50	1.22	0.0807	0.0527	0.0353	0.0369	309	177	114	79	58	45	39	36	33	30	27	24
22	12	50	1.81	0.1534	0.1072	0.0763	0.0768	600	437	282	197	145	111	71	71	69	67	65	62
22	16	50	1.66	0.1230	0.0823	0.0578	0.0577	484	276	178	124	91	70	60	57	54	51	48	45
22	18	50	1.60	0.1113	0.0737	0.0513	0.0513	430	245	158	110	81	62	32	32	31	30	30	29

1. Theoretical section properties have been calculated per AISI 2016 'North American Specification for the Design of Cold-Formed Steel Structural Members'. Ixx and Sxx are effective section properties for deflection and bending.
2. Allowable loads are calculated in accordance with AISI 2016 specifications considering bending, shear, combined bending & shear, deflection and ASTM E 1592 uplift testing for 24 ga and 22 ga and UL 580 uplift testing for 26 ga. Allowable loads do not address web crippling, fasteners or support material. Allowable loads consider the three or more equal spans condition. Panel weight is not considered.
3. Deflection consideration is limited by a maximum deflection ratio of L/180 of span.
4. Allowable loads do not include a 1/3 stress increase for wind.

\- Indicates that no testing is available for the application.

Metal Sales™ metalsales.us.com

Anchorage, AK 866.640.7663
Bay City, MI 888.777.7640
Deer Lake, PA 800.544.2577
Denver, CO 800.289.7663
Detroit Lakes, MN 888.594.1394
Fontana, CA 800.782.7953
Fort Smith, AR 877.452.3915
Independence, MO 800.747.0012
Jacksonville, FL 800.394.4419
Jefferson, OH 800.321.5833
Kelso, WA 800.431.3470
Mocksville, NC 800.228.6119
Nashville, TN 800.251.8508
Rock Island, IL 800.747.1206
Rogers, MN 800.328.9316
Sellersburg, IN 800.999.7777
Sioux Falls, SD 888.299.0024
Spokane, WA 800.572.6565
Temple, TX 800.543.4415
Woodland, CA 800.759.6019