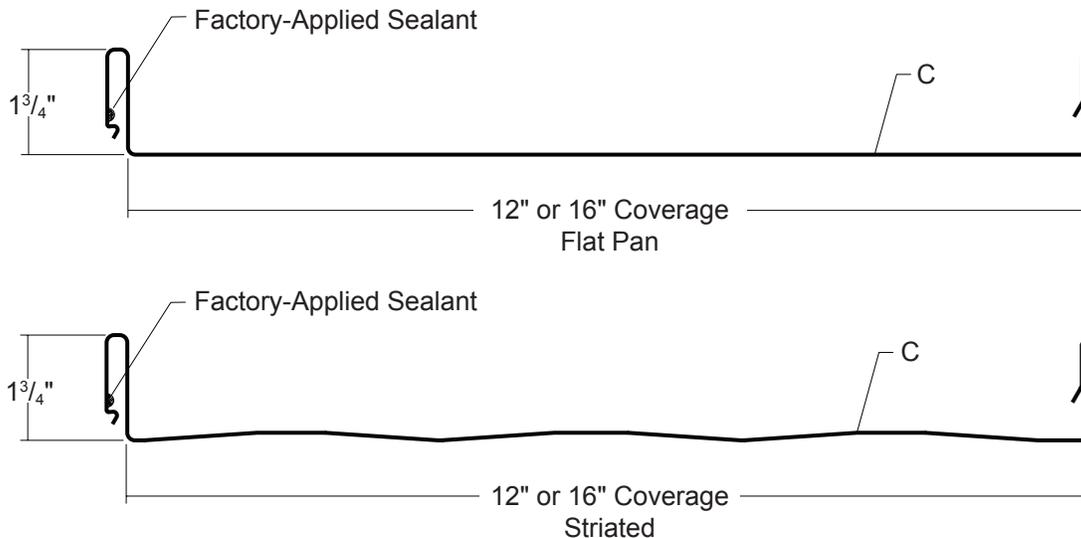


# VERTICAL SEAM

Condensed  
Technical  
Reference



ARCHITECTURAL  
COMMERCIAL  
PANEL

CONCEALED  
FASTENED

12" or 16"  
COVERAGE

MINIMUM  
SLOPE  
1:12\*

OPEN FRAMING OR  
SOLID SUBSTRATE

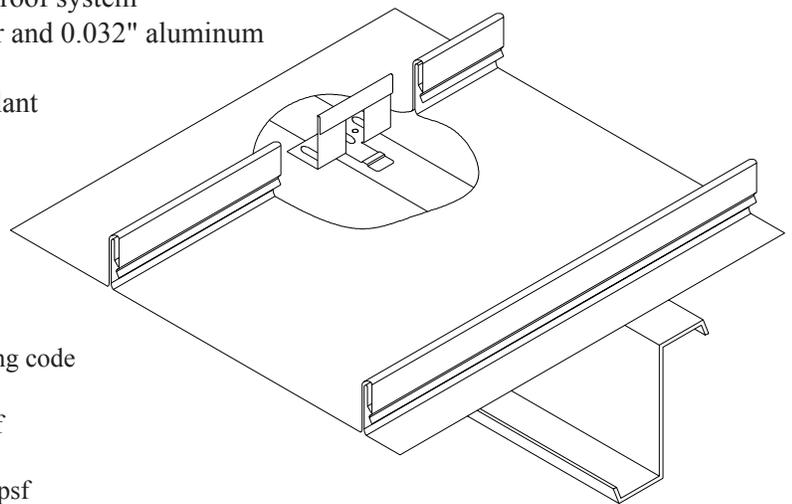
## PANEL OVERVIEW

- ▶ Finishes: PVDF, MS Colorfast45<sup>®</sup> and Acrylic-Coated Galvalume<sup>®</sup>
- ▶ Corrosion Protection: AZ55 per ASTM A 792 for unpainted Galvalume<sup>®</sup>  
AZ50 per ASTM A 792 for painted Galvalume<sup>®</sup>  
G90 per ASTM A 653 for Galvanized
- ▶ Gauges: 24 ga standard; 22 ga optional
- ▶ 12" or 16" panel coverage, 1<sup>3</sup>/<sub>4</sub>" 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
- ▶ Panels cannot be endlapped
- ▶ Snap-together side lap with factory-applied sealant

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

## TESTING AND APPROVALS

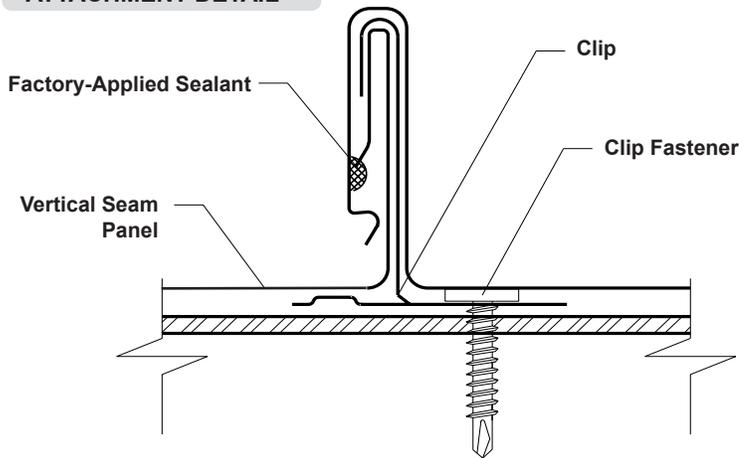
- ▶ UL 2218 Impact Resistance - Class 4
- ▶ UL 790 Fire Resistance Rating - Class A, per building code
- ▶ UL 263 Fire Resistance Rating - per assembly
- ▶ ASTM E 283 Air Leakage - 0.035 cfm/ft<sup>2</sup> at 1.57 psf
- ▶ ASTM E 331 Water Penetration - none at 12 psf
- ▶ ASTM E 1680 Air Leakage - 0.0036 cfm/ft<sup>2</sup> 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



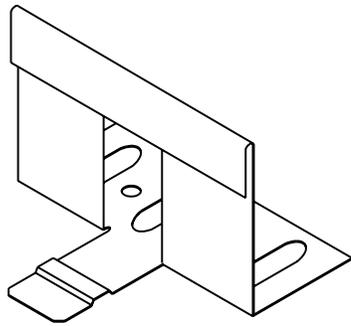
**MS Metal Sales**<sup>™</sup>

# VERTICAL SEAM

## 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 holes is optional.
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

Ga	Width in	Yield ksi	Weight psf	Top In Compression		Bottom In Compression	
				Ixx in <sup>4</sup> /ft	Sxx in <sup>3</sup> /ft	Ixx in <sup>4</sup> /ft	Sxx in <sup>3</sup> /ft
26	12	50	1.06	0.0783	0.05320	0.0370	0.0405
26	16	50	0.97	0.0617	0.0403	0.0278	0.0304
26	18	50	0.94	0.0560	0.0359	0.0247	0.0270
24	12	50	1.38	0.1120	0.0777	0.0525	0.0554
24	16	50	1.26	0.0885	0.0590	0.0398	0.0416
24	18	50	1.22	0.0807	0.0527	0.0353	0.0369
22	12	50	1.81	0.1534	0.1072	0.0763	0.0768
22	16	50	1.66	0.1230	0.0823	0.0578	0.0577
22	18	50	1.60	0.1113	0.0737	0.0513	0.0513

## ALLOWABLE UNIFORM LOADS, psf For various clip spacings

Ga	Width in	Yield ksi	Weight psf	Ixx in <sup>4</sup> /ft	Sxx in <sup>3</sup> /ft	Ixx in <sup>4</sup> /ft	Sxx in <sup>3</sup> /ft	Inward Load						Outward Load					
								2.5'	3'	3.5'	4'	4.5'	5'	2.5'	3'	3.5'	4'	4.5'	5'
								26	12	50	1.06	0.0783	0.05320	0.0370	0.0405	148	104	76	59
26	16	50	0.97	0.0617	0.0403	0.0278	0.0304	111	78	57	44	-	-	55	49	42	36	-	-
26	18	50	0.94	0.0560	0.0359	0.0247	0.0270	-	-	-	-	-	-	-	-	-	-	-	-
24	12	50	1.38	0.1120	0.0777	0.0525	0.0554	204	142	105	80	64	52	44	43	42	41	40	39
24	16	50	1.26	0.0885	0.0590	0.0398	0.0416	153	107	79	60	48	39	42	38	34	30	27	24
24	18	50	1.22	0.0807	0.0527	0.0353	0.0369	136	95	70	54	42	34	33	30	27	24	20	19
22	12	50	1.81	0.1534	0.1072	0.0763	0.0768	283	197	145	111	88	71	69	67	65	62	60	58
22	16	50	1.66	0.1230	0.0823	0.0578	0.0577	212	148	109	84	66	54	54	51	48	45	36	35
22	18	50	1.60	0.1113	0.0737	0.0513	0.0513	189	132	97	74	59	48	31	30	29	29	28	27

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.