Important Information

The application and detail drawings in this manual are strictly for illustration purposes and may not be applicable to all building designs or product installations. All projects should conform to applicable building codes for that particular area. It is recommended to follow all building regulations and standard industry practices.

Metal Sales Manufacturing Corporation is not responsible for the performance of the wall system if it is not installed in accordance with the suggested instructions referenced in this manual. If there is a conflict between this manual and the actual erection drawings, the erection drawings are to take precedence.

Prior to ordering and installing materials, all dimensions should be verified by field measurements.

Metal Sales reserves the right to modify, without notice, any details, recommendations or suggestions. Any questions you may have regarding proper installation of these Concealed Fastened Wall Panel systems should be directed to your local Metal Sales representative (see pages 2 and 3).

Oil canning is not a cause for rejection. Oil canning can be described as the amount of waviness found in the flat areas of metal panels. Oil canning is an inherent characteristic of light gauge cold formed metal products, particularly those with broad flat areas. There are many factors which may contribute to oil canning that Metal Sales is not able to control. These factors include: misalignment of the support system, over driving of fasteners used on the panels, stress (whether inherent in the panel or induced), thermal expansion and contraction of the panel, improper material handling, width, gauge, length, color of panels and improper installation (reference Metal Construction Association "Oil Canning Position Paper"- Appendix A).

Consult your local Metal Sales Branch for any additional information not outlined in this manual.

This manual is designed to be utilized as a guide when installing a Concealed Fastened Wall Panel system. It is the responsibility of the erector to ensure the safe installation of this product system.

SAFETY

STUDY APPLICABLE OSHA AND OTHER SAFETY REQUIREMENTS BEFORE FOLLOWING THESE INSTRUCTIONS.

The installation of metal wall systems is a dangerous procedure and should be supervised by trained knowledgeable erectors. USE EXTREME CARE WHILE INSTALLING WALL PANELS. It is not possible for Metal Sales to be aware of all the possible job site situations that could cause an unsafe condition to exist. The erector of the wall system is responsible for reading these instructions and determining the safest way to install the wall system.

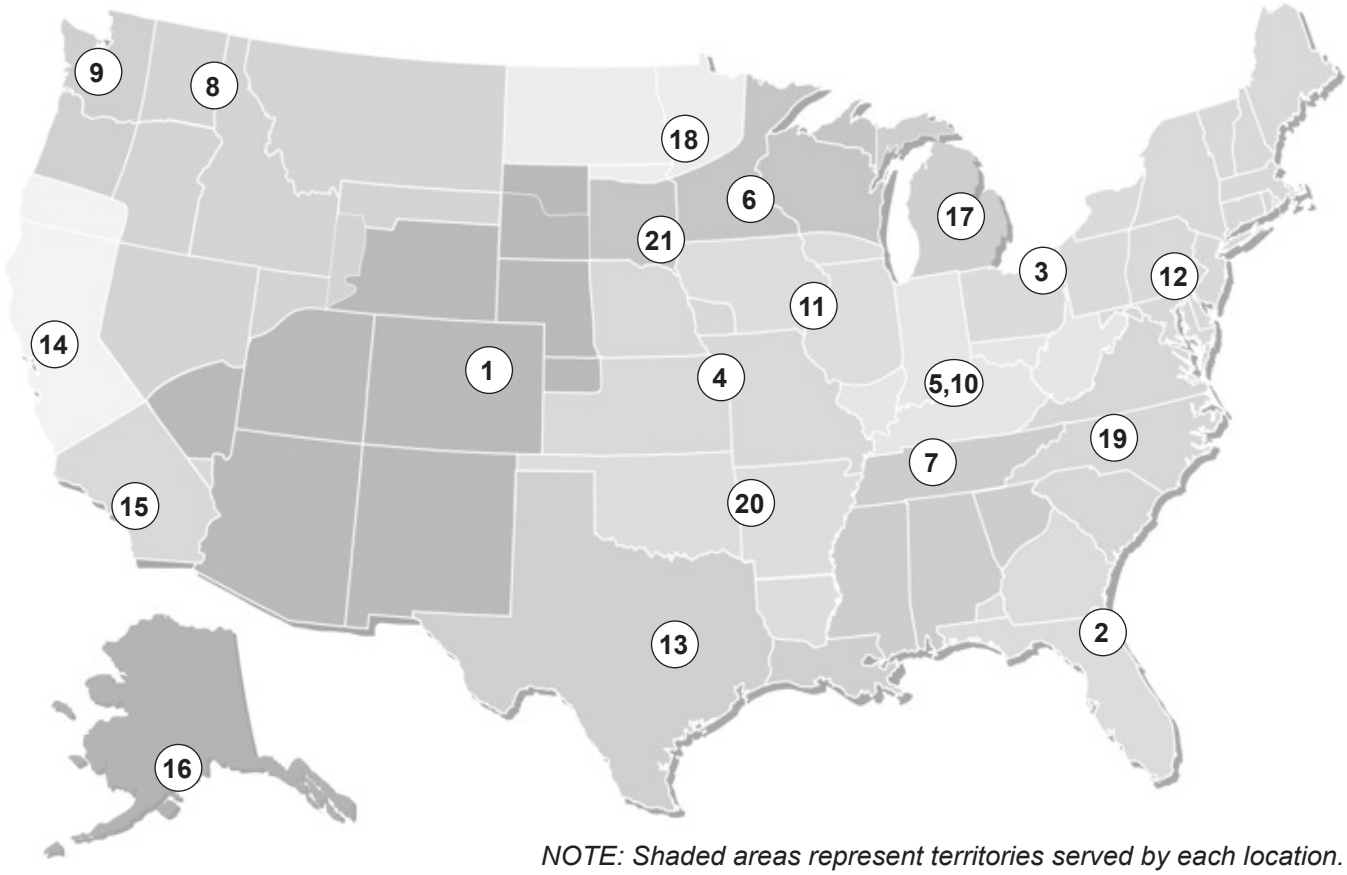
These instructions are provided only as a guide to show a knowledgeable, trained erector the correct relationship of parts to one another. If following any of the installation steps would endanger a worker, the erector should stop work and decide upon a corrective action.

Fall protection for workers installing wall panels must be provided.

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Branch Territory Map

metal sales™
manufacturing corporation



NOTE: Shaded areas represent territories served by each location.

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'H' indicates horizontal panels, 'V' indicates vertical panels

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Branch Locations

1. DENVER
7990 East I-25 Frontage Road
Longmont, CO 80504
303.702.5440
800.289.7663
800.289.1617 Fax

2. JACKSONVILLE
7110 Stuart Avenue
Jacksonville, FL 32254
904.783.3660
800.394.4419
904.783.9175 Fax
800.413.3292 Fax

3. JEFFERSON
352 East Erie Street
Jefferson, OH 44047
440.576.9070
800.321.5833
440.576.9242 Fax
800.233.5719 Fax

4. INDEPENDENCE
1306 South Powell Road
Independence, MO 64057
816.796.0900
800.747.0012
816.796.0906 Fax

5. SELLERSBURG
7800 State Road 60
Sellersburg, IN 47172
812.246.1866
800.999.7777
812.246.0893 Fax
800.477.9318 Fax

6. ROGERS
22651 Industrial Boulevard
Rogers, MN 55374
763.428.8080
800.328.9316
763.428.8525 Fax
800.938.9119 Fax

7. NASHVILLE
4314 Hurricane Creek Boulevard
Antioch, TN 37013
615.641.7100
800.251.8508
615.641.7118 Fax
800.419.4372 Fax

8. SPOKANE
2727 East Trent Avenue
Spokane, WA 99202
509.536.6000
800.572.6565
509.534.4427 Fax

9. SEATTLE
20213 84th Avenue, South
Kent, WA 98032
253.872.5750
800.431.3470 (Outside WA)
800.742.7900 (Inside WA)
253.872.2008 Fax

10. NEW ALBANY
999 Park Place
New Albany, IN 47150
812.944.2733
812.944.1418 Fax

11. ROCK ISLAND
8111 West 29th Street
Rock Island, IL 61201
309.787.1200
800.747.1206
309.787.1833 Fax

12. DEER LAKE
29 Pinedale Industrial Road
Orwigsburg, PA 17961
570.366.2020
800.544.2577
570.366.1648 Fax
800.544.2574 Fax

13. TEMPLE
3838 North General Bruce Drive
Temple, TX 76501
254.791.6650
800.543.4415
254.791.6655 Fax
800.543.4473 Fax

14. WOODLAND
1326 Paddock Place
Woodland, CA 95776
530.668.5690
800.759.6019
530.668.0901 Fax

15. FONTANA
14213 Whittram Avenue
Fontana, CA 92335
909.829.8618
800.782.7953
909.829.9083 Fax

16. ANCHORAGE
4637 Old Seward Highway
Anchorage, AK 99503
907.646.7663
866.640.7663
907.646.7664 Fax

17. BAY CITY
5209 Mackinaw Road
Bay City, MI 48706
989.686.5879
888.777.7640
989.686.5870 Fax
888.777.0112 Fax

18. DETROIT LAKES
1435 Egret Avenue
Detroit Lakes, MN 56501
218.847.2988
888.594.1394
218.847.4835 Fax
888.594.1454 Fax

19. MOCKSVILLE
188 Quality Drive
Mocksville, NC 27028
336.751.6381
800.228.6119
336.751.6301 Fax
800.228.7916 Fax

20. FORT SMITH
7510 Ball Road
Fort Smith, AR 72908
479.646.1176
877.452.3915
479.646.5204 Fax

21. SIOUX FALLS
2700 West 3rd Street, Suite 4
Sioux Falls, SD 57104
605.335.2745
888.299.0024

TECHNICAL SUPPORT

TECHNICAL SERVICES
545 South 3rd Street, Suite 200
Louisville, KY 40202
502.855.4300
800.406.7387
800.944.6884 Fax

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Safety
Use proper safety gear, safe equipment and safe processes. Safety gear includes gloves, arm guards, safety goggles and fall protection. Safe equipment includes maintained screw gun, saw, snips and folder. Safe processes include being aware of dangers and taking appropriate measures to avoid them.

Material Availability
Panels are available in 24 ga, 22 ga and 20 ga steel and 0.032" aluminum. Flashings are available in 24 ga and 22 ga steel and 0.032" aluminum. Only 24 ga panel and flashing materials, in standard colors, are stocked. Custom 24 ga colors, all 22 ga, all 20 ga and all 0.032" materials are secured per project and require minimum order quantities.

Material Receipt
Upon receipt of material, confirm all parts have been delivered and that there is no damage. Any shortages should be reported to the Metal Sales contact. Transit damage should be noted on the bill of lading.

Material Storage
Material not used right away, should be stored inside, out of the elements. If inside storage is not available, tarp the material such that air can circulate. Elevate the crates off the ground and slope so that water will run off.

Handling
Transport panels in the crates to the installation site. Adequate support for individual panels every 6' to 8' is necessary. Grasp a panel by one side and let the other side hang down.

Wall Condition
Before installing panels, ensure the wall support material is plumb, square and true. Variance from in-plane should not exceed 1/4" in 10'.

Wall Assembly
Cover building envelope sheathing with a moisture barrier, such as peel-and-stick underlayment or synthetic building wrap for resistance to air and water penetration through the wall assembly. Install the moisture barrier horizontally from the bottom upward, overlapping each run over the previous, lower run.

Spacers
Spacers with a minimum depth of 1/4" are recommended at clips and trims to hold the wall assembly off of the wall line and allow water to drain. Spacers may be shims, hat channels or furring strips installed to not hold water.

Plan the Work
Before installing panels on a wall section, plan for alignment with adjacent wall sections. Decide if the first panel will be a full or partial panel. Consider the locations of wall penetrations and openings.

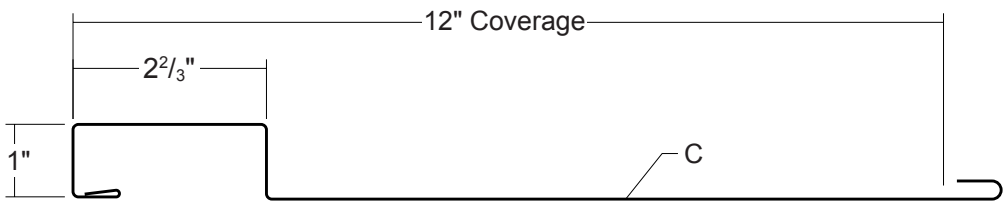
Clip Fasteners
Do not overtighten the panel clip fasteners. The fasteners should be brought just to firm contact between the support material, panel and clip. Overtightening the clip fasteners can make installation of the next panel difficult. The panel must be capable of sliding along its length after the clips are installed. The number of fasteners per clip can be either one or two, depending on the support material and the design load requirements.

Installation Practice
For horizontal panels, start at the bottom of the wall and work up the wall toward the top. Always 'shingle' panels and trims so that water will run down off of one member on to the next. Ensure every surface has adequate slope to permit water to run off and not collect on any surface. When installing panels, give effort to stay on module by checking the coverage of each panel.

Strippable Film
Panels and trim are typically provided with strippable film as protection against minor fabrication, transit and handling damage. The strippable film must be removed just before installation. Waiting until after panel installation to remove the strippable film or after significant exposure to sunlight or heat can make removal very difficult.

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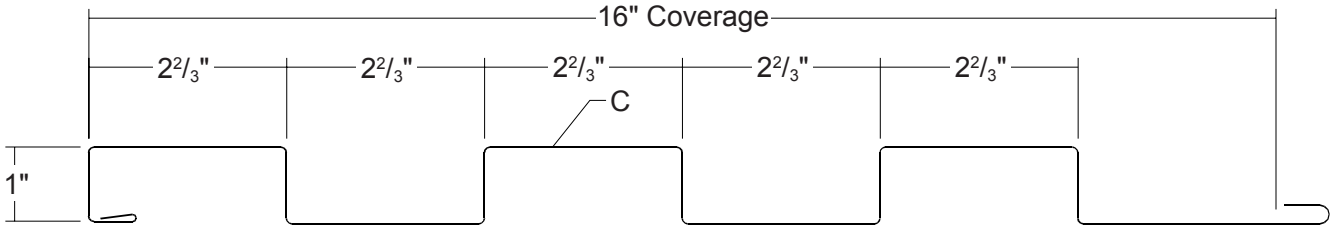
EM1-1212 Box Rib



Panel can be produced in lengths from 5' to 30'.

Product No.	Coverage	Description	Thick	Finish
2774541	12"	1 rib	24 ga	Galvalume® (ACG)
27745XX	12"	1 rib	24 ga	PVDF Painted
2974541	12"	1 rib	22 ga	Galvalume® (ACG)
29745XX	12"	1 rib	22 ga	PVDF Painted
30745XX	12"	1 rib	20 ga	PVDF Painted
27745XXA	12"	1 rib	0.032"	PVDF Painted Aluminum

EM1-1653 Box Rib

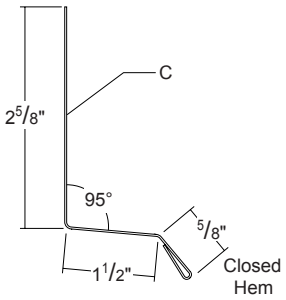


Panel can be produced in lengths from 5' to 30'.

Product No.	Coverage	Description	Thick	Finish
2775041	16"	3 ribs	24 ga	Galvalume® (ACG)
27750XX	16"	3 ribs	24 ga	PVDF Painted
2975041	16"	3 ribs	22 ga	Galvalume® (ACG)
29750XX	16"	3 ribs	22 ga	PVDF Painted
30750XX	16"	3 ribs	20 ga	PVDF Painted
27750XXA	16"	3 ribs	0.032"	PVDF Painted Aluminum

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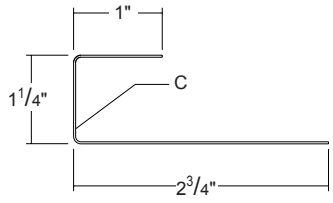
BASE TRIM 1"



Product No.	Length	Thick	Finish
5870741	10'-2"	24 ga	Galvalume® (ACG)
58707XX	10'-2"	24 ga	PVDF Painted
6070741	10'-2"	22 ga	Galvalume® (ACG)
60707XX	10'-2"	22 ga	PVDF Painted
58707XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 5 1/4"

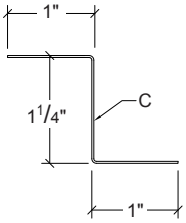
C-CLOSURE 1"



Product No.	Length	Thick	Finish
5871141	10'-2"	24 ga	Galvalume® (ACG)
58711XX	10'-2"	24 ga	PVDF Painted
6071141	10'-2"	22 ga	Galvalume® (ACG)
60711XX	10'-2"	22 ga	PVDF Painted
58711XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 5"

Z-CLOSURE 1"

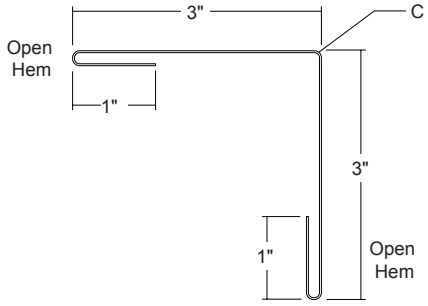


Product No.	Length	Thick	Finish
5872741	10'-2"	24 ga	Galvalume® (ACG)
58727XX	10'-2"	24 ga	PVDF Painted
6072741	10'-2"	22 ga	Galvalume® (ACG)
60727XX	10'-2"	22 ga	PVDF Painted
58727XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 3 1/4"

This Flashing can be used as an alternate to C-Closure.

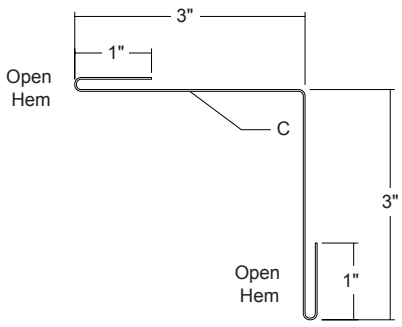
OUTSIDE CORNER



Product No.	Length	Thick	Finish
5872441	10'-2"	24 ga	Galvalume® (ACG)
58724XX	10'-2"	24 ga	PVDF Painted
6072441	10'-2"	22 ga	Galvalume® (ACG)
60724XX	10'-2"	22 ga	PVDF Painted
58724XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 8 1/8"

INSIDE CORNER

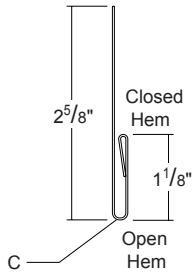


Product No.	Length	Thick	Finish
5872641	10'-2"	24 ga	Galvalume® (ACG)
58726XX	10'-2"	24 ga	PVDF Painted
6072641	10'-2"	22 ga	Galvalume® (ACG)
60726XX	10'-2"	22 ga	PVDF Painted
58726XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 8 1/8"

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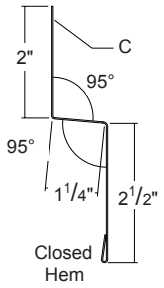
PANEL STARTER



Product No.	Length	Thick	Finish
5872841	10'-2"	24 ga	Galvalume® (ACG)
58728XX	10'-2"	24 ga	PVDF Painted
6072841	10'-2"	22 ga	Galvalume® (ACG)
60728XX	10'-2"	22 ga	PVDF Painted
58728XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 4 3/8"

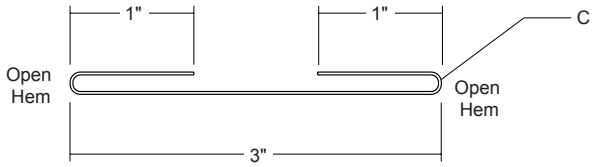
TRANSITION 1"



Product No.	Length	Thick	Finish
5873741	10'-2"	24 ga	Galvalume® (ACG)
58737XX	10'-2"	24 ga	PVDF Painted
6073741	10'-2"	22 ga	Galvalume® (ACG)
60737XX	10'-2"	22 ga	PVDF Painted
58737XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 6 1/4"

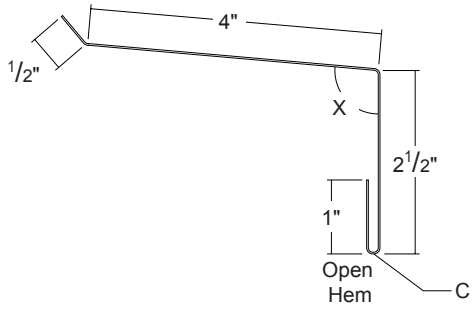
REVEAL



Product No.	Length	Thick	Finish
5874041	10'-2"	24 ga	Galvalume® (ACG)
58740XX	10'-2"	24 ga	PVDF Painted
6074041	10'-2"	22 ga	Galvalume® (ACG)
60740XX	10'-2"	22 ga	PVDF Painted
58740XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 5 1/8"

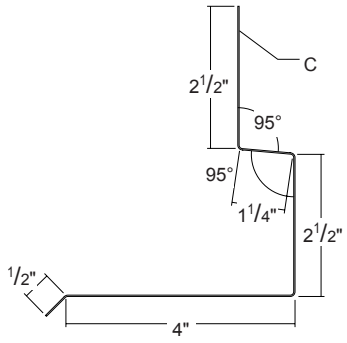
SILL/JAMB TRIM



Product No.	Length	Thick	Finish
5871841	10'-2"	24 ga	Galvalume® (ACG)
58718XX	10'-2"	24 ga	PVDF Painted
6071841	10'-2"	22 ga	Galvalume® (ACG)
60718XX	10'-2"	22 ga	PVDF Painted
58718XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 8"
X= 95° for Sill or 90° for Jamb

HEAD TRIM 1"



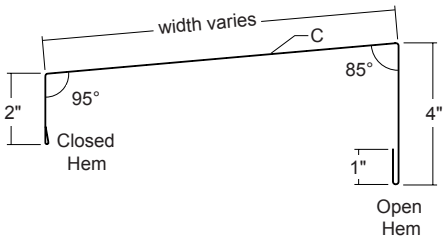
Product No.	Length	Thick	Finish
5872141	10'-2"	24 ga	Galvalume® (ACG)
58721XX	10'-2"	24 ga	PVDF Painted
6072141	10'-2"	22 ga	Galvalume® (ACG)
60721XX	10'-2"	22 ga	PVDF Painted
58721XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = 10 3/4"

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Flashing Profiles

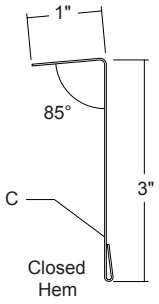
COPING



Width	Product No.	Length	Thick	Finish
8"	58714XX	10'-2"	24 ga	PVDF Painted
10"	58715XX	10'-2"	24 ga	PVDF Painted
12"	58716XX	10'-2"	24 ga	PVDF Painted
8"	60714XX	10'-2"	22 ga	PVDF Painted
10"	60715XX	10'-2"	22 ga	PVDF Painted
12"	60716XX	10'-2"	22 ga	PVDF Painted
8"	58714XXA	10'-2"	0.032"	PVDF Aluminum
10"	58715XXA	10'-2"	0.032"	PVDF Aluminum
12"	58716XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = $15^1/_2$", $17^1/_2$" or $19^1/_2$"

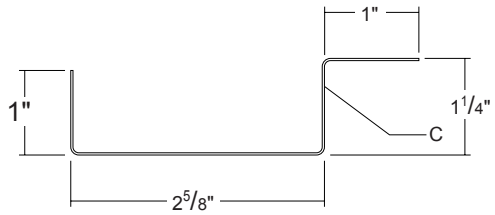
COPING CLEAT



Product No.	Length	Thick	Finish
5873441	10'-2"	24 ga	Galvalume® (ACG)
58734XX	10'-2"	24 ga	PVDF Painted
6073441	10'-2"	22 ga	Galvalume® (ACG)
60734XX	10'-2"	22 ga	PVDF Painted
58734XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = $4^1/_2$"

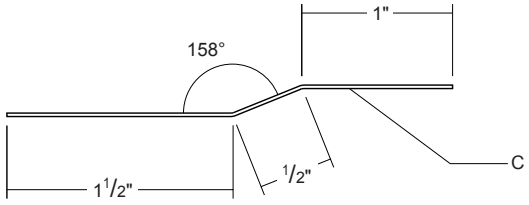
PANEL END CLOSURE 1"



Product No.	Length	Thick	Finish
5873141	10'-2"	24 ga	Galvalume® (ACG)
58731XX	10'-2"	24 ga	PVDF Painted
6073141	10'-2"	22 ga	Galvalume® (ACG)
60731XX	10'-2"	22 ga	PVDF Painted
58731XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = $5^7/_8$"

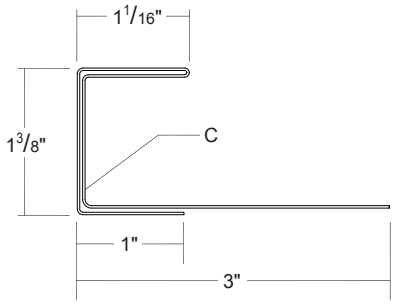
OFFSET CLEAT



Product No.	Length	Thick	Finish
5806499	10'-2"	24 ga	PVDF Painted

Flashing Stretch Out = 3"

WINDOW CLOSURE 1"



Product No.	Length	Thick	Finish
5874341	10'-2"	24 ga	Galvalume® (ACG)
58743XX	10'-2"	24 ga	PVDF Painted
6074341	10'-2"	22 ga	Galvalume® (ACG)
60743XX	10'-2"	22 ga	PVDF Painted
58743XXA	10'-2"	0.032"	PVDF Aluminum

Flashing Stretch Out = $8^7/_8$"

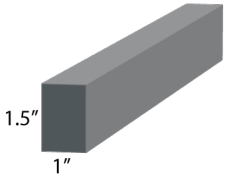
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CONCEALED FASTENED CLIP



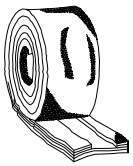
Product No.	Size	WT/200	Finish
4934200	2 1/4" x 1 3/4" x 3/4"	30.00 lbs	G90 Galvanized

UNIVERSAL CLOSURE



Product No.	Description	WT/Ea	Type
6411100	1" x 1 1/2" x 50'	4.00 lbs	Foam
6411199	1" x 1 1/2" x 10'	0.80 lbs	Foam

DOUBLE BEAD TAPE SEALANT



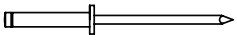
Product No.	Description	WT/Ctn.	Type
6403899	7/8" x 3/16" x 25' 20 Rolls per Carton	40.00 lbs	Butyl

TUBE SEALANT



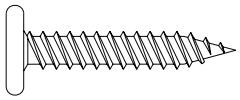
Product No.	Description	WT/Ea	Color
6402800	Acrylic Tube Sealant	3.31 lbs	Clear
64028XX	Tube Sealant	3.31 lbs	Color Match

POP RIVET



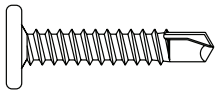
Product No.	Description	WT/250	Finish
8240201	1/8" x 3/8" Pop Rivet	0.75 lbs	Bare
82402XX	1/8" x 3/8" Pop Rivet	0.75 lbs	Painted

PANCAKE HEAD WOOD SCREW



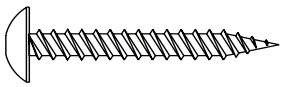
Product No.	Description	WT/250	Finish
8243100	#10-12 x 1" PH Wood Screw	1.90 lbs	Plated

PANCAKE HEAD DRILLER



Product No.	Description	WT/250	Finish
8242100	#10-16 x 1" PH Driller	1.90 lbs	Plated

LOW PROFILE WOOD SCREW



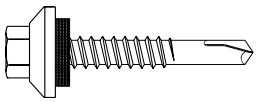
Product No.	Description	WT/250	Finish
8244100	#12-11 x 1 1/2" LP Wood Screw	2.75 lbs	Painted

WOOD SCREW XL



Product No.	Description	WT/250	Finish
8212300	#10-14 x 1 1/2" Wood Screw XL	3.75 lbs	Plated
82123XX	#10-14 x 1 1/2" Wood Screw XL	3.75 lbs	Painted

SELF DRILLER XL

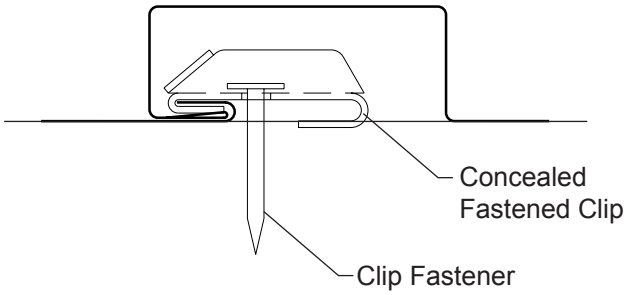


Product No.	Description	WT/250	Finish
8235300	#12-14 x 1 1/4" Self Driller XL	3.75 lbs	Plated
82353XX	#12-14 x 1 1/4" Self Driller XL	3.75 lbs	Painted

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EM1-1212 Box Rib

PANEL ATTACHMENT



FASTENING INFORMATION

- Concealed Fastened Clip is $2^1/_4$" x $1^3/_4$" x $^3/_4$", from 16 ga, G90 material with 2 fastener holes.
- Clip Fastener(s) should be driven just to contact between fastener head / clip / panel / support. Beyond contact, the clip can crush the open hem of the panel and make engagement of the next panel difficult. Overdriven fasteners will cause panel distortions.
- Fasteners should extend $^1/_2$" or more past the inside face of the support material for steel and wood sheathing support materials.
- Clip Fasteners:
  Attaching to Wood:
  #12-11 x $1^1/_2$" Low Profile Wood Screw
  Attaching to Steel:
  < 18 ga: $^1/_4$"-13 Deck Screw
  ≥ 18 ga, ≤ 12 ga: #10-16 Pancake Head Driller
  > 12 ga: $^1/_4$"-14 Self Driller, No Washer

INSTALLATION DIRECTION

Horizontally-oriented panels must be installed from the bottom to the top.

Vertically-oriented panels may be installed from the right-to-left or left-to-right.

STEEL 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	2'	3'	4'	5'	6'	2'	3'	4'	5'	6'
24	12	50	1.25	0.0297	0.0355	0.0291	0.0574	120	97	69	44	23	70	58	45	33	21
22	12	50	1.66	0.0442	0.0538	0.0410	0.0783	120	97	71	47	23	70	58	45	33	21
20	12	33	2.00	0.0635	0.0799	0.0550	0.0966	120	97	71	47	23	70	58	45	33	21

1. Theoretical section properties have been calculated per AISI 2012 '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 2012 specifications considering bending, shear, combined bending and shear, deflection, load testing on 16 ga girts and load testing of comparable profiles. Allowable loads consider the 3 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.

ALUMINUM SECTION PROPERTIES

ALLOWABLE UNIFORM LOADS, psf For various clip spacings

Thick in	Width in	Yield ksi	Weight psf	I in^4/ft	S_{Top} in^3/ft	S_{Bottom} in^3/ft	Inward Load						Outward Load					
							2'	2.5'	3'	4'	5'	6'	2'	2.5'	3'	4'	5'	6'
0.032	12	17	0.60	0.0720	0.0950	0.2969	100	89	78	33	17	10	60	55	51	33	17	10

1. Section properties have been calculated per 2010 Aluminum Design Manual. I and S are section properties for deflection and bending.
2. Allowable load is calculated in accordance with 2010 Aluminum Design Manual specifications considering bending, shear, combined bending and shear, deflection, load testing on 16 ga girts and load testing of comparable profiles. Allowable load does not address web crippling or other fasteners or support materials. Allowable loads consider the 3 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 in wind.

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EM1-1212 Box Rib

EM1-1212 on 16 ga Girts

Wall Fastener Spacing (feet)

Wind Speed (mph) Exposure Category	20 ft, Mean Roof Height			40 ft, Mean Roof Height			60 ft, Mean Roof Height		
	Thickness	Field -15.1 psf	Edge -18.6 psf	Thickness	Field -17.4 psf	Edge -21.5 psf	Thickness	Field -19 psf	Edge -23.4 psf
100C	24 ga	6.00	6.00	24 ga	6.00	5.50	24 ga	6.00	5.50
	22 ga	6.00	6.00	22 ga	6.00	5.50	22 ga	6.00	5.50
	20 ga	6.00	6.00	20 ga	6.00	5.50	20 ga	6.00	5.50
	0.032"	6.00	6.00	0.032"	6.00	6.00	0.032"	6.00	5.50
110C	Thickness	Field -18.2 psf	Edge -22.5 psf	Thickness	Field -21.1 psf	Edge -26 psf	Thickness	Field -23 psf	Edge -28.4 psf
	24 ga	6.00	5.50	24 ga	5.50	5.50	24 ga	5.50	5.00
	22 ga	6.00	5.50	22 ga	5.50	5.50	22 ga	5.50	5.00
	20 ga	6.00	5.50	20 ga	5.50	5.50	20 ga	5.50	5.00
	0.032"	6.00	5.50	0.032"	6.00	5.50	0.032"	5.50	5.00
120C	Thickness	Field -21.7 psf	Edge -26.8 psf	Thickness	Field -25.1 psf	Edge -31 psf	Thickness	Field -27.4 psf	Edge -33.8 psf
	24 ga	5.50	5.50	24 ga	5.50	5.00	24 ga	5.00	4.50
	22 ga	5.50	5.50	22 ga	5.50	5.00	22 ga	5.00	4.50
	20 ga	5.50	5.50	20 ga	5.50	5.00	20 ga	5.00	4.50
	0.032"	6.00	5.00	0.032"	5.50	5.00	0.032"	5.00	4.50
130C	Thickness	Field -25.5 psf	Edge -31.4 psf	Thickness	Field -29.5 psf	Edge -36.4 psf	Thickness	Field -32.1 psf	Edge -39.6 psf
	24 ga	5.50	5.00	24 ga	5.00	4.50	24 ga	5.00	4.00
	22 ga	5.50	5.00	22 ga	5.00	4.50	22 ga	5.00	4.00
	20 ga	5.50	5.00	20 ga	5.00	4.50	20 ga	5.00	4.00
	0.032"	5.50	5.00	0.032"	5.00	4.00	0.032"	4.50	4.00
140C	Thickness	Field -29.5 psf	Edge -36.5 psf	Thickness	Field -34.2 psf	Edge -42.2 psf	Thickness	Field -37.2 psf	Edge -46 psf
	24 ga	5.00	4.50	24 ga	4.50	4.00	24 ga	4.50	3.50
	22 ga	5.00	4.50	22 ga	4.50	4.00	22 ga	4.50	3.50
	20 ga	5.00	4.50	20 ga	4.50	4.00	20 ga	4.50	3.50
	0.032"	5.00	4.00	0.032"	4.50	3.50	0.032"	4.00	3.00
150C	Thickness	Field -33.9 psf	Edge -41.9 psf	Thickness	Field -39.2 psf	Edge -48.4 psf	Thickness	Field -42.7 psf	Edge -52.8 psf
	24 ga	4.50	4.00	24 ga	4.50	3.50	24 ga	4.00	3.00
	22 ga	4.50	4.00	22 ga	4.50	3.50	22 ga	4.00	3.00
	20 ga	4.50	4.00	20 ga	4.50	3.50	20 ga	4.00	3.00
	0.032"	4.50	3.50	0.032"	4.00	3.00	0.032"	3.50	2.50
160C	Thickness	Field -38.6 psf	Edge -47.6 psf	Thickness	Field -44.6 psf	Edge -55.1 psf	Thickness	Field -48.6 psf	Edge -60 psf
	24 ga	4.50	3.50	24 ga	4.00	3.00	24 ga	3.50	2.50
	22 ga	4.50	3.50	22 ga	4.00	3.00	22 ga	3.50	2.50
	20 ga	4.50	3.50	20 ga	4.00	3.00	20 ga	3.50	2.50
	0.032"	4.00	3.00	0.032"	3.50	2.50	0.032"	N.G.	N.G.
170C	Thickness	Field -43.6 psf	Edge -53.8 psf	Thickness	Field -50.4 psf	Edge -62.2 psf	Thickness	Field -54.9 psf	Edge -67.8 psf
	24 ga	4.00	3.00	24 ga	3.50	2.50	24 ga	3.00	2.00
	22 ga	4.00	3.00	22 ga	3.50	2.50	22 ga	3.00	2.00
	20 ga	4.00	3.00	20 ga	3.50	2.50	20 ga	3.00	2.00
	0.032"	3.50	2.50	0.032"	N.G.	N.G.	0.032"	N.G.	N.G.

Notes:

1. Allowable spacing is based on capacities determined in AISI 2012, North American Specification for the Design of Cold-Structural Members and ADM 2010, Aluminum Design Manual.

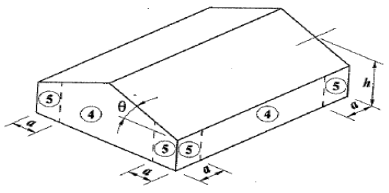
2. Allowable spacing is based on an applied load determined using ASCE 7-10 for the wind speeds and Wind Exposures tabulated. Assumptions include a tributary area of 10 square feet, an Enclosed building, a Topographic Factor of 1.0 and panel bearing length of 2.5 inches.

3. Allowable spacing is determined using the IBC 2015 suction and pressure, the combination is 0.6W.

4. Testing is the basis for the load carrying capacity.

(4) - FIELD
(5) - EDGE

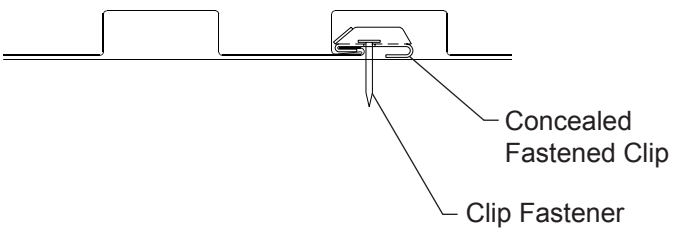
a - LEAST OF 10% MINIMUM BUILDING WIDTH OR 40% OF MEAN ROOF HEIGHT BUT NOT LESS THAN 3'.



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EM1-1653 Box Rib

PANEL ATTACHMENT



FASTENING INFORMATION

- Concealed Fastened Clip is 2 1/4" x 1 3/4" x 3/4", from 16 ga, G90 material with 2 fastener holes.
- Clip Fastener(s) should be driven just to contact between fastener head / clip / panel / support. Beyond contact, the clip can crush the open hem of the panel and make engagement of the next panel difficult. Overdriven fasteners will cause panel distortions.
- Fasteners should extend 1/2" or more past the inside face of the support material for steel and wood sheathing support materials.
- Clip Fasteners:
  - Attaching to Wood:
    - #12-11 x 1 1/2" Low Profile Wood Screw
  - Attaching to Steel:
    - < 18 ga: 1/4"-13 Deck Screw
    - ≥ 18 ga, ≤ 12 ga: #10-16 Pancake Head Driller
    - > 12 ga: 1/4"-14 Self Driller, No Washer

INSTALLATION DIRECTION

Horizontally-oriented panels must be installed from the bottom to the top.

Vertically-oriented panels may be installed from the right-to-left or left-to-right.

STEEL 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 in⁴/ft	Sxx in³/ft	Ixx in⁴/ft	Sxx in³/ft	2'	3'	4'	5'	6'	2'	3'	4'	5'	6'
24	16	50	1.39	0.0495	0.0729	0.0533	0.0911	120	97	71	47	23	70	58	45	33	21
22	16	50	1.81	0.0713	0.1094	0.0750	0.1340	120	97	71	47	23	70	58	45	33	21
20	16	33	2.21	0.1005	0.1658	0.1020	0.1967	120	97	71	47	23	70	58	45	33	21

1. Theoretical section properties have been calculated per AISI 2012 '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 2012 specifications considering bending, shear, combined bending and shear, deflection, load testing on 16 ga girts and load testing of comparable profiles. Allowable loads consider the 3 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.

ALUMINUM SECTION PROPERTIES

ALLOWABLE UNIFORM LOADS, psf For various clip spacings

Thick in	Width in	Yield ksi	Weight psf	I in⁴/ft	S_{Top} in³/ft	S_{Bottom} in³/ft	Inward Load						Outward Load					
							2'	2.5'	3'	4'	5'	6'	2'	2.5'	3'	4'	5'	6'
0.032	16	17	0.67	0.1080	0.1977	0.2369	100	89	79	57	36	14	63	58	53	43	33	23

1. Section properties have been calculated per 2010 Aluminum Design Manual. I and S are section properties for deflection and bending.
2. Allowable load is calculated in accordance with 2010 Aluminum Design Manual specifications considering bending, shear, combined bending and shear, deflection, load testing on 16 ga girts and load testing of comparable profiles. Allowable load does not address web crippling or other fasteners or support materials. Allowable loads consider the 3 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 in wind.

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EM1-1653 Box Rib

EM1-1653 on 16 ga Girts

Wall Fastener Spacing (feet)

100C

Thickness	20 ft, Mean Roof Height Field -15.1 psf	20 ft, Mean Roof Height Edge -18.6 psf	40 ft, Mean Roof Height Field -17.4 psf	40 ft, Mean Roof Height Edge -21.5 psf	60 ft, Mean Roof Height Field -19 psf	60 ft, Mean Roof Height Edge -23.4 psf
24 ga	6.00	6.00	6.00	5.50	6.00	5.50
22 ga	6.00	6.00	6.00	5.50	6.00	5.50
20 ga	6.00	6.00	6.00	5.50	6.00	5.50
0.032"	6.00	6.00	6.00	6.00	6.00	5.50

110C

Thickness	Field -18.2 psf	Edge -22.5 psf	Field -21.1 psf	Edge -26 psf	Field -23 psf	Edge -28.4 psf
24 ga	6.00	5.50	5.50	5.50	5.50	5.00
22 ga	6.00	5.50	5.50	5.50	5.50	5.00
20 ga	6.00	5.50	5.50	5.50	5.50	5.00
0.032"	6.00	5.50	6.00	5.50	5.50	5.00

120C

Thickness	Field -21.7 psf	Edge -26.8 psf	Field -25.1 psf	Edge -31 psf	Field -27.4 psf	Edge -33.8 psf
24 ga	5.50	5.50	5.50	5.00	5.00	4.50
22 ga	5.50	5.50	5.50	5.00	5.00	4.50
20 ga	5.50	5.50	5.50	5.00	5.00	4.50
0.032"	6.00	5.50	5.50	5.00	5.50	4.50

130C

Thickness	Field -25.5 psf	Edge -31.4 psf	Field -29.5 psf	Edge -36.4 psf	Field -32.1 psf	Edge -39.6 psf
24 ga	5.50	5.00	5.00	4.50	5.00	4.00
22 ga	5.50	5.00	5.00	4.50	5.00	4.00
20 ga	5.50	5.00	5.00	4.50	5.00	4.00
0.032"	5.50	5.00	5.00	4.50	5.00	4.00

140C

Thickness	Field -29.5 psf	Edge -36.5 psf	Field -34.2 psf	Edge -42.2 psf	Field -37.2 psf	Edge -46 psf
24 ga	5.00	4.50	4.50	4.00	4.50	3.50
22 ga	5.00	4.50	4.50	4.00	4.50	3.50
20 ga	5.00	4.50	4.50	4.00	4.50	3.50
0.032"	5.00	4.50	4.50	4.00	4.50	3.50

150C

Thickness	Field -33.9 psf	Edge -41.9 psf	Field -39.2 psf	Edge -48.4 psf	Field -42.7 psf	Edge -52.8 psf
24 ga	4.50	4.00	4.50	3.50	4.00	3.00
22 ga	4.50	4.00	4.50	3.50	4.00	3.00
20 ga	4.50	4.00	4.50	3.50	4.00	3.00
0.032"	4.50	4.00	4.00	3.00	4.00	3.00

160C

Thickness	Field -38.6 psf	Edge -47.6 psf	Field -44.6 psf	Edge -55.1 psf	Field -48.6 psf	Edge -60 psf
24 ga	4.50	3.50	4.00	3.00	3.50	2.50
22 ga	4.50	3.50	4.00	3.00	3.50	2.50
20 ga	4.50	3.50	4.00	3.00	3.50	2.50
0.032"	4.00	3.50	3.50	2.50	3.00	2.00

170C

Thickness	Field -43.6 psf	Edge -53.8 psf	Field -50.4 psf	Edge -62.2 psf	Field -54.9 psf	Edge -67.8 psf
24 ga	4.00	3.00	3.50	2.50	3.00	2.00
22 ga	4.00	3.00	3.50	2.50	3.00	2.00
20 ga	4.00	3.00	3.50	2.50	3.00	2.00
0.032"	3.50	2.50	3.00	2.00	N.G.	N.G.

Notes:

1. Allowable spacing is based on capacities determined in AISI 2012, North American Specification for the Design of Cold-Structural Members and ADM 2010, Aluminum Design Manual.

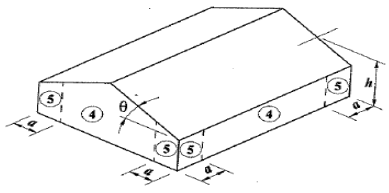
2. Allowable spacing is based on an applied load determined using ASCE 7-10 for the wind speeds and Wind Exposures tabulated. Assumptions include a tributary area of 10 square feet, an Enclosed building, a Topographic Factor of 1.0 and panel bearing length of 2.5 inches.

3. Allowable spacing is determined using the IBC 2015 suction and pressure, the combination is 0.6W.

4. Testing is the basis for the load carrying capacity.

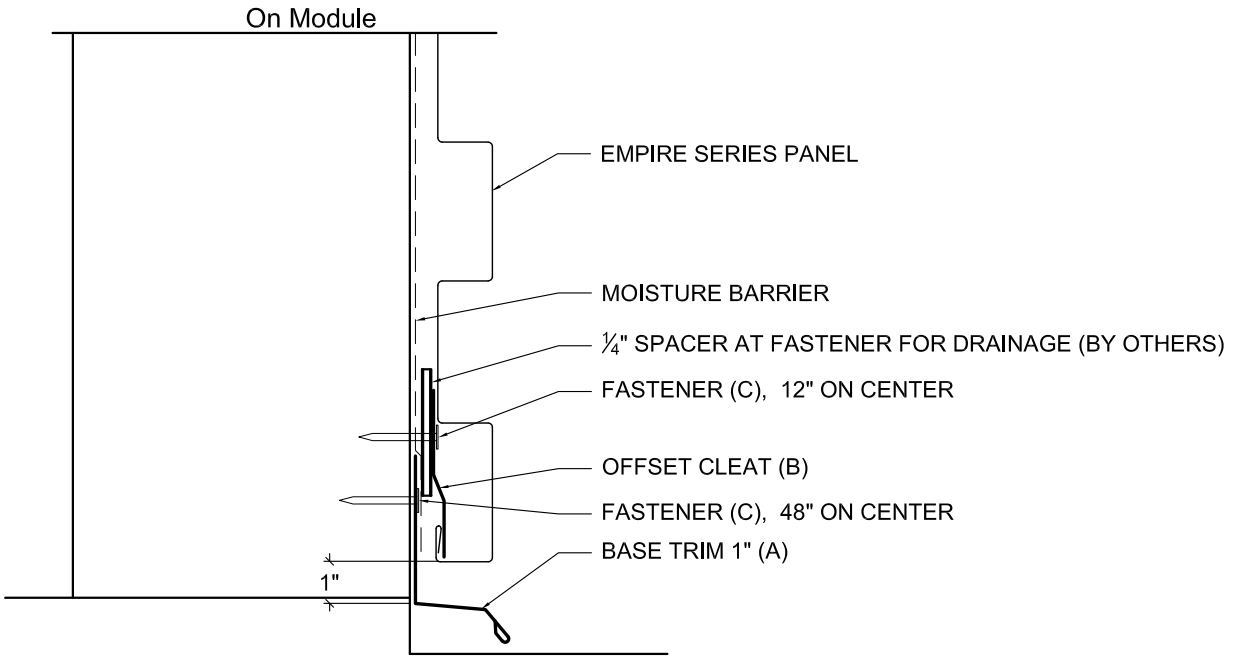
④ - FIELD
⑤ - EDGE

a - LEAST OF 10% MINIMUM BUILDING WIDTH OR 40% OF MEAN ROOF HEIGHT BUT NOT LESS THAN 3'.

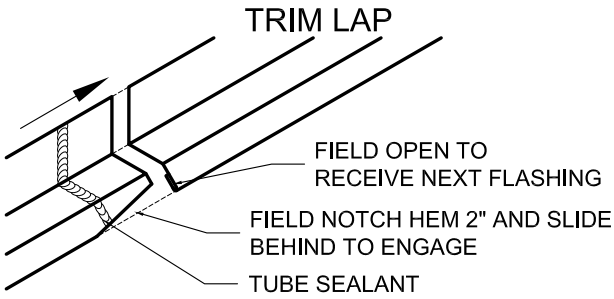


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Base - Horizontal

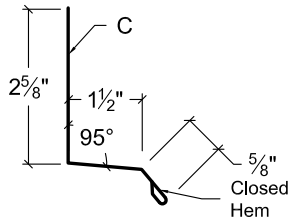
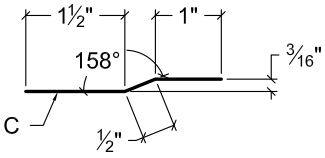
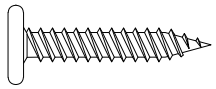
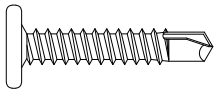


ELEVATION VIEW



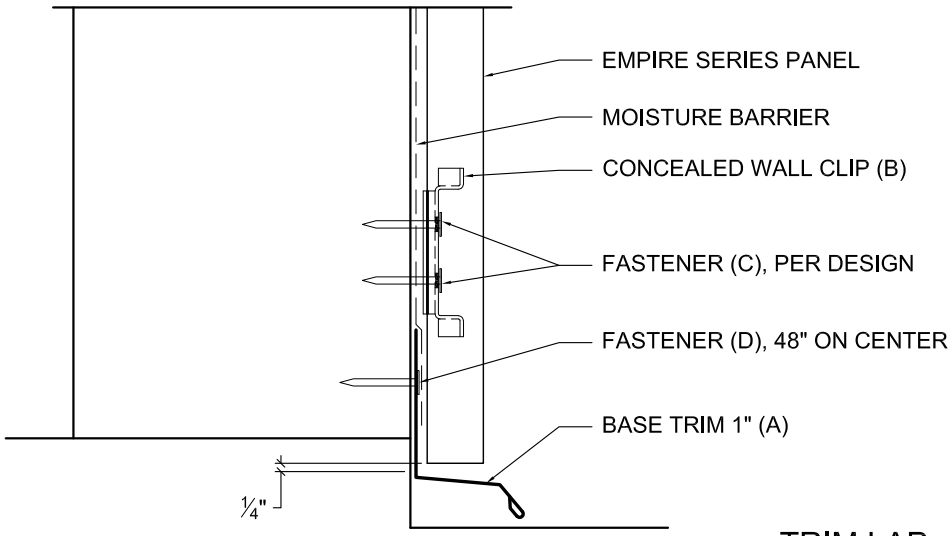
NO FASTENERS THROUGH TRIM LAP

INSTALL ORDER
1. BASE TRIM
2. MOISTURE BARRIER
3. SPACER & OFFSET CLEAT
4. PANEL

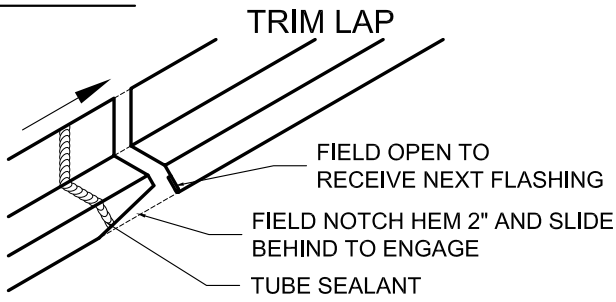
	Part	Description	Product #	Length	Installation Information
(A)		Base Trim 1" 24 Ga Base Trim 1" 22 Ga Base Trim 1" 0.032"	58707XX 60707XX 58707XXA	10'-2"	Install Moisture Barrier over top of Base Trim
(B)		Offset Cleat 24 Ga	5806499	10'-2"	Install 2" x 2" x ¼" spacer behind Offset Cleat. Hook panel onto Offset Cleat.
(C)		#10-12 x 1" PH Wood Screw	8243100	1"	For attachment to wood decking
(C)		#10-16 x 1" PH Driller	8242100	1"	For attachment to metal framing

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Base - Vertical

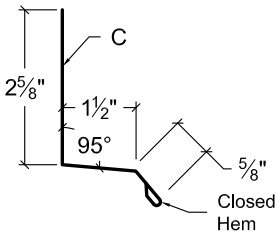
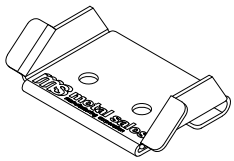
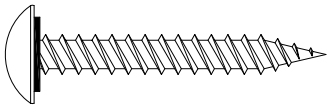
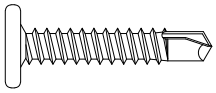
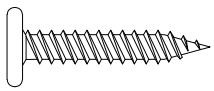


ELEVATION VIEW



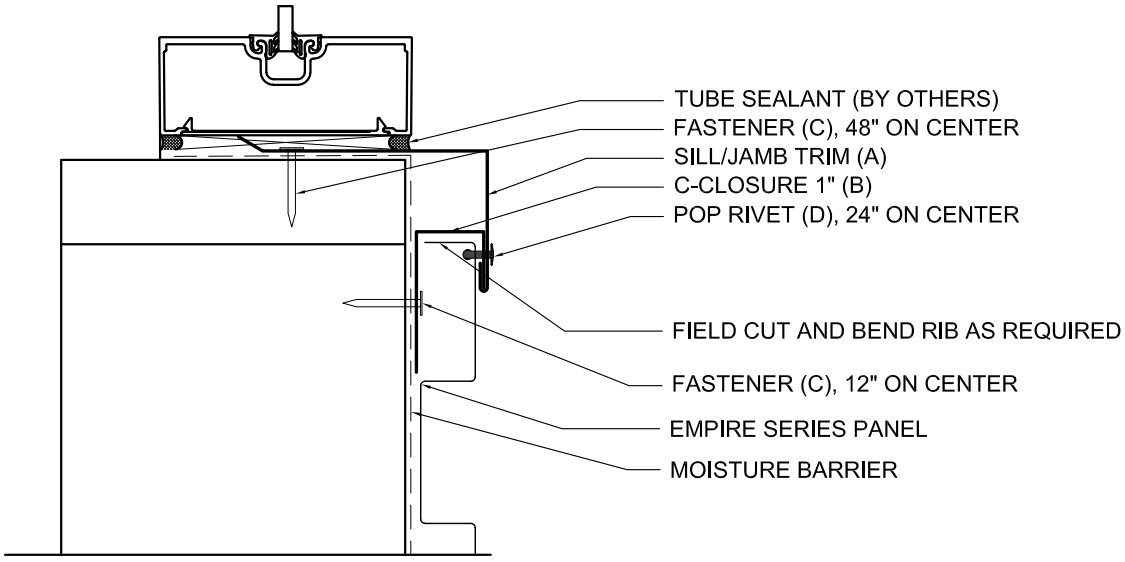
NO FASTENERS THROUGH TRIM LAP

INSTALL ORDER
1. BASE TRIM
2. MOISTURE BARRIER
3. PANEL

	Part	Description	Product #	Length	Installation Information
(A)		Base Trim 1" 24 Ga Base Trim 1" 22 Ga Base Trim 1" 0.032"	58707XX 60707XX 58707XXA	10'-2"	Install Moisture Barrier over top of Base Trim
(B)		Concealed Wall Clip 16 Ga Galv	4934200	2¼"	Install along the length of every panel spaced per design and within 6" of the panel ends.
(C)		#12-11 x 1½" LP Wood Screw	8244100	1½"	For clip attachment to wood sheathing
(C), (D)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(D)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood sheathing

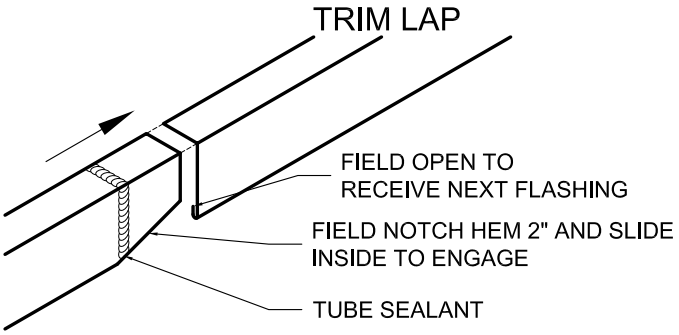
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Sill - Horizontal

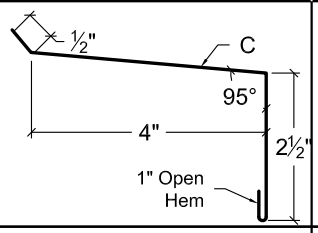
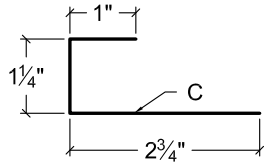
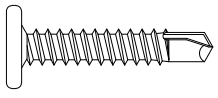
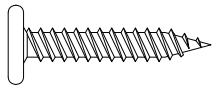
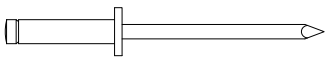


ELEVATION VIEW

INSTALL ORDER
1. MOISTURE BARRIER
2. C-CLOSURE
3. PANEL
4. SILL TRIM
5. WINDOW SILL

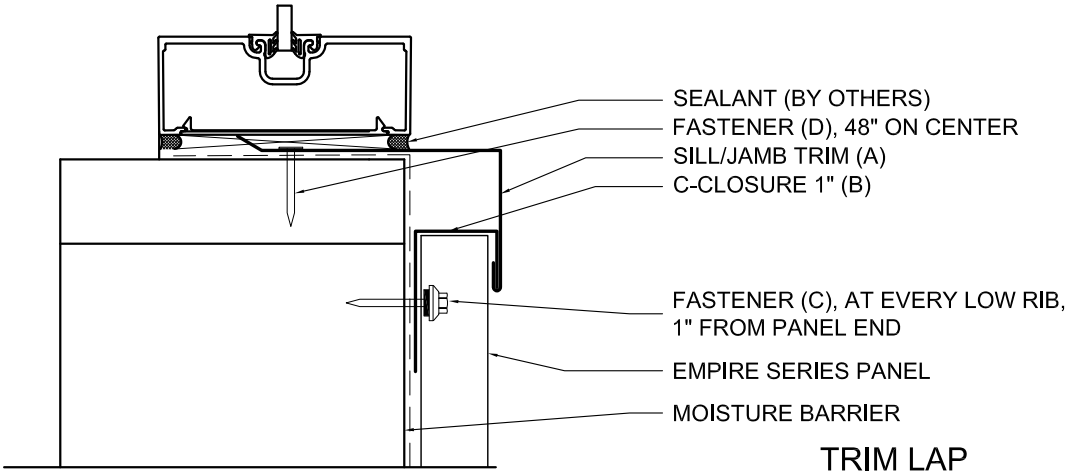


NO FASTENERS THROUGH TRIM LAP

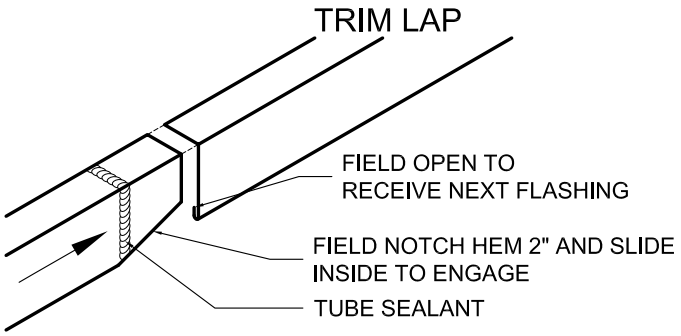
	Part	Description	Product #	Length	Installation Information
(A)		Sill/Jamb Trim 24 Ga Sill/Jamb Trim 22 Ga Sill/Jamb Trim 0.032"	58718XX 60718XX 58718XXA	10'-2"	Hook Sill/Jamb Trim onto C-Closure and fasten in place. Ensure Sill/Jamb Trim is installed with slope to allow for water drainage.
(B)		C-Closure 1" 24 Ga C-Closure 1" 22 Ga C-Closure 1" 0.032"	58711XX 60711XX 58711XXA	10'-2"	Install C-Closure and hook Sill/Jamb Trim over 1" leg.
(C)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(C)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking
(D)		⅛" x ⅜" Pop Rivet	82402XX		Attach Sill/Jamb Trim to C-Closure and panel.

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Sill - Vertical

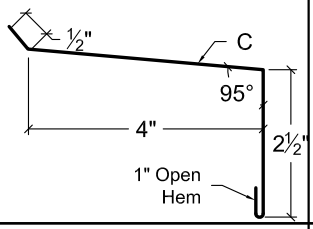
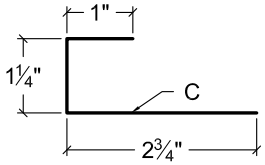
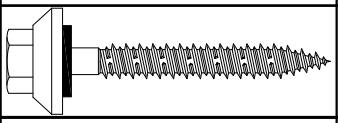
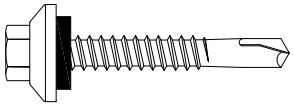
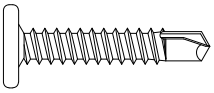
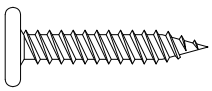


ELEVATION VIEW



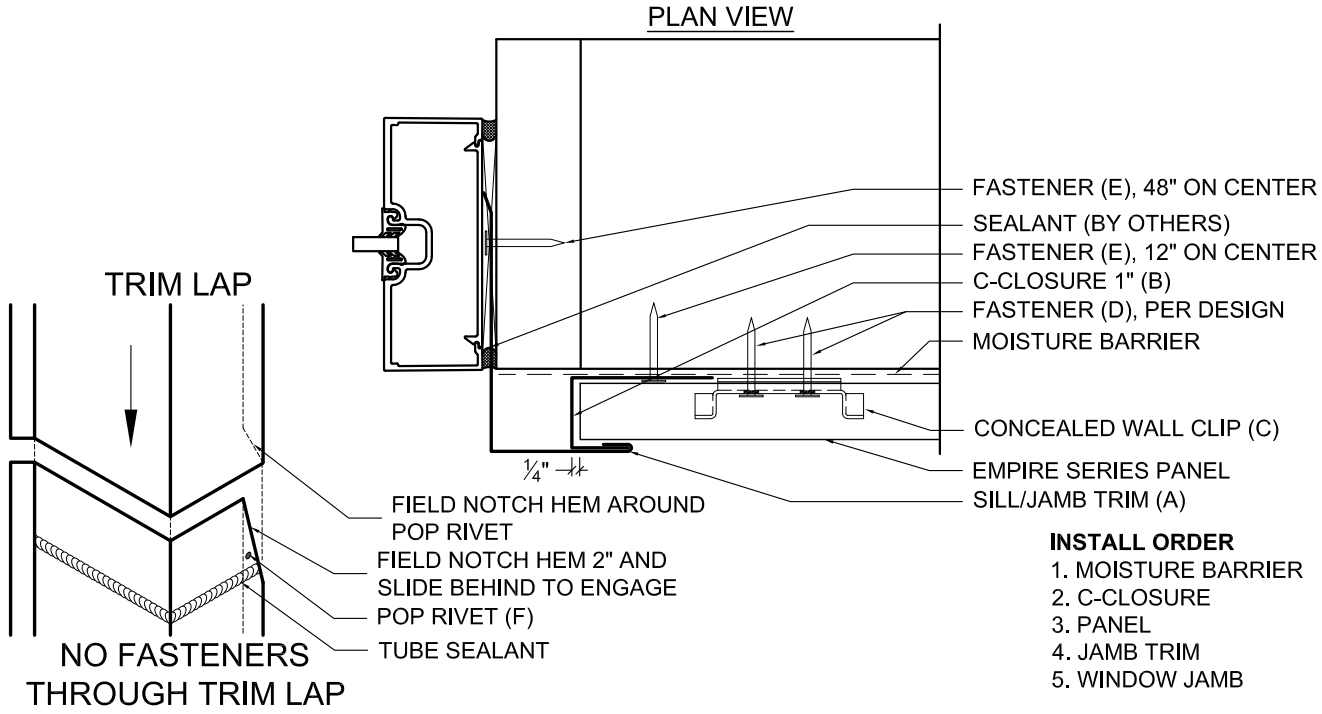
NO FASTENERS THROUGH TRIM LAP

INSTALL ORDER
1. MOISTURE BARRIER
2. C-CLOSURE
3. PANEL
4. SILL TRIM
5. WINDOW SILL

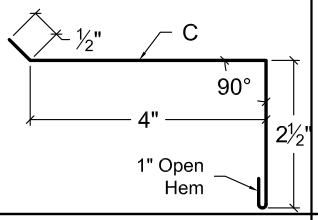
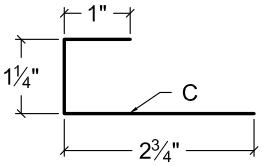
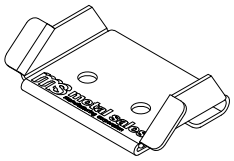
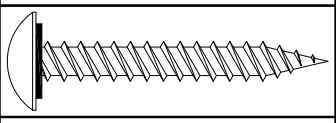
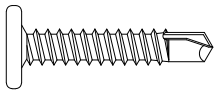
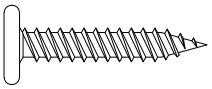
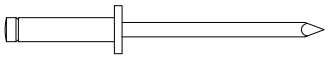
	Part	Description	Product #	Length	Installation Information
(A)		Sill/Jamb Trim 24 Ga Sill/Jamb Trim 22 Ga Sill/Jamb Trim 0.032"	58718XX 60718XX 58718XXA	10'-2"	Hook Sill/Jamb Trim onto C-Closure and fasten in place. Ensure Sill/Jamb Trim is installed with slope to allow for water drainage.
(B)		C-Closure 1" 24 Ga C-Closure 1" 22 Ga C-Closure 1" 0.032"	58711XX 60711XX 58711XA	10'-2"	Install C-Closure and hook Sill/Jamb Trim over 1" leg.
(C)		#10-14 x 1½" Wood Screw XL	82123XX	1½"	Install over wood decking
(C)		#12-14 x 1¼" Self Driller XL	82353XX	1¼"	Install over metal framing
(D)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(D)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking

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Jamb - Horizontal



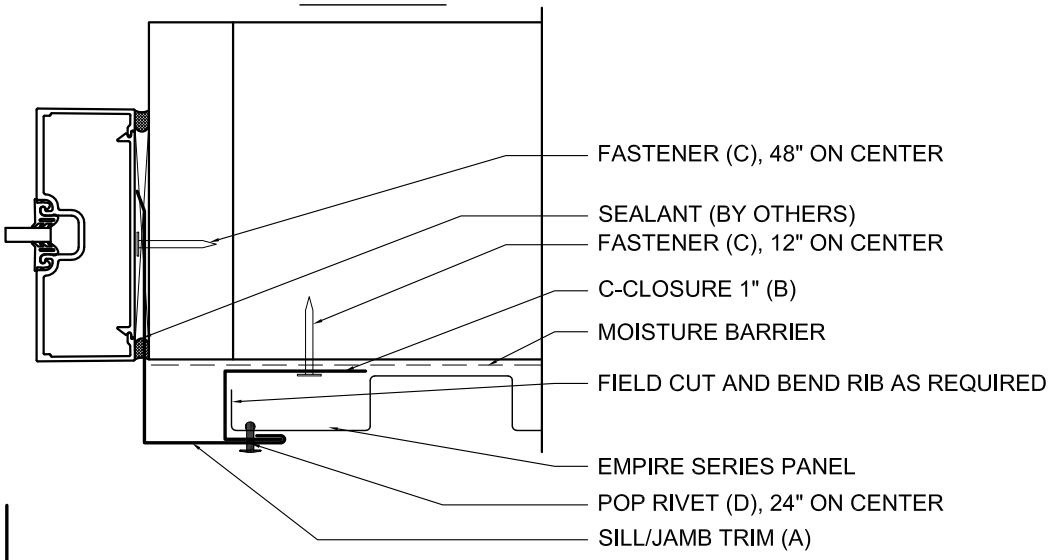
INSTALL ORDER
1. MOISTURE BARRIER
2. C-CLOSURE
3. PANEL
4. JAMB TRIM
5. WINDOW JAMB

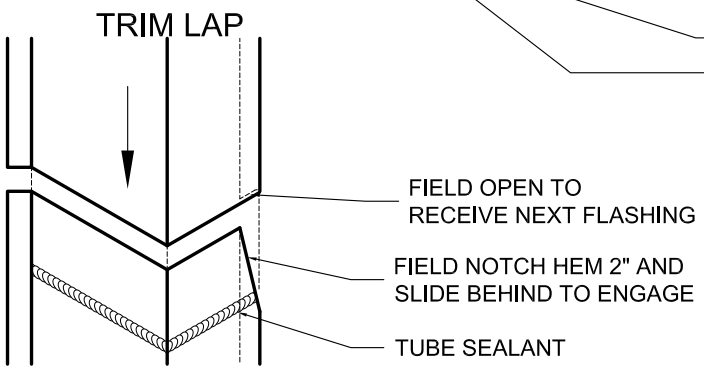
	Part	Description	Product #	Length	Installation Information
(A)		Sill/Jamb Trim 24 Ga Sill/Jamb Trim 22 Ga Sill/Jamb Trim 0.032"	58718XX 60718XX 58718XXA	10'-2"	Hook Sill/Jamb Trim onto C-Closure and fasten into place.
(B)		C-Closure 1" 24 Ga C-Closure 1" 22 Ga C-Closure 1" 0.032"	58711XX 60711XX 58711XXA	10'-2"	Install C-Closure and hook Sill/Jamb Trim over 1" leg.
(C)		Concealed Wall Clip 16 Ga Galv	4934200	2¼"	Install along the length of every panel spaced per design and within 6" of the panel ends.
(D)		#12-11 x 1½" LP Wood Screw	8244100	1½"	For clip attachment to wood sheathing
(D), (E)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(E)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking
(F)		⅛" x ⅜" Pop Rivet	82402XX		Attach Sill/Jamb Trim to C-Closure

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Jamb - Vertical

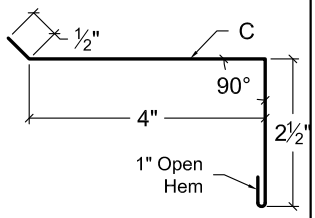
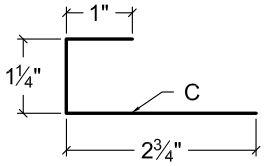
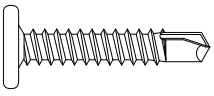
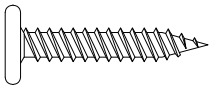
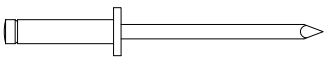
PLAN VIEW





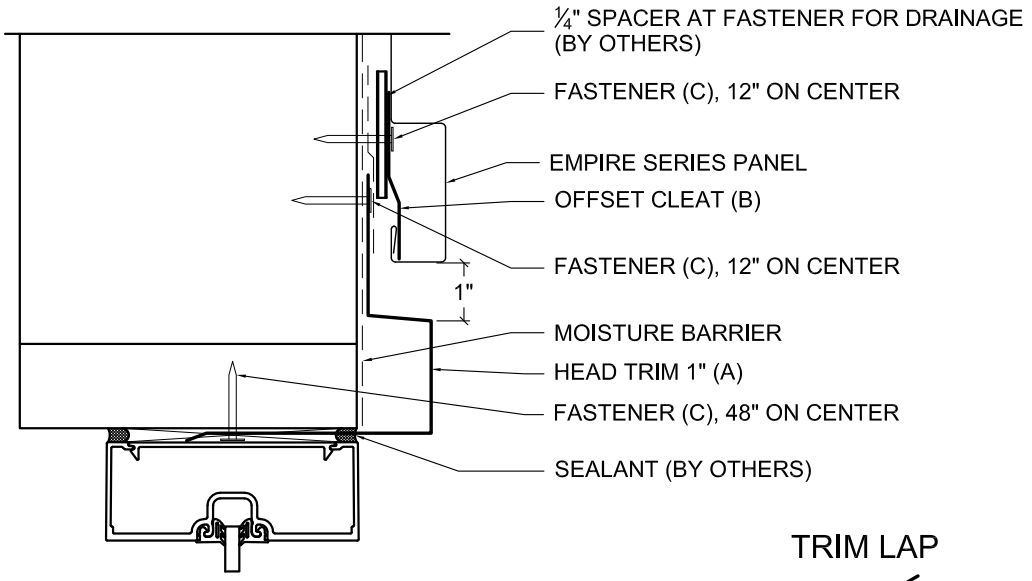
NO FASTENERS
THROUGH TRIM LAP

INSTALL ORDER
1. MOISTURE BARRIER
2. C-CLOSURE
3. PANEL
4. JAMB TRIM
5. WINDOW JAMB

	Part	Description	Product #	Length	Installation Information
(A)		Sill/Jamb Trim 24 Ga Sill/Jamb Trim 22 Ga Sill/Jamb Trim 0.032"	58718XX 60718XX 58718XXA	10'-2"	Hook Sill/Jamb Trim onto C-Closure and fasten into place.
(B)		C-Closure 1" 24 Ga C-Closure 1" 22 Ga C-Closure 1" 0.032"	58711XX 60711XX 58711XXA	10'-2"	Install C-Closure and hook Sill/Jamb Trim over 1" leg.
(C)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(C)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking
(D)		⅛" x ⅜" Pop Rivet	82402XX		Attach Sill/Jamb Trim to C-Closure and panel.

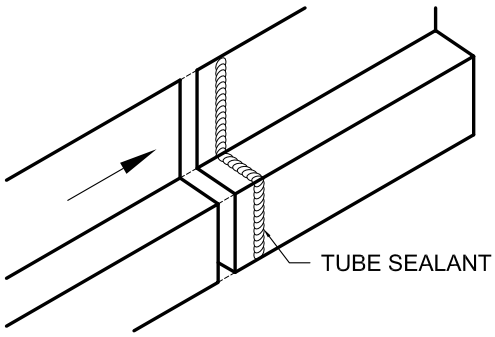
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Head - Horizontal



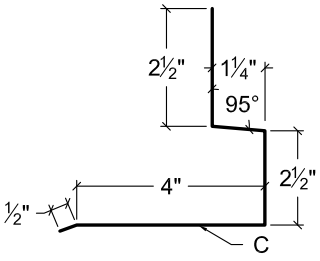
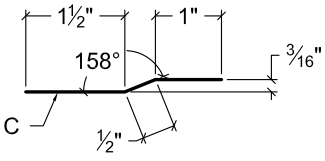
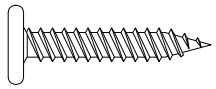
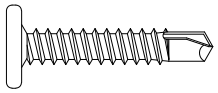
ELEVATION VIEW

TRIM LAP



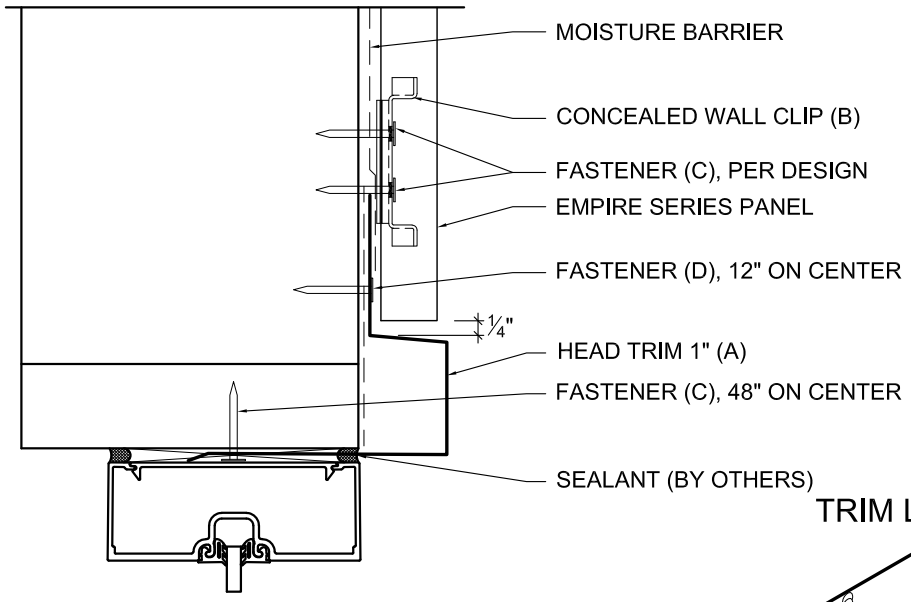
NO FASTENERS THROUGH TRIM LAP

INSTALL ORDER
1. HEAD TRIM
2. MOISTURE BARRIER
2. SPACER & OFFSET CLEAT
3. PANEL
4. WINDOW HEAD

	Part	Description	Product #	Length	Installation Information
(A)		Head Trim 1" 24 Ga Head Trim 1" 22 Ga Head Trim 1" 0.032"	58721XX 60721XX 58721XXA	10'-2"	Install Moisture Barrier over top of Head Trim and fasten in place. Ensure Head Trim is installed with slope to allow for water drainage.
(B)		Offset Cleat 24 Ga	5806499	10'-2"	Install 2" x 2" x ¼" spacer behind Offset Cleat. Hook panel onto Offset Cleat.
(C)		#10-12 x 1" PH Wood Screw	8243100	1"	For attachment to wood decking
(C)		#10-16 x 1" PH Driller	8242100	1"	For attachment to metal framing

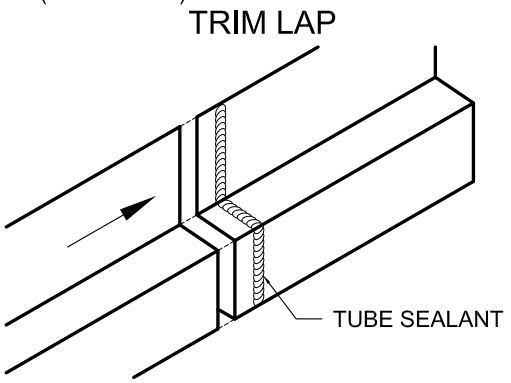
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Head - Vertical

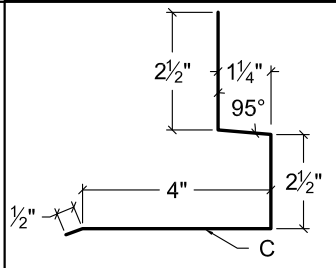
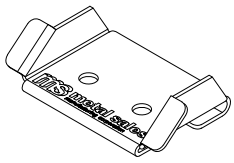
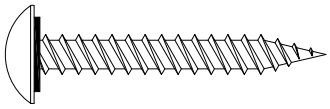
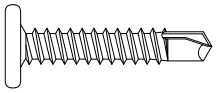
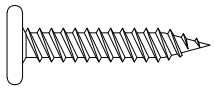


ELEVATION VIEW

INSTALL ORDER
1. HEAD TRIM
2. MOISTURE BARRIER
3. PANEL
4. WINDOW HEAD

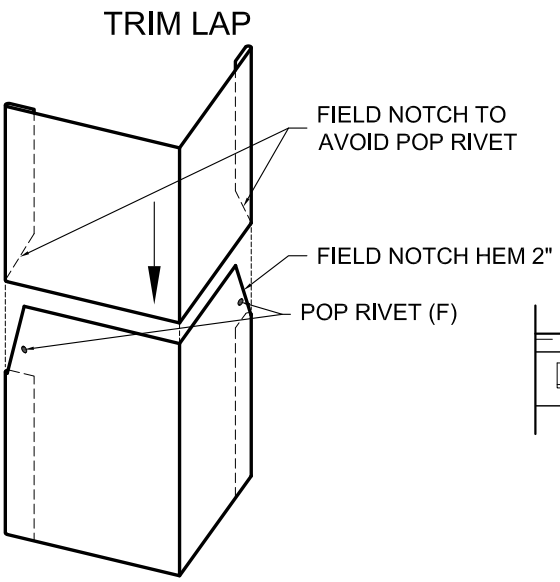


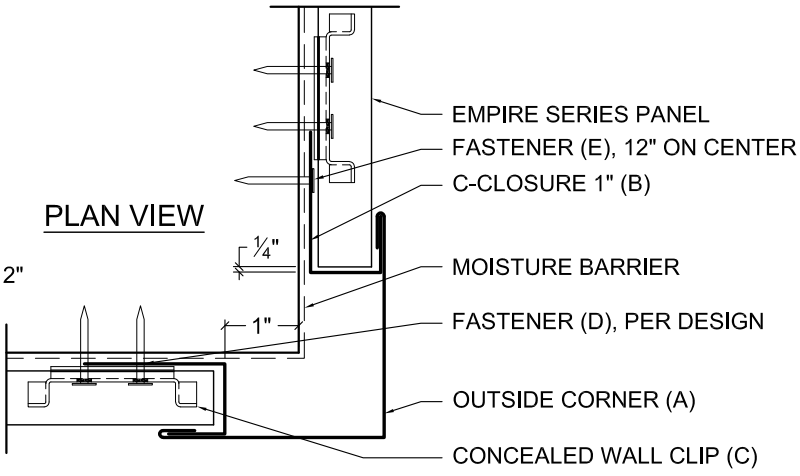
NO FASTENERS THROUGH TRIM LAP

	Part	Description	Product #	Length	Installation Information
(A)		Head Trim 1" 24 Ga Head Trim 1" 22 Ga Head Trim 1" 0.032"	58721XX 60721XX 58721XXA	10'-2"	Install Head Trim and fasten in place with Moisture Barrier over the top of the Head Trim. Ensure Head Trim is installed with slope to allow for water drainage.
(B)		Concealed Wall Clip 16 Ga Galv	4934200	2¼"	Install along the length of every panel spaced per design and within 6" of the panel ends.
(C)		#12-11 x 1½" LP Wood Screw	8244100	1½"	For clip attachment to wood decking
(C), (D)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(D)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking

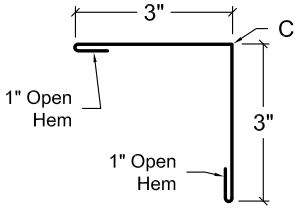
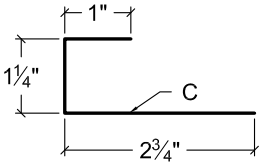
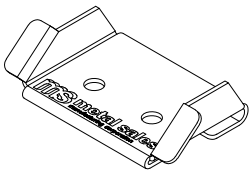
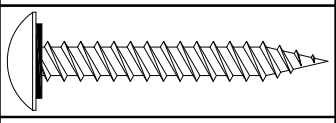
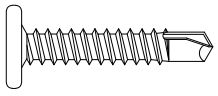
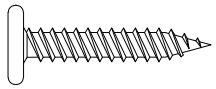
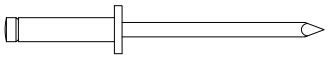
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Outside Corner-Horizontal





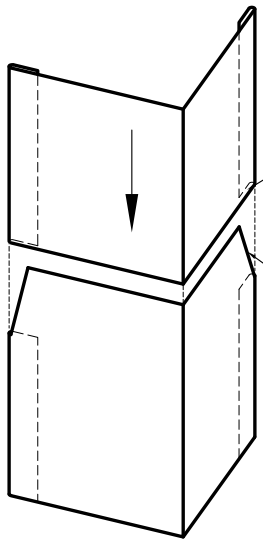
INSTALL ORDER
1. MOISTURE BARRIER
2. C-CLOSURE
3. PANEL
4. OUTSIDE CORNER
5. C-CLOSURE
6. PANEL

	Part	Description	Product #	Length	Installation Information
(A)		Outside Corner 24 Ga Outside Corner 22 Ga Outside Corner 0.032"	58724XX 60724XX 58724XXA	10'-2"	Hook Outside Corner around C-Closure, pull C-Closure into place. Pop Rivet to C-Closures under trim lap.
(B)		C-Closure 1" 24 Ga C-Closure 1" 22 Ga C-Closure 1" 0.032"	58711XX 60711XX 58711XXA	10'-2"	Install C-Closure to start panel.
(C)		Concealed Wall Clip 16 Ga Galv	4934200	2¼"	Install along the length of every panel spaced per design and within 6" of the panel ends.
(D)		#12-11 x 1½" LP Wood Screw	8244100	1½"	For clip attachment to wood decking
(D), (E)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(E)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking
(F)		⅛" x ⅜" Pop Rivet	82402XX		Attach Outside Corner to C-Closures at lap.

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Outside Corner - Vertical

TRIM LAP

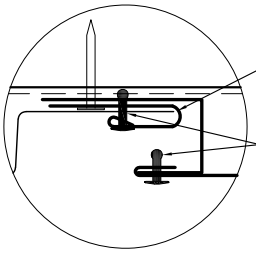


FIELD OPEN TO
RECEIVE NEXT FLASHING

FIELD NOTCH HEM 2"

NO FASTENERS
THROUGH TRIM LAP

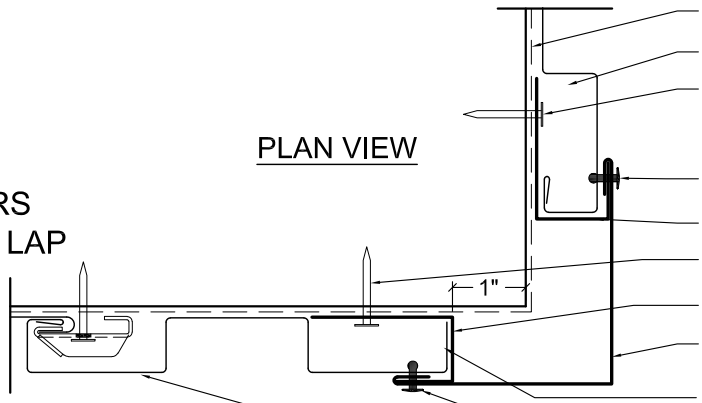
AT LOW RIB



PANEL STARTER (C)

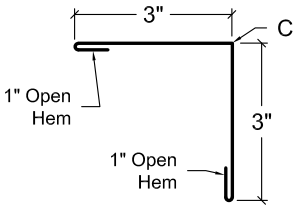
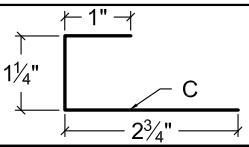
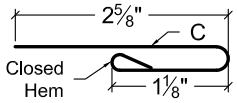
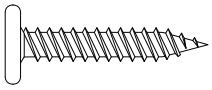
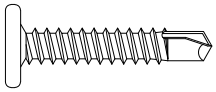
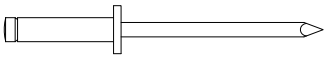
POP RIVET (E)
24" ON CENTER

PLAN VIEW



MOISTURE BARRIER
EMPIRE SERIES PANEL
FASTENER (D), 12" ON CENTER
POP RIVET (E), 24" ON CENTER
C-CLOSURE 1" (B)
FASTENER (D), 12" ON CENTER
C-CLOSURE 1" (B)
OUTSIDE CORNER (A)
FIELD CUT AND BEND
RIB AS REQUIRED
POP RIVET (E), 24" ON CENTER
EMPIRE SERIES PANEL

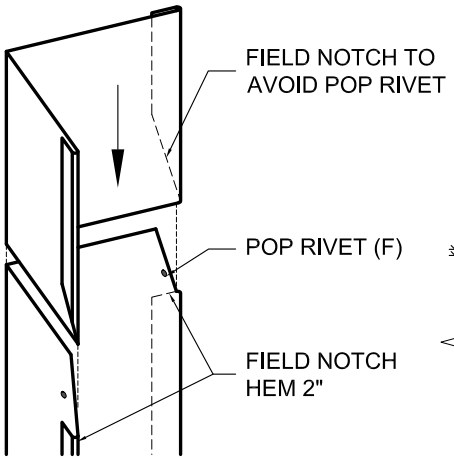
INSTALL ORDER
1. MOISTURE BARRIER
2. C-CLOSURE
3. PANEL
4. OUTSIDE CORNER
5. C-CLOSURE
6. PANEL

	Part	Description	Product #	Length	Installation Information
(A)		Outside Corner 24 Ga Outside Corner 22 Ga Outside Corner 0.032"	58724XX 60724XX 58724XXA	10'-2"	Hook Outside Corner around C-Closures. Pop Rivet to panel and C-Closures.
(B)		C-Closure 1" 24 Ga C-Closure 1" 22 Ga C-Closure 1" 0.032"	58711XX 60711XX 58711XXA	10'-2"	Install C-Closure to start panel.
(C)		Panel Starter 24 Ga Panel Starter 22 Ga Panel Starter 0.032"	58728XX 60728XX 58728XXA	10'-2"	Fasten to face of C-Closure, slide low rib of panel into open hem.
(D)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking
(D)		#10-16 x 1" PH Driller	8242100	1"	For trim attachment to metal framing
(E)		⅛" x ⅜" Pop Rivet	82402XX		Attach Outside Corner to C-Closures and panels.

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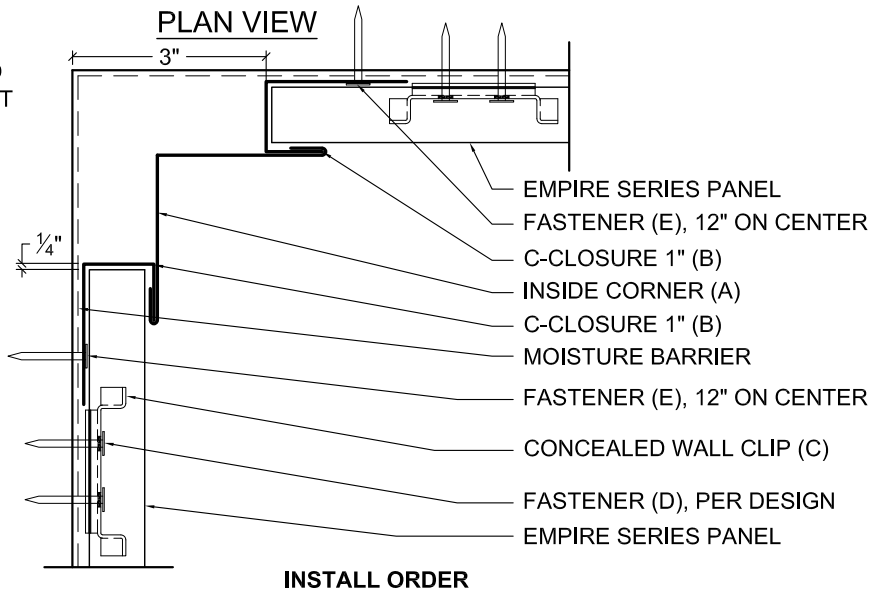
Inside Corner - Horizontal

TRIM LAP

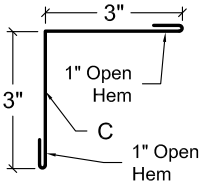
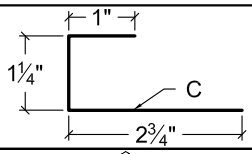
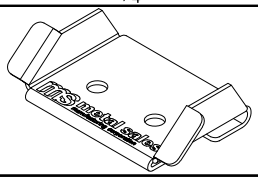
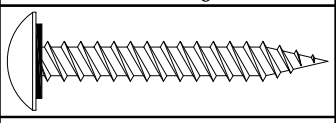
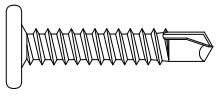
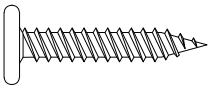
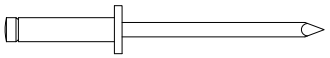


NO FASTENERS
THROUGH TRIM LAP

PLAN VIEW

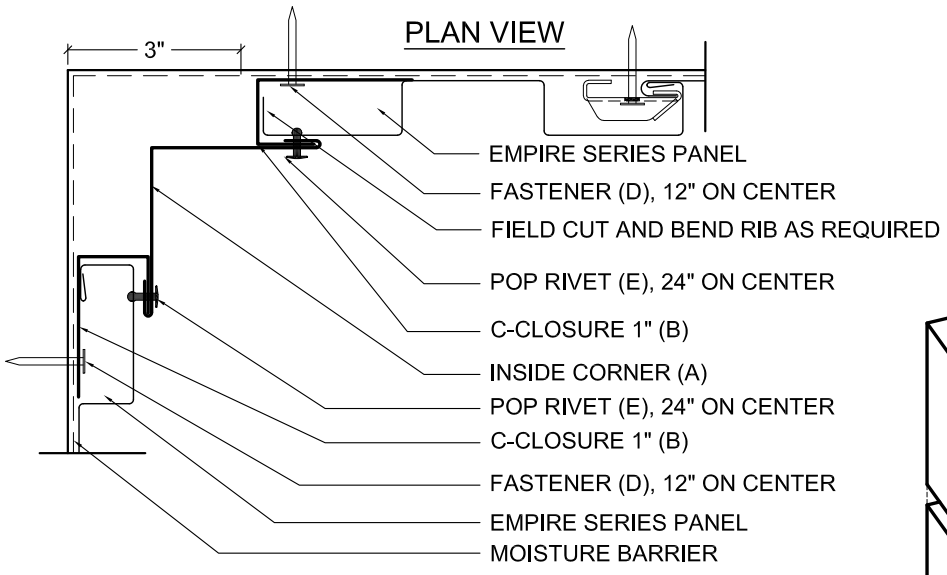


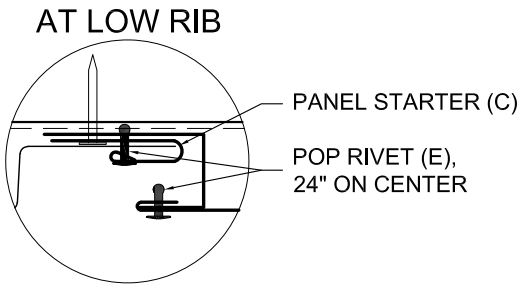
INSTALL ORDER
1. MOISTURE BARRIER
2. C-CLOSURE
3. PANEL
4. INSIDE CORNER
5. C-CLOSURE
6. PANEL

	Part	Description	Product #	Length	Installation Information
(A)		Inside Corner 24 Ga Inside Corner 22 Ga Inside Corner 0.032"	58726XX 60726XX 58726XXA	10'-2"	Hook Inside Corner around C-Closures into place. Pop Rivet to C-Closures under trim lap.
(B)		C-Closure 1" 24 Ga C-Closure 1" 22 Ga C-Closure 1" 0.032"	58711XX 60711XX 58711XXA	10'-2"	Install C-Closure to start panel.
(C)		Concealed Wall Clip 16 Ga Galv	4934200	2¼"	Install along the length of every panel spaced per design and within 6" of the panel ends.
(D)		#12-11 x 1½" LP Wood Screw	8244100	1½"	For clip attachment to wood decking
(D), (E)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(E)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking
(F)		⅛" x ⅜" Pop Rivet	82402XX		Attach Inside Corner to C-Closures at lap.

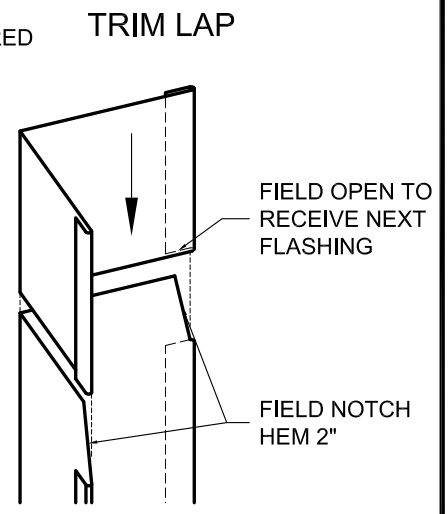
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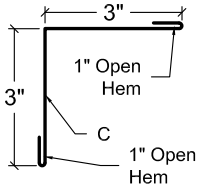
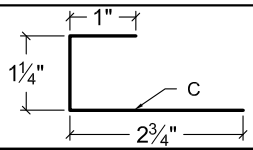
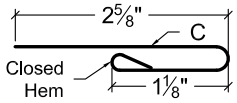
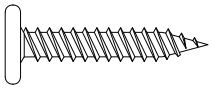
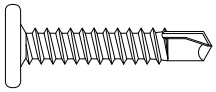
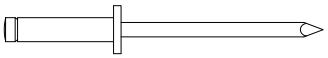
Inside Corner - Vertical





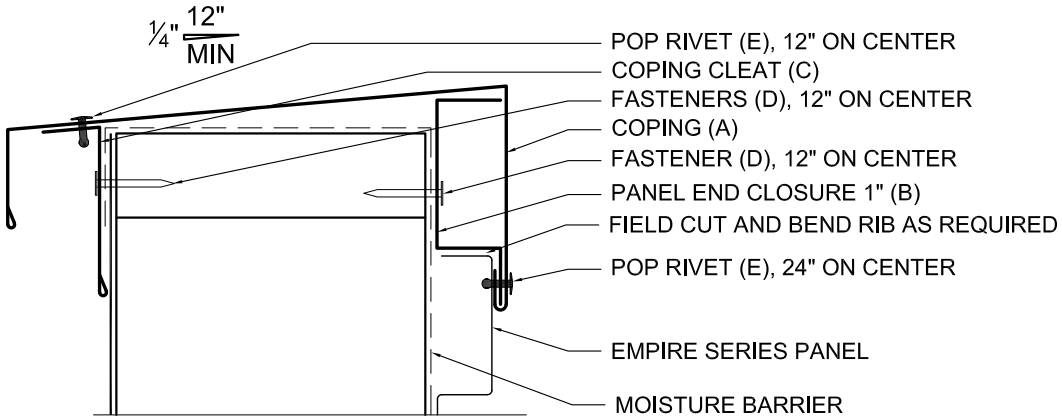
INSTALL ORDER
1. MOISTURE BARRIER
2. C-CLOSURE
3. PANEL
4. INSIDE CORNER
5. C-CLOSURE
6. PANEL



	Part	Description	Product #	Length	Installation Information
(A)		Inside Corner 24 Ga Inside Corner 22 Ga Inside Corner 0.032"	58726XX 60726XX 58726XXA	10'-2"	Hook Intside Corner Trim around C-Closures. Pop Rivet to closure trims and panel 24" on center.
(B)		C-Closure 1" 24 Ga C-Closure 1" 22 Ga C-Closure 1" 0.032"	58711XX 60711XX 58711XXA	10'-2"	Install C-Closure on each side of corner.
(C)		Panel Starter 24 Ga Panel Starter 22 Ga Panel Starter 0.032"	58728XX 60728XX 58728XXA	10'-2"	Fasten to face of C-Closure, slide low rib of panel into open hem.
(D)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking
(D)		#10-16 x 1" PH Driller	8242100	1"	For trim attachment to metal framing
(E)		⅛" x ⅜" Pop Rivet	82402XX		Attach Inside Corner to C-Closures and panels.

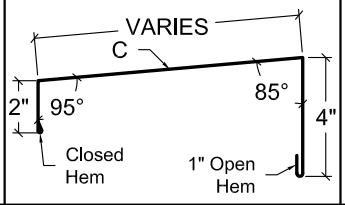
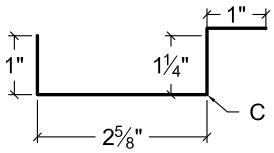
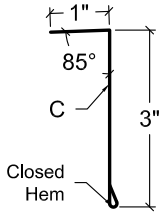
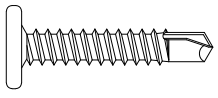
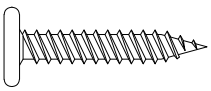
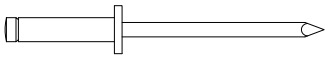
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Coping - Horizontal



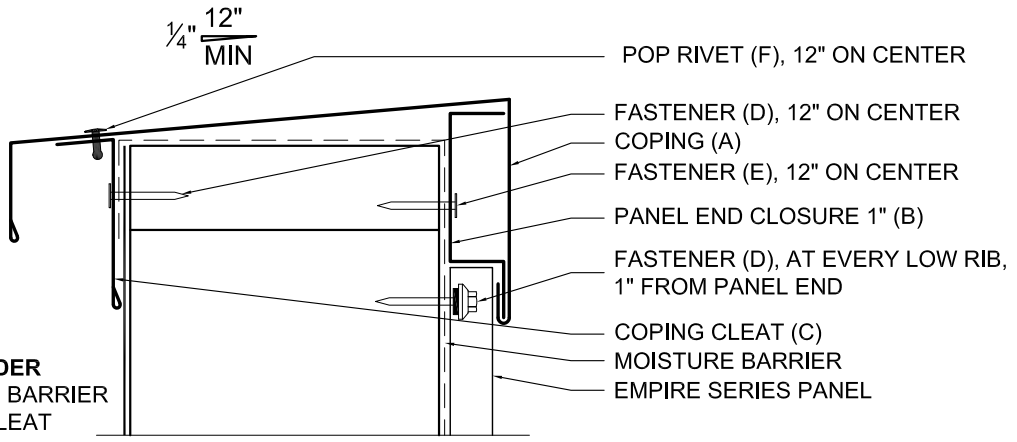
ELEVATION VIEW

INSTALL ORDER
1. MOISTURE BARRIER
2. COPING CLEAT
3. PANEL END CLOSURE
4. COPING
5. PANEL

	Part	Description	Product #	Length	Installation Information
(A)		Coping 8" 24 Ga Coping 8" 22 Ga Coping 10" 24 Ga Coping 10" 22 Ga Coping 12" 24 Ga Coping 12" 22 Ga	58714XX 60714XX 58715XX 60715XX 58716XX 60716XX	10'-2"	Hook Coping onto Panel End Closure and Pop Rivet to Coping Cleat.
(B)		Panel End Closure 1" 24 Ga Panel End Closure 1" 22 Ga Panel End Closure 1" 0.032"	58731XX 60731XX 58731XXA	10'-2"	Carefully locate Panel End Closure to support Coping.
(C)		Coping Cleat 24 Ga Coping Cleat 22 Ga Coping Cleat 0.032"	58734XX 60734XX 58734XXA	10'-2"	Install Coping Cleat to accept Coping attachment.
(D)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(D)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking
(E)		⅛" x ⅜" Pop Rivet	82402XX		Trim to trim attachment

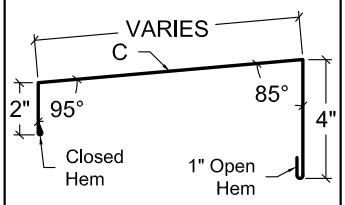
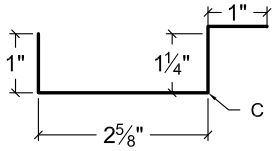
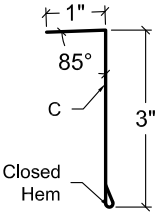
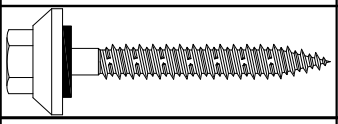
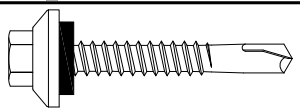
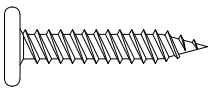
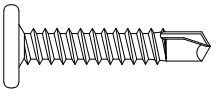
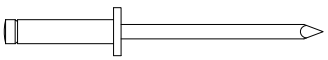
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Coping - Vertical



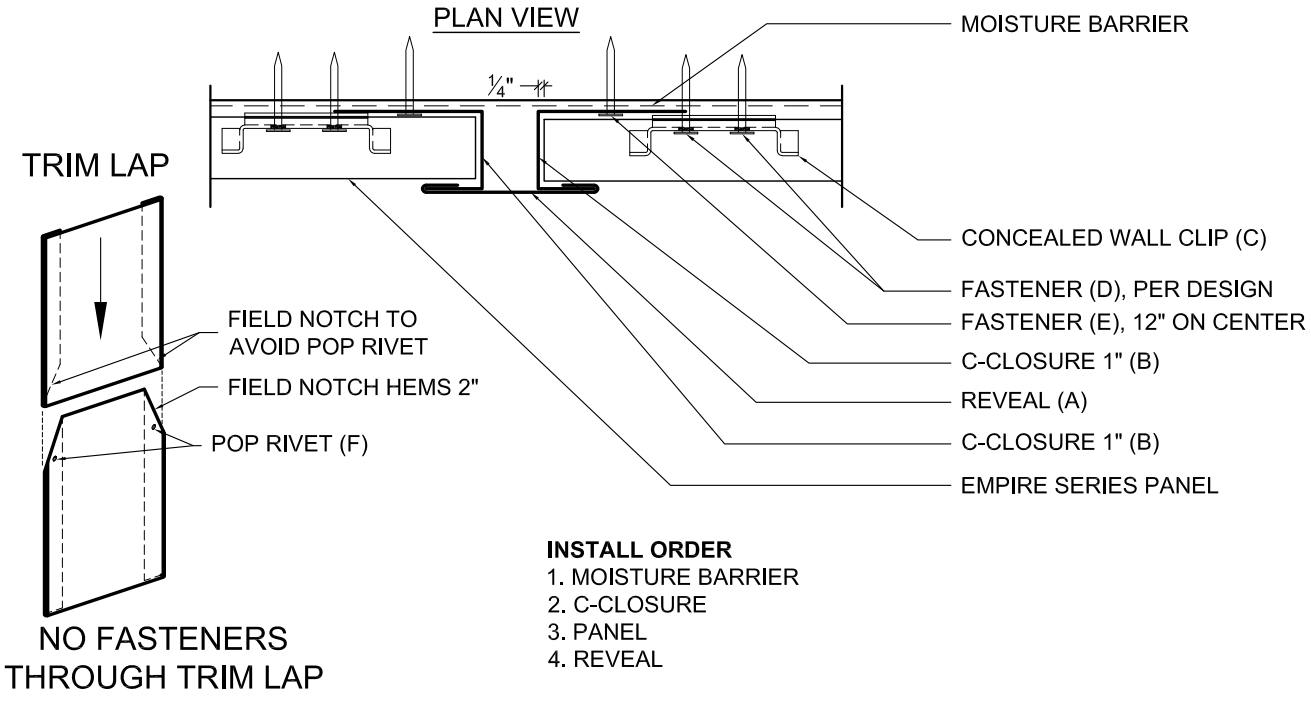
INSTALL ORDER
1. MOISTURE BARRIER
2. COPING CLEAT
3. PANEL
4. PANEL END CLOSURE
5. COPING

ELEVATION VIEW

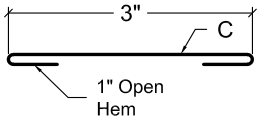
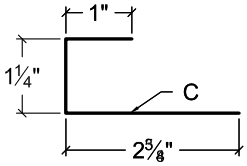
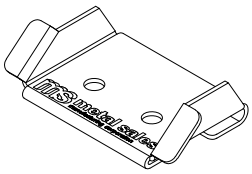
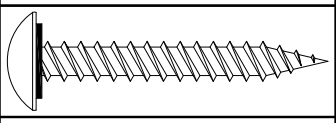
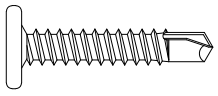
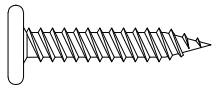
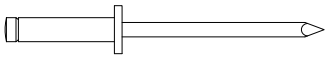
	Part	Description	Product #	Length	Installation Information
(A)		Coping 8" 24 Ga Coping 8" 22 Ga Coping 10" 24 Ga Coping 10" 22 Ga Coping 12" 24 Ga Coping 12" 22 Ga	58714XX 60714XX 58715XX 60715XX 58716XX 60716XX	10'-2"	Hook Coping onto Panel End Closure and Pop Rivet to Coping Cleat.
(B)		Panel End Closure 1" 24 Ga Panel End Closure 1" 22 Ga Panel End Closure 1" 0.032"	58731XX 60731XX 58731XXA	10'-2"	Carefully locate Panel End Closure to support Coping.
(C)		Coping Cleat 24 Ga Coping Cleat 22 Ga Coping Cleat 0.032"	58734XX 60734XX 58734XXA	10'-2"	Install Coping Cleat to accept Coping attachment.
(D)		#10-14 x 1½" Wood Screw XL	82123XX	1½"	Install over wood decking
(D)		#12-14 x 1¼" Self Driller XL	82353XX	1¼"	Install over metal framing
(E)		#10-12 x 1" PH Wood Screw	8243100	1"	For attachment to wood decking
(E)		#10-16 x 1" PH Driller	8242100	1"	For attachment to metal framing
(F)		⅛" x ⅜" Pop Rivet	82402XX		Trim to trim attachment

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Reveal - Horizontal

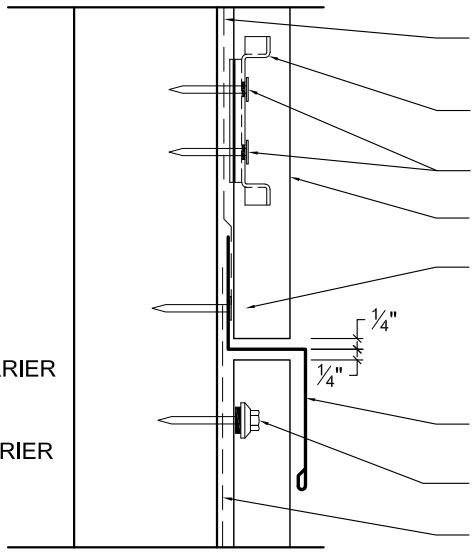


INSTALL ORDER
1. MOISTURE BARRIER
2. C-CLOSURE
3. PANEL
4. REVEAL

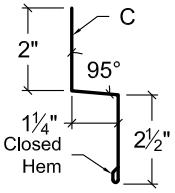
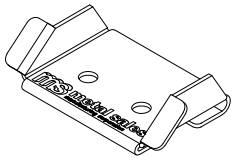
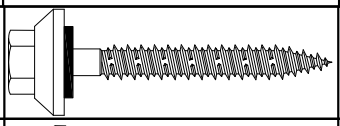
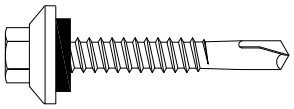
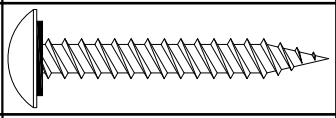
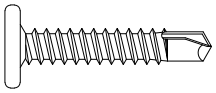
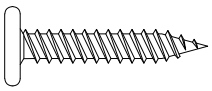
	Part	Description	Product #	Length	Installation Information
(A)		Reveal 24 Ga Reveal 22 Ga Reveal 0.032"	58740XX 60740XX 58740XXA	10'-2"	Hook Reveal to C-Closures. Pop Rivet to C-Closure under trim lap.
(B)		C-Closure 1" 24 Ga C-Closure 1" 22 Ga C-Closure 1" 0.032"	58711XX 60711XX 58711XXA	10'-2"	Install C-Closure to restrain Reveal. Leave ¼" gap between end of panels and back of C-Closures.
(C)		Concealed Wall Clip 16 Ga Galv	4934200	2¼"	Install along the length of every panel spaced per design and within 6" of the panel ends.
(D)		#12-11 x 1½" LP Wood Screw	8244100	1½"	For clip attachment to wood decking
(D), (E)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(E)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking
(F)		⅛" x ⅜" Pop Rivet	82402XX		Attach Reveal to C-Closures at trim lap.

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ELEVATION VIEW



INSTALL ORDER
1. LOWER MOISTURE BARRIER
2. LOWER PANEL
3. TRANSITION TRIM
4. UPPER MOISTURE BARRIER
5. UPPER PANEL

	Part	Description	Product #	Length	Installation Information
(A)		Transition Trim 1" 24 Ga Transition Trim 1" 22 Ga Transition Trim 1" 0.032"	58737XX 60737XX 58737XXA	10'-2"	Install Transition Trim over lower panels. Install Moisture Barrier over top of Transition Trim
(B)		Concealed Wall Clip 16 Ga Galv	4934200	2¼"	Install along the length of every panel spaced per design and within 6" of the panel ends.
(C)		#10-14 x 1½" Wood Screw XL	82123XX	1½"	Install over wood decking
(C)		#12-14 x 1¼" Self Driller XL	82353XX	1¼"	Install over metal framing
(D)		#12-11 x 1½" LP Wood Screw	8244100	1½"	For clip attachment to wood sheathing
(D), (E)		#10-16 x 1" PH Driller	8242100	1"	For clip/trim attachment to metal framing
(E)		#10-12 x 1" PH Wood Screw	8243100	1"	For trim attachment to wood decking

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Care and Maintenance

Though factory-applied pre-painted finishes are very durable and will last many years, eventually it may be desirable to thoroughly clean or repaint them.

Dirt pickup may cause apparent discoloration of the paint when it has been exposed in some dirt-laden atmospheres for long periods of time. In areas of strong sunlight, slight chalking may cause some change in appearance. A good cleaning will often restore the appearance of these buildings and render repainting unnecessary. An occasional light cleaning will help maintain a good appearance.

In many cases, simply washing the building with plain water using a hose or pressure sprayer will be adequate. In areas where heavy dirt deposits dull the surface, a cloth or soft bristle brush and solution of water and detergent ($^1/_3$ cup of laundry detergent per gallon of water for example) may be used. This should be followed by an adequate rinse of water. Do not use wire brushes, abrasives, or cleaning tools which will scratch the coating surface.

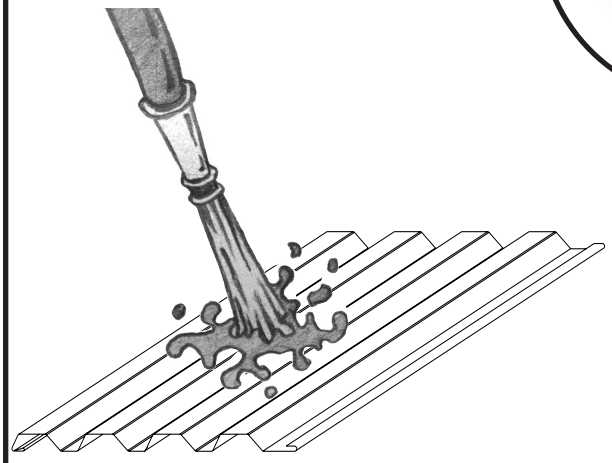
Mildew may occur in areas subject to high humidity but is not normally a problem due to the high inherent mildew resistance of the baked finish that is used. However, mildew can grow on dirt and spore deposits in some cases. To remove mildew along with the dirt, the following solution is recommended.

$^1/_3$ cup detergent (Tide® or equivalent)
$^2/_3$ cup trisodium phosphate (Solex® or equivalent)
1 quart of 5% sodium hypochlorite solution (Clorox® or equivalent)
3 quarts of water

Strong solvents and abrasive type cleaners should be avoided. Most organic solvents are flammable and toxic, and must be handled accordingly. When using a solvent, consult maintenance professionals and label instructions for proper handling and disposal of washings. If required, a mild solvent such as mineral spirits can be used to remove caulking compounds, oil, grease, tars, wax and similar substances. Use a cloth dampened with mineral spirits and apply only to areas which are contaminated. Follow up the use of this mild solvent with detergent cleaning and rinsing.



DO NOT USE A WIRE BRUSH



HOSE OR PRESSURE SPRAY FOR ADEQUATE CLEANING



USE MILD DETERGENT AND WATER FOR HEAVY DIRT DEPOSITS

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Notes

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