STANDING SEAM
Installation, Flashings & Shop Drawing Detail Guide
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Western States “Western Lock™” Panel
Installation, Flashings & Shop Drawing Detail Guide

Notes to Designer and Installers

The details contained in this guide are proven industry details and are intended to be used as a design aid and installation guide. It does not depict all situations that may be encountered on all projects. Modifications are the responsibility of the designer/owner/installer. Consideration should be given for Fit for Purpose, Building use, Climate conditions such as temperature, snow, wind, and moisture, Governing Building Codes, and Maintenance. It is highly recommended that all trims and flashings be of the same material as the panels (metal, gauge, finish) to ensure long term performance and durability. Where possible, flashing edges should be hemmed to strengthen the edge and protect the cut edge from exposure.

Framing and Substrates

“Western Lock ™” panels are used over all type of substrates like Steel Decking, open purlins, spaced sheathing, and wood decking such as plywood. Most details in this guide are shown with panels attached to Solid Decking.

Note on Underlayment

Not all conditions require an underlayment. However metal roofing is susceptible to Condensation and it is recommended that an appropriate Roofing underlayment be use on all wood substrates to protect the structure during installation. For added protection from rain and snow, it is recommended to use rubberized ice and water shield on eaves, valleys, and areas of roof penetrations.

Technical Assistance Contact your WSDI sales or technical representative for any additional information or assistance.

Slope Requirements

It is recommended that “Western Lock ™” panels have a minimum slope requirement of 3:12 on all structures.

Valley and Snow Design

Valley design and dimension must be the proper width to accommodate high snow, rain, ice, and slope conditions. If possible, splices, penetrations, valleys, roof elevation changes, should be minimized in areas of high snow and ice accumulations.

Oil Canning

Oil canning is a condition common with flat metal surfaces. This waviness is caused by steel mill tolerances, forming, variations in the structures surfaces, and hardness of the steel. Measures are taken at the roll forming process, like profile design, steel gauge, corrective leveling, to minimize the effects of oil canning. Oil Canning is a Characteristic of steel and cannot be eliminated totally and therefore is not reason for rejection of the panels.

Job Site Storage

While waiting to be installed on the job site, Storage of panels, trim crates, and flat sheet should be sloped in order to allow for proper moisture run off. One end should be elevated so as not to allow ponding of water on the metal surface. When using tarps for protection, proper ventilation should be provided to prevent condensation. Moisture or condensation that is trapped inside a bundle can lead to white rust on sheeting.

References

For other installation techniques and details, The Sheet Metal and Air Conditioning Contractors National Association Inc. (SMACNA) and NRCA manuals are great resource for working with sheet metal.
Western States Metal Roofing “Western Lock™” Standing Seam Panel
Installation, Flashings & Shop Drawing Detail Guide

Fastener Selection

Notes to Installers:

• Fastener Selection will vary depending on type and thickness of substrate.
• Design Calculations for clip spacing should be completed by the design engineer.
• The use of Butyl tape mastic, Butyl sealants and Curing Sealants is always recommended to insure weather tight installation.
• Panels and flashings should never be installed in contact with dissimilar metals.
• Use only those flashings and accessories designed for use with this panel.
• Panel clip attachment screws must be long enough to fully penetrate through roof deck substrate or penetrate solid lumber at least one inch.

• Exposed Trim Fasteners should have sealing washers and be coated to provide protection against corrosion.
• Screws must be properly driven to ensure holding strength and proper seal. (see diagram)
• Recommended drill speed is 2000rpm. Improper setting of drill speed can lead to snapping of screw heads.
• Pre drilling of screw holes may be necessary with heavy gauge metals.
### Western States Metal Roofing “Western Lock™” Panel

**Installation, Flashings & Shop Drawing Detail Guide**

#### Fastener Selection

<table>
<thead>
<tr>
<th>Description</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 x 7/8” Lap Self tap</td>
<td>Used to attach Trims. Stainless to be used with A606-4 Steel</td>
</tr>
<tr>
<td>14 x7/8 Lap Stainless</td>
<td></td>
</tr>
<tr>
<td>#10-12 x 1” Pancake head Wood</td>
<td>Used to attach Panel clips. Used to secure trims to substrates. Also available in Stainless Steel.</td>
</tr>
<tr>
<td>#10-12 x 1” SD PH Self Driller</td>
<td></td>
</tr>
<tr>
<td>Steel</td>
<td></td>
</tr>
<tr>
<td>1/8” Stainless Rivets</td>
<td>Used for Trim to Trim attachment or trim to wall panels.</td>
</tr>
<tr>
<td>Stainless Screws</td>
<td></td>
</tr>
<tr>
<td>#10 x1 x1/4” Wood Drillers</td>
<td>Used for panel attachment for panels made with A606-4 Steel</td>
</tr>
<tr>
<td>#10 x 1.5 x ¼”</td>
<td></td>
</tr>
<tr>
<td>#10 x 2” x ¾”</td>
<td></td>
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</table>

- The table above shows the panel Fasteners provided by WSD. Special order screws are available.
<table>
<thead>
<tr>
<th>Detail #</th>
<th>Panel Type</th>
<th>Rev</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Western Lock</td>
<td></td>
<td>05-20-13</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>TRIM CLEAT WS-401</th>
<th>BULL NOSE DRIP/ EAVE TRIM WS-402</th>
<th>JOGGLER CLEAT WS-403</th>
<th>STANDARD EAVE TRIM WS-404</th>
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<tr>
<td><img src="trimm-cleat-ws-401.png" alt="Diagram" /></td>
<td><img src="bull-nose-drip-eave-trim-ws-402.png" alt="Diagram" /></td>
<td><img src="joggle-cleat-ws-403.png" alt="Diagram" /></td>
<td><img src="standard-eave-trim-ws-404.png" alt="Diagram" /></td>
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<table>
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<tr>
<th>7&quot; RIDGE/hip CAP FLASHING WS-405H</th>
<th>KNEE/rib COVER WS-406</th>
<th>DRIP FLASHING WS-407</th>
<th>GUTTER EAVE TRIM WS-408</th>
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<tr>
<td><img src="7-ridge-hip-cap-flashing-ws-405h.png" alt="Diagram" /></td>
<td><img src="knee-rib-cover-ws-406.png" alt="Diagram" /></td>
<td><img src="drip-flashin-ws-407.png" alt="Diagram" /></td>
<td><img src="gutter-eave-trim-ws-408.png" alt="Diagram" /></td>
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<table>
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<tr>
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<th>6&quot; PERFORATED VENT STRIP WS-411</th>
<th>GUTTER SPLICE WS-413</th>
<th>STD. PRE-HUNG BOX GUTTER WS-415</th>
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<tr>
<td><img src="zee-closure-ws-410.png" alt="Diagram" /></td>
<td><img src="6-perforated-vent-strip-ws-411.png" alt="Diagram" /></td>
<td><img src="gutter-splin-ws-413.png" alt="Diagram" /></td>
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<tr>
<td>PANEL TYPE</td>
<td>STANDARD TRIM</td>
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<tr>
<td>------------</td>
<td>---------------</td>
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<td>PEAK/HIGH EAVE WS-419</td>
<td>10&quot; VENTED RIDGE CAP WS-420V</td>
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<td>REGLET FLASHING WS-429</td>
<td>RECEIVER TRIM WS-430</td>
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<td>GABLE TRIM WS-434</td>
<td>ALTERNATE GABLE TRIM WS-435</td>
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<tr>
<td>VALLEY PAN 18 3/4&quot; WS-425</td>
<td>ANGLE TRIM WS-431</td>
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<tr>
<td>VALLEY PAN 18 3/4&quot; WS-425</td>
<td>RAKE SIDEWALL TRIM WS-432</td>
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<td>VALLEY PAN 18 3/4&quot; WS-425</td>
<td>TRANSITION TRIM HIGH TO LOW WS-436</td>
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<tr>
<td>VALLEY PAN 18 3/4&quot; WS-425</td>
<td>TRANSITION TRIM LOW TO HIGH WS-437</td>
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STANDARD TRIM

A 05-20-13

DETAIL #: WSD-ST6
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<tr>
<th>Panel Type</th>
<th>Diagram</th>
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<td>![Diagram of Cricket Flashing WS-450]</td>
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<td>Gable Drip Trim WS-451</td>
<td>![Diagram of Gable Drip Trim WS-451]</td>
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<tr>
<td>Gable Starter Trim WS-452</td>
<td>![Diagram of Gable Starter Trim WS-452]</td>
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<td>Alternate Gable Trim WS-453</td>
<td>![Diagram of Alternate Gable Trim WS-453]</td>
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<tr>
<td>Alternate Rakewall Trim WS-454</td>
<td>![Diagram of Alternate Rakewall Trim WS-454]</td>
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<td>Alternate Rakewall Trim WS-455</td>
<td>![Diagram of Alternate Rakewall Trim WS-455]</td>
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<tr>
<td>Downspout Straight WS-426</td>
<td>![Diagram of Downspout Straight WS-426]</td>
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<td>Downspout W/Kick Out WS-427</td>
<td>![Diagram of Downspout W/Kick Out WS-427]</td>
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<tr>
<td>Downspout Elbow WS-443</td>
<td>![Diagram of Downspout Elbow WS-443]</td>
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<tr>
<td>Downspout Outlet WS-475</td>
<td>![Diagram of Downspout Outlet WS-475]</td>
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<tr>
<td>Gutter Strap WS-412</td>
<td>![Diagram of Gutter Strap WS-412]</td>
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<tr>
<td>Gutter End WS-414</td>
<td>![Diagram of Gutter End WS-414]</td>
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**STANDARD TRIM**

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<th>WESTERN LOCK</th>
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<td>REV:</td>
<td>A</td>
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<td>DATE:</td>
<td>05-20-13</td>
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Fax: (602) 261-7726  
877-PURLINS (787-5467)
<table>
<thead>
<tr>
<th>Detail</th>
<th>Description</th>
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<tbody>
<tr>
<td>DOWNSPOUT STRAP WS-442</td>
<td><img src="image" alt="Diagram of DOWNSPOUT STRAP WS-442" /></td>
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<tr>
<td>FLOATING RIDGE/HIP CAP WS-456</td>
<td><img src="image" alt="Diagram of FLOATING RIDGE/HIP CAP WS-456" /></td>
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<tr>
<td>FLOATING HIGH EAVE/PEAK WS-457</td>
<td><img src="image" alt="Diagram of FLOATING HIGH EAVE/PEAK WS-457" /></td>
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<tr>
<td>FLOATING HEA/END WALL WS-458</td>
<td><img src="image" alt="Diagram of FLOATING HEA/END WALL WS-458" /></td>
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<tr>
<td>18GA PANEL SUPPORT WS-459</td>
<td><img src="image" alt="Diagram of 18GA PANEL SUPPORT WS-459" /></td>
</tr>
</tbody>
</table>
3/8" BEAD OF NON-CURING BUTYL SEALANT ON MALE RIB OF PANEL AND TIED INTO TAPE SEALANT PRIOR TO ENGAGING FEMALE RIB OF NEXT PANEL

FIELD NOTCH AND HEM PANEL

1 1/2" CLEARANCE FOR THERMAL MOVEMENT

EAVE TRIM (WS-402)

TRIM CLEAT (WS-401)

EAVE TRIM FLASHING W/ BULLNOSE

WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

WESTERN LOCK ROOF PANEL

APPROPRIATE UNDERLAYMENT
WOOD DECKING

PANCAKE HEAD SCREW AT 12" O.C.

1 1/2" HEM

1/2" HEM

1/2" HEM

* CAN ONLY BE BENT FOR MAX. 6:12 PITCH

COLOR SIDE

COLOR SIDE

5/8" TRIM CLEAT (WS-401)

EAVE TRIM (WS-402)

* DENOTES ANGLE

05-20-13

GAUGE: ________  COLOR: ________

LENGTH: ________  FINISH: ________

MATERIAL: ________
3/8" BEAD OF NON-CURING BUTYL SEALANT ON MALE RIB OF PANEL AND TIED INTO TAPE SEALANT PRIOR TO ENGAGING FEMALE RIB OF NEXT PANEL

FASTENER AT 12" O.C.
WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

WESTERN LOCK ROOF PANEL

#9X_ WOOD SCREW TBD HEX HEAD

EAVE TRIM (WS-404)

TRIM CLEAT (WS-401)

APPROPRIATE UNDERLAYMENT WOOD DECKING

3/16" X 7/8" BUTYL TAPE

PANCAKE HEAD SCREWS AT 12" O.C.

FASTENER AT 12" O.C.

WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

6"

1/2" HEM

1/2" HEM

5/16

1/2"

COLOR SIDE

COLOR SIDE

EAVE TRIM (WS-404)

* DENOTES ANGLE

TRIM CLEAT (WS-401)

Gauge: _____  Color: _____
Length: _____  Finish: _____
Material: _____

FIXED
EAVE DETAIL

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A 05-20-13
Panel Type: WESTERN LOCK
Detail #: WSD-D2
3/8" BEAD OF NON-CURING BUTYL SEALANT ON MALE RIB OF PANEL AND TIED INTO TAPE SEALANT PRIOR TO ENGAGING FEMALE RIB OF NEXT PANEL

JOGGLE CLEAT (WS-403)
FIELD NOTCH AND HEM PANEL

CLEARANCE FOR THERMAL MOVEMENT

EAVE TRIM (WS-404)
TRIM CLEAT (WS-401)

APPROPRIATE UNDERLAYMENT
WOOD DECKING
3/16" X 7/8" BUTYL TAPE
PANCAKE HEAD SCREWS AT 12" O.C.

WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

1 3/8"
1/2"
15°
1 3/4"

JOGGLE CLEAT (WS-403)

6"
1/2" HEM

3/4"
1/2" HEM

EAVE TRIM (WS-404)
* DENOTES ANGLE

1/12"

COLOR SIDE

TRIM CLEAT (WS-401)

COLOR SIDE

GAUGE: _____
COLOR: _____
LENGTH: _____
FINISH: _____
MATERIAL: ______

WSD-D3

EAVE FLASHING
W/ JOGGLE CLEAT
DETAIL

WESTERN LOCK

A 05-20-13

REV: DATE:

DETAIL #: WSD-D3

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Western Lock Clip

(Contact design professional for clip spacing and location)

3/8" bead of non-curing butyl sealant on male rib of panel and tied into tape sealant prior to engaging female rib of next panel

Western Lock Roof Panel

Joggle Cleat (WS-403)

Field notch and hem panel

Gutter Strap (WS-412)

Clearance for thermal movement

Appropriate underlayment

Wood decking

3/16" x 7/8" butyl tape

Pancake head screws at 12" O.C.

3/16" x 7/8" butyl tape

Standard Pre-Hung Box Gutter (WS-415)

Pop rivet at 12" O.C.

Eave Trim (WS-408)
Optional if required to cover inside color of gutter

Standard Pre-Hung Box Gutter (WS-415)

Western Lock Eave Trim (WS-408)

* Denotes angle

Gutter with gutter detail

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POP rivet one side as required

GUTTER SPlice (WS-413)

4" gap

APPLY non-curing butyl sealant on both sides of gutter

1 1/8"

7/8"

6 1/2"

GUTTER SPlice (WS-413)

* denotes angle

STANDARD pre-hung box gutter WS-415

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FINISH: _______  COLOR: _______

GAUGE: _______  LENGTH: _______

MATERIAL: _______  FINISH: _______

05-20-13
APPLY (2) BEADS OF CURING SEALANT TO BOTH SIDES OF PANEL RIB PRIOR TO INSTALLING SEAM COVER

FILL IN OPEN ENDS OF SEAM RIBS WITH CURING SEALANT

POP RIVETS BOTH SIDES. TOP, BOTTOM AND AT LAPs

WESTERN LOCK KNEE/RIB COVER (WS-406)

WESTERN LOCK ROOF PANEL

WESTERN LOCK CLIP

FIELD CUT PANEL RIBS AND BEND OVER ROOF EDGE. SEAL ENDS OF PANEL PRIOR TO INSTALLING SEAM COVER

APPROPRIATE UNDERLAYERMENT

WOOD DECKING

PANCAKE HEAD SCREWS AT 12" O.C.

FIELD NOTCH AND HEM 1"

WESTERN LOCK CLIP (CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

WESTERN LOCK ROOF PANEL

DESIGN CAUTION:
TURNING PANELS DOWN FOR FASCIA MAY ESTABLISH UNWANTED POINT OF PANEL FIXITY.

STANDING SEAM KNEE/RIB COVER (WS-406)
* DENOTES ANGLE

DRIP FLASHING (WS-407)

GAUGE: _______ COLOR: _______
LENGTH: _______ FINISH: _______
MATERIAL: _______

TURN DOWN KNEE DETAIL

Panel Type: WESTERN LOCK

DETAIL #: WSD-D6

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05-20-13
FLOATING RIDGE/HIP CAP (WS-456)

18GA PANEL END SUPPORT (WS-459)

CONTINUOUS 3/16" X 7/8"
85007

HWH FASTENER W/WASHER AT 12" O.C.

NON-CURING BUTYL SEALANT AT ENDS, FILL IN ALL GAPS

ZEE CLOSURE (WS-410)

WESTERN LOCK CLIP (CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

WESTERN LOCK ROOF PANEL

PRE-POP 1/8" RMET TO PANEL PRIOR TO INSTALLATION
@ HIP = 4" O.C.
RIDGE = 4 EQ. SPACED PER PANEL

APPROPRIATE UNDERLAYMENT
WOOD DECKING

FLOATING RIDGE/HIP CAP (WS-456)
* DENOTES ANGLE

GAUGE: __________ COLOR: __________
LENGTH: __________ FINISH: __________
MATERIAL: __________________

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Fax: (602) 261-7726
877-PURLINS (787-5467)

FLOATING RIDGE/HIP DETAIL

A 05-20-13

REV: DATE:

DETAIL #: WSD-D8
WESTERN LOCK ROOF PANEL
WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

CONT. 3/16" X 7/8"
BUTYL TAPE

#9X WOOD SCREW TBD
HEX HEAD @ 4" O.C.

1/2" OPEN HEM

1/2" OPEN HEM

6" MIN.

12 3/4"

3/8" BEAD OF NON-CURING
BUTYL SEALANT ON MALE RIB
OF PANEL AND TIED INTO TAPE
SEALANT PRIOR TO ENGAGING
FEMALE RIB OF NEXT PANEL

VALLEY FLASHING
(WS-425)

APPROPRIATE UNDERLAYMENT
WOOD DECKING

18 3/4"

18 3/4"

* DENOTES ANGLE

VALLEY FLASHING (WS-425)

GAUGE: 
COLOR: 
LENGTH: 
FINISH: 
MATERIAL: 

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FIXED VALLEY DETAIL

WESTERN LOCK

A 05-20-13
REV: DATE:
DETAIL #: 
WSD-D12
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Phoenix, AZ 85007                              Fax: (602) 261-7726
www.MetalForRoofing.com                      877-PURLINS (787-5467)

**Fixed High Eave Detail**

**Panel Type:** WESTERN LOCK

**Detail #:**  WSD-D13

**Date:** 05-20-13
**Floating High Eave/Peak Detail (WSD-D14)**

**Western Lock Clip** (Contact Design Professional for Clip Spacing and Location)

**Western Lock Roof Panel**

**Appropriate Underlayment**

**Wood Decking**

**Floating High Eave/Peak Flashing (WS-457)**

18GA Panel End Support (WS-459)

Non-Curing Butyl Sealant at ends, fill in all gaps

HWH Fastener w/Washer at 12" O.C.

7EE Closure (WS-410)

Continuous 3/16" x 7/8" Butyl Tape

Trim Cleat (WS-401)

Pancake head screws at 12" O.C.

Pre-Pop 1/8" rivet to panel prior to installation

(4) Pop Rivets Eq. Spaced per panel

ZEE Closure (WS-410)

1 1/2"

Floating High Eave/Peak Flashing (WS-457)

* Denotes Angle

3/4" x 1/2" open hem

3/4" x 1/2" open hem

1 1/2" x 1 1/2"

5/8" 8 x 1 1/2"

1 1/4" 1/16"

1 1/2"

1 1/2"

1 1/4" 1/16"

1 1/4" 1/16"

1/2" open hem

1/2" open hem

8" 17/8"

18GA Panel End Support (WS-459)

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**Panel Type:** Western Lock

**Detail #:** WSD-D14

**Date:** 05-20-13

**Gauge:**

**Finish:**

**Material:**

**Color:**
NOTE:
FIELD CUT FIRST AND
LAST PANELS TO EQUAL
WIDTHS.
NOTE:
FIELD CUT FIRST AND LAST PANELS TO EQUAL WIDTHS.

NOTE:
THIS TRIM REQUIRES SLIDING UP FROM EAVE

FIELD CUT AND BEND PANEL UP 1 1/2"

RECEIVER TRIM (WS-430)

GABLE TRIM (WS-435)

TRIM CLEAT (WS-401)

POP RIVET AT 12" O.C.

3/16" X 7/8" BUTYL TAPE

WESTERN LOCK ROOF PANEL

WESTERN LOCK CLIP (CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

APPROPRIATE UNDERLAYMENT WOOD DECKING

PANCAKE HEAD SCREWS AT 12" O.C.

1 1/2"

1/2" OPEN HEM

1/4"

3/4"

TRIM CLEAT (WS-401)

COLOR SIDE

1 1/4"

2 1/2"

1/4"

3/4"

COLOR SIDE

1/2" OPEN HEM

3 PIECE GABLE DETAIL

WESTERN LOCK

GAUGE: ________  COLOR: ________
LENGTH: ________  FINISH: ________
MATERIAL: ________

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NOTE:
FIELD CUT FIRST AND LAST PANELS TO EQUAL WIDTHS.

3/16" X 7/8" BUTYL TAPE
WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

WESTERN LOCK
ROOF PANEL

3/4" MIN.
ENGAGEMENT

GABLE STARTER TRIM
(WS-452)

FILL POCKET WITH
NON-CURING BUTYL
SEALANT PRIOR TO
INSERTING ROOF PANEL

GABLE Drip TRIM
(WS-451)

TRIM CLEAT
(WSD-401)

APPROPRIATE UNDERLAYMENT
WOOD DECKING
FASTENER AT 12" O.C.

GABLE Drip TRIM
(WS-451)

COLOR SIDE

1/2" OPEN HEM

COLOR SIDE

1/2" OPEN HEM

COLOR SIDE

1/2" OPEN HEM

COLOR SIDE

1/2"

TRIM CLEAT (WS-401)

WESTERN LOCK

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Western States Metal Roofing
CONTINUOUS 3/16" X 7/8"
BUTYL TAPE AT TOP AND
BOTTOM "Z" CLOSURE

FIELD BEND PANEL
UP 1 1/2"

PANEL CLIP
(OPTIONAL)

ALTERNATE GABLE TRIM
(WS-453)

TRIM CLEAT
(WS-401)

NOTE:
MUST USE TRIM CLEAT
WITH THIS APPLICATION

1/8" POP RIVET AT 12" O.C.

ZEE CLOSURE (WS-410)

WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL
FOR CLIP SPACING AND LOCATION)

WESTERN LOCK
ROOF PANEL

APPROPRIATE UNDERLAYMENT
WOOD DECKING

RIVET "Z" CLOSURE @12" O.C.
TO PANEL PRIOR TO INSTALLING

FASTENER AT 12" O.C.

COLOR SIDE

1/2" HEM

1 1/2"

ALTERNATE
GABLE TRIM (WS-453)

 COLOR SIDE

ZEE CLOSURE (WS-410)

TRIM CLEAT (WD-401)

CONTINUOUS 3/16" X 7/8"
BUTYL TAPE AT TOP AND
BOTTOM "Z" CLOSURE

FIELD BEND PANEL
UP 1 1/2"

PANEL CLIP
(OPTIONAL)

ALTERNATE GABLE TRIM
(WS-453)

TRIM CLEAT
(WS-401)

NOTE:
MUST USE TRIM CLEAT
WITH THIS APPLICATION

1/8" POP RIVET AT 12" O.C.

ZEE CLOSURE (WS-410)

WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL
FOR CLIP SPACING AND LOCATION)

WESTERN LOCK
ROOF PANEL

APPROPRIATE UNDERLAYMENT
WOOD DECKING

RIVET "Z" CLOSURE @12" O.C.
TO PANEL PRIOR TO INSTALLING

FASTENER AT 12" O.C.

COLOR SIDE

1/2" HEM

1 1/2"

ALTERNATE
GABLE TRIM (WS-453)

 COLOR SIDE

ZEE CLOSURE (WS-410)

TRIM CLEAT (WD-401)

CONTINUOUS 3/16" X 7/8"
BUTYL TAPE AT TOP AND
BOTTOM "Z" CLOSURE

FIELD BEND PANEL
UP 1 1/2"

PANEL CLIP
(OPTIONAL)

ALTERNATE GABLE TRIM
(WS-453)

TRIM CLEAT
(WS-401)

NOTE:
MUST USE TRIM CLEAT
WITH THIS APPLICATION

1/8" POP RIVET AT 12" O.C.

ZEE CLOSURE (WS-410)

WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL
FOR CLIP SPACING AND LOCATION)

WESTERN LOCK
ROOF PANEL

APPROPRIATE UNDERLAYMENT
WOOD DECKING

RIVET "Z" CLOSURE @12" O.C.
TO PANEL PRIOR TO INSTALLING

FASTENER AT 12" O.C.

COLOR SIDE

1/2" HEM

1 1/2"

ALTERNATE
GABLE TRIM (WS-453)

 COLOR SIDE

ZEE CLOSURE (WS-410)

TRIM CLEAT (WD-401)
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Fax: (602) 261-7726
877-PURLINS (787-5467)

NOTE:
FIELD CUT FIRST AND LAST PANELS TO EQUAL WIDTHS.

ANCHOR FASTENER
BY OTHERS
FIELD CUT AND BEND
PANEL UP 1 1/2"

CONSTRUCTION SEALANT
REGLET FLASHING (WS-429)
CAULK SEALANT
RAKE SIDEWALL TRIM (WS-432)
POP RIVET AT 12" O.C.
RECEIVER TRIM (WS-430)
WESTERN LOCK
ROOF PANEL

APPROPRIATE UNDERLAYMENT
WOOD DECKING

PANCAKE HEAD
SCREWS AT 12" O.C.

COLOR SIDE
1 1/4"
1/2" HEM
3/4"

COLOR SIDE
4"
1/2" HEM

COLOR SIDE
1 1/8"
1/2" OPEN
HEM

COLOR SIDE
1 3/4"
1/2" OPEN
HEM

COLOR SIDE
4"

WESTERN LOCK DETAIL
WSD-D16

FINISH:
MATERIAL:
GAUGE: ________ COLOR: ________
LENGTH: ________ FINISH: ________
MATERIAL: ________
NOTE:
FIELD CUT FIRST AND LAST PANELS TO EQUAL WIDTHS.

CONSTRUCTION SEALANT
REGLET FLASHING (WS-429)
CAULK SEALANT
ALTERNATE RAKEWALL TRIM (WS-454)
WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)
WESTERN LOCK ROOF PANEL

3/4" MIN. ENGAGEMENT

APPROPRIATE UNDERLAYMENT
WOOD DECKING

ANCHOR FASTENER BY OTHERS

FILL POCKET WITH NON-CURING BUTYL SEALANT PRIOR TO INSERTING ROOF PANEL

FASTENER AT 12" O.C.

5/8" COLOR SIDE
1 1/4" 1/2" HEM
2 1/2" HEM

REGLET FLASHING (WS-429)

1 1/2" HEM

1/2" OPEN HEM

2"

5"

ALTERNATE RAKEWALL TRIM (WS-454)
NOTE:
FIELD CUT FIRST AND LAST PANELS TO EQUAL WIDTHS.

ANCHOR FASTENER BY OTHERS

ZEE CLOSURE (WS-410)

FIELD BEND PANEL UP 1 1/2"

RIVET "Z" CLOSURE @12" O.C.
TO PANEL PRIOR TO INSTALLING

APPRIOPRIATE UNDERLAYERMENT
WOOD DECKING

CONTINUOUS 3/16" X 7/8"
BUTYL TAPE AT BOTTOM OF "Z" CLOSURE

CONSTRUCTION SEALANT
REGLET FLASHING (WS-429)
CAULK SEALANT
ALTERNATE RAKEWALL TRIM (WS-455)
FILL OPEN HEM WITH NON-SKINNING BUTYL SEALANT
WESTERN LOCK CLIP (CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)
WESTERN LOCK ROOF PANEL

FINISH:
MATERIAL:
GAUGE:
LENGTH:
COLOR:
FINISH:
MATERIAL:

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Western Lock

REPORTING
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ZEE CLOSURE
ALTERNATE
RAKEWALL DETAIL

GAUGE: __________  COLOR: __________
LENGTH: __________  FINISH: __________
MATERIAL: __________

ZEE CLOSURE (WS-410)
ALTERNATE RAKEWALL TRIM (WS-455)
Western Lock

DETAIL #: WSD-D16B
REV: A   DATE: 05-20-13
PANEL TYPE:
WESTERN LOCK
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<td>WESTERN LOCK END WALL</td>
<td>A</td>
<td>05-20-13</td>
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---

**Specifications**

- **Finish:**
- **Material:**
- **Gauge:**
- **Length:**
- **Color:**

---

**Drawing Details**

- **CONSTRUCTION SEALANT**
- **REGLET FLASHING (WS-429)**
- **CAULK SEALANT**
- **FLOATING HEAD/END WALL TRIM (WS-458)**
- **NON-CURING BUTYL SEALANT AT ENDS, FILL IN ALL GAPS**
- **Western Lock Clip** (Contact design professional for clip spacing and location)
- **Western Lock Roof Panel**
- **ZEE CLOSURE (WS-410)**
- **HWH Fastener W/Washer at 12” O.C.**
- **Contin. 3/16” X 7/8” BUTYL TAPE**
- **Appropriate Underlayment**
- **Wood decking**

---

**Legend**

- 1/4”
- 1/2”
- 1 1/2”
- 1 3/4”
- 1 5/8”
- 1”
- 8”
- 1/2” OPEN HEM
- 3/4”
- * Denotes Angle

---

**Notes**

- Pre-pop 1/8” rivet to panel prior to installation (4) pop rivets eq. spaced per panel.
- 18 GA PANEL END SUPPORT (WS-459)

---

**Contact Information**

- Phone: (602) 495-0048
- Fax: (602) 261-7726
- 877-PURLINS (787-5467)
3/8" BEAD OF NON-CURING BUTYL SEALANT ON MALE RIB OF PANEL AND TIED INTO TAPE SEALANT PRIOR TO ENGAGING FEMALE RIB OF NEXT PANEL

JOGGLE CLEAT (WS-403)

FILL HEM OF PANEL WITH NON-CURING BUTYL SEALANT PRIOR TO INSTALLING JOGGLE CLEAT

TRANSITION TRIM HIGH TO LOW (WS-436)

CONT. 3/16" X 7/8" BUTYL TAPE

POP RIVET AT 12" O.C.

NON-CURING BUTYL SEALANT AT ENDS, FILL IN ALL CAPS

WESTERN LOCK CLIP (CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

FIELD NOTCH AND HEM PANEL

PANCAKE HEAD SCREWS AT 12" O.C.

CONT. 3/16" X 7/8" BUTYL TAPE

6" MIN.

1 1/2" 1 1/2"

1 3/8" 1 3/4"

1/2"

15°

1 3/8"

1/2"

JOGGLE CLEAT (WS-403)

ZEE CLOSURE (WS-410)

(4) FASTENERS EQ. SPACED PER PANEL FLASHING SUPPORT MAY BE REQUIRED

APPROPRIATE UNDERLAYMENT WOOD DECKING ZEE CLOSURE (WS-410)

HIGH TO LOW TRANSITION DETAIL

WESTERN LOCK PANEL TYPE:

DETAIL #: WSD-D19

GAUGE: _________  COLOR: _________

LENGTH: _________  FINISH: _________

MATERIAL: _________
CONSTRUCTION SEALANT

REGLET FLASHING (WS-429)

CRICKET FLASHING CUSTOM TRIM (WS-450)

ANCHOR FASTENER BY OTHERS

FILL HEM OF PANEL WITH NON-CURING BUTYL SEALANT PRIOR TO INSTALLING JOGGLE CLEAT

FIELD NOTCH AND HEM PANEL

CAULK SEALANT

FIELD FORMED CRICKET

3/8" BEAD OF NON-CURING BUTYL SEALANT ON MALE RIB OF PANEL AND TIED INTO TAPE SEALANT PRIOR TO ENGAGING FEMALE RIB OF NEXT PANEL

WESTERN LOCK ROOF PANEL

WESTERN LOCK CLIP (CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

3/16" X 7/8" BUTYL TAPE PHILLIPS HEAD FASTENER AT 12" O.C.

JOOGLE CLEAT (WS-403)

APPROPRIATE UNDERLAYERMENT WOOD DECKING

CRICKET FLASHING CUSTOM TRIM (WS-450)
* DENOTES ANGLE

1/2" HEM

6" MAX.

6"

1/2" HEM

18" VARIES

3/8"

1 1/4"

1 3/8"

1/2"

1 3/4"

150°

3/4"

3/4"

3/8"

1/2"

5/8"
CRICKET FLASH FIELD
FAB. FROM FLAT SHEET

APPLY SEALANT
BEHIND CRICKET FLASH

APPLY SEALANT
UNDER HEM

SPLIT PANEL AND SLIDE FLASH UNDER PANEL

BACK-UP AREA W/ A FLAT SHEET AND
CAULK WATERTIGHT (INSTALL BELOW
AND BACK FLASH)

ISOMETRIC VIEW

PLAN VIEW

WESTERN LOCK
CURB/CHIMNEY

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Fax: (602) 261-7726
877-PURLINS (787-5467)
FIELD FORMED CRICKET
3/8" BEAD OF NON-CURING BUTYL SEALANT ON MALE RIB OF PANEL AND TIED INTO TAPE SEALANT PRIOR TO ENGAGING FEMALE RIB OF NEXT PANEL

CRICKET FLASHING CUSTOM TRIM (WS-450)
* DENOTES ANGLE

WESTERN LOCK CLIP
(CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

3/16" X 7/8" BUTYL TAPE
PHILLIPS HEAD FASTENER AT 12" O.C.

JOGGLE CLEAT (WS-403)

APPROPRIATE UNDERLayment
WOOD DECKING

FIELD NOTCH AND HEM PANEL

FILL HEM OF PANEL WITH NON-CURING BUTYL SEALANT PRIOR TO INSTALLING JOGGLE CLEAT

ANCHOR FASTENER BY OTHERS

CRICKET FLASHING CUSTOM TRIM (WS-450)

CAULK SEALANT

CURB FLASHING BY OTHERS

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ANCHOR FASTENER BY OTHERS

(4) PANCAKE HEAD SCREWS EQ. SPACED PER PANEL

CONT. 3/16" X 7/8" BUTYL TAPE

WOOD DECKING

APPROPRIATE UNDERLayment

CURB FLASHING BY OTHERS

CAULK SEALANT

HEADWALL TRIM (WS-428)

NON-CURING BUTYL SEALANT AT ENDS, FILL IN ALL GAPS

ZEE CLOSURE (WS-410)

POP RIVET AT 12" O.C.

WESTERN LOCK CLIP (CONTACT DESIGN PROFESSIONAL FOR CLIP SPACING AND LOCATION)

HEADWALL TRIM (WS-428)

* DENOTES ANGLE

WESTERN LOCK ROOF PANEL

ZEE CLOSURE (WS-410)

1 1/2" 1 1/2"

6" VARIES
1/2" HEM

1/2" HEM

COLOR SIDE

COLOR SIDE

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FINISH: _______  COLOR: _______

GAUGE: _______  LENGTH: _______

MATERIAL: _______  COLOR: _______

PITCHBREAK @ CURB/CHIMNEY DETAIL

DETAIL:

PANEL TYPE:

WESTERN LOCK

DETAIL #:

WSD-D24

REV:  DATE:

A  05-20-13
NOTE:
FIELD CUT FIRST AND LAST PANELS TO EQUAL WIDTHS.

ANCHOR FASTENER BY OTHERS

FIELD CUT AND BEND PANEL UP 1 1/2"

CURB FLASHING BY OTHERS

CAULK SEALANT

RAKEWALL TRIM (WS-432)

POP RVET AT 12" O.C.

RECEIVER TRIM (WS-430)

WESTERN LOCK
ROOF PANEL

APPROPRIATE UNDERLAYMENT
WOOD DECKING

PANCAKE HEAD
SCREWS AT 12" O.C.

1 1/8"
1 1/2" OPEN HEM
4"

1 3/4"
3/4"
COLOR SIDE
COLOR SIDE

1/2" HEM

RAKEWALL TRIM (WS-432)

RECEIVER TRIM (WS-430)
3/8" bead of non-curing butyl sealant on male rib of panel and tied into tape sealant prior to engaging female rib of next panel.

(2) 3/8" beads of butyl sealant.

Clip 12" max from panel end or per clip attachment schedule.

Hem uphill.

Western lock roof panel.

Field notch and hem panel.

Joggle cleat (WS-403).

Appropriate underlayment.

Wood decking.

Fastener thru sealant bead.

Fill hem of panel with non-curing butyl sealant prior to installing joggle cleat.

SEE NOTCH DETAIL ON SHEET WSD-D27.

Western lock roof panel.

Downhill or lower panel.

Fill hem of panel with non-curing butyl sealant prior to installing joggle cleat.

6" min. lap.

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FINISH:  
MATERIAL:  
GAUGE:  
COLOR:  
LENGTH:  
FINISH:  
MATERIAL:  

PANEL ENDLAP DETAIL

PANEL TYPE: WESTERN LOCK

DETAIL #: WSD-D26

REV: A
DATE: 05-20-13
FIELD NOTCH MALE AND FEMALE RIB (AS SHOWN) 9"

WESTERN LOCK
ROOF PANEL
DOWNHILL OR LOWER PANEL

FIELD LAP DETAIL

WESTERN LOCK

GAUGE: _______  COLOR: _______
LENGTH: _______  FINISH: _______
MATERIAL: ___________________
**Western Lock Detail**

**Panel HEM DETAIL**

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A 05-20-13

**Panel Type:**  
WESTERN LOCK

**Detail #:**  
WSD-D28
PIPE (BY OTHERS)

STAINLESS STEEL HOSE CLAMP (BY OTHERS)

WESTERN LOCK ROOF PANEL

SUBSTRATE OPENING MUST BE 1" LARGER THAN BASE OF ROOF JACK

ROOF JACK (DEKTITE OR EQUAL) (NOT BY N.B.A) REFER TO MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

FIELD CUT HOLE 1" MIN. LARGER THAN PIPE. LOCATE ALL PIPE IN THE BROAD FLAT OF PANEL

PIECE PENETRATION DETAIL

GAUGE: _______ COLOR: _______
LENGTH: _______ FINISH: _______
MATERIAL: _______

WESTERN LOCK

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Western States Metal Roofing
901 W. Watkins St.                              Phone: (602) 495-0048
Phoenix, AZ 85007                                  Fax: (602) 261-7726
www.MetalForRoofing.com                  877-PURLINS (787-5467)
www.RustedRoofing.com
www.MetalDeck.com

custom trim name: WSD-CT31
Special Design Considerations

The details contained in this guide are proven industry details and are intended to be used as a design aid and installation guide. It does not depict all situations that may be encountered on all projects. Modifications are the responsibility of the designer/owner/installer. Consideration should be given for Fit for Purpose, Building use, Climate conditions such as temperature, snow, wind, and moisture, Governing Building Codes, and Maintenance.
It is highly recommended that all trims and flashings be of the same material as the panels (metal, gauge, finish) to ensure long term performance and durability. Where possible, flashing edges should be hemmed to strengthen the edge and protect the cut edge from exposure.

Acceptance

Use of this manual is strictly voluntary. Details that are provided are to be used as a guide only. Details may not be applicable for all situations. This guide provides one standard detail and WSDI accepts that other installation details may be needed and other details may exist. WSDI makes no guarantee as to the Weather Tightness of the system or details found with in this guide. The information in this manual is believed to be correct and accurate at the time of printing. WSDI reserves the right to change details, discontinue products, change designs at any time without incurring obligation. It is best to consult your Design Engineer for recommendations.

Underlayment

There are many types of underlayment’s on the market today. All designed with a special purpose depending on the type of Metal and profile. Many different types of metal will require a different type of underlayment, such as A606-4 (Corten) which requires a High Temperature underlayment. It is best to consult your Design Engineer for recommendations.

Valley and Snow Design

Valley design and dimension must be the proper width to accommodate high snow, rain, ice, and slope conditions. If possible, splices, penetrations, valleys, roof elevation changes, should be minimized in areas of high snow and ice accumulations. Details found in this manual may not pertain in areas of high snow and ice accumulations.

Panel coverage and fastening

Normal panel width of “Western Lock” panel is 16”. However depending on the finish selected and the required coil feed, other sizes may be available. Please consult with your WSDI representative for details and fastening recommendations.

Safety and Maintenance

Walking on and installing any roof is dangerous! Extreme care should always be used when walking on roofs. Safety should always be a top priority and approved fall protection and equipment as approved by OSHA should always be used. No roof is immune to severe weather or is completely maintenance free. To keep your roof performing as it was designed; an inspection and comprehensive maintenance program should be implemented.

References

For other installation techniques and details, The Sheet Metal and Air Conditioning Contractors National Association Inc. (SMACNA) and NRCA manuals are great resource for working with sheet metal.

Technical Assistance

Contact your WSDI sales or technical representative for any additional information or assistance. To insure you have the latest information available, please inquire or visit our web sites at www.metaldeck.com or Rustedroofing.com
WESTERN STATES METAL ROOFING

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901 W. Watkins Street
Phoenix, AZ 85007

Phone:
(877) 787-5467
(855) 426-7836

Email:
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sales@metalforroofing.com

For More Information:
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www.metalforroofing.com