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This Residential Roofing Guide is designed to be utilized as a guide when installing and
caring for residential roofing systems. Please refer to Wheeling Corrugating Company [WCC]
warranties for specific details concerning warranty coverages, limitations, and obligations of the
WCC manufactured products discussed in this guide.

Wheeling reserves the right to change any of the information and/or details and notes
pertaining to its products without notice.
Building Detail and Accessories

Note: All products not available at all locations.
Special sizes of accessories available upon request.
Drawings are not to scale.

Inside Closure

Outside Closure

Touch-up Paint  Butyl Tape  Pipe Flashing

1 Ridge Cap  2 Drip Edge  3 Fascia  4 W-Valley  5 Rake Trim

6 Rake or Eave Flashing  7 Side Wall Trim  8 Reglet Flashing  9 End Wall Flashing
Steel roofing and accessories is one of Wheeling Corrugating Company’s product lines available to the residential market. Centurydrain® (Figure 1) and 5-V (Figure 2) are two of the most commonly used panels attached with exposed fasteners. Wheeling also manufactures Loc-Seam (Figure 3), a concealed fastener panel used extensively in residential construction.

**Figure 1**

![Centurydrain®](image1)

**Figure 2**

![5-V](image2)

**Figure 3**

![Loc-Seam](image3)

Note: Loc-Seam is available in 16 inch cover width at some locations. Refer to Loc-Seam installation instructions for specific Loc-Seam details.

### Handling

When unloading bundles of steel panels, extreme caution is advised. A forklift can dent or puncture the underside of the sheet. It is recommended that a spreader device be used on the forklift for bundles over 20 feet in length to avoid bending in the middle of the sheets.

Care should also be exercised to protect the finish when lifting individual panels from the stack or bundle. Dragging of individual sheets from the bundle can scratch the surface and reduce the paint performance. The paint finish is tough enough to withstand normal weather conditions but can be scratched and abraded if care is not taken.

The panel edges must be protected at all times during the unloading and handling process to assure good fitting and good looking lap joints on the finished installation.

Note: Details in this guide show Centurydrain metal roofing. Use of 5-V roofing would be similar.
Cutting and Trimming

There will always be a certain amount of cutting and trimming necessary on the job site, such as for openings and gable end panels. Tin snips are more than adequate for the job; however, if you use an electric saw, you should use a steel cutting blade. For even better results, cutting may also be accomplished by a portable shear profiled to conform to the panel for perfect across-the-profile cutting.

Panels are to be cut one at a time and should be turned with the exterior side down and the reverse side up in order that the hot metal particles and filings from the cutting do not become embedded in and cause rust marks on the exterior face of the panel. Also, care should be taken to brush off all panel particles after cutting to further reduce the possibility of rust marks and bleeding on the panel after it is installed. To prevent unsightly premature edge rust on exposed edges, which includes factory cut edges, Wheeling recommends coating with an acrylic clear coat or equivalent clear coat.

Roof Preparation

In areas where local building code requirements exceed the following recommendations, the local code will govern. Install underlayment, 30 lb. felt paper in accordance with manufacturers recommendation. In areas requiring an ice barrier, two layers of underlayment adhered together or a self-adhering polymer modified bitumen sheet should be used in lieu of normal underlayment and extend from the eave’s edge to a point at least 24 inches inside the exterior wall line.

Roof Slope

The minimum roof slope for Centurydrain and 5-V is 2-1/2 to 12. If slope is below 3 to 12, sealant is recommended at end lap and side lap conditions.

Re-roofing

Check with local code official for re-roofing restrictions and landfill disposal should existing roofing need to be removed. Re-roofing over most existing fiberglass or asphalt shingles can be done with Centurydrain. The shingles must be smooth [without curling, blisters, etc.] and 30 lb felt or other acceptable underlayment is to be used over the shingle. Existing roofs of multiple layer fiberglass or asphalt shingles and various other types of shingles should be removed or framing strips applied over the existing membrane for support of Centurydrain. Re-roofing with 5-V requires the existing roofing to be removed and underlayment installed over the deck as new construction.
Roofing Installation Guide

Install flashings prior to panel installation that are to be covered by panel ends such as Drip Edge, W-Valley, Rake or Corner Trim.

Begin laying the roofing panels on the end of the building away from the prevailing wind so that the side lap seams face away from the prevailing wind-driven rain. This provides extra security against water penetration.

The first panel determines the alignment of all remaining panels on the roof, so extreme care must be taken to accurately square the first sheet. The overlapping rib edge should be flush with the edge of the roof (Detail A), and the panel should overhang the eave approximately 1 inch to provide for a drip edge. The side rib with the drain channel should face the direction in which the sheets are being laid down (Detail B). When the panel is positioned, it should be fastened through the first rib, top and bottom. The panel should be attached completely before starting the next panel.

A tip for assuring straight alignment for successive rows of panels is to stretch chalk lines between nails. These lines will serve as guidelines to align panels.

If a roof requires more than one horizontal row of panels, temporarily fasten at two points, not the ends, along main middle ribs of Panel #1 in lower corner. Next, install Panel #2 above and end lapping over Panel #1. Align both panels with chalk line. Install Panel #3 next to Panel #1 side lapping it. Install Panel #4 above Panel #3 side lapping over Panel #2 and end lapping over Panel #3. Check alignment at ridge and eave again. Temporarily fasten all panels; permanently fasten when all panels are in line (Figure 4).

Fastening

Attachment of panels to the decking substraight is with #9 X 1-1/2" metal to wood sharp point screws with sealing washers. Care should be taken to properly set the screw fastener for a weather tight fit (see Figure 5). Care must also be taken not to overdrive the fastener and strip the thread out in the decking.
Recommended Fastening Guide

Based on International Residential Code™ 2000*, Table R301.2[2] Component and Cladding Loads for a Building with a Mean Roof Height of 30 feet Located in Exposure B and Roof Slopes 10 to 30 degrees.

<table>
<thead>
<tr>
<th>WIND (MPH)</th>
<th>ZONE (FORCE – PSF)</th>
<th>DECK</th>
<th>UP. SLOPE FASTENER SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CENTURYDRAIN</td>
<td>5-V</td>
</tr>
<tr>
<td>90</td>
<td>1 (-13.3)</td>
<td>7/16&quot; OSB</td>
<td>24&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15/32&quot; PLYWOOD</td>
<td>24&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19/32&quot; PLYWOOD</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2, 3 (-28.2)</td>
<td></td>
<td>7/16&quot; OSB</td>
<td>20&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15/32&quot; PLYWOOD</td>
<td>20&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19/32&quot; PLYWOOD</td>
<td>20&quot;</td>
</tr>
<tr>
<td>100</td>
<td>1 (-16.5)</td>
<td>15/32&quot; PLYWOOD</td>
<td>24&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19/32&quot; PLYWOOD</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2, 3 (-34.8)</td>
<td></td>
<td>15/32&quot; PLYWOOD</td>
<td>18&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19/32&quot; PLYWOOD</td>
<td>18&quot;</td>
</tr>
<tr>
<td>110</td>
<td>1 (-19.9)</td>
<td>15/32&quot; PLYWOOD</td>
<td>24&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19/32&quot; PLYWOOD</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2, 3 (-42.1)</td>
<td></td>
<td>15/32&quot; PLYWOOD</td>
<td>15&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19/32&quot; PLYWOOD</td>
<td>12&quot;</td>
</tr>
<tr>
<td>120</td>
<td>1 (-23.7)</td>
<td>19/32&quot; PLYWOOD</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2, 3 (-50.1)</td>
<td></td>
<td>19/32&quot; PLYWOOD</td>
<td>20&quot;</td>
</tr>
</tbody>
</table>


Fasteners are placed in the bottom flat adjacent to each rib as shown in Figure 6a. At eaves, laps, and ridges, the fasteners are placed on both sides of each rib as shown in figure 6b.

Note: In areas where local building code requirements exceed the above recommendation, the local code will govern.
Fascia Trim
Attach fascia trim with galvanized flat screws or galvanized nails positioned to be under the drip edge. End lap fascia trim 1 inch minimum.

Drip Edge
Attach drip edge using galvanized flat screws or galvanized nails to temporarily hold in place straight. End lap drip edge 1 inch minimum.
**Fascia Trim**

Attach fascia trim with galvanized flat screws or galvanized nails positioned to be under rake or gable flashing.

**Rake or Gable Flashing**

Place butyl sealant to seal between roofing and gable or rake flashing. Attach with #9 X 1" metal to wood self-drilling screws spaced 12" on center.

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**Recommended**

[Diagram showing roofing components including Underlayment, Wheeling Metal Roofing, Butyl Sealant, Deck, Soffit, Fascia Trim, Rake or Gable Flashing, and Capping the Rake Trim]

**Alternate**

[Diagram showing an alternate setup including Underlayment, Wheeling Metal Roofing, Butyl Sealant, Deck, Soffit, Fascia Trim, Rake or Gable Flashing, and Capping the Rake Trim]
Ridge may be vented by holding deck and roof ridge back 1-1/2" on each side of the peak starting 12 inches from each end of the structure. Install profile filtering material to prevent insect infiltration and wind driven snow or rain. Attach ridge cap and fasten through venting material with #9 X 1-1/2" metal to wood self-drilling sealing screws. End lap ridge 6 inches and seal laps with sealant.
W-Valley

Prior to placing, install a second layer of underlayment or water and ice shield centered along each valley. Install W-Valley flashing and secure with galvanized flat screws or galvanized nails. Roof panels are cutback 6 inches. Install underside expandable closure with sealant. Install roof panels and fasten panels through the closure strip and valley into the deck with #9 X 1-1/2" sealing screws.
End Wall

Install outside profile closure with mastic prior to setting wall trim. Attach end wall trim with #9 X 1-1/2" metal to wood self-drilling screws through the outside closure at each rib. Attach vertical leg to wall substraight.

Side Wall

Roof should be installed prior to siding. Install counter flashing and attach with roofing nails. Trim panel to fit within 1/2 inch of wall. Install sealant tape on panel and set side wall trim. Attach #9 X 1-1/2" metal to wood self-drilling sealing screws at 12" on center.
Skylight Detail

Skylight Flashing
Cut the roofing panels in the following manner: at the top side 6 inches from the skylight box, at the bottom side as close to box as possible, along the side remove nearest rib if necessary so flashing will bear on panel bottom flange. Prepare the skylight flashing shown in Figure 5. Cut a 1/8” slot in the roof panels at the uphill corners to allow top side flashing to slip under the roofing panel as shown in Figure 6. Place the inside closure with sealant between the roofing panel and the counter flashing and attach. Place side flashing along the skylight box with the upper end of the horizontal leg slid underneath the topside of the flashing. Use sealant between the flashing and roof panel. Install downside flashing with outside closure and sealant between the panel and flashing. Wrap tabs on side flashing around downside flashing and fasten to box. Use sealant wherever necessary to make a watertight curbing. Complete fastening the roof panels and curbing as required.

NOTE:
Flashing to be formed at job site.

Figure 5

Section A

Section B

Section C

Figure 6
Roof panel and base flashing preparation is very similar to skylight flashing. Add reglet flashing which may be stepped at mortar joints or run continuously for a water-tight seal.
MISSION STATEMENT

Wheeling Corrugating Company’s mission is to provide a safe and healthy working environment. We emphasize the importance of safety through regular communication with all employees regarding their and the company’s responsibilities for the safety of themselves and others. In addition, we are concerned about the safety of our customers.

EXTREMELY IMPORTANT

Store steel panels in a dry place. Stand them on end and fan out at the bottom to provide positive air circulation and moisture run-off. If panels must be stacked, they should be kept off the ground on wooden blocks or strips in an inclined position in a dry place.

The panels should be stored outside only when it is absolutely necessary and then only for short periods of time. The use of canvas or waterproof paper should be used only when allowing for ventilation. Plastic tarping, which may cause sweating and condensation and trap moisture, should never be used.

If these precautions are not taken and moisture is trapped in the panel, superficial staining may occur. When moisture remains in the bundle of panels for a considerable time, wet-storage stains can occur, reducing the effective life of the panel.

Failure to comply with the above recommended procedures relieves Wheeling Corrugating Company of responsibility for any resultant damage to, or deterioration of, its panels and voids all warranties.

Be sure to comply with all OSHA regulations.

CAUTION: Sheet metal roofing can have sharp edges. Safety equipment should be worn by workers.

CAUTION: When cutting roofing and siding, safety glasses and other safety equipment should be worn by workers.

CAUTION: Do not leave unattended or unattached sheets on roof.

WARNING

YOU MAY FALL FROM ROOF AND BE KILLED OR SERIOUSLY INJURED.

Panels are slippery. Use fall protection.

Any panel can collapse.

Do not step on loose panels.

Do not step on or “near” loose edge of panel.

Do not step within 3 feet of panel end.

Loose panels may slide out from under you.

Do not step on loose panels or stacks of panels.

Underwriters Laboratory Inc. Uplift Class 90
Underwriters Laboratory Inc. Impact - 4
Underwriters Laboratory Inc. Fire Class A, B, C