

# ONDURA-6V<sup>TM</sup>

Corrugated Asphalt Roofing Sheets

I N S T A L L A T I O N   I N S T R U C T I O N S

**Thank you for choosing ONDURA-6V for your roofing project. ONDURA-6V should be carefully installed. Mistakes in installation can cause roof problems later on. Please take your time and closely follow these installation guidelines.**

## CAUTION

Installation of roofing materials can be dangerous. The relative amount of danger is increased by the height from the ground, increasing pitches of the roof slope, inclement weather conditions or other factors. We strongly recommend for anyone installing ONDURA-6V, or working on a roof in any manner, to take all precautions possible to ensure your personal safety at all times.

Be sure that ladders and other such devices are safely positioned and properly secured. OSHA recommends the use of a safety harness when applying roofing. Protective eyewear is recommended when applying nails or using power tools. ONDURA-6V may be slippery when wet, dusty, frosty or oily, so please avoid working or walking on the roof if any of these conditions exist. Windy conditions can make the worksite more dangerous, so we recommend that you do not attempt to install ONDURA-6V during windy conditions.

## TOOLS AND MATERIALS

You will need the following tools and materials:

- Claw Hammer
- Utility Knife
- Saw (Hand Saw or Circular Saw)
- Measuring Tape or Yardstick
- Chalk line
- String
- Pencil or Marker
- Protective Eyewear

## ESTIMATING GUIDE FOR ONDURA-6V

Sheet dimensions: 44 inches wide by 79 inches long

### Sheet Coverage

For projects requiring multiple sheets, account for overlaps in calculating roof coverage (see diagram below).

- Sidelap should be at least one corrugation (4 inches for one corrugation overlap).
- Headlap should be at least 7 inches.
- The effective sheet coverage is 40 inches wide by 72 inches long.
- 5 sheets to cover a square

### Fasteners

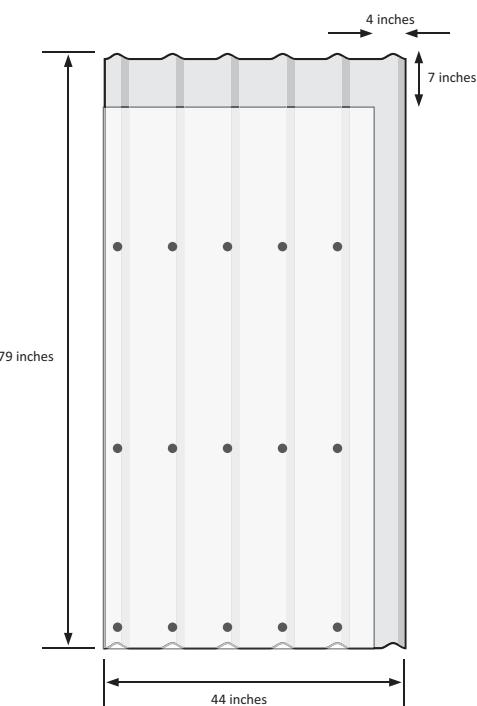
- Fasteners needed per sheet: 15 for 3 rows of fasteners, with rows spaced approximately 24 inches apart.
- Fasteners for roof ridge: 4 fasteners per foot of ridge (2 on each side).
- Fasten sheets on every corrugation
- Fasten ridge caps at every corrugation.

### Ridge Caps

Ridge cap sections should overlap by at least 7 inches.

### Closure Strips

Closure strips are 40 inches long, with 2 eave strips and 2 ridge strips per pack. Closure strips should be used at roof ridge and eaves.



## PLANNING STAGE

### Determine the Slope of the Roof

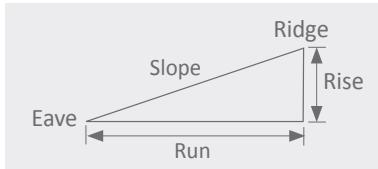
The slope of the roof can be calculated from measurements of the rise and run of the roof. The rise is the vertical distance of the ridge above the eave. The run is the horizontal distance of the ridge from the eave. A roof slope is often stated as the inches of vertical rise per 12 inches of horizontal run length. The minimum appropriate slope for an ONDURA-6V roof is a 3 inch rise over a 12 inch run.

Slope = amount of rise per run

Example: 3-in rise per

12-in run = 3:12

Minimum slope required: 3:12



### Roof Sheathing

Roof sheathing is a plywood or OSB (oriented strandboard) layer on top of the roof supports, and is required to support ONDURA-6V. We recommend using standard felt paper or an ice water shield over the sheathing.

#### On-Site Storage

While stored at the job site, ONDURA-6V sheets must be covered to protect from damage that may be caused by rainwater trapped between sheets. Do not allow stacked sheets to get wet while stored.

### Roof Coverage

ONDURA-6V sheets are 44 inches wide and 79 inches long. We recommend an overhang at the roof eave of 1 to 1-3/4 inches (Note: 1-3/4 inches is the maximum overhang relative to the edge of the roof sheathing). Five sheets provide 100 square feet of roof coverage. Measure the roof from eave to ridge and add the overhang length to determine the total length of coverage.

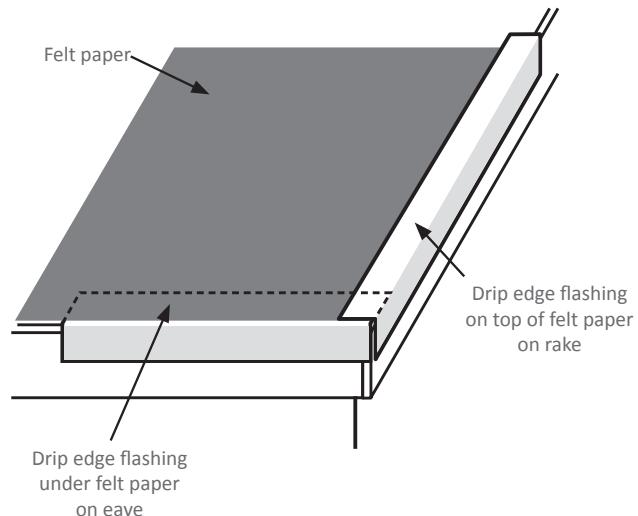
If the total length of coverage is greater than 79 inches, then you will need a second row of ONDURA-6V sheets. The sheet overlap from row to row should be at least 7 inches.

Note: At the ridge of the roof the gap across the ridge, between the upper ends of the ONDURA-6V sheets on each side of the roof, will be covered by the ridge cap; and the gap should be no more than two inches.

If your roof is wider than 44 inches, then you will need to account for the single corrugation overlap for adjacent ONDURA-6V sheets. The first ONDURA-6V sheet will provide 44 inches of coverage. Each additional ONDURA-6V sheet will provide 40 inches of coverage with one corrugation overlap.

### Rake Edge

The rake edge of the roof should be covered to prevent water intrusion or damage to the sheathing. Run felt paper to rake edge of sheathing, and refer to the suggested rake trim solutions found in the Installation Stage of this guide.

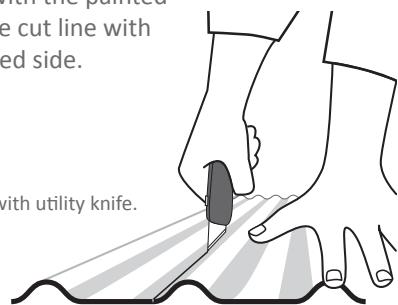


### Cutting ONDURA-6V Sheets

Always wear eye protection when cutting.

- To cut an ONDURA-6V sheet parallel to the corrugations, use a utility knife with a sharp blade. Always cut sheets in the valley of a corrugation with the painted side up.
- To cut an ONDURA-6V sheet perpendicular to the corrugations, use a circular saw or a hand saw. Apply lubricating oil on the saw blade to aide in a smoother cut. For best results, work with the painted side down and mark the cut line with a pencil on the unpainted side.

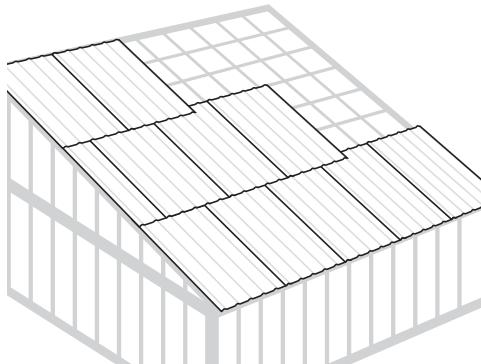
Cut through the valley with utility knife.



## Placement of ONDURA-6V Sheets

If more than one row of ONDURA-6V sheets is needed, then the sheets must be installed along the eave first. Then additional rows are installed above the previous row.

Each row should be installed with the first sheet at the opposite end of the roof from the prevailing winds. With this orientation, the seam of the overlap will face away from the prevailing winds. This orientation will reduce the possibility of wind-driven rain getting under the corrugation overlap. If wind-driven rain could come from both directions, then we recommend sealing along the overlap with an elastomeric caulk.

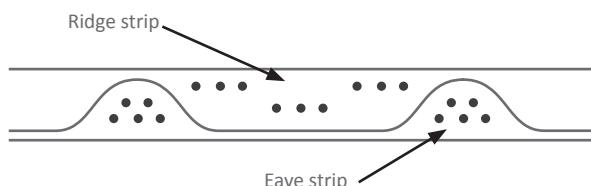


For aesthetic reasons, we recommend staggering the position of the corrugation overlap for each row by starting the second row with a sheet that has fewer corrugations. As a general guide, an ONDURA-6V sheet with 3 or 4 corrugations should be used for the first sheet on the second row. Then full-width sheets should be used across the second row. If installing more than 2 rows, the odd numbered rows should start with a full-width sheet and the even numbered rows should start with a 3 or 4 corrugation sheet.

If possible, we recommend placing the first row of ONDURA-6V sheets on the roof to confirm coverage with overlaps before the installation of the sheets.

## Closure Strips

ONDURA-6V closure strips fill the space created by the corrugations. Vented closure strips are recommended along the eaves and ridge of the roof to enable airflow under the corrugations. The ventilation holes are small enough to prevent birds and insects from forming nests under the corrugations. Solid closure strips are available to completely block the openings. There are two ridge strips and two eave strips per pack.



## INSTALLATION STAGE

### Sheet Alignment

Place first ONDURA-6V sheet on roof. Align the ONDURA-6V sheet to the rake edge. Align the eave edge of the ONDURA-6V sheet to overhang the eave by 1 to 1-3/4 inches.

### Closure Strip Position

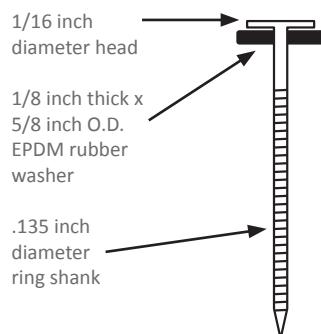
Place closure strips under the ONDURA-6V sheet with the curved side up to fill the corrugations. The closure strips must be placed where the nails will be located so that the nails will securely hold the closure strips in place during the life of the roof.



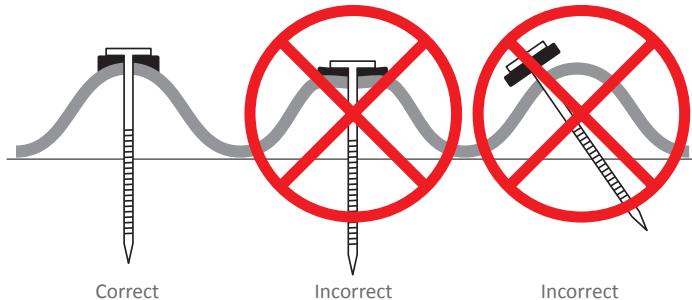
**Tip:** To help hold closure strips in place, adhere your strip to the deck or the ONDURA-6V sheet with spray adhesive before laying your sheet of ONDURA-6V over it.

### Nail Position

Note: We recommend genuine ONDURA nails for installing ONDURA-6V sheets. Genuine ONDURA nails are made from galvanized steel, are ring shanked, and have a large EPDM rubber washer to improve sealing around the nail. Other types of nails may not provide sufficient hold-down strength. Color-coordinated screws with washers may be available.

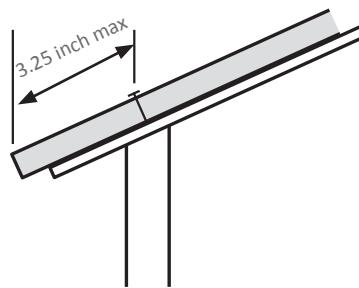


Drive each ONDURA nail only through the crown of a corrugation and perpendicular to the roof surface. Be careful not to overdrive or underdrive the nail. The rubber washer on the nail should be snugly in contact with the sheet. Slight hand pressure on a nailed-down corrugation should not separate the sheet from washer contact.



For resistance to wind uplift, the maximum distance from the eave edge of a sheet to the first row of nails is 3.25 inches.

Install nails on the first sheet along the eave and rake edges.



**Tip:** For each row of nails, install the first two nails at opposite sides of the sheet and attach a string line between them—across the corrugations—as a guide for the position of the other nails. Mark the position of the string on the crown of each corrugation with a pencil. Repeat for each row of nails.

Install nails at remaining positions, but do not fasten areas which will be overlapped by other sheets.

Place next ONDURA-6V sheet into position on roof.

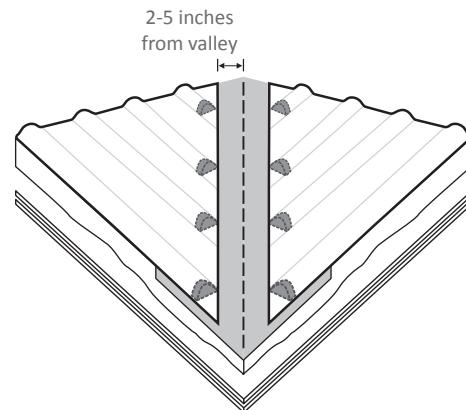
- The sheets must overlap by at least one corrugation along the direction of the eave.
- The sheets should overlap by at least 7 inches along the direction of the rake edge.

Install nails on the next sheet in the same manner as the first sheet.

For the last sheet in a row, install nails in the same pattern as previous sheets and in the final corrugation along the rake edge.

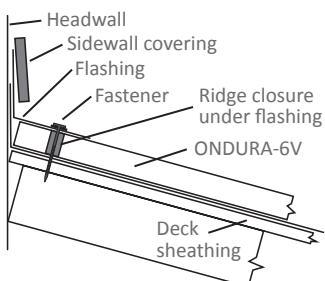
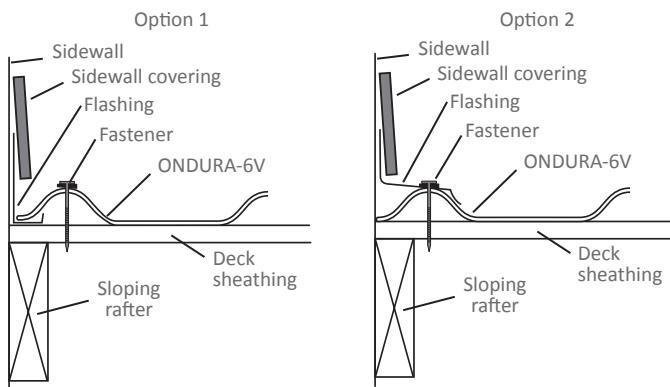
## Valley Flashings

For valleys, install a minimum 24" wide metal valley flashing. Cut sheets at an angle to fit the valley; then turn over, and on the undersides along the valley edge, caulk one corrugation of the ONDURA-6V eave closure strip, and place into the corrugation. Then put a 1/2" bead of caulking on the flat side of the closure strips and on the sheet between the closure strips. Turn sheets right side up, carefully lay in place so caulked closures seat on flashing, and nail in place at least 12" up from the center of valley without puncturing the metal flashing.



## Wall Flashing

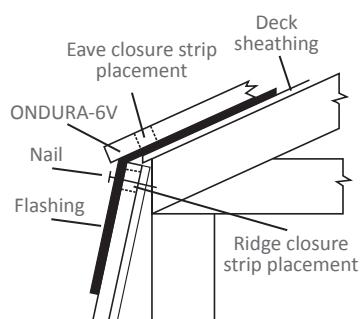
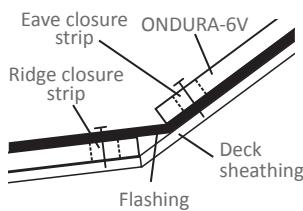
See below examples on how to flash when ONDURA-6V roofing meets a wall.



## Slope Changes

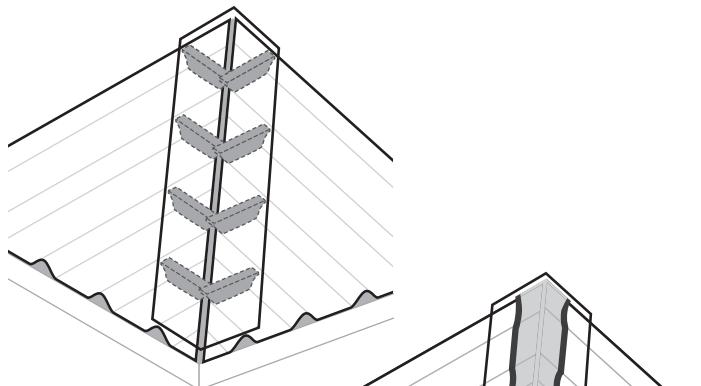
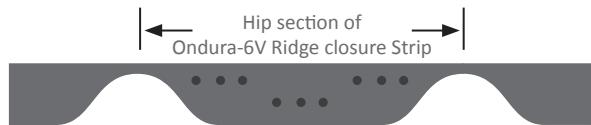
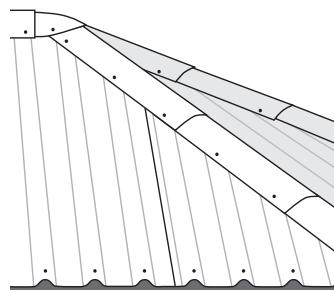
Flashing width should be increased as slope differences increase or whenever water build-up on the lower slope can be substantial.

Use elastometric caulking at all flashing joints and closure strips.

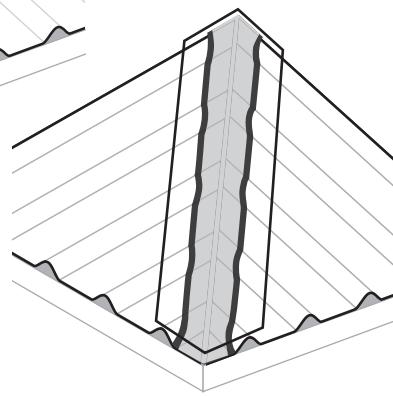


## Handling Hips With Sheets

For hips, sheets from either side must meet to support hip cover (an ONDURA ridge cap). Framing should also be in place beneath and near enough to the upper ends to receive nails securing the hip cover. Snap chalk lines on each side of hip to mark area of hip cover. Then cut one hip section from an ONDURA-6V closure strip, and using rubberized elastomeric flashing cement/caulking, caulk in place, or seal the hip with Ondulair Slim instead of closure strips. Install hip cover with 7" end laps.



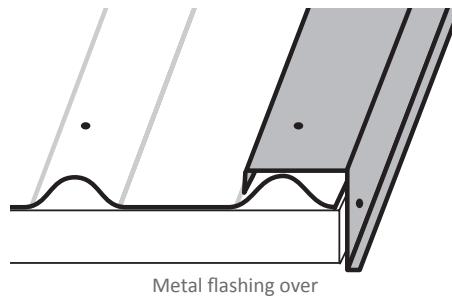
With closure strips



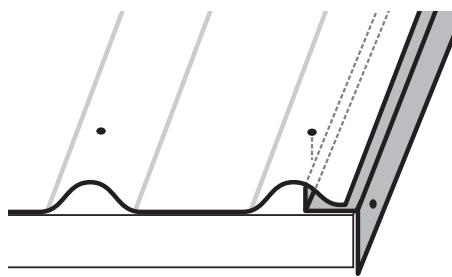
With Ondulair Slim

## ONDURA-6V Rake Trim

Finish your rake edge with metal flashing, either over or under the last corrugation edge of the ONDURA-6V sheet. When using metal flashing under the last corrugation, be careful to avoid nailing through your flashing.

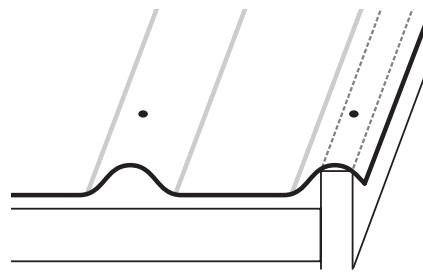
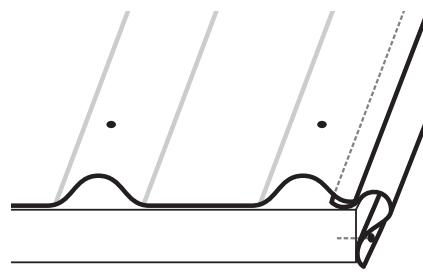


Metal flashing over



Metal flashing under

Alternatively, you could use a one corrugation strip from an ONDURA-6V sheet under the last corrugation edge, or secure the last corrugation directly to a raised rake edge.

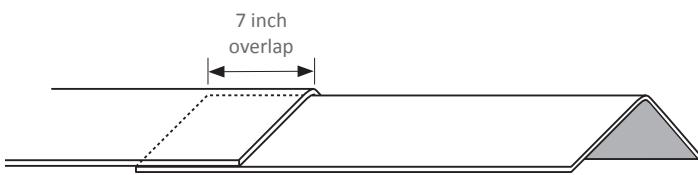


Corrugation over raised fascia board edge

## Ridge Cap

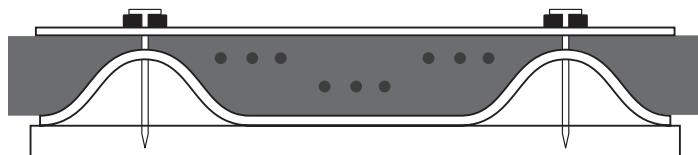
**Note:** Install all sheets on both sides of the roof before installing the ridge cap.

Measure the ridge to determine the required coverage. Ridge caps are available in 39.5 inches and 79 inches long. If more than one ridge cap is needed, they must be installed with a 7 inch overlap. The overlap must be over a corrugation so that the overlap is fastened with a nail through the corrugation. For resistance to wind uplift, the exposed end of the ridge cap must be no more than 3 inches from the closest nail position on a corrugation. Allow for 3 or 4 inches of material at end of ridge to overhang ridge end. This material will be used to cover the end of the ridge.



Place the first ridge cap at the end of the ridge away from the prevailing wind, allowing it to project out 3 to 4 inches from the ridge end.

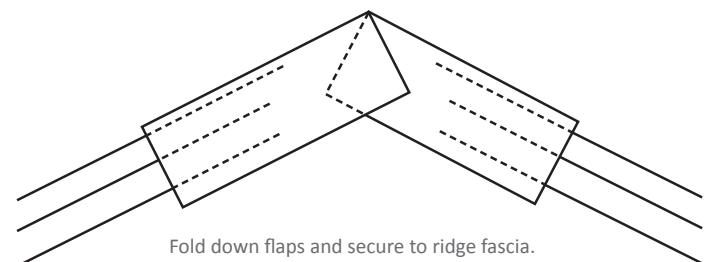
Insert ridge closure strip above ONDURA-6V sheet and below ridge cap. The closure strips must be placed where the nails will be located so that the nails will securely hold the closure strips in place during the life of the roof.



Install nails through the ridge cap and closure strip at every crown of the underlying ONDURA-6V sheets. The row of nails should be 1 inch above the lower edge of the ridge cap. If more than one ridge cap is needed, overlap the next ridge cap before fastening through the overlap. Place next ridge cap with 7 inch overlap. Insert closure strip and install nails. Install final ridge cap with 7 inch overlap and 3 to 4 inch overhang. Insert closure strip and install nails.

At each end of the ridge, cut the overhang portion of the ridge cap along the crown with a utility knife. Fold down resulting flaps for a weather guard. Secure flaps to ridge fascia with roofing nails.

**Tip:** In temperatures below 55°F, warm ridge cap before folding edge.

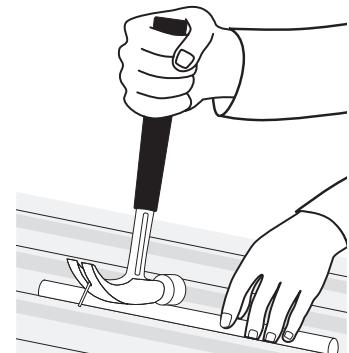


**Congratulations! You have completed the installation of your ONDURA-6V roof.**

## ADDITIONAL TIPS

### Pulling Nails

To pull a nail from an ONDURA-6V sheet, use a claw hammer and a 1-1/2 inch wood dowel or pipe. This technique minimizes the chance of damaging the sheet. Put the dowel or pipe in the valley next to the crown where the nail will be pulled. Then use the dowel or pipe as a leverage point for pulling the nail.



### Easy Maintenance

ONDURA-6V sheets are easy to maintain. Over a period of years, weathering will age your ONDURA-6V roof's coating. So you'll want to give your ONDURA-6V roof new life by repainting. First, sweep dirt and loose debris off your roof. Then either brush or spray with top quality 100% acrylic latex exterior paint.

**CAUTION:** Do not steam clean or use pressurized cleaning equipment on ONDURA-6V roofing.



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