STANDARD DETAILS FOR METAL ROOFING AND SIDING

The details and written instructions described in this manual are suggested installation methods to ensure a quality application of our products, and should be considered as a guideline only. VARMASTEEL recognizes that installation techniques can vary based upon builder and geographical preferences, and that there are other acceptable ways to install our products.

Due to Product improvements, changes and other factors, VARMASTEEL reserves the right to change or delete information herein without prior notice or obligation to make changes in products previously purchased.

VARMASTEEL.COM/ 868 659 4008
Introduction

This manual contains information concerning installation, safety procedures, flashing dimensions and other roofing, cladding and trim information. For further information on our products and materials you can refer to our brochure section at WWW.VARMASTEEL.COM

Varma Principle

“WHERE STRENGTH IS QUALITY”

For us every challenge is a gift. We offer solutions to assist you in creating the perfect house or building project. Achieving your ideal building is our goal and we firmly believe that by offering quality materials, customer support, education and timely service we you in creating your ideal project.

PROJECT CONSULTING
QUALITY MATERIALS
FAST SERVICE
EDUCATION

We develop solutions for your building project. Contact us TODAY

LEARN MORE : WWW.VARMASTEEL.COM
CALL: 868 659 4008/4018/4048 FOR SUPPORT
SAFETY

SAFETY FIRST
At VARMASTEEL, safety is priority. We urge those who are reading this manual to always take the necessary safety precautions when installing a roof, flashing or trims. Knowing the required tools and techniques reduces the chance for injury.

TOOLS
Using the proper tools not only ensures a long-lasting roof but also reduces the risk of injuries and accidents occurring on the job. Always ensure that when you are installing a roofing, that you wearing the right gear and equipment. Safety glasses, gloves and hard hats are a must for any roofing installer. The use safety harnesses specifically designed for roofing must be installed. Soft soled shoes are recommended to prevent slippage. Ladders and scaffolding must always be properly checked to ensure that they are secured properly. Attachments such as ridge hooks or any form of roof hooks increases the stability of the ladder and prevents any slippage from the roof. Ensure that the right cutting tools are used.

During any installation tools must be properly secured, tool belts are highly recommended as they allow easy access to tools. Electric or manual shears are highly recommend. Open blades and other forms of abrasive shears are not recommended as they tool are not designed for roofing applications.

POSITIONING.
When installing a roof, never walk on unsecured panels, as these panels may slip and place the installer(s) in a dangerous situation. Always ensure that the panel is fully secured before walking on them. Roofing installers should be mindful of their surrounding environment. Installers should be observant and always notice openings, edges, tools, co workers and penetrations. Not taking notice can lead to serious injuries.

ENVIRONMENTAL CONDITIONS.
Never install a roof in wet or windy conditions. Wet panels should always be wiped dry to prevent slippage. In windy conditions workers should never install panels as intense winds during installation can lead to serious injuries.
MIN TOOL REQUIREMENTS

Caulking Gun — Used for miscellaneous caulking and sealing to inhibit water infiltration.

Chalk Line — Used to assist in the alignment of panels, flashings, etc.

Electric Drill — Used to drill holes such as those required for pop rivet installation.

Electric Nibblers or Metal Shears — Used for general metal cutting, such as cutting the panels in hip and valley areas. Some installers prefer using a circular saw with a metal cutting blade. This method may be faster, but it has some drawbacks:

• Saw cut edges are jagged and unsightly and tend to rust more quickly than sheared edges.
• Saw cutting produces hot metal filings that can embed in the paint and cause rust marks on the face of the panel.
• Saw cutting burns the paint & galvanizing at the cut edge leading to the onset of edge rust.

Hem Bending Tool — Used to hand bend the ends of the panels as indicated in the details of this manual.

Locking Pliers or Hand Break — Standard and “Duckbill” style for miscellaneous clamping and bending of parts.

Marking Tools — Indelible markers or scratching tools. No graphite pencils.

Rivet Tool — Used for miscellaneous flashing, trim applications and alternate eave detail.

Rubber Mallet — may be used to help snap panels together.

Scratch Awl — Can be made from old screw drivers ground to a point. Used to mark the steel, open hems, and as a punch.

Screw Gun — 2,000 to 2,500 rpm Clutch type screw gun with a depth sensing nose piece is recommended to ensure proper installation of the screws.

Snips — For miscellaneous panel and flashing cutting requirements. Three pairs will be required: one for left edge, one for right edge, and one for centerline cuts.

Tape Measure — 25 foot minimum.

Utility Knife — Used for miscellaneous cutting
Roofing Pitch
The roofing panels shown in this guide require a minimum roofing pitch of 2 1/2”. Any thing less please contact us for further information on how we can assist you with installtion.

Roofing
This manual will provide a detailed explanation on roofing panel endlapping. All end panels require a roofing sealant. Please refer to the manual for sequences on panel installtion. To provide a drip edge, allow an overhang of 1 to 2 inches at the eave. At the gable edge, use a gable or sidewall flashing. This will keep weather out, prevent lifting in high winds, and provide a neat, finished appearance. The trim and roofing sheet should be fastened every 12 to 24 inches along the gable edge. Do not step on panel ribs or on trim pieces to prevent kinking.

Bending Sheet Metal
In cases where sheet metal must be bent, 90 degrees is the maximum recommended angle. It is not recommendend to rebend sheets as tension and yeild strengths diminishes with every bend. When a metal roofing sheet must be installed on a curved roof, screws should be installed at every overlapping rib at the sheet ends to prevent a spring back effect.

Cutting and Drilling Steel Panels
Shears design for cutting sheet metal are the only such as portable shears or metal snips are a few of the recommended tools to use. DO NOT USE abrasive blades as these blades will create filings and chips which create rust regardless of the roofing material used. If absolutley necessary to use a saw, use a carbide-tipped blade.

Ensure that the panels being sawed are away from other panels and are face down. Sawed panels should be thoroughly wiped to remove and remaining filings. This will protect the roofing panel from rust. When drilling a panel ensure all filings are removed.

Screw Fastening
The recommended screws are galvanized screws with a polymer coating. At Varma we use ITW Buildex class 4 screws that are coated in zinc and with a CLIMASEAL finish. The ITW Buildex screws washers are known for their water tight and lasting seal. The image below shows the correct way for these screws to be installed.

Please remember to wipe away any filings created when drilling holes into metal panels. The filings will create rust if not removed.

Flashing and Trims
When installing flashing the upper flashing should be lapped on top of the lower flaishing. This will prevent moisture from leaking under the flashings and into the structure. This manual will give a detailed description of how to handle and install flashing.

Roof Maintainence.
Annual inspections and cleans should occur. This manual will give a detail description on how to maintain your roof.
CLEANING METAL ROOFING
Maintaining your roof is essential to having a longer lasting roof. By maintaining your roof you reduce the possibility of mold and algae buildup on the roof.

INSPECTION
Before an cleaning commences determine the areas that need cleaning. Also ensure that those areas are safe and will not result in any harm. By accessing the overall condition of the roof you can determine the life of the roof, the rate of corrosion and which areas are safe.

TOOLS AND EQUIPMENT
Pressure washers, clothes, non abrasive detergents, soft soaps and soft bristle brushes should be used. IMPORTANT, the use of abrasive materials on painted roofing, may result in scratches, dents, increased corrosion rates etc.

SAFETY
Allows ensure you have the right safety gear when cleaning a metal roof. Safety harnesses, roofing hooks, clamps, gloves, safety glasses and a dust mask are some the necessary safety tools needed to prevent skin irritation and injuries.

HOW TO CLEAN
On your power washer a level of 1800 PSI or less is the recommended pressure. Apply the non abrasive soaps to the mixing compartment within the pressure washer. Do not wash your roof on a ladder. If washing your roof off lower setting. Never stand on a roof with a pitch level greater than 7/12. Use a zero degree spray tip for your metal washer. Stand at the top of your roof and spray at a 45 degree angle while keeping the hose a foot away from the surface of the roof. IMPORTANT never spray close to your feet or where you will be standing. Ensure that the areas you are spraying from are dry and safe to walk on. Let the soap sit for 5 minutes then using only water spray the soapy areas clean. For areas where the algae or mold has adhere to the paint, use a soft bristle brush or a clean cloth and gentle wipe away the grim and dirt using a soft detergent and water.
OUTLINES

NOTES

The flashings shown here are standards sizes and angles used in installation. These sizes can vary in angle, length, and shape. Contact a sales agent for further information.

Based on the type flashing used and thickness of the material, Screws vary from 1 inch to 2 1/2 inch. It is not recommended to use non roofing screws that are not ergonomically designed specifically for roofing purposes. Using the right type of screw can prevent rust. For further information, please contact a VARMAS-STEEL sales agent.
STEP 1
Measure the length of the roof surface length and the width (eave to ridge) and multiply to find the square footage. If your roof has a shape other than rectangular (like on a hip type roof), break the roof into sections or give us a call to assist you.

STEP 2
Repeat all remaining roof surfaces to be covered with metal roofing, then add the total square footage for each side.

STEP 3
Find the area of the individual roofing panels you are going to use—multiply the panel length by its width. Example: A roof panel that measures 2 by 8 feet, has an area of 16 square feet.

STEP 4
Divide the total square footage of the roof by the square footage of the roofing panel; this product will be the amount of roofing panels that will be needed to cover the roof. If this number has a decimal, round up to the nearest whole number/panel. Example: Using the example panel from Step 3 (area of 16 square feet), and an example roof face that measures 20 by 40 feet (area of 800 square feet). Divide the roof surface of 800 square feet by the panel of 16 square feet to find that you will need 50 panels.
ROOF ESTIMATION

ROOFING PITCH
In cases where a roof has multiple pitches, it can be difficult to determine the amount of roofing material. One of the simpler ways to determine the amount of panels is to

1) section the roof and finding the area of each sections
2) add the the area of each section to get the total cross sectional area.
3) divide the total area by the area of the panel being used.

PITCH LEVELS
There are various ways to calculate your roofing pitch. One the simplest ways is to

1) Climb up the eave end of the roof.
2) Take the square and place the horizontal end face away from the roof and the vertical end facing towards the ground.
3) Find the 12” mark on the horizontal end of your square and line it up with your roof.
4) Ensure that you square is level with your leveler.
5) Measure the point where the roof meets the vertical part of your square. That point (rise) combine with your 12” mark is your pitch level. Example a rise of 4” will have a pitch of 4/12.
INSTALLATION

INDUSTRIAL 7

Height 25mm
65mm
95mm
1038mm Width
950mm Effective Coverage

Screws can also be placed every other ridge from right to left or left to right

Roofing: Eaves, Ridges, Endcaps

SNAP LOCK 18
STANDING SEAM

38mm

457mm Width
457mm Effective Coverage
Clips and Screws are hidden
**NU WAVE™**

- **Height:** 25mm
- **Rib Distance:** 254mm
- **Width:** 1092mm
- **Effective Coverage:** 1041mm

**Installation:**
- Lapping Nu Wave sheets
- Roofing: Eave, Ridging, Endlaps

**CORRUGATED**

- **Height:** 18mm
- **Rib Distance:** 75mm
- **Width:** 1066mm
- **Effective Coverage:** 914mm

**Installation:**
- Lapping Corrugated sheets
- Lapping can also occur on the 3rd ridge for a more versatile roof
- Roofing: Eave, Ridging Endlaps
CURVED ROOFING

At VARMASTEEL we can curved our Standing Seam and Corrugated panels to almost any angle to suit your roofing decor. Just provide and the profile and the angles.

EXAMPLE OF SIMPLE BENDS

- Adjustable angle at ends
- Adjustable angle
- Full panels adjustable angles
The ridge cap of the roof can be installed along the ridge line of the roof. They can be used to seal the upper point at which two slopes meet. These caps can be rollformed and bent into various shapes and sizes. The caps are secured above the roof. Available in either 26 or 24 gauge material.
The head wall flashing is installed over the roof and wall. The wall flashing is designed to prevent leakages into the rafters and roofing. The standard dimensions for a head wall flashing is 2\" x 8\" x 1\". Available in either 26 or 24 gauge material.

(Sizes not shown to scale)
Sidewall flashing is applied when the side of the roof is against an adjacent wall. The wall side of the flashing can be sealed even further with caulking sealant. The standard dimensions for wall flashings are 1/2” x 4” x 6” x 2”. These dimensions allow for the flashing cover of at least one of the trapezoids. By doing this it allows for easy installation and screw attachment. Custom wall flashings can be done dependant on customers preference and taste.
Valley gutters are guttering systems or flashings placed at the internal corners of pitched roofs. This type of flashing is installed under the roofing sheet to prevent the build up of water under the panels. They are specifically designed as a drainage system and can be shaped and designed into various “v” or “box” types.
HIGH SIDE PEAK

This flashing fits over the edges at the peak to prevent water from leaking into the panels. Can be customized in to various shapes and designs. Available in over 30 colours in 26 or 24 gauge.
This flashing is installed to prevent water from running down the exterior siding. There is no standard dimension for this flashing as it depends on both the pitch and purlin spacing of the roof.

The flashing can also be bent to adjust for underceiling later on.
Gable flashing is used to trim the edge of the roofing panel at the gable end of the roof. It should match the eave drip extends along the drip edge of the roof. If the panel is allowed to hang over the gable end, eave drip can be used as an alternative. The standard size of our gable flashing is 1” x 2” x 11” x 2”. A gable cap can be attached over the gable fascia.

(SIZES NOT SHOWN TO SCALE)
The flashing extends underneath the upper roof 'A' with a return fold, and then over the top of the lower roof 'B' with a break to suit the roofing profile. To minimise the problem of wind driving water up-hill the top ends of the lower roof should be turned up.

On the overlap 'B', the break has been detailed as notched into the roof profile. Whilst this is not compulsory, it does give greater protection from water blowing back under the flashing and aesthetically adds to the detail.
SCREW INFORMATION
The use of incomputable screws are one of the leading causes of corrosion for metal roofing applications. When buying screws to fasten your roof or wall, ensure that these screws are designed to prevent any aggressive damage to the sheet which simultaneously controls and limits the level of corrosion in the surrounding area. For example if your roof has a metallic coating comprising of zinc and aluminum then the screw should be coating in a zinc and aluminum coating.

WASHERS
The chemical components of the washers are the Washers can be made of many different materials, but EPDM, a synthetic polymer derived from oil is considered the ideal material for washers. Although many companies state that they supply EPDM washers, the percentage of EPDM contained in each washer varies greatly due to the absence of regulatory standards. One common washer additive one should be aware of is carbon black, which is used in a minuscule amount in EPDM blends for its ability to deliver important performance characteristics at a relatively low cost. These include:

- High UV resistance
- Improved elasticity
- Weathering resistance
- Assistance with manufacturing methods

Carbon black’s low cost also makes it effective for binding blends with high-clay contents. High levels of carbon black also result in bi-metallic corrosion facilitated by the conductive washer.

BUILDDEX SCREWS
BUILDDEX screws are known world wide for their quality and consistency, However customers should be mindful that the coating class, torque strength and climaseal. BUILDDEX screws varies across markets and customers should know if the coating is consistent with the coating of their roof.
FASTENERS

2 1/2” - 2” Metal Screws (Metal to Metal)

1 1/2” Metal Screws (Metal to Metal)

1” Metal Screws (Metal to Metal)

3/4” Stitch Screws (Metal to Metal)

3/4” Wafer Screws (Metal to Metal)

3” - 2 1/2” Wood Screws (Metal to Wood)

1” Wood Screws (Metal to Wood)

2” - Wood Screws (Metal to Wood)