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# INSTALLATION GUIDE FOR METAL ROOFING AND SIDING PANELS



**40-70**

Average number of years that a corrugated metal roof can last

**50**

Average number of years that metal siding can last

Installing metal roofing and siding is an excellent choice for residential and commercial projects alike. On average, a [corrugated metal roof](#) can last between 40-70 years and [metal siding can last 50 years](#), which is more than double the lifespan of asphalt shingles and vinyl siding.

However, roofing and siding installation is a complex process that requires the utmost attention, especially when it comes to ensuring the screws are fastened properly.

To help avoid the [common mistakes that occur when installing metal roofing](#) or siding, we're breaking down a step by step guide for proper installation.



# STEP 1: CHOOSE THE BEST FASTENER MATERIAL

Fasteners can be manufactured from a wide variety of materials and [fabricated for specific applications](#). When choosing a material, you must primarily focus on the function and the expected long-term performance of the fastener, but factors involving dissimilar metals and galvanic reaction must also be considered (like how the fastener will react with its environment, as well as the materials it is being used to attach).

The most common materials to choose from include:

## STEEL

because of its high tensile strength and durability, steel (including stainless steel, carbon steel, and alloy steel) is the most common material used in fasteners today

## BRONZE

while more expensive, bronze is superior to stainless steel in highly corrosive marine environments

## BRASS

while softer than steel or bronze, brass is also highly resistant to corrosion

## ALUMINUM

aluminum shares many of the same qualities as brass but is considerably lighter weight

Keep in mind, there are different grades within each material type, so choose the grade best suited to your usage and environment needs.



## STEP 2: AVOID LEAK POINTS WITH PROPER TIGHTENING

Sinking screws to fasten a metal roof doesn't sound like a very complicated process, but fasteners are actually a critical component in any metal roof/siding installation. And one of the most common errors is overtightening or under-tightening the screw fasteners.

### OVERTIGHTENING

It's a natural reaction to simply try and sink the screw as far down as it will possibly go. The tighter the screw, the more secure it must be, right? Unfortunately, that isn't always the case. The problem with this approach is that it over compresses the washer and thus creates too much stress. This can cause the washer to fail prematurely – or worse, you could break the washer right off the bat. Over compressed or broken washers can easily result in leaks.

### UNDER TIGHTENING

On the other hand, a screw that's underdriven doesn't create a proper seal for the washer and can also result in leaks. If you can still spin the washer after you've put in your screw, that's a good indication that the screw is under tightened.

To avoid both extremes, utilize a specialized screw gun that's set to the exact speed and torque specifications for your specific metal roofing fasteners and guarantee proper tightening every time.



## STEP 3: DON'T ANGLE THE SCREWS

Another common issue to avoid is putting screws in at an angle. It's very important to set each screw so that it's straight, flush, and in the direct center of the panel to create a proper washer seal. With thousands of screws to fasten, it's easy to get in a hurry, but if you're not careful, you can end up having some screws that are tilted or put in at an odd angle. Every angled screw makes it that much easier for water and wind to get beneath the panels becoming a potential leak site for your metal panel, which is a risk you don't want to take.





## STEP 4: DECIDE BETWEEN PRE-DRILLING VS. NOT PRE-DRILLING

If you asked two installers whether they pre-drill metal roofing sheets prior to installation, you would likely get two completely different answers. But which answer is correct depends on your project. Here are the differences between the two options and when each should be considered:

### NOT PRE-DRILLING

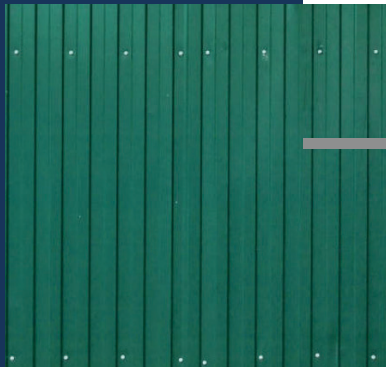
The screws that are used to attach the metal roofing/siding are self-drilling screws. This means that the screw will drill its own hole through the metal panel and into the metal or wood substrate. Therefore, you do not need to pre-drill the holes. In addition, if the metal panel is being installed over metal purlins, the spacing of the purlins would require you to measure where they are located before drilling the holes, which makes it tricky to pre-drill the sheeting in advance.

### PRE-DRILLING

However, you should consider pre-drilling the sheeting if you are attaching the metal panels to a solid wood substrate and do not need to worry about the distance between supports. When there is wood across your entire roof, anywhere that you drill a hole there will be a place where a screw can attach the panel. Under these circumstances, pre-drilling will help you speed up the process of installing the screws and will lessen the likelihood of the screws being installed at an angle.

## STEP 5: PLACE THE SCREWS IN THE PROPER AREAS

When it comes to corrugated metal paneling, one question that always comes up is exactly where to put the screws on the metal panels in the first place. While you might hear different opinions on the subject, the correct answer is that the screws should be fastened in accordance with the metal manufacturer's instructions. Ideally, placement for roofing and siding applications should be as follows:



### **ROOFING APPLICATIONS FASTEN THROUGH THE HIGH CORRUGATION**

If the fastener is placed in the valley of the panel, it partially obstructs water and debris. The valley of the panel is skinny and the fastener takes up most of that space. As the water drains, it will go over the screw, and screws that have backed out over time or that were installed incorrectly will leak or begin to rust. By installing the screws on the top of the ribs, you will avoid the bulk of this issue while still ensuring a secure seal.



### **SIDING APPLICATIONS FASTEN THROUGH LOW CORRUGATION**

When you put screws in the top of the ribs on metal siding panels, it puts pressure on the panels which causes the panel to have a bow in it. It's also hard to avoid overtightening the screw, which will cause a deformation in the panel at every fastener. By placing screws in the valleys of the corrugated metal panels, you'll avoid damaging the metal and will also ensure a safer and more secure seal that can withstand extreme environmental conditions like high winds and water without leaking.



## BONUS TIP: CHOOSE A TRUSTED VENDOR

Poor-quality or unfit materials will lead to unwanted problems like leaks, cracks, rusting, rotting and more, creating time-consuming and costly situations.

Before [choosing a roofing or siding material](#), you must consider important factors like environment, climate, roof slope, quality, etc. to ensure you choose an appropriate option that will be feasible for your project.

To avoid problems with incorrect or low-quality materials, consider working with a [trusted supplier like Corrugated Metals Inc.](#) who has over 125 years of industry experience, continuously meets industry standards, thoroughly tests its products, and stands behind them with warranties, to help you make the best decision for your roofing and siding project and cut down on unnecessary problems.



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## GET STARTED

Roofing and siding are two of the most important parts of a building; it's what protects the people as well as the structure itself. That's why it's important to be cautious, pay attention to detail, and use quality products when planning a metal roof/siding installation in your next project. Doing things right the first time will save yourself the money, effort, and time of dealing with repairs down the road.

If you're ready to learn how CMI's experience and innovation will enhance your next roofing or siding project, [get in touch today](#).