

# 5 Steps for Ensuring a Weathertight Roof

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The metal roofing industry is making great strides in developing installation methods that provide for weathertight, durable, low-maintenance systems that will endure for decades. Indeed, metal can be the most cost-effective roofing material for most structures - as long as its properly applied. But in order for building owners to derive the full benefits of a metal roofing system, the installation must live up to the project goal; a watertight, leak-free roof system from day one. To achieve that, I suggest the following steps be taken.

**1**

## **Select the right roof panel for the job.**

First, make sure the proper roof panel profile is specified for the project. This is especially important with complex roof designs having hips and valleys. Today's structural standing seams were originally developed to compare with the built-up flat roof market. The industry needed a panel profile that would allow standing water to sit on the roof for a short time without producing leaks. These roof systems were mainly installed on low-slope commercial or industrial structures. The most successful of these – the trapezoid system – worked extremely well for the built-up roof market, but was never intended to be an architectural panel profile. As the industry progressed, however, this profile was pushed into service as an architectural panel for steeper-pitched installations and for more complex designs.

This is not to say that a trapezoid panel will not work successfully in architectural applications. It means the designer must be more diligent in the details, and the installer more diligent in the installation process. When choosing a panel profile, therefore, the slope of the roof as well as the overall complexity of the roof structure must be considered. When hips and valleys are present, the designer must work with panel profiles that lend themselves to those conditions.

**2**

## **Make sure the roof is properly designed and detailed.**

The designer needs to ensure that the roof system is designed and detailed for weathertightness. Often roofing system manufacturers will provide this service. But designers who don't want to be tied to any one manufacturer can contract with a third-party experienced in metal roofing. By doing this, the designer can get information about different systems to determine what works and what doesn't for the project at hand. This step can also help avoid conditions that could lead to problems later in the life of the roof.

### **3 Insist on well- trained, certified installers.**

The next step is to make sure that all the components and design work come together as intended. Since every manufacturer's system is slightly different and requires small adjustments in installation techniques, this is best done by insisting on the use of experienced installers trained and certified by the roofing system manufacturer.

A good certification program will include an in-depth course on the proper method of installing all system components. It will cover all standard details as well as special installation conditions that might arise in complex installations. It should include a hands-on session that gives installers experience in installing the product correctly.

### **4 Have the roof installation inspected.**

During the actual installation of the roofing system is when the project can be won or lost. At this critical stage, it is necessary to make sure that the installer follows all of the details agreed on for the project. This is accomplished through roof audits, which should be performed by metal roofing specialists.

The number of audits usually depends on the size of the project. At a minimum, a roof of up to 30,000 square feet should have two audits, and one over 30,000 square feet should have three audits. These audits should be in-depth visual surveys that include a written report complete with photos and a listing of all deficiencies. The report should also detail the corrective actions necessary to bring any deficiencies up to the level originally specified.

### **5 Properly correct any deficiencies.**

Qualified roof auditors will survey the roof for detail compliance and find any areas that are incorrectly installed. For example, voids that produce leaks may appear as if they have been installed correctly. An experienced metal roof

auditor can detect small voids that allow water entry.

The auditor should photograph and note the location of all voids so the installer will know exactly where the problem is occurring and how to correct it. Any deficient area should be corrected in accordance with the installation methods detailed in the installation guide and the project drawings. Just covering up the deficiency with extra surface caulk is not a long-term repair. In most cases, the only way to ensure that a deficiency is corrected is to remove the components and re-install them in the approved manner. This approach may be more expensive, but it is vital to the integrity of the roof.

A final roof audit should be conducted to verify that the roof material is correctly and completely installed, using the roof auditor's reports to zero in on any deficiencies.

Most major manufacturers have agreements with the installers of their products to cover such items. It is important that the designer become familiar with the extent of the installer's responsibility concerning deficiencies. And the installer must hold to his obligations until it has been determined that the installation is satisfactory to the owner, architect, general contractor, and third-party metal roofing consultant.

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