



Dear Customers,

As a result of my inspection and meeting with you at your home on October 19th, the following report documents my comments and observations about the metal roof installation performed by XX Roofing, Inc. (XXX). Also in attendance was the installation manager for XX Roofing, Mr. XX and Mr. XX a representative from XX Building Supply (XXX), the metal roof material manufacturer.

Your contact with me was as a result of your dissatisfaction with the roof installation and performance of the roof as well as the lack of corrective response by XX Roofing, Inc.

Upon initial introduction to the project the presence of leaking, poor aesthetic appearance and a general lack of industry standard detailing was apparent. I will address those particular areas in this report with relative pictures provided by you. Your progress photos are much more extensive than referred to in this report but provide a timeline of the project at key stages of the installation.

LACK OF WEATHERTIGHTNESS

You were very fair in indicating areas that illustrated water damage prior to the roof installation but were also able to identify areas of water staining, peeling paint and soffit damage as a result of the roof installation that were not present prior. XXX did not make notations of any prior water damage so there is no documentation any of this damage was existing. The current leak areas around the skylights are of particular importance and are a clear breach of the contract warranty and performance standards of a licensed roofing contractor in Washington State. While no mention of soffit repair was in the contract documents other than checking intake venting screens, the contractor assumed that responsibility by performing replacement and repairs as well documented by the timeline photos. There are a large variety of photographs to document all these conditions that are not included in this report but are available as needed for evidence.

An email dated September 15, 2024 from XXX, the General Manager of XX Roofing, Inc., indicated he would take the next steps to rectify any issues and assured you the “workmanship meets or exceeds the requirements”. The commentary and photos will clearly show that criteria has not been met.

OIL CANNING

While “oil canning” is a well understood term in the metal roofing industry, it is more subjective than objective to define. It is an aesthetic condition that has a wide range of appearance and acceptability. Oil canning can be caused by a number of things but there are three basic conditions that determine it’s severity. The first is the condition of the surface the roof is installed on. It is easy to see the roof deflection by a simple look up the roof slope from the eave to the top of the roof. An unusually uneven surface can intensify the effects of oil canning but in your case, your roof surface was well within a standard that would not accentuate oil canning with the panel installed. XXX did install a new plywood roof surface after the initial roof material was removed.

The second condition is related to the condition of the metal roofing material that is installed. Often times a poorly produced roof panel will illustrate oil canning even with a good surface and care in installation. We were lucky to be able to inspect some remaining roof panels that were not installed. We held these panel up from the ground to see if any oil canning was present in those panels and there was not any indication of faulty material. All parties present participated in this exercise and agreed the panels looked good prior to installation. This inspection led us to conclude the material was not the culprit of the excessive oil canning.

The third condition that induces oil canning in metal roof panels is the installation methods. Excessive pressure to the screw fasteners installed in the attachment flange of the panel often accentuate oil canning. It is my conclusion this is the major cause of this excessive condition on this project. See **photos 1-4** to illustrate these conditions. The consistency of pattern in **photo 1** is a clear indication of fastening pattern over surface or material causes.



Photo #1



Photo #2



Photo #3



Photo #4

WORKMANSHIP

Flashing details

There are actually a very limited variety of flashing details on this project. There were no obvious deficiencies in the eave and valley details but proper installation can only be determined by disassembly of those specific areas. That inspection was not performed. The ridge, gable, skylight flashing and penetration areas all have significant deficiencies illustrated in the following photos.

Ridge

The ridge overlap conditions were not installed properly as shown with significant distortion and exorbitant use of caulking to fill large gaps. **photo #5** The end of the ridge line above the main entry has a patched small piece of gable under the ridge end that is unsightly. See **photo 6**. Large sections were used elsewhere as should have been the case here as well.

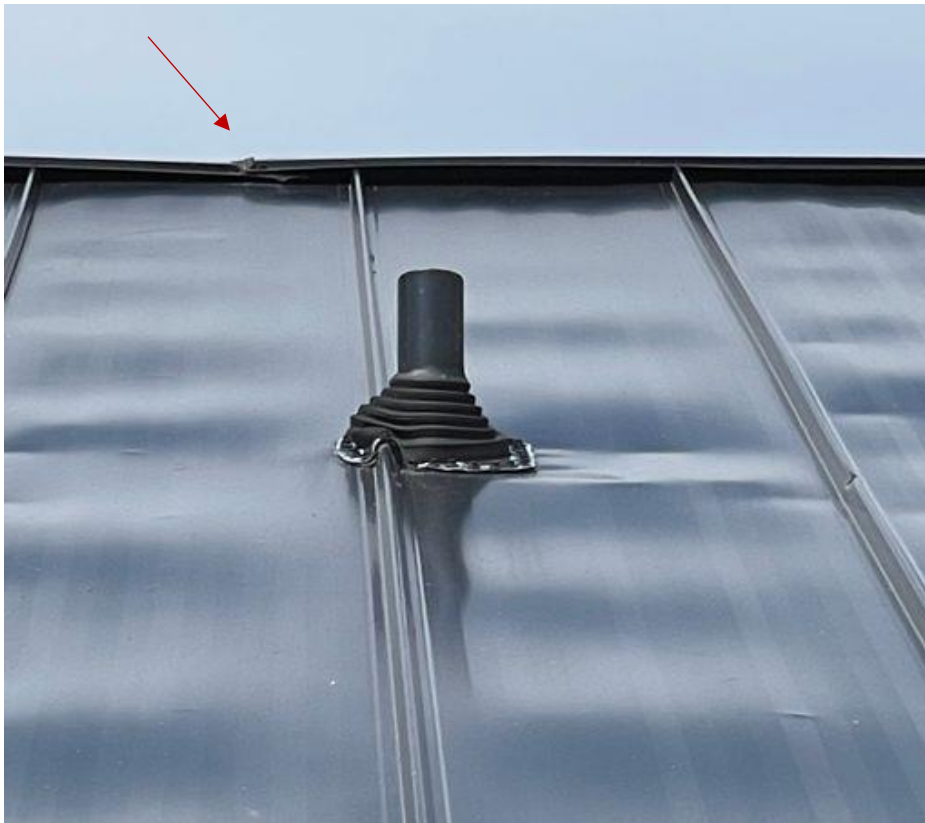


Photo #5



Photo #6

Gable

There are a number of problems with the gable/rake flashing details. **Photos 7 & 8** illustrate the improper overlap with significant gaps and lack of hem modification to allow a proper overlap. **Photos 9 & 10** show different gable on each side of the roof slope. The left gable has exposed fasteners and the right side does not. Both gables are different and the right side gable is not a manufacturers detail and is not installed in accordance with manufacturer standards. Notice the top fasteners on the gable in **photo 10**. The inconsistent gable flashings, lack of proper overlaps, excessive use of caulking to overcome poor craftsmanship and lack of following the manufacturers details suggest all gable flashings should be replaced and installed appropriately. The gable attachments may also contribute to the significant soffit staining and damage. See additional comments and photos in the “soffit” section later in the report.



Photo #7



Photo #8



Photo #9

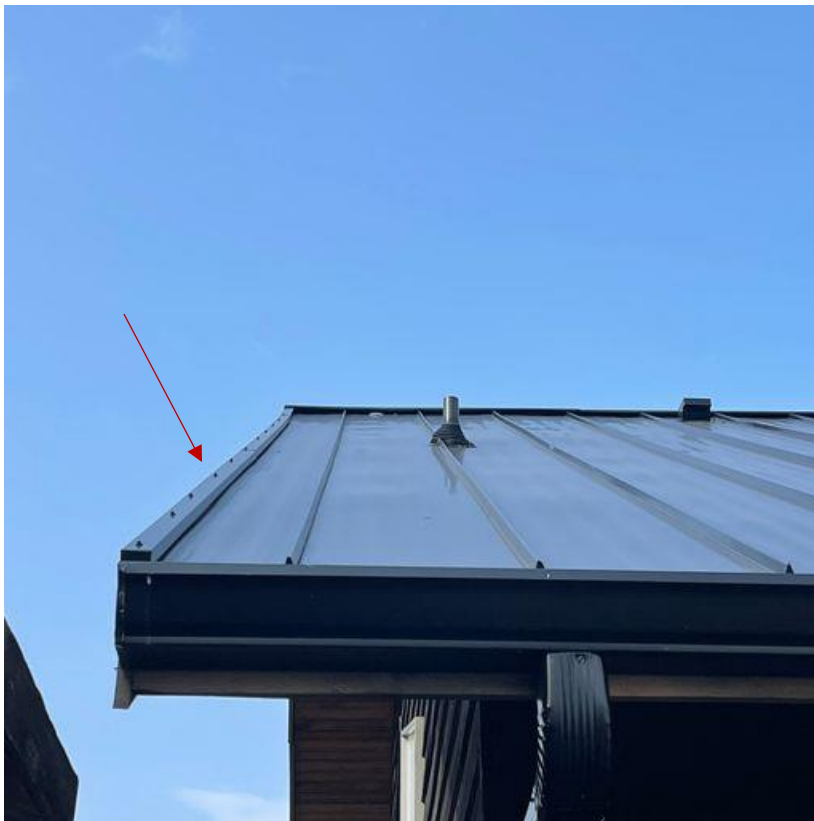


Photo #10

Skylights

The master bedroom opening skylight leaked from the original installation. Upon repair after a significant time under a tarp, the correcting installer noted the original installation was incorrect. The opening Velux skylights have very specific flashings that are required to work with the gasketed system detail of the Velux opening skylights. Exact Velux or exact match flashings must be used to properly seal these skylights. The remaining skylights are suspect due to the incorrect installation of the master bedroom skylight. The attached **photos 11 & 12** illustrate the interior water staining. The location of the staining illustrates the gaskets were not in the appropriate location with the new flashing.



Photo #11



Photo #12

Penetrations

One plumbing vent, the exhaust vent and all the chimney flashings are inappropriate or installed inappropriately.

The plumbing vent flashing as illustrated in **photo 13** is installed in the panel seam. Although this may be unavoidable, when encountered there must be a custom box flashing made as required by the manufacturer of this part or there must be a relief cut in the panel seam to ensure that moisture collected with the seam above the pipe vent can escape prior to entering inside the flashing and dripping inside the roof envelope. The attachment of fasteners in this area also accentuated oil canning due to the use of excessive force.

Panels dents and lack of care are also evidenced **photo 13**.



Photo #13

The exhaust hood in **photo 14** appears to be a standard part used with traditional roofing products and is not appropriate for metal roof installations. Any roof penetration should be “shingled” into the roof panel and not surface mounted as shown. This mounting practice requires total dependency on sealants on a sloped plane which has proven to have a very limited life expectancy and is not in accordance with industry standard practices. The sealant is also applied in a very haphazard manner.



Photo #14

The two chimney penetrations also have standard roof penetration flashings that were field painted in a similar color to the roof. There are multiple problems with this installation as follows:

- The nature of these flashings are not compatible with standing seam metal roof panels
- They are surface mounted requiring dependency on sealant
- The panel ribs were cut out and filled with sealant for weathertightness. This will fail in a very short time.
- The flashings are not “shingled into the roof panels as required.
- The field painting does not match the roof panels and is already failing/chipping off.

Photo 15 illustrates the deficiencies noted above



Photo #15

Soffits

The contract notes to verify venting were to your understanding to verify and replace as necessary. The following **photos 16-19** illustrate the ineffective use of new brown plastic vent material installed in a manner with open gaps and inconsistent appearance. In some cases the vent material was installed over the original damaged screen. Notice the broken soffit section that was from a workers foot stepping on the soffit from the top side and not performing an appropriate repair remedy.



Photo #16



Photo #17



Photo #18



Photo #19

Gutters and downspouts

The gutters are not mounted in a manner to properly drain and there is annoying noise in the downspouts that has been reported to the installer.

Additional comments

The customer overheard the crew discussing this was only their second metal roof installation. While experience must be gained by installation practice, an experienced metal roof installer or supervisor was apparently not present during this installation. There are serious deficiencies in the installation of the underlayment, panels, flashings and roof penetrations. The choices of methods and materials used is also suspect based on the final result

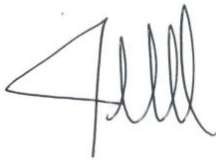
At the meeting on October 19 with all previously noted in attendance, the conclusion reached by XX Roofing Company was that a 24 gauge 12" wide panel would have been a better product to have been proposed by the salesperson for this application and that the roof should be replaced to overcome the poor installation and appearance. While I agree that suggested product would have a higher likelihood of improved appearance, it would not overcome the significant shortfalls in the installation performance and apparent skill level of those that installed this roof.

Again, the choices made with the products used and the methods of installation are the reasons this roof is failing and looks abhorrent. This roof panel system and standard flashings with appropriate penetration flashings installed by a professional and experienced metal roof installation team would perform well and be a showpiece for this homeowner and installation company. What we have here does not meet any of that criteria.

Because of the apparent poor installation of all the roof materials starting with the underlayment, the overattachment of the roof panels and the poor craftsmanship of the trim and penetration flashings, my only suggested remedy is a total replacement by a qualified installer.

My experience with 46 years in this industry to include manufacturing, installation and training gives me the confidence I can easily backup all these findings and statements to whatever extent necessary. I stand ready to provide whatever further assistance you may request.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jerry Iselin', with a stylized, cursive script.

Jerry Iselin
President, Metal Roof Specialties
2016 Inductee Metal Construction Hall of Fame