# Chapter 14: Reflective Roof Insulation

Proper vapor barriers and ventilation system design and installation are important to prevent condensation and resulting problems from moisture damage.

Condensation occurs when moisture laden air comes in contact with a surface temperature equal to or below air dew point. This phenomenon creates problems which are not unique with steel covered buildings. These problems are common to all construction types.

Any metal roof underside is to be protected from condensation by insulation, which reduces condensation forming potential on panel undersides.

## Most Common Mistakes:

1. Overlapping insulation rolls.
2. Cutting off at eave girts to create "waste".
3. Placing insulation in overhangs (beyond column building lines).
4. Not placing roof insulation under all steel roof surfaces within building lines (including roof only shed or carport areas).
5. Failure to square roof plane before installation.
6. Not straightening eave girt to a string line before installation.
7. Failure to adequately seal joints, rips or tears in insulation.
8. Not using roof insulation.

If an error is made and more reflective insulation is needed, minimum shipping time is one week by UPS ground. **(This is the only shipping option for rolls this large.)**

When installing, reflective insulation either A1V or A2V (white vinyl on one side), white vinyl side will face building interior (with few exceptions).

Package insert may give directions for installing insulation. The directions refer to "airspace". This is not the airspace on building inside. The "aluminum" reflective side is installed **facing the steel** (sunny side up).

Reflective insulation installation does not change construction methods. Reflective insulation facings are not affected by cold temperature. Except for underneath a concrete slab, reflective insulation is not to be overlapped. Depending upon product received, install by one of the following methods.

Prior to of *any* roof insulation installation, make certain roof planes have been squared. **See** Chapter 13.

**Reflective building insulation** is not placed in overhangs. If **reflective building insulation** is installed in overhangs, there will be an insulation ***SHORTAGE*** !

Start roof **reflective building insulation** at same end of building roof steel installation will start. The insulation roll end begins flush with eave purlin outside edge (also known as eave girt). The insulation leading "long" edge begins flush with building end truss outside.

**Reflective insulation** is installed to run eave to eave over ridge. Splices are best made directly on purlin tops.

Other than to make a roll end square, do not trim starting edge. Start flush at eave girt outside edge. Opposite end is cut flush with opposite eave girt outside edge (or ridge purlin upper edge for translucent or Vented Ridge applications).

CAUTION Verify adequate material exists before trimming off large amounts.

Using a minimum 5/16" galvanized staple, staple through insulation to eave purlin top. As an alternative to staples, 1" galvanized roofing nails (with the big plastic washers) also work well. Roll out reflective insulation across purlins (up and over ridge) with aluminum side up and white side down (towards building inside). **See** Figure 14-1**.**

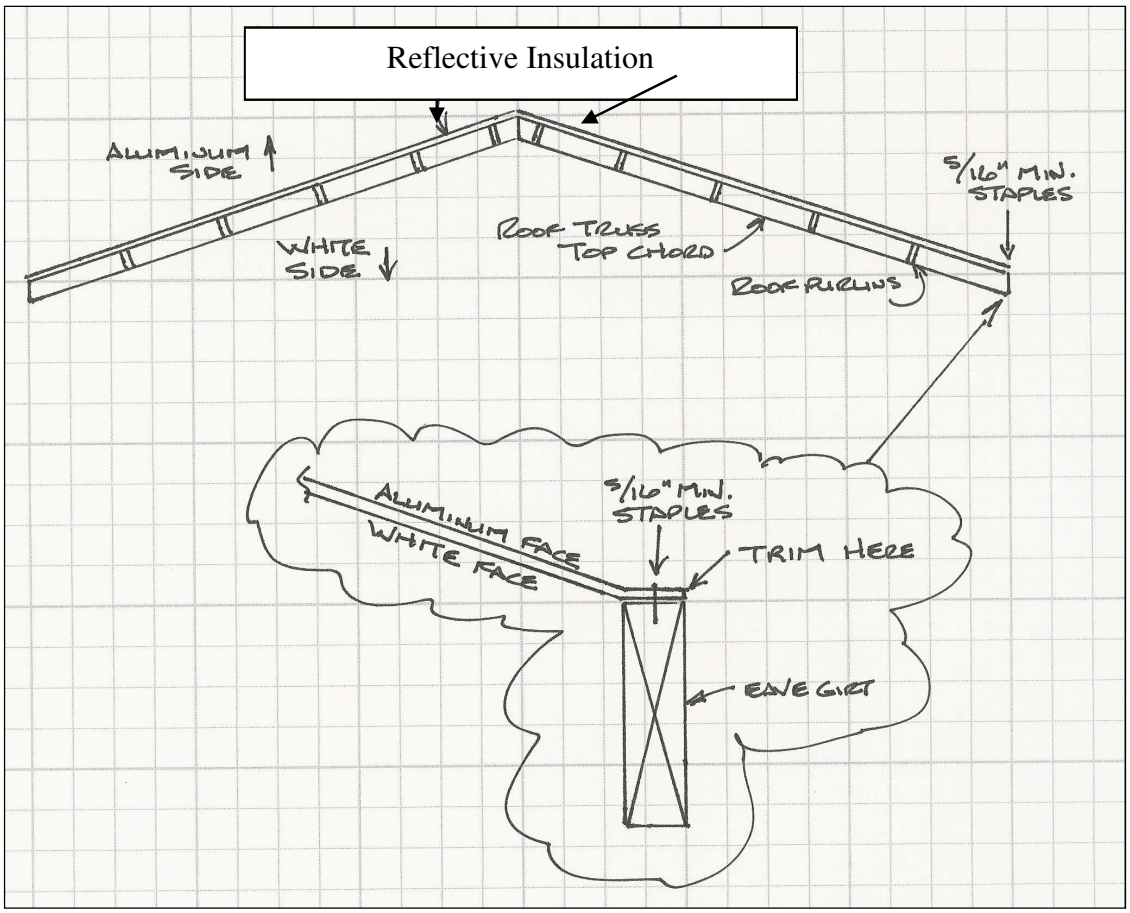


**Figure 14-1**

Pull insulation past opposite eave purlin edge and staple to top. Trim roll off flush with opposite eave purlin outside edge.

As an alternative, double-faced tape may be used to attach insulation to eave girts. This tape is available from Hansen Buildings.

Install next roll in same manner, stretching roll tightly, align properly and close butt sides.

For reflective insulation with an "*adhesive tab*" (typically A1V): These have a 1" tab (without air cells) extending along one insulation roll long side. At seam, where two insulation rolls are joined, pull tab across adjacent roll by 1", remove "pull strip" from the adhesive, and firmly press the two rolls together. Properly installed, each roll will have a 48" net coverage.

For square edge rolls, use a *butt joint* and seal seams properly with tape.


Good to Know! A *butt joint* is where two pieces are placed end to end or side to side without overlapping.

Foil tape (for V1V or V2V faced both sides with aluminum), 2" white vinyl tape or a silicone bead can be used to make permanent seams between ends and reflective insulation roll sides. The optional foil tape or white vinyl tape are both available from Hansen Buildings.

For maximum air and vapor tightness, keep perforations in reflective insulation to a minimum. Seal all perforations with reflective insulation tape.