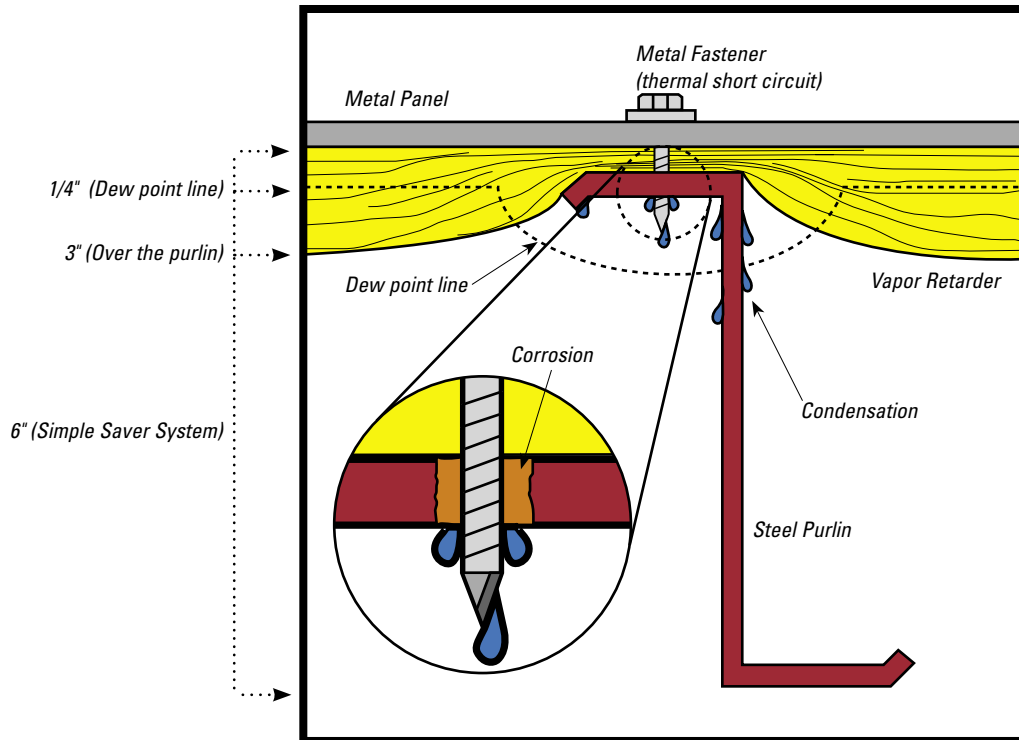


# EFFECTS OF TRADITIONAL INSULATION SYSTEMS



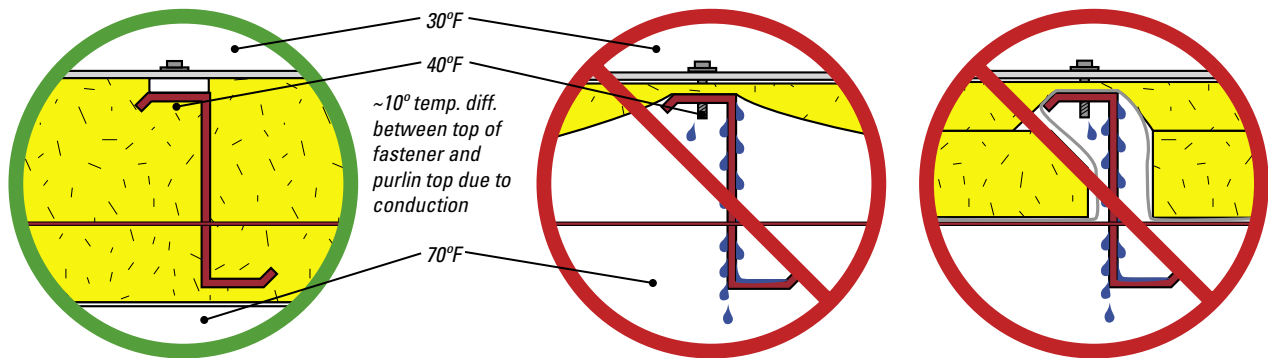
## MAJOR DEFECTS

1. IMPROPER PLACEMENT OF VAPOR RETARDER (OVER THE PURLIN)
2. SEVERE LOSS OF INSULATION VALUE FROM COMPRESSION

## RELATED PROBLEMS WITH TRADITIONAL INSULATION SYSTEMS

|   |   |
|---|---|
| <b>Condensation</b>                         | Causes dripping, damage to ceilings and building contents, deterioration of facings, and wet insulation. This condensation is often perceived to be caused by roof leaks.                   |
| <b>Corrosion</b>                            | Structural deterioration, roof panel deterioration, shortened roof life, high repair costs. Also causes loosening of roof fasteners and standing seam clip fasteners.                       |
| <b>Exposed Purlins</b>                      | Unfinished appearance, collects dust and dirt, absorbs light, reflects sound, needs painting and cleaning. Radiates heat from the exterior and transfers cold air into building's interior. |
| <b>Poor Quality In-place Vapor Retarder</b> | Ineffective joint sealing methods destroy perm ratings. Improper placement outside of dew point line results in condensation and corrosion.   |
| <b>Obsolete Thermal Performance</b>         | Actual insulation values are 50% to 75% less than economically desirable.   |

# THE SIMPLE SAVER SYSTEM VS. TRADITIONAL METHODS OF INSTALLATION



## SIMPLE SAVER SYSTEM

- Full Thickness Insulation
- Proper Vapor Barrier Placement
- Purlins Fully Encapsulated
- Attractive Appearance
- Extrusion Welded Seams

## OVER-THE-PURLIN METHOD

- Severely Compressed Insulation
- Defective Vapor Barrier Placement
- Exposed Conductive Structure
- Unfinished Appearance
- Poorly Sealed Seams

## LONG TAB OVER PURLIN

- Compressed Insulation
- Defective Vapor Barrier Placement
- Voids in Insulation
- Exposed Conductive Structure
- Unfinished Appearance
- Poorly Sealed Seams

**METAL BUILDING DEW POINT TABLE\***

| Interior Temp. (dry bulb)             | Interior Relative Humidity Percentage                  |     |     |     |     |     |     |     |     |
|---------------------------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|
|                                       | 10   | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  |
|                                       | <b>Purlin Temperature at Which Condensation Occurs</b> |     |     |     |     |     |     |     |     |
| -20                                   |  |     |     |     |     |     | -27 | -24 | -22 |
| -10                                   |  |     |     | -28 | -23 | -20 | -17 | -14 | -12 |
| 0                                     |  | -30 | -23 | -18 | -13 | -10 | -7  | -5  | -2  |
| 10                                    | -30  | -21 | -13 | -8  | -4  | 0   | 3   | 5   | 8   |
| 20                                    | -23  | -12 | -5  | 1   | 5   | 10  | 13  | 15  | 18  |
| 30                                    | -15  | -3  | 5   | 11  | 15  | 19  | 22  | 25  | 28  |
| 40                                    | -8   | 5   | 13  | 19  | 24  | 28  | 31  | 34  | 37  |
| 50                                    | 0  | 13  | 21  | 27  | 32  | 37  | 40  | 44  | 47  |
| 60                                    | 7  | 20  | 29  | 35  | 41  | 46  | 50  | 54  | 57  |
| Room temp @ 5' above floor level → 70 | 14   | 28  | 37  | 45  | 50  | 55  | 59  | 63  | 67  |
| Ceiling temperature → 80              | 20   | 36  | 46  | 54  | 60  | 65  | 69  | 73  | 77  |
| 90                                    | 27   | 44  | 54  | 63  | 69  | 74  | 79  | 83  | 87  |
| 100                                   | 34   | 52  | 63  | 71  | 78  | 84  | 88  |     |     |
| 110                                   | 41   | 60  | 71  | 80  | 87  |     |     |     |     |

The temperature at ceiling is often 10°F higher than temperatures at 5' above floor level due to heat gradients. To prevent condensation in a metal building, warm humid air must be prevented from contacting any interior surface temperature that is below the dew point of the interior air mixture. The over-the-purlin and long tab methods of insulating do not prevent internal air from contacting cold conductive roof fasteners and the surrounding purlin areas. \*See dew point line on reverse side.