

Dissimilar Materials

Dissimilar materials can be a disaster to a metal roof, so one must be aware of materials that cause problems. Dissimilar materials are materials which when placed in an electrolytic solution react with one another chemically. In simple terms, it's when two pieces of metal get wet, and one causes the other to corrode.

Galvalume and Galvanized

In our business, our primary material is galvalume and galvanized. The materials that cause us the biggest problem with these products are copper and lead. These two metals should not be anywhere remotely close to the galvalume or galvanized material we supply. Even a roof made of galvalume or galvanized material should not drain into a copper gutter. While once thought of as being acceptable, recent case studies have shown that the water hits the gutter and splashes upon the roof and causes corrosion. Other occurrences we see regularly on roofs are the use of copper lightning rods. Lightning rods should be made out of aluminum when used on a galvalume or galvanized roof. Drainage from an air conditioner on the roof is water that is dripping from copper coils inside the unit and should be plumbed off the roof through PVC pipe to avoid corrosion. (See photo encaption.) Lead pipe flashings are common and should be replaced with EPDM dektites. These are just a few of the common occurrences. In all cases, all dissimilar materials should be avoided when possible. When two dissimilar metals being used together, cannot be avoided, care must be taken to assure that they must not be able to get wet, and a barrier sheet of some sort must separate them.



Example of corrosion caused by drainage from copper coils inside air conditioning units.

Treated Lumber - Wet Mortar

Other dissimilar materials such as treated lumber and wet mortar should not come in contact with a galvalume or galvanized panel. These materials can also cause premature corrosion of galvalume and galvanized products.

Copper Coil

Occasionally we will manufacture a panel out of copper coil. When using a copper panel, all fasteners and/or clips should be made of copper or stainless steel. The use of these metals will prevent the copper panel from corroding the clips and/or fasteners.

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