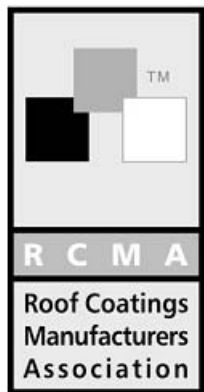


COATINGS FOR METAL ROOFING

By the Roof Coatings Manufacturers Association

Metal roofing systems have been used for many years. After World War II, metal roofs were employed on industrial facilities such as warehouses and on farm and agricultural buildings. Due to improved aesthetics, materials, and sound damping, the use of metal roofs has been increasing. Since the late 1970s, modern roofing has been using an aluminum/zinc alloy (known as Galvalume® coated steel) as the predominant metal material. Traditional galvanized steel roofs are still manufactured and are the most common metal roof panel currently in place. Metal roof panels may have baked on finishes for aesthetic or functional reasons. Metal roofs can be extremely durable, but as they age, the coating degrades and may benefit from recoating. Metal roofing with exposed fasteners can develop leaks at the attachment points that call for repair or sealing prior to coating.



Coatings for Metal Panels

Many different types of coatings are used to coat metal panels. The products include asphalt or polymeric (elastomeric) coatings.

The asphalt coatings may be a solvent or water-based product. Reflective asphalt coatings are typically used as a coating for a metal roof. Polymer-modified asphalt coatings, which offer improved elongation and recovery properties over

conventional asphalt coatings, are also used.

Elongation and recovery are important properties in a metal roofing system, as the metal panels expand and contract with changes in temperatures. Pigmented latex coatings are the most common materials used in coating metal panels, as they offer a wide range of resistance to chemicals, oils, and solvents, and have good elongation and recovery. Polyurethane coatings are often used in areas where industrial chemicals or oils are present.

Solvent-borne elastomeric coatings have very good elongation and recovery and can be formulated for tenacious adhesion to metal. The resistance to solvents and oils is lower than acrylic or polyurethane coatings, so these coatings are not used in areas such as restaurants, where oils and solvents are present.

Roof Evaluation

The metal roof should first be evaluated to determine the extent of the degradation. The roofing manufacturer should be contacted if warranty conditions are involved or if replacement is required. The condition of the seams, both vertical and horizontal, should be determined first. The primary seal for the metal roofing system is the seam tape or caulk that is put in the joints between the metal panels. As the system ages, the primary sealant may degrade. To repair the primary sealant, seams that are leaking should be inspected, screws tightened, and washers replaced as needed.

The field of the panels should be inspected to see if any panels need to be replaced or if there is

white or red rust. White rust can occur on galvanized roofs, appears to be a chalking of the metal, and is the first stage of corrosion. If there is white rust on the roof, use a solvent-based or water-based rust preventative primer to seal the area. Red rust is a later stage of deterioration, and will continue unless it is removed from the panel. If there are small amounts of surface red rust, power washing, sand blasting, or wire brushing can remove it. The area should then be sealed with a rust preventative primer. Situations where red rust is prevalent or has started to corrode the metal panel require repair and are beyond the scope of this document. Structural metal roofs with red rust may be unsound and should not be walked on.

Even if no rust is present, the roof should be cleaned and free of any dirt, oils, or residual coating. Sealing washers around fasteners degrades them and may necessitate replacement. If there are any screws missing, they should be replaced, and a dab of caulk should be put on the screw heads. The seams should then be sealed by using either elastomeric caulks, specialty tapes designed for this purpose, or fabric embedded in elastomeric sealant.

Coating the Metal Panels

A primer is used in many instances to improve the adhesion of the coating to the metal panels. The coating manufacturer should be contacted for recommendations on the use of a primer.

Depending on the system chosen, a base and topcoat are usually required. Spray, squeegee, brush, or roller may be used to apply coatings, which are available in various size containers, including 5-gallon pails, 55-gallon drums, totes, or bulk. A base coating is often used. The topcoat of the system is usually applied perpendicular to

the base coat at the same rate of coverage. The manufacturer should be consulted for recommended application rates.

Reflective pigmented roof systems are often used to reduce the energy consumption of a building. This is especially true on dark-colored roofs where there is little or minimal insulation.

Metal roofing is a very durable roofing system. If the roof and the coating are maintained, the life of a metal roof can be extended indefinitely.

For additional information on cold-applied roof coating materials, or about any of the Roof Coating Manufacturers Association (RCMA) manufacturer member companies, contact the RCMA at 1156 15th Street, NW, Suite 900, Washington, DC 20005, telephone: 202-207-0919; facsimile: 202-223-9741; website: www.roofcoatings.org. ■

ABOUT THE AUTHOR

This Tech Note was prepared by and has the approval of the Roof Coatings Manufacturers Association (RCMA), 1156 15th Street NW, Suite 900, Washington, DC 20005 (202-207-0919 or www.roofcoatings.org). This note is for informational purposes only and is not intended to revoke or change the requirements or specifications of the individual roofing material manufacturers or local, state, and federal building officials that have jurisdiction in a given area. Any question or inquiry as to the requirements or specifications of a manufacturer should be directed to the roofing manufacturer concerned.