

Use of Primers Prior to Roof Coating

Primers are designed to prepare the roof surface for accepting a coating and improving the overall adhesion of the coating to the roof substrate. Typically, they exhibit low viscosity and are formulated to quickly wet the substrate in a thin layer and, when cured, to leave behind a thin film acceptable for receiving a coating. Primers are available in a variety of binder and solvent combinations, and the type of primer employed in a particular application will be based upon the substrate, weather conditions, and the type of coating being applied. A decision to use a primer should not be made without consulting the manufacturer's requirements for the specific coating and substrate.

A primer is never a substitute for proper roof surface preparation. The substrate should be clean and dry prior to coating. Dust, chalking film, bitumen exudate, greases or oils and other loose debris should be cleaned off of the roof prior to the application of coatings. Any required roof or flashing repairs should be completed and allowed to adequately cure, prior to coating. For more on preparing a modified bitumen roof surface prior to coating application, consult the Roof Coating Manufacturers Association/Asphalt Roofing Manufacturers Association document entitled *Evaluation and Preparation of Modified Bitumen Roofing Systems for the Application of Surface Coatings*.

Surfaces which generally require primer include: metal flashings, gravel stops, and other metal edging; concrete and masonry roof decks, masonry walls and floors and gypsum and other porous surfaces. In addition, certain roofing substrates may require priming to not only promote coating adhesion, but to prevent the substrate from negatively impacting the performance of the coating. As examples, rust inhibitive primers are often used to prevent flashing rusting from blooming through the surface of a water-base coating and "bleed" blocking primers are used to prevent the lighter fractions of some bitumen roofs from staining white elastomeric coatings.

Primers are generally applied to clean dry surfaces, however water-based (emulsion) primers can be applied to damp (not wet) surfaces. Application of the surface coating, should occur soon after the primer has been applied and cured, to ensure the desired results.

The following are some general guidelines regarding the application of primer which are useful to consider.

Asphalt Roofs

Asphalt Roofs, such as smooth-surfaced built-up or modified bitumen membranes contain light oils, called exudate that can leave a membrane soon after its application. This process, called "tobacco juicing" is normal and the exudate will generally wash off

the roof after rainstorms.

Any exudate on a roof prior to coating application should be thoroughly cleaned. Special primers designed to resist the exudate from bleeding through to the fresh coating may be required prior to the application of light colored elastomeric coatings.

Glaze-coated built-up roofing can also release exudate. In addition, the glaze coat, if not reinforced, will crack or “alligator”. One method to reduce this effect on new roofs, or to cover existing cracks in the glaze-coat of older roofs is to prepare the roof with a layer of fiber-reinforced asphalt emulsion coating prior to the application of a reflective or protective coating. On old, weathered asphalt roofs, many coating manufacturers recommend the use of an asphalt primer after cleaning the membrane to prepare the surface for coating.

Metal Roofs

Today, a number of different types of factory-finished, metal roofing panels are available in the market place. These include galvanized, fluoropolymer-based (PVDF) and siliconized polyester-based prefinished aluminum and steel and even granule surfaced metal shingles. Depending on the factory-finish of the metal panel, the coating to be used, and the weathered condition of the panel, a primer may or may not be required, prior coating.

Primers are generally recommended before applying a surface coating to a galvanized metal roof, regardless of whether the roof is new or old. Special primers are made for both aluminum asphalt and elastomeric coating applications over galvanized metal roofing. Certain rust-inhibitive primers, such as zinc-chromate-based primers may be incompatible with some coatings. Therefore, guidance from the coating manufacturer should be sought. As stated earlier, the use of primer is not a substitute for proper surface preparation, including the removal of rust and scale on weathered metal roofing.

Coal Tar Roofs

Generally speaking, coal tar roof coatings are considered self-priming, and do not require primer application prior to application of coal tar coating or resaturant. However, there are instances where it may be difficult to adequately clean a coal tar roof prior to receiving a coal tar coating or, with the advent of modified tar roofing membranes and systems, there is a requirement to apply a reflective surface coating. In these instances, priming may be necessary to achieve the desired results. It is important to consult the manufacturer to obtain specific recommendations and guidance in these circumstances.

Previously Coated Roofs

Recoating of existing coatings is a key benefit derived from using field applied coatings as it leads directly to reducing life cycle costs of a roofing assembly. Because coatings have a finite service life, recoating will be necessary, after the existing coating has weathered and is no longer providing useful protection to the surface. Depending on the type of existing coating and the extent of weathering, it may be necessary to prime the surface prior to applying a fresh application of roof coating. Below are some suggested

guidelines to consider for various weathered roof coatings. As previously noted, none of these recommendations precludes proper surface preparation.

Asphalt Coatings

Refer to Asphalt Roofs above for guidance.

Asphalt Aluminum Coatings

When coating an existing aluminum coated roof with a water-based coating, including acrylics, priming with a solvent-based primer may be necessary, because the chemical treatment used on the aluminum pigment can interfere with adhesion.

Acrylic Coatings

On roofs with an existing layer of acrylic coating, primer may be required prior to application of new coating. The use of primer, as well as the type of primer selected, will be largely dictated by the age and condition of the existing acrylic coating.

Silicone Coatings

In general, only silicone based primers and coatings should be used over existing silicone coatings, since adhesion to silicone is difficult. Whether or not a primer is required prior to recoating will depend upon the condition of the existing silicone based coating.

Sprayed Polyurethane Foam (SPF) Roofs

SPF roofing is coated immediately after installation to protect the SPF from ultraviolet degradation. Therefore, primers are not generally required in this application. However, existing SPF roofs may have been coated with silicone-based coatings or acrylic coatings. As adhesion to silicone is difficult, as noted above, manufacturers often perform adhesion tests on a sample of the roof membrane and recommend the appropriate primer to help assure the proper attachment of the new coating. If silicone roof coatings present, special coating procedures are required, contact the roofing manufacturer for instructions.

Single Ply Roofs

A variety of elastomer based, single ply roof membranes have been used in the industry, including PVC, CSPE, CPE, TPO and EPDM. Because each of these types of elastomer membranes exhibit unique coating challenges, specific primers and/or primer/washes may be required prior to coating. If coating is an option, advice and guidance from the manufacturer of the roof membrane and the coating, is required.

Concrete

Prior to coating a concrete surface, the concrete shall be clean and dry. Loose concrete should be removed or repaired before coating. A primer is used on concrete to seal the pores of the concrete and aid in the adhesion of the coating. The coating manufacturer should be contacted for a recommended primer. If a release agent or curing compound has been used on the concrete surface, inform the coating manufacturer, as these may

inhibit the adhesion of the primer and coating.

Note: These recommendations were prepared by and have the approval of the Roof coating Manufacturers Association for informational purposes only. They are 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 your area, Any question, or inquiry, as to the requirements, or specifications of a manufacturer, should be directed to the roofing manufacturer concerned.