

## **Self-Adhesive Modified Bituminous Membrane Roof Systems: Considerations for Effective Low Slope Installation**

*Revised April 2020*

Self-adhesive (SA) modified bituminous membranes provide an effective finished roof when properly installed. These systems combine the long-term, proven performance of modified bitumen sheet materials with installation advantages imparted by a self-adhesive bituminous layer.

### **Product Description, Manufacturing Process and Governing Standards**

Self-adhesive modified bituminous membranes are comprised of asphalt, polymers, and tackifiers, and may contain mineral stabilizers. The products may be reinforced with fiberglass, polyester, or a combination of the two. Products designed for exposure to the elements are typically surfaced with mineral granules, coatings, films, or other opaque surfacing. The self-adhesive layer is protected with a release film or paper, which is removed during installation.

Labor saving application without the added complications of torching, mopping, or liquid adhesives is one of the primary advantages of self-adhesive membranes. Because there are no kettles or torches required, installation of self-adhesive membranes may be less disruptive to building occupants.

Many self-adhesive modified bituminous membranes are evaluated using test methods in ASTM D5147, as are other modified bituminous sheet materials, and may meet the physical properties of asphalt base sheets or modified bitumen sheet material standards such as ASTM D4601, ASTM D1970, ASTM D6162, ASTM D6163, ASTM D6164, and CSA A123.23.

### **Product Storage Prior to Use**

Self-adhesive modified bituminous membranes are generally packaged and stored in cardboard boxes or they are protected with opaque wrapping. Unprotected self-adhesive products should not be stored in direct sunlight since exposure to ultraviolet (UV) rays may affect the adhesive properties, especially on the outer convolutions of the roll, or cause “dog-legging” of the roll. Storage for extended periods or under extreme conditions can alter the adhesion properties of the self-adhesive bitumen or affect roll alignment.

### **Installation**

The following items should be considered when installing a self-adhesive membrane system.

- Always consult manufacturer’s application recommendations before specifying or installing a particular product.
- At the time of installation, the air, product, and substrate temperatures should be at or above the minimum application temperature recommended by the manufacturer. While the typical minimum temperature range for application is 40-50°F, consult the specific manufacturer for recommendations for material storage and handling during colder weather application. Self-adhesive products should only be applied to an acceptable substrate, as specified by the product manufacturer. The substrate must be free of dust, dirt, oils, moisture or debris that could interfere with proper adhesion.
- Manufacturers may require the substrate be primed prior to membrane application to aid



adhesion of self- adhesive membranes. Primers are applied by brush, roller, or spray. Check with the manufacturer to determine requirements for primer type, application rate, and drying time. Solvent-based primers may damage the self-adhered membrane and roof system if the solvent had not evaporated fully before the installation of the roof system.

- Unlike other installation methods for modified bitumen membranes, there is no liquid bituminous layer to fill all the surface irregularities. Consequently, proper application is essential, especially at all overlaps and T- joints. Applying pressure to the sheet with a heavy roller is typically required. End laps on mineral-surfaced self-adhesive sheets may need to be heat welded or sealed with compatible roofing mastics as specified by the manufacturer. If using solvent-based mastic, following manufacturer recommended application rates and other precautions to prevent solvent-induced damage to the membrane.

Where different grades of self-adhesive products and/or primers are available for cold weather application refer to the manufacturer's written instructions for guidance on proper product selection.

For more information, please consult the ARMA Modified Bitumen Design Guide for Building Owners. The Design Guide addresses relevant aspects, issues and concerns of modified bituminous roofing systems and their associated components, substrates, construction techniques and innovative uses.

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