



## 6.2 SPECIFIC INSULATION REQUIREMENTS (CONTINUED)

### Cellular Foam Glass:

1. Must meet ASTM Specification C 552; FS HH-I-551E
2. Must meet the physical and performance characteristics of Pittsburgh Corning Foamglass.

### Thermal Barrier:

1. Must meet ASTM Specification C-1117

## 6.3 ROOF INSULATION INSTALLATION

The installation of all roof insulation should be in accordance with the insulation manufacturer's recommendations and guidelines.

Any specific installation that varies from the insulation manufacturer's recommendations must be approved in writing by a member of the TAMKO Technical Services Department.

All cellular plastic foam roof insulations must be overlaid with a layer of fiberboard, perlite, or fiberglass roof insulation.

Note: Installation recommendations for cover board may vary; consult the specific manufacturer for their CURRENT installation recommendations. TAMKO does not recommend the use of 1 in. diameter cap fasteners for attachment of the insulation.

TAMKO will not issue Roofing System Limited Warranties on specifications that do not comply with the preceding requirements.

## 7.0 STORAGE OF ROOFING MATERIALS

All roofing materials must be properly stored in a dry location prior to application. When materials are stored, they must be on platforms off the ground or roof deck, and covered with opaque waterproof tarps that have been properly tied down. All rolls must be stored on end to prevent their becoming deformed or damaged. Wet or damp roofing materials should never be used in the construction of a TAMKO roof assembly.

**AWAPLAN PREMIUM, AWAPLAN PREMIUM FR, AWAPLAN HEAT WELDING, AWAPLAN 170 FR, AWAPLAN 170, AWAPLAN VERSA-SMOOTH, AWAPLAN VERSAFLEX, AWAFLEX FR, AWAFLEX, OR VERSA-CAP FR:** During cold and damp environmental conditions, the rolls should be placed in a heated area. Rolls should be stored in a standing position with the labels right side up. To prevent their becoming deformed or damaged, all rolls must be stored on end and not double stacked. If rolls become deformed, the material may be laid out on the roof to allow the sun to relax the material. Any areas where accidental damage occurs to the roll should be cut out before the material is installed.

## 8.0 APPLICATION OF ROOFING MATERIALS

The roofing contractor must maintain qualified supervision on the job at all times. The following material application information was written to provide TAMKO's recommendations and procedures during normal conditions. For specific cold-weather application recommendations see Section 15.0. For specific re-cover requirements in addition to the application recommendations listed below. See Section 23.0.

**CAUTION: APPROPRIATE FALL PROTECTION METHODS SHOULD BE USED WHENEVER WORKING ON ROOFS.**



## 8.1 GENERAL APPLICATION RECOMMENDATIONS

All open eaves must have treated wood nailers. In the case of steel or masonry roof decks, wood nailers should be provided around the perimeter of the roof and around all openings.

Interply moppings of asphalt should consist of approximately 23 lb. (+ or -15%) per 100 sq. ft. of roof area. **Excessive interply moppings should be avoided as slippage may result.** Allow time for the asphalt to set up before walking on completed plies of glass felts. Displacement of the asphalt is inversely proportional to the set time. Recommendations for weights as stated are based upon application under average conditions. Application at extremely low or high temperatures can result in variation from the prescribed limits. For roof deck surfaces or insulating materials that absorb asphalt, the asphalt must be applied in a quantity sufficient to assure adequate adhesion.

All masonry and metal surfaces that are to receive a mopping of asphalt should be primed first with asphalt primer at a rate of approximately 3/4 gal. per 100 sq. ft. Primer must be allowed time to cure before the application of hot asphalt to avoid problems with adhesion.

All plies of roofing membrane should commence at the low points. Application will not be accepted if at any point the flow of water is against the laps.

The base ply in all specifications should not be allowed to remain open without surface protection. **Phased application of TAMKO commercial roofing materials is not acceptable.**

All felts and coated rolls, including AWAPLAN VERSA-SMOOTH, AWAPLAN VERSAFLEX, and VERSA-BASE, should be rolled and broomed in place immediately behind the mop and firmly imbedded into the hot mopping. Care should be exercised to avoid heavy brooming of fiberglass ply sheets.

Sheets should not be "dropped" or nailed and turned back. End laps should not be less than 4 in.

Excessive traffic on any roof is discouraged.

## 8.2 HOT ASPHALT APPLIED POLYESTER SBS MODIFIEDS

This section applies to the following TAMKO polyester reinforced SBS modified products: **AWAPLAN PREMIUM, AWAPLAN PREMIUM FR, AWAPLAN VERSA-SMOOTH, AWAPLAN 170 FR, AWAPLAN 170, AWAPLAN VERSAFLEX, AWAFLEX FR, or AWAFLEX** to be installed in moppings of hot asphalt. On jobs where accessibility makes it difficult to deliver hot asphalt to the point of application TAM-PRO Premium SBS Adhesive or TAM-PRO M3 Adhesive cold-process adhesive products may be suitable alternatives to hot asphalt; refer to Section 8.4 or contact the Technical Services Department for product and application options.

Interply moppings of asphalt should consist of approximately 23 lb. (+or-15%) per square for AWAPLAN PREMIUM, AWAPLAN PREMIUM FR, AWAPLAN VERSA-SMOOTH, AWAPLAN 170 FR, AWAPLAN 170, AWAPLAN VERSAFLEX, AWAFLEX FR, or AWAFLEX. **The asphalt must be a minimum of 400 degrees F at the point of application.** Care should be taken to avoid cooling of mopping asphalt during the application process. Do not mop the asphalt more than 4 ft. in front of the roll. Immediately press the roll into the hot asphalt by applying pressure to the factory core in the roll. ASTM D 312, TYPE III or TYPE IV ASPHALT should be used for application of AWAPLAN PREMIUM, AWAPLAN PREMIUM FR, AWAPLAN VERSA-SMOOTH, AWAPLAN 170 FR, AWAPLAN 170, AWAFLEX FR, AWAFLEX, or AWAPLAN VERSAFLEX. **Excessive interply moppings should be avoided as slippage may result.**



Side laps of the AWAPLAN PREMIUM, AWAPLAN PREMIUM FR, AWAPLAN VERSA-SMOOTH, AWAPLAN VERSAFLEX, AWAPLAN 170 FR, or AWAPLAN 170 membranes, should be in 4 in. (consistent with the factory selvage). Side laps for AWAFLEX FR, or AWAFLEX membranes should be 3 in. The entire sheet, including the side lap, **must be totally adhered in hot asphalt with no void areas**. A small amount of asphalt protruding from the side lap is acceptable and assists in the inspection when determining proper application. Care should be taken to avoid excessive amounts of asphalt at the lap. All exposed asphalt in excess of 1/4 in. width should be covered with granules.

Alternatively, mopping the field of membrane and heat welding the laps is an acceptable method of installation for AWAPLAN PREMIUM FR, AWAPLAN PREMIUM, AWAPLAN 170 FR, AWAPLAN 170, AND AWAPLAN VERSA-SMOOTH.

End laps of the AWAPLAN PREMIUM FR, AWAPLAN PREMIUM, AWAPLAN 170 FR, AWAPLAN 170, AWAPLAN VERSA-SMOOTH, AWAPLAN VERSAFLEX, AWAFLEX FR, or AWAFLEX membrane should overlap the underlying sheet by a minimum of 6 in. The protrusion of asphalt from the end lap is acceptable and provides a checkpoint for the proper application of the material. All end laps should be staggered or a modified cap sheet installed over each row of the end laps; the center core of the roll should be used to firmly press the end into the hot asphalt.

**Factory Splices:** On rolls of: AWAPLAN PREMIUM, AWAPLAN PREMIUM FR, AWAPLAN VERSA-SMOOTH, AWAPLAN 170 FR, AWAPLAN 170, AWAPLAN VERSAFLEX, AWAFLEX FR, or AWAFLEX where the splice exists, the splice is marked with a tag. This splice should be cut out before the roll is applied to the roof. Where the splice has been removed, the material should be lapped 6 in. in the same fashion as the normal end lap. An alternative method is to cover the splice with a full-width piece of AWAPLAN PREMIUM, AWAPLAN PREMIUM FR, AWAPLAN VERSA-SMOOTH, AWAPLAN 170 FR, AWAPLAN 170, AWAPLAN VERSAFLEX, AWAFLEX FR, or AWAFLEX that extends at least 6 in. on both sides of the splice.

### **8.3 TORCH-APPLIED POLYESTER SBS MODIFIEDS**

This section applies to the following TAMKO polyester reinforced SBS modified products: **AWAPLAN HEAT WELDING, AWAPLAN VERSA-SMOOTH, AWAPLAN PREMIUM FR, or AWAPLAN PREMIUM.**

Heat welding (also known as torching) requires that the applicator be experienced in this type of application. Certifications are available through various industry organizations. For further information contact TAMKO Technical Services Department. Fire extinguishers should be on the roof at all times. The torch should be used to warm up the surface to which the AWAPLAN membrane is being applied, to preheat portions of the roll that are about to be applied, and to melt a portion of the modified asphalt on the back of the sheet that will be used to adhere the membrane. The area of the roll where the modified asphalt is being melted is the most critical. It must be heated evenly across the entire width of the sheet that is being welded. During normal application, a small flow of asphalt should precede the roll as it is laid down. This flow of asphalt will be visible to the applicator and should flow out on both sides of the sheet. **Care should be taken to avoid excessive melting of the AWAPLAN membrane.**

**Safety is of major importance when heat welding modified bitumens.** It is the sole responsibility of the roofing applicator to enforce fire safety precautions and to ensure proper safety at all times. Torches should be extinguished when not in use and should not be left unattended. There should be a sufficient number of working fire extinguishers on the roof to handle any contingency that might develop. The roofing applicators should be trained in the proper use of fire extinguishers. If you need more information regarding the safe application of modified bitumens, contact the Asphalt Roofing Manufacturers Association (ARMA) for their booklet regarding heat welding of modified bitumens, titled Torch Applied Roofing Do's and Don'ts or their video, A Guide to Safely Torch-On Modified Bitumen.

**Factory Splices:** On rolls of AWAPLAN HEAT WELDING, AWAPLAN VERSA-SMOOTH, AWAPLAN PREMIUM FR, or AWAPLAN PREMIUM where a splice exists, the splice is marked with a tag. This splice should be cut out before the roll is applied to the roof. Where the splice has been removed, the material should be lapped 6 in. in the same fashion as a normal end lap. An alternate method is to cover the splice with a full-width piece of AWAPLAN membrane which extends 6 in. on both sides of the splice.



### 8.3 TORCH-APPLIED POLYESTER SBS MODIFIEDS (CONTINUED)

Further information concerning the proper heat-weld application of AWAPLAN HEAT WELDING, AWAPLAN VERSA-SMOOTH, AWAPLAN PREMIUM FR, or AWAPLAN PREMIUM may be attained by contacting the Technical Services Department at 1-800-641-4691. **AWAPLAN 170 FR, AWAPLAN 170, AWAPLAN VERSAFLEX, AWAFLEX FR, AWAFLEX, and VERSA-CAP FR, are currently not available in a heat-welding grade.**

### 8.4 COLD-PROCESS-APPLIED POLYESTER SBS MODIFIEDS

This section applies to the following TAMKO polyester reinforced SBS modified products: **AWAPLAN PREMIUM, AWAPLAN PREMIUM FR, AWAPLAN HEAT WELDING, AWAPLAN VERSA-SMOOTH, AWAPLAN 170, AWAPLAN 170 FR, AWAFLEX FR, AWAFLEX and AWAPLAN VERSAFLEX.** Contact the Technical Services Department at 1-800-641-4691 for additional cold-process membrane and application options.

**TAM-PRO M3 ADHESIVE** may be applied using a 3/16 inch "V" notched squeegee or it may be sprayed using equipment designed for this purpose. The rate of application for TAM-PRO M3 Adhesive is approximately 1-1/2 to 2 gallons per 100 square feet for squeegee application and 1-1/2 to 2-1/2 gallons per 100 square feet for spray application.

**TAM-PRO 856 PREMIUM SBS ADHESIVE** is to be applied using a 3/16 inch "V" notched squeegee. It should be lightly stirred prior to application. The rate of application for TAM-PRO 856 PREMIUM SBS ADHESIVE is approximately 1-1/2 gallons per 100 square feet.

Do not apply mastic/adhesive in excess of the recommended amounts as blistering may occur.

The base sheet surface to receive the mastic/adhesive must be smooth, dry, and free of any irregularities. It is recommended that the rolls of membrane be unrolled and allowed to relax prior to setting them into the mastic/adhesive. Broom the membrane as necessary to ensure complete embedding of the membrane into the mastic/adhesive. To relax the sheet, particularly in cold weather, the sheets may be cut in half prior to installation. Membrane end laps may be offset a minimum of 18 inches or butted. If they are butted, a full width of modified cap sheet must be applied perpendicular to the field sheets paying particular attention to "T" laps. Foot traffic on the SBS membrane should be avoided during and immediately after application as the membrane may shift in the uncured mastic/adhesive. In addition to the mastic/adhesive, backnailing of the SBS modified membrane is required on roof slopes above 3/4" per linear foot.

**Side and end lap treatment will vary depending on the mastic/adhesive and the membrane.**

**For TAM-PRO 856 PREMIUM SBS ADHESIVE,** the side and end laps may be set in adhesive or heat welded.

**For TAM-PRO M3 ADHESIVE** it is recommended that the side and end laps be heat welded.

Any exceptions to this rule should be referred to the TAMKO Technical Services Department. Heat welding may be accomplished using an electric hot air welder or a propane detail torch. **CAUTION SHOULD BE USED WHEN EXPOSING ANY ADHESIVE PRODUCTS TO AN OPEN FLAME.**

If end and side laps are adhered using adhesive, they should be lightly rolled to ensure complete contact of the lap. Care should be taken to avoid too much pressure that might result in displacing the mastic/adhesive. Heat welded laps should be rolled to ensure lap integrity. When possible, heat welded laps are the preferred method, especially when inclement weather is threatening since it will provide a watertight lap immediately following application. At the end of the day all laps should be carefully inspected to ensure that they are properly sealed. AWAFLEX and AWAFLEX FR side laps and end laps should be sealed using adhesive only.

During winter conditions, it will be necessary to preheat the mastic/adhesive and the membrane to room temperature conditions prior to installation. Cold weather application temperatures should be a minimum of 40 degrees F and only if material is stored at room temperature for 24 hours prior to use. Spray application of mastic may require preheating of material immediately prior to spraying depending on the type of equipment used. Material temperature should be 100 degrees F at the spray tip for best application. Do not allow material temperature to exceed 180 degrees F.



## 8.5 HOT-ASPHALT APPLIED FIBERGLASS SBS MODIFIEDS

This section applies to the following TAMKO fiberglass reinforced SBS modified product: **VERSA-CAP FR**.

Interply moppings of asphalt will consist of approximately 23 lb. (+or-15%) per square for VERSA-CAP FR. The asphalt must be a minimum of 400 degrees F at the point of application. Asphalt meeting ASTM D 312 Type IV should be used for application of VERSA-CAP FR.

Side laps of the VERSA-CAP FR membrane should be 3 in. (consistent with the factory selvage). The entire sheet, including the side lap must be totally adhered in hot asphalt with no void areas. A small amount of asphalt protruding from the side lap is acceptable and assists in the inspection when determining proper application. Care should be taken to avoid excessive amounts of asphalt at the lap. All exposed asphalt in excess of 1/4 in. width should be covered with granules. End laps of the VERSA-CAP FR membrane should overlap the underlying sheet by a minimum of 4 in. The protrusion of asphalt at the end lap is acceptable and provides a checkpoint for the proper application of the material. All end laps should be staggered or a full width modified cap sheet installed over each row of end laps.

VERSA-CAP FR should not be applied with asphalt that is below 400 degrees F at the point of application. Do not mop the asphalt more than 4 ft. in front of the roll. Immediately press the roll into the hot asphalt by applying pressure to the factory core in the roll.

To insure satisfactory performance, the VERSA-CAP FR can be unrolled and allowed to relax prior to the application. Alternatively, VERSA-CAP FR can be unrolled, cut into lengths of 12 to 18 ft. and allowed to relax and flatten prior to application.

## 8.6 BUILT-UP ROOFING

This section applies to the following TAMKO fiberglass ply sheet products: **TAM-GLASS PREMIUM or TAM-PLY IV**.

Interply moppings of asphalt should consist of approximately 23 lb. (+or-15%) per 100 sq. ft. of roof area. **Excessive interply moppings should be avoided as slippage may result.** Allow time for the asphalt to set up before walking on completed plies of glass felts. Displacement is inversely proportional to the set time.

The flood coat should be uniformly applied at the rate of approximately 60 lb. (+or-15%) per sq. ft. of roof area. Recommendations for weights as stated are based upon application under average conditions. Application at extremely low or high temperatures can result in variations from the prescribed limits. For roof deck surfaces or insulating material that absorb asphalt, the asphalt must be applied in a quantity sufficient to assure adequate adhesion.

The base ply in all specifications should not be allowed to remain open without surface protection. **Phased application of TAMKO commercial roofing materials is not acceptable.**

Application of surface coatings on the finished plies of fiberglass systems may be delayed up to 60 days without a glaze coat. Before the surfacing is applied, the roof must be dry and clean. **All roof drain areas should be glazed immediately upon installation.** When a felt laying machine is used, all felts and coated rolls should be rolled and broomed in place to firmly embed the sheet into hot asphalt. Care should be exercised to avoid heavy brooming of fiberglass ply sheets.

Sheets should not be "dropped" or nailed and turned back. End laps should not be less than 4 in. Excessive traffic on any roof is discouraged.