

ABOUT DURAFLEX® SBS

U.S. Ply has engineered and developed DURAFLEX® SBS (Styrene-Butadiene-Styrene), hot asphalt or cold adhesive applied modified bitumen membranes which are manufactured from exclusive formulas using the highest quality materials available in the market today to meet or exceed the industry standards for high performance membranes.

U.S. Ply begins with prime grades of asphalt which are then modified with elastomeric (SBS) polymers. The result is a modified bitumen compound that demonstrates revolutionary waterproofing characteristics, extreme heat resistance, low temperature flexibility and excellent elongation properties. U.S. Ply then strategically adds reinforcements of polyester or composite fibers in the modified bitumen compound to incorporate additional performance characteristics into the membrane.

DURAFLEX® SBS MODIFIED ADHESIVE

As an alternative to hot asphalt application, DURAFLEX® SBS membranes are designed to be installed in conjunction with USP® 901 Premium SBS Modified Bitumen Adhesive, a high-performance, high-solids, asphalt based polymer modified adhesive that contains a unique blend of custom formulated components that enhance elasticity, adhesion and waterproofing characteristics of the adhesive.

ROOFING DESIGN

U.S. Ply offers a variety of applications such as cold applied, hot asphalt applied and torch applied systems. Always check product labels for proper application methods. The choice of installation method is influenced by specific project conditions including size, height, roof slope, roof deck construction, accessibility, fire/safety/code considerations and site sensitivity and climatic conditions. Not every published specification is suitable for every project condition; therefore, proper consideration must be given before selecting a particular roofing product, specification and/or installation method for each individual project.

Contact the U.S. Ply Technical Services for design assistance in choosing the right system for your roof.

ABOUT U.S. PLY, INC.

U.S. PLY, INC. entered the commercial roofing industry in 1985, utilizing the company's 35+ years as a pioneering leader in the development of modified bitumen technology. We offer high quality components and roofing systems that are designed to be durable and the right choice to help your roof stand up to the most extreme environmental elements for years to come.

Our roofing products are produced using 100% AMERICAN MADE raw materials. This means we use only the highest quality and standard of raw materials and manufacturing processes to ensure long term performance. U.S. PLY, INC. offers only high quality membranes and components, and the systems are designed and tested for weathering, durability and compatibility. They can be specified, installed and maintained with confidence.

Green Standards Information:

Green Standards Information: DuraFlex® SBS contains up to 30% recycled materials. The recycled post-consumer materials are derived from plastics which averts disposal of plastics in landfills or commercial dumps. The post-industrial recycled materials are derived from reclaimed non-hazardous coal combustion by-product waste which averts disposal of coal by product waste in in landfills or commercial dumps. (See individual product data for details).

DuraFlex® SBS modified bitumen membranes are FM Approved, FBC Approved, UL Classified and listed with Texas Windstorm (TDI) Insurance. DuraFlex® 190 SBS, 190FR SBS, 250FR SBS and G4FR SBS are available in ULTRA WHITE reflective granule option. CRRC Rated, initial SRI = 106, Weathered SRI = 68, initial reflectivity = 0.84, Weathered reflectivity = .57, initial emissivity = 0.90, Weathered Emissivity = .91.

SAFETY PRECAUTIONS

Installation of a roof system is a construction process. As with any construction process safety is a key element; therefore, U.S. Ply recommends that all applicable safety standards and good roofing practices be followed. Fire prevention is the applicator's responsibility.



Product Specifications

DURAFLEX® SBS Membrane	60 SBS Base	G4S SBS Base	SBS POLYBASE	190S SBS	250S SBS
ASTM Designation	D6163, Type I, S	D6163, Type I, S	D6164, Type I, S	D6164, Type I, S	D6164, Type II, S
Nominal Size of Roll	1.5 Squares	1 Square	1.5 Squares	1 Square	1 Square
Nominal Roll Weight	88 lb/roll (40 kg/m ²)	88 lb/roll (40 kg/m ²)	88 lb/roll (40 kg/m ²)	88 lb/roll (40 kg/m ²)	88 lb/roll (40 kg/m ²)
Dimensions	39 3/8" x 49' 1"	39 3/8" x 32' 9"	39 3/8" x 49' 1"	39 3/8" x 32' 9"	39 3/8" x 32' 9"
Membrane Thickness	2.3 mm (90 mils)	3.0 mm (120 mils)	2.3 mm (90 mils)	3.0 mm (120 mils)	3.0 mm (120 mils)
Application Method	Hot Asphalt / Cold Applied / Mechanical	Hot Asphalt / Cold Applied / Mechanical	Hot Asphalt / Cold Applied / Mechanical	Hot Asphalt / Cold Applied / Mechanical	Hot Asphalt / Cold Applied / Mechanical
Surfacing	Smooth	Smooth	Smooth	Smooth	Smooth
Function	Base / Interply	Base / Interply	Base / Interply	Base / Interply	Base / Interply
Post-Consumer Recycled %	0%	0%	4.5%	2.9%	3.7%
Post-Industrial Recycled %	24.4%	16.6%	24.5%	16.7%	16.7%

The sizes and weights listed are approximate, and are for unapplied rolls.

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BY U.S. PLY, INC.

Product Specifications (cont.)

DURAFLEX® SBS Membrane	G4M SBS	G4FR SBS	190 SBS	190FR SBS	250FR SBS
ASTM Designation	D6163, Type I, G	D6163, Type I, G	D6164, Type I, G	D6164, Type I, G	D6164, Type II, G
Nominal Size of Roll	1 Square	1 Square	1 Square	1 Square	1 Square
Nominal Roll Weight	105 lb/roll (48 kg/m ²)	105 lb/roll (48 kg/m ²)	105 lb/roll (48 kg/m ²)	105 lb/roll (48 kg/m ²)	105 lb/roll (48 kg/m ²)
Dimensions	39 3/8" x 32' 9"	39 3/8" x 32' 9"	39 3/8" x 32' 9"	39 3/8" x 32' 9"	39 3/8" x 32' 9"
Membrane Thickness	3.8 mm (150 mils)	3.8 mm (150 mils)	3.8 mm (150 mils)	3.8 mm (150 mils)	3.8 mm (150 mils)
Application Method	Hot Asphalt / Cold Applied	Hot Asphalt / Cold Applied	Hot Asphalt / Cold Applied	Hot Asphalt / Cold Applied	Hot Asphalt / Cold Applied
Surfacing	Granule	Granule	Granule	Granule	Granule
Function	Cap	Fire Rated Cap	Cap	Fire Rated Cap	Fire Rated Cap
Post-Consumer Recycled %	0%	0%	2.4%	2.4%	3.2%
Post-Industrial Recycled %	6.8%	6.5%	6.4%	6.4%	6.4%

The sizes and weights listed are approximate, and are for unapplied rolls.

GENERAL

Safety: See below. DO NOT BEGIN INSTALLATION UNTIL THIS INFORMATION IS READ, UNDERSTOOD AND IMPLEMENTED.

INSTALLATION:

Surface Preparation: All surfaces to be adhered must be clean, dry and free from any foreign matter, such as oil, grease, dirt or any debris that could inhibit the bonding capabilities of the adhesive. On existing roofs, inspect roof deck condition – moisture in old roof may require complete removal of existing roof. Check local building codes – local building codes may require complete removal of existing roof. Check with manufacturer for details on cutting out and repairing blisters, buckles and raised edges for a smooth surface. Check all flashings, edges, drains, valleys and vents and repair as needed.

Hot Asphalt Application: Asphalt shall be applied at its EVT temperature or 425°F (218°C), whichever is greater, in a uniform layer, without voids, at a rate of 25 lb/square (1.2 kg/m²) ± 20%.

Adhesive Application: Mechanically mix adhesive before application. Apply adhesive by sprayer, or notched squeegee at a rate of 1.5 – 2 gallons per 100 ft² (0.6 - 0.8 L/m²) to structural concrete, approved coverboard, Type G2 base sheet or SBS modified asphalt membrane.

Installation Method: Spray:

A Graco 45.1 pump, 120H AM Roof Pump or equivalent is recommended. Consult equipment manufacturer for optimum Psi, spray tip size, length of hose, number of spray guns, etc., to achieve uniform application. The adhesive sets by the evaporation of the solvent.

Squeegee: When using a squeegee, it should have a 1/4" (6 mm) serrations to apply a uniform, smooth, even coat without gaps, dry areas or bubbles.

MEMBRANE APPLICATION INSTRUCTIONS

- DURAFLEX® SBS membranes must not be applied during adverse weather or without following all precautionary measures in temperatures 45°F or below.
- Install DURAFLEX® SBS membrane in full width sheets, lapping 4" on the sides and 6" on the ends. Stagger adjacent end laps a minimum of 18" apart. Starting at the low point or the drains, apply the HOT ASPHALT or USP® 901 SBS Adhesive to the substrate per specification.
- End laps and selva laps of the base sheet or interply membrane being lapped must be coated with asphalt or adhesive so that a visible bead of asphalt or adhesive appears. Roll all laps with a steel roller to ensure proper adhesion.
- Cap sheet application: Install full width cap sheets, lapping 3" (7.6 cm) on the sides and 6" (15.2 cm) on ends. Adjacent end laps must be staggered from underlying plies.
- The coiled membrane must be unrolled, placed upside down and allowed to relax for approximately 15 minutes prior to application. Then reroll to apply. This will allow the membrane to lay flat.
- For mop applications of SBS membranes, the mopping stroke will be such that the side lap is covered with asphalt last. A rolling bank (puddle) of mopping asphalt must be maintained across the full width of the roll.
- For adhesive applications of SBS membranes, after applying the adhesive, roll the membrane into the tacky adhesive, making sure that it is laying flat and making full contact with the adhesive. End laps and selva laps of the SBS being lapped must be coated with adhesive so that a visible bead of adhesive appears. Roll all laps with steel roller to ensure proper adhesion. Alternately, the end laps and side laps of the SBS may be heat welded with a hot air welder; this method of application will provide a watertight lap immediately and may be preferable when inclement weather or temperatures between 45°F and 70°F are threatening.
- Hot air welding techniques should obtain a continuous 3/8" (10 mm) bead of molten modified bitumen visible at all laps/seams after application. Dry laps are not acceptable. To ensure the proper 3/8" (10 mm) flow of bitumen at the seam areas, a weighted roller may be used. Roller application should follow behind the electric heat welder or propane torch no more than 3 ft. (0.91 m) nor less than 1 1/2 ft. (0.48 m) to ensure that the membrane will be at the proper temperature for proper flow. Hand rollers or "walking-in the seam" are also acceptable. Check all seams for full and uniform adhesion. Un-adhered seams must be lifted with a heated trowel and resealed by lightly heat welding the seam area.
- Matching granules must be broadcast into the modified bitumen bleed out at seams while hot to enhance the finished appearance of the membrane.
- All end laps must be staggered a minimum of 18" (45.7 cm) so that no adjacent end laps coincide. If end laps fall in line or are not staggered the proper distance, a full width of DURAFLEX® SBS membrane must be installed over the end laps. End laps, flashing sheets and other seams formed over granule surfaces require pre-heating of the top surface of the underlying granule surface membrane to a point where the granules just begin to sink into it, and the modified compound comes up through the granules to ensure proper seam construction and adhesion.
- All laps must be parallel or perpendicular to the slope of the roof so that water is never flowing against the lap.

WARNING

APPLICATION/USE OF THESE PRODUCTS MAY RESULT IN BURNS, AND/OR OTHER PHYSICAL INJURY. SURFACES WHICH COME IN CONTACT WITH THE MOLTEN PRODUCT MAY BECOME INFLAMED. CONTACT WITH MOLTEN ASPHALT MAY CAUSE BURNS.

STATEMENT OF PRACTICAL TREATMENT

In case of skin contact with molten bitumen, apply ice or other cold liquid compatible with skin. Get medical attention immediately.

GENERAL PRECAUTIONS

Read and understand U.S. Ply's specification manual before starting application. Follow all precautions and directions. Thoroughly train all personnel in the recommended safety procedures for use of kettles, asphalt mopping, propane torches, and for application of product. Fire prevention inspections should be conducted periodically during installation, with a final inspection being conducted upon completion of that day's work. Wear personal protective gear. Always use approved safety hard hat, goggles, heavy duty gloves, snug fitting clothing (long pants and long sleeved shirt) and boots. Thoroughly train all personnel on preventing and extinguishing fires. Thoroughly train all personnel in first aid procedures. Never allow contact between the heated surface of the product, hot asphalt, or open flame with hair, skin or clothing. Always comply with all applicable OSHA safety standards and fire codes. Avoid physical contact with product for at least one hour after application to surface. Never apply built-up or modified bitumen products directly over exposed conduits or pipes laying on the roof deck. Use extreme caution when working around equipment, such as gas lines or HVAC units, which have electrical and/or gas connections. Provide in the immediate work area at least one (1) ABC-rated FIRE EXTINGUISHER for each torching device.

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