PRODUCTS AND APPLICATION GUIDE

BITEC
BITUMEN TECHNOLOGY®

WHEN QUALITY MATTERS™

DIVISION 7

Rev. 2/23

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APP CAP SHEET MEMBRANES

PRODUCT	MODIFIER	REINFORCEMENT	APPLICATION METHOD	SURFACING TOP/BOTTOM	ASTM STANDARD SPECIFICATION
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ISA-4T	APP	Polyester/FG	HEAT WELD	TALC/FILM	D6223, TYPE I, GRADE S
APM-4T	APP	Polyester/FG	HEAT WELD	MINERAL/FILM	D6223, TYPE I, GRADE G
APM-4.5T	APP	Polyester/FG	HEAT WELD	MINERAL/FILM	D6223, TYPE I, GRADE G

ADDITIONAL INFORMATION

(VALUES ARE APPROXIMATE)

	COVERAGE	THICKNESS	WEIGHT	ROLLS PER PALLET	ROLLS PER TRUCKLOAD
APS-4T	1 SQ.	4.0 mm (160 mils)	90 lb (41 kg)	20	500 - 520
ISA-4T	97 FT^2	4.0 mm (160 mils)	90 lb (41 kg)	20	500 - 520
APM-4T	97 FT^2	4.0 mm (160 mils)	107 lb (48.6 kg)	20	460 - 480
APM-4.5T	75 FT^2	4.5 mm (180 mils)	92 lb (42 kg)	24	480 - 500

APS-4T™
PRODUCT INFORMATION

Highly versatile, heat welded, APP roof membrane that can also be used in other waterproofing applications

OVERVIEW

BITEC APS-4T is a highly versatile heat welded modified bitumen membrane that can be used in roofing applications, but is also suitable for use on road structures and bridges, water reservoirs, basements, and multistory parking garages among other applications. APS-4T is composed of carefully selected asphalts and blended with high-quality polypropylene resins. APS-4T is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- UV resistance
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as the reinforcement in APS-4T, has isotropic mechanical properties providing the composite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- Flexibility
- Puncture resistance
- Elasticity
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deterioration resistance
- Dimensional stability

APS-4T incorporates a patented wet talc slurry application to prevent blocking of rolls and to provide a smooth, even surface. Polyethylene film is adhered to the heat weld face of the roll. This film and embossed pattern act as a sight indicator for the applicator in determining the proper flow needed to ensure adequate bonding of plies and seams. After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to increase overall reflectivity of the system and/or fire rating. BITEC recommends that a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

IDEAL USES

APS-4T, in addition to being an excellent waterproofing membrane for use in roofing applications, may also be used in the waterproofing of:

- Road structures and bridges
- Water reservoirs and artificial canals
- Foundations
- Basements
- Verandas and galleries
- Multi-story car parking and garages
- Roof gardens

PACKAGING

Palletized units contain 20 rolls of APS-4T waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

APS-4T must be fully adhered to the substrate. When applying the membrane, the polyethylene film should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned and set, before the actual heat welding of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the heat welding process.)

Begin heat welding the film surface of the membrane, using a sweeping motion, maintaining even heating. The actual heat welding motion should be done in an “L” configuration, preheating the previously installed membrane lap, then sweeping across the roll face while advancing the roll over the roof surface. As the roll is advanced, a bead of modified bitumen should be seen flowing from between the lap seam a distance of 1⁄4” to 3⁄8” from the membrane edge, which is being advanced. This flow out should be consistent and uninterrupted.

Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam. Upon removal of the hot trowel, pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance. All side and end laps should be a minimum of 3" and 6" respectively.

BITEC APP membranes can not be installed in hot roofing asphalt, cold process adhesives or by mechanical attachment. BITEC APP membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a minimum 1⁄2" thick, mechanically attached recover board. BITEC does not recommend the use of plastic roofer's cement with any of its APP membranes. As with any roofing project, good roofing practices should always be followed. Consult the BITEC specification and details book for information governing certain systems.

TOOLS REQUIRED

Tools required to apply BITEC APS-4T waterproofing membrane include: a heat welding device having a UL certified regulator, propane bottle, spatula or round nose roofer's trowel, a roofer's knife, pair of work gloves, flat sole shoes and an ABC dry chemical fire extinguisher. Alternately, an approved hot air welder can be employed.

Before using this product, be sure that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalt, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151,155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat welding device operator, should be no closer than 3' from open flame.
NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

APS-4T™

PRODUCT INFORMATION

BITEC BITUMEN TECHNOLOGY®

Technical Schedule	
APPROVALS	UL, FM, FBC, HUD, TDI
SOFTENING POINT (ASTM D-36)	302°F (150°C)
REINFORCEMENT	Polyester with Fiberglass
PENETRATION (ASTM D5)	40 dmm @ 25°C
SLIDE (UNI-8202)	<40 mils (<1 mm)
WATER TIGHTNESS (CGSB 37-GP-56M)	passed
DYNAMIC PUNCTURE (CGSB 37-GP-56M)	passed
STATIC PUNCTURE (CGSB 37-GP-56M)	passed
TENSILE STRENGTH @ 73.4°F (23°C) (ASTM D5147)	MD = 80 lbf/in (14.01 kN/m) XMD = 56 lbf/in (9.80 kN/m)
TENSILE STRENGTH @ 0°F (-17.7°C) (ASTM D5147)	MD = 150 lbf/in (26.30 kN/m) XMD = 116 lbf/in (20.31 kN/m)
ELONGATION @ 73.4°F (23°C) (ASTM D5147)	MD = 52% XMD = 55%
ELONGATION @ 0°F (-17.7°C) (ASTM D5147)	MD = 6% XMD = 12%
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	passed -30°F (-34.4°C)
TEAR STRENGTH @ 73.4°F (23°C) (ASTM D4073)	MD = 129 lbf/in (22.59 kN/m) XMD = 97 lbf/in (16.99 kN/m)
THICKNESS	160 mils (4 mm)
ROLL WEIGHT, APPROX.	90 lbs (41 kg)
COVERAGE, INSTALLED APPROX.	100 ft² (9.3 m²)
TOTAL SURFACE AREA, APPROX.	109.9 ft² (10.4 m²)

All Information is given in good faith, but normal tolerances of manufacture and testing will apply. Bitec reserves the right to improve and change its products at any time without prior notice or advice. The use of Bitec products is determined by local conditions and individual requirements of each contract. In consideration of the many factors involved, Bitec cannot be held responsible for the application of its products and for conditions beyond its control. All claims filed against Bitec warranties will be subject to the provisions set forth at the date of warranty issuance, and any addendum thereto. Under no circumstances will Bitec be held liable for any damage, whether personal injury or property damage, which occur during or after the application of the membrane.

STANDARD SPECIFICATION:
ASTM D6223, TYPE I, GRADE S

TDI Evaluation ID: RC-58

FLORDA PRODUCT APPROVAL:
FL 16347.2-R4, FL 16347.3-R4,
FL 16347.4-R4, FL 16270

HUD MR No. 1229

Approvals:

FM APPROVED

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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ISA-4T ™

PRODUCT INFORMATION

Industry standard APP modified bitumen cap sheet. Installed membrane covers approximately 97 ft²

OVERVIEW

BITEC ISA-4T is a highly versatile heat welded modified bitumen membrane that can be used in roofing applications, but is also suitable for use on road structures and bridges, water reservoirs, basements, and multistory parking garages among other applications. ISA-4T is composed of carefully selected asphalts and blended with high-quality polypropylene resins. ISA-4T is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- UV resistance
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as the reinforcement in ISA-4T, has isotropic mechanical properties providing the composite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- Flexibility
- Puncture resistance
- Elasticity
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deterioration resistance
- Dimensional stability

ISA-4T incorporates a patented wet talc slurry application to prevent blocking of rolls and to provide a smooth, even surface. Polyethylene film is adhered to the heat weld face of the roll. This film and embossed pattern act as a sight indicator for the applicator in determining the proper flow needed to ensure adequate bonding of plies and seams. After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to increase overall reflectivity of the system and/or fire rating. BITEC recommends that a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

IDEAL USES

ISA-4T, in addition to being an excellent waterproofing membrane for use in roofing applications, may also be used in the waterproofing of:

- Road structures and bridges
- Water reservoirs and artificial canals
- Foundations
- Basements
- Verandas and galleries
- Multi-story car parking and garages
- Roof gardens

PACKAGING

Palletized units contain 20 rolls of ISA-4T waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

ISA-4T must be fully adhered to the substrate. When applying the membrane, the polyethylene film should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned and set, before the actual heat welding of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the heat welding process.)

Begin heat welding the film surface of the membrane, using a sweeping motion, maintaining even heating. The actual heat welding motion should be done in an “L” configuration, preheating the previously installed membrane lap, then sweeping across the roll face while advancing the roll over the roof surface. As the roll is advanced, a bead of modified bitumen should be seen flowing from between the lap seam a distance of 1⁄4” to 3⁄8” from the membrane edge, which is being advanced. This flow out should be consistent and uninterrupted.

Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam. Upon removal of the hot trowel, pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance. All side and end laps should be a minimum of 3" and 6" respectively.

BITEC APP membranes can not be installed in hot roofing asphalt, cold process adhesives or by mechanical attachment. BITEC APP membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a minimum 1⁄2" thick, mechanically attached recover board. BITEC does not recommend the use of plastic roofer's cement with any of its APP membranes. As with any roofing project, good roofing practices should always be followed. Consult the BITEC specification and details book for information governing certain systems.

TOOLS REQUIRED

Tools required to apply BITEC ISA-4T waterproofing membrane include: a heat welding device having a UL certified regulator, propane bottle, spatula or round nose roofer's trowel, a roofer's knife, pair of work gloves, flat sole shoes and an ABC dry chemical fire extinguisher. Alternately, an approved hot air welder can be employed.

Before using this product, be sure that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalt, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151,155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat welding device operator, should be no closer than 3' from open flame.
NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

ISA-4T™

PRODUCT INFORMATION

Technical Schedule		
MODIFIER	APP	
REINFORCEMENT	Polyester	
THICKNESS (nominal)	160 mils (4 mm)	
TOP SURFACING	Talc	
BOTTOM SURFACING	PE Film	
SELVEDGE EDGE	3 in (75 mm)	
APPROXIMATE ROLL SIZE	100 ft^2 (9.2m^2)	
METHOD OF INSTALLATION	Heat Welding	
TENSILE STRENGTH (ASTM D5147)	MD = 100 lbf/in (17.51 kN/m)	XMD = 70 lbf/in (12.26 kN/m)
ELONGATION (ASTM D5147)	MD = 50%	XMD = 50%

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Approvals:

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

NATIONAL ROOFING CONTRACTORS ASSOCIATION

STANDARD SPECIFICATION:

ASTM D6223, TYPE I, GRADE S

TDI Evaluation ID: RC-58

FLORDA PRODUCT APPROVAL:
FL 16347.2-R4, FL 16347.3-R4,
FL 16347.4-R4

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APM-4T™

PRODUCT INFORMATION

Heat welded, mineral surfaced membrane with various features critical to providing superior waterproofing protection

OVERVIEW

BITEC APM-4T is heat welded, mineral surfaced, modified bitumen waterproofing membrane with various features critical to providing superior waterproofing protection, such as low temperature flexibility, puncture resistance and excellent adhesion. APM-4T is composed of carefully selected asphalts and blended with high-quality polypropylene resins. APM-4T is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- UV resistance
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as reinforcement in APM-4T, has isotopic mechanical properties providing the composite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- Flexibility
- Puncture resistance
- Elasticity
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deterioration resistance
- Dimensional stability

The mineral surface protects the membrane from aging caused from heat and ultra violet radiation. Most mineral surfacings yield high amounts of solar reflectivity to realize some energy savings, depending on building construction and use. Some heat absorption values are given below, calculated on the basis of an ideal black surface as being 100%:

- Ideal Black 100%
- Bituminous Surface 94%
- Gray Mineral 85%
- Tan Mineral 57%
- White Mineral 30%

APM-4T incorporates a smooth and even application of polyethylene film to prevent blocking of rolls and to provide a smooth, acceptable heat weld surface. Polyethylene film is applied to the heat weld face of the roll. The polyethylene film acts as a “sight indicator” for the applicator in determining the proper flow needed to ensure adequate bonding of plies and seams.

After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to increase the overall reflectivity of the system and/or fire rating. BITEC recommends that a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 20 rolls of APM-4T waterproofing membrane. Each unit is shrink wrapped in a special poly-ethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

APM-4T must be fully adhered to the substrate. When applying the membrane, the polyethylene film should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned and set before the actual heat welding of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane remains aligned during the heat welding process.)

Begin heat welding the film surface of the membrane, using a sweeping motion, maintaining even heating. The actual heat welding motion should be done in an “L” configuration, preheating the previously installed membrane lap, then sweeping across the roll face while advancing the roll over the roof surface. As the roll is advanced, a bead of modified bitumen should be seen flowing from between the lap seam a distance of 1⁄4 to 3⁄8” from the membrane edge, which is being advanced. This flow out should be consistent and uninterrupted. Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly heat welding.

Upon removal of the hot trowel, pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance. All side and end laps should be a minimum of 4" and 6" respectively.

BITEC APP membranes may not be installed in hot roofing asphalt, cold process adhesives or by mechanical attachment. BITEC APP membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a min. 1⁄2" thick, mechanically attached recovery board. BITEC does not allow the use of plastic roofer's cement with any of its membranes.

As with any roofing project, good roofing practices should always be followed. Consult the specification and details book for information governing certain systems.

TOOLS REQUIRED

Tools required to apply BITEC APM-4T waterproofing membrane include: a heat welding device having a UL certified regulator, propane bottle, spatula or round nose roofer's trowel, a roofer's knife, pair of work gloves, flat sole shoes and an ABC dry chemical fire extinguisher. Alternately, an approved hot air welder can be employed.

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3' from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

APM-4T™

PRODUCT INFORMATION

BITEC BITUMEN TECHNOLOGY®

Technical Schedule		
APPROVALS	UL (R13231)	
SOFTENING POINT (ASTM D36)	302°F (150°C)	
REINFORCEMENT	Polyester with Fiberglass	
PENETRATION (ASTM D5)	40 dmm @ 25°C	
SLIDE (UNI-8202)	<40 mils <1 mm	
WATER TIGHTNESS (CGSB 37-GP-56M)	passed	
DYNAMIC PUNCTURE (CGSB 37-GP-56M)	passed	
STATIC PUNCTURE (CGSB 37-GP-56M)	passed	
TENSILE STRENGTH @ 73.4°F (23°C) (ASTM D5147)	MD = 80 lbf/in (14.0 kN/m)	XMD = 59 lbf/in (10.3 kN/m)
TENSILE STRENGTH @ 0°F (-17.7°C) (ASTM D5147)	MD = 145 lbf/in (25.4 kN/m)	XMD = 103 lbf/in (18.0 kN/m)
ELONGATION @ 73.4°F (23°C) (ASTM D5147)	MD = 52%	XMD = 56%
ELONGATION @ 0°F (-17.7°C) (ASTM D5147)	MD = 5%	XMD = 5%
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	passed -30°F (-34.4°C)	
TEAR STRENGTH @ 73.4°F (23°C) (ASTM D4073)	MD = 135 lbf/in (23.6 kN/m)	XMD = 110 lbf/in (19.3 kN/m)
THICKNESS	160 mils (4 mm)	
ROLL WEIGHT, APPROX.	107 lbs (48.6 kg)	
COVERAGE, INSTALLED APPROX.	97 ft² (9 m²)	
TOTAL SURFACE AREA, APPROX.	107.6 ft² (10 m²)	

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STANDARD SPECIFICATION:
ASTM D6223, TYPE I, GRADE G

TDI Evaluation ID: RC-58

FLORIDA PRODUCT APPROVAL:
FL 16347.2-R4, FL 16347.3-R4,
FL 16347.4-R4, FL 16270

HUD MR No. 1229

Approvals:

FM APPROVED

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

Member of:

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APM-4.5T™

PRODUCT INFORMATION

Heat welded, mineral surface modified bitumen membrane that provides excellent flexibility, elasticity, and puncture resistance

OVERVIEW

BITEC APM-4.5T is heat welded, mineral surfaced, modified bitumen membrane that provides excellent flexibility, elasticity and puncture resistance, all critical to providing superior waterproofing protection. APM-4.5T is composed of carefully selected asphalts and blended with high-quality polypropylene resins. APM-4.5T is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as a reinforcement in APM-4.5T, has isotropic mechanical properties providing the composite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- High flexibility
- Puncture resistance
- High elongation
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deterioration resistance
- Dimensional stability

The mineral surface protects the membrane from aging caused from heat and ultra violet radiation. Most mineral surfacings yield sufficiently high amounts of solar reflectivity to realize some energy savings, depending on building construction and use. Some heat absorption values are given below, calculated on the basis of an ideal black surface as being 100%:

- Ideal Black 100%
- Bituminous Surface 94%
- Gray Mineral 85%
- Tan Mineral 57%
- White Mineral 30%

APM-4.5T incorporates a smooth and even application of polyethylene film to prevent blocking of rolls and to provide a smooth, acceptable heat weld surface. Polyethylene film is contained on the weldable face of the roll. The polyethylene film acts as a sight indicator for the applicator in determining the proper flow needed to ensure adequate bonding of plies and seams.

After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to increase the overall reflectivity of the system and/or fire rating. BITEC recommends that a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 24 rolls of APM-4.5T waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

BITEC APM-4.5T must be fully adhered to the substrate. When applying the membrane, the polyethylene film should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned and set before the actual heat welding of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the heat welding process.)

Begin heat welding the film surface of the membrane, using a sweeping motion, maintaining even heating. The heat welding motion should be done in an “L” configuration, preheating the previously installed membrane lap, then sweeping across the roll face while advancing the roll over the roof surface. As the roll is advanced, a bead of modified bitumen should be seen flowing from between the lap seam a distance of 1⁄4 to 3⁄8” from the membrane edge, which is being advanced. Flow out should be consistent and uninterrupted. Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly heat welding. Upon removal of the hot trowel, pressure should be

applied to the top ply, forcing the modified bitumen to flow out the desired distance. All side and end laps should be a minimum of 4" and 6" respectively.

BITEC APP membranes may not be installed in hot roofing asphalt, cold process adhesives or by mechanical attachment. BITEC APP membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a min. 1⁄2" thick, mechanically attached recovery board. BITEC does not allow the use of plastic roofer's cement with any of its membranes.

As with any roofing project, good roofing practices should always be followed. Consult the specification and details book for information governing certain systems.

TOOLS REQUIRED

Tools required to apply BITEC APM-4.5T waterproofing membrane include: a propane heat welding device having a UL certified regulator, propane bottle, spatula or round nose roofer's trowel, a roofer's knife, pair of work gloves, flat sole shoes and an ABC dry chemical fire extinguisher. Alternately, an approved hot air welder can be employed.

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1962., 150., 151., 153., 1191-110, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3' from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

APM-4.5T™

PRODUCT INFORMATION

Technical Schedule		
APPROVALS	UL (R13231)	
SOFTENING POINT (ASTM D36)	302°F (150°C)	
REINFORCEMENT	polyester fabric	
PENETRATION (ASTM D5)	30 dmm @ 25°C	
SLIDE (UNI-8202)	< 40 mils (<1 mm)	
ROLL DIMENSIONS	25.6 ft x 3.28 ft (7.81 m x 1 m)	
WATER TIGHTNESS (CGSB 37-GP-56M)	passed	
DYNAMIC PUNCTURE (CGSB 37-GP-56M)	passed	
STATIC PUNCTURE (CGSB 37-GP-56M)	passed	
TENSILE STRENGTH (ASTM D5147)	MD = 100 lbf/in (17.51 kN/m)	XMD = 70 lbf/in (12.23 kN/m)
ELONGATION (ASTM D5147)	MD = 50%	XMD = 55%
TOP / BOTTOM SURFACE	Mineral / Film	
THICKNESS	180 mils (4.5 mm)	
ROLL WEIGHT, APPROX.	92 lb (42 kg)	
COVERAGE, INSTALLED APPROX.	75 ft² (7 m²)	
TOTAL SURFACE AREA, APPROX.	86.4 ft² (8 m²)	

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STANDARD SPECIFICATION:
ASTM D6223, TYPE I, GRADE G

TDI Evaluation ID: RC-58

FLORIDA PRODUCT APPROVAL:
FL 16347.2-R4, FL 16347.3-R4,
FL 16347.4-R4, FL 16270

HUD MR No. 1229

Approvals:

FM APPROVED

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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WHEN QUALITY MATTERS™

We Have the HIghest Technology to Stop the Smallest Leak

SBS CAP SHEET MEMBRANES

PRODUCT	MODIFIER	REINFORCEMENT	APPLICATION METHOD	SURFACING TOP/BOTTOM	ASTM STANDARD SPECIFICATION
SFM-3.5H	SBS	Fiberglass	HOT ASPHALT/ COLD ADHESIVE	MINERAL/COAL SLAG	D6163, TYPE I, GRADE G
SFM-3.5H-FR	SBS	Fiberglass	HOT ASPHALT/ COLD ADHESIVE	MINERAL/COAL SLAG	D6163, TYPE I, GRADE G
SFM-4H	SBS	Fiberglass	HOT ASPHALT/ COLD ADHESIVE	MINERAL/COAL SLAG	D6163, TYPE I, GRADE G
SFM-4H-FR	SBS	Fiberglass	HOT ASPHALT/ COLD ADHESIVE	MINERAL/COAL SLAG	D6163, TYPE I, GRADE G
SPM-3.5H	SBS	Polyester	HOT ASPHALT/ COLD ADHESIVE	MINERAL/COAL SLAG	D6162, TYPE I, GRADE G
SPM-4H	SBS	Polyester	HOT ASPHALT/ COLD ADHESIVE	MINERAL/COAL SLAG	D6162, TYPE I, GRADE G
SPM-4H/250	SBS	Polyester	HOT ASPHALT/ COLD ADHESIVE	MINERAL/COAL SLAG	D6162, TYPE I, GRADE G
SPM-4T	SBS	Polyester	HEAT WELD	MINERAL/FILM	D6162, TYPE I, GRADE G
SPM-4.5T	SBS	Polyester	HEAT WELD	MINERAL/FILM	D6162, TYPE I, GRADE G
SPS-3H	SBS	Polyester	HOT ASPHALT/ COLD ADHESIVE	COAL SLAG/ COAL SLAG	D6162, TYPE I, GRADE S
IMPERFLEX MSA	SBS/SBR	Fiberglass	SELF-ADHERED	MINERAL/ RELEASE FILM	D6163, TYPE I, GRADE G D1970

ADDITIONAL INFORMATION
(VALUES ARE APPROXIMATE)

PRODUCT	COVERAGE	THICKNESS	WEIGHT	ROLLS PER PALLET	ROLLS PER TRUCKLOAD
SFM-3.5H	1.0 SQ.	3.5 mm (140 mils)	105 lb (45 kg)	20	460 - 480
SFM-3.5H-FR	1.0 SQ.	3.5 mm (140 mils)	103 lb (45 kg)	20	460 - 480
SFM-4H	1.0 SQ.	4.0 mm (160 mils)	105 lb (48 kg)	20	460 - 480
SFM-4H-FR	1.0 SQ.	4.0 mm (160 mils)	105 lb (48 kg)	24	460 - 480
SPM-3.5H	1.0 SQ.	3.5 mm (140 mils)	103 lb (45 kg)	20	460 - 480
SPM-4H	1.0 SQ.	4.0 mm (160 mils)	105 lb (48 kg)	20	460 - 480
SPM-4H\250	1.0 SQ.	4.0 mm (160 mils)	105 lb (48 kg)	20	460 - 480
SPM-4T	1.0 SQ.	4.0 mm (160 mils)	103 lb (48 kg)	20	460 - 480
SPM-4.5T	0.75 SQ.	4.5 mm (180 mils)	92 lb (39 kg)	24	480 - 504
SPS-3H	1.0 SQ.	3.0 mm (120 mils)	80 lb (39 kg)	24	480 - 504
IMPERFLEX MSA	1.0 SQ.	3.5 mm (140 mils)	103 lb (48 kg)	20	460 - 480

SFM-3.5H™

PRODUCT INFORMATION

Modified bitumen membrane with strong puncture resistance and excellent low temperature flexibility

OVERVIEW

BITEC SFM-3.5H is a hot asphalt or cold adhesive applied, mineral surfaced, modified bitumen waterproofing membrane that is strong, puncture resistant and has excellent low temperature flexibility, making it ideal for applications in climates with extreme temperature variations.

It is composed of carefully selected asphalts and blended with high quality styrene-butadiene-styrene rubber. SFM-3.5H is reinforced with a high-strength fiberglass mat. SFM-3.5H waterproofing membrane yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Excellent workability
- Longevity
- Mechanical strength
- Deterioration resistance
- Dimensional stability

SFM-3.5H incorporates a smooth and even application of coal slag to prevent blocking of rolls and to provide a smooth, acceptable application surface. SFM-3.5H can be applied by using hot asphalt or by using BITEC elastomeric cold process adhesives.

After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to protect the membrane from the harmful effects of ultra violet radiation and for UL fire rating if required. BITEC recommends a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 20 rolls of SFM-3.5H waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

BITEC SFM-3.5H must be fully adhered. When applying the membrane, the coal slag surface should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned, allowed to relax and set before the actual installation of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the installation process.)

BITEC SFM-3.5H is designed to be applied by conventional methods of hot asphalt or cold adhesive application. BITEC PMA-186 or PMA-2000 cold process adhesive should be applied at a rate of 1.5 to 2.5 gallons per 100 ft^2. (The substrate that the cold process adhesive is being applied over may affect consumption rates.) Refer to the adhesive technical data sheets for application methods. Hot asphalt applications require ASTM D312 Type III mopping asphalt for low slope applications or ASTM D312 Type IV for slopes greater than 1” per foot. Hot asphalt should be applied at a rate of 25 lb./100 ft^2. Follow NRCA and the asphalt manufacturers guidelines for EVT requirements when heating asphalt. Refer to the BITEC General Application Instructions in the BITEC Products and Application Guide for proper application techniques.

All side and end laps should be a minimum of 4” and 6”, respectively. BITEC SBS hot applied membranes can be installed in hot roofing asphalt or in BITEC approved cold process adhesives.

BITEC SBS membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a minimum 1⁄2” thick, mechanically attached recovery board. Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes.

As with any roofing project, good roofing practices should always be followed. Consult the BITEC specification and details book for information governing certain systems.

SFM-3.5H™

PRODUCT INFORMATION

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association. Alternately, use of a hot air welding device can be employed.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3' from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SFM-3.5H™

PRODUCT INFORMATION

Technical Schedule	
APPROXIMATE ROLL DIMENSIONS	33.9' X 3.28" (10.34 m x 1 m)
SEAM WIDTH	3.5" (89 mm)
APPROXIMATE INSTALLED COVERAGE	100 ft^2 (9.3 m)
TOP SURFACE	Coal Slag
BOTTOM SURFACE	Coal Slag
APPROXIMATE THICKNESS	3.5 mm (140 mils)
APPROXIMATE WEIGHT	100 lb (45.5 kg)
REINFORCEMENT	Fiberglass Mat
SOFTENING POINT (ASTM D36)	250°F (120°C)
TEAR STRENGTH (ASTM D5147)	105 lbf (467 N)
TENSILE STRENGTH (ASTM D5147 @ 23°C lbf/in)	MD 60 XMD 40 (MD 10.51 kN/m XMD 7.00 kN/m)
ELONGATION %	MD 10 XMD 10
PENETRATION (ASTM D5 @ 25°C)	40 dmm
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	-22°F (-30°C)
PERMEANCE	<1 perm

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STANDARD SPECIFICATION:
ASTM D6163, Type I, Grade G

FLORIDA PRODUCT APPROVAL:
FL16347, FL 16270

TDI Evaluation ID

HUD MR No. 1229

Approvals:

FM APPROVED

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

Member of:

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SFM-3.5H-FR™

PRODUCT INFORMATION

Modified bitumen membrane with strong puncture resistance and excellent low temperature flexibility with fire retardant additives

OVERVIEW

BITEC SFM-3.5H-FR is a hot asphalt applied, mineral surfaced, modified bitumen waterproofing membrane that is strong, puncture resistant, and has excellent flexibility at low temperatures, making it ideal for applications in hot climates. with extreme temperature variations.

It is composed of carefully selected asphalts and mixed with high quality styrene-butadiene-styrene rubber. SFM-3.5H-FR is reinforced with high strength fiberglass mesh. SFM-3.5H-FR waterproofing membrane offers the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Excellent workability
- Longevity
- Mechanical strength
- Deterioration resistance
- Dimensional stability

SFM-3.5H-FR incorporates a smooth, uniform application of coal slag to prevent roll blockage and provide an acceptable, uniform application surface.

SFM-3.5H-FR incorporates a smooth and even application of coal slag to prevent blocking of rolls and to provide a smooth, acceptable application surface. SFM-3.5H-FR can be applied by using hot asphalt or by using BITEC elastomeric cold process adhesives.

After installation of the roofing membrane is complete, the surface can be coated with a BITEC approved roof coating to protect the membrane from the harmful effects of ultraviolet radiation and for UL fire rating, if required. . BITEC recommends that a period of at least 45 days elapse before applying roof coatings. This will effectively allow the membrane to cure and accept the roof sheathing.

PACKAGING

Palletized units contain 20 rolls of SFM-3.5H-FR waterproofing membrane.

Each unit is shrink-wrapped in a special polythene bag for added stability. BITEC recommends that material units are stacked individually.

APPLICATION

BITEC SFM-3.5H-FR must be fully adhered. When applying the membrane, the coal slag surface should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned, allowed to relax and set before the actual installation of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the installation process.)

BITEC SFM-3.5H-FR is designed to be applied by conventional methods of hot asphalt or cold adhesive application. BITEC PMA-186 or PMA-2000 cold process adhesive should be applied at a rate of 1.5 to 2.5 gallons per 100 ft^2. (The substrate that the cold process adhesive is being applied over may affect consumption rates.) Refer to the adhesive technical data sheets for application methods. Hot asphalt applications require ASTM D312 Type III mopping asphalt for low slope applications or ASTM D312 Type IV for slopes greater than 1” per foot. Hot asphalt should be applied at a rate of 25 lb./100 ft^2. Follow NRCA and the asphalt manufacturers guidelines for EVT requirements when heating asphalt. Refer to the BITEC General Application Instructions in the BITEC Products and Application Guide for proper application techniques.

All side and end laps should be a minimum of 4” and 6”, respectively. BITEC SBS hot applied membranes can be installed in hot roofing asphalt or in BITEC approved cold process adhesives.

BITEC SBS membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a minimum 1⁄2 thick, mechanically attached recovery board. Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes.

As with any roofing project, good roofing practices should always be followed. Consult the BITEC specification and details book for information governing certain systems.

SFM-3.5H-FR™

PRODUCT INFORMATION

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of torching equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3' from open flame. Alternately, a hot air welding device may be employed.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SFM-3.5H-FR™

PRODUCT INFORMATION

Technical Schedule	
APPROXIMATE ROLL DIMENSIONS	33.9' X 3.28" (10.34 m x 1 m)
SEAM WIDTH	3.5" (89 mm)
APPROXIMATE INSTALLED COVERAGE	100 ft² (9.3 m)
TOP SURFACE	Mineral Granules
BOTTOM SURFACE	Coal Slag
APPROXIMATE THICKNESS	3.5 mm (140 mils)
APPROXIMATE WEIGHT	100 lb (45.5 kg)
REINFORCEMENT	Fiberglass Mat
SOFTENING POINT (ASTM D36)	250°F (120°C)
TEAR STRENGTH (ASTM D5147)	105 lbf (467 N)
TENSILE STRENGTH (ASTM D5147 @ 23°C lbf/in)	MD 60 XMD 40 (MD 10.51 kN/m XMD 7.00 kN/m)
ELONGATION %	MD 10 XMD 10
PENETRATION (ASTM D5 @ 25°C)	40 dmm
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	-22°F (-30°C)
PERMEANCE	<1 perm

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Approvals:

FM APPROVED

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

STANDARD SPECIFICATION:

ASTM D6163, TYPE I, GRADE G

Member of:

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SFM-4H™

PRODUCT INFORMATION

Modified bitumen membrane with strong puncture resistance and excellent low temperature flexibility

OVERVIEW

BITEC SFM-4H is a hot asphalt or cold adhesive applied, mineral surfaced, modified bitumen waterproofing membrane that is strong, puncture resistant and has excellent low temperature flexibility, making it ideal for applications in climates with extreme temperature variations.

It is composed of carefully selected asphalts and blended with high quality styrene-butadiene-styrene rubber. SFM-4H is reinforced with a high-strength fiberglass mat. SFM-4H waterproofing membrane yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Excellent workability
- Longevity
- Mechanical strength
- Deterioration resistance
- Dimensional stability

SFM-4H incorporates a smooth and even application of coal slag to prevent blocking of rolls and to provide a smooth, acceptable application surface. SFM-4H can be applied by using hot asphalt or by using BITEC elastomeric cold process adhesives.

After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to protect the membrane from the harmful effects of ultra violet radiation and for UL fire rating if required. BITEC recommends a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 20 rolls of SFM-4H waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

BITEC SFM-4H must be fully adhered. When applying the membrane, the coal slag surface should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned, allowed to relax and set before the actual installation of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the installation process.)

BITEC SFM-4H is designed to be applied by conventional methods of hot asphalt or cold adhesive application. BITEC PMA-186 or PMA-2000 cold process adhesive should be applied at a rate of 1.5 to 2.5 gallons per 100 ft^2. (The substrate that the cold process adhesive is being applied over may affect consumption rates.) Refer to the adhesive technical data sheets for application methods. Hot asphalt applications require ASTM D312 Type III mopping asphalt for low slope applications or ASTM D312 Type IV for slopes greater than 1” per foot. Hot asphalt should be applied at a rate of 25 lb./100 ft^2. Follow NRCA and the asphalt manufacturers guidelines for EVT requirements when heating asphalt. Refer to the BITEC General Application Instructions in the BITEC Products and Application Guide for proper application techniques.

All side and end laps should be a minimum of 4” and 6”, respectively. BITEC SBS hot applied membranes can be installed in hot roofing asphalt or in BITEC approved cold process adhesives.

BITEC SBS membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a minimum 1⁄2” thick, mechanically attached recovery board. Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes.

As with any roofing project, good roofing practices should always be followed. Consult the BITEC specification and details book for information governing certain systems.

SFM-4H™

PRODUCT INFORMATION

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat weld equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
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Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3' from open flame. Alternately, a hot air welding device may be employed.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SFM-4H™

PRODUCT INFORMATION

Technical Schedule	
APPROXIMATE ROLL DIMENSIONS	33.9' X 3.28" (10.34 m x 1 m)
SEAM WIDTH	3.5" (89 mm)
APPROXIMATE INSTALLED COVERAGE	100 ft^2 (9.3 m)
TOP SURFACE	Coal Slag
BOTTOM SURFACE	Coal Slag
APPROXIMATE THICKNESS	4.0 mm (160 mils)
APPROXIMATE WEIGHT	100 lb (45.5 kg)
REINFORCEMENT	Fiberglass Mat
SOFTENING POINT (ASTM D36)	250°F (120°C)
TEAR STRENGTH (ASTM D5147)	105 lbf (467 N)
TENSILE STRENGTH (ASTM D5147 @ 23°C lbf/in)	MD 60 XMD 40 (MD 10.51 kN/m XMD 7.00 kN/m)
ELONGATION %	MD 10 XMD 10
PENETRATION (ASTM D5 @ 25°C)	40 dmm
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	-22°F (-30°C)
PERMEANCE	<1 perm

All Information is given in good faith, but normal tolerances of manufacture and testing will apply. BITEC reserves the right to improve and change its products at any time without prior notice or advice. The use of BITEC products is determined by local conditions and individual requirements of each contract. In consideration of the many factors involved, BITEC cannot be held responsible for the application of its products and for conditions beyond its control. All claims filed against BITEC warranties will be subject to the provisions set forth at the date of warranty issuance, and any addendum thereto. Under no circumstances will BITEC be held liable for any damage, whether personal injury or property damage, which occur during or after the application of the membrane.

Approvals:

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

STANDARD SPECIFICATION:

ASTM D6163, Type I, Grade G

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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www.bi-tec.com

SFM-4H-FR™

PRODUCT INFORMATION

Modified bitumen membrane with strong puncture resistance and excellent low temperature flexibility with fire retardant additives

OVERVIEW

BITEC SFM-4H-FR is a hot asphalt applied, mineral surfaced, modified bitumen waterproofing membrane that is strong, puncture resistant, and has excellent flexibility at low temperatures, making it ideal for applications in hot climates. with extreme temperature variations.

It is composed of carefully selected asphalts and mixed with high quality styrene-butadiene-styrene rubber. SFM-4-FR is reinforced with high strength fiberglass mesh. SFM-4-FR waterproofing membrane offers the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Excellent workability
- Longevity
- Mechanical strength
- Deterioration resistance
- Dimensional stability

SFM-4H-FR incorporates a smooth, uniform application of coal slag to prevent roll blockage and provide an acceptable, uniform application surface.

SFM-4H-FR incorporates a smooth and even application of coal slag to prevent blocking of rolls and to provide a smooth, acceptable application surface. SFM-4H-FR can be applied by using hot asphalt or by using BITEC elastomeric cold process adhesives.

After installation of the roofing membrane is complete, the surface can be coated with a BITEC approved roof coating to protect the membrane from the harmful effects of ultraviolet radiation and for UL fire rating, if required. . BITEC recommends that a period of at least 45 days elapse before applying roof coatings. This will effectively allow the membrane to cure and accept the roof sheathing.

PACKAGING

Palletized units contain 20 rolls of SFM-4H-FR waterproofing membrane.

Each unit is shrink-wrapped in a special polythene bag for added stability. BITEC recommends that material units are stacked individually.

APPLICATION

BITEC SFM-4-FR must be fully adhered. When applying the membrane, the coal slag surface should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned, allowed to relax and set before the actual installation of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the installation process.)

BITEC SFM-4H-FR is designed to be applied by conventional methods of hot asphalt or cold adhesive application. BITEC PMA-186 or PMA-2000 cold process adhesive should be applied at a rate of 1.5 to 2.5 gallons per 100 ft^2. (The substrate that the cold process adhesive is being applied over may affect consumption rates.) Refer to the adhesive technical data sheets for application methods. Hot asphalt applications require ASTM D312 Type III mopping asphalt for low slope applications or ASTM D312 Type IV for slopes greater than 1” per foot. Hot asphalt should be applied at a rate of 25 lb./100 ft^2. Follow NRCA and the asphalt manufacturers guidelines for EVT requirements when heating asphalt. Refer to the BITEC General Application Instructions in the BITEC Products and Application Guide for proper application techniques.

All side and end laps should be a minimum of 4” and 6”, respectively. BITEC SBS hot applied membranes can be installed in hot roofing asphalt or in BITEC approved cold process adhesives.

BITEC SBS membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a minimum 1⁄2” thick, mechanically attached recovery board. Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes.

As with any roofing project, good roofing practices should always be followed. Consult the BITEC specification and details book for information governing certain systems.

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of torching equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3' from open flame. Alternately, a hot air welding device may be employed.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SFM-4H-FR™

PRODUCT INFORMATION

Technical Schedule	
APPROXIMATE ROLL DIMENSIONS	33.9' X 3.28" (10.34 m x 1 m)
SEAM WIDTH	3.5" (89 mm)
APPROXIMATE INSTALLED COVERAGE	100 ft² (9.3 m)
TOP SURFACE	Mineral Granules
BOTTOM SURFACE	Coal Slag
APPROXIMATE THICKNESS	4.0 mm (160 mils)
APPROXIMATE WEIGHT	105 lb (48 kg)
REINFORCEMENT	Fiberglass Mat
SOFTENING POINT (ASTM D36)	250°F (120°C)
TEAR STRENGTH (ASTM D5147)	105 lbf (467 N)
TENSILE STRENGTH (ASTM D5147 @ 23°C lbf/in)	MD 60 XMD 40 (MD 10.51 kN/m XMD 7.00 kN/m)
ELONGATION %	MD 10 XMD 10
PENETRATION (ASTM D5 @ 25°C)	40 dmm
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	-22°F (-30°C)
PERMEANCE	<1 perm

All Information is given in good faith, but normal tolerances of manufacture and testing will apply. BITEC reserves the right to improve and change its products at any time without prior notice or advice. The use of BITEC products is determined by local conditions and individual requirements of each contract. In consideration of the many factors involved, BITEC cannot be held responsible for the application of its products and for conditions beyond its control. All claims filed against BITEC warranties will be subject to the provisions set forth at the date of warranty issuance, and any addendum thereto. Under no circumstances will BITEC be held liable for any damage, whether personal injury or property damage, which occur during or after the application of the membrane.

Approvals:

FM APPROVED

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

STANDARD SPECIFICATION

ASTM D6163, Type I, Grade G

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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www.bi-tec.com

SPM-4T™

PRODUCT INFORMATION

Heat welded, puncture, and fatigue resistant modified membrane, offering a seamless appearance and proven performance

OVERVIEW

BITEC SPM-4T is heat welded, puncture, and fatigue resistant, mineral-surfaced modified bitumen waterproofing membrane that offers a clean, seamless appearance and proven watertight performance. It is composed of carefully selected asphalts and blended with high-quality styrene-butadiene-styrene rubber. SPM-4T is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as reinforcement in SPM-4T, has isotropic mechanical properties providing the composite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- High flexibility
- Puncture resistance
- High elongation
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deterioration resistance
- Dimensional stability

The mineral surface protects the membrane from aging caused from heat and ultra violet radiation. Most mineral surfacing yield sufficiently high amounts of solar reflectivity to realize some energy savings, depending on building construction and use. Some heat absorption values are given below, calculated on the basis of an ideal black surface as being 100%:

- Ideal Black 100%
- Bituminous Surface 94%
- Gray Mineral 85%
- Tan Mineral 57%
- White Mineral 30%

SPM-4T incorporates a smooth and even application of polyethylene film to prevent blocking of rolls and to provide a smooth, acceptable heat welding surface. Polyethylene film is contained on the heat weldable face of the roll. The polyethylene film acts as a sight indicator for the applicator in determining the proper flow needed to ensure adequate bonding of plies and seams.

After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to increase the overall reflectivity of the system and/or fire rating. BITEC recommends that a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 20 rolls of SPM-4T waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

SPM-4T must be fully adhered to the substrate. When applying the membrane, the polyethylene film should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned and set before the actual heat welding of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the heat welding process.)

Begin heat welding the film surface of the membrane, using a sweeping motion, maintaining even heating. The actual heat welding motion should be done in an “L” configuration, preheating the previously installed membrane lap, then sweeping across the roll face while advancing the roll over the roof surface. As the roll is advanced, a bead of modified bitumen should be seen flowing from between the lap seam a distance of 1⁄4 to 3⁄8” from the membrane edge, which is being advanced. This flow out should be consistent and uninterrupted. Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly heat welding. Upon removal of the hot trowel,

pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance.

All side and end laps should be a minimum of 4 and 6 inches respectively.

BITEC SBS heat welded membranes may not be installed in hot roofing asphalt, cold process adhesives or by mechanical attachment. BITEC SBS membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a minimum 1⁄2" thick, mechanically attached recovery board. Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes. As with any roofing project, good roofing practices should always be followed. Consult the BITEC specification and details for information governing certain systems.

TOOLS REQUIRED

Tools required to apply BITEC SPM-4T waterproofing membrane include: heat welding equipment having a UL certified regulator, propane bottle, spatula or round nose roofer's trowel, a roofer's knife, pair of work gloves, flat sole shoes and an ABC dry chemical fire extinguisher. Alternately, an approved hot air welder may be employed.

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat welding application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3' from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SPM-4T™

PRODUCT INFORMATION

Technical Schedule		
APPROVALS	UL (R13231)	
SOFTENING POINT (ASTM D36)	250°F (120°C)	
REINFORCEMENT	Polyester	
PENETRATION (ASTM D5)	40 dmm @ 25°C	
SLIDE (UNI-8202)	<40 mils (<1 mm)	
COLD FLEXIBILITY (ASTM D5147)	passed -13°F (-25°C)	
ROLL DIMENSION	32.8' x 3.28' (10 m x 1 m)	
DYNAMIC PUNCTURE (CGSB 37-GP-56M)	passed	
STATIC PUNCTURE (CGSB 37-GP-56M)	passed	
TENSILE STRENGTH (ASTM D5147)	MD = 105 lbf/in (18.39 kN/m)	XMD = 75 lbf/in (13.13 kN/m)
ELONGATION (ASTM D5147)	MD = 60%	XMD = 70%
TOP / BOTTOM SURFACE	Mineral / Film	
THICKNESS	160 mils (4 mm)	
ROLL WEIGHT, APPROX.	100 lb (45.5 kg)	
COVERAGE, INSTALLED APPROX.	95 ft² (8.8 m²)	
TOTAL SURFACE AREA, APPROX.	107 ft² (9.3 m²)	

All Information is given in good faith, but normal tolerances of manufacture and testing will apply. BITEC reserves the right to improve and change its products at any time without prior notice or advice. The use of BITEC products is determined by local conditions and individual requirements of each contract. In consideration of the many factors involved, BITEC cannot be held responsible for the application of its products and for conditions beyond its control. All claims filed against BITEC warranties will be subject to the provisions set forth at the date of warranty issuance, and any addendum thereto. Under no circumstances will BITEC be held liable for any damage, whether personal injury or property damage, which occur during or after the application of the membrane.

Approvals:

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

STANDARD SPECIFICATION:
ASTM D6164, TYPE I, GRADE G

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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SPM-4.5T™
PRODUCT INFORMATION

Heat welded, puncture, and fatigue resistant modified membrane, offering a seamless appearance and proven performance

OVERVIEW

BITEC SPM-4.5T is a heat welded, puncture and fatigue resistant, mineral-surfaced modified bitumen waterproofing membrane that offers a clean, seamless appearance and proven watertight performance. It is composed of carefully selected asphalts and blended with high-quality styrene-butadiene-styrene rubber. SPM-4.5T is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as reinforcement in SPM-4.5T, has isotropic mechanical properties providing the composite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- High flexibility
- Puncture resistance
- High elongation
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deteriorationresistance
- Dimensional stability

The mineral surface protects the membrane from aging caused from heat and ultra violet radiation. Most mineral surfacing yield sufficiently high amounts of solar reflectivity to realize some energy savings, depending on building construction and use. Some heat absorption values are given below, calculated on the basis of an ideal black surface as being 100%:

- Ideal Black 100%
- Bituminous Surface 94%
- Gray Mineral 85%
- Tan Mineral 57%
- White Mineral 30%

SPM-4.5T incorporates a smooth and even application of polyethylene film to prevent blocking of rolls and to provide a smooth, acceptable heat welding surface. Polyethylene film is contained on the heat weld face of the roll. The polypropylene film acts as a sight indicator for the applicator in determining the proper flow needed to ensure adequate bonding of plies and seams.

After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to increase the overall reflectivity of the system and/or fire rating. BITEC recommends that a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 24 rolls of SPM-4.5T waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

Depending on the type of roof, SPM-4.5T must be fully adhered. BITEC specifications applicable to this product should be consulted to determine which system should be employed. When applying the membrane, the polyethylene film should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned and set before the actual heat welding of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the heat welding process.)

Begin heat the film surface of the membrane, using a sweeping motion, maintaining even heating. The actual heat welding motion should be done in an “L” configuration, preheating the previously installed membrane lap, then sweeping across the roll face while advancing the roll over the roof surface. As the roll is advanced, a bead of modified bitumen should be seen flowing from between the lap seam a distance of 1⁄4" to 3⁄8” from the membrane edge, which is being advanced. This flow out should be consistent and uninterrupted. Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly heat welding. Upon removal of the hot trowel,

pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance.

All side and end laps should be a minimum of 4 and 6 inches respectively.

BITEC SBS heat weld membranes may not be installed in hot roofing asphalt, cold process adhesives or by mechanical attachment. BITEC SBS membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a minimum 1⁄2" thick, mechanically attached recovery board. Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes. As with any roofing project, good roofing practices should always be followed. Consult the BITEC specification and details book for information governing certain systems.

TOOLS REQUIRED

Tools required to apply BITEC SPM-4.5T waterproofing membrane include: a heat welding device having a UL certified regulator, propane bottle, spatula or round nose roofer's trowel, a roofer's knife, pair of work gloves, flat sole shoes and an ABC dry chemical fire extinguisher. Alternately, an approved hot air welder can be employed.

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations

The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat welding device operator, should be no closer than 3' from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SPM-4.5T™

PRODUCT INFORMATION

Technical Schedule	
APPROVALS	UL (R13231)
SOFTENING POINT (ASTM D-36)	250°F (120°C)
REINFORCEMENT	Polyester
PENETRATION (ASTM D5)	40 dmm @ 25°C
SLIDE (UNI-8202)	<40 mils (<1 mm)
COLD FLEXIBILITY (ASTM D5147)	passed -13°F (-25°C)
ROLL DIMENSION	25.6 ft X 3.28 ft (7.8 m x 1 m)
DYNAMIC PUNCTURE (CGSB 37-GP-56M)	passed
STATIC PUNCTURE (CGSB 37-GP-56M)	passed
TENSILE STRENGTH (ASTM D5147)	MD = 105 lbf/in XMD = 75 lbf/in
ELONGATION (ASTM D5147)	MD = 60% XMD = 70%
TOP / BOTTOM SURFACE	Mineral / Film
THICKNESS	180 mils (4.5 mm)
ROLL WEIGHT, APPROX.	92 lb (41.8 kg)
COVERAGE, INSTALLED APPROX.	75 ft² (7 m²)
TOTAL SURFACE AREA, APPROX.	83.9 ft² (7.8 m²)

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Approvals:

FM APPROVED

CLASSIFIED UL R-13231

Membrane for Roofing Systems
As to an external fire exposure only
49S8

STANDARD SPECIFICATION:
ASTM D6164, TYPE I, GRADE G

TDI Evaluation ID: RC-58

FLORIDA PRODUCT APPROVAL:
FL 16347.2-R4, FL 16347.3-R4,
FL 16347.4-R4

HUD MR No. 1229

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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SPM-3.5H™
PRODUCT INFORMATION

Polyester reinforced modified bitumen membrane with a mineral surface to provide protection from heat and UV radiation

OVERVIEW

BITEC SPM-3.5H is a polyester reinforced modified bitumen membrane with a mineral surface to provide protection from heat and UV radiation. This hot asphalt applied waterproofing membrane is composted of carefully selected asphalts and is blended with high quality styrene-butadiene-styrene rubber. SPM-3.5H is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as a reinforcement in SPM-3.5H, has isotropic mechanical properties providing the composite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- High flexibility
- Puncture resistance
- High elongation
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deterioration resistance
- Dimensional stability

The mineral surface protects the membrane from aging caused from heat and ultra violet radiation. Most mineral surfacing yield sufficiently high amounts of solar reflectivity to realize some energy savings, depending on building construction and use. Some heat absorption values are given below, calculated on the basis of an ideal black surface as being 100%:

- Ideal Black 100%
- Bituminous Surface 94%
- Gray Mineral 85%
- Tan Mineral 57%
- White Mineral 30%

SPM-3.5H incorporates a smooth and even application of coal slag to prevent blocking of rolls and to provide a smooth, acceptable application surface. SPM-3.5H can be applied by using hot asphalt or by using any BITEC approved elastomeric cold process adhesive. (When using cold adhesives, follow the specific adhesive manufacturer's installation specifications.) Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes.

After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to increase the overall reflectivity of the system and/or fire rating. BITEC recommends that a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 20 rolls of SPM-3.5H waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

BITEC SPM-3.5H must be fully adhered. When applying the membrane, the coal slag surface should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned, allowed to relax and set before the actual installation of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the installation process.)

BITEC SPM-3.5H is designed to be applied by conventional methods of hot asphalt or cold adhesive application. BITEC PMA-186 or PMA-2000 cold process adhesive should be applied at a rate of 1.5 to 2.5 gallons per 100 ft^2. (The substrate that the cold process adhesive is being applied over may affect consumption rates.) Refer to the adhesive technical data sheets for application methods. Hot asphalt applications require ASTM D312 Type III mopping asphalt for low slope applications or ASTM D312 Type IV for slopes greater than 1" per foot. Hot asphalt should be applied at a rate of 25 lb./100 ft^2. Follow NRCA and the asphalt manufacturers guidelines for EVT requirements when heating asphalt. Refer to the BITEC General Application Instructions in the BITEC Products and Application Guide for proper application techniques.

SPM-3.5H™

PRODUCT INFORMATION

A continuous, 1⁄4” bead of uninterrupted mopping asphalt shall be seen coming from the end and side laps. Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly torching. Upon removal of the hot trowel, pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance. All side and end laps should be a minimum of 4 and 6 inches respectively.

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor’s responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat welding application. The contractor should be familiar with NFPA 58 “Standard for the Storage and Handling of Liquefied Petroleum Gas” and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld device operator, should be no closer than 3’ from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SPM-3.5H™

PRODUCT INFORMATION

Technical Schedule		
APPROVALS	UL (R13231)	
SOFTENING POINT (ASTM D36)	250°F (120°C)	
REINFORCEMENT	Polyester with Fiberglass	
PENETRATION (ASTM D5)	40 dmm @ 25°C	
SLIDE (UNI-8202)	<40 mils (<1 mm)	
ROLL DIMENSIONS	33.9 ft x 3.28 ft (10.34 m x 1 m)	
DYNAMIC PUNCTURE (CGSB 37-GP-56M)	passed	
STATIC PUNCTURE (CGSB 37-GP-56M)	passed	
TENSILE STRENGTH @ 73.4°F (23°C) (ASTM D5147)	MD = 72 lbf/in (12 kN/m)	XMD = 51 lbf/in (9 kN/m)
TENSILE STRENGTH @ 0°F (-17.7°C) (ASTM D5147)	MD = 119 lbf/in (21 kN/m)	XMD = 101 lbf/in (18 kN/m)
ELONGATION @ 73.4°F (23°C) (ASTM D5147)	MD = 57%	XMD = 73%
ELONGATION @ 0°F (-17.7°C) (ASTM D5147)	MD = 52%	XMD = 69%
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	passed -45°F (-42.7°C)	
TEAR STRENGTH @ 73.4°F (23°C) (ASTM D5147	MD = 110 lbf/in (19 kN/m)	XMD = 83 lbf/in (14.5 kN/m)
THICKNESS	140 mils (3.5 mm)	
ROLL WEIGHT, APPROX.	100 lb (45.5 kg)	
COVERAGE, INSTALLED APPROX.	100 ft² (9.3 m²)	
TOTAL SURFACE AREA, APPROX.	111.2 ft² (10.33 m²)	

All Information is given in good faith, but normal tolerances of manufacture and testing will apply. BITEC reserves the right to improve and change its products at any time without prior notice or advice. The use of BITEC products is determined by local conditions and individual requirements of each contract. In consideration of the many factors involved, BITEC cannot be held responsible for the application of its products and for conditions beyond its control. All claims filed against BITEC warranties will be subject to the provisions set forth at the date of warranty issuance, and any addendum thereto. Under no circumstances will BITEC be held liable for any damage, whether personal injury or property damage, which occur during or after the application of the membrane.

Approvals:

FM APPROVED

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

STANDARD SPECIFICATION:
ASTM D6162, TYPE I, GRADE G

TDI Evaluation ID: RC-58

FLORIDA PRODUCT APPROVAL:
FL 16347.2-R4, FL 16347.3-R4,
FL 16347.4-R4

HUD MR No. 1229

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SPM-4H™

PRODUCT INFORMATION

Polyester reinforced modified bitumen membrane with a mineral surface to provide protection from heat and UV radiation

OVERVIEW

BITEC SPM-4H is a polyester reinforced modified bitumen membrane with a mineral surface to provide protection from heat and UV radiation. This hot asphalt applied waterproofing membrane is composted of carefully selected asphalts and is blended with high quality styrene-butadiene-styrene rubber. SPM-4H is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as a reinforcement in SPM-4H, has isotropic mechanical properties providing the composite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- High flexibility
- Puncture resistance
- High elongation
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deterioration resistance
- Dimensional stability

The mineral surface protects the membrane from aging caused from heat and ultra violet radiation. Most mineral surfacing yield sufficiently high amounts of solar reflectivity to realize some energy savings, depending on building construction and use. Some heat absorption values are given below, calculated on the basis of an ideal black surface as being 100%:

Ideal Black	100%
Bituminous Surface	94%
Gray Mineral	85%
Tan Mineral	57%
White Mineral	30%

SPM-4H incorporates a smooth and even application of coal slag to prevent blocking of rolls and to provide a smooth, acceptable application surface. SPM-4H can be applied by using hot asphalt or by using BITEC elastomeric cold process adhesives.

After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to increase the overall reflectivity of the system and/or fire rating. BITEC recommends that a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 20 rolls of SPM-4H waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

BITEC SPM-4H must be fully adhered. When applying the membrane, the coal slag surface should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned, allowed to relax and set before the actual installation of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the installation process.)

BITEC SPM-4H is designed to be applied by conventional methods of hot asphalt or cold adhesive application. BITEC PMA-186 or PMA-2000 cold process adhesive should be applied at a rate of 1.5 to 2.5 gallons per 100 ft^2. (The substrate that the cold process adhesive is being applied over may affect consumption rates.) Refer to the adhesive technical data sheets for application methods. Hot asphalt applications require ASTM D312 Type III mopping asphalt for low slope applications or ASTM D312 Type IV for slopes greater than 1” per foot. Hot asphalt should be applied at a rate of 25 lb./100 ft^2. Follow NRCA and the asphalt manufacturers guidelines for EVT requirements when heating asphalt. Refer to the BITEC General Application Instructions in the BITEC Products and Application Guide for proper application techniques.

A continuous, 1⁄4” bead of uninterrupted mopping asphalt shall be seen coming from the end and side laps. Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly torching. Upon removal of the hot trowel, pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance. All side and end laps should be a minimum of 4 and 6 inches respectively.

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor’s responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat welding application. The contractor should be familiar with NFPA 58 “Standard for the Storage and Handling of Liquefied Petroleum Gas” and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld device operator, should be no closer than 3’ from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SPM-4H™

PRODUCT INFORMATION

Technical Schedule		
APPROVALS	UL (R13231)	
SOFTENING POINT (ASTM D36)	250°F (120°C)	
REINFORCEMENT	Polyester with Fiberglass	
PENETRATION (ASTM D5)	40 dmm @ 25°C	
SLIDE (UNI-8202)	<40 mils (<1 mm)	
ROLL DIMENSIONS	33.9 ft x 3.28 ft (10.34 m x 1 m)	
DYNAMIC PUNCTURE (CGSB 37-GP-56M)	passed	
STATIC PUNCTURE (CGSB 37-GP-56M)	passed	
TENSILE STRENGTH @ 73.4°F (23°C) (ASTM D5147)	MD = 72 lbf/in (12 kN/m)	XMD = 51 lbf/in (9 kN/m)
TENSILE STRENGTH @ 0°F (-17.7°C) (ASTM D5147)	MD = 119 lbf/in (21 kN/m)	XMD = 101 lbf/in (18 kN/m)
ELONGATION @ 73.4°F (23°C) (ASTM D5147)	MD = 57%	XMD = 73%
ELONGATION @ 0°F (-17.7°C) (ASTM D5147)	MD = 52%	XMD = 69%
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	passed -45°F (-42.7°C)	
TEAR STRENGTH @ 73.4°F (23°C) (ASTM D5147	MD = 110 lbf/in (19 kN/m)	XMD = 83 lbf/in (14.5 kN/m)
THICKNESS	160 mils (4.0 mm)	
ROLL WEIGHT, APPROX.	100 lb (45.5 kg)	
COVERAGE, INSTALLED APPROX.	100 ft^2 (9.3 m^2)	
TOTAL SURFACE AREA, APPROX.	111.2 ft^2 (10.33 m^2)	

All Information is given in good faith, but normal tolerances of manufacture and testing will apply. BITEC reserves the right to improve and change its products at any time without prior notice or advice. The use of BITEC products is determined by local conditions and individual requirements of each contract. In consideration of the many factors involved, BITEC cannot be held responsible for the application of its products and for conditions beyond its control. All claims filed against BITEC warranties will be subject to the provisions set forth at the date of warranty issuance, and any addendum thereto. Under no circumstances will BITEC be held liable for any damage, whether personal injury or property damage, which occur during or after the application of the membrane.

Approvals:

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

STANDARD SPECIFICATION:
ASTM D6162, TYPE I, GRADE G

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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SPM-4H/250™

PRODUCT INFORMATION

250 g/m² polyester reinforced modified bitumen membrane with a mineral surface to provide protection from heat and UV radiation

OVERVIEW

BITEC SPM-4H/250 is a polyester reinforced modified bitumen membrane with a mineral surface to provide protection from heat and UV radiation. This hot asphalt applied waterproofing membrane is composted of carefully selected asphalts and is blended with high quality styrene-butadiene-styrene rubber. SPM-4H/250 is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as a reinforcement in SPM-4H/250, has isotropic mechanical properties providing the com-posite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- High flexibility
- Puncture resistance
- High elongation
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deterioration resistance
- Dimensional stability

The mineral surface protects the membrane from aging caused from heat and ultra violet radiation. Most mineral surfacing yield sufficiently high amounts of solar reflectivity to realize some energy savings, depending on building construction and use. Some heat absorption values are given below, calculated on the basis of an ideal black surface as being 100%:

- Ideal Black 100%
- Bituminous Surface 94%
- Gray Mineral 85%
- Tan Mineral 57%
- White Mineral 30%

SPM-4H/250 incorporates a smooth and even application of coal slag to prevent blocking of rolls and to provide a smooth, acceptable application surface. SPM-4H/250 can be applied by using hot asphalt or by using BITEC elastomeric cold process adhesives.

After installation of the roofing membrane is complete, the surface may be coated with a BITEC approved roof coating to increase the overall reflectivity of the system and/or fire rating. BITEC recommends that a period of at least 45 days elapse before roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 20 rolls of SPM-4H/250 waterproof-ing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

APPLICATION

BITEC SPM-4H/250 must be fully adhered. When applying the membrane, the coal slag surface should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned, allowed to relax and set before the actual installation of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure the membrane will remain aligned during the installation process.)

BITEC SPM-4H/250 is designed to be applied by conventional methods of hot asphalt or cold adhesive application. BITEC PMA-186 or PMA-2000 cold process adhesive should be applied at a rate of 1.5 to 2.5 gallons per 100 ft². (The substrate that the cold process adhesive is being applied over may affect consumption rates.) Refer to the adhesive technical data sheets for application methods. Hot asphalt applications require ASTM D312 Type III mopping asphalt for low slope applications or ASTM D312 Type IV for slopes greater than 1” per foot. Hot asphalt should be applied at a rate of 25 lb./100 ft². Follow NRCA and the asphalt manufacturers guidelines for EVT requirements when heating asphalt. Refer to the BITEC General Application Instructions in the BITEC Products and Application Guide for proper application techniques.

SPM-4H/250™

PRODUCT INFORMATION

A continuous, 1⁄4” bead of uninterrupted mopping asphalt shall be seen coming from the end and side laps. Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly torching. Upon removal of the hot trowel, pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance. All side and end laps should be a minimum of 4 and 6 inches respectively.

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor’s responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat welding application. The contractor should be familiar with NFPA 58 “Standard for the Storage and Handling of Liquefied Petroleum Gas” and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld device operator, should be no closer than 3’ from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SPM-4H/250 ™

PRODUCT INFORMATION

Technical Schedule	
APPROVALS	UL (R13231)
SOFTENING POINT (ASTM D36)	250°F (120°C)
REINFORCEMENT	Polyester with Fiberglass
PENETRATION (ASTM D5)	40 dmm @ 25°C
SLIDE (UNI-8202)	<40 mils (<1 mm)
ROLL DIMENSIONS	33.9 ft x 3.28 ft (10.34 m x 1 m)
DYNAMIC PUNCTURE (CGSB 37-GP-56M)	passed
STATIC PUNCTURE (CGSB 37-GP-56M)	passed
TENSILE STRENGTH @ 73.4°F (23°C) (ASTM D5147)	MD = 105 lbf/in XMD = 75 lbf/in
TENSILE STRENGTH @ 0°F (-17.7°C) (ASTM D5147)	MD = 119 lbf/in (21 kN/m) XMD = 101 lbf/in (18 kN/m)
ELONGATION @ 73.4°F (23°C) (ASTM D5147)	MD = 57% XMD = 73%
ELONGATION @ 0°F (-17.7°C) (ASTM D5147)	MD = 52% XMD = 69%
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	passed -45°F (-42.7°C)
TEAR STRENGTH @ 73.4°F (23°C) (ASTM D5147	MD = 110 lbf/in (19 kN/m) XMD = 83 lbf/in (14.5 kN/m)
THICKNESS	160 mils (4.0 mm)
ROLL WEIGHT, APPROX.	100 lb (45.5 kg)
COVERAGE, INSTALLED APPROX.	100 ft^2 (9.3 m^2)
TOTAL SURFACE AREA, APPROX.	111.2 ft^2 (10.33 m^2)

All Information is given in good faith, but normal tolerances of manufacture and testing will apply. BITEC reserves the right to improve and change its products at any time without prior notice or advice. The use of BITEC products is determined by local conditions and individual requirements of each contract. In consideration of the many factors involved, BITEC cannot be held responsible for the application of its products and for conditions beyond its control. All claims filed against BITEC warranties will be subject to the provisions set forth at the date of warranty issuance, and any addendum thereto. Under no circumstances will BITEC be held liable for any damage, whether personal injury or property damage, which occur during or after the application of the membrane.

Approvals:

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

STANDARD SPECIFICATION:
ASTM D6162, TYPE I, GRADE G

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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SPS-3H™

PRODUCT INFORMATION

Smooth surface modified bitumen membrane that can be used as either a cap sheet or base sheet

OVERVIEW

BITEC SPS-3H is a hot asphalt applied, smooth-surfaced, modified bitumen waterproofing membrane that can be used as either a cap sheet or base sheet. When used as a cap sheet, it must be coated or flood coated.

It is composed of carefully selected asphalts and blended with high quality styrene-butadiene-styrene rubber. SPS-3H is reinforced with polyester fabric and yields the following performance characteristics:

- Impermeable to water
- Low temperature flexibility
- Thermally stable
- Excellent adhesion
- Resistant to acids and most bases
- Puncture resistant
- Excellent workability
- Longevity

Polyester fabric, used as the reinforcement in SPS-3H, has isotropic mechanical properties providing the composite membrane with similar mechanical characteristics in all angular directions in relation to the membrane surface. Polyester fabric imparts the following properties to the composite membrane:

- High flexibility
- Puncture resistance
- High elongation
- Mechanical strength
- Fatigue resistance
- Tear strength
- Deterioration resistance
- Dimensional stability

SPS-3H incorporates a smooth and even application of coal slag to prevent blocking of rolls and to provide a smooth, acceptable application surface. SPS-3H can be applied by using hot asphalt or by using BITEC elastomeric cold process adhesives.

After installation of the roofing membrane is complete, the surface must be coated with a BITEC approved roof coating to protect the membrane from the harmful effects of ultra violet radiation and for UL fire rating if required.

BITEC recommends that a period of at least 45 days elapse before the roof coatings are applied. This will effectively allow the membrane to cure and accept the roof coating.

PACKAGING

Palletized units contain 24 rolls of SPS-3H waterproofing membrane. Each unit is shrink wrapped in a special polyethylene bag for stability. BITEC recommends that units of material be single stacked.

SPS-3H has no mineral surface, and therefore must be coated by a BITEC approved roof coating or receive a flood coat of ASTM D312 roofing asphalt with roofing gravel applied at a minimum rate of 400 lb/sq.

SPS-3H can be used as either a cap sheet, an interply, or a base sheet. The overall roof system performance will be enhanced by its use as a base sheet.

APPLICATION

BITEC SPS-3H must be fully adhered. BITEC specifications applicable to this product should be consulted to determine which system should be employed. Prior to application, the membrane should be unrolled completely, aligned, allowed to relax and set before the actual installation of the membrane occurs. The membrane should then be rolled up half way, leaving the other half fully extended. (This will ensure that the membrane will remain aligned during the installation process.)

BITEC SPS-3H is designed to be applied by conventional methods of hot asphalt or cold adhesive application. BITEC PMA-186 or PMA-2000 cold process adhesive should be applied at a rate of 1.5 to 2.5 gallons per 100 ft^2. (The substrate that the cold process adhesive is being applied over may affect consumption rates.) Refer to the adhesive technical data sheets for application methods. Hot asphalt applications require ASTM D312 Type III mopping asphalt for low slope applications or ASTM D312 Type IV for slopes greater than 1” per foot. Hot asphalt should be applied at a rate of 25 lb./100 ft^2. Follow NRCA and the asphalt manufacturers guidelines for EVT requirements when heating asphalt. Refer to the BITEC General Application Instructions in the BITEC Products and Application Guide for proper application techniques. It is essential that the asphalt be applied uniformly at a distance not to exceed 4’ in front of the advancing roll surface. A continuous, 1⁄4” bead of uninterrupted mopping asphalt shall be seen coming from the end and side laps.

Seams that are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly heat welding. Upon removal of the hot trowel, pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance.

All side and end laps should be a minimum of 3" and 6" respectively. If the membrane is loose laid, an area of 40" each side of the end lap should be fully bonded to the roof surface.

BITEC SBS membranes are not recommended for use over coal tar or pitch roofs unless the existing deck is separated from the BITEC membrane by a minimum 1⁄2" thick, mechanically attached recovery board. Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes. As with any roofing project, good roofing practices should always be followed. Consult the BITEC specification and details book for information governing certain systems.

Before using this product, be certain that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat weld equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3' from open flame. Alternately, a hot air welding device may be employed.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

SPS-3H™

PRODUCT INFORMATION

Technical Schedule		
APPROVALS	UL (R13231)	
SOFTENING POINT (ASTM D-36)	250°F (120°C)	
REINFORCEMENT	Polyester Fabric	
PENETRATION (ASTM D5)	40 dmm @ 25°C	
SLIDE (UNI-8202)	<40 mils (<1 mm)	
COLD FLEXIBILITY (ASTM D5147)	passed -13°F (-25°C)	
ROLL DIMENSION	32.8' X 3.28' (10 m X 1 m)	
DYNAMIC PUNCTURE (CGSB 37-GP-56M)	passed	
STATIC PUNCTURE (CGSB 37-GP-56M)	passed	
TENSILE STRENGTH (ASTM D5147)	MD = 105 lbf/in (18.39 kN/m)	XMD = 75 lbf/in (13.84 kN/m)
ELONGATION (ASTM D5147)	MD = 60%	XMD = 70%
TOP / BOTTOM SURFACE	Coal Slag / Coal Slag	
THICKNESS	120 mils (3 mm)	
ROLL WEIGHT, APPROX.	73 lb (33.18) kg	
COVERAGE, INSTALLED APPROX.	100 ft^2 (9.3 m^2)	
TOTAL SURFACE AREA, APPROX.	109.9 ft^2 (10 m^2)	

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Approvals:

FM APPROVED

CLASSIFIED UL R-13231

Membrane for Roofing Systems As to an external fire exposure only 49S8

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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Imperflex® MSA

PRODUCT INFORMATION

Mineral surfaced SBS cap sheet used to complete the Imperflex roof system

OVERVIEW

Imperflex MSA is a mineral surfaced, SBS polymer modified bitumen cap sheet used to complete the Imperflex roof system. Imperflex MSA is intended for use on residential roofs where roof slopes prevent effective use of shingles, tile and/or metal.*

Imperflex MSA is composed of select SBS polymers blended with a special asphalt and reinforced with high-strength fiberglass mat. A split, silicon coated release film must be removed before installation. This film prevents the roll from sticking during storage and aids installation.

The membrane is coated on top with factory installed, colored ceramic coated roof granules. Silicon coated release film protects the 3.5" selvedge edge. The film must be removed for proper installation. The membrane is durable, resists coating slide at normal roof temperatures and is self-sealing.

Do not install on any roof with slope less than ½" in 12" or in areas where water stands or forms ponds.

IDEAL USES

Bitec recommends these products be used only for residential and light commercial roofs. Imperflex products used in light commercial roof applications shall be limited to certain flashing details as well as residential-like applications. All metal and wood surfaces receiving Imperflex must be primed with an approved water based SA primer. Imperflex products may or may not be suitable for certain constructions.

APPLICATION

Bitec strongly recommends the roof system installation provide positive drainage. Imperflex membranes used over wood decks or any other deck suspect of having excessive movement must be cut into half (½) lengths before installation. Imperflex membranes must be rolled in using a heavy steel roller to remove air and improve contact with surfaces. Flashing sheets can be rolled in using a seam roller or suitable tool. Imperflex end laps should be sealed using SBS modified bitumen adhesive to improve seal.

All metal must be primed and sandwiched between layers of Imperflex USA and Imperflex MSA. Imperflex products are not designed to fully replace or act as a substitute for polymer modified bitumen heat welded; hot asphalt; or adhesive applied roof membranes and systems. Imperflex products are an adjunct to these products.

Surface Preparation

All surfaces to be waterproofed with this product must be smooth, dry, free of projections, bulges and old roofing materials. Dust and moisture on any surface to be waterproofed and/or the membrane itself will prevent proper adhesion and could result in leaks. Never install this product over any old or existing roofing material or existing metal roofs.

Imperflex MSA is to be used as a cap sheet only, on slopes equal to or greater than ½" in 12". MSA comes with a factory installed adhesive. MSA cannot be used as a component in any Bitec commercial roofing specifications, except as noted. Prime all metal, wood, masonry and concrete surfaces using an approved water based SA primer. Primer should be applied according to manufacturers instructions.

Bitec strongly recommends the use of water based primers specifically manufactured for self adhering membranes. ***BITEC IM-Prime™ is highly recommended as a primer for this application and is fully compatible with all of our SA products.***

On wood or any other decks suspect of excessive movement, cut USA base ply and the MSA cap sheet into half (½) sheet lengths before installation. This will ease installation and help prevent wrinkling, ridging and fish-mouths. ***Be sure that all end laps are sealed with lap adhesive such as Bitec PMA-186 or PMA-2000.***

Install one ply of Imperflex USA. Then install the MSA. The Imperflex USA may also be installed as an inverted base ply with adhesive side up, mechanically fastened, leaving the release film in place until ready to install the Imperflex MSA cap sheet membrane.

Imperflex® MSA

PRODUCT INFORMATION

Temperature
Apply Imperflex MSA in fair weather when the air, deck and membrane temperature is 50°F (10°C) and rising up to 110°F (43°C). All surfaces receiving membrane shall be completely dry before product installation.

Cap Sheet Application

1. Starter strip
Peel back half sheet of release film. Align membrane at lower edge of roof and adhere the exposed membrane area to the prepared surface in shingle fashion. Always ensure proper alignment. Continue to peel both halves of release film in a manner that will allow smooth and even application of the membrane. Roll in by using a heavy roller to remove any trapped air. Remove selvedge release film.

When using an adhesive-to-adhesive side installation, remove only small areas of release film from the USA base ply to prevent contamination of the self adhering surface before applying the MSA cap sheet. Extreme care must be exercised when using and installing two self adhering surfaces together to prevent contamination, wrinkles or air pockets. Once a small area (each roll) is stuck together, it must be rolled with the heavy roller. Do not wait until an entire area (several rolls) is installed before “rolling in” membrane.

2. Subsequent courses of membrane
Install subsequent courses in a similar fashion staggering finished end laps by at least 3 feet. Finished end laps should be 6” min., while finished side laps should be 3.5” min. ***All end laps should be sealed using modified bitumen adhesive and rolled in at the time of application.***

3. Construction details
Construction details are the same as for commercial grade SBS modified bitumen cap sheets. Refer to Bitec’s published specifications for proper execution of flashing and construction details.

4. Residential roof valley and ridge
Remove release film. Center roll over area to be waterproofed. Start at low point and work upward. Press and work membrane outward from center.

Slope Limitations
Good roofing practice requires all modified bitumen roof systems result in positive drainage. ***In all cases, a minimum roof slope of ½” in 12 will be required.*** Sufficient drainage, for this purpose, is defined as complete and immediate removal of water from the roof surface resulting in no areas of standing water or ponds. Bitec strongly recommends this minimum slope guideline be adhered to, especially as it pertains to the installation of Imperflex products. The determination of slope and the design of any roof system, as well as the selection of the roof system components, which includes the deck and can include existing roof components, is the sole responsibility of the contractor(s), owner(s) and/or owners’ representative(s), and building code official(s).

Bitec will not determine the suitability of Imperflex for use on any construction or that the construction possesses an effective slope prior to product installation.

Imperflex products are manufactured to effectively provide a watertight roof membrane system if installed properly and in accordance to published Bitec standards and industry good roofing practice and on any construction that will accommodate its use.

PRECAUTIONS

- Bitec assumes no responsibility for any loss arising from misuse and/or misapplication of these products
- Imperflex MSA shall never be applied directly to an existing roof system
- Do not install this product on mobile homes, prefabricated structures or where the roof deck, attic space, or areas under roof deck lack adequate ventilation
- Do not install this product directly to any type of roof insulation
- Improper use of and/or improper installation of Imperflex products will void your warranty
- Imperflex products should not be used in any interior space due to their asphaltic odor
- Imperflex products can be slippery when wet or covered with frost and/or ice
- Keep Imperflex products and all roofing components away from children and animals
- Other conditions may apply to the use and installation of Imperflex products
- Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes.

NOTE: Please refer to our publications for additional information regarding these products.

Please call 800-535-8597 for a copy or to inquire about conditions not covered.

WARRANTY

Imperflex MSA membrane is covered by a limited 10-year material only warranty, except as noted otherwise. Warranty must be registered to be in effect. Please call 800-535-8597 to request a copy of the warranty.

Imperflex® MSA

PRODUCT INFORMATION

Technical Schedule	
MODIFIER	SBS
APPROX. ROLL SIZE	32.8 ft. x 3.28 ft (10 mx 1 m)
SEAM WIDTH	3.5 (88.9 mm)"
APPROX. COVERAGE	100 ft^2 (9.3 m^2)
TOP SURFACE	Colored Mineral*
BOTTOM SURFACE	Release Film
NOMINAL THICKNESS	3.5 mm (140 mils)
NOMINAL WEIGHT	100 lbs (45.5 kg)
REINFORCEMENT	fiberglass mat
SOFTENING POINT (ASTM D36)	250°F (120°C)
COLD FLEXIBILITY (ASTM D5147)	13°F (-25°C)
TENSILE STRENGTH (ASTM D5147)	MD = 80 lbf/in (14.00 kN/m) XMD = 75 lbf/in (13.13 kN/m)
ELONGATION (ASTM D5147)	MD = 30% XMD = 30%

This product meets or exceeds ASTM D 1970.
*Standard colors are white, green, jet black and buff. Blended colors are tan blend, black blend, gray blend. All values are approximate.

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Approvals:

CLASSIFIED UL R-13231

STANDARD SPECIFICATION: ASTM D6163, TYPE I, GRADE I D1907
FLORIDA PRODUCT APPPROVAL: FL 5215.1-R6, FL 16347.1-R4

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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Rev. 8/2022

APP and SBS BASE SHEET MEMBRANES

PRODUCT	MODIFIER	REINFORCEMENT	APPLICATION METHOD	SURFACING TOP/BOTTOM	ASTM STANDARD SPECIFICATION
COMPABASE FA-2T	APP	Fiberglass	HEAT WELD/ MECHANICALLY ATTACHED	COAL SLAG/FILM	D6509
COMPABASE FS-2H	SBS	Fiberglass	HOT ASPHALT/ COLD ADHESIVE	COAL SLAG/ COAL SLAG	D6163, TYPE I, GRADE S
COMPABASE FS-2H-FR	SBS	Fiberglass	HOT ASPHALT/ COLD ADHESIVE	COAL SLAG/ COAL SLAG	D6163, TYPE I, GRADE S
COMPABASE PS-2H	SBS	Polyester	HOT ASPHALT/ COLD ADHESIVE	COAL SLAG/ COAL SLAG	D6162, TYPE I, GRADE S
IMPERFLEX USA	SBS/SBR	Fiberglass	SELF-ADHERED	FILM/RELEASE FILM	D6163, TYPE I, GRADE S D1970
ELASTO PE 3 P/P	SBS	Polyester	HEAT WELD	FILM/FILM	D6162, TYPE I, GRADE S
BETA BASE I	NONE	Fiberglass	HOT ASPHALT/ COLD ADHESIVE/ MECHANICALLY ATTACHED	SAND/SAND	D4601, TYPE II
Elasto GL - NB	SBS	Fiberglass	MECHANICALLY ATTACHED	FILM/SAND	D4601, TYPE II

ADDITIONAL INFORMATION

(VALUES ARE APPROXIMATE)

	COVERAGE	THICKNESS	WEIGHT	ROLLS PER PALLET	ROLLS PER TRUCKLOAD
COMPABASE FA-2T	1.5 SQ.	2.0 mm (80 mils)	75 lb (32 kg)	20	480
COMPABASE FS-2H	1.5 SQ.	2.0 mm (80 mils)	95 lb (41 kg)	20	480
COMPABASE FS-2H-FR	1.5 SQ.	2.0 mm (80 mils)	95 lb (48.6 kg)	20	480
COMPABASE PS-2H	1.5 SQ.	2.0 mm (80 mils)	95 lb (42 kg)	24	480
IMPERFLEX USA	1.5 SQ.	2.0 mm (80 mils)	82 lb (39 kg)	20	480
ELASTO PE 3 P/P	1.0 SQ.	3.0 mm (80 mils)	80 lb (39 kg)	24	480
BETA BASE I	3.0 SQ.	1.5 mm (60 mils)	80 lb (36 kg)	20	520
Elasto GL - NB	2.0 SQ.	1.5 mm (60 mils)	85 lb (39 kg)	24	480

Compabase FA-2T™

PRODUCT INFORMATION

Highly versatile, easy-to-apply base sheet compatible with any APP modified bitumen membrane

OVERVIEW

Compabase FA-2T modified bitumen base sheet is a highly versatile, easy to apply base sheet compatible with any APP modified bitumen membrane. It is composed of select atactic polypropylene resins blended with high-quality, blended asphalts, and reinforced with a fiberglass mat. FA-2T carries a UL Type G2 classification and can be used in any APP modified bitumen waterproofing system.

Compabase FA-2T may be either mechanically fastened, nailed or heat weld applied to approved substrates. BITEC Compabase FA-2T used in conjunction with BITEC APS-4T, APM-4T or APM-4.5T will not only enhance the overall modified bitumen membrane system, but will provide the cap sheet with a compatible base for attachment, lessening the probability of insufficient bonding. Compabase FA-2T provides the foundation for a high-performance waterproofing system. FA-2T can also be used as underlayment in metal roof systems.

Advantages of using Compabase FA-2T include:

- System compatibility
- Two ply modified bitumen system
- Excellent flexibility
- Excellent weatherability
- Easy to apply
- Good dimensional stability
- Enhances modified bitumen system performance
- Keeps your BITEC modified bitumen membrane system in total performance

PACKAGING

Compabase FA-2T comes palletized, containing 24 rolls per palletized unit, shrink wrapped in a specially engineered polyethylene bag for durability in handling.

APPLICATION

Compabase FA-2T is applied by either heat welding or mechanically fastening to approved substrates. Compabase FA-2T shall be installed having 3” and 4” side and end laps, respectively.

Compabase FA-2T may be spot welded to certain substrates provided prior approval has been obtained from BITEC’s manager of technical services. BITEC does not recommend the use of plastic roofer’s cement with any of its APP membranes.

STORAGE

Rolls should be stored under cover away from direct exposure to the elements until immediately before use. If it becomes necessary to store material on the job site or roof deck, units should be covered with an opaque tarpaulin or similar cover. (Clear or black protective coverings are not acceptable.)

Units should also be stored elevated from the roof deck by placement on a pallet. If possible, materials should be stored inside away from direct sunlight at the job site. Do not stack units more than two high.

SAFETY

Contractor
It is the contractor’s responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 “Standard for the Storage and Handling of Liquefied Petroleum Gas” and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3’ from open flame. Alternatively, a hot air welding device may be employed.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

Compabase FA-2T™

PRODUCT INFORMATION

Technical Schedule	
MODIFIER	APP
APPROX. ROLL SIZE	49.2 ft x 3.28 ft (15.0 m x 1.0 m)
SEAM WIDTH	3" (75 mm)
APPROX. COVERAGE	150 ft^2 14.0 m^2
TOP SURFACE	Coal Slag
BOTTOM SURFACE	Film
NOMINAL THICKNESS	80 mils (2 mm)
NOMINAL WEIGHT	100 lb (45.5 kg)
REINFORCEMENT	Fiberglass
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	passed -25°F (-31.6o C)
TEAR STRENGTH @ 73.4°F (23°C) (ASTM D4073)	MD = 106 lbf/in XMD = 88 lbf/in (MD = 18.56 kN/m XMD = 15.44 kN/m)
SOFTENING POINT (ASTM D36)	302°F (150o C)
TENSILE STRENGTH @ 73.4°F (23°C) (ASTM D5147)	MD = 120 lbf/in XMD = 120 lbf/in (MD = 21.01 kN/m XMD = 21.01 kN/m)
TENSILE STRENGTH @ 0°F (-17.7°C) (ASTM D5147)	MD = 64 lbf/in XMD = 46 lbf/in (MD = 11.21 kN/cm XMD = 8.06 kN/m)
ELONGATION @ 73.4°F (23°C) (ASTM D5147)	MD = 4% XMD = 4%
ELONGATION @ 0°F (-17.7°C) (ASTM D5147)	MD = 4% XMD = 4%

Approvals:

FM APPROVED

CLASSIFIED UL

TYPE G2 COATED BASE/PLY SHEET
FOR ROOFING SYSTEMS
AS TO EXTERNAL FIRE EXPOSURE
78P3

STANDARD SPECIFICATION:
ASTM D6509

HUD MR No. 1229

Member of:

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Compabase FS-2H

PRODUCT INFORMATION

SBS modified bitumen base sheet with excellent weatherability, enhancing flexibility and fatigue resistance of hot-applied systems

OVERVIEW

Compabase FS-2H is an SBS modified bitumen base sheet with excellent weatherability, which enhances the overall flexibility and fatigue resistance of hot-applied systems. It is compatible with any of Bitec's SBS modified bitumen membranes. Compabase FS-2H is composed of select distilled bitumen and SBS and reinforced with a high strength fiberglass mat. Compabase FS-2H will eliminate the concerns of compatibility and performance between SBS cap sheets bonded to oxidized bitumen base sheets by heat welding.

Compabase FS-2H also eliminates the concern that the oxidized bitumen component of the roof system is the "weak link" in performance. Oxidized bitumen base sheets are not modified with SBS polymer. These base sheets are hard, brittle and have poor flexibility at lower temperatures in comparison to modified bitumen base sheets. Oxidized bitumen does not blend well with SBS polymer.

Compabase FS-2H, when used in conjunction with any Bitec SBS modified bitumen membrane, provides a high-performance waterproofing system. Bitec's Compabase FS-2H, used in lieu of oxidized bitumen base sheets, and applied with modified SBS cap sheets, provides the waterproofing redundancy necessary for long-term watertight performance.

Advantages of using Compabase FS-2H include:

- System compatibility
- Two-ply modified bitumen system
- Excellent flexibility
- Excellent weatherability
- Easy to apply
- Good dimensional stability
- Enhances modified bitumen system performance
- Keeps your Bitec modified bitumen membrane system in total performance

PACKAGING

Compabase FS-2H is shipped in palletized, shrink wrapped units of 24 rolls per unit.

APPLICATION

Compabase FS-2H is applied using ASTM TYPE III or TYPE IV roofing asphalt or by mechanical attachment. Compabase FS-2H shall be installed having 3" and 4" minimum side and end laps, respectively. Compabase FS-2H may be installed using Bitec-approved elastomeric adhesives. (Projects requiring labor and material warranty must have prior approval from Bitec's manager of technical services if elastomeric adhesives are to be used.)

STORAGE

Rolls should be stored under cover away from direct exposure to the elements until immediately before use. If it becomes necessary to store material on the job site or roof deck, units should be covered with an opaque tarpaulin or similar cover. (Clear or black protective coverings are not acceptable.) Units should also be elevated from the roof deck by placement upon a pallet. If possible, material should be stored away from direct sunlight during storage at the job site. Do not stack units two or more high.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of torching equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to torch application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat-soled shoes and work gloves. Workmen, other than the torch operator, should be no closer than 3' from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

Compabase FS-2H™

PRODUCT INFORMATION

Technical Schedule	
MODIFIER	SBS
APPROX. ROLL SIZE	49.2 ft. x 3.28 ft. (15 m x 1m))
SEAM WIDTH	3" (75mm)
APPROX. COVERAGE	150 ft² (14 m²)
TOP SURFACE	Coal Slag
BOTTOM SURFACE	Coal Slag
NOMINAL THICKNESS	80 mils (2 mm)
NOMINAL WEIGHT	100 lbs (45.5 kg)
REINFORCEMENT	Fiberglass mat
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	passed -30°F (-34.4°C)
TEAR STRENGTH @ 73.4°F (23°C) (ASTM D4073)	MD = 97 lbf/in XMD = 82 lbf/in (MD = 17.01 kN/m XMD = 14.34 kN/m)
SOFTENING POINT (ASTM D36)	240°F (116°C)
TENSILE STRENGTH @ 73.4°F (23°C) (ASTM D5147)	MD = 42 lbf/in XMD = 44 lbf/in (MD 7.36 kN/m XMD 7.71 kN/m)
TENSILE STRENGTH @ 0°F (-17.7°C) (ASTM D5147)	MD = 116 lbf/in XMD = 92 lbf/in (MD 20.31 kN/m XMD 16.11 kN/m)
ELONGATION @ 73.4°F (23°C) (ASTM D5147)	MD = 4% XMD = 4%
ELONGATION @ 0°F (-17.7°C) (ASTM D5147)	MD = 4% XMD = 4%

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Approvals:

FM APPROVED

CLASSIFIED UL

TYPE G2 COATED BASE/PLY SHEET
FOR ROOFING SYSTEMS
AS TO EXTERNAL FIRE EXPOSURE
78P3

STANDARD SPECIFICATION:
ASTM D6163, TYPE I GRADE S

HUD MR No. 1229

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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Compabase FS-2H-FR™

PRODUCT INFORMATION

SBS modified bitumen base sheet with excellent weathering and a fire resistant additive for additional protection

OVERVIEW

Compabase FS-2H-FR is an SBS modified bitumen base sheet with excellent weathering and a fire resistant additive for additional protection. It is compatible with any of Bitec's SBS modified bitumen membranes. Compabase FS-2H-FR is composed of select distilled bitumen and SBS and reinforced with a high strength fiberglass mat. Compabase FS-2H-FR will eliminate the concerns of compatibility and performance between SBS cap sheets bonded to oxidized bitumen base sheets by heat welding.

Compabase FS-2H-FR also eliminates the concern that the oxidized bitumen component of the roof system is the weak link in performance. Oxidized bitumen base sheets are not modified with SBS polymer. These base sheets are hard, brittle and have poor flexibility at lower temperatures in comparison to modified bitumen base sheets. Oxidized bitumen does not blend well with SBS polymer.

Compabase FS-2H-FR, when used in conjunction with any BITEC SBS modified bitumen membrane, provides a high-performance waterproofing system. Bitec's Compabase FS-2H-FR, used in lieu of oxidized bitumen base sheets, and applied with modified SBS cap sheets, provides the waterproofing redundancy necessary for long-term watertight performance.

Advantages of using Compabase FS-2H-FR include:

- System compatibility
- Two-ply modified bitumen system
- Excellent flexibility
- Excellent weatherability
- Easy to apply
- Good dimensional stability
- Enhances modified bitumen system performance
- Keeps your BITEC modified bitumen membrane system in total performance

PACKAGING

Compabase FS-2H-FR is shipped in palletized, shrink wrapped units of 24 rolls per unit.

APPLICATION

BITEC FS-2H-FR is designed to be applied by conventional methods of hot asphalt or cold adhesive application. BITEC PMA-186 or PMA-2000 cold process adhesive should be applied at a rate of 1.5 to 2.5 gallons per 100 ft^2. (The substrate that the cold process adhesive is being applied over may affect consumption rates.)Refer to the adhesive technical data sheets for application methods. Hot asphalt applications require ASTM D312 Type III mopping asphalt for low slope applications or ASTM D312 Type IV for slopes greater than 1" per foot. Hot asphalt should be applied at a rate of 25 lb./100 ft^2. Follow NRCA and the asphalt manufacturers guidelines for EVT requirements when heating asphalt. Refer to the BITEC General Application Instructions in the BITEC Products and Application Guide for proper application techniques. Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes.

STORAGE

Rolls should be stored under cover away from direct exposure to the elements until immediately before use. If it becomes necessary to store material on the job site or roof deck, units should be covered with an opaque tarpaulin or similar cover. (Clear or black protective coverings are not acceptable.) Units should also be elevated from the roof deck by placement upon a pallet. If possible, material should be stored away from direct sunlight during storage at the job site. Do not stack units two or more high.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat weld operator, should be no closer than 3' from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

Compabase FS-2H-FR™

PRODUCT INFORMATION

Technical Schedule	
MODIFIER	SBS
APPROX. ROLL SIZE	49.2 ft. x 3.28 ft. (15.0 m x 1 m)
SEAM WIDTH	3" (75 mm)
APPROX. COVERAGE	150 ft.^{2} (14 m^2)
TOP SURFACE	Coal Slag
BOTTOM SURFACE	Coal Slag
NOMINAL THICKNESS	80 mils (2 mm)
NOMINAL WEIGHT	100 lb (45.5 kg)
REINFORCEMENT	Fiberglass mat
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	passed -30°F (-34.4°C)
TEAR STRENGTH @ 73.4°F (23°C) (ASTM D4073)	MD = 97 lbf/in XMD = 82 lbf/in (MD =16.99 kN/m XMD = 14.36 kN/m)
SOFTENING POINT (ASTM D36)	240°F (116°C)
TENSILE STRENGTH @ 73.4°F (23°C) (ASTM D5147)	MD = 42 lbf/in XMD = 44 lbf/in (MD = 7.36 kN/m XMD = 7.43 kN/m)
TENSILE STRENGTH @ 0°F (-17.7°C) (ASTM D5147)	MD = 116 lbf/in XMD = 92 lbf/in (MD = 20.13 kN/m XMD = 16.11 kN/m)
ELONGATION @ 73.4°F (23°C) (ASTM D5147)	MD = 4% XMD = 4%
ELONGATION @ 0°F (-17.7°C) (ASTM D5147)	MD = 4% XMD = 4%

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Approvals:

FM APPROVED

CLASSIFIED UL

TYPE G2 COATED BASE/PLY SHEET
FOR ROOFING SYSTEMS
AS TO EXTERNAL FIRE EXPOSURE
78P3

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

STANDARD SPECIFICATION:
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Compabase PS-2H™

PRODUCT INFORMATION

Easy to apply SBS base sheet that works in conjunction with SBS cap sheets to provide unsurpassed watertight protection

OVERVIEW

Compabase PS-2H is an easy to apply SBS base sheet that works in conjunction with SBS cap sheets to provide unsurpassed watertight protection. It is composed of select distilled bitumen and SBS and reinforced with polyester fabric. Compabase PS-2H will eliminate the concerns of compatibility and performance between SBS cap sheets bonded to oxidized bitumen base sheets by heat welding. Compabase PS-2H also enhances the overall flexibility and fatigue resistance of hot applied systems.

Compabase PS-2H also eliminates the concern that the oxidized bitumen component of the roof system is the "weak link" in performance. Oxidized bitumen base sheets are not modified with SBS polymer. These base sheets are hard, brittle and have poor flexibility at lower temperatures in comparison to modified bitumen base sheets. Oxidized bitumen does not blend well with SBS polymer.

Compabase PS-2H, when used in conjunction with any BITEC SBS modified bitumen membrane, provides a high-performance waterproofing system.

BITEC Compabase PS-2H, used in lieu of oxidized bitumen base sheets and applied with modified SBS cap sheets, provides the waterproofing redundancy necessary for long term watertight performance.

Advantages of using Compabase PS-2H include:

- System compatibility
- Two-ply modified bitumen system
- Excellent flexibility
- Excellent weatherability
- Easy to apply
- Good dimensional stability
- Enhances modified bitumen system performance
- Keeps your BITEC modified bitumen membrane system in total performance

PACKAGING

Compabase PS-2H is shipped in palletized, shrink wrapped units of 24 rolls per unit.

APPLICATION

Compabase PS-2H is applied by using ASTM D312 TYPE III or ASTM D312 TYPE IV roofing asphalt or by mechanical attachment. Compabase PS-2H shall be installed having 3" and 4" minimum side and end laps, respectively.

Compabase PS-2H shall be installed using BITEC approved elastomeric adhesives PMA 186 and PMA 2000. (Projects requiring labor and material warranty must have prior approval from BITEC's manager of technical services if elastomeric adhesives are to be used.)

STORAGE

Rolls should be stored under cover away from direct exposure to the elements until immediately before use. If it becomes necessary to store material on the job site or roof deck, units should be covered with an opaque tarpaulin or similar cover. (Clear or black protective coverings are not acceptable.)

Units should also be elevated from the roof deck by placement upon a pallet. If possible, material should be stored away from direct sunlight during storage at the job site. Do not stack units two or more high.

SAFETY

Contractor
It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of torching equipment. Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.1101, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

Fire Department Regulations
The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

Personnel
Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workmen, other than the heat weld operator, should be no closer than 3' from open flame.

NOTE: The roofing contractor and his employees are the key to success regarding safety. Safety should always be first!

Compabase PS-2H™

PRODUCT INFORMATION

Technical Schedule	
MODIFIER	SBS
APPROX. ROLL SIZE	49.2 ft x 3.28 ft (15 m x 1 m)
SEAM WIDTH	3" (75 mm)
APPROX. COVERAGE	150 ft² (14 m²)
TOP SURFACE	Coal Slag
BOTTOM SURFACE	Coal Slag
NOMINAL THICKNESS	80 mils (2 mm)
NOMINAL WEIGHT	100 lbs (45.5 kg)
REINFORCEMENT	Polyester with Fiberglass
LOW TEMPERATURE FLEXIBILITY (ASTM D5147)	passed -45°F (-42.7°C)
TEAR STRENGTH @ 73.4°F (23°C) (ASTM D4073)	MD = 126 XMD = 100 (MD = 22.07 kN/m XMD = 18.56 kN/m)
SOFTENING POINT (ASTM D36)	240°F (116°C)
TENSILE STRENGTH @ 73.4°F (23°C) (ASTM D5147)	MD = 83 lbf/in XMD = 63 lbf/in (MD = 14.54 kN/m XMD = 11.03 kN/m)
TENSILE STRENGTH @ 0°F (-17.7°C) (ASTM D5147)	MD = 120 lbf/in XMD = 90 lbf/in (MD = 21.02 kN/m XMD = 15.76 kN/m)
ELONGATION @ 73.4°F (23°C) (ASTM D5147)	MD = 56% XMD = 59%
ELONGATION @ 0°F (-17.7°C) (ASTM D5147)	MD = 55% XMD = 53%

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Approvals:

FM APPROVED

CLASSIFIED UL

TYPE G2 COATED BASE/PLY SHEET
FOR ROOFING SYSTEMS
AS TO EXTERNAL FIRE EXPOSURE
78P3

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

STANDARD SPECIFICATION:
ASTM D6162, TYPE I GRADE S

HUD MR No. 1229

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Beta Base I™

PRODUCT INFORMATION

OVERVIEW

Beta Base I is an oxidized bitumen, fiberglass reinforced base sheet that can be used in modified bitumen and traditional built-up roof systems. It can be mechanically attached, hot applied or applied in approved BITEC elastomeric adhesives. Only mastics and adhesives provided by BITEC should be used with our SBS membranes. Meets ASTM D4601, Type II specifications.

UL Classified R-13231.

Beta Base I contains no filled components (0%) as inorganic fillers. Pinholes in glass felts cause problems in drying roofs. High-quality unfilled asphalt eliminates problems associated with pinholes.

Technical Schedule	
REINFORCEMENT	Fiberglass
ROLL WEIGHT (APPROX.)	75 lbs (35.5 kg)
LENGTH	108 ft (3.28 m)
WIDTH	36 in (0.91 m)
THICKNESS	Approx. 60mils (1.5 mm)
AREA	324 ft.² (30 m²)
SURFACE (TOP/BOTTOM)	Sand/Sand
TENSILE (MD/CD)	55 (155 kN)
FILLER	0%
SIDE LAP	2" (50 mm)

ASTM D4601, TYPE II

HUD MR No. 1229

CLASSIFIED UL R-13231

IDEAL USES

Beta Base is designed for use in both modified bitumen and conventional BUR roof systems requiring UL listed, Type G2 base sheet. Beta Base can be mechanically attached, hot applied or applied in approved Bitec elastomeric adhesives.

Beta Base is produced using oxidized (unmodified bitumen), reinforced with high strength fiberglass mat. Surfac-ing is either talc or sand. Ply stripes are furnished for ease in alignment and as an aid in application. Beta Base covers 300 ft.2 when applied in accordance with specifications.

PACKAGING

Beta Base I comes in palletized units of 20 rolls. Units should be stored inside away from exposure to the elements until immediately before use, if possible. Beta Base I can be used during cold weather if care is taken to warm the rolls by storing them in a warehouse or contained area with ambient temperature of +55° F (+12.7°C).

BITEC
P.O. Box 497
No. 2 Industrial Park Drive, Morrilton, Arkansas
72110 Phone 1-800-535-8597
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Imperflex® USA
PRODUCT INFORMATION

Smooth surface SBS base sheet for use in Imperflex roof systems

OVERVIEW

Imperflex USA is a smooth-surfaced SBS polymer-modified bitumen base sheet or interply, intended specifically for use in Imperflex roof systems. This versatile product can also be used as an underlayment and for waterproofing below grade foundations, footings and basements. Imperflex USA is durable, resists coating slide at normal roof temperatures, is self-sealing and resists water infiltration from snow and ice accumulation.

Imperflex USA is composed of select SBS polymers blended with distilled asphalt and reinforced with high-strength fiberglass mat. The membrane is protected on the bottom by a split, silicon coated release film, which must be removed before installation. The release film prevents the roll from sticking during storage and aids in installation.

The membrane is coated on top with factory installed re-fractory slag or polyethylene film.

NOTE: You must specify which surface you require when ordering.

IDEAL USES

Imperflex USA, in addition to be an excellent base sheet in roof applications, may also be used as:

- Underlayment to protect against water infiltration caused by ice and water dams at penetrations, valleys and edges
- Underlayment for commercial roofing applications
- Waterproofing below-grade foundations, footings and basements

BITEC recommends these products be used only for residential and light commercial roofs. Imperflex products used in light commercial roof applications shall be limited to certain flashing details as well as residential-like applications. All metal and wood surfaces receiving Imperflex must be primed with an approved water based SA primer. Imperflex products may or may not be suitable for certain constructions.

APPLICATION

Bitec strongly recommends the roof system installation provide positive drainage. Imperflex membranes used over wood decks or any other deck suspect of having excessive movement must be cut into half (1/2) lengths before installation. Imperflex membranes must be rolled in using a heavy steel roller to remove air and improve contact with surfaces. Flashing sheets can be rolled in using a seam roller or suitable tool. Imperflex end laps should be sealed using SBS modified bitumen adhesive to improve seal.

All metal must be primed and sandwiched between layers of Imperflex USA and Imperflex MSA. Imperflex products are not designed to fully replace or act as a substitute for polymer modified bitumen heat welded; hot asphalt; or adhesive applied roof membranes and systems. Imperflex products are an adjunct to these products.

Surface Preparation
This product is designed for installation as an underlayment with shingles, tile, metal roofs or as below-grade waterproofing and as the base sheet in various Imperflex roof systems.

All surfaces to be waterproofed with this product must be smooth, dry, and free of projections, bulges and old roofing materials. Dust and moisture on any surface to be waterproofed and/or the membrane itself will prevent proper adhesion and could result in leaks. Never install this product over any old or existing roofing material or existing metal roofs.

This product comes with a factory installed adhesive and does not require other adhesives, hot asphalt or heat welding to be installed. This product cannot be used as a component in any BITEC commercial roofing specifications, except as noted.

Prime all metal, wood, masonry and concrete surfaces using an approved water based SA primer. This primer should be applied according to manufacturer's instructions. However, as an option, an ASTM D41 asphalt primer may be used. ***BITEC strongly recommends the use of water-based primers, specifically BITEC IM-Prime™, manufactured for use with self-adhering membranes.*** Apply according to manufacturers instructions.

Temperature
Apply Imperflex USA in fair weather when the air, deck and membrane temperature is 50°F (10°C) or above. All surfaces receiving membrane shall be completely dry before product installation.

product installation.

Base Sheet Application
For the various base sheet applications, refer to the Imperflex MSA Technical Bulletin.

Roof Underlayment Application

Apply Imperflex USA in shingle fashion a minimum of 24" above the exterior wall of the building or as required by code. Peel back half sheet of release film. Align the mem-brane at the lower edge of the roof and adhere the ex-posed membrane area to the prepared surface. Continue to peel both halves of release film in a manner that will allow smooth and even application of the membrane.

Roll in the membrane using a heavy roller to remove any trapped air. For ice dam protection, apply Imperflex USA to extend above the uppermost expected level of ice dams. End laps should be 6" minimum. Side laps should be 3" minimum.

Valley and Ridge
Remove release film. Center roll over area to be water-proofed. Start at low point and work upward. Press and work membrane outward from center of application area. Side laps should be 3" minimum. End laps should be 6" minimum.

Slope Limitations
Good roofing practice requires all modified bitumen roof systems to result in positive drainage. In all cases, a minimum roof slope of ½" in 12 will be required. Sufficient drainage, for this purpose, is defined as complete and immediate removal of water from the roof surface resulting in no areas of standing water or ponds.

BITEC strongly recommends this minimum slope guideline be adhered to, especially as it pertains to the installation of Imperflex products. The determination of slope and the design of any roof system, as well as the selection of the roof system components, which includes the deck and can include existing roof components, is the sole responsibility of the contractor(s), owner(s) and/or owners' representative(s), and building code official(s).

BITEC will not determine the suitability of Imperflex for use on any construction or that the construction possesses an effective slope prior to product installation.

Imperflex products are manufactured to effectively provide a watertight roof membrane system if installed properly and in accordance to published BITEC standards and industry good roofing practice and on any construction that will accommodate its use.

PRECAUTIONS

- BITEC assumes no responsibility for any loss arising from misuse and/or misapplication of these products
- Imperflex USA shall never be left permanently exposed to the sun and for longer than 60 days
- Imperflex USA is a vapor barrier; proper ventilation must be maintained in moist climates to prevent interior condensation and to minimize ice dams
- Do not install this product on mobile homes, prefabri-cated structures or where the roof deck, attic space, or areas under roof deck lack adequate ventilation
- Do not install this product directly to any type of roof insulation
- Improper use of and/or improper installation of Imper-flex products will void your warranty
- Only mastics and adhesives provided by or approved by BITEC should be used with our SBS membranes.
- Imperflex products should not be used in any interior space due to their asphaltic odor
- Imperflex products can be slippery when wet or cov-ered with frost and/or ice
- Keep Imperflex products and all roofing components away from children and animals
- Other conditions may apply to the use and installation of Imperflex products

NOTE: Please refer to our publication "Roofing Material Specifications and Details" for information not covered in this document.

Please call 800-535-8597 for a copy or to inquire about conditions not covered.

Imperflex® USA
PRODUCT INFORMATION

Technical Schedule	
MODIFIER	SBS
APPROX. ROLL SIZE	45.75 ft. x 3.28 ft (14.5 m x 1 m)
SEAM WIDTH	3" (75 mm)
COVERAGE	150 ft² (14.0 m²)
TOP SURFACE	Film or Coal Slag
BOTTOM SURFACE	Release Film
NOMINAL THICKNESS	80 mils (2.0 mm)
NOMINAL WEIGHT	85 lb (38.6 kg)
REINFORCEMENT	Fiberglass Mat
SOFTENING POINT (ASTM D36)	240°F (116°C)
COLD FLEXIBILITY (ASTM D5147)	14°F (-10°C)
TENSILE STRENGTH (ASTM D5147)	MD = 75 lbf/in (13.13 kN/m) XMD = 60 lbf/in (10.51 kN/m)
ELONGATION (ASTM D5147)	MD = 3% XMD = 3%

This product meets or exceeds ASTM D 1970. All values are approximate.

All Information is given in good faith, but normal tolerances of manufacture and testing will apply. BITEC reserves the right to improve and change its products at any time without prior notice or advice. The use of BITEC products is determined by local conditions and individual requirements of each contract. In consideration of the many factors involved, BITEC cannot be held responsible for the application of its products and for conditions beyond its control. All claims filed against BITEC warranties will be subject to the provisions set forth at the date of warranty issuance, and any addendum thereto. Under no circumstances will BITEC be held liable for any damage, whether personal injury or property damage, which occur during or after the application of the membrane.

Approvals:

CLASSIFIED UL R-13231

STANDARD SPECIFICATION:
ASTM D1970

FLORIDA PRODUCT APPROVAL:
FL 215.1-R6, FL 16347.1-R4

Member of:

NATIONAL ROOFING CONTRACTORS ASSOCIATION

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Rev. 2/2023

ELASTO GL - NB (NAIL - BASE)™

PRODUCT INFORMATION

Polymer Modified Bitumen Nail-Base Sheet

ELASTO GL - NB is made from specially selected asphalt and high-quality SBS polymers. The asphalt and polymers are blended using equipment designed specifically for polymer modifying asphalts.
ELASTO GL - NB is reinforced with high-strength fiberglass mat which yields excellent membrane dimensional stability and ease of application.
ELASTO GL - NB is a base sheet, it should not be used as the cap sheet in any roof system.
ELASTO GL - NB must be installed by nailing to a suitably prepared substrate and by no other method. It can be used as the base sheet in BITEC SBS heat-weld systems and BITEC self-adhered systems.

PERFORMANCE CHARACTERISTICS

- **Water Impermeability**
- **Excellent Low Temperature Flexibility**
- **Thermally Stable**
- **Excellent Adhesion**
- **Resists Most Acids and Bases**
- **Dimensionally Stable**
- **ASTM D4601 Type II**
- **60 mil thickness**

PACKAGING and HANDLING

Each pallet contains 20 rolls, shrink-wrapped using a durable polyethylene bag for stability and protection from the elements. Never double stack palletized units. Store individual rolls on-end Special attention must be paid to storage and handing of this material. Proper deck preparation is essential to providing a base over which the the cap sheet can be successfully installed.

Rev. 3/2023

Technical Schedule	Elasto GL - NB
TOP SURFACE	Film
BOTTOM SURFACE	Coal Slag
LENGTH	64.5 ft (18.6 m)
WIDTH	3.28 ft (1.0 m)
THICKNESS	Approx. 60mils (1.5 mm)
AREA	200 ft2 (19.7 m ^{2})
COLD FLEXIBILTY	-30^{0}C (-22 ^{0}F)
TENSILE (MD /CD)	55 lbf/in (9.6 kN/m)
ELONGATION (MD/CD)	5%
SIDE LAP	3" (75 mm)

All values are approximate.

This product should be installed by a professional roofing contractor using methods published in the most recent installation manual. Contact our Technical Service Department at (800)535-8597 if you have any questions.

APP - GENERAL APPLICATION INSTRUCTIONS

APPLICATION

BITEC APP membranes must be fully adhered to the substrate. BITEC specifications applicable to this product should be consulted prior to installation.

Moisture scan by infrared or capacitance, etc. is required for recover or additional coating requested to extend warranties. Call Bitec Technical Services for additional information.

When applying membrane, the polyethylene film should always be down, facing the roof deck. Prior to application, the membrane should be unrolled completely, aligned and set, before the actual heat welding of the membrane occurs.

The membrane should then be rolled up half way, leaving the other half fully extended. (This will insure that the membrane will remain aligned during the heat welding process.)

Begin heat welding the film surface of the membrane, using a sweeping motion, maintaining even heating. The actual heat welding motion should be done in an "L" configuration, preheating the previously installed membrane lap, then sweeping across the roll face while advancing the roll over the roof surface.

As the roll is advanced, a bead of modified bitumen should be seen flowing from between the lap seam a distance of 1/4" to 3/8" from the overlapped membrane edge. This "flow out" should be consistent and uninterrupted.

It is recommended that all exposed bitumen either be granulated while the bitumen is still hot, or coated with an aluminum coating after cooling. BITEC has granules avaiilable for this procedure.

Seams which are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly heat welding. Upon removal of the hot trowel, slight pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance.

All side and end laps should be a minimum of 3" and 6" respectively. Where end laps are made on APP granule surfaced membranes it is important to do the following:

Warm the granule surfaced membrane only enough to allow the granules to change color slightly, indicating the bitumen has softened enough to permit the granules to sink into the bitumen.

This must be done slowly with care and reduced heat so as not to overheat the membrane which can damage the polyester reinforcement.

When the granules become encapsulated with bitumen, a proper end lap seal can be achieved. Remember that the bitumen must flow together for a properly heat welded seam or end lap. If the top membrane is only stuck over the granules, end lap seams will leak due to improper application.

Protect adjacent areas from scorching where end laps are made by using burn boards, scraps of material or a piece of sheet metal used for that purpose.

Caution should also be exercised not to direct any heat toward previously applied membrane. This will help prevent scorching and/or damaging areas where lap seams or end laps are not being made.

ATTENTION:

- **DO NOT MIX APP PRODUCTS WITH SBS PRODUCTS.**
- **BITEC APP MEMBRANES MAY NOT BE INSTALLED IN HOT ROOFING ASPHALT, COLD PROCESS ADHESIVES OR BY MECHANICAL ATTACHMENT.**
- **BITEC APP MEMBRANES ARE NOT RECOMMENDED FOR USE OVER COAL TAR OR PITCH ROOFS UNLESS THE EXISTING DECK IS SEPARATED FROM THE BITEC MEMBRANE BY A MINIMUM 1/2" THICK, MECHANICALLY ATTACHED RECOVER BOARD.**
- **BITEC DOES NOT ALLOW THE USE OF PLASTIC ROOFER'S CEMENT WITH ITS APP MEMBRANES.**
- **AS WITH ANY ROOFING PROJECT, GOOD ROOFING PRACTICES SHOULD ALWAYS BE FOLLOWED. CONSULT THE BITEC SPECIFICATION AND DETAILS BOOK FOR INFORMATION GOVERNING CERTAIN SYSTEMS.**

TOOLS REQUIRED

Tools needed to apply BITEC APP waterproofing membrane are: a heat welding device having a UL Certified regulator, propane bottle, spatula or round nose roofer's trowel, a roofer's knife, pair of work gloves, flat sole shoes and an ABC dry chemical fire extinguisher.

Before using this product, be sure that all information concerning the installation of this product and safety guidelines pertaining thereto have been read and fully understood. The application of modified membranes requires the use of explosive gas and molten asphalts, which if mishandled can and will cause personal injury and/or property damage.

THE CONTRACTOR

It is the contractor's responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment.

Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.110, which apply to heat weld application. The contractor should be familiar with NFPA 58 "Standard for the Storage and Handling of Liquefied Petroleum Gas" and any other appropriate publications of the National LP Gas Association.

FIRE DEPT. REGULATIONS

The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

FALL PROTECTION

The employer or contractor must determine whether fall protection is required (using the requirements set forth in 29 CFR 1926.501) and, if so, select and provide workers with fall protection systems that comply with the criteria found in 29 CFR 1926.502.

PERSONNEL

Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves. Workers, other than the heat welding operator, should be no closer than 3' from open flame.

APP APPLICATION - Non-Nailable Decks (.1)

If plans or specifications require installation of an APP modified bitumen membrane system over a non-nailable deck, apply in accordance with these specifications. BITEC System Specification Numbers for non-nailable systems, include the (.1) designation to indicate that NO FASTENERS have been used in the system.

1.00 PRIMER

Non-nailable decks are usually some form of concrete and must be primed with BITEC Asphalt Primer 41™ for proper adhesion.

Normally, nailable decks are not primed. Only for unusual situations or with self-adhering membranes would a nailable deck be primed. Contact BITEC Technical Services Department regarding any unusual conditions that require priming a nailable deck.

BITEC Asphalt Asphalt Primer 41™ must also be used on masonry wall surfaces that are to have any membrane flashings adhered to the surface.

Primer is also required on any metal surfaces built into the membrane system. **Wherever primer is used it must be allowed to dry completely before any membrane is applied to the primed surface.**

2.00 ROOF INSULATION

The following insulation types are acceptable for use with APP membranes:

- Perlite
- Wood Fiber
- Polyisocyanurate (ISO)

3.00 CANT STRIPS

At flashing details, where the roof makes the transition from horizontal to a vertical surface, a non-combustible cant strip must be used.

4.00 BASE SHEETS

A minimum of one ply of BITEC BETA BASE™ fiberglass base sheetmust be installed over the insulation or deck with ASTM D312 hot asphalt before the roof membrane is heat weld. Other BITEC Beta Base™ may be used depending on project specifications and/or local code requirements or specification requirements.

5.00 FASTENERS

Fasteners can be used in some non-nailable deck situations, but pre-drilling of the deck will be required before the fastener is installed. Fasteners must be designed and approved for the type deck being used. For specification information regarding situations where fasteners are used in non-nailable decks, refer to BITEC published literature for information regarding this.

Where fasteners are used to secure flashings to vertical surfaces, they must be of an appropriate type for the situation encountered. You may also contact BITEC Technical Services Department at (800) 535-8597 for information regarding fastener selection.

6.00 DRAIN OUTLETS

Drainage outlets shall be installed below the roof deck surface to permit POSITIVE DRAINAGE of the roof deck and to prevent water ponding at the drain rim.

Base ply should be evenly trimmed with the drain flange, followed with a 40" x 40" heat weld collar of BITEC APS-4T smooth surface membrane.

This collar must extend into and be fully adhered to the interior of the drain flange and interior surface. The APP membrane shall be fully adhered to the base ply, flashing collar, and extend into the drain. A 30" x 30" 4 lb LEAD or 16 oz COPPER flashing is optional over the field membrane.

When used, the metal flashing should be primed with BITEC Asphalt Primer 41™ and allowed to thoroughly dry. An APP membrane target flashing should extend 4" beyond the lead or copper flashing.

Clamp rings must be installed and tightened when the membrane is still warm. Broken or missing clamp rings must be replaced. Each drain must have a properly fitted strainer.

7.00 PENETRATION FLASHINGS

Where pipes or other penetrations occur in the roof surface, a collar of smooth APS-4T membrane should be installed over the base ply extending a minimum of 4" beyond the flanges.

A metal flashing shall be installed having a continuous flange, 4" min. width, on top of the APP membrane collar.

The collar should be heated and soft before the flange is set in place. This will provide one seal.

ALL METAL FLASHING FLANGES MUST BE PRIMED WITH BITEC Asphalt Primer 41 AND ALLOWED TO COMPLETELY DRY BEFORE MEMBRANE AND FLASHINGS ARE INSTALLED.

On non-nailable decks where wood blocking is provided, the metal flange must be nailed 3" o.c., 3/4" from the perimeter edge.

When no nailer is provided, sheet metal flashing bases no larger than 18" square may be installed without fasteners.

For bases larger than 18", the bases should be mechanically fastened to the deck with an appropriate type fastener for the type deck being fastened to, and an additional target flashing may be necessary to bury the fastener head.

The field membrane must be fully adhered to the APS-4T membrane collar and primed metal flange. This provides a second seal.

All seams must be troweled and filled with molten bitumen. A top target ply of cap sheet membrane must be installed at each penetration. This provides a third seal.

Where pitch pans are used at penetrations, they must be installed in accordance with BITEC published details at the time of installation.

When other approved prefabricated penetration items are used, they should be installed in accordance with the manufacturer's instructions.

Fill pitch pans using Elastopav® Flashing Compound. Pitch pans should either be fitted with rain collars, and/or the filler should be coated with a protective coating.

8.00 BASE FLASHING

Base flashing plies are to be integrated into the membrane system as additional plies and are to be interleaved with the membrane plies as the system is installed. Therefore, base flashing plies should not just be stacked on top of the membrane plies. Also, since

phased construction is not recommended, all membrane and base flashing plies should be finished daily.

BITEC modified bitumen systems are superior roof systems. The required base flashing system installation described here and detailed in the Construction Details section of the BITEC Roofing Material Specifications and Details Manual, will provide a superior flashing system.

When a base flashing is installed against a wood substrate, BITEC BETA BASE™ fiberglass base sheet must be nailed to the wood or other nailable substrate first. Nails should be 8" o.c. each direction. This provides an anchor sheet to which the base flashing is attached.

Where base flashings are installed against masonry substrates, the surface must be smooth, clean, primed and dry.

When multi-ply systems are installed the interply membrane(s) must also be included in the base flashing extra plies.

All base flashing plies must be securely anchored to the vertical surface and protected at the top by a counterflashing or termination bar, securely anchored and sealed to the wall.

Maximum height for base flashings systems is 24". Flashings above 24" are considered wall flashings, and are not covered by BITEC warranties.

Cold applied mastics may not be used with APP products and should not be necessary when these products are properly installed.

9.00 ROOF DECK

The BITEC System Specification Numbers use (.1) in the specification number to designate that no fasteners have been used in the system.

The roof deck must be smooth, dry, clean and free of sharp projections and depressions, and properly sloped to the outlets. Weak areas or depressed areas should be corrected before roof application begins. The contractor is responsible for determining that the deck substrate is acceptable before roof application begins.

THE ROOFING CONTRACTOR, ARCHITECT, AND THE ENGINEER MUST ALLOW FOR POSITIVE DRAINAGE WHEN DESIGNING THE ROOF DECK OR THE ROOF SYSTEM.

BITEC, INC. DEFINES POSITIVE DRAINAGE AS FOLLOWS: ROOF DECK BECOMES DEVOID OF WATER WITHIN 72 HOURS AFTER LIQUID PRECIPITATION HAS OCCURRED. BITEC WILL NOT BE RESPONSIBLE FOR MEMBRANE DAMAGE AS A RESULT OF INADEQUATE ROOF DECK DRAINAGE.

10.00 FINAL SURFACING

As an option, a BITEC ROOF COATING can be applied to the finished membrane system.

BITEC RECOMMENDS THAT A PERIOD OF AT LEAST 45 DAYS LAPSE BEFORE THE ROOF COATING IS APPLIED. (ROOF COATING MAY BE REQUIRED TO COMPLY WITH THE UL, CODE REQUIREMENTS OR FM SYSTEM REQUIREMENTS.)

11.00 WARRANTIES

Information regarding BITEC warranties may be obtained by calling (800) 535-8597.

Storage and Handling

1. Deliver all roofing materials to the site in original packaging, with factory seals intact. All products are to display the manufacturers product identification labels.
2. Store all canned goods in their original, undamaged containers. Containers are to be stored in a clean, dry location within their specified temperature range.
3. Store roll goods on end placed on pallets in a clean, dry area where they will be protected from the elements prior to installation. Care is to be taken in order to prevent damage to roll ends and edges. Do not double stack modified bitumen products.
4. Do not expose materials to any form of moisture before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
5. Remove the material covers provided by the manufacturer. Use “breathable” type covers such as tarpaulins in order to allow venting and provide protection from weather and moisture. Cover and protect materials at the end of each workday and prior to the arrival of any inclement weather.
6. Do not remove any protective tarpaulins until immediately before the material is to be installed. Materials shall be stored at temperatures above 55°F a minimum of 24 hours prior to application.

APP APPLICATION - Nailable Decks (.2)

If plans or specifications require installation of an APP modified bitumen membrane system over a nailable deck, apply in accordance with these specifications. BITEC System Specification Numbers for nailable systems, include the (.2) designation to indicate that FASTENERS HAVE BEEN USED in the system.

1.00 PRIMER

BITEC Asphalt Primer 41™ must be used on masonry wall surfaces that are to have any membrane flashings adhered to the surface. Primer is also required on any metal surfaces built into the membrane system. Wherever primer is used it must be allowed to dry thoroughly before any membrane is applied to the primed surface.

Normally, nailable decks are not primed. Only for unusual situations or with self-adhering membranes would a nailable deck be primed. Contact BITEC Technical Services Department regarding any unusual conditions that require priming a nailable deck.

2.00 ROOF INSULATION

The following insulation types are acceptable for use with APP membranes:

- Perlite
- Wood Fiber
- Polyisocyanurate (ISO)

3.00 CANT STRIPS

At flashing details, where the roof makes the transition from horizontal to a vertical surface, a non-combustible cant strip must be used.

4.00 BASE SHEETS

A minimum of one ply of BITEC BETA BASE™ fiberglass base sheet must be in- stalled over the insulation or deck with approved fasteners or ASTM D312 hot asphalt before the roof membrane is heat welded. Other base sheets may be used depending on project specifications and/ or local code requirements or specification requirements.

For nailable decks such as wood without any roof insulation, light- weight insulating concrete or gypsum decks, a minimum of one ply of BITEC BETA BASE™ fiberglass-base sheet must be fastened to the deck. As a minimum, the base sheet should be fastened 9" o.c. at the laps and 18" o.c. in two rows along the center of the sheet.

For wood decks, nails must be annular ring shank or spiral shank nails with minimum 1" diameter caps. Smooth shank nails, plastic cap nails and square head nails are not acceptable. Screw and plate fasteners are acceptable.

5.00 FASTENERS

Fasteners used in nailable type decks must be designed and approved for the type deck being used. Fastener application pattern requirements vary according to the type of insulation and deck being used and the wind uplift resistance requirements for the projects geographical region. Consult Factory Mutual Research Corporation (FMRC) publications for fastener approvals governing the project's geographical region, or the FMRC Building Materials Approval Guide, governing BITEC products and system approvals.

Typically, screw and plate type fasteners are required to secure roof insulation boards to metal decks.

Plastic stress plates should not be used in situations where a heat weld applied membrane is being applied over the plates.

Nails must be annular ring shank or spiral shank nails with min. 1" diameter caps. Smooth shank nails, plastic cap nails and square head nails are not acceptable. For some applications, larger caps may be required.

Some nailable decks may require specialized fasteners for fastening membrane plies or roof insulation. Consult insulation manufacturers, fastener manufacturers or BITEC Technical Services Department for additional information.

Where fasteners are used to secure flashings to vertical surfaces, they must be of an appropriate type for the situation encountered.

Poured decks such as lightweight insulating concrete and gypsum deck will require specialized fasteners and the fastening pattern is normally determined by engineering calculations in accordance with publication ASCE 7-22 for specific geographical areas and environmental conditions to meet certain wind uplift resistance requirements.

You may also contact BITEC Technical Services Department at (800) 535-8597 for information regarding fastener selection.

6.00 DRAIN OUTLETS

Drainage outlets shall be installed below the roof deck surface to permit POSITIVE DRAINAGE of the roof deck and to prevent water ponding at the drain rim. Base ply should be evenly trimmed with the drain flange, followed with a 40" x 40" heat weld collar of BITEC APS-4T smooth surface membrane. This collar must extend into and be fully adhered to the drain flange.

The APP membrane shall be fully adhered to the base ply, flashing collar, and extend into the drain. A 30" x 30", 4 lb lead or 16 oz copper flashing is optional over the field membrane. When used, the metal flashing should be primed with BITEC Asphalt Primer 41™, and allowed to thoroughly dry. An APP membrane target flashing must be installed to extend 4" beyond the lead or copper flashing.

Clamp rings should be installed and tightened while the membrane is still warm. Broken or missing clamp rings must be replaced. Each drain must have a properly fitted strainer.

7.00 PENETRATION FLASHINGS

Where pipes or other penetrations occur in the roof surface, a collar of smooth APS-4T membrane should be installed over the base ply extending a minimum of 4" beyond the flanges. A metal flashing shall be installed having a continuous flange, 4" minimum width, on top of the APP membrane collar. The collar should be heated and soft before the flange is set in place. This will provide one seal.

ALL METAL FLASHING FLANGES MUST BE PRIMED WITH BITEC Asphalt Primer 41™ AND ALLOWED TO DRY BEFORE MEMBRANE AND FLASHINGS ARE INSTALLED.

On nailable decks where wood blocking is provided, the metal flange must be nailed 3" o.c., ¾" from the perimeter edge. When no nailer provisions are provided, sheet metal flashing bases no larger than 18" square may be installed without fasteners. For bases larger than 18", the bases should be mechanically fastened to the deck with an appropriate type fastener, and an additional target flashing may be necessary to bury the fastener head.

On nailable decks, the metal flange must be nailed 3" o.c., 3/4" from the perimeter edge.

The field membrane must be fully adhered to the APS-4T membrane collar and primed metal flange. This provides a second seal. All seams must be troweled and filled with molten bitumen. A top target ply of cap sheet membrane must be installed at each penetration. This provides a third seal.

Where pitch pan type flashings are used at penetrations, they must be installed in accordance with BITEC BITEC's published detail. When other approved prefabricated penetration items are used, they should be installed in accordance with that manufacturers instructions.

All exposed modified bitumen "bleed out" must be surfaced with granules while the bitumen is still hot, or coated later for UV protection.

Fill pitch pans using Elastopav® Flashing Compound. Pitch pans should be fitted with rain collars.

8.00 BASE FLASHING

Base flashing plies are to be integrated into the membrane system as additional plies and are to be interleaved with the membrane plies as the system is installed. Therefore, base flashing plies should not just be stacked on top of the membrane plies.

Also, since phased construction is not recommended, all membrane and base flashing plies should be finished daily.

BITEC modified bitumen systems are superior roof systems and the required base flashing system installation described here and detailed in the Construction Details section of the BITEC Roofing Material Specifications and Details Manual, will provide a much superior flashing system.

When a base flashing is installed against a wood substrate, BITEC BETA BASE™ fiberglass base sheet must be nailed to the wood or other nailable substrate first. Nails should be 8" o.c. each direction. This provides an anchor sheet to which the base flashing is attached. Flashing membranes should never be adhered directly to a wood surface.

Where base flashings are installed against masonry substrates, the surface must be smooth, clean, primed and dry.

When multi-ply systems are installed the interply membrane(s) must also be

included in the base flashing extra plies.

All base flashing plies must be securely anchored to the vertical surface and protected at the top by a counter-flashing or termination bar securely anchored and sealed to the wall.

Maximum height for base flashings systems is 24". Flashings above 24" are considered wall flashings, not covered in BITEC warranties.

Cold applied mastics may not be used with APP products and should not be necessary when these products are properly installed.

All exposed bitumen must be surfaced with granules while still hot or coated for UV protection.

9.00 ROOF DECK

The BITEC System Specification Numbers use (.2) in the specification number to designate that fasteners have been used in the system.

The roof deck must be smooth, dry, clean and free of sharp projections and depressions, and properly sloped to the outlets. Weak or depressed areas should be corrected before roof application begins. The contractor is responsible for determining that the deck substrate is acceptable before roof application begins.

THE ROOFING CONTRACTOR, ARCHITECT AND THE ENGINEER MUST ALLOW FOR POSITIVE DRAINAGE WHEN DESIGNING THE ROOF DECK OR ROOF SYSTEM.

BITEC DEFINES POSITIVE DRAINAGE AS FOLLOWS: ROOF DECK BECOMES DEVOID OF WATER WITHIN 72 HOURS AFTER LIQUID PRECIPITATION HAS OCCURRED. BITEC WILL NOT BE RESPONSIBLE FOR MEMBRANE DAMAGE AS A RESULT OF INADEQUATE ROOF DECK DRAINAGE.

10.00 FINAL SURFACING

As an option, a BITEC APPROVED ROOF COATING can be applied to the finished membrane system.

BITEC RECOMMENDS THAT A PERIOD OF AT LEAST 45 DAYS LAPSE BEFORE THE ROOF COATING IS APPLIED. (ROOF COATING MAY BE REQUIRED TO COMPLY WITH UL OR FM SYSTEM REQUIREMENTS.)

11.00 WARRANTIES

Information regarding BITEC warranties may be obtained from BITEC Technical Services Department by calling (800) 535-8597.

Storage and Handling

1. Deliver all roofing materials to the site in original packaging, with factory seals intact. All products are to display the manufacturers product identification labels.
2. Store all canned goods in their original, undamaged containers. Containers are to be stored in a clean, dry location within their specified temperature range.
3. Store roll goods on end placed on pallets in a clean, dry area where they will be protected from the elements prior to installation. Care is to be taken in order to prevent damage to roll ends and edges. Do not double stack modified bitumen products.
4. Do not expose materials to any form of moisture before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
5. Remove the material covers provided by the manufacturer. Use “breathable” type covers such as tarpaulins in order to allow venting and provide protection from weather and moisture. Cover and protect materials at the end of each workday and prior to the arrival of any inclement weather.
6. Do not remove any protective tarpaulins until immediately before the material is to be installed. Materials shall be stored at temperatures above 55°F a minimum of 24 hours prior to application.

SBS - GENERAL APPLICATION INSTRUCTIONS

APPLICATION

BITEC SBS membranes must be fully adhered to the substrate. BITEC specifications applicable to this product should be consulted prior to installation.

Moisture scan by infrared or capacitance, etc. is required for recover or additional coating requested to extend warranties. Call Bitec Technical Services for additional information.

Moisture scans by infrared or capacitance, etc. Scanners will be required for recovers or additional coating requested to extend warranties. Call Bitec Technical Services for additional information.

When applying the membrane, the fine sand surface should always be down facing the roof deck.

Prior to application, the membrane should be unrolled completely, aligned, allowed to relax and set before the actual installation of the membrane occurs.

The membrane should then be rolled up half way, leaving the other half fully extended. (This will insure that the membrane will remain aligned during the installation process.)

SBS membranes are designed to be applied by conventional methods of hot mopping, using ASTM D312 TYPE lll mopping asphalt. ASTM TYPE IV should be used on slopes greater than 3" in 12".

The Roofing Contractor shall not let the mopping asphalt temperature fall below 450°F, or overheat the asphalt to overcome rapid cooling. BITEC recommends that mopping asphalt EVT requirements be met when applying insulation or fiberglass ply sheets.

For more information on proper asphalt temperatures, refer to “BITEC Roofing Material Specifications and Details” manual, Page. 16, Section 1.04.

Mopping of base and cap sheet plies shall be done at a rate of 25 lb/100 ft^2 in a solid mopping of hot asphalt. It is essential that the asphalt be applied uniformly at a distance not to exceed 4' in front of the advancing roll surface.

A continuous, ¼" bead of uninterrupted mopping asphalt shall be seen coming from the end and side laps. Seams which are not fully bonded can be repaired by inserting a hot trowel between the affected seam and lightly heat welding. Upon removal of the hot trowel, pressure should be applied to the top ply, forcing the modified bitumen to flow out the desired distance.

All side and end laps should be a minimum of 4" and 6" respectively.

If the membrane is loose laid, an area of 40" each side of the end lap should be fully bonded to roof surface.

It is recommended that all exposed bitumen either be granulated while the bitumen is still hot, or coated with an aluminum coating after cooling.

Gravel surfacing is an option for SBS modified bitumen membrane systems and a BITEC requirement for some systems. See specific application requirements.

DO NOT MIX APP PRODUCTS WITH SBS PRODUCTS.

BITEC SBS HOT APPLIED MEMBRANES CAN BE INSTALLED IN HOT ROOFING ASPHALT OR IN BITEC APPROVED COLD PROCESS ADHESIVES.

BITEC SBS MEMBRANES ARE NOT RECOMMENDED FOR USE OVER COAL TAR OR PITCH ROOFS UNLESS THE EXISTING DECK IS SEPARATED FROM THE BITEC MEMBRANE BY A MINIMUM 2" THICK, MECHANICALLY ATTACHED RECOVER BOARD.

BITEC DOES NOT ALLOW THE USE OF PLASTIC ROOFER’S CEMENT WITH ANY OF ITS MEMBRANES.

AS WITH ANY ROOFING PROJECT, GOOD ROOFING PRACTICES SHOULD ALWAYS BE FOLLOWED. CONSULT THE BITEC SPECIFICATION AND DETAILS BOOK FOR INFORMATION GOVERNING CERTAIN SYSTEMS.

TOOLS REQUIRED

Tools needed to apply BITEC SBS waterproofing membranes are: a roofer’s kettle, lug bucket, roofer’s mop, dial thermometer, spatula or round nose roofer’s trowel, a roofer’s knife, pair of work gloves, flat sole shoes and an ABC dry chemical fire extinguisher at the kettle and on the roof.

BEFORE USING THIS PRODUCT, BE CERTAIN THAT ALL INFORMATION CONCERNING THE INSTALLATION OF THIS PRODUCT AND SAFETY GUIDELINES PERTAINING THERETO HAVE BEEN READ AND FULLY UNDERSTOOD.

THE APPLICATION OF MODIFIED BITUMEN MEMBRANES REQUIRES THE USE OF EXPLOSIVE GAS AND MOLTEN ASPHALTS, WHICH IF MISHANDLED CAN AND WILL CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

THE CONTRACTOR

It is the contractor’s responsibility to observe all fire prevention policies and practices, to train, instruct and warn employees on the use of heat welding equipment.

Follow OSHA and NRCA provisions for fire protection, including but not limited to those listed in OSHA 1910.151, 155, 156, 157, and 1910.110, which apply to heat weld application. The contractor should be familiar with NFPA 58 “Standard for the Storage and Handling of Liquefied Petroleum Gas” and any other appropriate publications of the National LP Gas Association.

FIRE DEPT. REGULATIONS

The contractor should be familiar with all local fire codes in his area. The contractor is responsible for obtaining all necessary permits or certificates before any work is started.

PERSONNEL

Proper clothing should be worn at all times while installing any modified membrane. Long sleeve shirt, long pants, leather or durable flat sole shoes and work gloves.

THE ROOFING CONTRACTOR AND HIS EMPLOYEES ARE THE KEY TO SUCCESS REGARDING SAFETY... SAFETY SHOULD ALWAYS BE FIRST!

SBS APPLICATION - Non-Nailable Decks (.1)

If plans or specifications require installation of an SBS modified bitumen membrane system over a non-nailable deck, apply in accordance with these specifications. BITEC System Specification Numbers for non-nailable systems, include the (.1) designation to indicate that NO FASTENERS HAVE BEEN USED in the system.

1.00 PRIMER

Non-nailable decks are usually a form of concrete and must be primed with BITEC Asphalt Primer 41™ for proper adhesion.

Only for unusual conditions or with self-adhering membranes would a nailable deck be primed. Contact the BITEC Technical Service Department regarding any unusual conditions that would not allow priming of a non-nailable deck.

BITEC Asphalt Primer 41™ must also be used on masonry wall surfaces that are to have any membrane flashings adhered to the surface. Primer is also required on any metal surfaces built into the membrane system. Wherever primer is used, it must be allowed to dry thoroughly before any membrane is applied to the primed surface.

2.00 ROOF INSULATION

The following insulation types are acceptable for use with SBS membranes:

- Perlite
- Wood Fiber
- Polyisocyanurate (ISO)

3.00 CANT STRIPS

At flashing details, where the roof makes the transition from horizontal to a vertical surface, a non-combustible cant strip must be used.

4.00 BASE SHEETS

A minimum of one ply of BITEC BETA BASE™ base sheet must be installed over the insulation or deck with ASTM D312 hot asphalt before the roof membrane is heat weld.

Other base sheets may be used depending on project specifications and/or local code requirements or specification requirements.

5.00 FASTENERS

Fasteners can be used with some non-nailable decks situations, but pre-drilling of the deck will be required before the fastener is installed. Fasteners must be designed and approved for the type deck being used.

For specification information regarding situations where fasteners are used in non-nailable decks, see the specification for Nailable Decks.

Where fasteners are used to secure flashings to vertical surfaces, they must be of an appropriate type for the situation encountered. You may also contact BITEC Technical Services Department at (800) 535-8597 for information regarding fastener selection.

6.00 DRAIN OUTLETS

Drainage outlets shall be installed below the roof deck surface to permit POSITIVE DRAINAGE of the roof deck and to prevent water ponding at the drain rim.

Base ply should be evenly trimmed with the drain flange, followed with a 40" x 40" collar of BITEC SBS smooth surface membrane set in hot asphalt.

This collar must extend into and be fully adhered to the interior of the drain flange and interior surface. The SBS membrane shall be fully adhered to the base ply, flashing collar, and extend into the drain. A 30" x 30", 4 lb lead or 16 oz copper flashing is optional over the field membrane.

When used, the metal flashing should be primed with BITEC Asphalt Primer 41™ and allowed to completely dry before being set in hot asphalt.

An SBS membrane target flashing must then be installed to extend 4" beyond the lead or copper flashing (when used) and be set in hot asphalt or applied in SBS modified flashing cement. This top target flashing at roof drains should be at least 30" x 30" at roof drains when metal flashings are not used.

Clamp rings should be installed and tightened while the membrane is still warm. Broken or missing clamp rings must be replaced.

Repair or replace clamp bolts and accessories as necessary. Each drain should have a properly fitted strainer.

7.00 PENETRATION FLASHINGS

Where pipes or other penetrations occur in the roof surface, a collar of smooth SPS-3H membrane should be installed over the base ply, extending a minimum of 4" beyond the flanges.

A metal flashing shall be installed having a continuous flange, 4" minimum width, on top of the SBS membrane collar. The collar should be set in hot asphalt. The sheet metal flashing flange is then set in hot asphalt and securely fastened when possible. This will provide one seal.

ALL METAL FLASHING FLANGES MUST BE PRIMED WITH BITEC Asphalt Primer 41™ AND ALLOWED TO DRY BEFORE MEMBRANE AND FLASHINGS ARE INSTALLED.

On non-nailable decks where wood blocking is provided, the metal flange must be nailed 3" o.c., 3/4" from the perimeter edge. When no nailer provisions are provided, sheet metal flashing bases no larger than 18" square may be installed without fasteners.

For bases larger than 18", the bases should be mechanically fastened to the deck with appropriate type fasteners, and an additional target flashing may be necessary to bury the fastener head.

The field membrane must be fully adhered to the SPS-3H membrane collar and primed metal flange with hot asphalt. This provides a second seal. All seams must be troweled and filled with molten bitumen or SBS modified flashing cement.

A top target ply of cap sheet membrane must be installed at each penetration. This provides a third seal.

Where pitch pan type flashings are used at penetrations, they must be installed in accordance with BITEC's published detail. When other approved prefabricated penetration items are used, they should be installed in accordance with that manufacturers instructions.

All exposed asphalt, modified bitumen or mastic must be surfaced with granules while still hot or coated for UV protection.

Use Elastopav® Flashing Compound to fill pitch pans. Pitch pans should either be fitted with rain collars, and /or the filler should be coated with a protective coating.

8.00 BASE FLASHING

Base flashing plies are to be integrated into the membrane system as additional plies and are to be interleaved with the membrane plies as the system is installed. Therefore, base flashing plies should not just be stacked on top of the membrane plies. Also, since phased construction is not recommended, all membrane and base flashing plies should be finished daily.

BITEC modified bitumen systems are superior roof systems. The required base

flashing system installation described here and detailed in the Construction Details section of the BITEC Roofing Material Specifications and Details Manual, will provide a much superior flashing system.

When a base flashing is installed against a wood substrate, a BITEC BETA BASE™ fiberglass base sheet must be nailed to the wood or other nailable substrate first. Nails should be 8" o.c. each direction. This provides an anchor sheet to which the base flashing is attached. Flashing membranes should never be adhered directly to a wood surface.

The top ply of base flashing on SBS systems may be heat weld applied SPM-4.5T for a cleaner application.

Where base flashings are installed against masonry substrates, the surface must be smooth, clean, primed and dry.

When multi-ply systems are installed the interply membrane(s) must also be included in the base flashing extra plies.

All base flashing plies must be securely anchored to the vertical surface and protected at the top by a counterflashing or termination bar securely anchored and sealed to the wall.

Maximum height for base flashings systems is 24". Flashings above 24" are considered wall flashings, not covered in BITEC warranties.

Cold applied SBS modified mastics may not be used with any products that have a plastic film on the back side. They are designed for heat weld application only.

All exposed asphalt, modified bitumen or mastic must be surfaced with granules while still hot, or coated later for UV protection.

9.00 ROOF DECK

The BITEC System Specification Numbers use (.1) in the specification number to designate that no fasteners have been used in the system.

The roof deck must be smooth, dry, clean and free of sharp projections and depressions, and properly sloped to the outlets. Weak areas or depressed areas should be corrected before roof application begins. The contractor is responsible for determining that the deck substrate is acceptable before roof application begins.

THE ROOFING CONTRACTOR, ARCHITECT AND ENGINEER MUST ALLOW FOR POSITIVE DRAINAGE WHEN DESIGNING THE ROOF DECK OR ROOF SYSTEM.

BITEC DEFINES POSITIVE DRAINAGE AS FOLLOWS: ROOF DECK BECOMES DEVOID OF WATER WITHIN 72 HOURS AFTER LIQUID PRECIPITATION HAS OCCURRED. BITEC WILL NOT BE RESPONSIBLE FOR MEMBRANE DAMAGE AS A RESULT OF INADEQUATE ROOF DECK DRAINAGE.

10.00 FINAL SURFACING

As an option, a BITEC APPROVED ROOF COATING can be applied to the finished membrane system.

BITEC RECOMMENDS THAT A PERIOD OF AT LEAST 45 DAYS LAPSE BEFORE THE ROOF COATING IS APPLIED. (ROOF COATING MAY BE REQUIRED TO COMPLY WITH UL OR FM SYSTEM REQUIREMENTS).

Gravel surfacing is an option for SBS modified bitumen roof membrane systems and a BITEC requirement for some systems.

When gravel surfacing is required or specified, it should be spread in ASTM D312 Type III asphalt immediately upon application of the hot asphalt. If the asphalt cools too much the gravel will not embed in the asphalt properly and will eventually wash or wear away prematurely, leaving the membrane system without any surfacing protection.

Gravel used should meet ASTM D 1863-93 requirements, (Re-approved in 1996) and be applied at a minimum rate of 400 pounds per 100 square feet. Additional gravel may be required, depending on the specific gravel source, actual size available and how well it provides coverage.

11.00 WARRANTIES

Information regarding BITEC warranties may be obtained by calling (800) 538597.

Storage and Handling

1. Deliver all roofing materials to the site in original packaging, with factory seals intact. All products are to display the manufacturers product identification labels.
2. Store all canned goods in their original, undamaged containers. Containers are to be stored in a clean, dry location within their specified temperature range.
3. Store roll goods on end placed on pallets in a clean, dry area where they will be protected from the elements prior to installation. Care is to be taken in order to prevent damage to roll ends and edges. Do not double stack modified bitumen products.
4. Do not expose materials to any form of moisture before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
5. Remove the material covers provided by the manufacturer. Use “breathable” type covers such as tarpaulins in order to allow venting and provide protection from weather and moisture. Cover and protect materials at the end of each workday and prior to the arrival of any inclement weather.
6. Do not remove any protective tarpaulins until immediately before the material is to be installed. Materials shall be stored at temperatures above 55°F a minimum of 24 hours prior to application.

SBS APPLICATION - Nailable Decks (.2)

If plans or specifications require installation of an SBS modified bitumen membrane system over a nailable deck, apply in accordance with these specifications. The BITEC System Specification Numbers for nailable systems, include the (.2) designation to indicate that FASTENERS HAVE BEEN USED in the system.

1.00 PRIMER

BITEC Asphalt Primer 41™ must be used on masonry wall surfaces that are to have any membrane flashings adhered to the surface. Primer is also required on any metal surfaces built into the membrane system. Wherever primer is used, it must be allowed to dry thoroughly before any membrane is applied to the primed surface.

Nailable decks normally are not primed. Only for unusual conditions or with self-adhering membranes would a nailable deck be primed.Contact BITEC Technical Service Department regarding any unusual conditions that require priming a nailable deck.

2.00 ROOF INSULATION

The following insulation types are acceptable for use with SBS membranes:

- Perlite
- Wood Fiber
- Polyisocyanurate (ISO)

3.00 CANT STRIPS

At flashing details, where the roof makes the transition from horizontal to a vertical surface, a non-combustible cant strip must be used.

4.00 BASE SHEETS

A minimum of one ply of BITEC BETA BASE™ base sheet must be installed over roof insulation, set in ASTM D312 hot asphalt before the roof membrane is installed. Other base sheets may be used depending on project specifications and/or local code requirements or specification requirements.

For nailable decks such as wood without any roof insulation, light- weight insulating concrete or gypsum decks, a minimum of one ply of BITEC BETA BASE™ base sheet must be fastened to the deck. As a minimum, the base sheet should be fastened 9" o.c. at the laps and 18" o.c. in two rows along the center of the sheet. For wood decks, nails must be annular ring shank or spiral shanked nails with minimum 1" diameter caps. Smooth shank nails, plastic cap nails and square head nails are not acceptable. Screw and plate fasteners are acceptable.

5.00 FASTENERS

Fasteners used with nailable type decks must be designed and approved for the type deck being used. Fastener application pattern requirements vary according to the type of insulation and deck being used and the wind uplift resistance requirements for the projects geographical region.

Consult Factory Mutual Research Corporation (FMRC) publications for fastener approvals governing the project's geographical region, or the FMRC Approval Guide, governing BITEC products and system approvals.

Typically, screw and plate type fasteners are required to secure roof insulation boards to metal decks.

Plastic stress plates should not be used in situations where a heat weld applied membrane is being applied over the plates.

Nails must be annular ring shank or spiral shanked nails with minimum 1" diameter caps. Smooth shank nails, plastic cap nails and square head nails are not acceptable. For some applications, larger caps may be required.

Some nailable decks may require specialized fasteners for fastening membrane plies or roof insulation. Consult insulation manufacturers, fastener manufacturers or the BITEC Technical Services Department for additional information.

Where fasteners are used to secure flashings to vertical surfaces, they must be of an appropriate type for the situation encountered.

Poured decks such as lightweight insulating concrete and gypsum deck will require specialized fasteners and the fastening pattern is normally determined by engineering calculations in accordance with publication ASCE 7-22 for specific geographical areas and environmental conditions to meet certain wind uplift resistance requirements.

You may also contact BITEC Technical Services Department at (800) 535-8597 for information regarding fastener selection.

6.00 DRAIN OUTLETS

Drainage outlets shall be installed below the roof deck surface to permit POSITIVE DRAINAGE of the roof deck and to prevent water ponding at the drain rim. Base ply should be evenly trimmed with the drain flange, followed with a 40" x 40" collar of BITEC SPS-3H smooth surface membrane set in hot asphalt.

This collar must extend into and be fully adhered to the interior of the drain flange and interior surface. The SPS-3H membrane shall be fully adhered to the base ply, flashing collar, and extend into the drain.

A minimum 30" x 30", 4 lb lead or 16 oz copper flashing is optional over the field membrane. When used, the metal flashing should be primed with BITEC Asphalt Primer 41™, and allowed to thoroughly dry before being set in hot asphalt.

An SBS membrane target flashing must then be installed to extend 4" beyond the lead or copper flashing (when used) and be set in hot asphalt or applied in PMA-2000 flashing cement. This top target flashing at roof drains should be at least 30" x 30" at roof drains when metal flashings are not used.

A clamp ring must be installed and tightened while the membrane is still warm. Broken or missing clamp rings must be replaced. Each drain should have a properly fitted strainer.

7.00 PENETRATION FLASHINGS

Where pipes or other penetrations occur in the roof surface, a collar of smooth SPS-3H membrane should be installed over the base ply extending a minimum of 4" beyond the flanges. A metal flashing shall be installed having a continuous flange, 4" minimum width, on top of the SBS membrane collar. The collar should be set in hot asphalt. The sheet metal flashing flange is then set in hot asphalt and securely fastened when possible. This will provide one seal.

ALL METAL FLASHING FLANGES MUST BE PRIMED WITH BITEC Asphalt Primer 41™ AND ALLOWED TO COMPLETELY DRY BEFORE MEMBRANE AND FLASHINGS ARE INSTALLED.

On nailable decks where wood blocking is provided, the metal flange must be nailed 3" o.c., 3/4" from the perimeter edge. When no nailer provisions are provided, sheet metal flashing bases no larger than 18" square may be installed without fasteners.

For bases larger than 18", the bases should be mechanically fastened to the deck with an appropriate type fastener, and an additional target flashing may be necessary to bury the fastener head.

The field membrane must be fully adhered to the SPS-3H membrane collar and primed metal flange with hot asphalt. This provides a second seal. All seams must be troweled and filled with molten bitumen or PMA 2000. A top target ply of cap sheet membrane must be installed at each penetration. This provides a third seal.

Where pitch pan type flashings are used at penetrations, they must be installed in accordance with BITEC's published detail. When other approved prefabricated penetration items are used, they should be installed in accordance with that manufacturers instructions.

All exposed asphalt, modified bitumen or mastic must be surfaced with granules while still hot or later coated for UV protection.

Use Elastopav® Flashing Compound to fill pitch pans. Pitch pans should either be fitted with rain collars, and /or the filler should be coated with a protective coating.

8.00 BASE FLASHING

Base flashing plies are to be integrated into the membrane system as additional plies and are to be interleaved

When a base flashing is installed against a wood substrate, BITEC BETA BASE™ fiberglass base sheet must be nailed to the wood or other nailable substrate first. Nails should be 8" o.c. each direction. This provides an anchor sheet to which the base flashing is attached. Flashing membranes should never be adhered directly to a wood surface.

The top ply of base flashing on SBS systems may be heat weld applied SPM-4.5T for a cleaner application.

Where base flashings are installed against masonry substrates, the surface must be smooth, clean, primed and dry.

When multi-ply systems are installed the interply membrane(s) must also be included in the base flashing extra plies.

All base flashing plies must be securely anchored to the vertical surface and protected at the top by a counterflashing or termination bar securely anchored and sealed to the wall.

Maximum height for base flashings systems is 24". Flashings above 24" are considered wall flashings, not covered in BITEC warranties.

Cold applied SBS modified mastics may not be used with any products that have a plastic film on the back side. They are designed for heat weld application only. All exposed asphalt, modified bitumen or mastic must be surfaced with granules while still hot or coated for UV protection.

9.00 ROOF DECK

The BITEC System Specification Numbers use (.2) in the specification number to designate that fasteners have been used in the system.

The roof deck must be smooth, dry, clean and free of sharp projections and depressions, and properly sloped to the outlets. Weak areas or depressed areas should be corrected before roof application begins.

The contractor is responsible for determining that the deck substrate is acceptable before roof application begins.

THE ROOFING CONTRACTOR, THE ARCHITECT AND THE ENGINEER MUST ALLOW FOR POSITIVE DRAINAGE WHEN DESIGNING THE ROOF DECK OR ROOF SYSTEM.

BITEC DEFINES POSITIVE DRAINAGE AS FOLLOWS: ROOF DECK BECOMES DEVOID OF WATER WITHIN 72 HOURS AFTER LIQUID PRECIPITATION HAS OCCURRED.

BITEC WILL NOT BE RESPONSIBLE FOR MEMBRANE DAMAGE AS A RESULT OF INADEQUATE ROOF DECK DRAINAGE.

ROOF COATING can be applied to the finished membrane system.

BITEC RECOMMENDS THAT A PERIOD OF AT LEAST 45 DAYS LAPSE BEFORE THE ROOF COATING IS APPLIED. (ROOF COATING MAY BE REQUIRED TO COMPLY WITH UL OR FM SYSTEM REQUIREMENTS.)

Gravel surfacing is an option for SBS modified bitumen roof membrane systems and is a BITEC requirement for some systems.

When gravel surfacing is required or specified, it should be spread in ASTM D312 Type III asphalt immediately upon application of the hot asphalt.

If the asphalt cools too much the gravel will not embed in the asphalt properly and will wash or wear away prematurely, leaving the surface membrane system without any protection.

Gravel used should meet ASTM D 1863-93 requirements (Reapproved in 1996) and be applied at a minimum rate of 400 lb per 100 ft^2. Additional gravel may be required, depending on the specific gravel source, actual size available and how well it provides coverage.

11.00 WARRANTIES

Information regarding BITEC warranties may be obtained from BITEC Technical Services Department by calling (800) 535-8597.

COLD ADHESIVE APPLIED SYSTEMS

INTRODUCTION

BITEC cold adhesive applied SBS modified bitumen membranes will give better security and performance than conventional roll roofing products made with oxidized asphalt.

Their application range covers slopes and deck configurations from ¼"/ft up to 3"/ft.

A specially formulated cold adhesive is used in lieu of hot asphalt to install the membrane. After a short curing time the cold applied adhesive applied system forms a flexible, durable, watertight system that will outlast conventional roll roofing systems.

These products are intended for use by a professional roofing contractor having previous experience in the application methods described.

PRODUCTS

Any coal slag surfaced BITEC modified bitumen product can be installed using PMA 168 and PMA 2000. These membranes are tear and puncture resistant, have excellent flexibility and performance as opposed to conventional organic and fiberglass reinforced blown asphalt coated membranes.

BITEC SBS modified bitumen membranes are composed of special asphalt modified with SBS thermoplastic rubber. A high strength fiberglass or polyester reinforcement is used as the support.

ADHESIVES

BITEC PMA 186 field grade SBS modified bitumen adhesive is recommended for use on low slope applications from ¼"/ft up to ¾"/ft, while PMA 2000 trowel grade SBS modified bitumen adhesive is recommended for slopes above ¾"/foot, for base flashings and some roof penetrations. Both are fibrated, heavy bodied adhesives, blended with the highest quality bitumen and contain an SBS thermoplastic rubber as a modifier, ensuring complete compatibility between the membranes and the adhesive.

Do not use these cold adhesive products on coal tar pitch roofs.

GENERAL REQUIREMENTS

Follow all good roofing practices, BITEC specifications and detail when installing
adhesive applied mebranes. Depending upon specific project requirements, roof insulation and base sheets may require mechanical attachment in lieu of adhesive securement.

Use only BITEC SBS membranes having coal slag on the bottom surface with this application. BITEC APP membranes, heat weld grade SBS membranes or fiberglass ply sheets cannot be installed in cold adhesive.

Cold adsive may be applied at temperatures between 55° F and 120° F. Only BITEC PMA 186, PMA 2000 or approved adhesives should be used to install these membranes. Follow the adhesive manufacturer's application rates when installing these membranes. Typically, applications rates will be 2 to 2.5 gallons per 100 ft². Apply adhesive using spray equipment, a notched squeegee with notches ¼" long, ⅛" deep and spaced 1" on center or by using a three knot brush or a properly notched trowel.

BITEC PMA 2000 trowel grade flashing adhesive should be

applied at the rate of approximately 2 to 3 gallons per 100 ft².

Special care should be taken to not over-apply any cold process adheive. Over-application can cause degradation of the membrane.

Wood decks should be minimum ½" plywood or minimum ¾" T & G planks. Deck shall be dry, smooth and free of debris. Decks should be built to provide ¼" per foot minimum slope for positive Base sheet must be BITEC Beta Base or other approved ASTM D 4601 Type II, UL Type G2 fiberglass base sheet.

On wood decks without insulation, the base sheet must be mechanically fastened with approved fasteners 9" o.c. at the laps and stagger nailed 18" o.c in the field unless specified or required otherwise.

Base flashing requirements are the same as required for hot asphalt applied systems. Refer to Details in the BITEC Roofing Materials Specifications and Details manual. Roof slopes ¾"in12 and above require the base sheet and membrane to be installed parallel to the slope with the base sheet fastened as noted above. The cap sheet and any interplies must also be fastened at end laps, 2" from the top edge and 6" o.c., across the sheet width, using nails and tin discs or approved screws and plates.

Cold applied systems should be planned to be installed so that traffic can stay off of the completed installation until it has cured sufficiently to withstand foot traffic without creating depressions in the assembly.

It is highly recommended to coat any exposed adhesive at side or end laps and at roof penetrations and base flashings using a BITEC roof coating.

Interplies for three ply systems must be either FS-2H, PS-2H for 15 year systems or SPS-3H for a twenty year system Fiberglass ply sheets may not be used.

DANGER: Combustible materials. Keep out of reach of children and pets. Product is for commercial or industrial use. Harmful or fatal if swallowed. Contains petroleum spirits.

If swallowed, do not induce vomiting. Call physician or poison control immediately! For contact with skin, wash with soap and water. Do not use solvent or mineral spirits to clean hands. For eye contact, flush eyes with copious amount of water and seek medical attention immediately!

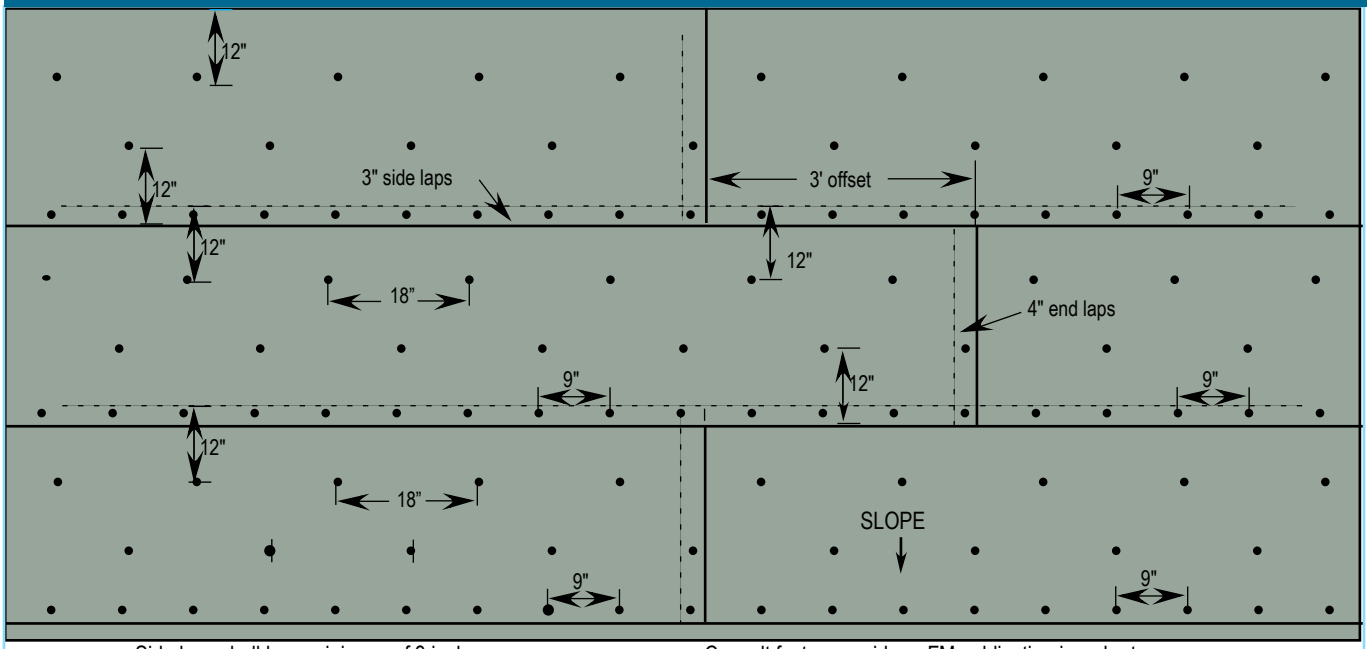
This material is combustible. Keep away from any heat source, fire or flame. Smoking should not be allowed in the work area. Store materials in original containers. Do not use this container for anything other than its intended use.

Dispose of empty container as dictated by local regulations. Keep containers closed when not in use. Avoid breathing the mist or vapors. Use only in well ventilated areas.

For warranty information governing cold adhesive applied membrane systems, contact BITEC Technical Services Department at 1-800-535-8597.

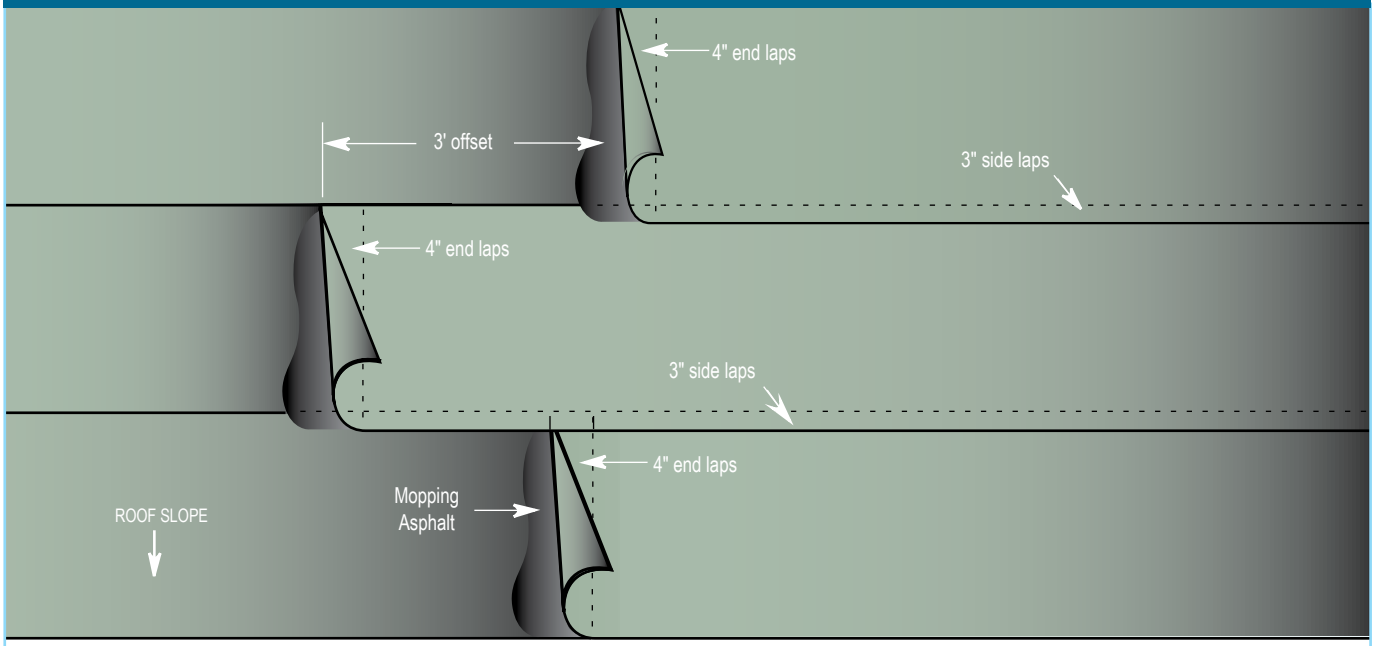
COMPABASE LAYING DIAGRAMS

1. Laying Diagram for Mechanically-Attached Base Sheet



- Side laps shall be a minimum of 3 inches
- Mechanical fasteners 9 inches o.c. for side laps
- Field shall be attached by mechanically fastening 12 inches from edge, 18 inches o.c. staggered
- Consult fastener guide or FM publication in order to determine the kind of fastener
- End laps shall be a minimum of 4 inches
- End laps shall be offset a minimum of 3 feet

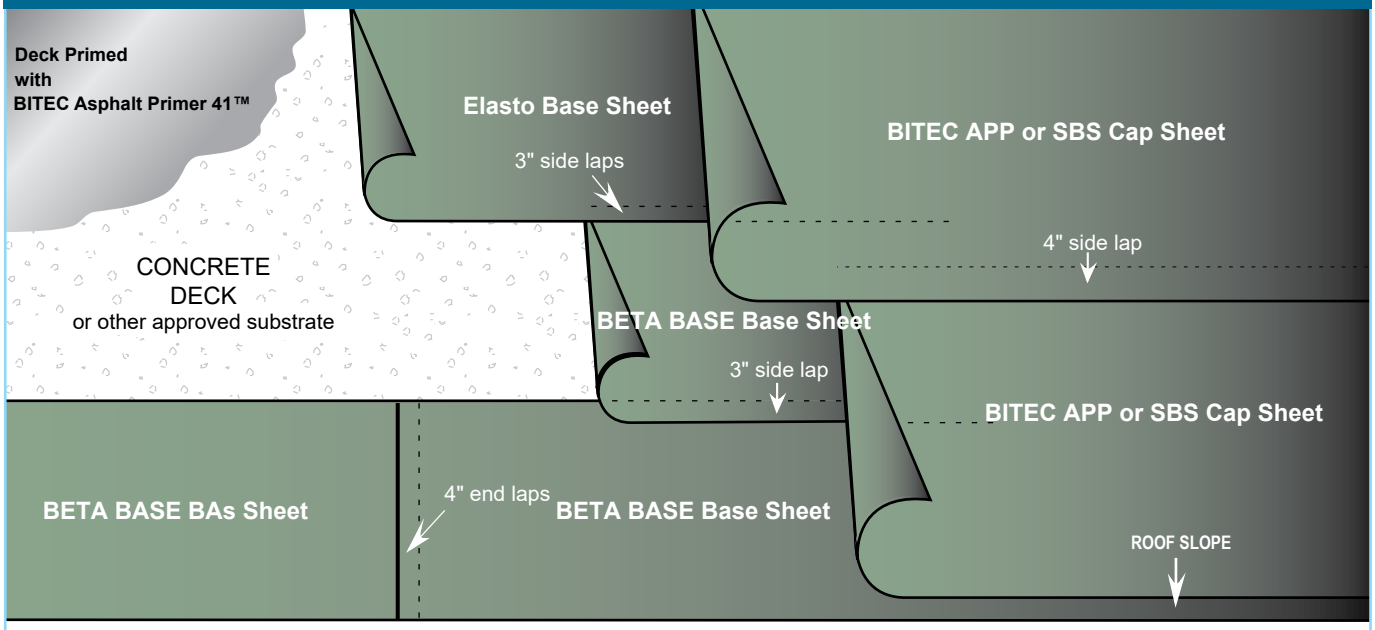
2. Laying Diagram for Hot-Mopped Base Sheet



- Base sheet shall be adhered in ASTM Type III or Type IV mopping asphalt
- Side laps shall be 4 inches minimum
- End laps shall be 6 inches minimum
- Mopping asphalt shall be applied at a rate of 25 pounds per 100 square feet
- End laps shall be offset a minimum of 3 feet

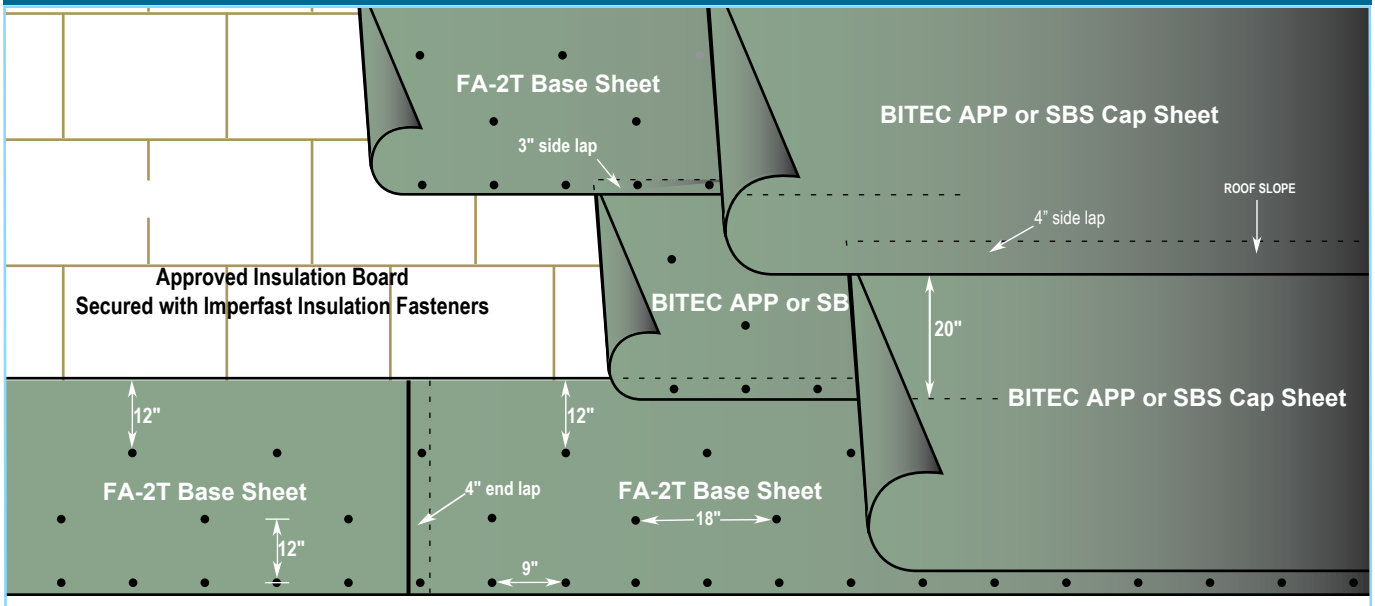
COMPABASE LAYING DIAGRAMS

3. Laying Diagram for Heat weld Applied Base Sheet



- Base sheet side shall be 2" and 4" respectively
- Any cap sheet membrane shall be installed with seams offset 20" from installed base sheet
- You must refer to the product selection sections for the correct membranes to use
- All end laps must be staggered a minimum of 3'

4. Laying Diagram for Mech. Attached FA-2T over Insulation



- FA-2T base sheet can be nailed or mechanically fastened to all nailable substrates using approved fasteners
- FA-2T side and end laps shall be 3" and 4" respectively
- Side laps are to be fastened 9" o.c.
- Field shall be fastened at 18 in. o.c. staggered 12" in from side in two rows.
- FA-2T base sheet shall be offset 20" from mechanically attached base sheet seam, or where laps formed are non superimposed
- Side laps and end laps shall be 3" and 4" respectively
- End laps of both base sheets shall be staggered a minimum of 3'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