

**BITEC**  
BITUMEN TECHNOLOGY™

# SELF ADHERING MEMBRANES

Please read the entire document before purchasing and installing any of these products

**imperflex**®  
USA SBS UNDERLAYMENT

## ROOFING UNDERLAYMENT



**Imperflex USA**, a smooth surface SBS Polymer modified bitumen underlayment, is intended for use primarily as a residential roof underlayment to protect against water infiltration caused by ice and water dams at penetrations, valleys and edges on sloped roofs. It can also be used to waterproof below-grade foundations, footings and basements.

**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 refractory slag or polyethylene film.  
**Note: you must specify which surface you require when ordering.**

The membrane is durable, resists coating slide at normal roof temperatures, self-sealing and resists water infiltration from snow and ice accumulation.

**imperflex**®  
MSA SBS Mineral Surfaced

## MINERAL SURFACE CAP SHEET



**No Torching,  
No Mopping,  
Required!**

**Imperflex MSA**, a mineral surface SBS Polymer modified bitumen cap sheet, 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 distilled 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 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 temps and is self-sealing. It is used as an exposed membrane and is eligible for a ten-year material only warranty.\*\*

Do not install on any roof with slope less than 1/2" in 12", or in areas where water stands, or forms ponds.

\*Refer to slope limitation guidelines, inside

\*\*Except for specifications MSA-12-05LM and MSA-12-06LM

# imperflex®

USA SBS UNDERLAYMENT



## THE INSTALLER

This product is manufactured for use only by trained, professional roofing contractors and water-prooferers.

## APPLICATION INSTRUCTIONS

Instructions can also be found on the container (box) where each roll is stored. However, this publication has complete installation instructions.

## SURFACE PREPARATION

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 is designed for installation as an underlayment with shingles, tile, metal roofs or as below grade waterproofing. 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, INC., commercial roofing specifications, except as noted.

**Prime all metal, masonry and concrete surfaces using primer conforming to ASTM D41 standards. Primer is not required on wood surfaces, but is recommended.** Primer should be

applied at a rate of 1 gal. per 250-350 ft<sup>2</sup> (23-32 m<sup>2</sup>).

## TEMPERATURE

Apply IMPERFLEX USA in fair weather when the air, deck and membrane temperature is 40°F (5°C) or above.

## UNDERLAYMENT APPLICATION

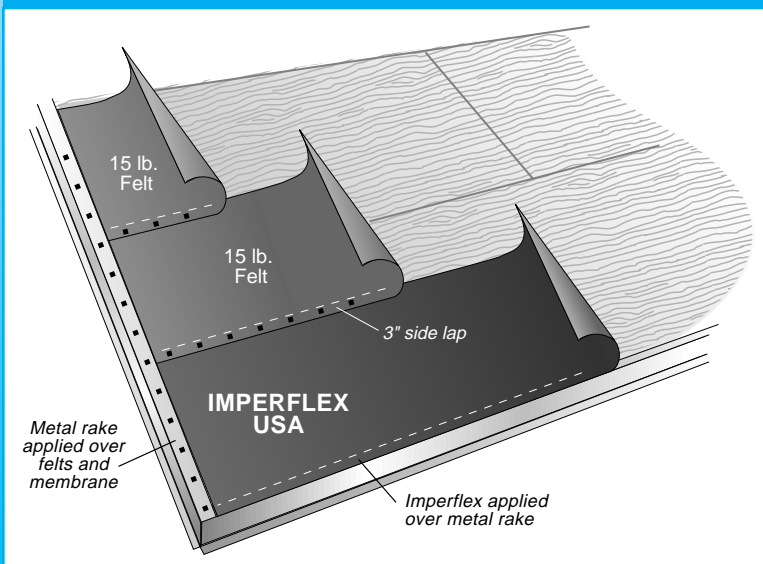
APPLY IMPERFLEX USA in shingle fashion a minimum of 24" above the exterior wall of the building, or as required by code. Peel back half sheet of release film. Align membrane at lower edge of roof and adhere the exposed membrane area to the prepared surface. Continue to peel both halves of release film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

Roll in 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.

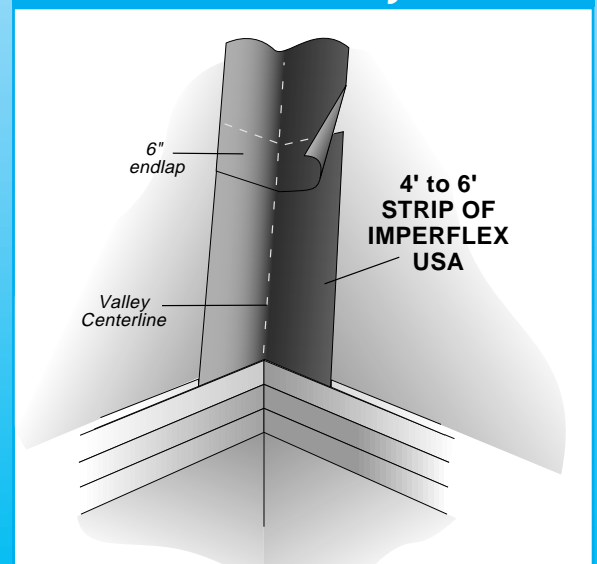
## VALLEY AND RIDGE

Remove release film. Center roll over area to be waterproofed. 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.

### At Roof Eave



### In the Valley



# imperflex®

MSA SBS Mineral Surfaced

## MINERAL SURFACED CAP SHEET



No Torching,  
No Mopping  
Required!

### THE INSTALLER

**Imperflex MSA** is manufactured for use by trained professional roofing contractors and waterprooferers.

### APPLICATION INSTRUCTIONS

Instructions can also be found on the container (box) where each roll is stored. However, this publication has additional installation instructions.

### SURFACE PREPARATION

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.**

**Imperflex MSA** is to be used as a cap sheet only, on slopes equal to or greater than 1/2" in 12". MSA comes with a factory installed adhesive. MSA cannot be used as a component in any BITEC, INC., commercial roofing specifications, except as noted.

Prime all metal, masonry and concrete surfaces using primer conforming to ASTM D41 standards. Primer should be applied at a rate of 1 gallon per 250-350 ft<sup>2</sup> (23-32 m<sup>2</sup>).

Install one ply of ASTM D2178 Type IV ply sheet with the **non-sanded surface** up by mechanical attachment. Install this base ply before the MSA. **Imperflex USA** may also be used as a base sheet if inverted, the film removed and the membrane mechanically attached.

### TEMPERATURE

Apply **IMPERFLEX MSA** in fair weather when the air, deck and membrane temperature is between 50°F (5°C) and 110°F (43°C).

### 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 seldge release film.

#### 2. Subsequent courses of membrane

Install subsequent courses in a similar fashion staggering finished end laps by at least 3 ft. 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.

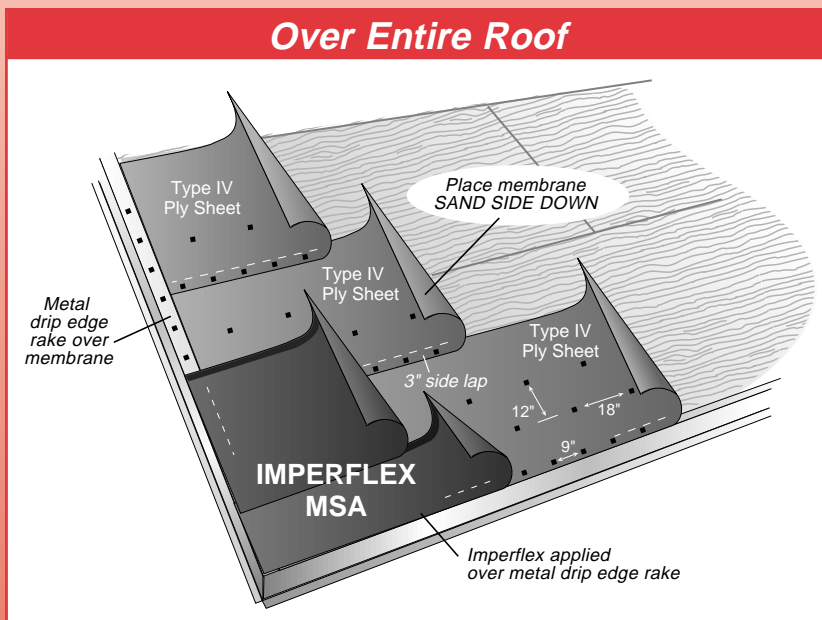
#### 3. Construction details

Construction details are the same as for commercial grade SBS modified bitumen cap sheets. Refer to BITEC, INC., published specifications for proper execution of flashing and construction details.

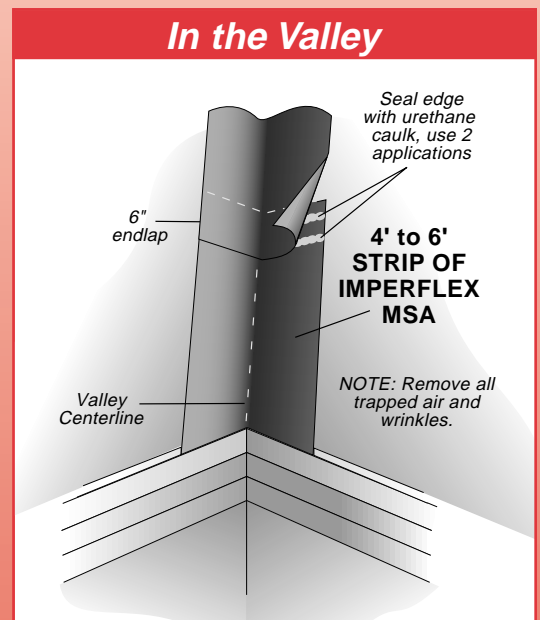
#### 4. Residential roof valley and ridge

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

### Over Entire Roof



### In the Valley



**Specification**

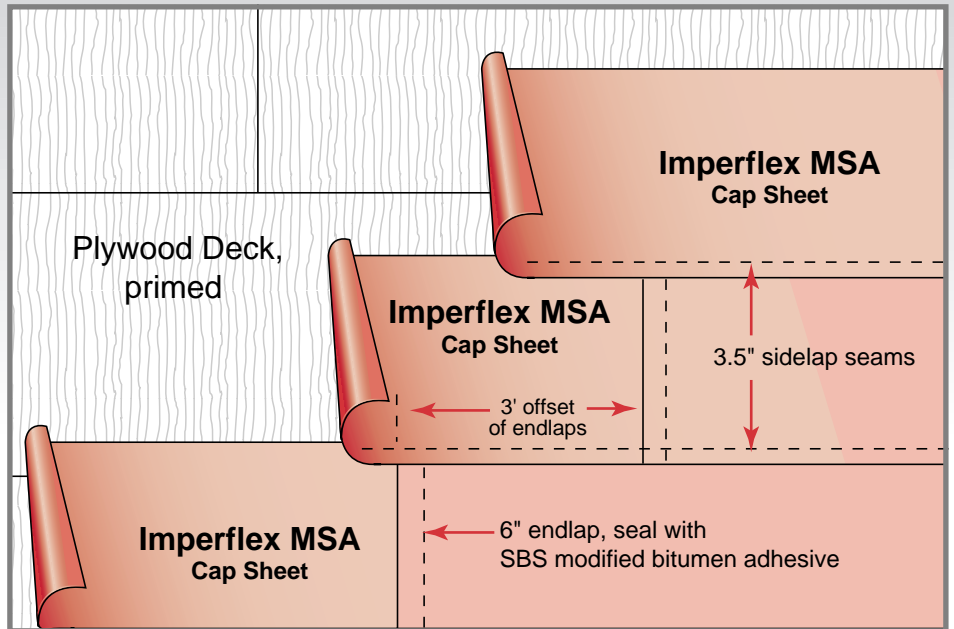
**MSA-12-01**

12-Yr Material Only Warranty

**DECK:** Plywood with surface primed. If barrier board is used, prime the barrier board instead of the plywood

**CAP SHEET:** Imperflex MSA

**NOTE:** End laps must be offset 3' and sealed with SBS modified bitumen adhesive



**Specification**

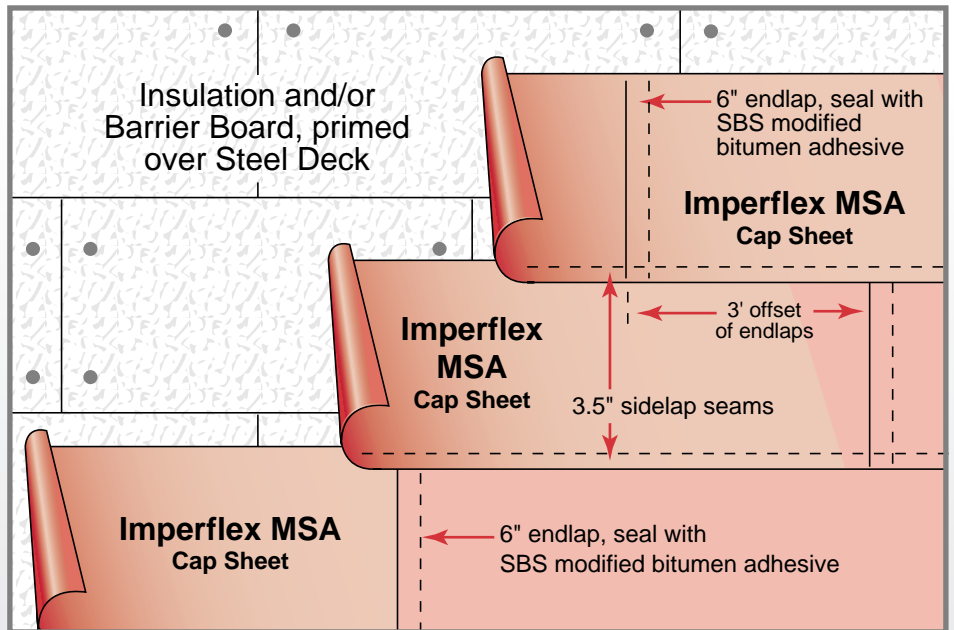
**MSA-12-02**

12-Yr Material Only Warranty

**DECK:** Steel with insulation and/or barrier board, primed

**CAP SHEET:** Imperflex MSA

**NOTE:** End laps must be offset 3' and sealed with SBS modified bitumen adhesive



**Specification**

**MSA-12-03**

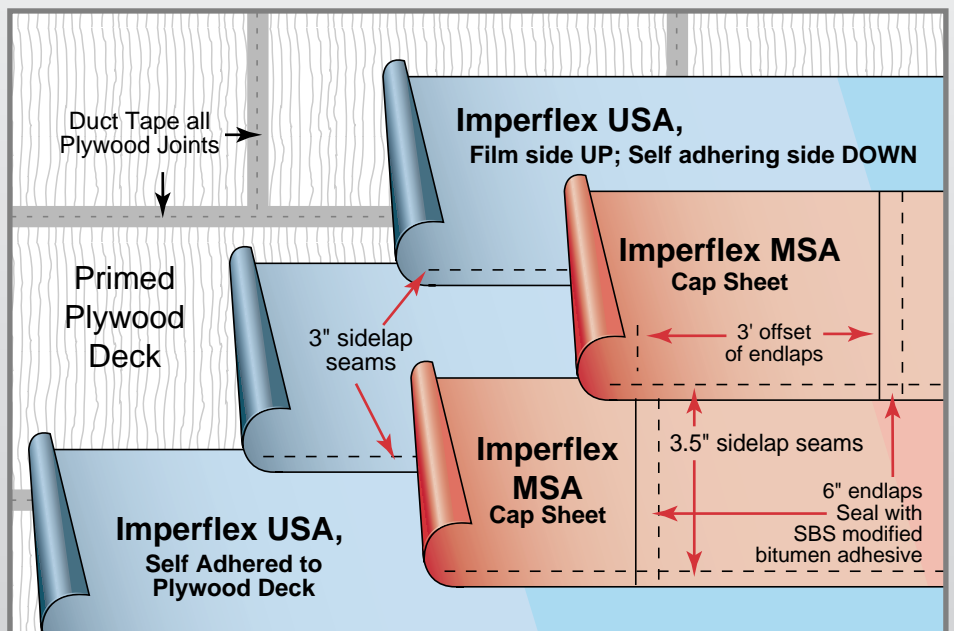
12-Yr Material Only Warranty

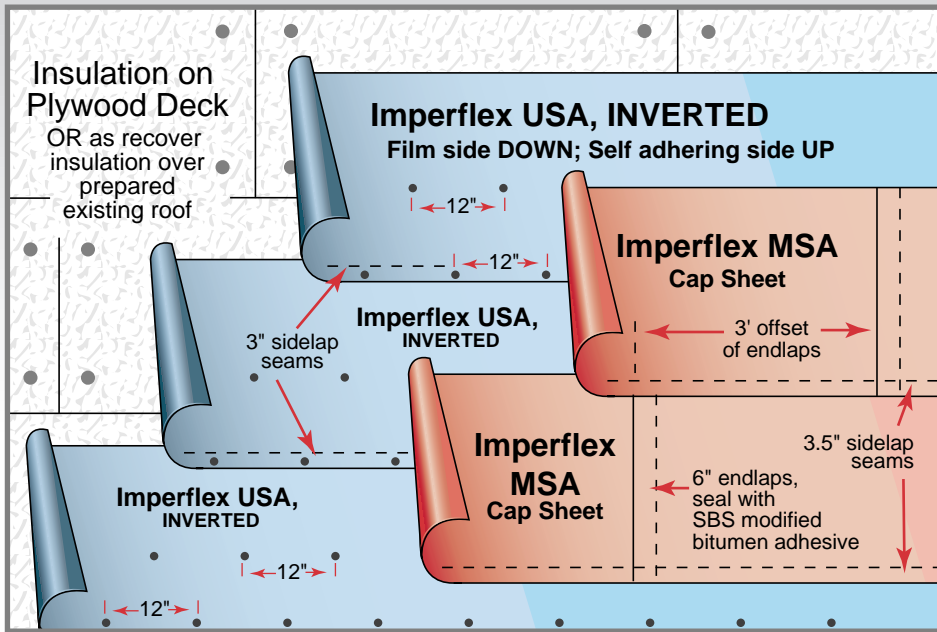
**DECK:** Plywood with all joints taped using duct tape. Plywood surface must be primed using asphalt primer.

**BASE SHEET:** Imperflex USA (film)

**CAP SHEET:** Imperflex MSA

**NOTE:** End laps must be offset 3' and sealed with SBS modified bitumen adhesive





**Specification**  
**MSA-12-04**

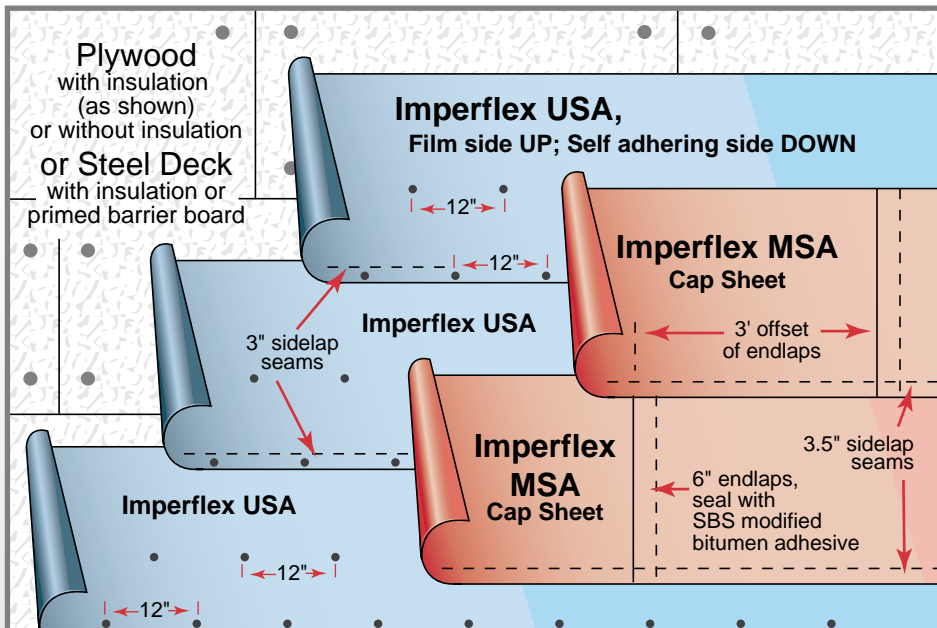
12-Yr Material Only Warranty

**DECK:** Plywood with insulation or re-cover insulation

**BASE SHEET:** Imperflex USA (film) inverted; mechanically attached

**CAP SHEET:** Imperflex MSA

**NOTE:** End laps must be offset 3' and sealed with SBS modified bitumen adhesive.



**Specification**  
**MSA-12-05.LM**

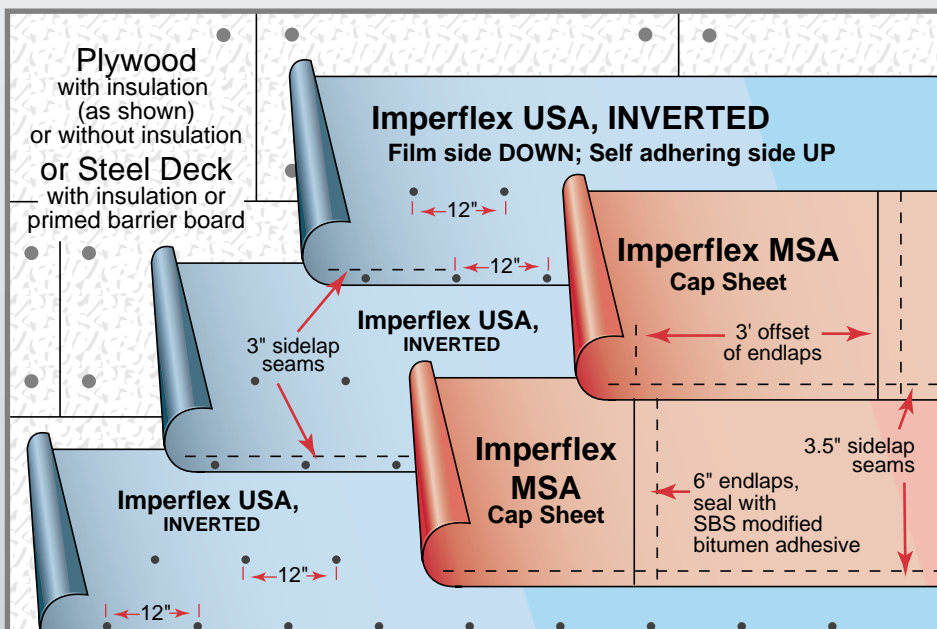
\*12-Yr Labor/Material Warranty

**DECK:** Plywood with or without insulation, or Steel Deck with insulation or barrier board, primed

**BASE SHEET:** Imperflex USA, mechanically attached

**CAP SHEET:** Imperflex MSA

**NOTE:** End laps must be offset 3' and sealed with SBS modified bitumen adhesive.



**Specification**  
**MSA-12-06.LM**

\*12-Yr Labor/Material Warranty

**DECK:** Plywood with or without insulation, or Steel Deck with insulation or barrier board, primed

**BASE SHEET:** Imperflex USA (film) inverted; mechanically attached

**CAP SHEET:** Imperflex MSA

**NOTE:** End laps must be offset 3' and sealed with SBS modified bitumen adhesive

\*Installations for Labor & Material Warranties must be installed by BITEC, INC. authorized applicators only.

## USE, INSTALLATION and LIMITATIONS

### CAUTION:

- BITEC, INC. 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.
- IMPERFLEX USA shall never be left permanently exposed to the sun and for never 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.
- IMPERFLEX MSA and/or USA are not designed to be installed on mobile home roofs.
- Improper use of and/or improper installation of IMPERFLEX products will void your warranty.
- Other conditions may apply to the use and installation of IMPERFLEX products. Please refer to our publication "Roofing Material Specifications and Details" for information not covered in this document. Please call 800-535-8597 to receive your free copy.

### SLOPE LIMITATIONS

Good roofing practice requires all modified bitumen roof systems result in positive drainage. In many cases a minimum roof slope of 1/2" in 12" will provide sufficient drainage. 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, INC. 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, INC., standards and industry good roofing practice and on any construction that will accommodate its use.

### LIMITED TEN-YEAR WARRANTY (MSA MEMBRANE ONLY)

IMPERFLEX MSA membrane is covered by a limited ten-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.

### MINIMUM RECOMMENDATIONS

BITEC, INC., strongly recommends that a trained-professional roofing contractor install IMPERFLEX products. Your selection of a roofing contractor for the project is very important. Ask the contractor for references and check each reference before entering into any contract. Also, request from the contractor a list of materials for the project as well as information about those materials.

BITEC, INC., recommends these products to 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 asphalt primer.

BITEC, INC. strongly recommends that the roof system installation provide positive drainage.

BITEC, INC. strongly recommends that all surfaces to receive IMPERFLEX products be dry, cleaned and prepared properly in order to provide a surface that will allow the membrane to bond completely and to effectively create waterproof seams.

**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.

### PRODUCT USES

BITEC, INC. recommends this product to be used only for waterproofing and roofing residential and light commercial roofs. IMPERFLEX products in light commercial roof applications shall be limited to certain flashing details as well as residential-like applications.

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. IMPERFLEX products may or may not be suitable for certain constructions.

### PRODUCT INFORMATION AND ASSISTANCE

More information about this product can be obtained by calling your local BITEC technical sales representative, or by calling 800-535-8597, or at [www.bi-tec.com](http://www.bi-tec.com).

This brochure contains the most up-to-date information on IMPERFLEX membranes; however, changes and modifications to this publication and to IMPERFLEX products may be made without notice.

### LIMITATION OF LIABILITY

BITEC, INC., at its option and sole discretion will fully, or partially replace, or fully or partially refund to the customer the purchase price of this product if found defective in materials or our workmanship which result in a roof leak. All other remedies and liabilities, including, and without limitation, liability for consequential damage, personal injury, loss of profits, loss of use, loss of income, and all other warranties including and without limitation, the implied warranty are excluded. Customer will pay all freight charges if product or a portion thereof is replaced. Physical damage to membrane from any cause is excluded.

The purchaser and installer are solely responsible for proper storage, use and installation of these products.

Please refer to the IMPERFLEX MSA "Limited Ten-Year Material Warranty" for coverage and exclusions.



## SELF-ADHERING UNDERLAYMENT

PHYSICAL PROPERTIES		
Modifier	Styrene Butadiene Styrene	
Approx. Roll Size	45.75' x 3.28'	
Seam Width	3"	
Approx. Coverage	150 ft <sup>2</sup>	
Top Surface	Fine mineral or PE film	
Bottom Surface	Release film	
Nominal Thickness	1.5 mm (60 mil)	
Nominal Weight	85 lb	
Reinforcement	Fiberglass	
ASTM D-36 Softening Point	240° F (116° C)	
UNI-8202 Cold Flex. Temp	-14° F (-10°C)	
ASTM D-412 Tensile Strength (lb/in)	Long. 75	Trans. 60
ASTM D-412 % Elongation to Break	Long. 3	Trans. 3

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

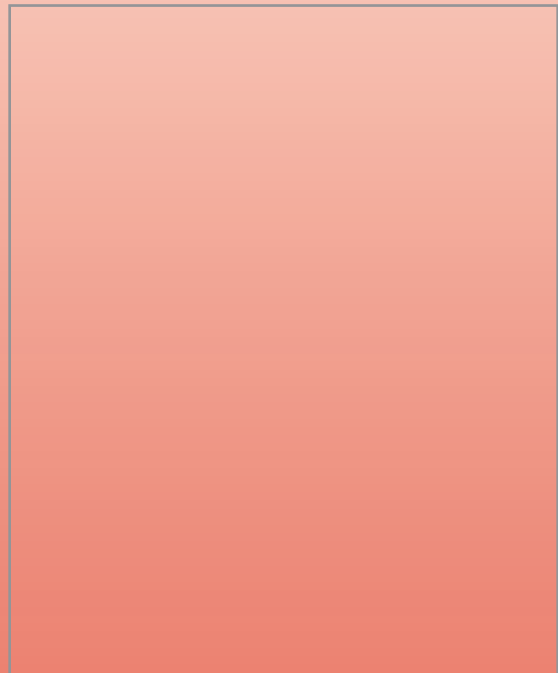


## SELF-ADHERING MINERAL SURFACE CAP SHEET

PHYSICAL PROPERTIES		
Modifier	Styrene Butadiene Styrene	
Approx. Roll Size	32.8' x 3.28'	
Seam Width	3.5"	
Approx. Coverage	100 ft <sup>2</sup>	
Top Surface	Colored granules*	
Bottom Surface	Release film	
Nominal Thickness	3.5 mm (140 mils)	
Nominal Weight	100 lb	
Reinforcement	Fiberglass	
ASTM D-36 Softening Point	250° F (120° C)	
UNI-8202 Cold Flex. Temp	-13° F (-25°C)	
ASTM D-412 Tensile Strength (lb/in)	Long. 80	Trans. 75
ASTM D-412 % Elongation to Break	Long. 30	Trans. 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



## PRODUCT STORAGE and MATERIAL HANDLING

### STORAGE AND HANDLING

Store IMPERFLEX products in their original containers on pallets, inside or under cover, protected from the elements. Avoid prolonged storage above 90°F (32°C). Product may stick together and/or discolor if stored at elevated temperatures. Do not store product in moisture prone areas or where moisture is a problem. Keep these products in their original container, upright until immediately before use. Store any remaining membrane in original container to protect it for future use.

### CAUTION:

- Never use IMPERFLEX products for any purpose other than its intended use. Misuse of or abuse to the product may result in property damage or personal injury.
- BITEC, INC. assumes no responsibility for any loss arising from misuse and/or misapplication of these products.
- Dispose of any unused IMPERFLEX products in accordance with local codes. (IMPERFLEX products do not contain asbestos.)

- 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. Please refer to our publication "Roofing Material Specifications and Details" for information not covered in this document. Please call 1-800-535-8597 to receive your free copy.

### PRODUCT INFORMATION AND ASSISTANCE

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This brochure contains the most up-to-date information on IMPERFLEX membranes; however, changes and modifications to this publication and to IMPERFLEX products may be made without notice.

As with all roofing installations, it is the responsibility of the contractor or installer to provide for adequate fall protection for all personnel engaged in the roofing and construction phase.

*Imperfex products contain high-quality distilled asphalt and "made-on-purpose" polymers, creating a monolithic sheet that is free of brittle, non-flexible oxidized asphalt. Only the highest quality raw materials are used in making BITEC products.*



Specifications subject to change without notice. Revised 6/02



Visit our web site at [www.bi-tec.com](http://www.bi-tec.com)

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**MANUFACTURERS OF ADVANCED TECHNOLOGY WATERPROOFING MEMBRANES**