

Tarco LeakBarrier™ EasySystem® SBS Self-Adhered Modified Bitumen Roofing System

MODIFIED BITUMINOUS ROOFING GUIDE SPECIFICATION

Nailable Substrates Membrane Adhered Direct to Substrate

Note: *This specification is provided as a general guide only. Jobsite conditions, contract specifications and/or other documents may require changes to the general guide. Tarco does not practice architecture or engineering.*

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Asphaltic modified bituminous roofing
2. Insulation

B. Related Sections

1. Section 06100: Rough Carpentry
2. Section 07620: Sheet Metal Flashing and Trim
3. Section 15430: Plumbing Specialties

1.02 REFERENCES

- A. Factory Mutual (FM Global) - Approval Guide
- B. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R13228)
- C. American Society for Testing and Materials (ASTM) - Annual Book of ASTM Standards
- D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual
- E. Asphalt Roofing Manufacturers Association (ARMA)
- F. National Roofing Contractors Association (NRCA)
- G. American Society of Civil Engineers (ASCE)

1.03 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

1.04 PERFORMANCE REQUIREMENTS

- A. Provide an installed roofing membrane and base flashing system that does not permit the passage of water.
- B. Tarco shall provide all primary roofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

1.05 SUBMITTALS

- A. Product Data: Provide product data sheets for each type of product indicated in this section.

- B. Shop Drawings: Provide manufacturer's standard details and approved shop drawings for the roof system specified.
- C. Samples: Provide samples of insulation(s), fasteners and roll goods for verification of quality.

1.06 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
Tarco shall provide a roofing system that meets and/or exceeds all criteria listed in this section.
- B. Installer's Qualifications:
Installer shall be classified as a licensed contractor as outlined by the requirements set forth by the local authority having jurisdiction and/or governing code bodies.
- C. Source Limitations:
Other manufacturers may provide components that are listed in this section, provided they do not cause any adverse effects on the primary roofing manufacturer's membranes.
- D. Final Inspection:
The local authority having jurisdiction and/or governing code body official must provide a comprehensive final inspection after completion of the roof system. All application errors shall be addressed and a final punch list must be completed.

1.07 PRE-INSTALLATION CONFERENCE

- A. Prior to the scheduled commencement of the roofing installation and associated work, conduct a meeting at the project site with the installer, architect, owner and any other persons directly involved with the performance of the work. The installer may record conference discussions to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to roofing work.

1.08 REGULATORY REQUIREMENTS

- A. All work is to be performed in a professional and safe manner. All work performed is to conform to all requirements set forth by the local authorities having jurisdiction, federal regulations and governing code bodies.

1.09 DELIVERY, STORAGE AND HANDLING

- A. Deliver all roofing materials to the site in original packaging, with factory seals intact. All products are to display the manufacturers product identification labels.
- B. Store all canned goods in their original, undamaged containers. Containers are to be stored in a clean, dry location within their specified temperature range.

- C. 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.
- D. 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.
- E. 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. Do not remove any protective tarpaulins until immediately before the material is to be installed.
- F. Materials shall be stored at temperatures above 55°F a minimum of 24 hours prior to application.

1.10 PROJECT CONDITIONS

A. Weather

- 1. Proceed with roofing only when existing and forecasted weather conditions are favorable for the application of roofing membranes.
- 2. Material interface temperatures must be 40°F and rising for self-adhering membranes and asphalt or water-based adhesives.

1.11 WARRANTY

- A. Provide Manufacturer's standard Tarco Specialty Products (TSP) LeakBarrier® Limited Warranty. TSP maximum liability shall not exceed the original cost of the defective product, exclusive of the installation and labor costs or costs of flashing, metal work, insulation or any other materials supplied or manufactured by others.
 - 1. Duration: Warranty periods range between 10, 15, 20, and 25 years* from the date of completion. Warranty periods are contingent on the number of Tarco LeakBarrier® SBS membrane plies that will be installed.

*For Tarco LeakBarrier® products listed within this section when installed in accordance with current Tarco application and specification requirements as well as local authority having jurisdiction and governing code body requirements. Review the current Tarco published application and specification requirements for the full terms and conditions of the warranty.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. Tarco Specialty Products
One Information Way, Suite 225
Little Rock, AR 72202

2.02 INSULATION ACCESSORIES

A. Cant Strip:

Factory fabricated rigid perlite or HD fiberboard strip cut at angles to provide a true 45 angle between horizontal and vertical surfaces.

B. Tapered Edge Strip:

Factory fabricated rigid perlite strip cut at angles to provide a smooth transition between differences in elevation.

2.03 BASE / INTERPLY SHEETS

- A. A premium, SBS modified, glass fiber reinforced, self-adhesive modified bituminous base sheet for use in most low slope and some steep slope roof system applications. Each roll contains two squares (200 gross square feet) 36" x 72'. Trade name: LeakBarrier® EasyBase™ Self-Adhering SBS base sheet.

2.04 MEMBRANE MATERIALS

- A. A premium, SBS modified, granule surfaced, polyester reinforced, self-adhesive modified bituminous cap sheet membrane for use in most low slope and some steep slope roof system applications. Each roll contains one square of material (100 square feet) 36" x 36' LeakBarrier® EasyStick™ Plus Self-Adhering cap sheet.
- B. Color: To be selected by owner or architect from standard Tarco® EasyStick™ Plus Self Adhering cap sheet color selections.

2.05 FLASHING MATERIALS

- A. A premium, SBS modified, glass fiber reinforced, self-adhesive modified bituminous base sheet for use in most low slope and some steep slope roof system applications. Each roll contains two squares (200 gross square feet) of material, 36" x 72' LeakBarrier® EasyBase™ Self-Adhering SBS base sheet.
- B. A premium, SBS modified, granule surfaced, polyester reinforced, self-adhesive modified bituminous cap sheet membrane for use in most low slope and some steep slope roof system applications. Each roll contains one square of material (100 square feet) 36" x 36' LeakBarrier® EasyStick™ Plus Self Adhering cap sheet.

2.06 ACCESSORIES

A. Mechanical Fasteners

1. Refer to local authority having jurisdiction and governing code body requirements for acceptable fasteners where applicable.

B. One Way Vents

1. Pressure relief device consisting of a one-piece spun aluminum vent pre-flashed with modified bitumen. Internally, the vent contains a neoprene valve that allows air pressure and moisture vapor to escape out of the system without allowing additional air and moisture vapor to return.

C. Standard Vents

1. A spun aluminum vent may be pre-flashed with modified bitumen, designed to waterproof soil pipes and roofing protrusions.

Note: *Not for use over active pipes that emit steam or excessive moisture vapor, condensation may occur. Not for use over boiler or heater/furnace vent pipes.*

D. Adjustable Vents

1. A two-piece roof-flashing unit consisting of a pre-flashed spun aluminum base and a flexible upper boot, allowing for waterproofing of tall or awkward roof protrusions.

E. Plumbing Vent Flashings

1. Pre-formed lead vent/soil stack flashings designed to waterproof vent pipes. It can be used as a pipe cover to replace finger and cap flashing on standard vent pipe details.
2. Field formed modified bitumen membrane designed to waterproof vent pipes. It can be used as a pipe cover to replace finger and cap flashing on standard vent pipe details.

F. Roof and Wall Scupper Drains

1. A spun aluminum (or copper) roof drain with gravel guard, strainer cap, and waterproofing plumbing seal attached.
2. A pre-flashed metal through-wall scupper/roof drain designed for easy installation to aid in quick lateral removal of water.

G. Pre-Formed Sealant Pans

1. A structural urethane outer shell, bonded to the roof surface, filled with a urethane rubber sealant. The urethane sealant conforms to the shape of any roof penetration, which penetrates through the roof surface to protect the roof system from moisture.

H. Expansion Joint Covers

1. Factory fabricated assemblies used to accommodate three-dimensional joints in a roof structure. Heavy re-enforced flexible cover with flexible flame retardant foam bellows for support. Nailing flanges are to conform onto curb irregularities.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that the surfaces and site conditions are ready to receive work.
- B. Verify that the deck is supported and secured.
- C. Verify that the deck is clean and smooth, free from imperfections, and properly sloped to drains, valleys, eaves, scuppers or gutters.
- D. Verify that the deck surfaces are clean, dry and free of any contaminants.

- E. Verify that all roof openings, curbs, pipes, sleeves, ducts, vents or other penetrations through the roof are solidly set, and that all flashings are tapered.

3.02 SUBSTRATE PREPARATION

A. Nailable substrates

1. Acceptable substrates for direct to deck adhesion of membranes: CDX & OSB Plywood.
2. Refer to design professional, individual substrate manufacturer standards, local authority having jurisdiction, governing code bodies, and roofing membrane manufacturer's published instructions for the proper preparation requirements of the substrate of choice prior to the application of the desired roof system.

3.03 INSTALLATION - GENERAL

- A. Install Tarco LeakBarrier® EasySystem™ SBS Self-Adhering roofing system according to all current application requirements in addition to those listed in this section.
- B. Apply an ASTM D 41 asphalt primer, water based acrylic or water based polymer modified primer in order to enhance adhesion of the base sheet onto new or existing substrates. Refer to the current Tarco published technical bulletins for a list of acceptable substrates.
- C. When the slope of the roof is 1" per foot or greater, install all plies parallel with the slope of the roof. At ridges all plies must extend a minimum of 6". Refer to the current Tarco published technical bulletins for back nailing fastening requirements.
- D. Start the application of membrane plies at the low point of the roof or at the drains, so that the flow of water is over or parallel to, but never against the laps.

3.04 BASE/INTERPLY SHEET

Note: *Ply Sheet Optional when applying LeakBarrier® EasyBase™ SBS Self-Adhering Base/Ply Sheet directly to substrate.*

- A. Coiled rolls should be unrolled and allowed to relax prior to installation. One may cut sheets into manageable lengths that will allow for a wrinkle and void free installation.
- B. Prior to the installation of the of EasyBase™ SBS Self-Adhering base sheet, clean the surface of the substrate, removing all debris, dirt, moisture and other contaminants. Repair any punctures, open seams and other defects prior to installation.
- C. Lap the base sheet a minimum of 3" on the side laps and 6' on the end laps. Keeping the base sheet tightly in place, push out all wrinkles and buckles ahead as fastening begins.
- D. Turn base sheet up 2" past the top of the cant strip.
- E. Starting at the low point of the roof, install one ply of EasyBase™ SBS Self-Adhering base sheet, lapping side laps a minimum of 3" and end laps a minimum of 6". Fold the bottom half of the sheet back and remove the release film from this part of the roll, leaving approximately 8" at the end of the roll where it will lap the previous

sheet. Working from the center of the sheet, carefully roll and hand press the sheet back into place over the interply being careful to avoid wrinkles and trapped air while maintaining proper alignment. Fold the upper portion of the sheet back on itself to expose and remove the remaining release film and finish the roll. Install the upper portion of the roll working from the center of the sheet outward toward the ends. Firmly hand press the sheet in place to avoid wrinkles and trapped air and finish by rolling the membrane in place with a minimum of a 70-lb weighted roller over the entire sheet in order to ensure adhesion and full contact with the underlying membrane. All laps must be staggered and offset from underlying courses a minimum of 18" for side laps and 36" for end laps.

- F. Base/Ply Sheet end lap detail: End laps must be a minimum of 6". End Laps are to be staggered and offset from adjacent courses a minimum of 3'. After aligning end laps, fold back the overlapping sheet and perform a 45° angle cut at on all the end lap of the underlying sheet. Once the 45° angle cut is performed, it will provide a smooth tapered transition. Next a 1/8" thick bead of an SBS trowel grade modified flashing cement/adhesive is to be applied at this transition location and all the "T" joints formed by the succeeding courses. Remove the release film from the underside of the overlapping sheet and form the lap without wrinkles or voids, hand rolling the membrane firmly in place so that a uniform bead of the adhesive is squeezed out at the lap edges and along the transition cut. Firmly press and roll the completed end laps as well as the entire membrane with a minimum of 70-lb weighted roller. Prior to installing succeeding courses, apply the SBS trowel grade modified flashing cement in between blisters or open seams. Install subsequent courses as detailed above.

3.05 CAP SHEET

- A. SBS membranes must not be applied during adverse weather or without precautionary measures.
- B. The use of a hot air welder is acceptable for use with the EasyStick Plus™ SBS Self-Adhering cap sheet membrane. Special care is to be taken when using the hot air welder to heat weld membrane side laps, end laps, repairs, flashing details, etc.
- C. Coiled rolls should be unrolled, placed upside down and allowed to relax prior to installation. Then roll the membrane back to its original coil form prior to its installation.
- D. Starting at the low point of the roof install one ply of EasyStick Plus™ SBS Self-Adhering cap sheet lapping a minimum of 3" on sides and 6" on end laps. Fold the bottom half of the sheet back and remove the release film from this part of the roll, leaving approximately 8" at the end of the roll where it will lap the previous sheet. Working from the center of the sheet, carefully roll and hand press the sheet back into place over the interply being careful to avoid wrinkles and trapped air while maintaining proper alignment. Fold the upper portion of the sheet back on itself to expose and remove the remaining release film and finish the roll. Install the upper portion of the roll working from the center of the sheet outward toward the ends. Firmly hand press the sheet to avoid wrinkles and trapped air and finish with by rolling the membrane in place with a minimum 70-lb weighted roller over the entire sheet to ensure adhesion and full contact with the underlying membrane. All laps must be staggered and offset from underlying courses a minimum of 18" for side laps and 36" for end laps.
- E. Cap sheet end lap detail: End laps must be a minimum of 6". End Laps are to be staggered and offset from adjacent courses a minimum of 3'. After aligning end lap, fold back the overlapping sheet and apply a 1/8" thick application of an SBS trowel grade modified flashing cement/adhesive to the underlying granule surface. Perform a 45° angle cut at on all the end laps of the underlying sheet. Once the 45° angle cut is performed it will provide a smooth tapered transition. A bead of flashing cement/adhesive must be applied at this transition location and at all the "T" joints formed by the succeeding courses. Remove the release film from the underside of the overlapping sheet and form the lap without wrinkles or voids, hand rolling the membrane firmly in place so

that a uniform bead of the adhesive is squeezed out at the lap edges and along the transition cut. Firmly press and roll the completed end lap and the entire membrane with a minimum 70-lb weighted roller. Prior to installing succeeding courses, apply the SBS trowel grade modified flashing cement in between blisters or open seams. Install subsequent courses as detailed above.

3.06 BITUMINOUS BASE FLASHINGS

- A. Install base flashing over all cant strips, horizontal to vertical transitions, roof edges and roof penetrations. Flashings are to be secured in accordance with current manufacturer, authority having jurisdiction and governing code body requirements.
- B. Prime all vertical surfaces with either an ASTM D 41 asphalt primer, water based acrylic or water based polymer modified primer, and allow adequate drying time prior to adhering flashing plies.
- C. Backer plies installed over masonry or other non-nailable substrates must be cut into manageable lengths. One may prime all vertical substrates and parapet walls with an ASTM D41 asphalt primer, water based acrylic or water based polymer modified primer in order to enhance adhesion to these areas. Once primed, one must roll the entire membrane in place in order to ensure adequate contact adhesion to the cant strip and vertical surfaces without excessive voids. All vertical laps shall be minimum of 4" .
- D. The finished ply of base flashing shall be run vertically to provide a selvage edge that will aid in achieving proper adhesion at the 3" vertical laps. If the sheet is run horizontally, the vertical laps must be a minimum of 6" and the selvage edge must be removed from the sheet or fully covered by the counter flashing. The finished flashing ply must extend out beyond the edge of the prior flashing plies and onto the field of the roof a minimum of 6". The flashing must be soundly adhered to the parapet, cant area and roof surface to result in a minimum void, non-bridging construction. One may prime all vertical substrates and parapet walls with an ASTM D41 asphalt primer, water based acrylic or water based polymer modified primer to enhance adhesion to these areas. All vertically applied self-adhering membranes must be rolled in place in order to ensure contact and adhesion.
- E. Base flashing heights must be a minimum of 8" above the roofline, not to exceed a maximum of 24" high.
- F. Use SBS trowel grade modified flashing cement/adhesive. Apply using a trowel or wide-edged putty knife with a uniform 1/8" thickness throughout. Firmly press and roll the membrane in place to ensure contact; then immediately nail the top of the flashing as specified in the appropriate flashing detail.
- G. Corner membrane flashings, such as "bow ties" for outside corners and "footballs" for inside corners or other membrane reinforcements are required to ensure that base flashing corners are sealed at cant areas. An alternate method of corner reinforcing is to install a LeakBarrier® EasyBase® membrane reinforcement piece on the prepared corner substrate prior to final EasyStick Plus™ surfacing membrane.

3.07 PENETRATIONS

- A. Horizontal penetrations shall be flashed with lead flashings, pitch pockets, pre-fabricated curbs filled with compatible sealants.
- B. Vertical penetrations may be flashed with polyester fabric embedded between two coats of SBS trowel grade modified flashing cement/adhesive. Once the adhesive dries, applicator may coat the penetration flashing detail with a trowel or brush grade water based white acrylic coating.

3.08 SHEET METAL

- A. Metal should not be used as a component of base flashing. Because of the high coefficient of expansion of sheet metals and the large temperature changes that can be experienced on a roof, sheet metal or exposed metal components must be isolated from the waterproofing components of the roofing and flashing system as efficiently as possible to prevent the metal from splitting the membranes.
 - B. It may be unavoidable to use metal in the roofing system (i.e., lead flange at drains, eaves drips, lead or soil stacks, pitch pans, etc.). The use of treated wood nailers and insulation stop must be 1" wider than the metal flange, for metal attachment. Metal flanges must always be set on top of the roof membrane with an SBS trowel grade modified flashing cement/adhesive for SBS roof systems. The metal flange is then sealed using the applicable construction detail to meet applicable code requirements. Metal accessories (gravel stops, counter flashing, etc.), galvanized or stainless steel should be 24 gauge, copper 16 oz, lead 2 1/2 to 4lb's and aluminum at 0.032.
 - C. Fabricate and install all sheet metal materials that may be outlined in applicable construction details. Refer to SMACNA (Sheet Metal and Air Conditioning Contractors National Association, Inc.) for guidance on sheet metal treatments not addressed in this specification.
 - D. Clean metal and apply asphalt ASTM D 41 asphalt primer, water based acrylic or water based polymer modified primer to all sheet metal surfaces that will come into contact with asphalt or other bituminous materials. Allow the primer adequate time to dry prior.
 - E. Always use fastener types, which are compatible with the sheet metal type.
 - 1. Copper or lead-coated copper: Use copper or bronze fasteners.
 - 2. Lead and galvanized steel: Use galvanized or cadmium-plated sheet fasteners.
 - 3. Aluminum: Use aluminum fasteners.
 - 4. Stainless steel: Use stainless steel fasteners.
 - F. Metal counter-flashing shall have a minimum 4" face with a drip lip. The bottom edge of the counter flashing shall cover the roofing membrane and/or base flashing by a minimum of 4". Metal counter flashing used for masonry walls, wooden walls, or through wall metal flashings should be a two-piece design to allow for installation and later removal. Metal counter-flashings for stucco, EIFS, wood siding or similar materials should be designed appropriately, such as "Z" type flashing. End joints shall be lapped 3" or greater. Adequate fasteners must be provided to secure against wind forces. Skirt fasteners shall be watertight.
 - G. Metal termination bars shall be a minimum of 1/10" thick by 1" wide with preformed sealant edge lap when it will be applied in exposed applications. The use of a termination bar without the preformed sealant edge lap is acceptable when the termination bar is applied beneath counter flashings. The termination bar should have a minimum of 1/4" x 3/8" slotted holes 4" on center centers to facilitate mechanical anchorage.
- Note: Termination bars may not be suitable in all base flashing and wall flashing conditions. Termination bars may only be used in conjunction with an appropriate counter-flashing extending a minimum of 4" below the termination bar.*
- H. Metal flanges for eave strips and pitch pockets to be used in conjunction with roofing shall be primed with either an ASTM D 41 asphalt primer, water based acrylic or water based polymer modified primer on all sides which may come into direct contact with either membrane adhesive or other asphaltic products. These components may be set in an SBS trowel grade modified flashing cement/adhesive. Eaves shall be a minimum of 3"X 3" and have drip

lips. Pitch pockets shall be a minimum of 4" wide for all projections and extensions through the roof. Provisions may be made for securing the drip edge skirt to the face of the wall.

- I. All pitch pockets for brackets, supports, pad-eyes, etc., shall have a metal sleeve minimum height of 4". All stacks shall have a metal sleeve flashing a minimum of 8" high.
- J. During re-roofing projects, provisions shall be made for the re-installation of existing roof top equipment, sheet metal ductwork, counter flashings and coping metal removed in conjunction with the new work. Also provide for cleaning and repairing of any existing sheet metal, and replacement of missing and irreparable sheet metal to match existing types.
- K. Conduits and piping such as electrical and gas lines must be set on wood blocking or some other form of support. Wood blocking/supports must be set on pads constructed of an additional layer of LeakBarrier® membrane material.

3.09 WALKWAYS

- A. Walkways for normal rooftop traffic may be constructed from two plies of LeakBarrier® membrane. This type of walkway is not for sidewalk or patio-type use.
- B. Construct walkways by solidly adhering a first ply of smooth surfaced membrane to the field of the roof followed by a granule surfaced membrane to the surface of the first ply.
- C. Walkway sections should be no longer than 10' with a 6" minimum gap between each section to allow for drainage.

3.10 ROOF PROTECTION

- A. All roofing work whether fully and or partially completed must be protected from other trades until completion.
- B. Whenever possible, stage all materials in such a manner that foot traffic is minimized over completed roof areas.
- C. When it is not possible to stage materials away from locations where partial or complete installation has taken place, temporary walkways and platforms shall be installed in order to protect all completed and in progress roof areas from traffic and point loading during the application process.
- D. Temporary tie-ins shall be installed at the end of each workday and removed prior to commencement of work the following day.

3.11 CLEAN-UP

- A. All work areas are to be kept clean, clear and free of debris at all times.
- B. Do not allow trash, waste, or debris to collect on the roof. These items shall be removed from the roof on a regular daily basis.

- C. All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.
- D. Dispose of or recycle all trash and excess material in a manner conforming to current United States Environmental Protection Agency (U.S. EPA) regulations and local laws.
- E. Properly clean the finished roof surface after completion. Ensure any drains and or gutters are not clogged.
- E. Clean and restore all damaged surfaces to their original condition.

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