

PA-750 Hot-Applied Rubberized Asphalt Waterproofing System

Installer's Guide



With you every step of the way



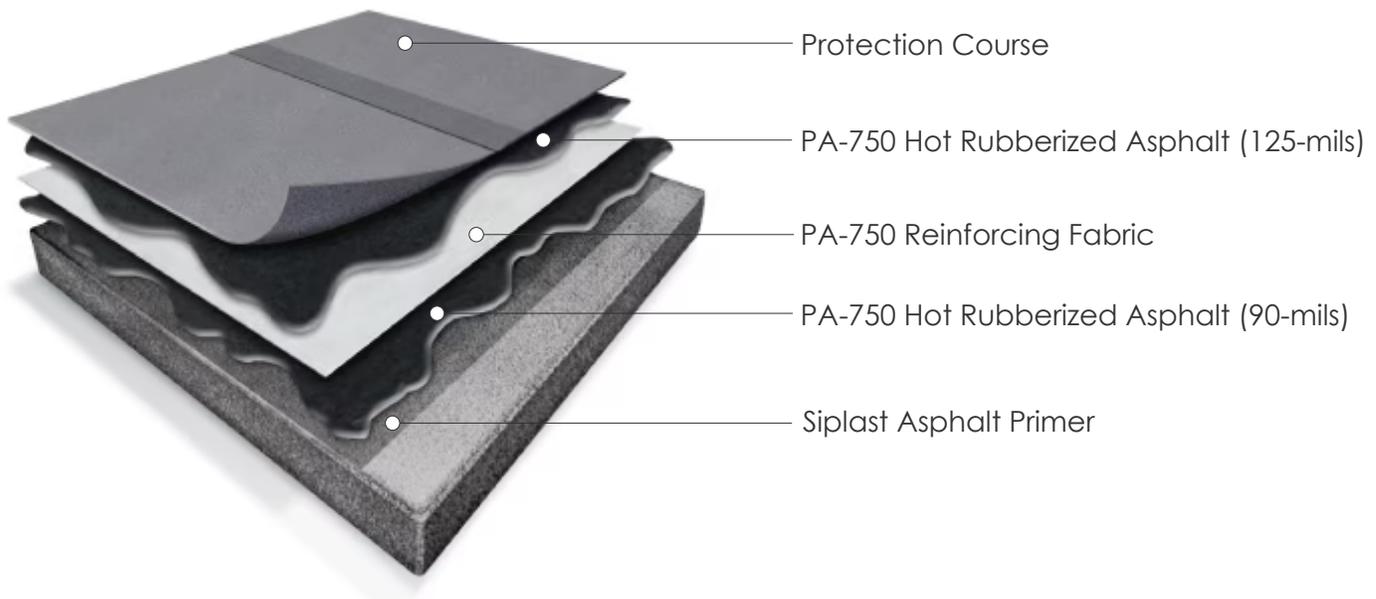
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I. System Overview & Products

System Overview

PA-750 is a hot-applied, rubberized asphalt-based membrane used as the primary component in the PA-750 Hot-Applied Rubberized Waterproofing System. PA-750 Hot-Applied Rubberized Waterproofing Asphalt, when used with PA-750 Reinforcing Fabric, is designed as a fast-setting, fully bonded, reinforced monolithic membrane. The PA-750 Waterproofing System is used in conjunction with Siplast SBS Modified Bitumen Protection Courses, bituminous flashing membranes, and liquid-applied flashing systems. The PA-750 Waterproofing System is a layered application consisting of one coat of primer, PA-750 Rubberized Asphalt layers reinforced with PA-750 Reinforcing Fabric, and a protection course.



Materials

PA-750 HRA System Products

Layer	Product	Application
Protection Courses	Paratech Glass Base	Applied in PA-750 HRA
	Paratech Glass Cap FR	Applied in PA-750 HRA
	Paratech 250 Base	Applied in PA-750 HRA
	Parabase Plus	Applied in PA-750 HRA
Waterproofing	PA-750 Hot-Applied Rubberized Waterproofing Asphalt	Hot applied
Reinforcement	PA-750 Reinforcing Fabric	Embedded in PA-750 HRA (HRA/Fabric/HRA)
Primers	PA-917 Primer	Roller, Brush, Spray
	PA-1125 Asphalt Primer	Roller, Brush, Spray

Flashing System Products

Flashing Type	Product	Application
Modified Bitumen	Paratech 180 Cap FR	Cold Adhesive
	Paratech 180 Cap FR TG	Torch
	Paratech 250 Cap FR	Cold Adhesive
	Paratech 250 Cap FR TG	Torch
	Parafor 30	Cold Adhesive
	Parafor 30 TG	Torch
	Parafor 50 LT	Torch, Cold Adhesive
	Parafor 50 TG	Torch
	Paradiene 40 FR	Cold Adhesive
	Paradiene 40 FR TG	Torch
	Veral Aluminum	Torch, SFT Adhesive
Liquid Flashing System	Parapro Flashing System	Liquid Applied
	Paraflex 531 Liquid-Applied Flashing	Liquid Applied

- For information regarding the Parapro Flashing System, [Click Here](#)
- For information regarding the Paraflex 531 Liquid-Applied Flashing System, [Click Here](#)

Packaging

Each unit is polyethylene wrapped and boxed in a double-walled kraft carton.

Product		Packaging
PA-750 Hot-Applied Rubberized Waterproofing Asphalt		30 lb box (21.43 sqft per box coverage per unit)/75 boxes per pallet.
PA-750 Reinforcing Fabric		600 ft x 39" roll (64 lbs per roll)/ 25 rolls per pallet.

II. Safety Considerations

Personal Protection and Safety

As with any construction project, safety is a key element. All applicable safety standards and good roofing practices must be followed. Please review Siplast's specifications, details, and instructions before starting an application.

Refer to the Safety Data Sheet (SDS) for each PA-750, Paradiene, Paratech, Parafor, Parapro, and related accessory products for specific PPE information. Only properly trained and professionally equipped Siplast Select Contractors experienced in the installation of the roofing applications listed herein should install these systems. Never allow contact between the heated surface of a torch, melter, or other tool and the applicator's hair, skin, or clothing. Always wear protective gear, including but not limited to hard hats, eye protection, heavy-duty gloves, and snug-fitting clothing that fully covers workers' arms and legs.

Review the melter manufacturer's literature for proper operating, safety, and maintenance procedures before use, and always keep a fire extinguisher nearby.

Never apply PA-750 Hot Rubberized Asphalt directly over exposed conduits or pipes lying on the roof deck.

Some products are harmful if inhaled, swallowed, or absorbed through the skin. They can cause skin, eye, and respiratory irritation and may cause skin and respiratory sensitization. Use all of the products with adequate ventilation or respiratory protection as needed to keep exposure below threshold limit values (TLV). Do not ingest the products, and avoid contact with eyes, skin, and clothing. Wear suitable gloves and eye/face protection. Wash thoroughly after handling all materials. Keep the products out of reach of children. First aid information is available on Safety Data Sheets (available at Siplast.com) and product containers.

When torch-applying flashings, follow all practices pertaining to industry standards and local code torch safety regulations and requirements. This includes using a fire watch during any torch applications. Always have approved fire-extinguishing equipment nearby when using a torch.

III. Storage and Handling

Pre-Construction Meeting

Schedule a preconstruction meeting prior to commencement of work to discuss means and methods of protecting the waterproofing membrane during construction. The meeting should be attended by the specifier or design professional, an authorized Siplast representative, the waterproofing contractor, and any applicable subcontractors responsible for related scopes, including overburden.

Storage - General

Store materials out of direct exposure to the elements, including sunlight. Store roll goods and asphalt boxes on a clean, flat, and dry surface. All material stored on the deck overnight shall be stored on pallets. Rolls must be stored on ends. Store materials in a manner so as to preclude overloading of deck and building structure. Store materials such as solvents, adhesives, and asphalt cutback products away from open flames, sparks, or excessive heat. Cover all material using a breathable cover, such as a canvas. Polyethylene or other non-breathable plastic coverings are not acceptable.

Storage - Parapro Flashing System

Store Parapro and Pro Resin products indoors in closed containers in a well-ventilated, cool, dry area away from direct sunlight, heat, open fire, any ignition source, oxidizing agents, strong acids, and strong alkalis. Resin products may autopolymerize at temperatures greater than 140°F (60°C). Resin product shelf life is 6 months from ship date. The shelf life of resin products will be reduced if the products are stored at temperatures above 77°F (25°C). Pro Catalyst is extremely heat sensitive. Proper storage is important to help ensure handling safety and product quality. To maintain product quality, the storage temperature of Pro Catalyst should not exceed 77°F (25°C). The reactivity/effectiveness of Pro Catalyst will decrease progressively when stored under high temperature conditions. Exposure to a temperature of 122°F (50°C) or higher can result in self-accelerating decomposition of Pro Catalyst. Self-accelerating decomposition is signaled by the presence of bright white smoke and can create temperatures in excess of 500°F (260°C), depending on the environmental conditions and quantity of catalyst present. Such temperatures can be hazardous in the presence of flammable materials. Therefore, Pro Catalyst should never be subjected to conditions that can result in self-accelerating decomposition.

Materials stored on the job site during application must be kept on a pallet in a shaded, well-ventilated area. In unshaded areas, cover materials with a white, reflective tarp in a manner that allows air circulation beneath the tarp.

Disposal

Incinerate or dispose of uncured or cured Parapro and Pro Products in accordance with Federal, State, Provincial, or Local regulations. Catalyze uncured resin, such as that present in pails or on lids, to allow for disposal. Pro Catalyst can be added to, and mixed with, a Parapro or Pro Resin to facilitate disposal.

Weather Restrictions

Do not apply PA-750 Waterproofing System products if there is a threat of precipitation, condensation is present on the substrate or the ambient temperature is within 5°F of the dew point. At ambient temperatures of 40°F (4°C) and below, special precautions must be taken to ensure that the rubberized asphalt maintains a minimum acceptable temperature of 380-400°F (193-204°C) at the point of application. The rubberized asphalt must not be overheated to compensate for cold conditions. The use of insulated handling equipment is strongly recommended. Hot luggers, carts, and kettle-to-roof supply lines should be insulated. Luggers and carts should never be more than half-filled at all times.

Protection

Upon completion of new work, use appropriate procedures for protection of the finished membrane during the remainder of the construction period. Protect completed membrane assembly.

IV. Installation Materials, Tools, and Equipment

Substrate Preparation Equipment

- Application rollers for primers
- Granule embedding torch

Application Equipment

- Melter – double jacketed, oil bath melter with mechanical agitation that is designed for the heating and application of hot rubberized asphalt waterproofing membranes MUST be used. The melter must be able to maintain material temperature between 375°F and 400°F (190-204 °C). Consult the melter manufacturer for specific instructions covering the melter's proper operating procedures, safety, and maintenance.



- Propane gas, diesel fuel, gasoline, or adequate electric service (depending on melter type)
- Dip thermometer (for checking membrane temperature)
- Hand torches and propane tanks
- Fire Extinguishers
- Brooms, shovels, and blowers
- Hand tools such as utility knives, heavy-duty scissors, hammers, screwdrivers, wrenches, etc.
- Tape measure and chalk line
- Industrial sprayer and or paint rollers for primer application. Liquid applied flashing application (Parapro/Paraflex): Plastic tarps, plastic mixing buckets, jiffy mixer, disposable paint rollers, disposable paint brushes, masking tape, hand grinder (with carbide disk or other appropriate abrasive wheel), battery-operated scale, Nitrile gloves.
- Hand trowels, notched trowels, large nap rollers with poles for flashing application work
- 5-gallon pails with safety handles designed for handling and pouring rubberized hot asphalt material
- Rubber flat-bladed squeegees – 6" & 18" wide, 2" deep, ¼" thick. Squeegee poles and replacement blades.
- 4-wheeled cart (for transporting pails of material over larger distances)
- Thickness gauge capable of measuring to mils (0.001") and/or 32nds of an inch
- Large nap roller mops on poles and membrane trough (for application to vertical surfaces)

V. Substrate Requirements, Preparation, and Repair

Acceptable Substrates

PA-750 Waterproofing Systems are typically installed over structural concrete substrates/decks. See below for more information regarding different types of concrete substrates/decks.

Concrete (Cast in Place): There are several different types of concrete (cast in place) used in construction. Some are acceptable substrates for PA-750; others are not. In general, Siplast requires a concrete substrate with a minimum compressive strength of 3,500 psi and a moisture content low enough to receive roofing materials.

Conventional Weight Concrete: Poured-in-place structural concrete decks (those that include as mix aggregates sand and stone or crushed gravel) should be fully cured, dry, frost-free, smooth, broom-cleaned and free from release or curing agents. The underside of the structural concrete deck should be provided with adequate ventilation to allow adequate drying of latent moisture within the concrete pour. The structural concrete deck should be evaluated for moisture content prior to application of roofing. In cases where the concrete contains excessive latent moisture or adequate surface dryness cannot be obtained, application should be discontinued until acceptable conditions prevail, or an alternative substrate preparation can be utilized. The acceptance of the structural concrete substrate to receive the roof membrane system is the responsibility of the project designer and/ or roofing contractor. All projections or depressions should be leveled.

Polymer-modified or fast-setting mortar/concrete products are acceptable provided that they have been tested/ approved in advance by Siplast. Contact Siplast Technical Support for a list of products that have been tested and approved.

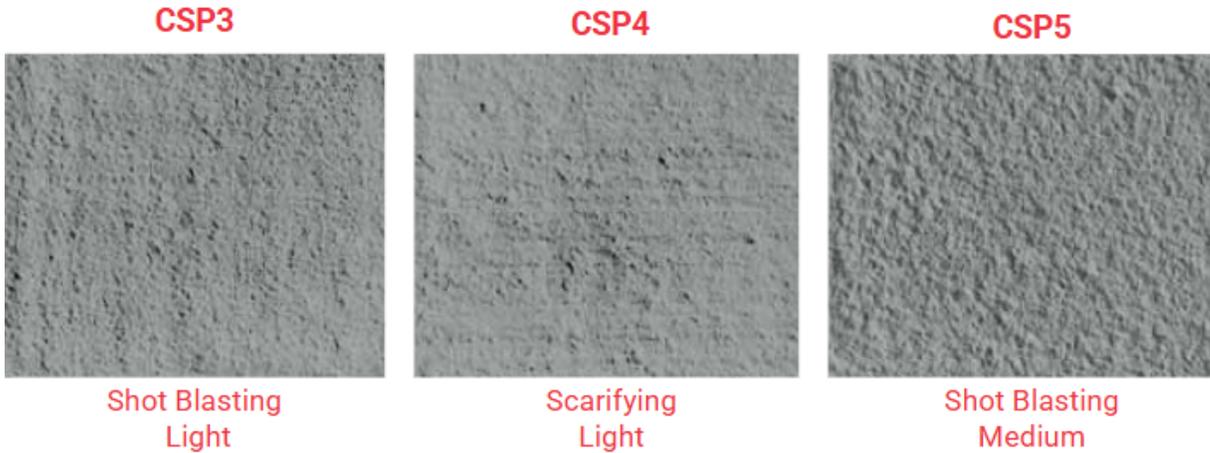
Structural Lightweight Concrete: Because of the moisture retention characteristics and variability of aggregate used in the mix of structural lightweight concrete, such decks can retain excessive and unacceptable levels of moisture for extended periods of time. Consequently, they cannot be evaluated according to timelines traditionally used for concrete mixed with hard stone and/or crushed gravel. Structural lightweight concrete decks should be evaluated for moisture content prior to application of roofing. In cases where the concrete contains excessive latent moisture or adequate surface dryness cannot be obtained, application should be discontinued until acceptable conditions prevail, or an alternative substrate preparation can be utilized. The acceptance of the concrete substrate to receive the roof membrane system is the responsibility of the project designer and/or roofing contractor.

Lightweight Insulating and/or Cellular Concrete*: Made with aggregates such as vermiculite, perlite, pumice, scoria, or diatomite, lightweight insulating concrete will have a density of 15-90 pcf and will retain more than 20% moisture by volume when fully cured. This high moisture content can create bonding and pinholing/blistering problems for the membrane.

** PA-750 cannot be directly adhered to Lightweight Insulating or cellular concrete. Contact Siplast Technical Support for more information regarding applications over LWIC decks.*

Concrete Surface Finish

A poured-in-place concrete surface (horizontal) should be finished to a CSP of 3-5 to allow the membrane to physically bond to the deck. The texture, however, should not be so rough that the membrane cannot be applied at a continuous thickness across the surface.



Concrete construction types that require project-specific review by Siplast Technical Support include:

- Split-slabs with a between-slab vapor impermeable membrane.
- Slab-on-grade construction.
- Concrete placed over a metal pan (including vented metal).
- Concrete with a moisture content exceeding published maximums.
- Concrete "T"-type constructions or pre-cast concrete panel construction without an overlay of reinforced concrete (see Detailing & Flashing Application section for precast joint treatment).
- Concrete utilizing porous aggregate (lightweight structural concrete).

Contact the Siplast Technical Department regarding applications over substrates other than structural concrete.

New Concrete Pours

The most important factor in assuring that the concrete will attain its greatest strength and durability is the extent to which it has CURED. Allow new concrete to cure for a minimum of 28 days in accordance with American Concrete Institute (ACI) Bulletin 308 – Guide to Curing Concrete. Concrete should not utilize curing agents, penetrating release agents, or be treated with waterproofing materials, as these materials can affect primer penetration and/or adhesion. Ensure that concrete substrates have a moisture content that is below published values at the time of primer application.

Consult Siplast before applying any curing compound to concrete scheduled to receive PA-750. Form release agents shall not be used on surfaces that are to receive PA-750. If the form release agent remains on the substrate, it shall be removed prior to any installation of PA-750 HRA.

Laitance

A weak, milky or powdery layer of cement and fines on the surface of fresh concrete, caused by excess water rising to the top. It is a result of using too much water in the mix, improper finishing, or poor curing. This layer is a weakness that can prevent PA-750 from securely bonding to the substrate, and therefore, the laitance must be removed before the membrane installation can begin.

Substrate Preparation

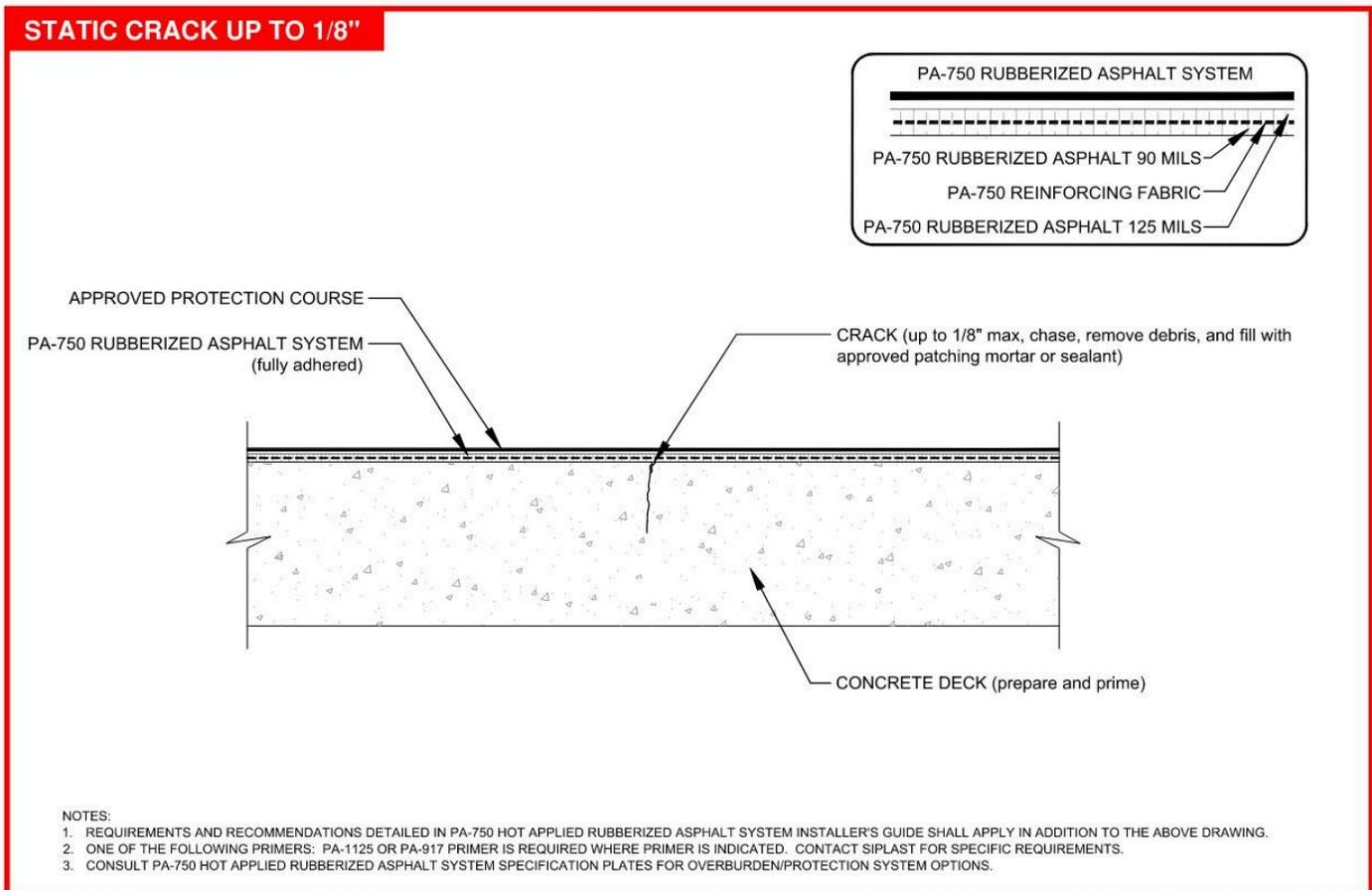
Ensure that structural concrete surfaces are properly cured, clean, dry, and free from laitance. Perform any remediation necessary to ensure that the concrete surface is level, smooth, without ridges, depressions, or exposed reinforcement. Patch depressions, holes, or cuts in the substrate. When necessary, use a quickset concrete repair compound and allow to cure thoroughly prior to application of the waterproofing system. In retrofit applications, use all reasonable means to remove existing waterproofing materials. In cases where residue from the old waterproofing system cannot be removed, contact the Siplast Technical Department for recommendations.

Concrete Crack and Joint Treatment

Before application of the PA-750 system, cracks and joints should be prepared and treated in accordance with Siplast details. Siplast recommendations for crack and joint preparation/treatment are intended to provide methods on a best effort basis to construct a watertight waterproofing system. Differential movement at cracks and between divided areas can potentially compromise long-term waterproofing system performance. Dynamic (moving) cracks should be investigated and the causes addressed before system application. Mechanical expansion joint systems should be considered for waterproofing structural expansion joints.

Static Cracks

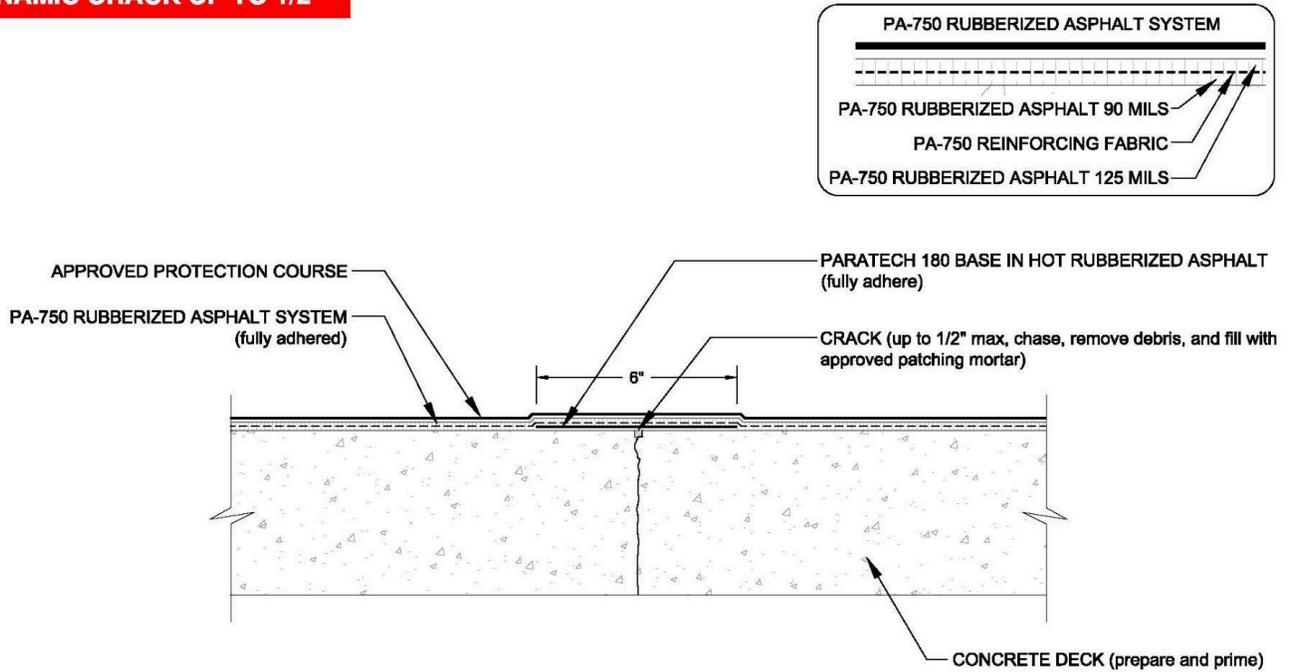
For cracks over 1/16" (1.6mm) but less than 1/8" (3.18mm) in width, apply a 12-inch-wide, 1/8-inch-thick coat of the specified rubberized asphalt membrane and reinforce with a 6-inch-wide strip of reinforcing fabric, centered over the joint and embedded firmly into the warm membrane. Apply another coat of membrane, 125 mils (3.2mm) thick, over the reinforcing sheet, totally encapsulating it in membrane.



Dynamic Cracks

Seal cracks and joints 1/8 to 1/2 inch wide with a 6-inch wide strip of the specified smooth-surfaced SBS modified bitumen stripping ply, centered over the joint and fully adhered to the prepared substrate.

DYNAMIC CRACK UP TO 1/2"



NOTES:

1. REQUIREMENTS AND RECOMMENDATIONS DETAILED IN PA-750 HOT APPLIED RUBBERIZED ASPHALT SYSTEM INSTALLER'S GUIDE SHALL APPLY IN ADDITION TO THE ABOVE DRAWING.
2. ONE OF THE FOLLOWING PRIMERS: PA-1125 OR PA-917 PRIMER IS REQUIRED WHERE PRIMER IS INDICATED. CONTACT SIPLAST FOR SPECIFIC REQUIREMENTS.
3. CONSULT PA-750 HOT APPLIED RUBBERIZED ASPHALT SYSTEM SPECIFICATION PLATES FOR OVERBURDEN/PROTECTION SYSTEM OPTIONS.

Adhesion Test

Adhesion testing is an excellent indicator of the presence of unforeseen contaminants such as sealers, oils and surface moisture that can affect adhesion of the primer layer although it should not be relied upon as the sole means of evaluation.

The first step is to apply a coat of PA-917 Primer and allow it to dry. If the primer can easily be scraped from the concrete surface, the moisture content is too high. If the primer exhibits good adhesion, the next step would be to squeegee a patch of PA-750 to the surface. The patch should be a minimum of 12" square, at least 125 mils in thickness, and applied with a squeegee with the force that would typically be applied while installing the full membrane in the field. The patch of PA-750 should be allowed to cool completely. Once the patch has cooled, a triangle shape should be cut near the center of the patch through the membrane to the concrete. Using a knife or fingers, attempts should be made to pull/peel the corners of the triangle shape from the surface of the concrete.



Ideal adhesion is indicated by the membrane being pulled apart, leaving a good deal of membrane on the surface of the concrete. Acceptable adhesion requires some force to be used in peeling/pulling the membrane from the surface, even though the concrete may wind up clean.

Unacceptable adhesion is indicated by the presence of moisture/dampness on the concrete or underside of the membrane; membrane that is completely loose from the surface with no force exerted to remove it; any amount of concrete dust or debris pulled up with the membrane. Any of these indicators will require additional drying or preparation of the concrete substrate.

Should a more systematic analysis be desired, ASTM D 4263 (Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method) can be performed. If moisture is present beneath the plastic sheeting referenced in the ASTM procedure, then waterproofing application should be postponed until the moisture content is at a more acceptable level.

Frequent bond checks throughout the application of the membrane should be conducted to ensure adequate adhesion is being maintained. If adhesion problems persist after corrective action has been taken, contact Siplast's Design Services Department for further instruction.

Primer Application

Prime the concrete substrate with a uniform coating of Siplast PA-1125 Asphalt Primer or PA-917 Primer (at a rate of 1 gallon per 400 to 600 square feet) and allow the primer to dry thoroughly. The surface should be a light brown. If applied too heavily, the primer may negatively affect adhesion, and will need to be allowed to flash off before proceeding with PA-750 application. Primer may be applied with a roller or air sprayer. Prime all metal flanges (jacks, edge metal, lead drains, flashings, etc.).

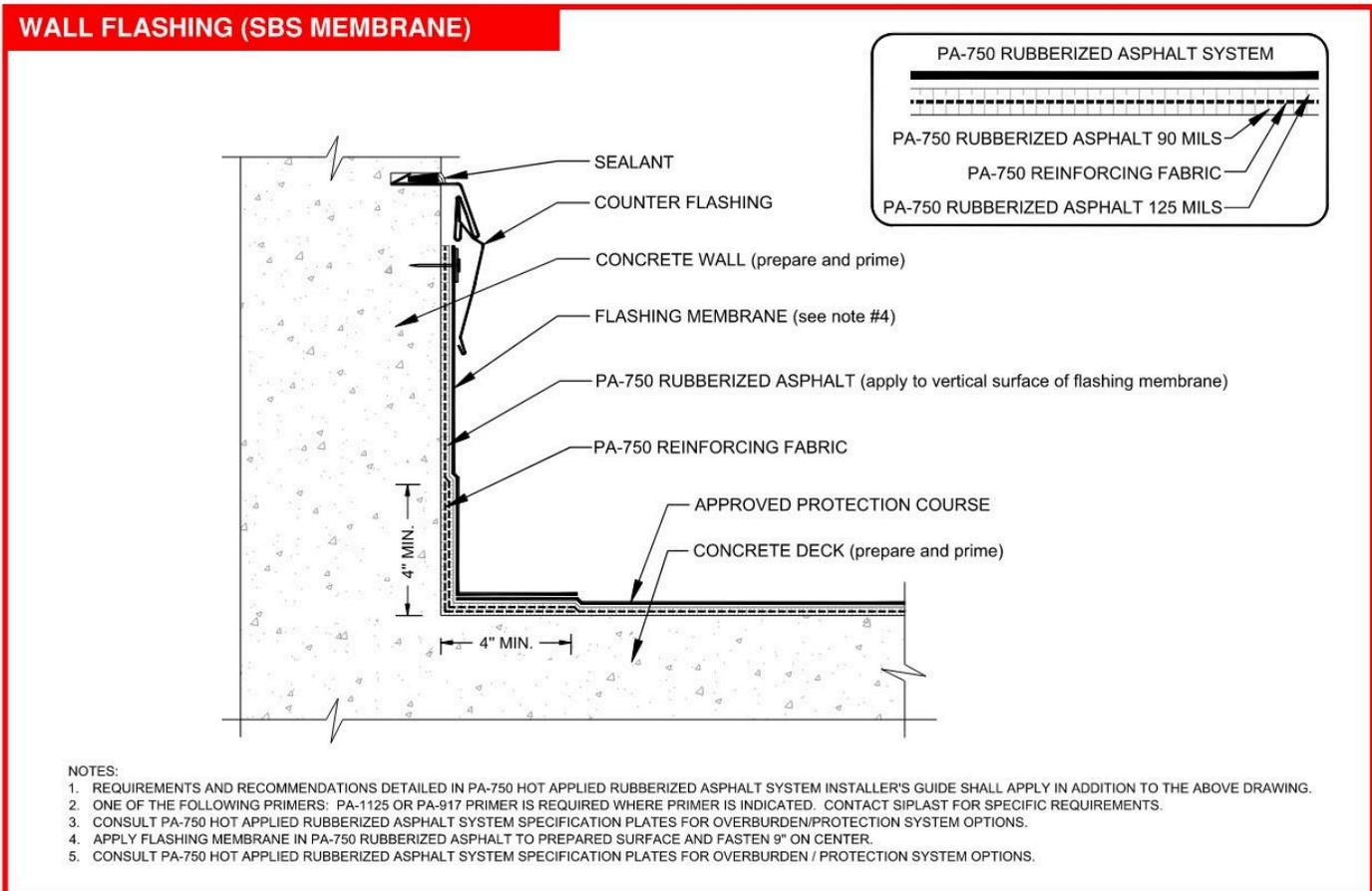
VI. Detailing & Flashing Application

Detail work is most commonly completed prior to installation of the field membrane. In roofing applications, Siplast recommends extending all flashings up above the finished roof surface 8-12 inches. Parapets, curbs, pipes, and walls are examples of where flashings must extend above the roof surface.

UV Exposed Flashings

Because PA-750 is not UV-stable, Parapro PMMA and Siplast SBS-modified bitumen flashing membranes are typically used for all exposed flashing conditions. The following are the types of exposed flashing materials commonly utilized with PA-750:

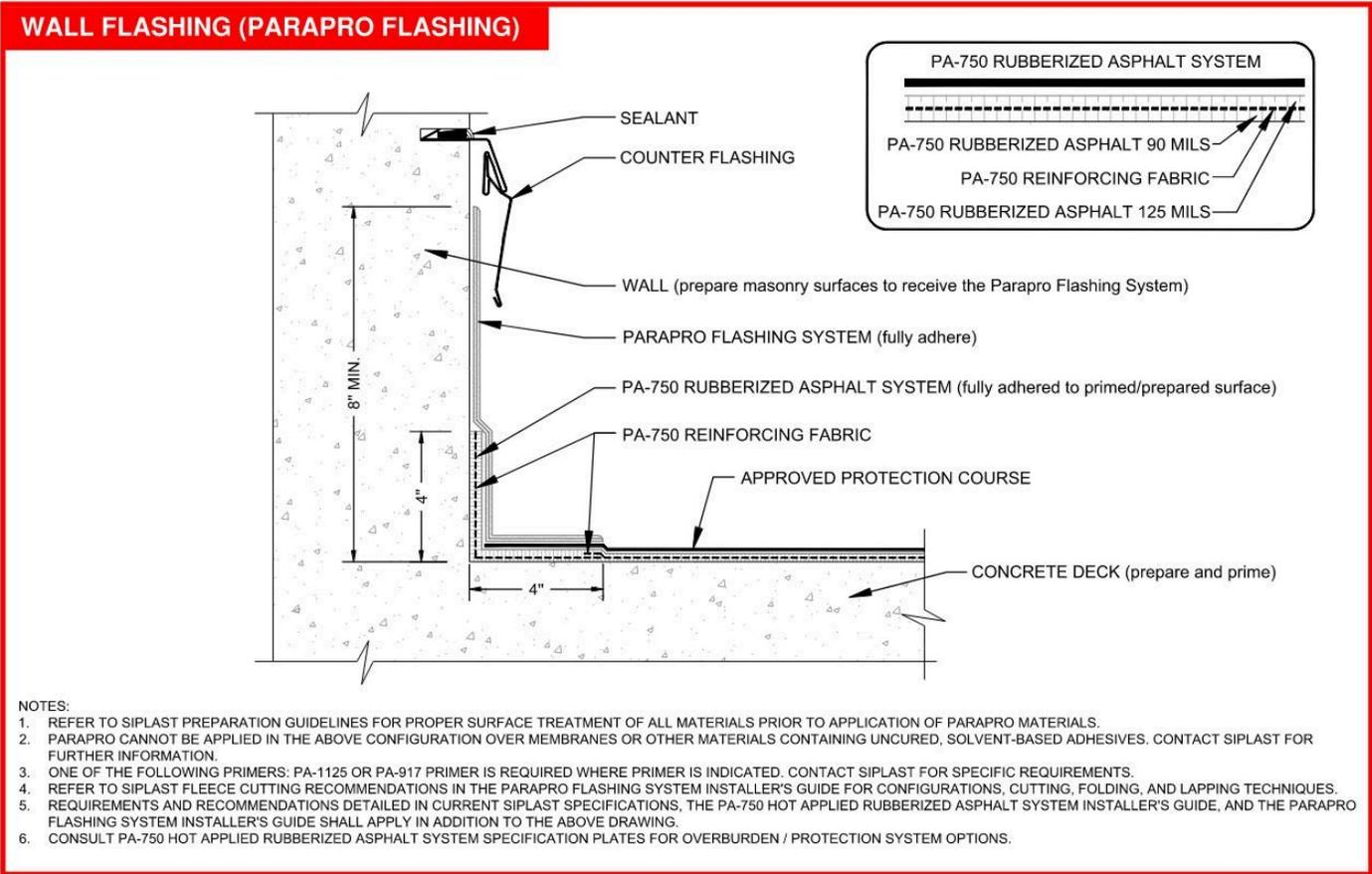
SBS Modified Bitumen Flashing Membrane



Granule-surfaced Flashing Application: Flash masonry parapet walls and curbs using an approved Siplast granule-surfaced flashing sheet for exposed applications. Apply the flashing sheets into place using three-foot widths (cut off the end of roll), always lapping the factory selvage edge. Extend the flashing sheet a minimum of 4 inches beyond the vertical flashing substrate onto the surface of the rubberized asphalt waterproofing membrane and up the wall or curb to the desired flashing height. Exert pressure on the flashing sheet during application to ensure complete contact with the vertical/horizontal surfaces, preventing air pockets. Check and seal all loose laps and edges. Nail the top edge of the flashing on 9-inch centers. (See manufacturer's schematic for visual interpretation).

Foil-surfaced Flashing Application: Apply the metal foil-faced flashing sheets into place using SFT Cement or torch-applied using three-foot widths (cut off the end of roll), always lapping the factory selvage edge. Extend the flashing sheet a minimum of 4 inches beyond the vertical flashing substrate onto the surface of the rubberized asphalt waterproofing membrane and up the wall or curb to the desired flashing height. Exert pressure on the flashing sheet during application to ensure complete contact with the vertical/horizontal surfaces, preventing air pockets; this can be accomplished by using a damp sponge or shop rag. Check and seal all loose laps and edges. Nail the top edge of the flashing on 9-inch centers. (See manufacturer's schematic for visual interpretation).

Liquid Flashing System



Parapro Flashing System: Parapro PMMA is mixed with a catalyst and combined with fleece reinforcement to provide a UV-stable, self-terminating membrane. For proper installation instructions, reference the [Parapro Flashing System Installer's Guide](#).

Paraflex 531 Liquid Flashing System: Paraflex 531 Liquid Flashing is a liquid-applied flexible membrane resin using silane-terminated polymer (STP) chemistry. Paraflex 531 Liquid Flashing is used in conjunction with Pro Fleece to field-construct Paraflex 531 Flashing Membrane. For proper installation instructions, reference the [Paraflex 531 Liquid Flashing System Installer's Guide](#)

Specific Detailing Conditions

Reinforcing Fabric: PA-750 Reinforcing Fabric is the standard duty reinforcing fabric used at cracks, construction joints, and at all changes-in-plane and as directed by Siplast.

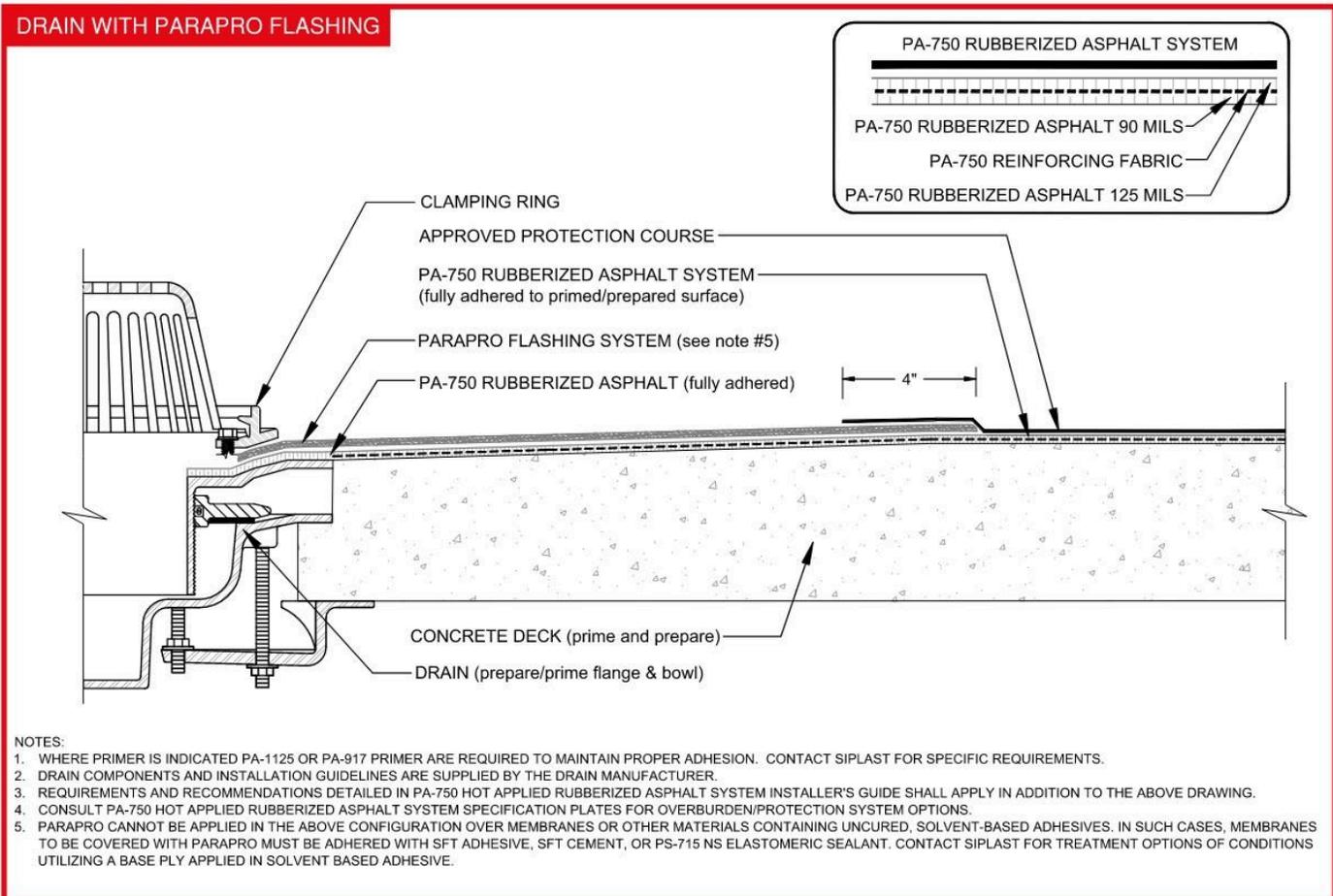
Construction or Control Joints: Apply PA-750, 125 mils (3.2mm) thick, over the joint area. Center a 6" (152.4mm) wide strip of reinforcing fabric over the joint and embed firmly into the warm membrane. Apply another coat of membrane, 125 mils (3.2mm) thick, over the reinforcing sheet, completely covering it.

Precast Joints: Side Joints: Fill the joints between precast panels with concrete or an acceptable repair mortar or sealant. Apply membrane, 125 mils (3.2mm) thick, over the joint area. Center a strip of reinforcing fabric over the joint, extending 3" (76.2mm) beyond both sides of the joint, and embed firmly into the warm membrane. Apply another coat of membrane, 125 mils (3.2mm) thick, over the reinforcing sheet, totally encapsulating it in membrane.

End Joints: Fill the joints between precast panels with concrete or an acceptable repair mortar. Apply membrane, 125 mils (3.2mm) thick, over the joint area. Center a strip of reinforcing fabric over the joint, extending 9" (228.6mm) beyond both sides of the joint, and embed firmly into the warm membrane. Apply another coat of membrane, 125 mils (3.2mm) thick, over the reinforcing sheet, totally encapsulating it in membrane.

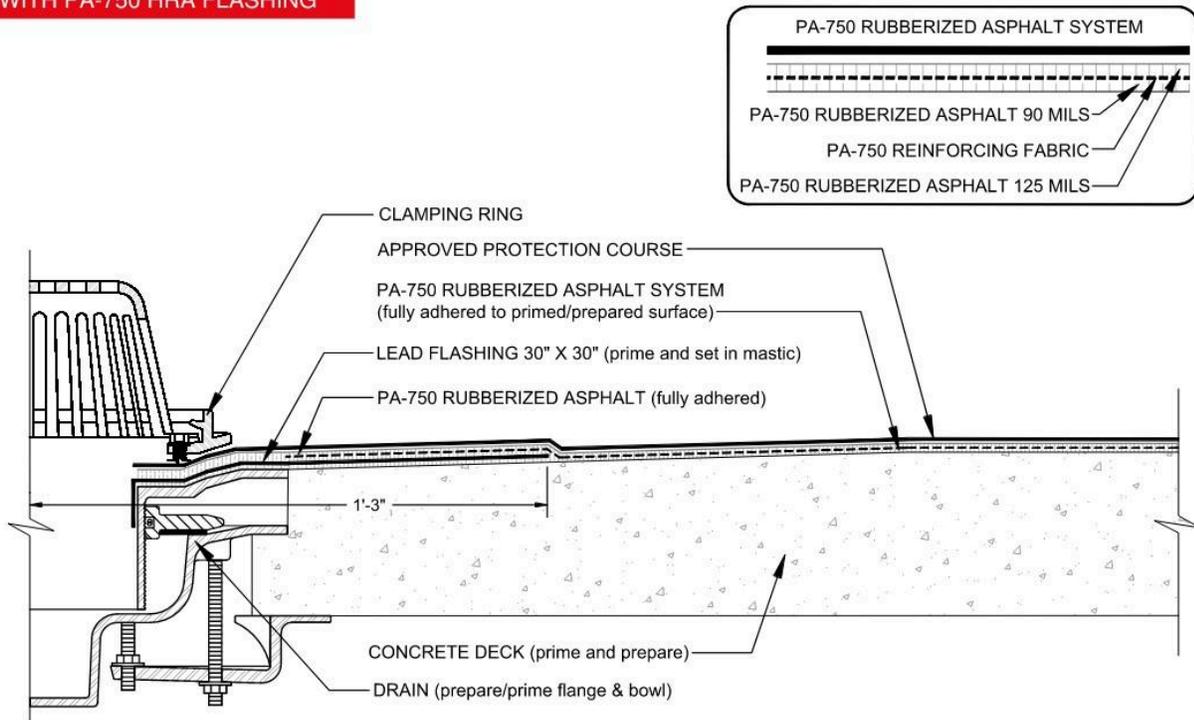
Roof Drains: Roof drains may be detailed with lead flashings or Parapro Flashing Resin System, as shown in the details below. PA-750 Reinforcing Fabric should not extend into drain bodies, as it creates potential to wick moisture back into the membrane assembly.

Drain with Parapro Flashing



Drain with PA-750 HRA Flashing

DRAIN WITH PA-750 HRA FLASHING



NOTES:

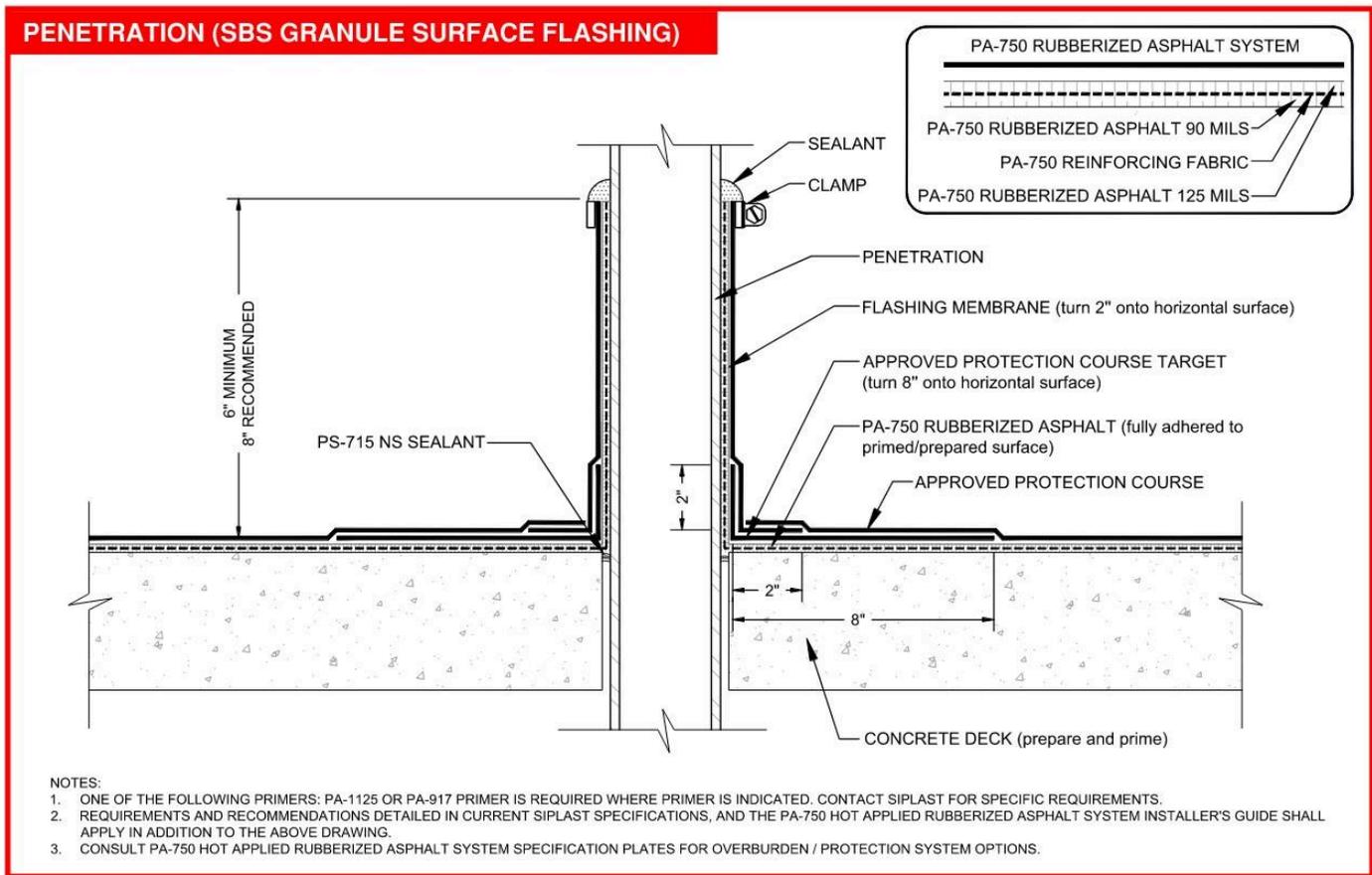
1. PA-1021 PLASTIC CEMENT IS REQUIRED WHERE MASTIC IS INDICATED.
2. WHERE PRIMER IS INDICATED PA-1125 OR PA-917 PRIMER ARE REQUIRED TO MAINTAIN PROPER ADHESION. CONTACT SIPLAST FOR SPECIFIC REQUIREMENTS.
3. DRAIN COMPONENTS AND INSTALLATION GUIDELINES ARE SUPPLIED BY THE DRAIN MANUFACTURER.
4. REQUIREMENTS AND RECOMMENDATIONS DETAILED IN PA-750 HOT APPLIED RUBBERIZED ASPHALT SYSTEM INSTALLER'S GUIDE SHALL APPLY IN ADDITION TO THE ABOVE DRAWING.
5. CONSULT PA-750 HOT APPLIED RUBBERIZED ASPHALT SYSTEM SPECIFICATION PLATES FOR OVERBURDEN/PROTECTION SYSTEM OPTIONS.

Penetrations

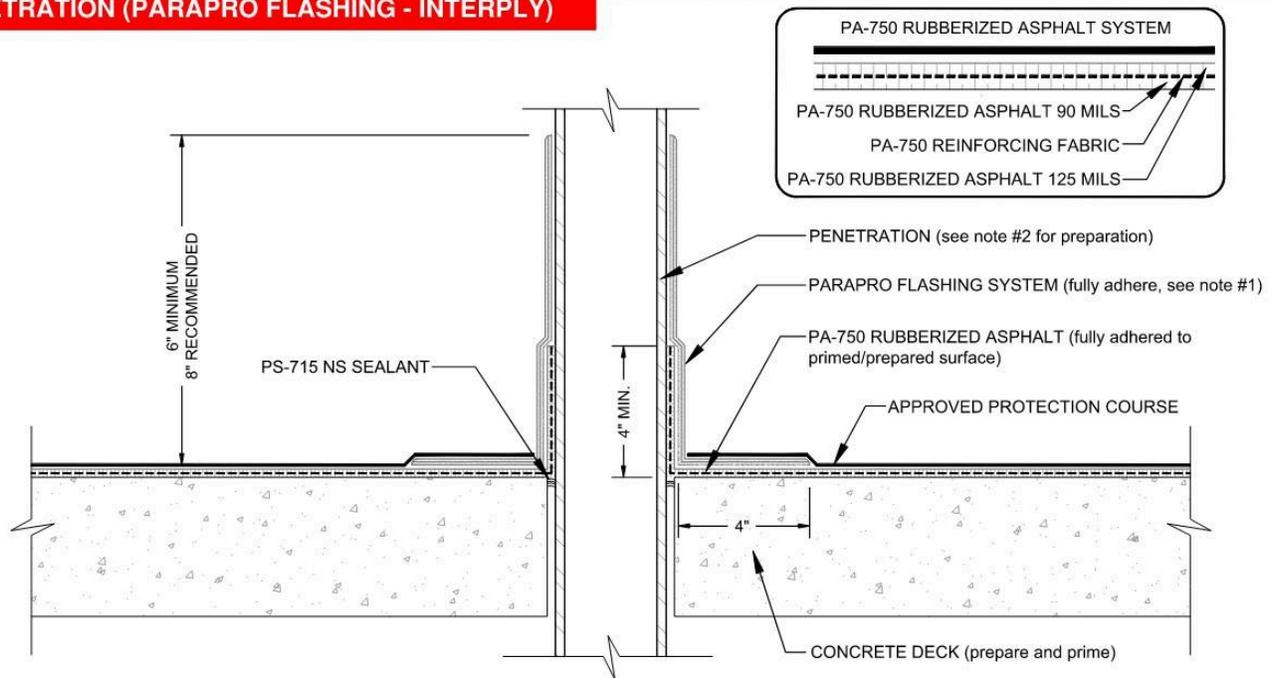
Penetrations must be rigid and securely fastened or cast into the deck. Flashing must seal directly to the penetration itself, where it passes through the membrane. Do not terminate flashing onto intermediate elements (such as metal flashing, insulation, or surface treatments) that could potentially fail and allow moisture to bypass the membrane and flashing. Flexible penetrations, like lightning cables or plastic conduits ("smurf tubes"), require enclosure in a stable, rigid pipe to permit proper flashing.

Hot pipes must first be surrounded by an intermediate "cold" sleeve pipe that allows the flashing to be applied to it as to not compromise the membrane.

SBS Modified Bitumen or Parapro Flashings must be used for all exposed flashings.



PENETRATION (PARAPRO FLASHING - INTERPLY)



NOTES:

1. CLEANWIPE THE SURFACE OF THE CURED PARAPRO FLASHING WITH PRO PREP AND ALLOW TO DRY PRIOR TO APPLICATION OF APPROVED PROTECTION COURSE.
2. PARAPRO CANNOT BE APPLIED IN THE ABOVE CONFIGURATION OVER MEMBRANES OR OTHER MATERIALS CONTAINING UNCURED, SOLVENT-BASED ADHESIVES. CONTACT SIPLAST FOR FURTHER INFORMATION.
3. ONE OF THE FOLLOWING PRIMERS: PA-1125 OR PA-917 PRIMER IS REQUIRED WHERE PRIMER IS INDICATED. CONTACT SIPLAST FOR SPECIFIC REQUIREMENTS.
4. REFER TO SIPLAST FLEECE CUTTING RECOMMENDATIONS IN THE PARAPRO FLASHING SYSTEM INSTALLER'S GUIDE FOR CONFIGURATIONS, CUTTING, FOLDING, AND LAPPING TECHNIQUES.
5. REQUIREMENTS AND RECOMMENDATIONS DETAILED IN CURRENT SIPLAST SPECIFICATIONS, THE PA-750 HOT APPLIED RUBBERIZED ASPHALT SYSTEM INSTALLER'S GUIDE, AND THE PARAPRO FLASHING SYSTEM INSTALLER'S GUIDE SHALL APPLY IN ADDITION TO THE ABOVE DRAWING.
6. CONSULT PA-750 HOT APPLIED RUBBERIZED ASPHALT SYSTEM SPECIFICATION PLATES FOR OVERBURDEN / PROTECTION SYSTEM OPTIONS.

VII. Membrane Application

Staging

It is critical that the melter and other installation tools and equipment are staged properly. Check with local municipalities to understand if hot permits are required.

The project team should be consulted to understand appropriate locations for staging of material and equipment, and that the structure can support the temporary loads.

Heating of PA-750

Heating and mixing melters shall be of the double-jacketed melter with a built-in agitator. Melters shall be equipped with two functional, permanently installed dial-type thermometers with an accuracy of $\pm 2^{\circ}\text{C}$ to measure the temperature of the melted compound and oil. A separate calibrated thermometer with an accuracy of $\pm 2^{\circ}\text{C}$ to verify the material temperature shall be available on the job site.

The membrane should be heated between 350°F and 400°F and slowly mixed. The membrane temperature should never exceed 400°F (204°C).



PA-750 System Layout Grid Guidelines

Membrane should be applied in a methodical manner to ensure proper application thicknesses. PA-750, installed at 215 mils, weighs approximately 1.4 lbs/sq ft. Gridding the deck using chalk lines can be a good method for maintaining proper thickness during installation, as detailed below:

First Coat (90 mils): When utilizing a 39-inch wide reinforcing fabric, chalk a grid of 40 inches by 18 feet (60 SF). A 5-gallon bucket of membrane that holds between 35-40 lbs, when distributed evenly over 60 sq. ft., will yield a minimum thickness of 90 mils.

Second Coat (125 mils): When utilizing a 39-inch wide reinforcing fabric, chalk a grid of 40 inches by 13 feet (43 SF). A 5-gallon bucket of membrane that holds between 35-40lbs, when distributed evenly over 43 sq. ft., will yield a minimum thickness of 125 mils.

Coverage Rates

Coverage rates will vary depending on the roughness of the substrate, the temperature of the membrane, and the ambient air temperature. Mil thickness gauges should be used often to ensure proper thickness is attained.

Application

1. Evenly distribute the base coat of the specified rubberized asphalt at a rate sufficient to provide a minimum thickness of 1/11 inch (90 mils), to form a seamless waterproofing membrane. Ensure that the application is total in coverage, leaving no breaks or voids. The spreading of the PA-750 is accomplished utilizing the flat rubber-bladed squeegees as detailed in the “Tools and Equipment” section of this guide.
2. While the base coat is still in a molten state, the PA-750 Reinforcement Fabric is then immediately unrolled or “flown in” to the 90 mils. Fully embed the specified reinforcing fabric by brushing it into the base coat (encourage bleed through), removing trapped air, and ensuring that there are no buckles or wrinkles, with the goal of 100% contact of the fabric into the membrane. Lap the reinforcing fabric a minimum of 2 inches (5 cm) at all side and head laps and apply an additional coat of rubberized asphalt between layers of overlapping fabric.



3. Ensure that the membrane bitumen is applied to extend beyond the reinforcing fabric by a maximum of 1/4 inch (6 mm).
4. Apply a second coat of PA-750, ensuring that the reinforcing fabric is completely encapsulated between the two layers of rubberized asphalt. Evenly distribute the second coat at a rate sufficient to achieve a minimum thickness of 125 mils (1/8 inch) over the membrane reinforcement fabric, providing a total minimum thickness of 215 mils (1/4 inch). PA-750 should overlap the fabric from the preceding row approximately 3” to ensure that the lap is sealed.



5. Protection course: While the rubberized asphalt is still warm enough to provide full adhesion, apply the protection layer free of wrinkles, creases, or fishmouths. Exert sufficient pressure on the roll during application to ensure prevention of air pockets without displacing the underlying rubberized asphalt. Butt sides and ends of the protection layer.

Exposure

Do not leave PA-750 Reinforcement Fabric exposed overnight, as there is a potential for the fabric to pick up moisture and retain it in the system. The top coat of membrane must be applied to cover all PA-750 Reinforcing Fabric.

All PA-750 applications require a protection course embedded into the membrane to protect the system from light construction traffic. An appropriate protection course should be selected based on the intended exposure time prior to installation of any overburden.

PA-750 has a maximum exposure time of 30 days with a mineral finish protection course.

Foot Traffic

It is best to limit foot traffic over the completed base coat and/or finished PA-750 system. To prevent tracking of asphalt or adhesives across the field of the roof, consider the use of talc or release liners on work boots.

Siplast protection courses are not intended to bear heavy construction traffic. If excessive traffic, including but not limited to staging, motorized machinery, and heavy foot traffic, is anticipated, additional measures should be taken to protect the completed membrane system.

VIII. Water Cut-off

At end of day's work, or when precipitation is imminent, construct a water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing.

IX. Final Inspections - Membrane Integrity Testing

Final Inspections

NOTE: A final inspection by Siplast of the completed waterproofing membrane and completion of all related punch list items are required prior to installation of the overburden for projects to be eligible for a Siplast Guarantee.

The Siplast representative will compile required punch list items indicating any deficiencies in the waterproofing membrane and flashing membrane system that require remediation before the installation will be accepted.

We recommend that sufficient advance notice be given to your local Siplast inspector in order to schedule the final inspection. Please contact the Siplast Technical and Design Support Department at 800-922-8800 should further clarification be required.

Membrane Integrity Testing

Integrity testing of the finished waterproofing membrane system is recommended and may also be required by the project specifications. Testing is typically conducted using either flood testing or electronic leak detection, prior to installation of any overburden.

Fully document all tests, regardless of method(s) used. Complete reports with a description of the techniques employed, summary of findings, and CAD scaled roof plans, and applicable photographs of the tested areas with the locations of all defects accurately mapped on the plans. Please forward all copies of test reports to the Siplast Technical Department

Water Flood Test

ASTM D5957: Standard Guide for Flood Testing Horizontal Waterproofing Installations. This practice describes testing the water-tightness of waterproofing installations applied to horizontal surfaces having a slope of no greater than 1/4 inch per foot (2% slope).

Prior to the application of the overburden, plug the drains and scuppers and flood the waterproofing surface with water a minimum of 1 to 2 inches deep. Leave the water for a minimum of 24 hours to ensure the system is leak-free.

Take necessary precautions to determine/verify if the structure can sustain the weight of the water for the duration of the test.

Electronic Leak Detection

This practice allows for using a low and/or high voltage electronic detection system to verify that the membrane is free of any holes, open seams, or capillary defects that will allow water to pass.

Each of the following methods allows for using a low-voltage electronic scanning system to locate membrane breaches on both horizontal and vertical surfaces to identify potential leaks in exposed roofing and waterproofing membranes.

ASTM D7877-14, Standard Guide for Electronic Methods for Detecting and Locating Leaks in Waterproof Membranes.

Four separate test methods are referenced below.

Low-voltage membrane EFVM

Low-voltage horizontal membrane scanning platform

Low-voltage vertical membrane surface scanning

High-voltage membrane testing

X. Overburden Installation

Overburden Installation Overview

Following the final inspection of the waterproofing system and remediation of any punch list items, remove any debris, excess waterproofing materials, equipment, and other related items prior to overburden application.

Membrane Protection

It is the waterproofing contractor's responsibility to ensure that the party responsible for installation of the overburden takes all necessary precautions to protect the waterproofing membrane during installation of the overburden.

Overburden Solutions

The PA-750 HRA Waterproofing System can be specified with a wide variety of overburden systems, including pedestals and pavers, poured-in-place concrete, mortar and pavers, and road asphalt. It may also be specified beneath modular or layered vegetated roof solutions. Use overburden components that are approved by Siplast and installed per the manufacturer's published recommendations. Contact the Siplast Technical Department for specific overburden information.

Insulation- Inverted Assemblies

Place the specified insulation unadhered directly over the membrane protection layer or drainage mat (if applicable), with the channeled edges down. Install the panels to fit tightly, leaving a maximum opening between panels of 3/8 inch. Closely abut walls, penetrations, and projections, leaving a maximum opening between panels and projections of 3/4 inch.

Conform to the following requirements where insulation is installed in multiple-layer configurations.

- A. Apply the thickest layer (2 inches minimum) of the insulation system as the bottom layer.
- B. Stagger the panel joints between insulation layers.
- C. Install all layers unadhered.

Asphaltic Protection Board (If Applicable)

Place the protection board unadhered directly over the completed membrane surface with the end joints staggered. Install the panels to fit tightly, leaving a maximum opening between panels of 3/8 inch. Closely abut walls, penetrations, and projections, leaving a maximum opening between panels and projections of 3/4 inch.

Pedestals/Pavers

Install the pedestals/pavers following the instructions and requirements of the insulation and pedestal/paver manufacturer, including specifications for perimeter securement and incorporation of metal-fabricated restraints at the perimeter if required. Include a protection layer atop the membrane assembly, beneath the base of the pedestals.

Vegetated Overburden

Siplast ParaGREEN Vegetated Roof Solutions include a range of layered and modular vegetated roof assemblies to meet project demands. ParaGREEN may be installed over our PA-750 HRA Waterproofing System to provide a single-source solution. Contact ParaGREEN@siplast.com for more information.

Root Barrier

Siplast requires the installation of ParaGREEN Root Barrier when installing ParaGREEN Vegetated Roof Solutions over PA-750 HRA. ParaGREEN Root Barrier seams may be heat-welded or taped with an 18" overlap using ParaGREEN Root Barrier Tape. ParaGREEN Root Barrier is available in 20, 40, and 60 mil thicknesses. Contact Siplast for application recommendations.

Polyethylene Membrane Protection Layer (If Applicable)

Place the specified polyethylene slip sheet unadhered directly over all areas of the newly applied membrane, extending to walls, curbs, and other related junctures. Lap the polyethylene sheets a minimum 6 inches at the sides and ends.

Drain Mat (If Applicable)

Install specified drain mat with filter fabric side up. Lap selvage edge over adjacent drain mat. Extend drain mat to walls, curbs, and other penetrations/junctures.

Filter Fabric

Place the specified filter fabric unadhered directly over the insulation. Overlap edges and ends of the fabric a minimum of 1 foot. Extend the fabric a minimum of 3 inches above the stone/gravel ballast at all penetrations with the exception of drains. Do not lap the fabric within 6 feet of the perimeter of the area. Immediately install ballast over the fabric to prevent heat buildup beneath the fabric. High temperatures may result in damage to the underlying insulation panels. Consider the use of a light-color tarp if fabric is to be exposed in hot weather or when exposed to severe UV.

Ballast

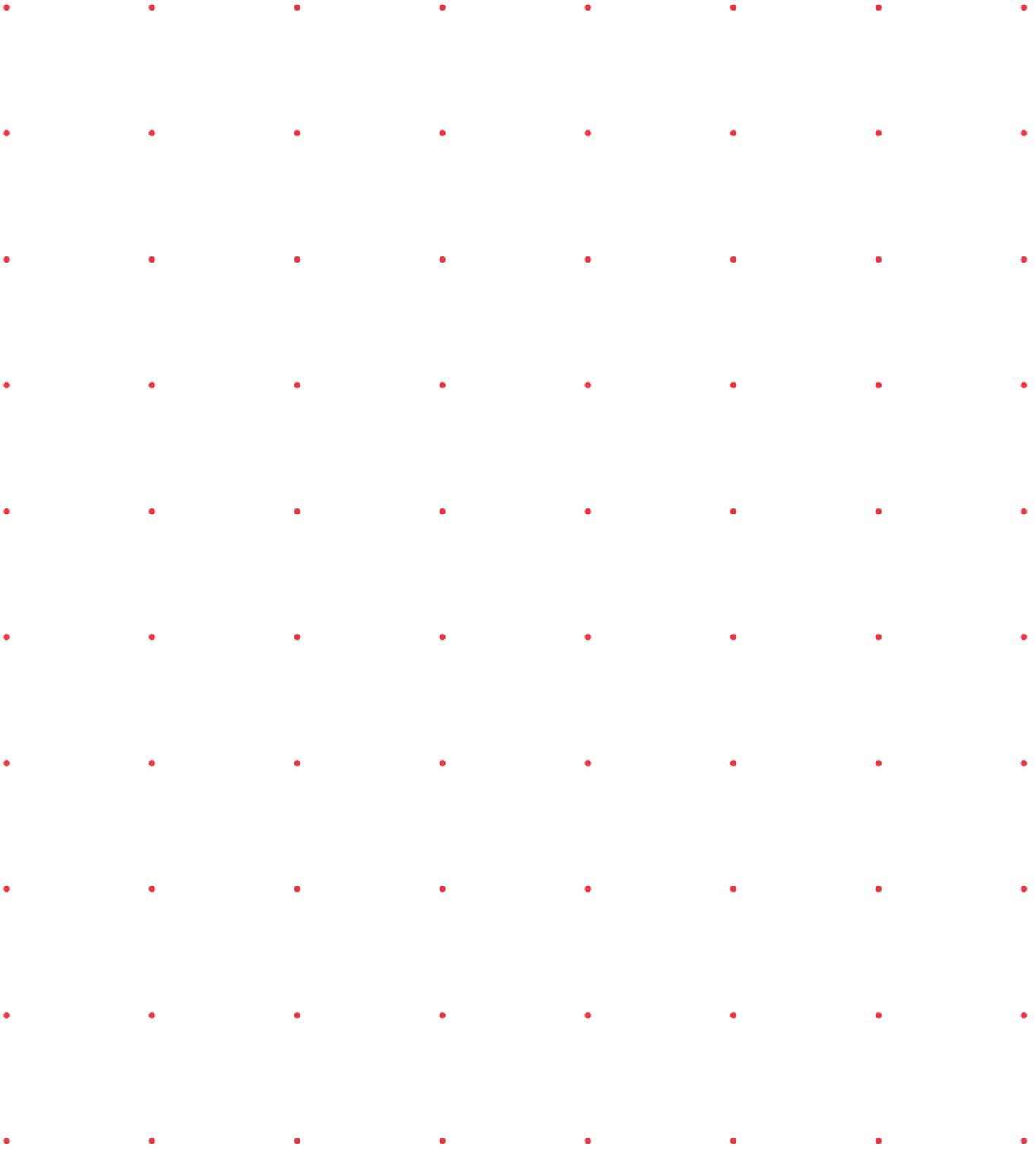
For the installation of stone ballast, follow the instructions of the insulation manufacturer and the following requirements.

1. Distribute the stone ballast evenly over the insulation/filter fabric or drainage mat at a minimum rate of 1000 lb/sq.
2. Provide for a ballast distribution at the roof perimeter of 2000 lb/sq in an area extending 4 feet in from the perimeter.

Please contact the Siplast Technical and Design Support Department at 800-922-8800 for specific applications not listed above.

XI.Details

For a complete list of detail drawings for the PA-750 Hot-Applied Rubberized Asphalt Waterproofing System, reference the following link: Siplast.com





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