siplast®

Foreman's Handbook

Engineered Roof Systems

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General Requirements

Storage and Handling

Siplast roll roofing products should be stored on end on a clean, flat surface. Care should be taken that the rolls are not dropped on their ends or edges, are not stored in a leaning position, and are not double stacked. Deformation resulting from this type of handling will make proper installation difficult. The material should be stored in such a manner as to ensure that it remains dry prior to and during installation.

Hot Asphalt Application

PA-100 Asphalt application temperatures should not be below the EVT range for mopping, and should at all times maintain a minimum temperature of 400°F (204°C) at the point of contact with the roofing sheet being applied.

All mopping layers must be total in coverage, without breaks or voids. Care should be taken not to exceed our recommended mopping weight of 25 pounds per ply square or 50 mils of (1.3 mm) thickness.

During application, asphalt should never be applied more than 5 feet ahead of the roll, which should be unrolled continuously at a steady pace. The moppings should always be "squared off" between mopping intervals, and the material should be rolled through the mopped areas and then be backrolled, exposing 2 to 3 inches of asphalt. This procedure eliminates excess asphalt buildup at roll "stops." Pressure should be kept on the roll immediately behind the mopping installation to ensure proper embedment. Air pockets beneath the system or between plies are unacceptable. Any such pockets should be "broomed in" immediately, while the asphalt is still hot enough to facilitate a proper bond. Use of a weighted roller on the laps is recommended.

Any use of Type IV asphalt provided by another manufacturer on regular term guarantees must be approved in advance by Siplast Research and Development.

Asphalt containers or bulk shipping tickets should indicate the Equiviscous Temperature (EVT), the Softening Point (SP), and the Flash Point (FP). If EVT and heating information are not provided, the following asphalt temperatures for Type IV are recommended:

- Maximum heating temperature, 525°F (274°C) or flash point less 25°F (14°C), whichever is lower. Asphalt must not be heated above the FP.
- Minimum application temperature measured at the point of contact with the roofing sheet being applied is 400°F (204°C).

PA-311, PA-311 M, and PA-311 LS Adhesive Application

Absorption rates of substrate materials vary. PA-311, PA-311 M, and PA-311 LS Adhesive application rates may need to be adjusted when working over highly absorbent surfaces to compensate for the porosity of such substrates, allowing the recommended minimum coating thickness of 24 mils to be achieved. Priming the surface of insulation panels using a Siplast asphalt primer (and allowing the primer to dry thoroughly) may reduce the application rate of PA-311, PA-311 M, and PA-311 LS in certain constructions. A heavier application of PA-311, PA-311 M, and PA-311 LS Adhesive (twice the standard field application) should be used at all end laps or whenever a granule surface is covered.

Membrane materials should be rolled or broomed with a follow tool to ensure complete contact of all membrane surfaces with the adhesive. Pressure should be applied over all end laps using a clean roller or trowel. Under certain job conditions, such as areas prone to ponding, torching or heat welding the laps of newly applied material is recommended.

Solvent-based cold adhesive has a setup time, which is often referred to as "curing" time. During this time, the solvent evaporates or dissipates through the system, and the roofing sheets are in a softened state. The time needed for complete "cure" varies due to factors such as adhesive type, ambient temperature, solar load, wind, humidity, and number of plies, which all affect the evaporation rate of the solvent. Using too much adhesive can increase the softness of the sheets and extend cure time. Monitor adhesive usage, and stay within usage rate guidelines.

Observing the following general guidelines for working with cold adhesive will help ensure a clean finished job.

- Regardless of ambient conditions, solvent flash-off time can be reduced by warming the adhesive prior to application.
- During the curing period, sheets are more susceptible to surface damage. Jobs should be staged in such a way that crews can stay off the finished work as much as possible. Consider applying both the Paradiene 20 base ply and Paradiene 30 finish ply on the same day. If it is impossible to avoid working over finished sheets, schedule work in the early morning hours, when surface temperatures are cooler.
- Set up warning lines to alert other trades to finished work, and reduce foot traffic in those areas.
- The use of talc or release liner on work boots can help minimize marring of the membrane surface.
- Whenever practical, install flashing membranes in early morning hours when surface temperatures are

cooler. When applying base flashing, work over a piece of protective material such as insulation board to prevent damage to the membrane surface.

- Broadcast granules in bleedout areas to prevent tracking of adhesive on the finished roof surface. This should be done while the adhesive is still wet to ensure proper embedment.

General Cold Weather Application

In cold weather conditions, it is important that storage and installation techniques be modified to ensure proper application. The following recommendations are intended as guidelines only. While application is in progress, ongoing assessments should be made to determine whether conditions are suitable for roofing operations.

In all applications, the determining factor as to the acceptability of temperature and conditions is the contractor's ability to install the products properly. The membrane should always lay flat, without buckles, air pockets or voids, and must be fully bonded. If this cannot be accomplished, application should be discontinued until more favorable temperatures and weather conditions prevail.

Whenever possible, all roofing materials should be stored in a warm or heated place, allowing the sheets to warm just prior to application. Application in cool weather can be completed more effectively by cutting warmed rolls into halves or thirds. Cut sheets should be allowed to lay flat with the back surface of the sheet facing up for at least 15 minutes.

Hot Asphalt Application in Cool Weather

In hot asphalt applications in cold weather conditions, special precautions must be taken to ensure that Type IV asphalt maintains a minimum 400°F (204°C) temperature at the point of contact with the roofing sheet being applied. Asphalt must not be overheated to compensate for cold conditions. The use of insulated handling equipment is strongly recommended. Hot luggers, mop carts, and kettle-to-roof supply lines should be insulated. In the cold weather season, hand mops should be constructed with a smaller yarn head than in the summer season to facilitate short moppings. Luggers and mop carts should never be more than half-filled at any time.

PA-311, PA-311 M, and PA-311 LS Adhesive Application in Cool Weather

The recommended application temperature range for PA-311, PA-311 M, and PA-311 LS Adhesive is 70° - 100°F (21°- 38°C) at the point of application. At the higher end of this range, PA-311, PA-311 M, and PA-311 LS tend to flow more easily, making application easier and reducing wear and tear on pumping equipment. Therefore, heating PA-311, PA-311 M, and PA-311 LS using commercial grade heating equipment is suggested for most application conditions. When heating materials, always exercise caution and never leave them unattended. PA-311, PA-311 M, and PA-311 LS should not be exposed to open flame for heating purposes. Application should be suspended in situations where the adhesive cannot be applied at temperatures allowing for even distribution.

To facilitate application at ambient temperatures below 50°F (10°C), adhesive and roll goods should be stored in a warm place such as a heated trailer or other insulated, heated storage area prior to use. Application in cool weather can be completed more effectively by cutting warmed rolls into halves or thirds. Cut sheets should be allowed to lay flat with the back surface of the sheet facing up for at least 15 minutes. "Fly" the pre-cut sheets in by placing them into the adhesive rather than rolling them into position. ("Flying in" sheets is an effective, efficient technique that is equally appropriate in warmer weather.) Membrane materials should be rolled or broomed with a follow tool to ensure complete contact of all membrane surfaces with the adhesive.

Parapro Roof Membrane and 123 Flashing Membrane Application

Parapro Roof Membrane and Parapro 123 Flashing Membrane Resins are available in summer and winter grades. Summer grade Parapro Roof Membrane and Parapro 123 Flashing Membrane Resins may be applied when the ambient temperature is between 59°F (15°C) and 104°F (40°) and the substrate temperature is between 59°F (15°C) and 122°F (50°C). Winter grade Parapro Roof Membrane Resin and Parapro 123 Flashing Membrane Resin may be applied when the ambient temperature is between 23°F (-5°C) and 68°F (20°) and the substrate temperature is between 23°F (-5°C) and 77°F (25°C).

Recommended ambient application temperatures for summer and winter grade materials overlap from 59°F to 68°F. At ambient temperatures below 59°F, winter grade resin should be used. Please refer to the Parapro Roof Membrane and Parapro 123 Flashing System Installer's Guides for specific details regarding application temperatures and catalyzation.

Pro Primer R, Pro Primer W, Pro Primer T, Pro Color Finish, Pro Clear Finish, Pro Repair Mortar, and Pro Paste Resins are not produced in winter and summer grades. Again, please refer to the Parapro Roof Membrane and Parapro 123 Flashing System Installer's Guides for specific details regarding application temperatures and catalyzation.

Torch Application

The National Roofing Contractors

Association (NRCA) and the Midwest Roofing Contractors Association (MRCA) publish a Certified Roofing Torch Applicator (CERTA) program that includes not only safety training for roofing professionals at all levels, but also industry guidelines for torch applications. Regarding these guidelines, the NRCA indicates that there are basic elements to observe. They include:

Field of the Roof Installations

- Incorporation of a thermal barrier (such as DensDeck) over all combustible decks.
- Application of a non-torch minimum 70-mil bituminous base sheet (such as Paradiene 20, Paradiene 20 SA, or Irex) at all transitional flashing locations.
- Elimination of open flame directed at penetrations, the roof edge, deck to wall transitions, etc.

Flashing Installations – All Substrates

- Application of a self-adhesive bituminous base sheet (such as Paradiene 20 SA) over all locations. All laps are heat sealed.
- Torch application using a single-burner torch having a maximum thermal output of 105K Btu.

While every effort has been made by Siplast to make the contents of this Siplast publication consistent with CERTA guidelines, it does not (nor is intended to) include a comprehensive listing of those guidelines. Likewise, the information contained in this publication should not be considered a substitute for CERTA training. Anyone considering installation of a roof system that will include torch application should contact the NRCA for complete CERTA guidelines, and should ensure that all torch operators have been properly trained and are CERTA-certified.

Other torch safety programs and guidelines are recognized in Canada, and vary by province. Siplast recommends that in Canada, either local torch safety guidelines or CERTA regulations be followed.

Vapor Retarders

Vapor retarders can be an important component of a properly designed roof assembly. The decision to use a vapor retarder is the responsibility of the architect, engineer or owner. As a general rule, vapor retarders are advisable as follows: (1) over heated buildings in regions where January temperatures average 40°F (4°C) or below, (2) over structures with high interior relative humidity, or (3) in any similar situation where a vapor drive can be expected. The designer should, however, study each project individually and consider all relevant conditions when making a decision. Improperly specified or constructed vapor retarders can have a deleterious effect on membrane performance.

Temporary Roofs

Temporary roofing that is installed over the roof deck prior to assembly of the substrate materials and Siplast membrane should be constructed of materials and methods approved in advance by Siplast. Contact Siplast for specific recommendations on appropriate temporary roof construction.

Cold Storage

It is strongly recommended that cold storage compartments be independently insulated and constructed so as to allow free ventilation between the compartment and the roof deck. Siplast will assume no responsibility for damages to the roof membrane caused by freezer-related vapor activity. Specification of roofing to be applied directly on freezer compartments is a design decision, responsibility for which rests with the designer.

Drainage

Siplast endorses as good design practice the recommendation that all roofs be provided with adequate slope and outlets to allow free drainage throughout the life of the building. It is the owner's/designer's responsibility to ensure that an adequate number, and the correct placement, of drains be included in the structure to allow for proper drainage. However, occasionally roof decks are constructed with unintentional low spots that tend to impede prompt and complete drainage. The composition of Siplast elastomeric asphalt materials makes them impervious to the adverse effects normally associated with ponding water. Therefore, the standard Siplast ten-year guarantee on these materials does not exclude from coverage random occurrences of ponding water. However, such areas can also be prone to accumulation of particulate matter and/or chemical compounds, which must be removed as a part of the roof's routine seasonal maintenance.

Cants

The unique properties of Siplast elastomeric asphalt and metal clad roofing and flashing systems permit the products to be bent at a right angle during application. For this reason, cant strips are optional when decks and walls are monolithic in construction or when proper independent flashing detailing is employed. (Refer to Detail No. 2030MIW2.) The use of cant strips is required, however, when dissimilar wall and decking materials are joined and an independent flashing detail is not used.
CERTA requirements regarding cant strips should be followed when roofing is applied with a torch.

Wood Nailers

Install treated wood nailers wherever specifications require the use of gravel stops or other perimeter metal compo-

nents, curbing, wood cants, insulation stops, or the mechanical fastening of roofing plies. Mechanically attach the nailers to the structural deck or supporting members following current FM Global requirements and local building code regulations. Nailers should be flush with the deck surface or, if insulation is used, nailers should be of the same thickness as the insulation. Nailers should be treated with a preservative compatible with asphalt. Where pressure treated lumber is used over steel decks or in conjunction with metal accessories, a separator layer consisting of a minimum 40-mil (1 mm) bituminous sheet should be considered for placement between the nailer and metal surfaces. Mechanical fasteners and connectors used to anchor wood nailers to roof decks and to fasten metal flanges to the nailers should be formed from Type 304 or Type 316 grade stainless steel, or be treated or pre-coated to meet current maximum corrosion resistance guidelines as recommended by the NRCA.

Expansion Joints

While Siplast elastomeric asphalt roofing materials have exceptional elongation and flexibility characteristics, expansion joints are required, where appropriate, in all Siplast guaranteed installations to avoid unnecessary isolated stress situations. In general, the designer should consider expansion joints in the following situations: (1) where the roof deck spans change direction, (2) junctures where changes in deck material occur, (3) where building additions are connected to existing buildings, (4) where the roof changes directions, such as “U” or “L” shaped buildings, (5) deck junctures with walls or other vertical surfaces where independent movement between adjoining surfaces is anticipated, (6) every 200 feet of continuous deck (length or width), and (7) wherever provisions for expansion joints occur in the building structure.

The situations indicated above are typical industry parameters for roof expansion joint design. In all cases, Siplast recommends that each project be specifically evaluated by the designer for potential movement between structural elements. Roof expansion joint constructions should be individually tailored to meet the actual job conditions. Curbed expansion joints with Paraguard metal expansion joint covers should be considered wherever provisions for expansion are required.

Wall Treatments/Base Flashing

Veral is uniquely suitable and widely used as a membrane waterproofing for parapet walls. While each wall treatment is different in its requirements, in general the following recommendations apply.

Care should be taken that all concrete or masonry walls are relatively smooth, dry, and broom-cleaned. All cracks and surface voids should be repaired. Prime concrete or masonry surfaces with PA-1125 Primer or PA-917 LS Primer at the rate of one gallon per 100 square feet and allow the primer to dry thoroughly. When wall surfaces are seriously deteriorated or when wall conditions require a venting treatment, wall surfaces must be sheathed with a surfacing layer of plywood or other appropriate material. Any wall treatment or base flashing should be accomplished without compromising any functioning weep holes.

Wood walls should be constructed of sound lumber or exterior grade plywood. All warped or defective materials should be replaced, and cracks wider than ¼-inch and knotholes larger than one inch in diameter should be covered with sheet metal. All wood surfaces must be covered by a layer of Irex or Paradiene 20 mechanically attached using appropriate fasteners, prior to application of the Veral. In a torch-applied flashing application, the mechanically attached sheets should be replaced by Paradiene 20 SA. When installing Paradiene 20 SA, the minimum required substrate temperature at the point of application is 60°F (15°C). In low temperature conditions, materials should be kept warm prior to application. Suspend application in situations where the self-adhesive base ply cannot be kept at temperatures allowing for proper adhesion.

Torch one layer of Veral solidly to the prepared substrate, applying the sheets vertically and always working to a selvage edge. If torching is impractical, SFT Flashing Cement or hot asphalt may be used as alternative application methods, with advance approval from Siplast. Please contact the Siplast Technical Department for specific recommendations. All non-vertical surfaces or transitional areas (cants, wall tops, and inside and outside corners) must be reinforced with a layer of Irex or Paradiene 20.

Veral is used as the final ply of base flashing in all standard Siplast roof specifications. When parapet walls are 24 inches or less in height, the Veral base flashing may be extended up and over the wall in one piece. Such an extension of the base flashing is considered a wall treatment and must be attached with appropriate fasteners on 9-inch centers across the top edge of the sheet and capped with metal coping.

When the walls are higher than 24 inches, the base flashing and wall treatment should be applied as separate procedures. The base flashing is extended a minimum of 8 inches up the wall. The wall treatment is lapped a minimum of 3 inches over the leading edge of the base flashing, and is extended up and over the wall. All wall treatments, regardless of height, must be attached

with appropriate fasteners as described above. Please contact the Siplast Technical Department for recommendations on treating walls without copings.

Paradiene 40 FR, Paradiene 40 FR TG, Parafor 50 LT, Parafor 50 TG, Parafor 30, and Parafor 30 TG are acceptable substitutes for Veral in all standard base flashing and wall treatment installations (with the exception of Parapet Non-wall Supported Deck No. 2030MIW2). All wall treatments, regardless of heights, must be attached with appropriate fasteners as described above. Please contact the Siplast Technical Department for Paradiene 40 and Parafor 50 flashing installation guidelines.

Independent Wall Flashing Treatments

Flashing assemblies should be isolated from vertical surfaces at transitional areas between decks and walls where the deck is independently supported from the wall, or where the potential exists for differential movement between wall supported decks and vertical surfaces. Where these conditions exist, an L-metal component, fabricated of 24-gauge sheet metal and including a 4-inch flange and 8-inch leg, should be mechanically attached to a nailer that is well secured to the deck. Base flashing should be accomplished following the methods and using materials required by Siplast. (Refer to Detail No. 2030MIW2.) All independent wall flashing details must be adequately counterflashed.

Walkways

Siplast recommends the use of Paratread in areas with anticipated high levels of pedestrian traffic or mechanical abuse potential.

Night Seals

Night seals are necessary to ensure that water does not migrate beneath the new membrane during breaks in application. At the end of the day's work, or when precipitation is imminent, a night seal must be installed at all open edges. Such tie-ins can be built using asphalt, PA-1021 Plastic Cement, or PA-828 Flashing Cement and fiberglass roofing felts, and should be constructed to withstand protracted periods of service. Night seals must be completely removed prior to the resumption of work.

Rooftop Additions

All openings, projections, and rooftop equipment added to a completed Siplast roof that either penetrate or are placed directly on the membrane should be detailed according to Siplast requirements. Rooftop additions such as prefabricated curbs, piped supply lines, flanged metal flashings, and lightning protection equipment vary in materials and design and should be individually evaluated prior to installation. Please contact the Siplast Technical Department for specific information as required.

Sealants

PS-304 Elastomeric Sealant is required where the finished Siplast membrane terminates at flanged metal components incorporated into the membrane system. Although sealants are not relied upon as a waterproofing component, they are designed to fill the small spaces at such membrane terminations. This precludes the accumulation of water, dirt, debris, etc. at the finished edge of the membrane system. PS-304 should be tooled in place.

Reference Charts

Products

Product	Description	Purpose	Application Method	Unit	Size	Coverage	Minimum Coverage Weight
Paradiene Roof Membrane Products							
Paradiene 20	Asphalt elastomer sheet, random glass mat reinforced.	First ply of Paradiene 20/30 composite, lapped 3 inches side and end.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 50 ft (15.24 m)	1.5 sq (13.9 m^2)	62 lb/sq (3.0 kg/m^2)
Paradiene 20 F	Asphalt elastomer sheet, random glass mat reinforced, perforated polypropylene film on top surface.	First ply of Paradiene 20 F/30 composite, lapped 3 inches side and end.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 50 ft (15.24 m)	1.5 sq (13.9 m^2)	62 lb/sq (3.0 kg/m^2)
Paradiene 20 HT	Asphalt elastomer sheet, glass mat/glass scrim reinforced.	First ply of Paradiene 20/30 composite, lapped 3 inches side and end. For high tensile requirements.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 50 ft (15.24 m)	1.5 sq (13.9 m^2)	62 lb/sq (3.0 kg/m^2)
Paradiene 20 HV	Asphalt elastomer sheet, random glass mat reinforced.	First ply of Paradiene 20/30 composite, lapped 3 inches side and end.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	90 lb/sq (4.4 kg/m^2)
Paradiene 20 EG	Asphalt elastomer sheet, glass mat/glass scrim reinforced.	Designed to be used in conjunction with Paradiene systems requiring extended guarantees. For high tensile requirements.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	84 lb/sq (4.1 kg/m^2)
Paradiene 20 PR	Asphalt elastomer sheet, polyester mat/fiberglass scrim reinforced.	Designed to be used as the top ply in gravel-surfaced Paradiene specifications.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 50 ft (15.24 m)	1.5 sq (13.9 m^2)	60 lb/sq (2.9 kg/m^2)
Paradiene 20 TG	Asphalt elastomer sheet, random glass mat-reinforced, thin layer of grooved torching grade asphalt on bottom side.	First ply of Paradiene 20/30 TG Series composite, lapped 3 inches side and end.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	76 lb/sq (3.7 kg/m^2)
Paradiene 20 TG F	Asphalt elastomer sheet, random glass mat-reinforced, thin layer of grooved torching grade asphalt on bottom side, perforated polypropylene film on top surface.	First ply of Paradiene 20/30 TG Series composite, lapped 3 inches side and end.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	76 lb/sq (3.7 kg/m^2)
Paradiene 20 HT TG	Asphalt elastomer sheet, glass mat/glass scrim reinforced, thin layer of grooved torching grade asphalt on bottom side.	First ply of Paradiene TG Series composite, lapped 3 inches side and end. For high tensile requirements.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	76 lb/sq (3.7 kg/m^2)
Paradiene 20 HV TG	Asphalt elastomer sheet, random glass mat reinforced, thin layer of grooved torching grade asphalt on bottom side.	First ply of Paradiene 20/30 composite, lapped 3 inches side and end.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	96 lb/sq (4.7 kg/m^2)
Paradiene 20 EG TG	Heavy-duty asphalt elastomer sheet, glass mat/glass scrim reinforced, thin layer of grooved torching grade asphalt on bottom side.	Designed to be used in conjunction with Paradiene TG Series systems requiring extended guarantees. For high tensile requirements.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	96 lb/sq (4.7 kg/m^2)
Paradiene 20 PR TG	Asphalt elastomer sheet, reinforced polyester mat/fiberglass scrim, thin layer of grooved torching grade asphalt on bottom side.	Designed to be used as the top ply in gravel-surfaced Paradiene specifications.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	96 lb/sq (4.7 kg/m^2)
Paradiene 20 TS	Asphalt elastomer sheet, random glass mat reinforced, with stripes of grooved torching grade asphalt on 50% of bottom side, and acrylic coating between the stripes, perforated polypropylene film on top surface.	Semi-adhered venting first ply to be used in conjunction with Paradiene 20 TS /30 TG and Paradiene 20 TS/ Veral roof systems.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	76 lb/sq (3.7 kg/m^2)
Paradiene 20 TS SA	Asphalt elastomer sheet, random glass mat reinforced, with stripes of self-adhesive asphalt on 50% of bottom side, and acrylic coating between the stripes, polyolefin release film on bottom side.	Semi-adhered self-adhesive venting first ply to be used in conjunction with Paradiene 20 TS SA/30 TG and Paradiene 20 TS SA/Veral roof systems.	Self-adhesive peel and stick	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	76 lb/sq (3.7 kg/m^2)
Paradiene 20 TS SA F	Asphalt elastomer sheet, random glass mat reinforced, with stripes of self-adhesive asphalt on 50% of bottom side, and acrylic coating between the stripes, polyolefin release film on bottom side, and perforated polypropylene film on top surface.	Semi-adhered self-adhesive venting first ply to be used in conjunction with Paradiene 20 TS SA F/30 TG and Paradiene 20 TS SA F/Veral roof systems.	Self-adhesive peel and stick	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	76 lb/sq (3.7 kg/m^2)
Paradiene 20 SA	Asphalt elastomer sheet, random glass mat reinforced, with a thin layer of self-adhesive asphalt covered with polyolefin release film on bottom side.	Fully adhered self-adhesive first ply to be used in conjunction with Paradiene 20 SA/30 TG roof systems and Paradiene 20 SA/Veral roof systems.	Self-adhesive peel and stick	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	72 lb/sq (3.5 kg/m^2)
Paradiene 20 SA F	Asphalt elastomer sheet, random glass mat reinforced, with a thin layer of self-adhesive asphalt covered with polyolefin release film on bottom side, and perforated polypropylene film on top surface.	Fully adhered self-adhesive first ply to be used in conjunction with Paradiene 20 SA F/ 30 TG roof systems and Paradiene 20 SA F/Veral roof systems.	Self-adhesive peel and stick	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	72 lb/sq (3.5 kg/m^2)

* Refer to Torch Application sections on pages 2 and 24 for additional information.

Product	Description	Purpose	Application Method	Unit	Size	Coverage	Minimum Coverage Weight
Paradiene 30	Asphalt elastomer sheet with mineral surfacing, random glass mat-reinforced.	Top ply of Paradiene 20/30 composite, lapped 3 inches side and end.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	90 lb/sq (4.4 kg/m^2)
Paradiene 30 HT	Asphalt elastomer sheet with mineral surfacing, glass mat/glass scrim reinforced.	Top ply of Paradiene 20/30 composite, lapped 3 inches side and end. For high tensile requirements.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	91 lb/sq (4.4 kg/m^2)
Paradiene 30 FR	Fire-rated asphalt elastomer sheet with mineral surfacing, random glass mat-reinforced.	Top ply of Paradiene 20/30 FR composite, lapped 3 inches side and end.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	90 lb/sq (4.4 kg/m^2)
Paradiene 30 HT FR	Fire-rated asphalt elastomer sheet with mineral surfacing, glass mat/glass scrim-reinforced.	Top ply of Paradiene 20/30 FR composite, lapped 3 inches side and end. For high tensile requirements.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	91 lb/sq (4.4 kg/m^2)
Paradiene 30 TG	Asphalt elastomer sheet with mineral surfacing, random glass mat-reinforced, thin layer of grooved torching grade asphalt on bottom side.	Top ply of Paradiene 20/30 TG Series composite, lapped 3 inches side and end.	Torch*	Roll	3.28 ft (1 m) x 25.25 ft (7.7 m)	0.75 sq (7.0 m^2)	112 lb/sq (5.4 kg/m^2)
Paradiene 30 HT TG	Asphalt elastomer sheet with mineral surfacing, glass mat/glass scrim reinforced, thin layer of grooved torching grade asphalt on bottom side.	Top ply of Paradiene TG Series composite, lapped 3 inches side and end. For high tensile requirements.	Torch*	Roll	3.28 ft (1 m) x 25.25 ft (7.7 m)	0.75 sq (7.0 m^2)	112 lb/sq (5.4 kg/m^2)
Paradiene 30 FR TG	Fire-rated asphalt elastomer sheet with mineral surfacing, random glass mat-reinforced, thin layer of grooved torching grade asphalt on bottom side.	Top ply of Paradiene 20/30 FR TG Series composite, lapped 3 inches side and end.	Torch*	Roll	3.28 ft (1 m) x 25.25 ft (7.7 m)	0.75 sq (7.0 m^2)	112 lb/sq (5.4 kg/m^2)
Paradiene 30 HT FR TG	Fire-rated asphalt elastomer sheet with mineral surfacing, glass mat/glass scrim reinforced, thin layer of grooved torching grade asphalt on bottom side.	Top ply of Paradiene TG Series composite, lapped 3 inches side and end. For high tensile requirements.	Torch*	Roll	3.28 ft (1 m) x 25.25 ft (7.7 m)	0.75 sq (7.0 m^2)	112 lb/sq (5.4 kg/m^2)
Paradiene 30 MW FR	Fire-rated asphalt elastomer sheet with mineral surfacing, woven glass reinforcement.	Top ply of Paradiene 20/30 FR composite, lapped 3 inches side and end. For ultra high tensile requirements.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	96 lb/sq (4.7 kg/m^2)
Paradiene 30 CR FR	Fire-rated asphalt elastomer sheet with reflective white synthetic chip surfacing, random glass mat reinforced.	Top ply of Paradiene 20/30 composite, lapped 3 inches side and end. For cool roof applications.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	75 lb/sq (3.6 kg/m^2)
Paradiene 30 CR FR TG	Fire-rated asphalt elastomer sheet with reflective white synthetic chip surfacing, random glass mat reinforced. Thin layer of grooved torching grade asphalt on bottom side.	Top ply of Paradiene 20/30 FR TG Series composite, lapped 3 inches side and end. For cool roof applications.	Torch*	Roll	3.28 ft (1 m) x 25.25 ft (7.70 m)	0.75 sq (7.0 m^2)	96 lb/sq (4.7 kg/m^2)
Paradiene 40 FR	Fire-rated asphalt elastomer sheet with mineral surfacing, glass mat/glass scrim reinforced.	Top ply of Paradiene 40 FR composite, side lapped 4 inches and end lapped 6 inches. Also used as a flashing sheet in Paradiene 20/30 systems.	PA-100 Asphalt, PA-311 Adhesive, PA-828, or SFT Flashing Cement	Roll	3.28 ft (1 m) x 25.25 ft (7.92 m)	0.75 sq (7.0 m^2)	114 lb/sq (5.5 kg/m^2)
Paradiene 40 FR TG	Fire-rated asphalt elastomer sheet with mineral surfacing, glass mat/glass scrim reinforced. Thin layer of grooved torching grade asphalt on bottom side.	Top ply of Paradiene 40 FR composite, side lapped 4 inches and end lapped 6 inches. Also used as a flashing sheet in Paradiene 20/30 systems.	Torch*	Roll	3.28 ft (1 m) x 25.25 ft (7.92 m)	0.75 sq (7.0 m^2)	125 lb/sq (6.1 kg/m^2)
Paradiene 40 CR FR	Fire-rated asphalt elastomer sheet with white synthetic chip surfacing, glass mat/glass scrim reinforced.	Top ply of Paradiene 40 FR composite, side lapped 4 inches and end lapped 6 inches. For cool roof applications. Also used as a flashing sheet in Paradiene 20/30 CR Systems.	PA-100 Asphalt, PA-311 Adhesive, PA-828, or SFT Flashing Cement.	Roll	3.28 ft (1 m) x 26 ft (7.92 m)	0.75 sq (7.0 m^2)	99 lb/sq (4.8 kg/m^2)
Paradiene 40 CR FR TG	Fire-rated asphalt elastomer sheet with reflective white synthetic chip surfacing, glass mat/glass scrim reinforced. Thin layer of grooved torching grade asphalt on bottom side.	Top ply of Paradiene 40 FR composite, side lapped 4 inches and end lapped 6 inches. For cool roof applications. Also used as a flashing sheet in Paradiene 20/30 CR Systems.	Torch*	Roll	3.28 ft (1 m) x 25.25 ft (7.7 m)	0.75 sq (7.0 m^2)	108 lb/sq (5.3 kg/m^2)

* Refer to Torch Application sections on pages 2 and 24 for additional information.

Product	Description	Purpose	Application Method	Unit	Size	Coverage	Minimum Coverage Weight
Veral Roof Membrane Products							
Veral Aluminum	Aluminum-clad asphalt elastomer sheet, glass mat/glass scrim reinforced.	Top ply of Veral roofing and flashing composite, lapped 3 inches side and end.	PA-100 Asphalt, Torch*, or SFT Cement	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	96 lb/sq (4.6 kg/m^2)
Parafor Roof Membrane Products							
Parafor 50 LT	Asphalt elastomer sheet with mineral surfacing, polyester mat/ fiberglass scrim reinforced.	Single-ply roofing membrane, side lapped 4 inches and end lapped 6 inches. Also used as a flashing sheet in Paradiene 20/30 and Parafor Roof Systems	PA-100 Asphalt, PA-311 Adhesive, PA-828, SFT Flashing Cement or Torch*	Roll	3.28 ft (1 m) x 26 ft (7.92 m)	0.75 sq (7.0 m^2)	141 lb/sq (6.9 kg/m^2)
Parafor 50 TG	Asphalt elastomer sheet with mineral surfacing, polyester mat/fiberglass scrim reinforced. Thin layer of grooved torching grade asphalt on bottom side.	Single-ply roofing membrane, side lapped 4 inches and end lapped 6 inches. Also used as a flashing sheet in Paradiene 20/30 and Parafor Systems.	Torch*	Roll	3.28 ft (1 m) x 26 ft (7.92 m)	0.75 sq (7.0 m^2)	143 lb/sq (7.0 kg/m^2)
Parafor 30	Asphalt elastomer sheet with mineral surfacing, polyester mat/fiberglass scrim reinforced.	Top ply of Parafor 30 composite, side lapped 3 inches and end lapped 6 inches. Used as a flashing sheet in Paradiene 20/30 and Parafor Roof Systems.	PA-828 or SFT Flashing Cement	Roll	3.28 ft (1 m) x 32.8 ft (10.0 m)	1 sq (9.3 m^2)	114 lb/sq (5.2 kg/m^2)
Parafor 30 TG	Asphalt elastomer sheet with mineral surfacing, polyester mat/fiberglass scrim reinforced. Thin layer of grooved torching grade asphalt on bottom side.	Top ply of Parafor 30 composite, side lapped 3 inches and end lapped 6 inches. Used as a flashing sheet in Paradiene 20/30 and Parafor Roof Systems.	Torch*	Roll	3.28 ft (1 m) x 32.8 ft (10.0 m)	1 sq (9.3 m^2)	114 lb/sq (5.2 kg/m^2)
Irex Base Sheet Products							
Irex 40	High-melt, high ductility asphalt sheet, random glass mat-reinforced.	First ply of Veral composite, lapped minimum 3 inches side and end.	PA-100 Asphalt or Torch*	Roll	3.28 ft (1 m) x 34 ft (10.36 m)	1 sq (9.3 m^2)	85 lb/sq (4.1 kg/m^2)
Irex HT	High-melt, high ductility asphalt sheet, glass mat/glass scrim-reinforced.	First ply of Veral composite, lapped minimum 3 inches side and end. For high tensile requirements.	PA-100 Asphalt or Torch*	Roll	3.28 ft (1 m) x 34 ft (10.36 m)	1 sq (9.3 m^2)	85 lb/sq (4.1 kg/m^2)
Base and Ply Sheet Products							
Parabase	Asphalt coated fiberglass base sheet meeting ASTM D 4601, Type II.	Mechanically fastened base sheet or adhered underlayment ply.	Asphalt or mechanically fastened	Roll	3 ft (0.91 m) x 108 ft (32.9 m)	3 sq (27.9 m^2)	20 lb/sq (0.9 kg/m^2)
Parabase FS	Asphalt coated fiberglass base sheet meeting ASTM D 4601, Type II with polyolefin film backing.	Mechanically fastened base sheet.	Mechanically fastened	Roll	3 ft (0.91 m) x 108 ft (32.9 m)	3 sq (27.9 m^2)	20 lb/sq (0.9 kg/m^2)
Parabase Plus	Asphalt coated fiberglass base sheet meeting ASTM D 4601, Type II.	Mechanically fastened base sheet or adhered underlayment ply.	Asphalt or mechanically fastened	Roll	3.28 ft (1 m) x 102.3 ft (31.2 m)	3 sq (27.9 m^2)	30 lb/sq (1.4 kg/m^2)
Paraglas	Asphalt coated fiberglass mat meeting ASTM D 2178, Type IV.	Ply felt for conventional built-up application, or as an underlayment ply.	Asphalt or mechanically fastened	Roll	3 ft (0.91 m) x 180 ft (54.9 m)	5 sq (50.2 m^2)	6.8 lb/sq (0.3 kg/m^2)
Adhesive and Cement Products							
PA-311 Adhesive	Blend of special adhesive asphalts and safe, high-flash, quick drying solvents meeting ASTM D 4479, Type II. Maximum VOC content is $\leq$ 395 g/L.	Interply adhesive for Paradiene 20/30, Paradiene 40 FR, and Parafor 50 LT roof systems.	Squeegee, spray, or Paraflow PA-311 Adhesive Spreader	Pail Drum Tote	5-gallon (19 L) pail 4.7 gl (17.8 L) net content 55-gallon (208 L) drum 53 gl (200.6 L) net content	See product data sheet	See product data sheet
PA-311 M Adhesive	Blend of special adhesive asphalts and safe, high-flash, quick drying solvents meeting ASTM D 4479, Type II. Meets regional VOC regulations. Maximum VOC content is $\leq$ 250 g/L.	Interply adhesive for Paradiene 20/30, Paradiene 40 FR, and Parafor 50 LT roof systems.	Squeegee, spray, or Paraflow PA-311 Adhesive Spreader	Pail Drum Tote	5-gallon (19 L) pail 4.7 gl (17.8 L) net content 55- gallon (208 L) drum 53 gl (200.6 L) net content 350-gallon (1,325 L) tote**	See product data sheet	See product data sheet
PA-311 LS Adhesive	Blend of special adhesive asphalts and safe, high-flash, quick drying solvents meeting ASTM D 4479, Type II. Meets regional VOC regulations. Maximum VOC content is $\leq$ 250 g/L.	Interply adhesive for Paradiene 20/30, Paradiene 40 FR, and Parafor 50 LT roof systems.	Squeegee, spray, or Paraflow PA-311 Adhesive Spreader	Pail Drum Tote	5-gallon (19 L) pail 4.7 gl (17.8 L) net content 55- gallon (208 L) drum 53 gl (200.6 L) net content	See product data sheet	See product data sheet
PA-1021 Plastic Cement	Asphalt cutback reinforced with non-asbestos fibers meeting ASTM D 4586, Type II. Maximum VOC content is $\leq$ 300 g/L.	General-purpose roof cement for use under all metal flanges.	Trowel	Pail	5-gallon (19 L) pail 4.7 gl (17.8 L) net content	See product data sheet	See product data sheet
PA-828 Flashing Cement	Asphalt cutback reinforced with non-asbestos fibers meeting ASTM D 4586, Type II. Maximum VOC content is $\leq$ 350 g/L.	Specially blended flashing cement which resists slump on sloped and vertical applications.	Trowel	Pail	5-gallon (19 L) pail 4.7 gl (17.8 L) net content	See product data sheet	See product data sheet
PA-100 Mopping Asphalt	Specially processed interply mopping asphalt meeting ASTM D 312, Type IV.	Interply adhesive for use with Siplast roofing membranes.	Mop or mechanical applicator	Carton	100-lb carton (45.4 kg)	See product data sheet	See product data sheet
PA-1000 Mopping Asphalt	Modified interply mopping asphalt meeting ASTM D 6152.	Interply adhesive for use with Siplast roofing membranes.	Mop or mechanical applicator	Carton	60-lb carton (27.2-kg)	See product data sheet	See product data sheet
SFT Adhesive	Single-component, solvent-free, moisture cured modified asphalt adhesive. Blend of proprietary polymers and asphalt. Contains no VOCs.	Interply adhesive for Paradiene 20/30, Paradiene 40, and Parafor 50 LT roof systems.	Notched squeegee	Pail	5-gallon (19 L) pail 5 gl (19 L) net content	See product data sheet	See product data sheet

* Refer to Torch Application sections on pages 2 and 24 for additional information.

** Limited Availability

Product	Description	Purpose	Application Method	Unit	Size	Coverage	Minimum Coverage Weight
Adhesive and Cement Products *continued*							
SFT Cement	Single-component, solvent-free moisture cured adhesive. Blend of proprietary polymers and modifiers.Contains no VOCs.	Multi-purpose cement for application of Siplast flashing membranes and other approved applications.	⅛-inch V-notched trowel	Pail	3.5-gallon (13.2 L) pail 3.5 gl (13.2 L) net content	See product data sheet	See product data sheet
Primer Products							
PA-1125 Asphalt Primer	Penetrating asphalt cutback meeting ASTM D 41, Type I. Maximum VOC content is ≤ 475 g/L.	Preparation of metal and masonry surfaces.	Brush, roller, or spray	Pail	5-gallon (19 L) pail 4.7 gl (17.8 L) net content	See product data sheet	See product data sheet
PA-1125 Quick Dry Spray Primer	Penetrating asphalt cutback meeting ASTM D 41, Type I. Exempt from VOC regulations.	Primer for preparation of metal and masonry surfaces.	Spray	17-oz Spray Can	Case of 12 17-oz spray cans	See product data sheet	See product data sheet
PA-1130 Asphalt Emulsion Primer	Asphalt emulsion primer. Maximum VOC content is ≤ 10 g/L.	General purpose	Brush, roller, or spray	Pail	5-gallon (19 L pail) 4.7 gl (17.8 L) net content	See product data sheet	See product data sheet
PA-917 LS Primer	Penetrating asphalt cutback meeting ASTM D 41, Type II. Meets regional VOC regulations. Maximum VOC content is ≤ 350 g/L.	Preparation of metal and masonry surfaces.	Brush, roller, or spray	Pail	5-gallon (19 L) pail 4.7 gl (17.8 L) net content	See product data sheet	See product data sheet
TA-119 Primer	Single-component, water-based surface primer. Maximum VOC content is ≤ 200 g/L.	High-tack primer designed to facilitate adhesion of self-adhesive membranes.	Roller	Pail	5-gallon (19 L) pail 4.7 gl (17.8 L) net content	See product data sheet	See product data sheet
TA-325 Primer	Solvent-based surface primer. Maximum VOC content is ≤ 450 g/L.	High-tack primer designed to facilitate adhesion of self-adhesive membranes.	Brush or roller	Pail	5-gallon (19 L) pail 4.7 gl (17.8 L) net content	See product data sheet	See product data sheet
Miscellaneous Accessory Products							
PC-227 Elastomeric Roof Coating	100% acrylic, white roof coating with asphalt bleed blocking properties.	Roof coating for use in finished system protection and for providing a cool roof surface.	Spray, brush, or roller	Pail Drum	5-gallon (19 L) pail 5 gl (18.9 L) net content 55-gallon (208 L) drum 55 gl (208.1 L) net content	See product data sheet	See product data sheet
PS-304 Elastomeric Sealant	Moisture-curing, non-slump, gun-grade sealant.	Sealant for use where finished membrane terminates at flanged metal components.	Professional caulking gun	Cartridge	Sixteen 10.3-fluid ounce (305 mL) cartridges	See product data sheet	
Paratread	Traffic resistant polymer modified bitumen sheet, polyester reinforced, surfaced with mineral granules.	Protective course for high traffic roof areas.	PA-1021 Plastic Cement or PA-828 Flashing Cement	Roll	2.5 ft (76 cm) x 20 ft (6.12 m)	50 sq ft (4.7 m^2)	71 lb per roll (32.6 kg/m^2)
Trafbloc	Sheet composed of chopped rubber particles and synthetic binders.	Protective course for high traffic roof areas.	Tape, asphalt, or adhesive	Roll	30.7 in. (78 cm) x 32.8 ft (10 m)	82 sq ft (7.6 m^2)	100 lb per roll (45.4 kg/m^2)
No. 11 Roofing Granules	Ceramic coated mineral granules.	Treatment of asphalt or adhesive bleedout.		Pail	5-gallon (19 L) pail		See product data sheet
CR Chips	White synthetic chips for cool roof membranes.	Treatment of asphalt or adhesive bleedout.		Pail	5-gallon (19 L) pail		See product data sheet
Paraslope	Asphalt encapsulated compressible aggregate.	Corrective material designed to address drainage problems in isolated areas without removing the existing membrane.	See product data sheet	Bag	3 cubic ft (84.9 L) pail	See product data sheet	See product data sheet
Zono-Patch	Mixture of cementitious binders, low-density fine aggregates and proprietary additives.	Designed for the repair of new and existing lightweight insulating concrete roof surfaces.	See product data sheet	Pail Bag	5-gallon (19 L) pail 40-pound (18.1kg) bag	See product data sheet	
Parafast Fasteners	Roofing fasteners and plates.	Fasteners for mechanical attachment of roof system components.		See fastener reference chart on page 8 of this guide.	See fastener reference chart on page 8 of this guide.	See product data sheet	
Para-Stik Insulation Adhesive	Single-component, moisture-cure, solvent-free, polyurethane, rigid insulation adhesive.	Rigid insulation adhesive used to adhere Paratherm and other approved insulations.	Wand application from a pre-pressurized container	Metal tank	30-lb (14-kg) metal tank	See product data sheet	
Teranap Waterproofing and Green Roofing Products							
Terabase TG	Asphalt elastomer sheet, random glass mat-reinforced, with a thin layer of grooved torching grade asphalt on bottom side.	First ply of the torch-applied Teranap System composite, lapped 3 inches side and end.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	76 lb/sq (3.7 kg/m^2)
Teranap 2M	Asphalt elastomer sheet, with a nonwoven polyester reinforcement.	Top ply of the torch-applied Teranap composite; lapped 6 inches side and end.	Torch*	Roll	6.56 ft (2 m) x 65.6 ft (20 m)	4.0 sq (37.2 m^2)	105 lb/sq (5.1 kg/m^2)
Teranap 1M Sand/ Sand	Asphalt elastomer sheet, with a nonwoven polyester reinforcement and a sand surfacing on both sides.	Top ply of the Teranap cold applied or mopped composite; lapped 4 inches side and end.	PA-100 Asphalt or PA-311 Adhesive	Roll	3.28 ft (1 m) x 26 ft (7.92 m)	.75 sq (7.0 m^2)	116 lb/sq (5.7 kg/m^2)
Teranap 1M Sand/Film	Asphalt elastomer sheet, with a nonwoven polyester reinforcement and a polyester film protective layer on top surface.	Top ply of the Teranap torch- applied composite; lapped 4 inches side and end.	Torch*	Roll	3.28 ft (1 m) x 26 ft (7.92 m)	.75 sq (7.0 m^2)	113 lb/sq (5.5 kg/m^2)

* Refer to Torch Application sections on pages 2 and 24 for additional information.

Product	Description	Purpose	Application Method	Unit	Size	Coverage	Minimum Coverage Weight
Roof Insulation Products							
Paratherm Polyisocyanurate Roof Insulation	Rigid roof insulation board composed of a closed cell polyisocyanurate foam core bonded to fiberglass reinforced facers.	High thermal value insulation board for use over metal, nailable, and non-nailable roof decks.	Parafast Fasteners, hot asphalt, or Para-Stik Adhesive	Board	4' x 4' (1.22 m x 1.22 m) or 4' x 8' (1.22 m x 2.44 m) boards. Thicknesses of 1" (25 mm) to 4" (102 mm).	See product data sheet	
Siplast Wood Fiberboard	General purpose wood fiberboard insulation panel.	Coverboard with Paratherm polyisocyanurate insulation, or for certain re-cover applications.	Parafast Fasteners, hot asphalt, or Para-Stik Adhesive	Board	4' x 4' (1.22 m x 1.22 m) or 4' x 8' (1.22 m x 2.44 m) boards. Thicknesses of ½" (12.5 mm) and 1" (25 mm).	See product data sheet	
Parapro Roof Membrane and Parapro 123 Flashing System Products							
Parapro Roof Membrane Resin	PMMA based resin, available in summer and winter grade.	Waterproofing layer of Parapro Roof Membrane System.	Roller	Metal drum	20-kg (44 lb) drum	See product data sheet	See product data sheet
Parapro Flashing Resin	PMMA based resin, available in summer and winter grade.	Waterproofing layer of Parapro 123 Flashing System.	Brush or roller	Metal drum	5-kg (11 lb) drum 10-kg (22 lb) drum	See product data sheet	See product data sheet
Pro Matrix	Fibrated PMMA based resin.	Flashing compound for use in situations where application of fleece-reinforced Parapro 123 and Terapro flashing is impractical due to flashing configuration.	Brush	Metal drum	10-kg (22 lb) drum	See product data sheet	See product data sheet
Pro Primer R Resin	PMMA based resin.	Primer and sealer for bituminous surfaces, prior to application of Parapro Roof Membrane System and Parapro 123 Flashing System.	Brush or roller	Metal drum	5-kg (11 lb) drum 10-kg (22 lb) drum	See product data sheet	See product data sheet
Pro Primer W Resin	PMMA based resin.	Primer and sealer for wood surfaces and other approved substrates prior to application of Parapro Roof Membrane System and Parapro 123 Flashing System.	Brush or roller	Metal drum	10-kg (22 lb) drum	See product data sheet	See product data sheet
Pro Primer T Resin	PMMA based resin.	Primer and sealer for concrete surfaces prior to application of Parapro Roof Membrane System and Parapro 123 Flashing System.	Brush or roller	Metal drum	10-kg (22 lb) drum	See product data sheet	See product data sheet
Pro Paste Resin	PMMA based resin.	Resin for patching and leveling surfaces.	Trowel	Metal drum	5-kg (11 lb) drum	See product data sheet	See product data sheet
Pro Repair Mortar	PMMA based resin/ filler blend.	Mortar for patching and leveling concrete surfaces.	Trowel	Pail	See product data sheet	See product data sheet	See product data sheet
Pro Catalyst	White granular powder.	Reactive agent for use in initiating polymerization and curing of Parapro resins.	Mix with resins	Plastic bag	0.1-kg (3.2 oz) bag	See product data sheet	
Pro Prep	Clear blended solvent.	For use in cleaning and reactivating transition areas of in-place Parapro 123 Flashing System membranes.	Clean shop rag	Resealable metal F-style can	1-gallon (3.8 L) can	See product data sheet	
Pro Fleece	Non-woven needle-punched polyester fleece.	Embedded in Parapro Membrane Resin for reinforcement.	Embed in resin with roller or brush	Roll	See product data sheet	See product data sheet	
Pro Tape	Coated cotton cloth tape.	Taping joints between substrate panels and substrate edges at walls, penetrations, and perimeters.	Self-adhesive	Roll	2 in (5 cm) width 3 in (7.6 cm) width See product data sheet for roll length	See product data sheet	See product data sheet
Paradiene 20 P	Asphalt elastomer sheet, random glass mat reinforced, with Syntan acrylic coating on top surface.	First ply of Paradiene 20 P/ Parapro Roof Membrane System, lapped 3 inches side and end.	PA-100 Asphalt	Roll	3.28 ft (1 m) x 50 ft (15.24 m)	1.5 sq (13.9 m^2)	59 lb/sq (2.9 kg/m^2)
Paradiene 20 SA P	Asphalt elastomer sheet, random glass mat reinforced, with a thin layer of self-adhesive asphalt covered with polyolefin release film on bottom side, and Syntan acrylic coating on top surface.	Fully adhered first ply of Paradiene 20 SA P/Parapro Roof Membrane System, lapped 3 inches side and end.	Self-adhesive peel and stick	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	69 lb/sq (3.4 kg/m^2)
Paradiene 20 TG P	Asphalt elastomer sheet, random glass mat reinforced, thin layer of grooved torching grade asphalt on bottom side, Syntan acrylic coating on top surface.	First ply of Paradiene 20 TG P/ Parapro Roof Membrane System, lapped 3 inches side and end.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	73 lb/sq (3.6 kg/m^2)
Paradiene 20 TS P	Asphalt elastomer sheet, random glass mat reinforced, with stripes of grooved torching grade asphalt on 50% of bottom side, and acrylic coating between the stripes. Syntan acrylic coating on top surface.	First ply of Paradiene 20 TS P/ Parapro Roof Membrane System, lapped 3 inches side and end.	Torch*	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	73 lb/sq (3.6 kg/m^2)
Paradiene 20 TS SA P	Asphalt elastomer sheet, random glass mat reinforced, with stripes of grooved torching grade asphalt on 50% of bottom side, acrylic coating between the stripes, and polyolefin release film on bottom side. Syntan acrylic coating on top surface.	First ply of Paradiene 20 TS SA P/ Parapro Roof Membrane System, lapped 3 inches side and end.	Self-adhesive peel and stick	Roll	3.28 ft (1 m) x 33.5 ft (10.21 m)	1 sq (9.3 m^2)	73 lb/sq (3.6 kg/m^2)

 * Refer to Torch Application sections on pages 2 and 46 for additional information.

Coverboard and Substrate Panel Usage

Panel Type	Panel Installation Method	Membrane Application Method
DensDeck or Securock*	Mechanical, Para-Stik	Torch, PA-311 Adhesive
DensDeck or Securock*	Hot Asphalt	Torch
DensDeck Prime	Mechanical, Para-Stik	Torch, PA-311 Adhesive, Self-Adhesive
DensDeck Prime	Hot Asphalt	Torch
DensDeck DuraGuard	Mechanical, Para-Stik	Torch, PA-311 Adhesive, Self-Adhesive
	Hot Asphalt	Torch
Wood Fiberboard	Mechanical, Para-Stik, Hot Asphalt	PA-311 Adhesive, PA-100 Asphalt
Perlite (¾-inch)	Mechanical, Hot Asphalt	PA-311 Adhesive, PA-100 Asphalt

*Minimum Securock panel thickness is ⅜-inch when panels are mechanically attached.

Slope Requirements/Fastening Schedule

Siplast System	Method of Applications	Under ½" Per Foot	½" - 2½" Per Foot	2½" - 3½" Per Foot	3½" - 6" Per Foot	6" - 12" Per Foot	Over 12" Per Foot
Paradiene 20/30	PA-100 Asphalt	NFR	NA	NA	NA	NA	NA
Paradiene 20/30	PA-311/SFT Adhesive	NFR	NFR[1]	24'	16'[2]	12'[2]	NA
Paradiene 20 TG/30 TG	Torch	NFR	NFR	24'	24'[2]	16'[2]	8'[2]
Paradiene 20 SA/20 TS SA/30 FR TG	SA/Torch	NFR	NFR	24'	24'[2]	16'[2]	8'[2]
Veral Aluminum	PA-100 Asphalt	NA	33'	24'	16'	NA	NA
Veral Aluminum	Torch	NA	NFR	NFR	33'	16'	8'
Parafor 50 LT	PA-100 Asphalt	NA	16'	NA	NA	NA	NA
Parafor 50 LT	PA-311/SFT Adhesive	NA	NFR[1]	26'	26'	16'	8'
Parafor 50 LT	Torch	NA	NFR	NFR	26'	16'	8'
Parafor 50 TG	Torch	NA	NFR	NFR	26'	16'	8'
Paradiene 40 FR[3]	PA-100 Asphalt	NFR	16'	NA	NA	NA	NA
Paradiene 40 FR[3]	PA-311/SFT Adhesive	NA	NFR[1]	26'	16'	12'	8'
Paradiene 40 FR TG[3]	Torch	NFR	NFR	26'	26'	16'	8'

Maximum sheet lengths are shown on the chart above to indicate application parallel to the slope of the roof. Fastening is required in all cases where a sheet length is indicated.

[1] Some fastening may be necessary to stabilize material until adhesive cures.

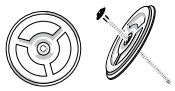
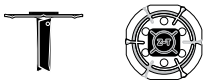
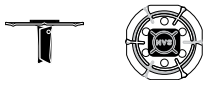
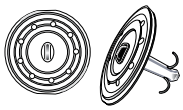
[2] Paradiene HT membranes must be substituted for the standard membranes at this slope.

[3] For roofing applications, Paradiene 40 FR and Paradiene 40 FR TG are installed in conjunction with a Paradiene 20 base ply as a complete roofing system.

Note: On compound slopes (i.e., domes, parabolic shapes, etc.) side lap fastening is also required 12" o.c.

Abbreviations: NA - Product may not be applied at this slope by method of application shown. NFR - No fastening required at this slope.

Parafast Reference Chart

	Parafast Product	Use	Available Lengths/ Diameters	Quantity Per Package
	**Roofing Fastener**	For conventional steel, wood, and plywood decks. Use with Parafast 3" Metal Plate.	1⅝" - 8"	1,000/pail
	**3" Metal Plate**	For use with Parafast Roofing Fasteners, Parafast HD Fasteners, Parafast XHD Fasteners, and Parafast CD-10 Fasteners.	3" diameter	1,000/pail
	**PA (Pre-assembled) Fastener and 3" Metal Plate**	For steel, wood, and plywood decks.	Fastener: 2" - 8" Plate: 3" diameter	250/box
	**HD Fastener**	For heavy steel and concrete decks. Use with Parafast 3 Metal Plate.	1¼" - 18"	Quantity per package varies with fastener size.
	**XHD Fastener**	For specialty applications. Use with Parafast 3" Metal Plate.	2" - 18"	Quantity per package varies with fastener size.
	**CD-10 Fastener**	Concrete drive fastener for structural concrete decks. Use with standard Parafast 3" Metal Plate.	2" - 12"	Quantity per package varies with fastener size.
	**LD Fastener**	For gypsum and cementitious wood fiber decks. Use with LD 3" Metal Plate.	2⅝" - 12"	Quantity per package varies with fastener size.
	**LD 3" Metal Plate**	For use with Parafast LD Fastener on gypsum and cementitious wood fiber decks.	3" diameter	500/box
	**Zono-tite Fastener**	Base sheet fastener for use with lightweight insulating concrete	1.7"	1,000/box
	**NVS Fastener**	Base sheet fastener for use with lightweight insulating concrete.	1"	1,000/box
	**Para-Lok Fastener**	Base sheet fastener for use with cementitous wood fiber and gypsum decks.	1.4" and 1.8"	500/box

Flashing Details

Paradiene 20/30
Paradiene 20/30 FR
Veral

The illustrations on these pages show flashing details applicable to Paradiene 20/30 and Paradiene 20/30 FR roofing systems. All Paradiene 20/30 details are applicable to the Veral System where Irex may be substituted for Paradiene 20 and Veral is substituted for Paradiene 30.

In instances where Veral base flashing is mopped, laps must be sealed by heat welding and the top edge of the sheet must be mechanically fastened on 9-inch centers.

Prior to flashing, granule surfaces must be prepared either by torch, PA-1125 Asphalt Primer, or PA-917 LS Primer.

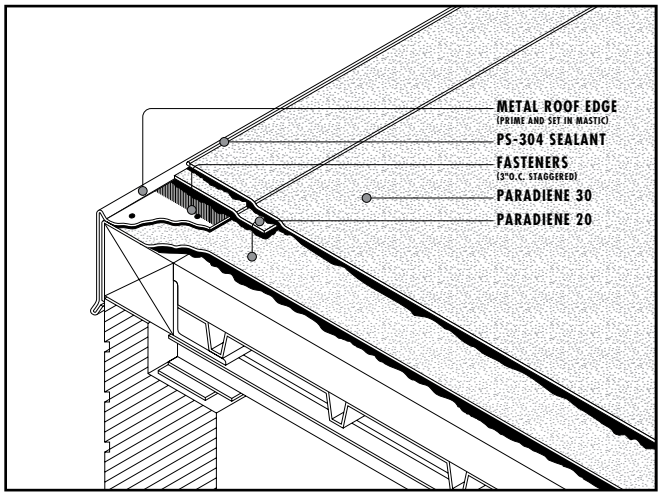
Veral base flashing should be cut to size off the end of the roll and applied vertically, always working to a selvage edge.

Paradiene 40 FR, Paradiene 40 FR TG, Parafor 50 LT, Parafor 50 TG, Parafor 30, Parafor 30 TG, and Parapro 123 Flashing are acceptable substitutes for Veral in all standard base flashing and wall treatment installations (with the exception of Parapet Non-wall Supported Deck No. 2030MIW2).

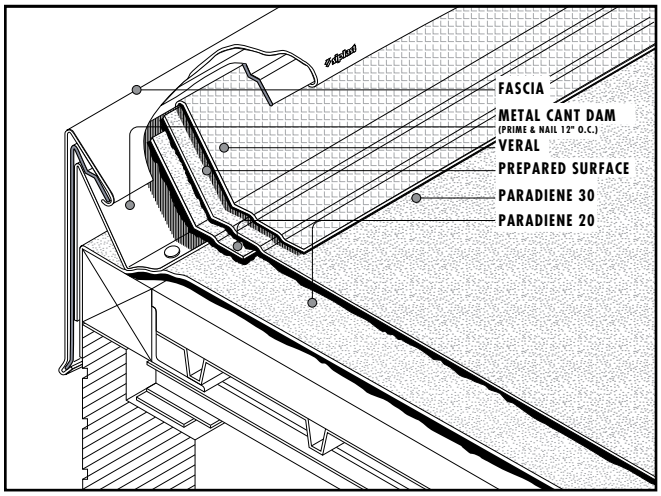
Siplast recommends that all precautions relative to torch applications, including a fire watch, be taken in accordance with CERTA recommendations. See pages 2 and 24 for more information on CERTA.

Parapro 123 Flashing may be substituted for lead flashing in drain details. Contact the Siplast Technical Department for requirements.

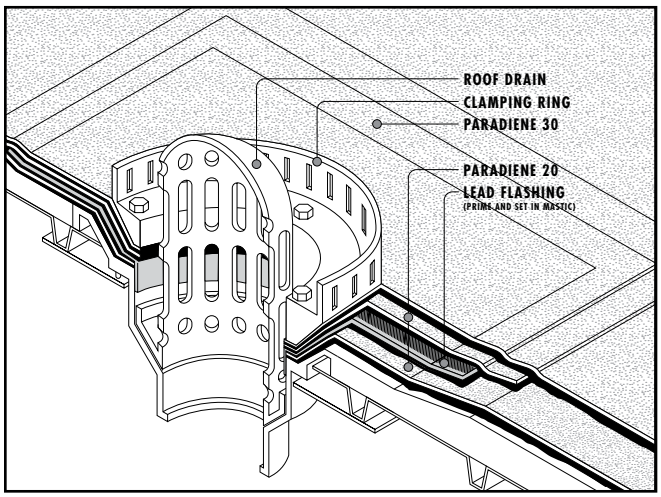
Roof Edge **No. 2030MIE1**



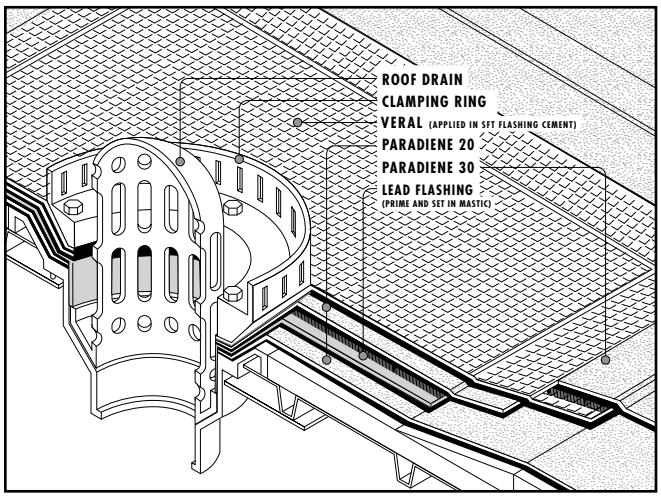
Paraguard Roof Edge **No. 2030MIE3**



Drain **No. 2030MID1**

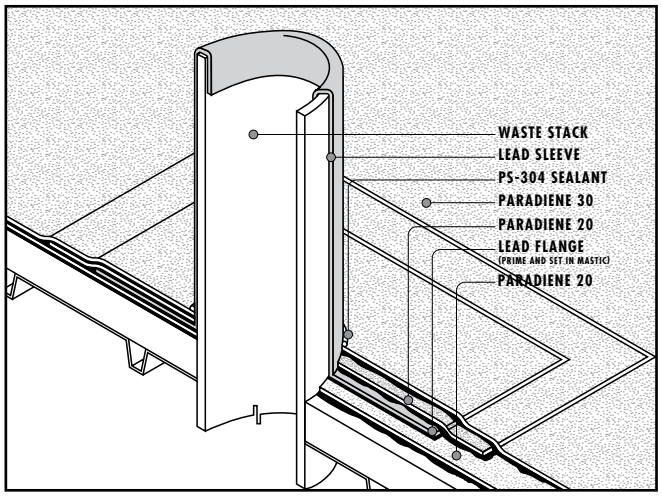


Sumped Drain **No. 2030MID2**

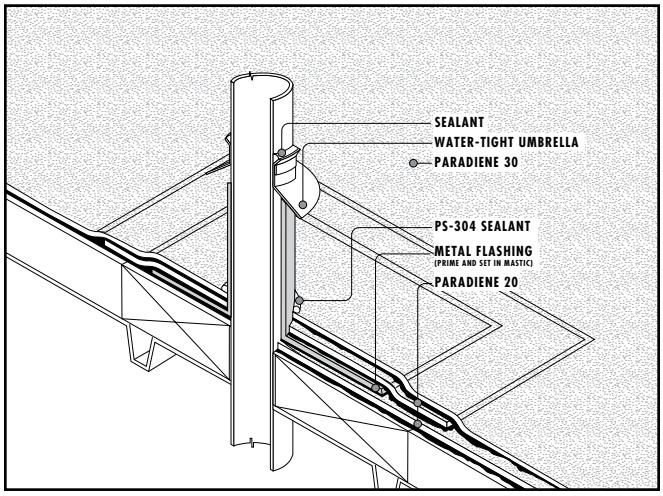


Flashing Details

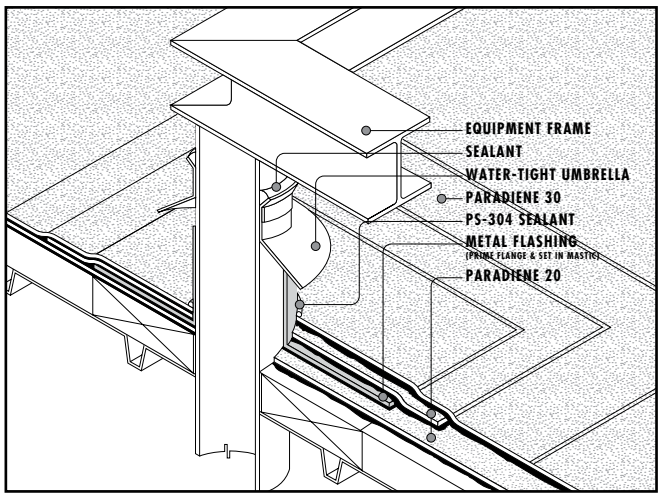
Waste Stack **No. 2030MIP1**



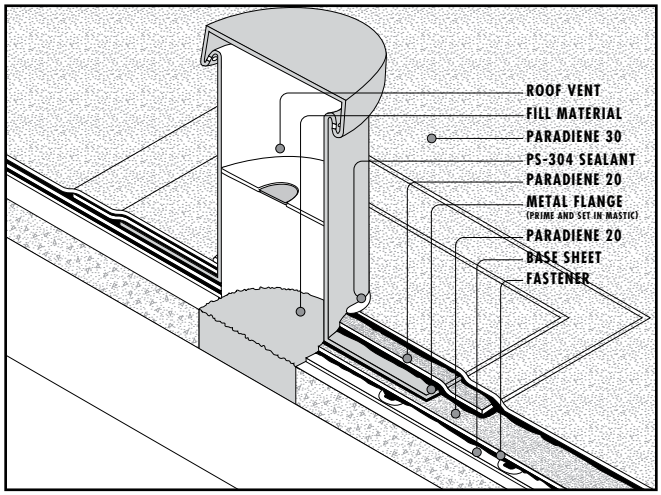
Pipe Penetration **No. 2030MIP5**



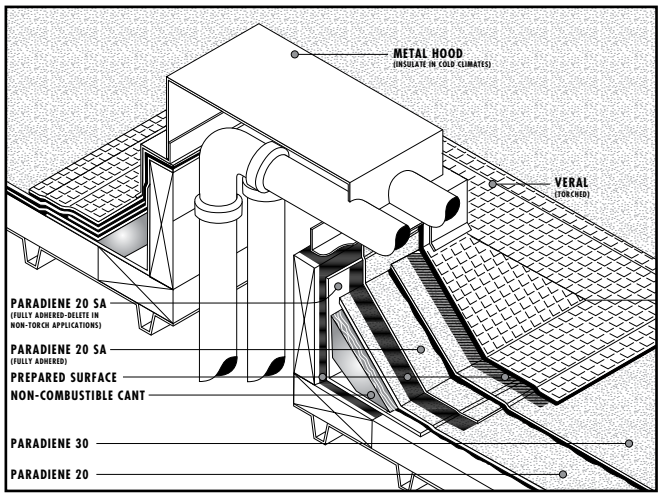
Equipment Frame **No. 2030MIP2**



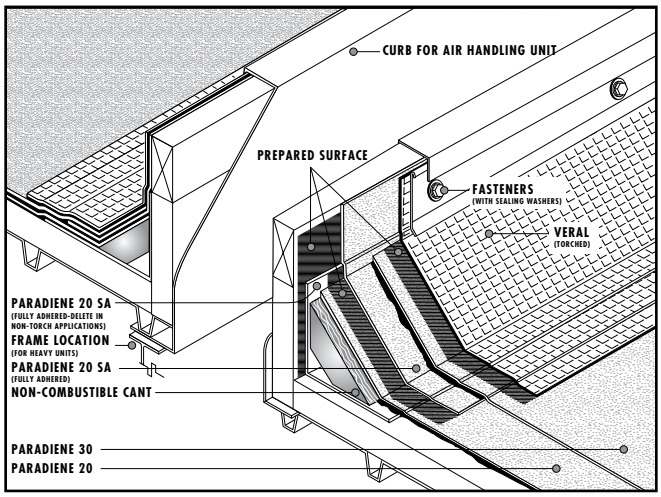
Roof Vent **No. 2030LBP4**



Curb **No. 2030MIC1**

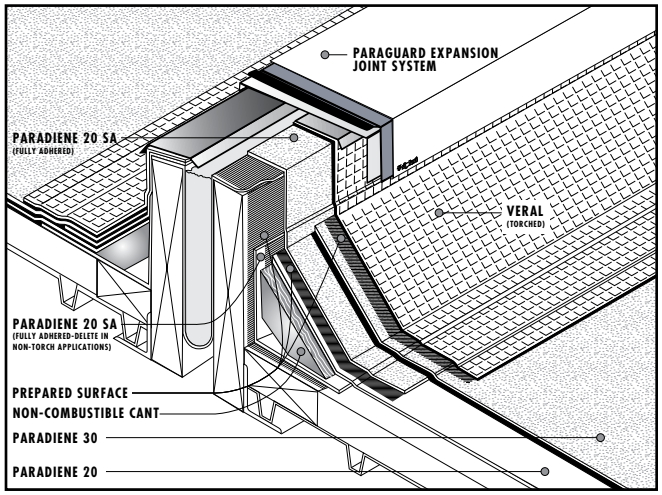


HVAC Curb **No. 2030MIC2**

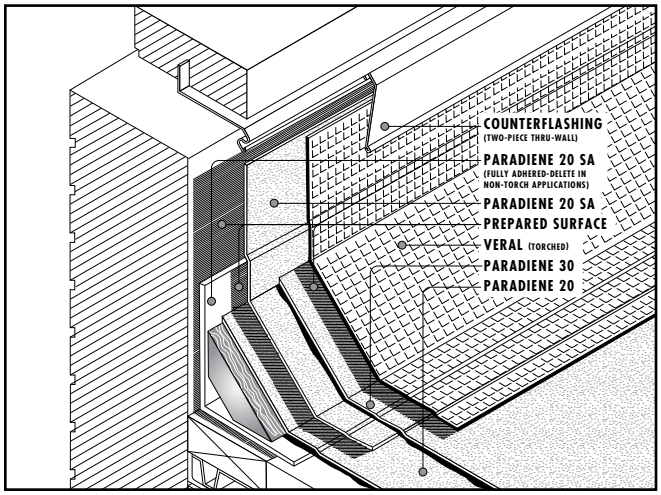


Flashing Details

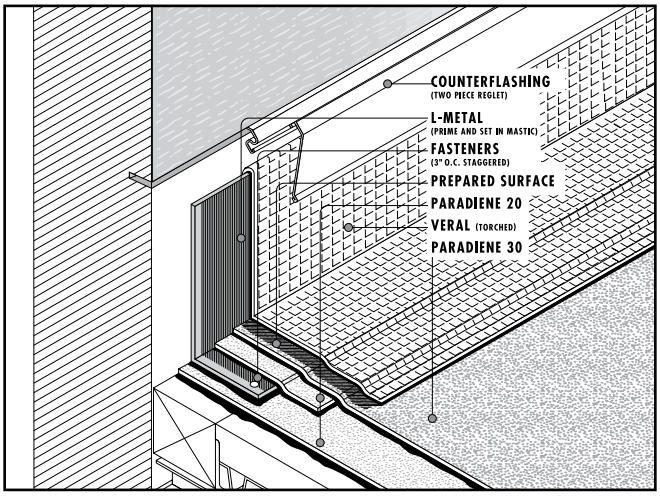
Paraguard Expansion Joint **No. 2030MIC7**



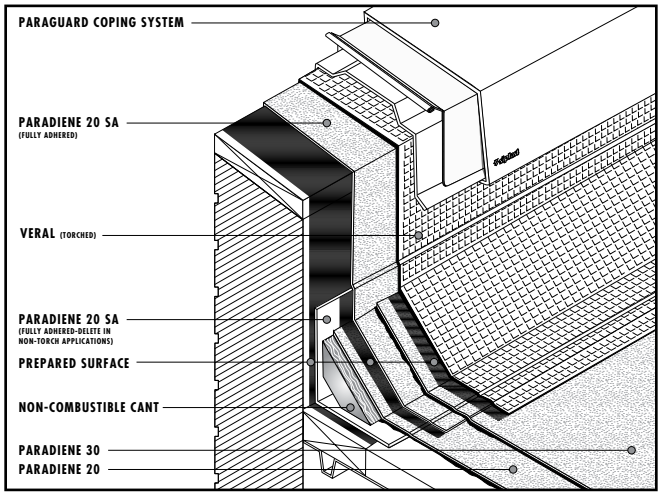
Parapet
(Wall-Supported Deck) **No. 2030MIW1**



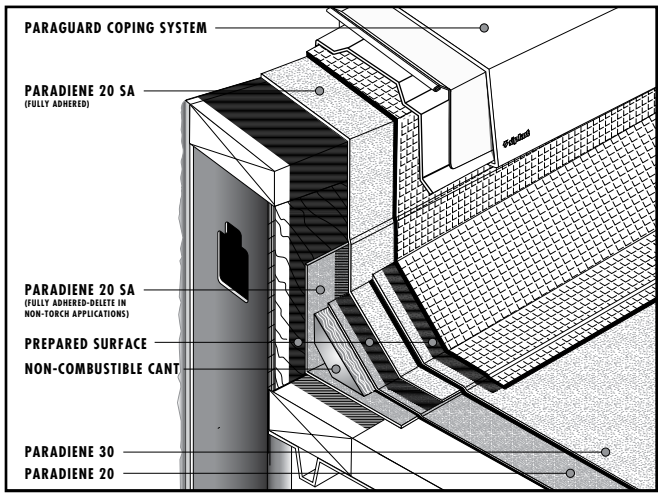
Parapet
(Non-Wall Supported Deck) **No. 2030MIW2**



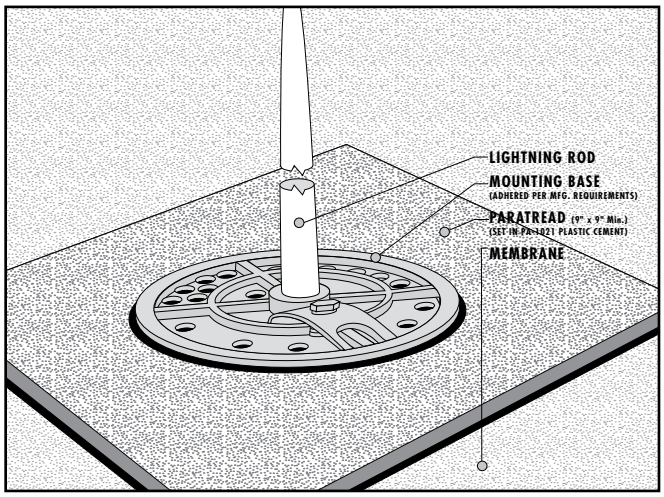
Parapet w/
Paraguard Coping **No. 2030MIW3**



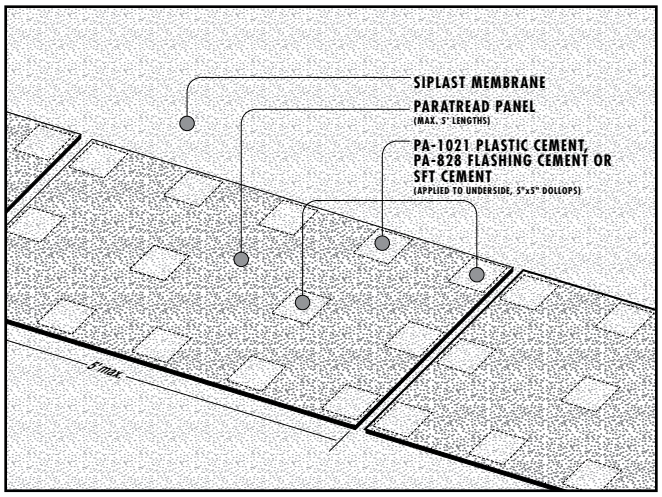
Plywood Veneered Parapet
w/Paraguard Coping **No.2030MIW5**



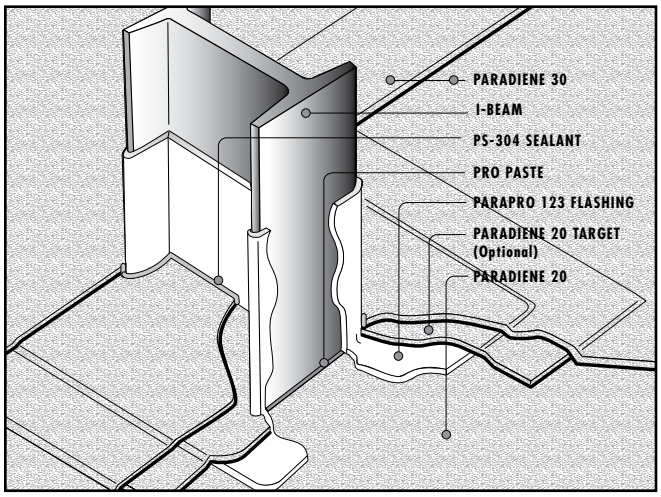
Lightning Protection **No. 2030MIS2**



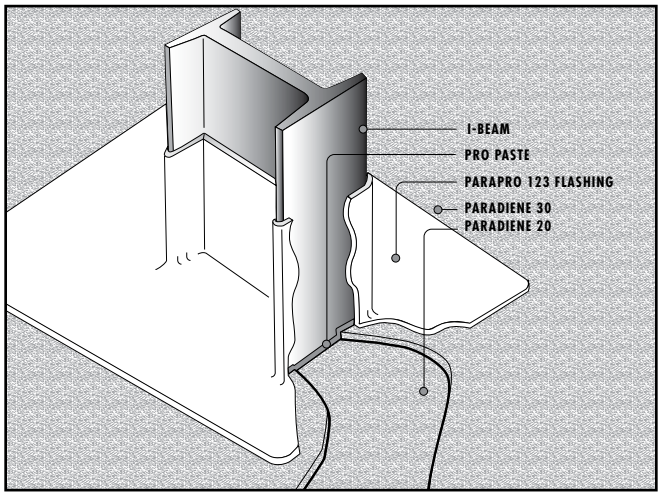
Paratread **No. 2030MIS3**



I-Beam With Parapro Flashing (Interply) **No. 2030MIP14**



I-Beam With Parapro Flashing **No. 2030MIP13**



Flashing Details

Teranap Plaza Deck
Teranap Green Roofing

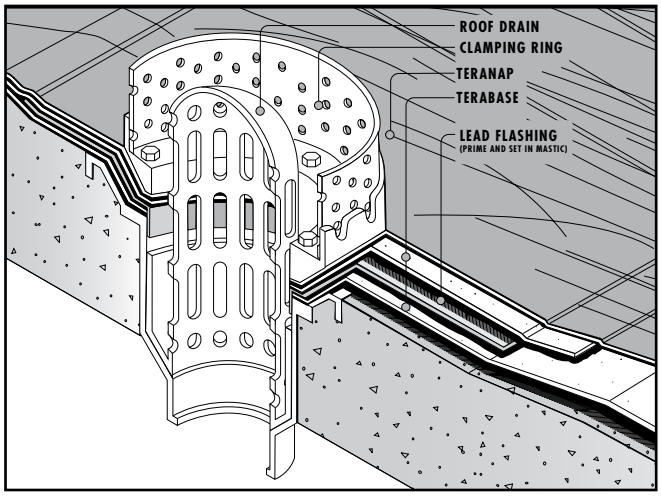
The illustrations shown on these pages show flashing details applicable to Teranap Plaza Deck and Teranap Green Roofing Systems.

Veral base flashing should always be cut to size off the end of the roll and applied vertically, always working to a selvage edge.

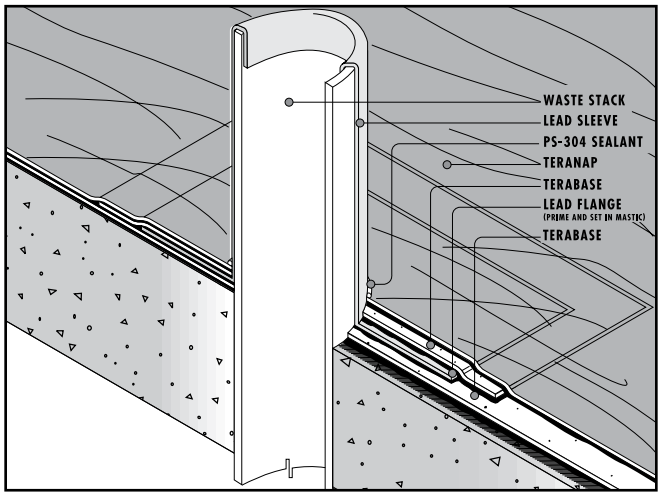
Siplast recommends that all precautions relative to torch applications, including a fire watch, be taken in accordance with CERTA recommendations. See pages 2 and 24 for more information on CERTA.

Parapro 123 Flashing may be substituted for lead flashing in drain details. Contact the Siplast Technical Department for requirements.

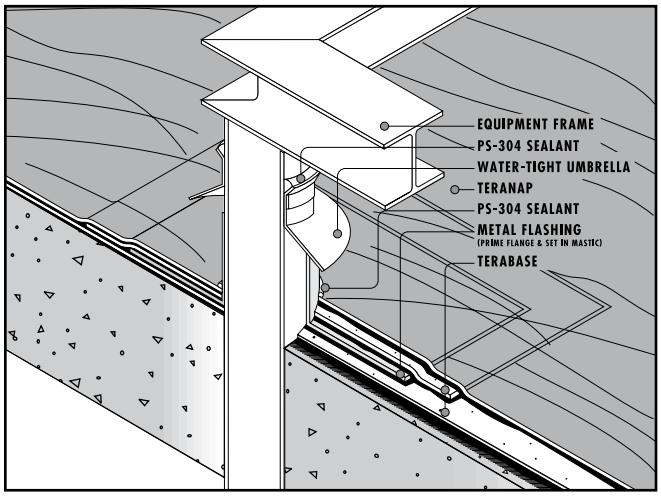
Drain **No. TND1**



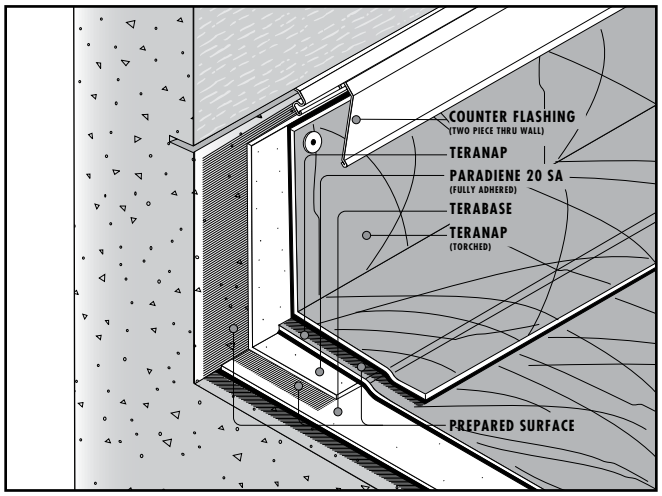
Waste Stack **No. TNP1**



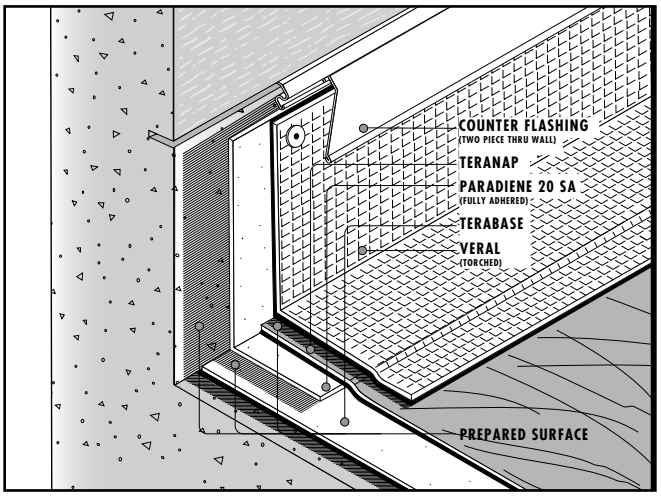
Equipment Frame **No. TDP2**



Parapet (Non-Exposed) **No. TNWI5**



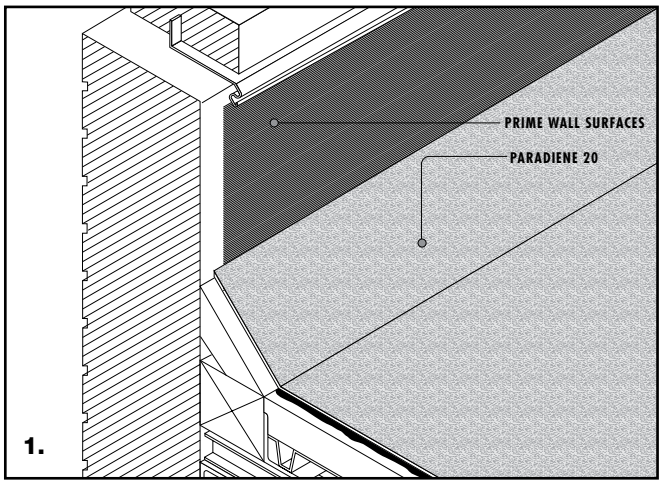
Parapet (Exposed) **No. TNWI5**



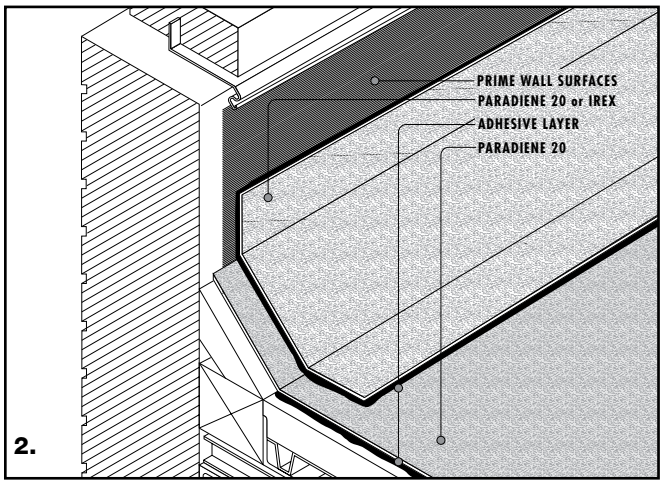
Flashing Application Steps

Base Flashing Detail

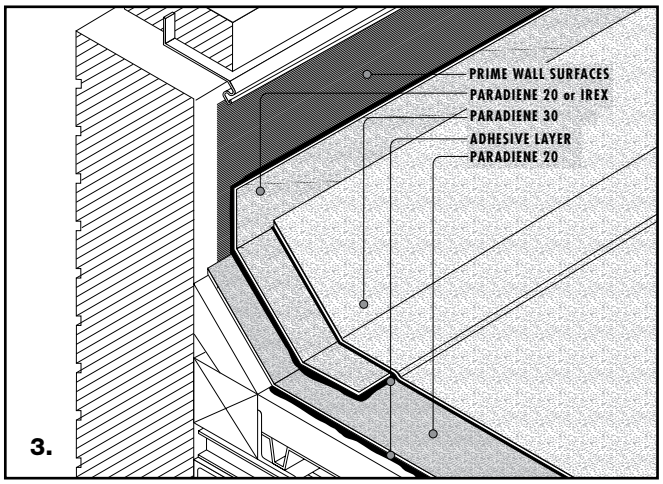
The illustrations on this page show membrane and flashing configurations applicable to installations where Veral flashing is applied with hot asphalt or approved cold adhesive. In situations where Veral flashing is torched, refer to the Torch Application Guidelines on page 2, and the details shown on pages 14-15.



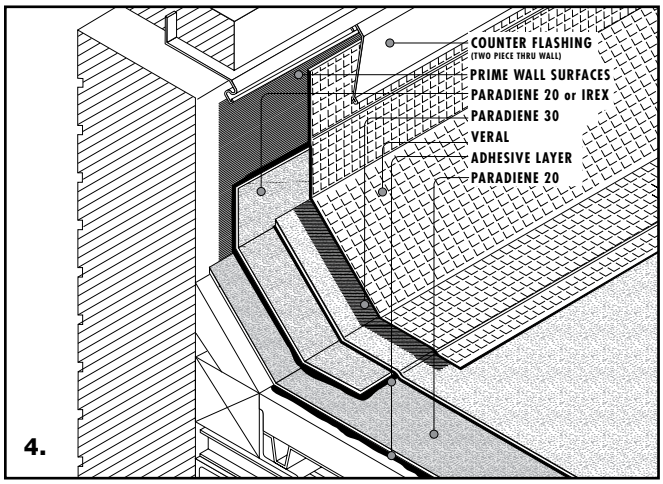
Prime the wall above the cant using PA-1125 or PA-917 LS Asphalt Primer. Allow to dry thoroughly. Fully adhere the Paradiene 20 base ply to the bottom of the cant and leave it dry on the cant. Paradiene 20 should extend to the top of the cant.



Fully adhere a strip-in ply of Paradiene 20 or Irex over the cant. The strip-in ply should extend 3 inches above the cant and a minimum of 3 inches onto the roof.

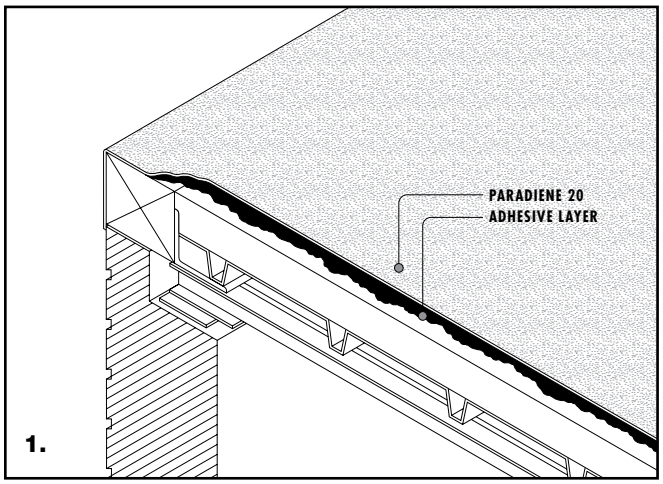


Fully adhere the Paradiene 30 field sheet to the top of the cant and chalk a line approximately 4 inches from the cant, parallel to the wall, to mark the flashing preparation area. Prior to flashing, granule surfaces must be prepared either by torch or with PA-1125 or PA-917 LS Asphalt Primer.

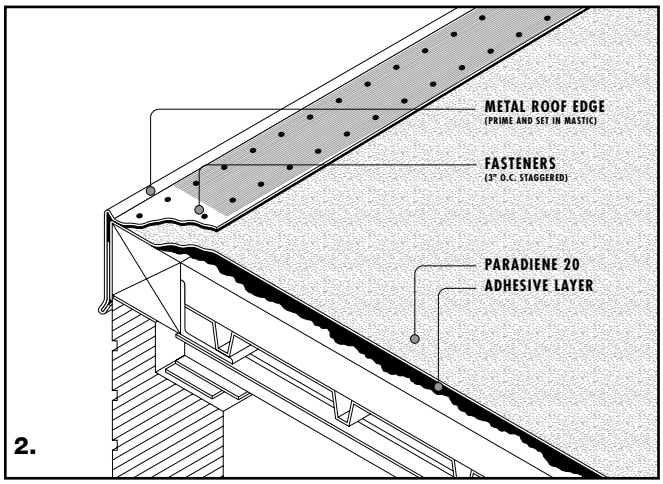


Fully adhere the Veral base flashing. The Veral should be cut to size off of the end of the roll and applied vertically, always working to the selvage edge. The Veral should extend 4 inches onto the field of the roof.

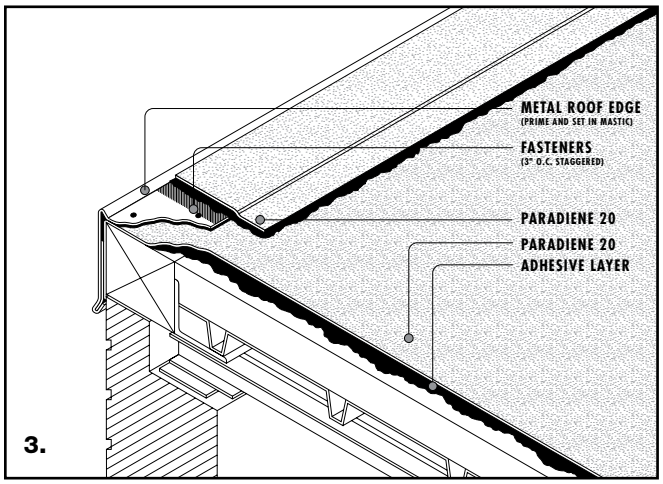
Roof Edge Detail



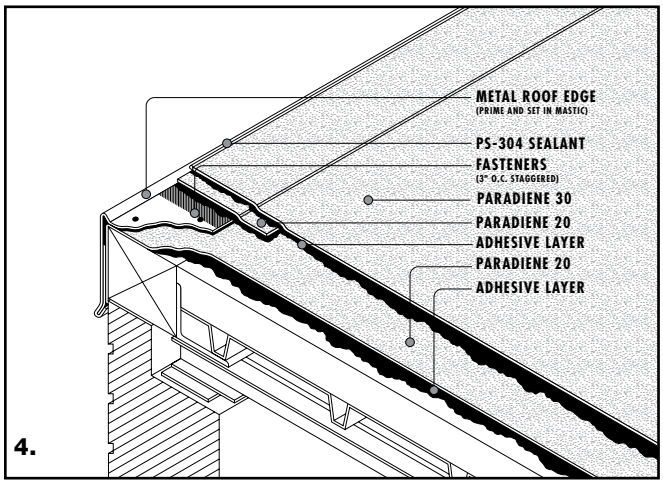
Adhere Paradiene 20 to the roof edge. Leave it dry over the edge of the roof a minimum of 4 inches or to below the wood blocking.



After setting primed edge metal in PA-1021 Plastic Cement, mechanically fasten the flange to the nailer using a 3-inch o.c. stagger pattern.

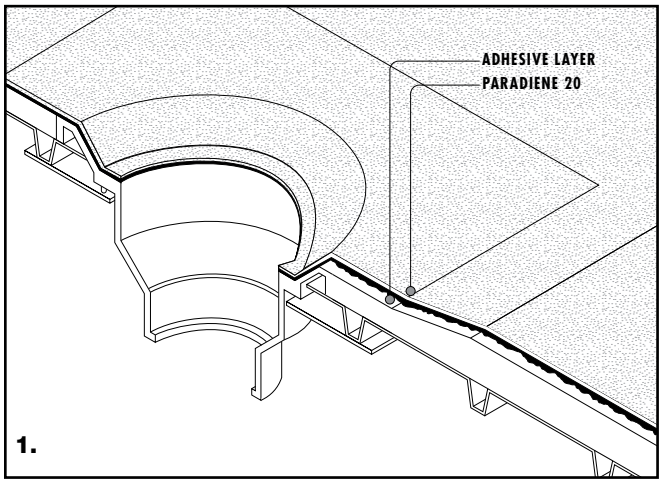


Fully adhere a strip-in ply of Paradiene 20 covering the fastened edge metal flange and extending 4 inches beyond the metal flange onto the roof surface.

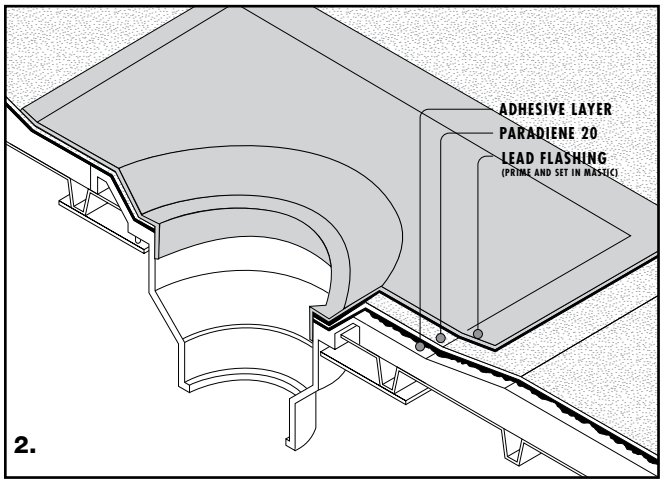


Fully adhere Paradiene 30 extending to the roof edge. Apply a bead of PS-304 Sealant to the space between the edge of the Paradiene 30 and the raised portion of the metal roof edge. (See page 40, detail no. 2030MIE1.)

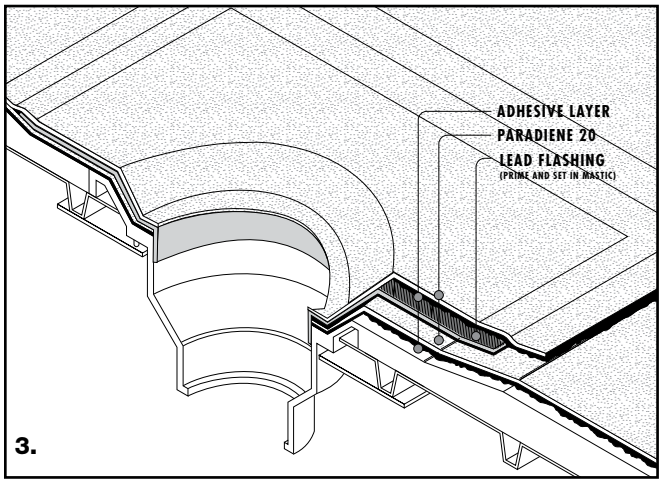
Drain Detail



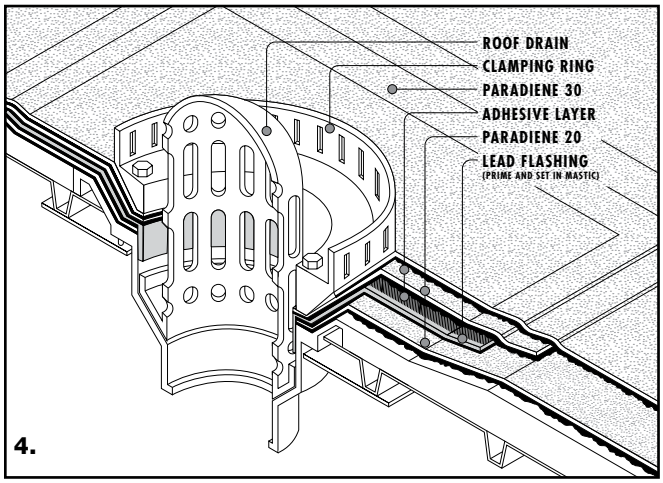
Fully adhere Paradiene 20 over the drain area, cutting the material into the drain.



Place a 30 inch x 30 inch square of primed 4-pound lead flashing in PA-1021 Plastic Cement over the drain. Form the lead with a rubber mallet.

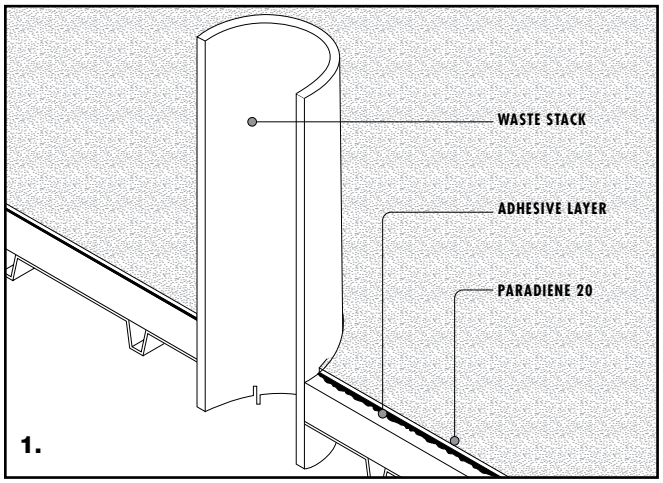


Adhere a Paradiene 20 “target” over the lead flashing extending from under the clamping ring to 4 inches beyond the lead flashing, onto the roof. Inspect the drain to determine the proper flashing material. If the drain is highly recessed, Veral should replace Paradiene 30 in the entire sump area.
Note: All plies should be set in PA-1021 Plastic Cement, extending from under the clamping ring out 6 inches onto the roof surface.

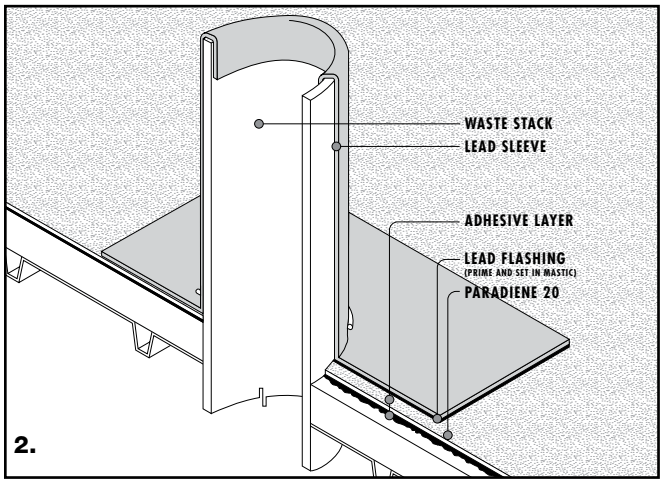


Adhere the Paradiene 30 and remove the portion covering the drain opening, ensuring that the Paradiene 30 extends under the clamping ring. Tighten the clamping ring and ensure that the drain is free of blockage. If Veral was used in the sump location, the Paradiene 30 should lap the Veral a minimum of 4 inches, and be adhered to the foil with PA-1021 Plastic Cement. (See page 13, detail no. 2030MID1.)

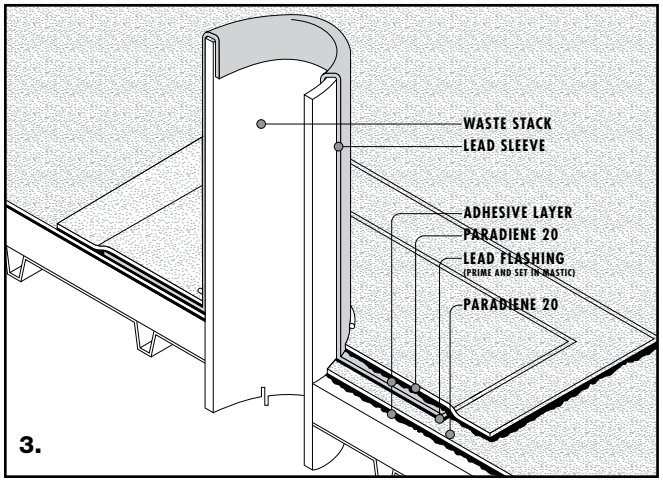
Waste Stack Detail



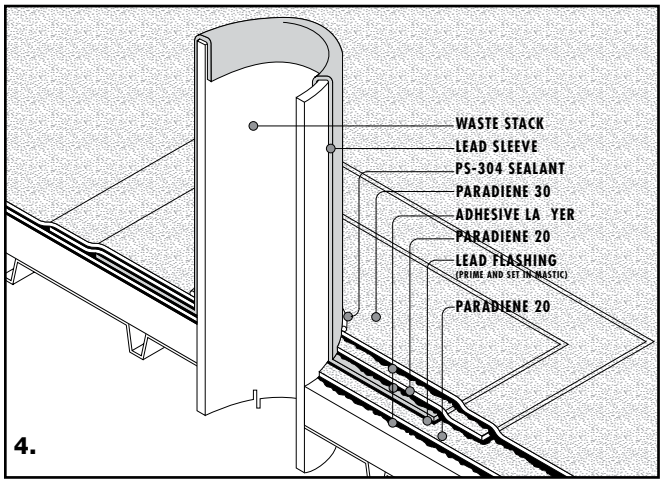
Adhere the Paradiene 20 base ply to the substrate, cutting the material to fit around the base of the penetration.



Apply a primed lead flashing over the stack and set it in PA-1021 Plastic Cement. Use a rubber mallet to conform the lead to the stack and substrate.



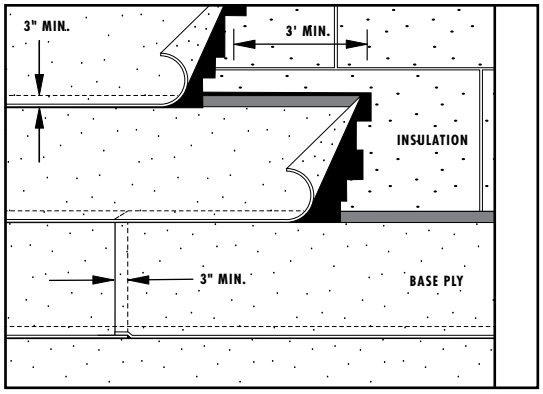
Fully adhere a Paradiene 20 “target” extending from the base of the stack to 4 inches beyond the lead flange.



Fully adhere the Paradiene 30 finish ply, cutting the material to fit around the base of the penetration. Place a bead of PS-304 Sealant at the base of the stack. (See page 14, detail no. 2030MIP1.)

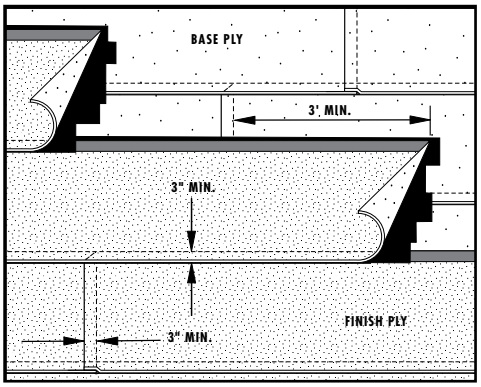
System Layouts

Paradiene 20/Irex
Base Ply Application



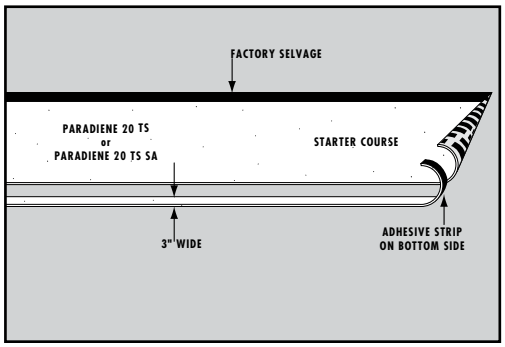
Beginning at the low point of the roof, fully adhere one ply of the base material to the substrate. Lap the sides and ends a minimum of 3 inches. Offset the end laps a minimum of 3 feet.

Paradiene 30/Veral
Finish Ply Application



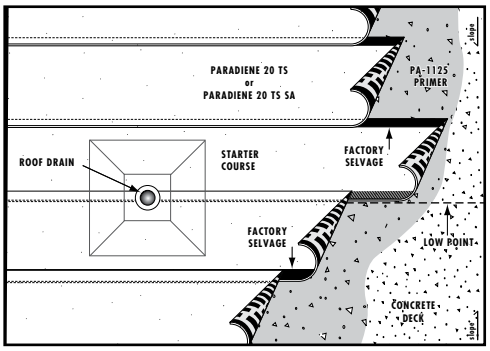
Again beginning at the low point, fully adhere one ply of the finish ply to the base ply. Lap sides and end a minimum of 3 inches. Offset the end laps a minimum of 3 feet. Stagger the laps between plies.

Paradiene 20 TS/TS SA Starter Course



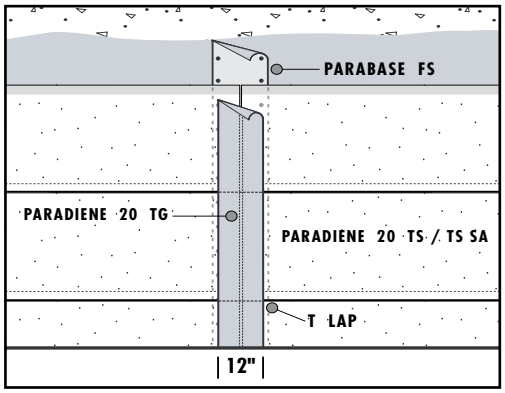
A starter course is required for application at the low point of the roof. To make a starter course, remove the portion of the sheet that contains the solid, under-side adhesive strip (which is located on the side opposite the selvage).

Paradiene 20 TS/TS SA Application



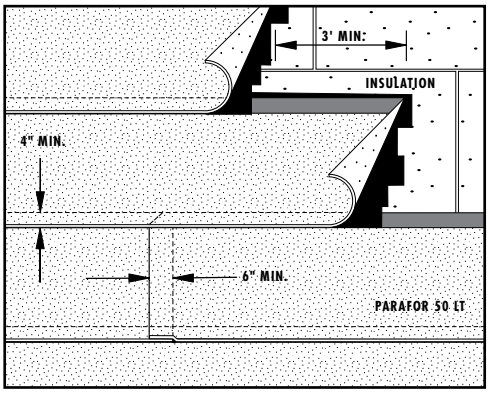
Beginning at the low point of the roof, adhere the starter course to the substrate. Each adjoining course should be applied so that the under-side adhesive strip laps onto the previous course. Use factory selvage wherever possible. For Paradiene 20 TS SA applications, prepare non-selvage surfaces prior to application of adjoining course.

Paradiene 20 TS/TS SA Seaming



Place a 12-inch wide strip of Parabase FS centered beneath the area where adjoining sections of Paradiene 20 TS/TS SA will be seamed. The Parabase FS may be partially attached using light-weight insulating concrete fasteners or adhered using dollops of PS-304 Elastomeric Sealant.

Parafor 50 LT Application



Beginning at the low point of the roof, fully adhere one ply of Parafor 50 LT to the substrate. Lap sides a minimum of 4 inches and ends a minimum of 6 inches. Offset end laps a minimum of 3 feet.

Helpful Application Hints

For general application guidelines, refer to pages 1 through 5 of this handbook.

Storage and Handling of Materials

Siplast roll roofing materials should be stored upright, on end, on a clean, flat surface. Preferably, the rolls should be left on their shipping pallets. The materials should be covered with tarps and kept dry at all times. Installation will be easier if materials are stored properly.

Substrates

Prior to the application of a Siplast Roof System, all openings, walls, and projections through the roof should be completed and the deck should be clean and dry.

Insulation

The edges of the insulation units should be fitted together without gaps. The insulation layer should present a clean, smooth, and dry surface to accept the roof membrane.

Saddles and Crickets

Rigid insulation used to construct saddles and crickets should not be sandwiched between roofing plies. If the base ply is in place, it must be removed before application of the cricket materials and continuation of roofing. The membrane should be installed over saddles and crickets in a manner that will not create backwater laps.

Paraslope should be used to correct random areas of ponding water after the roof membrane is applied.

Cold Weather Application

Special techniques are necessary when installing Siplast materials under cold weather conditions. See page 2 for recommendations.

Priming Metals

All metals used in the roof system must be primed with the appropriate Siplast primer. Primers are best applied using a paint brush or small paint roller.

Asphalt

When applying a Siplast Roof System using hot asphalt, PA-100 Asphalt, or approved ASTM D 312, Type IV asphalt must be used for all moppings. The maximum heating temperature of the asphalt should not exceed 525°F (274°C), and the minimum temperature of the asphalt at the point of membrane application should be 400°F (204°C). (See pages 1 and 2.)

All asphalt layers must be total in coverage, without breaks or voids. Interply moppings should not exceed 25 lb (1.22 kg/m^2) per ply per square.

Torch Application

Extreme caution should be used when working with a torch. Siplast strongly recommends that those operating a torch be thoroughly trained in safe application practices and certified by a recognized torch safety program such as CERTA, and be aware of torching hazards, including, but not limited to, the following:

Direction of flame.

- Recognize that flame can travel to places further than those visible to the torch operator.
- Always direct flame away from any penetrations, the roof edge, deck-to-wall transitions, etc.

Proximity of combustible materials.

- Never allow a flame to come into contact with combustible materials, flammable or explosive vapors, or gases.
- Recognize that combustible materials may be present in areas not visible to the torch operator, such as: below the roof deck or rooftop penetrations; within rooftop mechanical equipment, HVAC service lines, and utility pipes; at walls and perimeter edges; and on adjacent structures.

Knives and Trowels

When working with Veral, always keep trowels and knife blades clean. Heating trowels and knife blades will improve the roofer's ability to cut the Veral and seal seams and laps.

Cutting Materials

When cutting materials, straight edges or chalk lines should be used to ensure straight, accurate cuts. Do not cut directly on the surface of a new roof. When cutting Veral, place the material on a board and cut across the sheet using Veral's deep, embossed channels as a guide.

Foot Traffic During Application

The surfaces of Siplast products remain hot long after asphalt or torch application. During this period, the finished roof surface can be marred by foot traffic. To prevent tracking of asphalt across the field of the roof, workers should use talc or release liner on work boots. Even after the products have cooled, it is best to limit foot traffic over the completed roof.

It is important to remember that with cold adhesive applications, curing times are much longer than with asphalt or torch applications. During this curing time, the roofing sheets are in a softened state. Refer to page 1 for specific PA-311 Adhesive application guidelines.

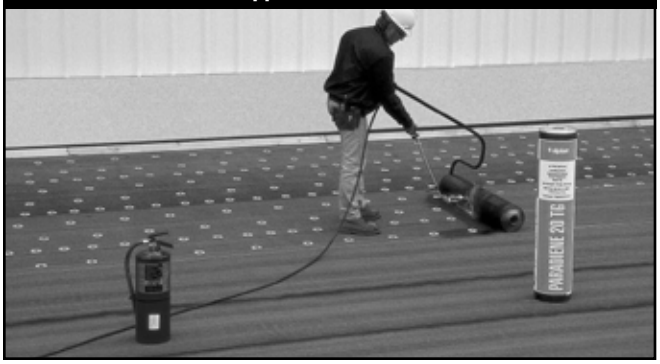
Wrinkles and Fishmouths

During the application of materials, all wrinkles and fishmouths should be corrected immediately by slicing, re-adhering the loose material, and patching. The materials used to repair the slice in the base ply layer should extend a minimum of 3 inches beyond the slice in all directions. Materials used to patch a slice in the finish ply should be cut off the end of the roll. Patches in the finish ply should extend from side lap to side lap.

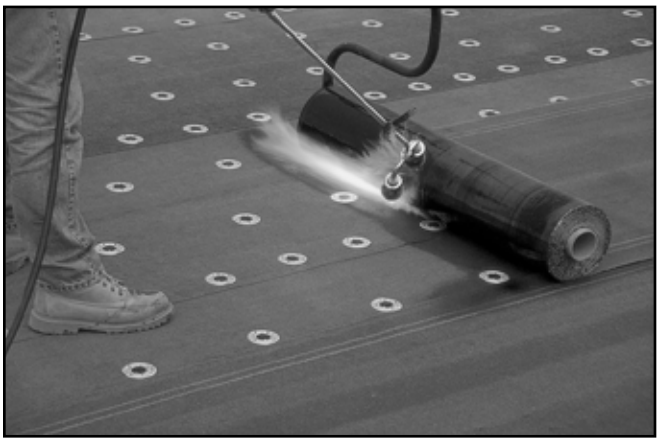
Applications

PARADIENE 20/30 SYSTEM APPLICATION

Paradiene 20 TG: Torch Application



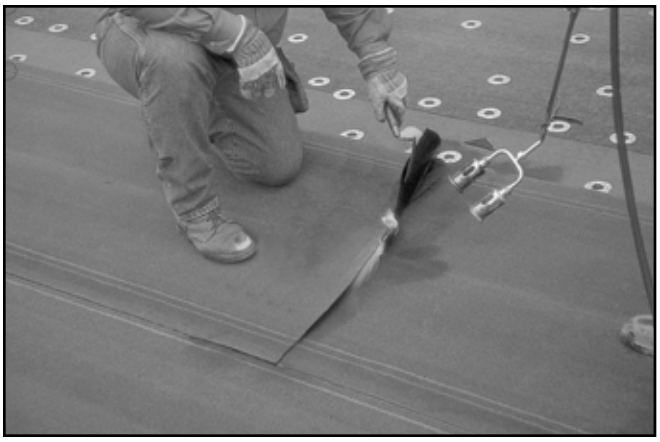
Install Parabase FS to the nailable lightweight concrete substrate according to Siplast nailing requirements. Starting at the low point of the roof, heat-bond the Paradiene 20 TG to the prepared substrate. Lap sides and ends a minimum of 3 inches.



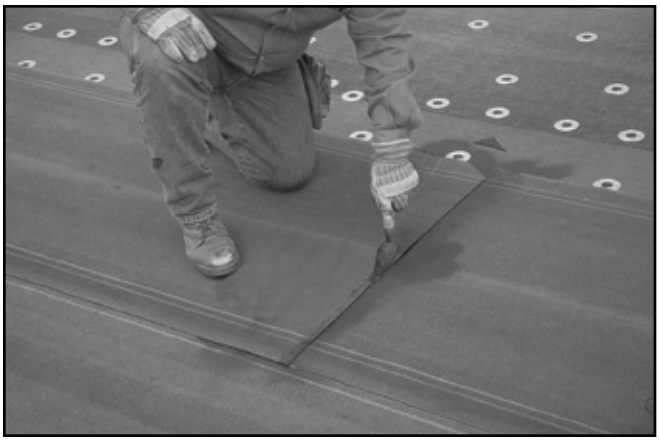
Concentrate the heat where the Paradiene 20 TG and base sheet make contact. Torch uniformly, side-to-side, using an “L” motion to preheat the selvage of the previous sheet. Burn off the plastic film and soften the back coating until the grooves are no longer visible without causing the Paradiene 20 TG sand surface to become displaced. The membrane should be completely fused, with only a small bead of bleedout.

Paradiene 20 TG can be applied using an approved torching wagon with a minimum of seven burners.

At end laps, a “dog ear” angle cut should be made on the overlapping selvage edge.



Lift the edge of the overlapping sheet using a clean trowel and heat the back side of the Paradiene 20 TG sheet.

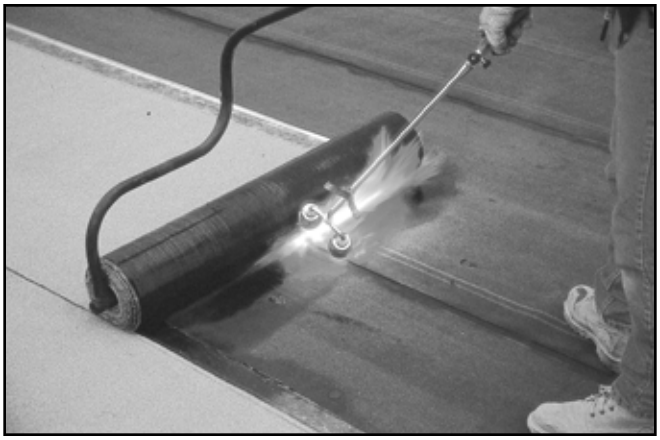


Apply pressure to the end laps to ensure complete adhesion.

Applications

Paradiene 30 TG: Torch Application

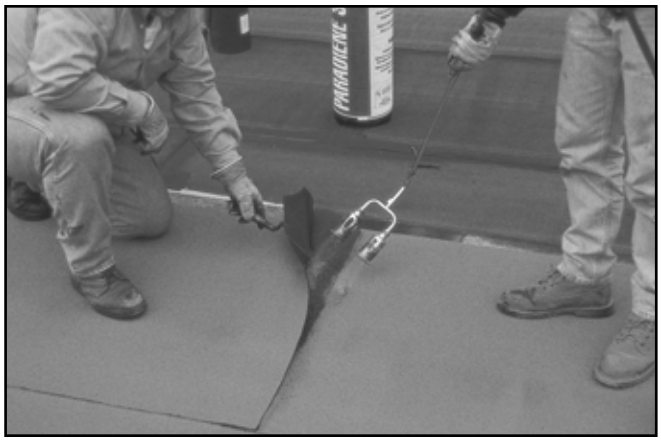
Paradiene 30 TG is heat fused to the Paradiene 20 ply. Remove selvage tape (not shown) prior to application of adjoining course of Paradiene 30 TG.



Concentrate the heat where the Paradiene 30 TG and Paradiene 20 make contact. Torch uniformly, side-to-side, using an “L” motion to preheat the selvage of the previous sheet. Burn off the plastic film and soften the back coating until the grooves are no longer visible without causing the granule surfacing on the top side of the sheet to become displaced. The membrane should be completely fused, with only a small bead of bleedout.

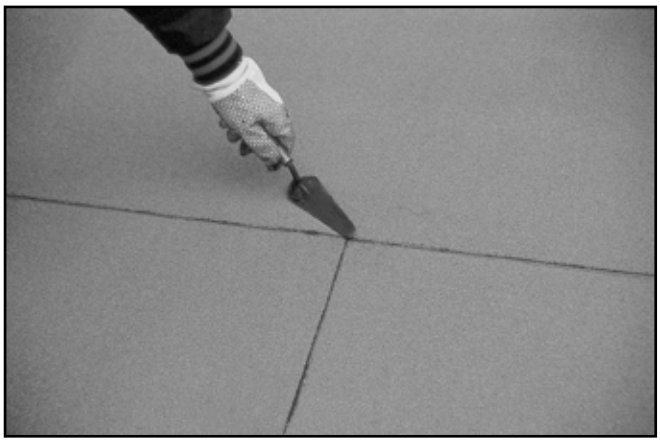
Prepare the granule surface to be overlapped (a minimum of 3 inches) by applying heat, allowing the bitumen to soften. Using a heated trowel, press the granules into the sheet.

At end laps, make a “dog ear” angle cut on the overlapping selvage edge.



Lift the edge of the overlapping sheet using a clean trowel and lightly heat the back side of the Paradiene 30 TG sheet.

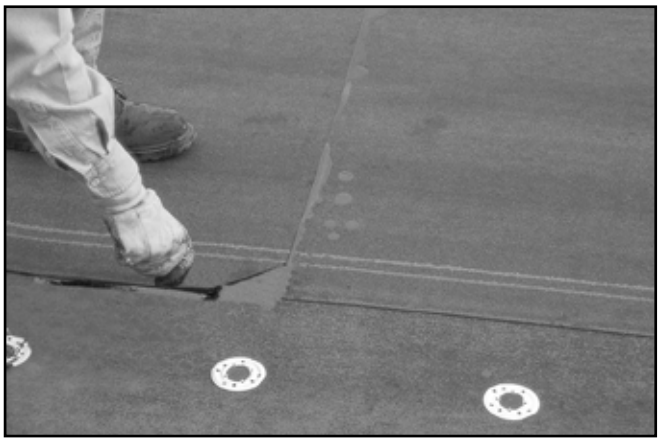
Apply pressure to the end laps to ensure complete adhesion.



While the bitumen is still hot enough to create a bond, use a clean, heated trowel to apply pressure to top seal all edges at T-laps.

Paradiene 20: PA-311 Adhesive Application

Install Parabase FS to the nailable lightweight concrete substrate according to Siplast nailing requirements. Apply Paradiene 20 in PA-311 Adhesive using a notched hand squeegee at a rate of 1½ to 2½ gallons per square, depending on porosity of substrate. A ¼-inch thick squeegee blade with notches cut in a saw-tooth pattern 3⁄16-inch high and ¼-inch wide will deliver a proper amount of warm adhesive.



At end laps, make a “dog ear” angle cut on the overlapping selvage edge.

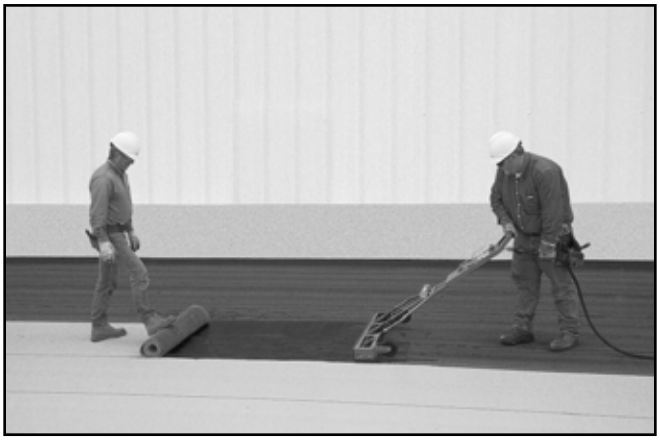
Apply pressure on the sheet to ensure full contact with the substrate and complete embedment in the adhesive.

Using a clean trowel, apply pressure to top seal all edges at T-laps.

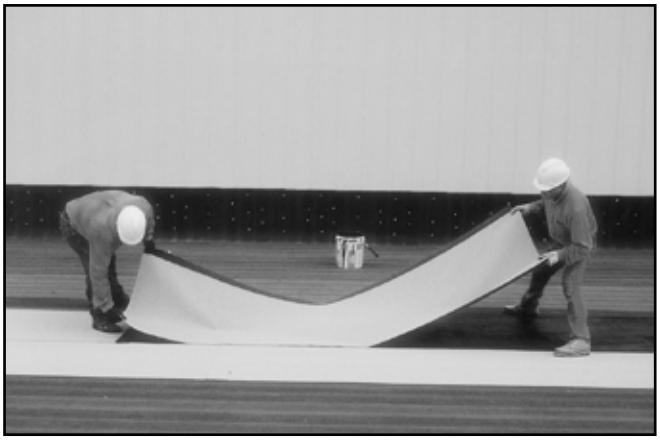
Paradiene 30: PA-311 Adhesive Application

Apply Paradiene 30 in PA-311 Adhesive using a notched hand squeegee at a rate of 1½ gallons per square. A 1/4-inch thick squeegee blade with notches cut in a sawtooth pattern 3⁄16-inch high and ¼-inch wide will deliver a proper amount of warm adhesive. Heat welding the laps is recommended with certain applications and weather conditions.

Applications



PA-311 Adhesive can also be applied using the Paraflow Adhesive Spreader.



Placing the roof membrane into the adhesive is an alternative to rolling it into the adhesive. This technique is commonly referred to as “flying in” the membrane. To use this technique, the material should be cut into thirds, stacked, and allowed to relax for approximately 15 minutes prior to application. The pre-cut pieces are then installed by “flying in” the flat, relaxed sheets into the adhesive.

Apply pressure on the sheet to ensure full contact with the substrate and complete embedment in the adhesive. Heat welding the laps is recommended with certain applications and weather conditions.

Use a slop sheet at end lap locations to allow for a full application of PA-311 Adhesive under the sheet and provide a neat finished appearance. On granule-surfaced materials, end lap usage of PA-311 adhesive should be approximately double that of the field sheet.

At end laps, make a “dog ear” angle cut on the overlapping selvage edge.

Using a clean trowel, apply pressure to top seal all edges at T-laps.

Apply extra granules at locations where the adhesive bleeds out of the side and end laps. The granules should be pressed in while the adhesive is still wet.

Paradiene 20: PA-100 Asphalt Application

Beginning at the low point of the roof, fully mop Paradiene 20 with PA-100 Asphalt. Asphalt must be a minimum of 400°F at the point of contact with the sheet being applied. (See additional asphalt information on page 7.) Lap sides and ends a minimum of 3 inches.

At end laps, make a "dog ear" angle cut on the overlapping selvage edge.

Using a clean trowel, apply pressure to top seal all edges at T-laps while asphalt is still hot enough to create a bond.

VERAL SYSTEM APPLICATION

Veral: Torch Application

For high slope nailable deck specifications, nail the Irex base sheet to the deck using approved fasteners according to Siplast nailing requirements. When a two ply system is required, fully adhere a torchable Irex to the base sheet, lapping sides and ends a minimum of 3 inches. Stagger the laps between the layers.

When torching Veral: (1) Preheat the selvage of the previously installed adjoining Veral sheet. (2) Angle the torch so that the heat is concentrated on the Irex sheet and away from the foil surface of the adjoning Veral sheet. (3) Keep the torch moving to bring the entire back surface of the Veral to the proper temperature prior to bonding. Torch uniformly, side to side, using an "L" motion to pre-heat the selvage of the previous sheet. (4) At the proper temperature, the bitumen on the backside of the Veral will appear slick and shiny. If the bitumen is runny, it has been overheated. Overheated materials must be removed and discarded. (5) While the roll is still hot, use a damp sponge mop to apply pressure to the Veral and ensure full adhesion. Care should be taken not to deform the waffle pattern of the Veral. (6) Nail the head laps according to the fastening pattern detailed in this publication. Prime foil surfaces at end laps and wherever adhesion to foil is required.

Caution: Prior to application of torch applied roof membranes over combustible roof decks, substrate preparation should follow CERTA guidelines on pages 2 and 24.

Applications

Remove the selvage release tape following application of the sheet. At end laps, make a “dog ear” angle cut on the overlapping selvage edge prior to torching the tail into place. When torching, do not apply the full torch flame directly to the surface of the Veral membrane, as the foil will disbond.

Following torching, move an idled flame continuously over the edge area, heating the trowel and lap simultaneously. Top seal all the edges carefully.

Veral Flashing: Torch Application

Prior to torch application of flashing membranes, prime all combustible substrates in preparation for installation of a self-adhesive bituminous base sheet (such as Paradiene 20 SA) in all locations.

Install a strip of self-adhesive bituminous base sheet (such as Paradiene 20 SA) over all transitional flashing locations. Seal laps. When installing Paradiene 20 SA, the minimum required substrate temperature at the point of application is 60°F (15°C). In low temperature conditions, materials should be kept warm prior to application. Suspend application in situations where the self-adhesive base ply cannot be kept at temperatures allowing for proper adhesion.

Install a non-combustible cant strip.

After application of the Paradiene 20 base ply to the field of the roof, install a self-adhesive bituminous base ply (such as Paradiene 20 SA) to the wall, extending over the top of the wall and onto the primed surface of the Paradiene 20 base ply. Heat seal the laps.

After installation of the Paradiene 30 finish ply, measure for proper flashing length and precut the Veral from the end of the roll, allowing a factory selvage for laps. Protect the finished roof by cutting flashing material over plywood or other protective material.

Measure out from the toe of the cant 4 inches and chalk a line along the 4-inch marks.

Prepare the granule surface on the wall side of the chalk line by applying heat, allowing the bitumen to soften. Press the granules into the sheet using a heated trowel. Alternatively, granule surfaces can be primed using PA-1125 Primer. Allow the primer to dry thoroughly before torching.

Remove the selvage release tape prior to installing the Veral flashing.

Always heat the Veral from side to side in small, manageable sections. Direct the flame away from the finished lap. Never direct the flame at the roof edge or deck to wall transitions.

Using a damp sponge, press each section into place on the wall before heating the next section. Veral should never be completely heated and applied in a single step. Apply pressure to the Veral with the damp sponge to ensure that the Veral has made full contact with the substrate. Care should be taken not to deform the waffle pattern of the Veral.

Applications

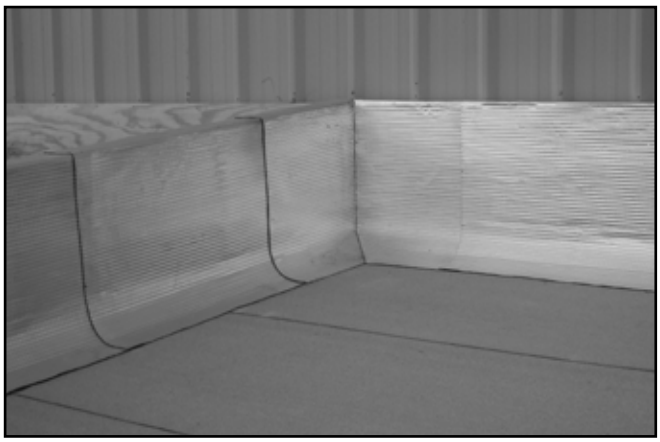
Using a clean, heated trowel, top seal all the edges carefully. Minimize bleedout.

Veral Flashing Torch Application: Inside Corner

The first Veral sheet should be cut to allow for a minimum 6-inch wrap around the inside corner.

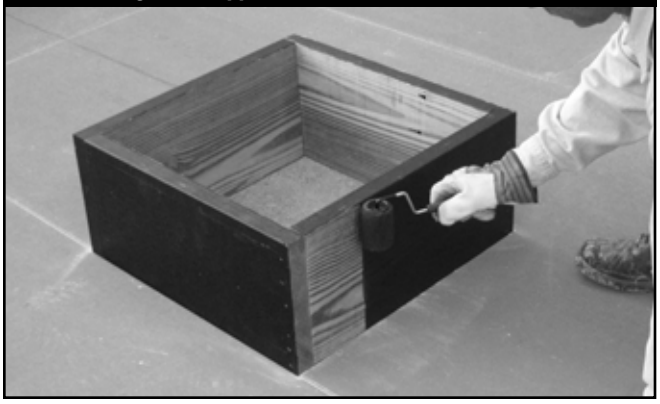
Cuts should be made at the wall/cant and cant/roof transitions to allow for complete adhesion to the substrate.

Using PA-1125 Primer, prime the foil that extends beyond the corner — the primer application should extend over the cant and roof surfaces. Allow the primer to dry thoroughly.

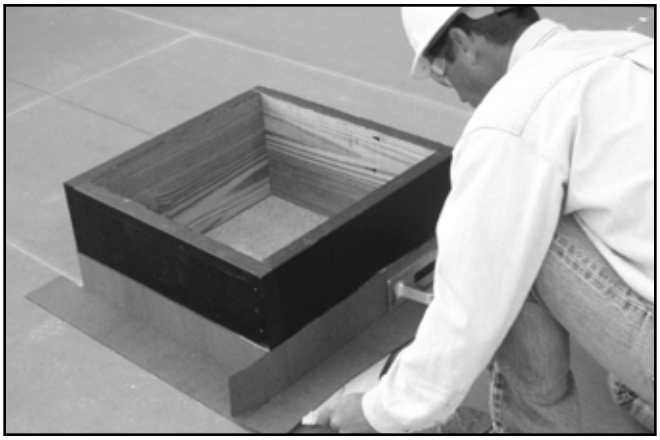


The finished corner should have a neat appearance. Nail the top edge of the Veral on 9-inch centers.

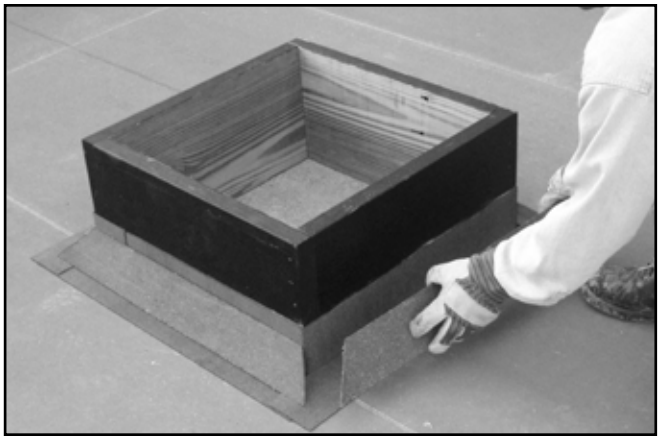
Veral Flashing Torch Application: Outside Corner



Prior to torch application of flashing membranes, prime all combustible substrates in preparation for installation of a self-adhesive bituminous base sheet (such as Paradiene 20 SA) in all locations.

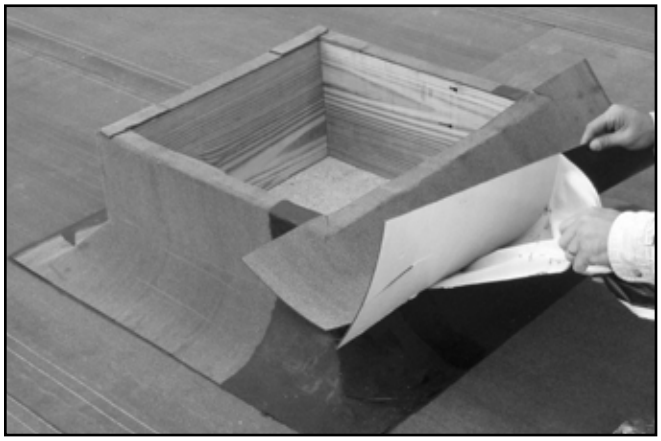


Install a strip of self-adhesive bituminous base sheet (such as Paradiene 20 SA) over all transitional flashing locations. Seal laps. When installing Paradiene 20 SA, the minimum required substrate temperature at the point of application is 60°F (15°C). In low temperature conditions, materials should be kept warm prior to application. Suspend application in situations where the self-adhesive base ply cannot be kept at temperatures allowing for proper adhesion.



Install a non-combustible cant strip.

Following application of the Paradiene 20 base ply to the field of the roof, prime the area to be flashed in preparation for installation of a self-adhesive bituminous base sheet (such as Paradiene 20 SA). Primer application should extend over the cant and roof surfaces.



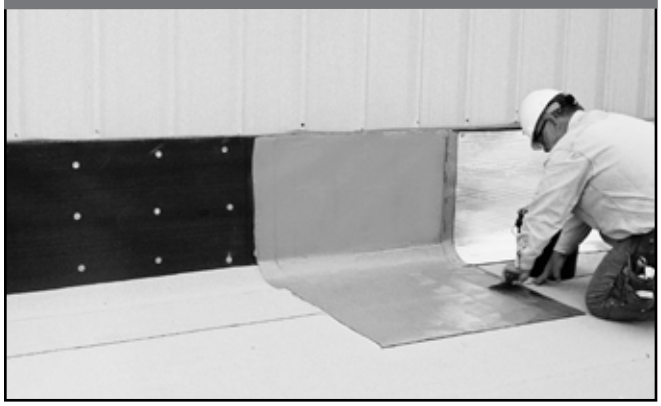
Install a self-adhesive bituminous base sheet (such as Paradiene 20 SA) in all locations. Make cuts as necessary to allow for complete adhesion to the substrate.

Fully torch the pre-cut Veral flashing sheet into place, using caution to never direct open flame toward the penetration. As each sheet is applied, prime the foil that extends beyond the corner with PA-1125 Primer and allow to dry thoroughly. Miter cut the end or finish panel at a 45 degree angle and fully torch into place.

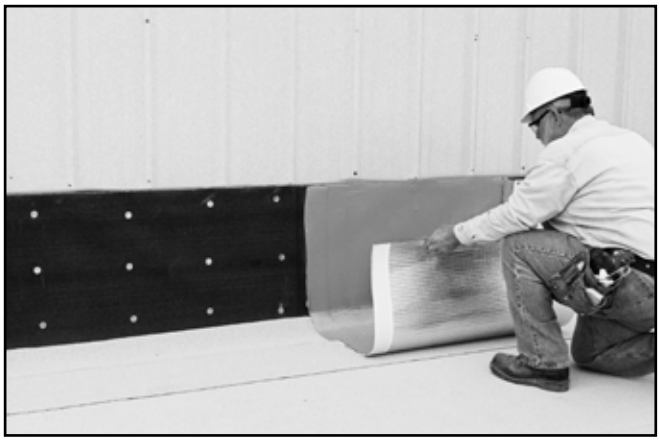
Using a clean, heated trowel, top seal all edges carefully.

Applications

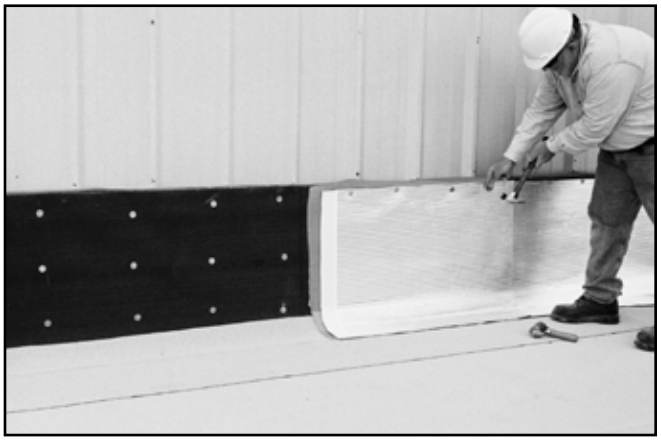
VERAL FLASHING APPLICATION WITH SFT CEMENT



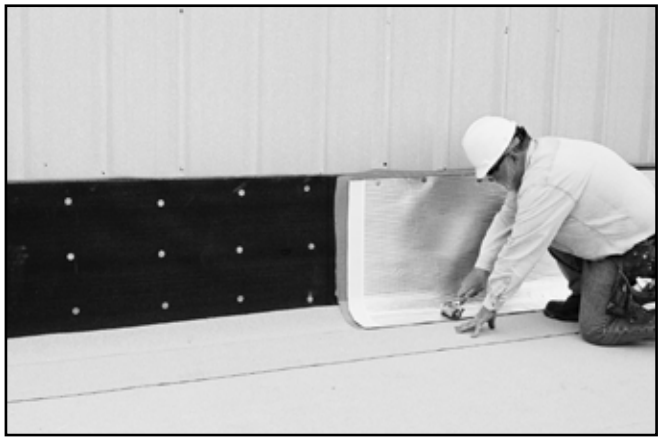
After measuring for proper flashing length, precut the Veral from the end of the roll, allowing a factory selvage for laps. Protect the finished roof by cutting flashing material over protective material. Position the pre-cut sheets along the wall, foil surface down. SFT Cement should be applied in a manner similar to that of contact adhesive. Apply a thin coat of SFT Cement to the substrate and the back of the pre-cut sheet with a ⅛" v-notched trowel.



Allow the SFT Cement to tackify. When "stringers" begin to form, apply the Veral flashing sheet to the wall and press into place.

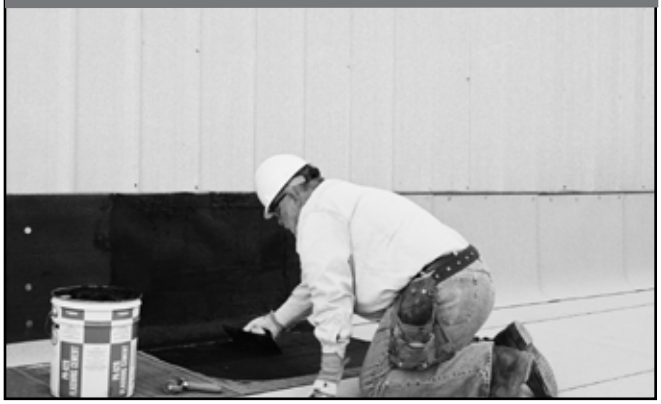


Mechanically fasten the top edge of the Veral flashing sheet..



Using a roller, apply pressure to the surface of the Veral flashing sheet to ensure complete contact with the substrate. Care should be taken not to deform the waffle pattern of the Veral.

PARADIENE 40 FR FLASHING APPLICATION



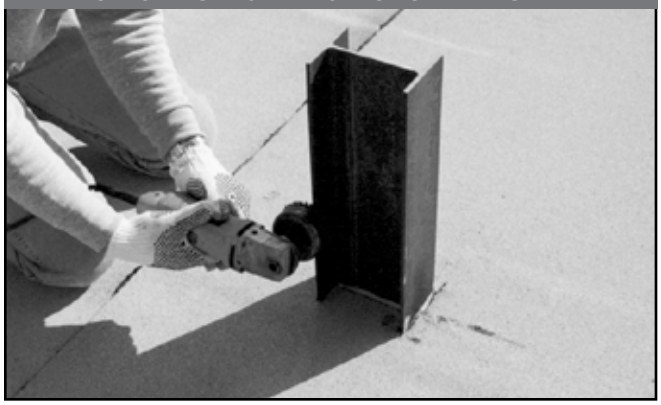
After measuring for proper flashing length, precut the Paradiene 40 FR from the end of the roll, allowing a factory selvage for laps. Protect the finished roof by cutting flashing material over protective material. Position the pre-cut sheets along the wall, granule surface down. Apply a coat of PA-828 Flashing Cement to the substrate and the back of the pre-cut sheet with a notched trowel. The application rate of PA-828 Flashing Cement should not exceed 2.0 gal/square (32 wet mils).

Apply the Paradiene 40 FR to the wall.

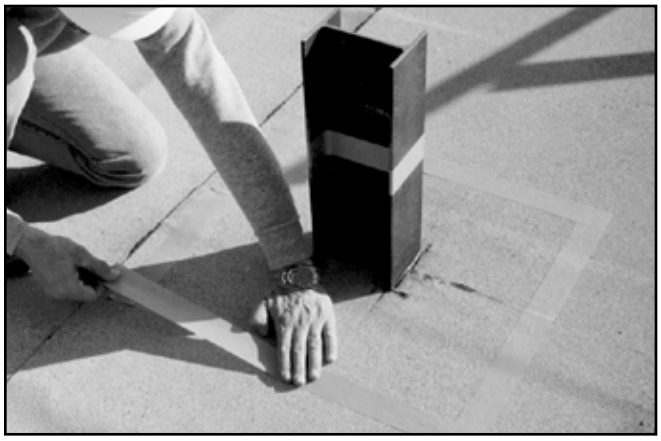
Mechanically fasten the top edge of the Paradiene 40 FR flashing sheet.

Using a roller, apply pressure to the surface of the Paradiene 40 FR flashing sheet to ensure complete contact with the substrate.

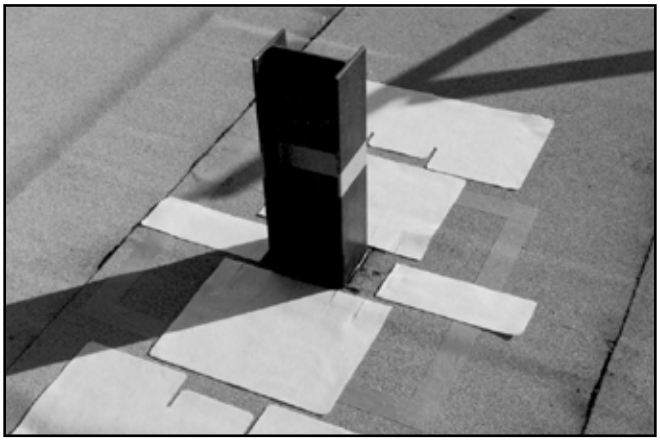
PARAPRO 123 FLASHING APPLICATION OVER FINISH PLY



Install the finish ply to fit tightly around the I-beam penetration. Any voids where membrances terminate at penetrations should be filled with Pro Paste or PS-304 Elastomeric Sealant. Remove all existing foreign materials from the steel I-beam by wire brush or by grinding. Using Pro Prep and a clean shop rag, wipe the area of the I-beam to be flashed. Allow the Pro Prep a minimum of 20 minutes drying time before continuing.



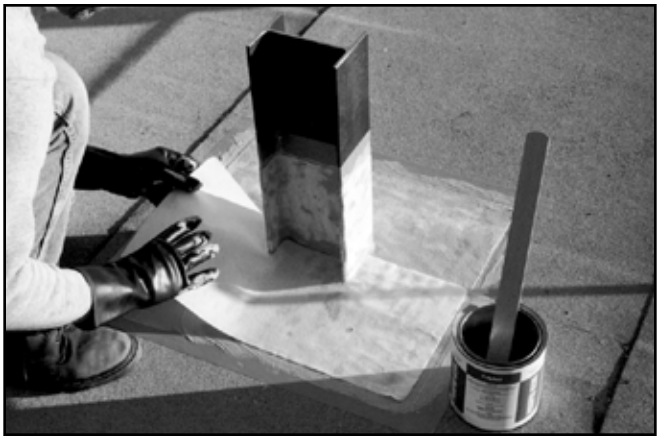
Using masking tape, mask off the area to be covered with Parapro 123 Flashing. Mask the termination of the flashing 6 inches high on the I-beam, and extending 8 inches onto the finished roof membrane in all directions. Catalyzed Parapro Flashing Resin must extend ¼-inch beyond Pro Fleece. Masking tape should be placed accordingly.



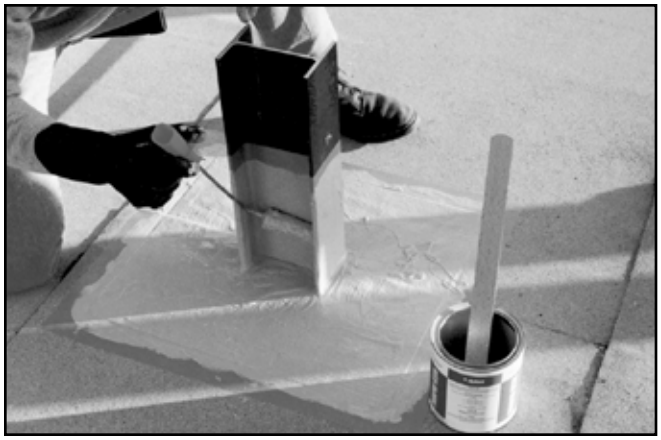
Cut the Pro Fleece for the I-beam configuration. Place each piece dry in its designated area to ensure proper fit prior to embedment into the Parapro Flashing Resin. Mix the Pro Catalyst and Parapro Flashing Resin as detailed in the mixing instructions.

Apply catalyzed Parapro Flashing Resin to the vertical surfaces, at a minimum consumption rate of 0.19 kg/sf (2.0 kg/m^2), extending onto the finished membrane a minimum of 2 inches. Apply the pre-cut Pro Fleece to the vertical surfaces, and embed the fleece in catalyzed resin, extending the resin ¼-inch beyond the edge of the fleece. Ensure that no air pockets are trapped beneath the fleece. Saturate all fleece surfaces with catalyzed Parapro Flashing Resin prior to overlapping with additional fleece. Strips of fleece must overlap by at least 2 inches.

Applications



Apply a base coat of catalyzed Parapro Flashing Resin to the horizontal surface extending a minimum of 8 inches from the penetration in all directions. Apply the pre-cut Pro Fleece to the horizontal surfaces, and embed the fleece in catalyzed resin, extending the resin ¼-inch beyond the edge of the fleece. Ensure that no air pockets are trapped beneath the fleece.

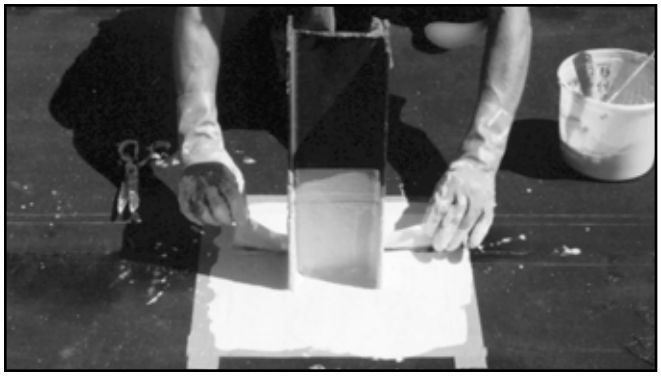


Top coat the embedded Pro Fleece with an additional layer of the catalyzed Parapro Flashing Resin at a minimum consumption rate of 0.12 kg/sf (1.3 kg/m^2). Remove the masking tape before the resin sets completely.

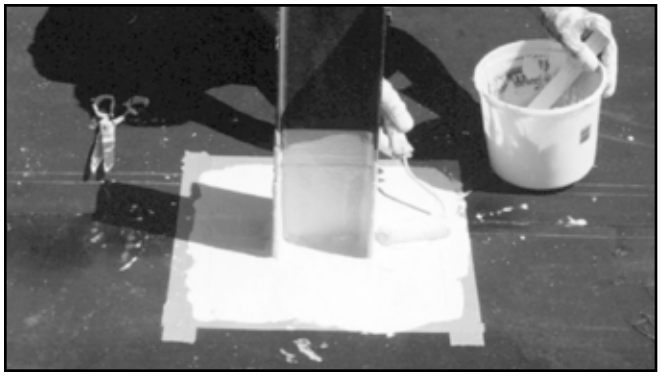
PARAPRO 123 FLASHING SYSTEM INTERPLY APPLICATION

Ensure that the base ply of the roof system fits tightly around the penetration. Any voids where membranes terminate at penetrations should be filled with Pro Paste or PS-304 Elastomeric Sealant. Remove all foreign materials from the penetration by wire brush or by grinding. Using Pro Prep and a clean shop rag, wipe the area of the penetration to be flashed. Allow the Pro Prep a minimum of 20 minutes drying time after application before continuing. The next application process should be completed within 60 minutes of cleaning with the Pro Prep.

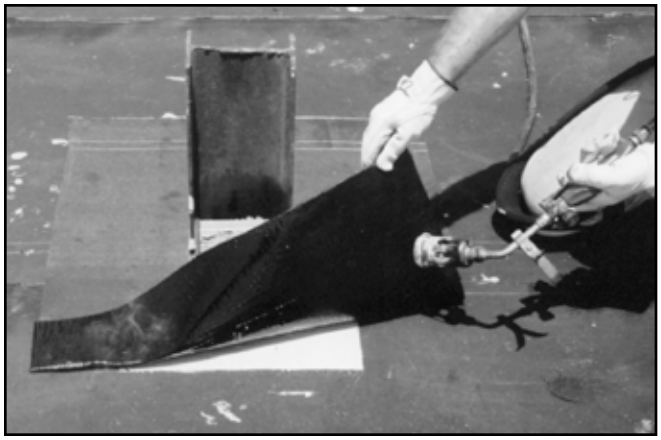
Using tape, mask off the termination of the flashing 6 inches high on the penetration, and extending 4 inches onto the base ply in all directions. Catalyzed Parapro Flashing Resin must extend ¼-inch beyond the Pro Fleece reinforcement, so tape should be placed accordingly. Apply a base coat of catalyzed Parapro Flashing Resin to the vertical surfaces at a minimum consumption rate of 0.19 kg/sf (2.0 kg/m^2), extending onto the base ply a minimum of 2 inches. Apply pre-cut Pro Fleece to the vertical penetration surfaces by embedding the fleece in the resin, extending the fleece a minimum of 2 inches onto the base ply. Ensure that no air is trapped beneath the fleece.



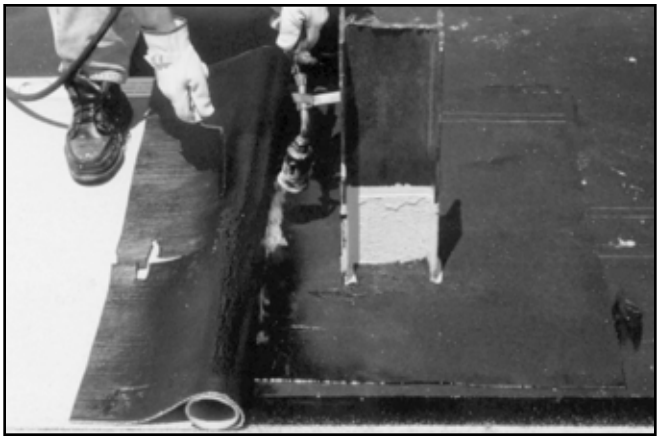
Saturate all fleece surfaces to be lapped with catalyzed Parapro Flashing Resin prior to overlapping with additional fleece. Strips of fleece must overlap by at least 2 inches (5 cm). Apply a base coat of catalyzed resin to the horizontal surface extending a minimum of 4 inches from the penetration in all directions. Apply pre-cut Pro Fleece to the horizontal surface by embedding the fleece in the resin, extending the fleece a minimum of 4 inches onto the horizontal surface. Ensure that no air is trapped beneath the fleece.



Top coat the embedded Pro Fleece with an additional layer of catalyzed Parapro Flashing Resin at a minimum consumption rate of 0.12 kg/sf (1.3 kg/m^2). Remove the masking tape before the resin sets completely.

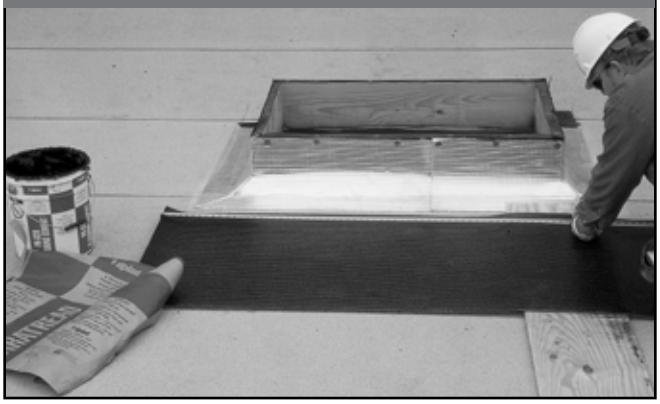


Using base ply material, torch-apply a target over the finished Parapro Flashing Membrane. The target must extend a minimum of 4 inches beyond the Parapro Flashing Membrane in all directions. This torch-applied target is optional.



Torch-apply the finish ply of the roof system, ensuring that the finish ply fits tightly around the penetration. Apply a bead of PS-304 Elastomeric Sealant around the base of the penetration to fill any gaps between the roof membrane system and the penetration.

PARATREAD APPLICATION



Cut the Paratread into maximum 5-foot panels. Allow the panels to relax and lay flat prior to installation.

Place the panels granule side down. Using a notched trowel, apply PA-828 Flashing Cement, PA-1021 Plastic Cement, or SFT Cement in spots 5 to 6 inches in diameter. Space spots on 11-inch centers along the edge, and on 14-inch centers down the center of the sheet. Contact Siplast for alternative Paratread application methods.

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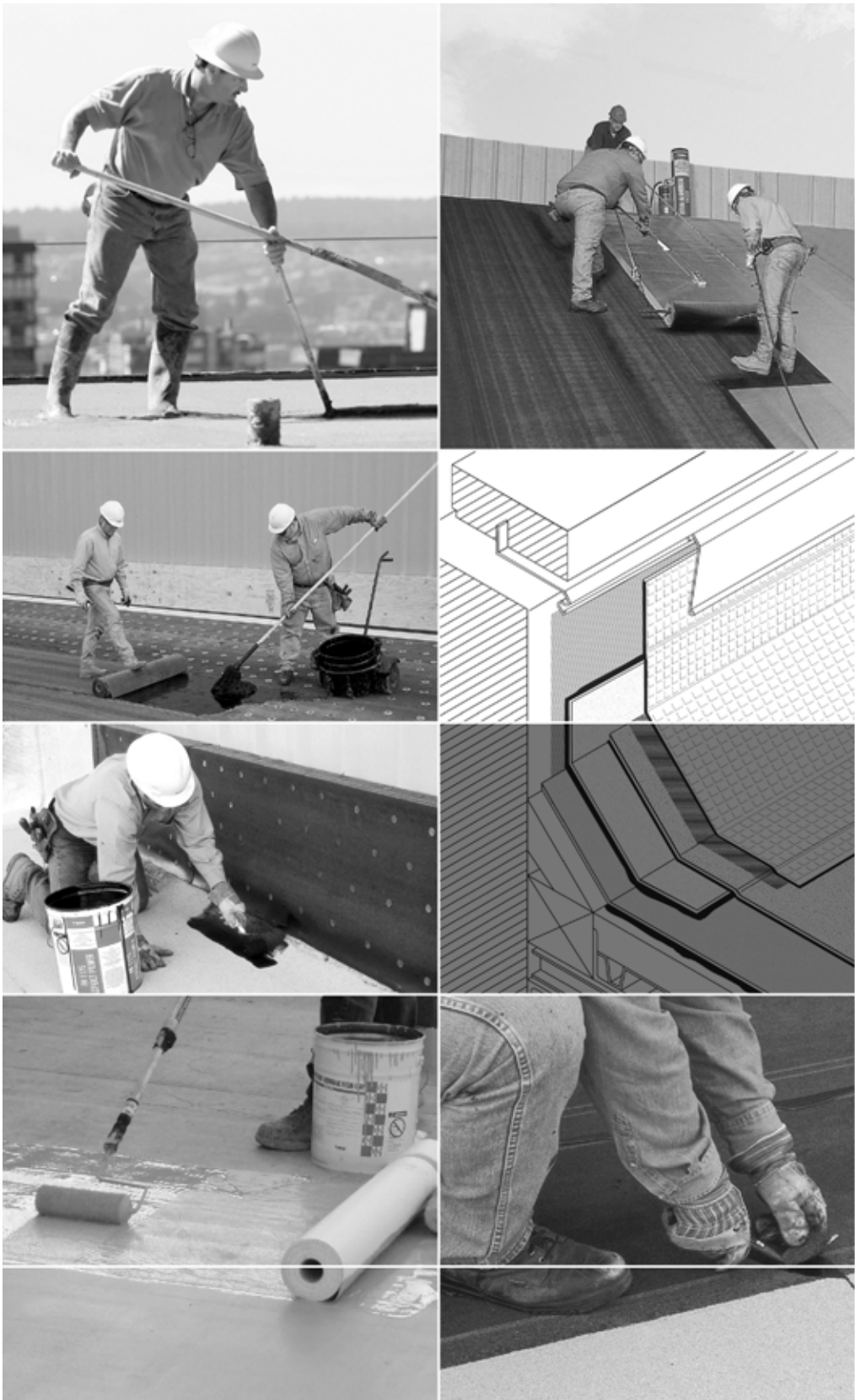

December 2008