



GenFlex EZ TPO Roofing Systems Application Guide

April 2026

NOTE: The contents of this guide are considered accurate at the time of posting. All information contained within should be validated for accuracy as it relates to specific project conditions or requirements. Specific codes, uplifts or other factors may result in changes to the information contained within this document. Validate all specific conditions with a GenFlex Regional Technical Coordinator prior to its use.

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General

This GenFlex Technical Manual provides instructions for the basic installation of GenFlex™ EZ TPO Roofing Systems. Reference to the EZ TPO Design Guide, Product Data Sheet (PDS) sheets, and other published information is necessary to ensure that the finished roof system is installed in compliance with GenFlex requirements.

Wind warranties in excess of 55 mph may require special considerations regarding fasteners, insulation, membrane gauge and securement. Refer to the system design guide or GenFlex website (www.GenFlex.com) for specific requirements and information for other TPO systems, including EZ Fleece Backed TPO, EZ Peel and Stick TPO, and EZ TPO InvisiWeld roof systems.

NOTE: If the proposed application falls outside of the specification, contact a GenFlex Regional Technical Coordinator for additional information.

Jobsite Considerations

Safety

- Comply with all applicable regulatory safety and health regulations.
- Consult container labels, Safety Data Sheets (SDS) and Product Data Sheet (PDS) for specific safety instructions for all products used on the project.
- Keep all adhesives, sealants, and cleaning materials away from ALL ignition sources (i.e., flames, fire, sparks, etc.). Do not smoke while using these materials.
- Care must be used when installing fasteners or other required roof related items to avoid possible conduits and other piping in or under the deck.
- Fumes from adhesive solvents may be drawn into the building during installation through rooftop intakes. Take suitable precautions when using such products on an occupied building.
- Do not use heat guns or open flames to dry adhesives and primers.

Cautions

- Store GenFlex EZ TPO membranes in the original undisturbed plastic wrap in a manner to protect it from becoming damaged. Insulation must be properly stored and protected from ignition sources, moisture, and damage. Consult container labels, Safety Data Sheets (SDS), and Product Data Sheets (PDS) for specific safety, use and storage instructions for all products used on the project.
- Do not use oil-base or bituminous-base roof cement with any GenFlex EZ TPO products.
- Store GenFlex Insulations properly protected from ignition sources, moisture, and damage.
- Membrane may stain if direct contact with asphalt products occur.

Cold Weather

- When the outside temperature is below 40 °F (4 °C), certain combinations of temperature and humidity may cause condensation on the surface of solvent-based adhesives and primers. If this condition occurs, discontinue the application. When the ambient air conditions no longer cause condensation on adhesive surfaces and the membrane is clean and dry then proceed with application of adhesive or primer.
- The consistency of sealants, adhesives and primers will begin to thicken as the temperature drops. To minimize this consequence:
 - Start work with sealants, adhesives and primers that have been stored between 60 °F to 80 °F (16 °C to 27 °C).
 - Complete test areas to determine if conditions will cause problems such as condensation with the application of the materials.
 - Stop the operation or change to another warm container when material becomes too thick to properly apply.
- When the outside temperature is below 40 °F (4 °C), installation of the GenFlex EZ TPO System requires additional precautionary measures:
 - Ensure that the roof surface is dry. Even trace amounts of moisture may cause poor adhesion and lead to moisture entrapment within the roofing system.
 - Use of temporary roofs should be considered when roof applications must occur in cold or potentially wet weather to permit continued interior construction or roof-top work.
 - Refer to the Product Data Sheets (PDS) for individual product temperature restrictions / limitations if applicable.

Roof Substrate Preparation

It is the roofing contractor's responsibility for ensuring that the substrate is acceptable for the GenFlex roof system. GenFlex Roofing System Limited Warranties require either new construction or a complete removal of the existing systems down to the deck.



It is the roofing contractor's responsibility to ensure that the substrate is acceptable for the GenFlex roof system. GenFlex does not approve of or recognize the results of destructive testing by others for the purposes of project close-out or to satisfy contract requirements. Any damage caused by such testing may prevent GenFlex from issuing a warranty. GenFlex is not responsible for costs associated with repairs or enhancements performed to the roof system as a result of testing.

Correct Substrate Defects

- Defects that need to be corrected before work can commence should be brought to the attention of the General Contractor or Owner in writing and addressed by them.
- For re-roofing applications, remove existing roof system components as specified by the project designer. If components are discovered during installation that could be detrimental to the performance of the new roof system, they should be brought to the attention of the project designer for corrective action.
- Recovering an existing roof system is an alternative to removing existing roof components. However, if soundness and integrity of the existing roof system cannot be verified, good roofing practice requires a complete tear-off to the structural deck. Non-destructive testing, in conjunction with core cuts, must be completed to determine the condition of the existing roof system and decking.
- The building owner or project designer is responsible for assuring that all wet insulation and/or wet substrate materials are removed in a re-roofing application. The best diagnostic technique is taking and evaluating a series of roof cuts. There are three other techniques that are currently available to make this determination by indirect means. These are:
 - Nuclear moisture detection
 - Infrared thermography
 - Electric capacitanceThese techniques provide measurement of factors that can be associated with the presence of moisture, which can then be verified with the use of roof core cuts to confirm the results of the non-destructive testing.
- In the absence of a design professional, the roofer should coordinate with the building owner to assure conditions are satisfactory to commence with the project as designed.

Remove Moisture

Ponded water, snow, frost and/or ice, present in more than trace amounts must be removed from the work surface(s) prior to installing the GenFlex EZ TPO Roofing System.

Prepare Surface

Acceptable substrates to which the GenFlex EZ TPO Roofing System is installed must be properly prepared prior to roof system installation. The surface must be relatively even, clean, dry, smooth, free of sharp edges, fins, loose or foreign materials, oil, grease, and other materials that may damage the roof system. Rough surfaces that could cause damage to the membrane must be overlaid with insulation or cover boards as determined by the design professional.

- Re-Cover projects require the existing system to be prepared for the new system application. This may include the following:
 - Remove wet/damaged materials and replace with like products.
 - Remove loose granules and debris from existing mod-bit surfaces.
 - Spud/Power broom gravel surfaces.
 - Detach and prepare new flashings as required.

Fill Voids

All surface voids of the immediate membrane substrate greater than ¼" (6.35 mm) wide must be filled with insulation.



Concrete Additives can have a negative impact on the adhesion of asphaltic membranes and insulation products. The concrete supplier/installer should verify that any additives in the mix will not render the deck unsuitable for roofing application. GenFlex does not accept surface-applied curing compounds for warranted systems. GenFlex does not accept for warranty any concrete substrates that have been sealed with chemical sealers or silicon surface treatments.

Wood Nailer Locations and Installation

GenFlex no longer requires the use of treated wood nailers. This is due to the new EPA requirements that have caused treated lumber to have more corrosive properties than the previous generation of wood treatments.

If architectural specifications require the use of treated wood nailers, the following GenFlex requirements apply:

- Refer to the GenFlex EZ TPO Design Guide for the appropriate GenFast fastener to be used for securing membrane into wood nailers.
- Nails penetrating treated wood nailers must be hot-dipped galvanized, meeting ASTM A653, Class G185 or as currently recommended by industry associations.
- Aluminum fasteners, flashings and accessory products must not make direct contact with treated wood nailers.
- Uncoated metal and painted metal flashing and accessories, except for 300-series stainless steel, must not make direct contact with treated wood nailers.
- When in doubt of the type of treatment of the wood nailer or its compatibility with a metal component, use EZ TPO membrane as a separator.

Because of recent EPA regulations regarding treated wood, new treatments for lumber may be highly corrosive to fasteners. Contact the fastener manufacturer for their recommendations on fasteners if attaching nailers that have been treated with corrosive materials.

Wood nailers must be installed as specified by the project designer or as noted in GenFlex Details and the EZ TPO System Design Guide. Install wood nailers as follows:

Wood Nailer Grade

- When wood nailers are used, GenFlex specifications require the use of wood that is kiln-dried (Southern Pine, Douglas Fir) structural grade #2 or better, unless otherwise noted.
- While being stored on the roof, properly GenFlex, and cover non-treated wood to protect from the weather and keep dry.
- Nailers must be properly anchored to provide secure attachment through the warranty term.
- Nailers are not covered by the Roofing System Limited Warranty.

Size of Nailer

Nailers shall be a min. thickness of 2" x 4" (51 mm x 102 mm) nominal 1½" x 3½" (38 mm x 89 mm) and exceed the width of any metal flange attached to it by a min. of ½" (13 mm).

Position of Nailer

- Total wood nailer height must match the total thickness of insulation being used and should be installed with a ⅛" (3.2 mm) gap between each length and each change of direction.
- When nailers are stacked, end joints should be staggered a min. of 12" (305 mm) from the prior layer in straight runs.

Secure Wood Nailer

- Wood nailers must be firmly fastened to the deck or building.
- Mechanically fasten wood nailers to resist a min. force of 200 lb/f (890 N) in any direction.
- Refer to attachment requirements of the roofing system as specified by the project designer if greater than 200 lb/f (890 N).

Taper Wood Nailer

The wood nailer must be tapered (if applicable) so that it will always be flush at the point of contact with the insulation (refer to GenFlex Details).

Pour-In-Place Decks

For new construction over poured-in-place decks or fill, and all recover projects, a waterproof separator membrane shall be placed between the non-treated lumber and the deck.

Installation of Wood Nailers by Others

- Make these specifications and details available when nailers are to be installed by others.
- Work that compromises the integrity of the roof system may jeopardize the roof warranty.

For Additional Information

Please consult the NRCA Special Report, "Use of Treated Wood in Roof Assemblies".

AIR OR VAPOR BARRIER INSTALLATION

Install Vapor Retarder (when specified):

Install a vapor retarder as specified by the project designer or as required by GenFlex.

Install Air Barrier (when specified):

Install an air barrier as specified by the project designer or as required by GenFlex.

VAPOR SHIELD INSTALLATION

GenFlex Vapor Shield Membrane is intended for use in applications where a vapor barrier is specified.

1. All substrates except metal decks must be primed with either GenFlex Vapor Shield Solvent Based Primer or Vapor Shield Water Based Primer.
2. Position Vapor Shield Membrane with min. 3" (76 mm) side laps and 6" (152 mm) end laps.
3. Shingle side laps up the roof slope wherever possible and stagger end laps min. 12" (305 mm).
4. Peel back approximately 5' (1.5 m) of release liner from the end of the roll and adhere it to the substrate.
5. Keeping the Vapor Shield flat and properly positioned, remove the remaining release liner on a 45° angle.
6. Roll the Vapor Shield with a 75 lb (34 kg) roller to fully mate the product to the substrate.
7. Refer to the GenFlex website (www.genflex.com) for details and additional product and installation information..

Base Sheet installation

This section is intended for applications where it has been determined that a base sheet is required for roof system installation. Refer to the GenFlex TPO Design Guide for suitable substrates, and the Product Data Sheets (PDS) for additional product and installation information.

General

1. Starting at the low point of the roof, align the base sheet, unroll, and allow the sheet to relax prior to attaching. After allowing the base sheet to relax, adhere or attach to the substrate with appropriate materials as indicated below.
2. Roofing base ply shall never touch roofing single ply, even at roof edges, laps, tapered edge strips, and cants. Cut out fishmouths/side laps, which are not completely sealed, and repair accordingly. Fully adhered base sheets which are not fully and continuously bonded shall be replaced.

Hot Asphalt Attachment

1. The base sheet may be attached using a solid mopping of ASTM D 312 Type III or IV hot steep asphalt.
2. The substrate must be suitable for asphalt attachment (structural concrete, base sheet, coverboard, etc.). Refer to the TPO Design Guide for suitable substrates, acceptable products, and/or associated Product Data Sheets (PDS) for additional information on specific base sheets.
3. The asphalt shall be at the manufacturer's stated EVT at point of installation.
4. Align subsequent rolls, shingling the laps, maintaining a min. 3" (51 mm) side lap and min. 6" (152 mm) end lap and repeat the application.
5. GenFlex recommends that a half sheet be used as the first roll to ensure that the base sheet laps and the cap sheet laps are not aligned. Half sheets may be required, depending on the roof slope.
6. Refer to EZ TPO Design Guide for slope limitations.
7. Do not install any base or ply sheets in solid mopping of asphalt directly to polyisocyanurate insulation. The base sheet must be mechanically attached, or spot attached using ASTM D312 Type III or IV asphalt. An overlayment of SECUROCK® or DensDeck® may be installed over the GenFlex GL ISO polyisocyanurate insulation before the base sheet is installed.
8. Solid Mopping
 1. Starting at the low point of the roof, align the base sheet and unroll into a solid mopping of hot asphalt.
 2. With a stiff push broom, immediately broom the base sheet ensuring full contact.

Mechanical Attachment

Starting at the low point of the roof, align the base sheet, unroll, and allow the sheet to relax prior to attaching. After allowing to relax, begin attachment at one end and work towards the other end, keeping the roll tight and wrinkle free. Align subsequent rolls, shingling the laps, maintaining a min. 3" (76 mm) side lap and min. (152 mm) end lap and repeat the application. Stagger all end laps.

Fasten Base Sheet Using GenFlex Insulation Plates and Fasteners

- Using GenFlex Insulation Plates and Fasteners, base sheets may be attached through insulation into the deck, or directly to poured in place concrete, wood, gypsum, cementitious wood fiber, lightweight concrete decks, or through a smooth surfaced built-up or modified bitumen roof system. Refer to the EZ TPO Design Guide for information on fasteners for specific deck types.

- 39" (1 m) GenFlex compatible base sheets and cap sheets used as base sheets. The Base sheet must be mechanically attached 12" (305 mm) o.c. in the side laps and 18" (457 mm) o.c. in two staggered rows in the field of the sheet. Each row shall be 13" (330 mm) approximately in from the sides of the base sheet.

Fasten Base Sheet Using Cap Nails

- Using cap nails with 1" (25 mm) diameter steel heads, base sheets may be attached to plywood, wood plank, and oriented strand board decks.
- Mechanically attach with cap nails specified by the project designer at 9" (229 mm) o.c. in the side laps and 18" (457 mm) o.c. in two staggered rows in the field of the sheet. Each row shall be 12" (305 mm) approximately in from the sides of the base sheet.
- Cap nails cannot be used to attach insulation, attach a base sheet through an existing insulated roof, attach a base sheet over a gravel surfaced built-up roof, or through a smooth surfaced un-insulated built-up roof over ½" (13 mm) thick.
- Fasteners used to attach base sheet must be manufactured for the deck type and be Factory Mutual Approved. This attachment pattern applies to all GenFlex compatible base sheets and cap sheets used as base sheets.

Base Sheet Laps

- Hot steep asphalt applied Base sheets must be lapped a min. of 3" (50.8 mm) in the side laps.
- Mechanically attached torch applied, or automatic heat welded base sheets must be lapped a min. of 3" (76 mm) in side laps.
- End laps must be min. 6" (152 mm).
- In all cases, an offset of 12" (305 mm) min. must be maintained between the side and end laps of the base sheet and the cap sheet.

INSULATION INSTALLATION

EZ TPO InvisiWeld Systems require a min. 1½" (38 mm) of insulation over the metal deck for operation of induction welding equipment. Ballast systems are not permitted when the membrane is installed directly over any mechanically attached insulation or over a hard surface such as GenFlex NB ISO, GenFlex HD ISO, DensDeck, SECUROCK, OSB, or concrete.

Install Insulation

- Install only as much insulation as can be covered with roofing membrane and completed before the end of the day's work or before the onset of inclement weather.
- Form continuous insulation joints over deck flange. Do not cantilever insulation edges over deck ribs. Min. bearing surface: 1" (25 mm).

Multiple Layers of Insulation

When installing multiple layers of insulation, all joints between layers shall be staggered 6" (152 mm) min.

Fit Insulation.

- Neatly fit insulation to all penetrations, projections, and nailers. Insulation should be loosely fitted, with no gaps greater than ¼" (6 mm) filled with acceptable insulation. The membrane shall not be left unsupported over a space greater than ¼" (6 mm).
- On metal decks, the edge of the board parallel with the roof deck flutes should be completely supported by the flange.
- Tapered insulation with acceptable facers for bonding must be installed around roof drains to provide proper slope for drainage as shown in GenFlex Details.

Insulation Attachment - Mechanical

- Insulation must be attached using the appropriate GenFlex Insulation Plates and Fasteners.
- If installing on a metal deck (where allowed by specification), the edge of the board parallel with the roof deck should be completely supported and fasteners must penetrate the top flange of the deck.
- When installing fasteners, care should be taken to avoid penetration of conduits and other piping below or encased in the deck.
- For insulation attachment please refer to the Product Data Sheets (PDS) that reference the specific insulation being used. Use appropriate attachment patterns and fastening rates of that specific insulation and desired warranty term.
- For specific deck penetration requirements refer to the Product Data Sheet that references the specific fastener being used.
- When installing a multi-layer insulation assembly, the fastening pattern is determined by the type and thickness of the top layer of insulation and the performance criteria of the system. MAS systems with a fully adhered perimeter shall require the perimeter insulation to use fastening pattern used in a fully adhered system as determined by the top layer of insulation.
- Multiple layers of insulation may be installed using a common fastener.

- Ensure that the fasteners are fully seated, but not overdriven. Use a properly adjusted clutch or depth sensing type of drill. Do not use a standard single speed drill. If a fastener must be removed after installation, do not reinstall fastener into same hole.
- Fastener pull tests should be conducted on existing decks or decks with conditions that are not “like new”. Pull values below GenFlex requirements may require increased fastening, alternate system requirements or refusal of warranty coverage.

Insulation Attachment – Asphalt Attachment

- The substrate may require priming or a base sheet prior to installing the insulation. Refer to the TPO Design Guide for specific information.
- The insulation shall be no larger than 4' x 4' (1.2 m x 1.2 m) panels.
- Insulation may be attached using a solid mopping of ASTM D 312 Type III or Type IV asphalt. GenFlex CG ISO and GenFlex HD ISO may not be asphalt attached.
- The asphalt shall be at the manufacturer’s stated EVT less ~ 25 °F (-4 °C) at the point of installation. Install enough asphalt to achieve complete adhesion, approximately 25-30 lb per 100 ft² (1.2-1.4 k/m²), depending on substrate.
- It is necessary to “walk” boards in to ensure complete adhesion to the substrate.
- Additional layers of insulation should be installed in the same fashion.

Insulation Attachment – Adhesive Attachment

- Insulation may be attached using ISO One Step™ (PDS #812), ISO Bond™ (PDS #819), or Quick Dual™ (PDS #836).
- Apply the adhesive in strict accordance with the instructions provided with the product and the Product Data Sheets (PDS) that are a part of the GenFlex Technical Database.
- It may be necessary to prime the substrate prior to installing the insulation adhesive with a prescribed primer.
- If installing on a metal deck (where allowed by specification), the edge of the board parallel with the roof deck flutes must be completely supported.
- The insulation or coverboard shall be no larger than 4' x 4' (1.2 m x 1.2 m).
- It is necessary to weight each board, using full pails of bonding adhesive or other available source of weight that will not damage the insulation board, at each corner, to ensure complete adhesion to the foam and substrate. Refer to the specific Product Data Sheet for min. wait times.

MEMBRANE INSTALLATION

This section contains information for standard GenFlex EZ TPO membrane systems. Read all the information to ensure that it is the correct system and application.

Additional securement details for the membrane (base tie-in) will occur at all locations where the membrane goes through an angle change greater than 1" (25 mm) in 12" (305 mm) (i.e., roof edges, curbs, interior walls, etc.) and other areas as details indicate. See GenFlex details for more information

EZ TPO Membrane installations may require the use of a EZ TPO Reinforced Perimeter Strip (RPS), requiring coordination with the many substrates at perimeters and layout and installation of the membrane system in a logical sequence. These steps should be addressed early in the roofing process.

!	Ensure proper welds are being achieved. If welding problems occur validate the following:
	<ul style="list-style-type: none"> ▪ Ensure the weld area is clean, dry, and free of contaminants prior to welding. ▪ If cleaning occurs completely dry area prior to welding. ▪ Perform test welds with scrap membrane to dial in the proper welding temperatures. ▪ Perform test welds prior to job start, after breaks in installation, and during temperature swings.
	NOTE: Once weld areas have cooled, validate weld is fully bonded and no gaps, fish mouths, pin holes or cold welds exist. Probe all welds to verify weld is completed properly.
	NOTE: It is important to verify that welds completed at any transition from machine to hand application is completed properly. Validate weld transition is fully bonded and no gaps, fish mouths, pin holes or cold welds exist. Probe all welds to verify weld is completed properly.
	NOTE: Lap membrane to cover membrane printed areas (lap lines, fastener location marks and product identifications printing) whenever possible.

Adhered Membrane

1. Position Membrane

- Place membrane panel, starting at the low side of the roof and unroll over the acceptable substrate. Allow the panel to relax for 30 minutes before attaching or splicing.
- The GenFlex EZ TPO adhered system shall be installed so that the seams shed or run parallel to the flow of water wherever possible.

- Placement of additional rolls of membrane shall provide for overlapping the sides of adjoining sheets 3½" (90 mm) as marked on the top side of the membrane and overlapping the ends of adjoining sheets a min. of 3" (76 mm). For sufficient membrane overlap distance, see standard lap splice details for robotic and hand welding.
 - If possible, sheets cut along one side shall have the cut edge installed as the underside of the seam. If cut edges are exposed on the weather side, they are to be sealed to specification with GenFlex EZ TPO Clear Cut Edge Sealant or GenFlex TPO Clear Cut Edge Sealant LVOC.
2. **Fold the Membrane Back.** After making sure the sheet is placed in its final position allowing for the proper lap width per GenFlex details and specifications, fold it back evenly onto itself without wrinkles to expose the underside bonding surface of the sheet and substrate.
 3. **Remove any Debris or Dirt.** Sweep the mating surfaces with a stiff broom to remove any debris or dirt that may have accumulated. If required, wash membrane with GenFlex Solvent Cleaner or GenFlex All Purpose LVOC Cleaner and allow to dry.
 4. **Apply the Bonding Adhesive.** Always stop bonding adhesive short of membrane seam area. Care must be taken not to apply bonding adhesive over an area that is to be later hot air welded to another sheet or flashing. All bonding adhesives must be completely removed from the seam area.
 - Apply bonding adhesive with either a 9" (228 mm) wide solvent-resistant paint roller or a commercial-grade adhesive sprayer.
 - Adhesive must be applied in a relatively uniform thickness to both surfaces at approximately the same time.
 - If adhesive is spray-applied, it must be back-rolled with a solvent-resistant paint roller to assure proper contact and uniform coverage. Refer to GenFlex Product Data Sheets (PDS) and container labels for specific application instructions.

Apply bonding adhesive at specified coverage rate. Refer to the container label and Product Data Sheet for specific application requirements and coverage rates.

5. Test Bonding Adhesive for Readiness (Touch-Push Test):

Allow the bonding adhesive to flash-off. Touch the adhesive surface in several places with a clean, dry finger to be certain that the adhesive does not stick or string. As you are touching the adhesive, push forward on the adhesive at an angle to ensure that the adhesive is ready throughout its thickness. If motion exposes wet or stringy adhesive when the finger is lifted, the adhesive is not ready for mating. Flash-off time will vary depending on ambient conditions of temperature, wind, and humidity.

6. **Bond the Membrane to the Substrate.** Starting at the fold, roll the previously coated portion of the membrane into the coated substrate slowly and evenly to prevent wrinkles.
7. **Broom the Membrane.** To assure proper contact, compress the bonded half of the membrane to the substrate with a stiff push broom.
8. **Repeat Procedure to Complete the Membrane Installation.** Fold the unadhered half of the membrane back onto itself and repeat the procedure.
9. **Weld the Lap**
 - If membrane has been open for more than 12 hours or become contaminated with dirt, debris or moisture, wash mating surfaces with GenFlex Solvent Cleaner or GenFlex All Purpose LVOC Cleaner and allow to dry.
 - Complete the laps with hot air welds as specified and refer to EZT-LS details.

Mechanically Attached System

GenFlex suggests that when installing mechanically fastened membranes over steel decks, the field attachment should run perpendicular to the deck panels. If a project is Factory Mutual insured or specified, per FM 1-29 Loss Prevention Data Sheet, attachment must run perpendicular to the deck panels.

The perimeter of the GenFlex EZ TPO mechanically attached roofing system may be adhered or mechanically attached. When mechanically attaching a perimeter, the fastener layout must be as specified in the GenFlex Attachment Guide at a min., or as required by the owner's design professional or local building code. Should a fully adhered perimeter be selected, the perimeter area is the same as for mechanically attached.

Securing with Plates and Fasteners

1. Position Membrane

- GenFlex EZ TPO mechanically attached roofing systems are installed starting at the low point of the roof using up to four sheets, determined by job requirements, that are half the width of the field panels. Place membrane panel, unroll over the acceptable substrate and allow panel to relax for a min. of 30 minutes before attaching or splicing. Ensure proper sheet overlap allowances for roof edge details and flashing seams. (Consult GenFlex EZ TPO Lap, edge, and base tie-in details.)
- The GenFlex TPO adhered system should be installed so that the seams shed or run parallel to the flow of water wherever possible.
- Placement of additional rolls of membrane shall provide for overlapping the sides of adjoining sheets 6" (152 mm) as marked on the top side of the membrane and overlapping the ends of adjoining sheets a min. of 3" (76 mm). For sufficient membrane overlap distance, see standard lap splice details for robotic and hand welding.

NOTE: If possible, sheets cut along one side shall have the cut edge installed as the underside of the seam. If cut edges are exposed on the weather side, they are to be sealed to specification with GenFlex EZ TPO Clear Cut Edge Sealant or TPO Clear Cut Edge Sealant LVOC.

2. Secure the Panel

- The inside edge of the half sheet lap is fastened to the deck using approved GenFlex EZ TPO Seam Plates and fasteners as required by specification.
- Position each fastener 2" (51 mm) inside the membrane edge and 1" (26 mm) from the area to be heat welded, per lap splice details.
- Install each fastener so that it is properly engaged in the deck and the head is flush within the countersunk portion of the seam plate.

3. Position Second Perimeter Panel

- Roll out the second perimeter panel and position along the lap line of the first.

4. Fold the Membrane Back at the Lap

- After confirming the sheet is positioned allowing for the proper lap width, fold it back evenly onto itself without wrinkles or creases to expose the underside mating surface of the lap.

5. Remove Dirt or Debris

- Sweep surfaces with a stiff broom to remove any debris or dirt that may have accumulated.

6. Weld the Lap

- Fold the membrane back into position, heat weld the side lap per the Membrane Seaming section of this specification, then fasten along the opposite edge of the panel.

7. Install Subsequent Perimeter Panels

- Continue this procedure of lay-out, fastening and welding for perimeter sheets.

8. Position First Field Panel

- Roll out the first field panel and position along the lap line of the last perimeter panel allowing for 6" (152 mm) side lap and 3" (76 mm) end laps.
- Follow procedure outlined above to secure the last perimeter panel and heat weld the first field lap.

9. Position and Secure Subsequent Field Panels

- Roll out, position, secure and complete adjoining field panels as above.
- Install each fastener so that it is properly engaged in the deck and the head is flush within the countersunk portion of the Seam Plate.
- If the slope changes direction, begin working at the lower edge of the adjoining side of the roof up the slope with perimeter and field panels until reaching previous work. A half sheet is installed over a ridgeline, secured, and welded to the two panels.

Adhered Perimeter

1. Position Perimeter Panel

- Place membrane panel, starting at the low side of the roof and unroll over the acceptable substrate. Allow the panel to relax for 30 minutes before attaching or welding.
- Membrane panels shall be installed so that the seams shed or run parallel to the flow of water wherever possible.
- Placement of additional rolls of membrane shall provide for overlapping the sides of adjoining sheets 3½" (90 mm) as marked on the top side of the membrane and overlapping the ends of adjoining sheets a min. of 3" (76 mm). For sufficient membrane overlap distance, see standard lap splice details for robotic and hand welding.
- If possible, sheets cut along one side shall have the cut edge installed as the underside of the seam.

2. Fold the Membrane Back

- After making sure the sheet is placed in its final position allowing for the proper lap width per GenFlex details and specifications, fold it back evenly onto itself without wrinkles to expose the underside bonding surface of the sheet and substrate.

3. Remove any Debris or Dirt

- Sweep the mating surfaces with a stiff broom to remove any debris or dirt that may have accumulated. If required, wash membrane with GenFlex Solvent Cleaner or All Purpose LVOC Cleaner and allow to dry.

4. Apply the Bonding Adhesive

- Always stop bonding adhesive short of membrane seam area.
- Care must be taken not to apply bonding adhesive over an area that is to be hot air welded to another sheet or flashing. All bonding adhesives must be completely removed from the seam area before welding.
- Apply bonding adhesive with either a 9" (228 mm) wide solvent-resistant paint roller or a commercial-grade adhesive sprayer.
- Adhesive must be applied in a relatively uniform thickness to both surfaces at approximately the same time.
- If adhesive is spray-applied, it must be back-rolled with a solvent-resistant paint roller to assure proper contact and uniform coverage. Refer to GenFlex Product Data Sheets (PDS) and container labels for specific application instructions.
- Apply bonding adhesive at specified coverage rate.
- Refer to the container label and Product Data Sheet for specific application requirements and coverage rates.

5. Test Bonding Adhesive for Readiness (Touch-Push Test)

- Allow the bonding adhesive to flash-off.
- Touch the adhesive surface in several places with a clean, dry finger to be certain that the adhesive does not stick or string. As you are touching the adhesive, push forward on the adhesive at an angle to ensure that the adhesive is ready throughout its thickness. If motion exposes wet or stringy adhesive when the finger is lifted, the adhesive is not ready for mating. Flash-off time will vary depending on ambient conditions of temperature, wind and humidity.

6. Bond the Membrane to the Substrate

- Starting at the fold, roll the previously coated portion of the membrane into the coated substrate slowly and evenly to prevent wrinkles.

7. Broom the Membrane

- To assure proper contact, compress the bonded half of the membrane to the substrate with a stiff push broom.

NOTE: If possible, sheets cut along one side shall have the cut edge installed as the underside of the seam. If cut edges are exposed on the weather side, they are to be sealed to specification with GenFlex EZ TPO Clear Cut Edge Sealant or TPO Clear Cut Edge Caulk LVOC.

8. Repeat Procedure to Complete the Membrane Panel Installation

- Fold the un-adhered half of the membrane back onto itself and repeat the procedure.

9. Terminate the Membrane at the Perimeter

- After the perimeter sheets are adhered to the substrate, they must be terminated along the outside edge using appropriate GenFlex roof edge or base tie-in detail.

10. Install Perimeter Isolation

- Install GenFast fasteners and TPO seam plates continuously along the inside edge of the adhered perimeter area per GenFlex details.

11. Position First Field Panel

- Roll out the first field panel and position along the lap line of the adhered perimeter panel allowing for 6" (152 mm) side lap and 3" (76 mm) end laps. Heat weld the first field lap.

12. Position and Secure Subsequent Field Panels

- Roll out, position, secure and splice adjoining field panels as above.
- Install each fastener so that it is properly engaged in the deck and the head is flush within the countersunk portion of the Seam Plate.
- If the slope changes direction, begin working at the lower edge of the adjoining side of the roof up the slope with perimeter and field panels until reaching previous work.
- A half sheet is installed over a ridgeline, secured, and welded to the two panels.

Ballasted System

Ballasted systems are not permitted when the membrane is installed directly over or onto a hard surface, such as GenFlex NB ISO, DensDeck, SECUROCK, DEXcell, OSB, GenFlex HD ISO, GenFlex HD Composite, or concrete.

Ballasted systems are not allowed when the membrane is installed directly to a layer of insulation, which has been mechanically attached.

Adhesive attachment of insulation is acceptable for Ballasted systems, if required.

1. Position Membrane

- Position membrane panel, without stretching, over the acceptable substrate and allow to relax for 30 minutes.
- Good roofing practice dictates that seams shed or run parallel to the flow of water wherever possible.
- Move Membrane to its Final Position. Shift the membrane panel to its final position allowing for a min. 4" (102 mm) field seam onto adjacent panels and sufficient membrane for proper flashing and termination.

2. Complete the Lap

- Heat weld the side lap (per section labeled Membrane Seaming of this specification), then fasten along the opposite edge of the panel.

3. Ballast Information

- Ballast Paver System
 - Contact the GenFlex Regional Technical Coordinator for more information on approved ballast paver systems.
 - Install the approved Ballast Paver System as required in proper sequence for membrane protection and paver system performance, according to the paver system manufacturer and as determined by the design professional.
- Stone Ballast
 - Spread stone ballast over the EZ TPO membrane at the rate specified by the project designer but never less than 10 lb/ft² (4.5 kg/ft²) using ASTM #4 stone. Refer to the EZ TPO Design Guide for additional ballast type and size requirements. Ballast must be spread over the membrane using soft rubber-tired

- ballast buggies. Spread ballast around penetrations by hand. Take special care not to damage TPO membrane when distributing ballast.
- Protect membrane and underlying insulation at staging areas where ballast is loaded, by layering additional insulation and/or plywood over a sacrificial layer of GenFlex membrane. Remove and replace all roofing components damaged from ballasting operation.
- Distribute ballast around Walkway Pads: Any ballast displaced by a walkway should be distributed around the pad to maintain the specified average ballast rate. (Do not position walkway within 10' (3.04 m) of a roof edge.) Use appropriate ballast pavers around mechanical equipment.

MEMBRANE SEAMING

The following information provides for typical set up and heat welding of GenFlex EZ TPO membrane. For information beyond the scope of this document, we encourage installers to contact a GenFlex Regional Technical Coordinator or local GenFlex Field Technical Representative.

Ensure proper welds are achieved. If welding problems occur validate the following:

- Ensure the weld area is clean, dry, and free of contaminants prior to welding.
- If cleaning occurs completely dry area prior to welding.
- Perform test welds with scrap membrane to dial in the proper welding temperatures.
- Perform test welds prior to job start, after breaks in installation, and during temperature swings.

! NOTE: Once weld areas have cooled, validate weld is fully bonded and no gaps, fish mouths, pin holes or cold welds exist. Probe all welds to verify weld is completed properly.

NOTE: It is important to verify that welds completed at any transition from machine to hand application is completed properly. Validate weld transition is fully bonded and no gaps, fish mouths, pin holes or cold welds exist. Probe all welds to verify weld is completed properly.

NOTE: Lap membrane to cover membrane printed areas (lap lines, fastener location marks and product identifications printing) whenever possible.

Equipment and Test Splice Requirements

1. The air intake, temperature and speed of the welder shall be adjusted to provide proper seam strength.
2. An ample power source shall be provided for all heat welding equipment. A dedicated generator must be provided for each robotic welder. For specifics on welding equipment and generator, consult the welder manufacturer's data sheets.
3. Adjust the welding equipment according to membrane thickness and varying weather conditions. It is recommended that this be completed using spare material before starting welding of the finished roofing material. In addition, destructive tests shall be completed at the beginning of each day of welding and every time there is an interruption in the welding process (i.e., power failure, welder shut down, change in job site conditions, after lunch, etc.) to verify adequate seam strength.
4. Automatic Welder Settings – See additional weld window tables at the end of this document. GenFlex EZ TPO allows for successful welding through a wide range of automatic welder settings for temperature and momentum. Typical settings near the center of this welding range are as follows (ambient temperatures between 20 °F to 90 °F and -6.7 °C to 32.2 °C):
 - Leister Varimat - Temperature: 1000 °F Air Flow: 80%, Speed: 11.5' min.
 - Leister Varimat V2 - Temperature: 1100 °F Air Flow: 70%, Speed: 12.5' min.
 - Contact a local GenFlex Technical Representative for additional information.

Clean the Lap Splice Area

If membrane has been exposed for more than 12 hours or becomes contaminated with dirt, debris, or moisture, it must be cleaned. Wearing chemical resistant gloves and using a clean white cotton rag dampened with GenFlex Solvent Cleaner wash, thoroughly clean the involved area on both sheets at least 6" (15.24 cm) wide prior to any welding activity. For aged membrane, or when additional cleaning is desired, a GenFlex Scrub pad moistened with GenFlex Solvent Cleaner may be used to clean the weld area, followed by wiping with a clean white cotton rag dampened with cleaner. Allow cleaner to flash off completely, as residual cleaner can contaminate the membrane bond.

Hot Air Weld Lap Splices

1. Horizontal field welds should be completed first. Wherever possible, field splices on the horizontal surface (including flashings) are to be completed using an automatic heat welder that has been designed for hot air welding of thermoplastic membranes. For specifics on welding equipment and generator, consult the equipment manufacturer's data sheet.

2. Seam Width Requirements

- Seams made with the automatic welder must be a min. of 1½" (38 mm) wide.
- Seams made with a hand welder must be a min. of 2" (50 mm) wide. Use silicone hand rollers to assure proper compression of the heated surfaces as hand welding proceeds.
- Wide Weld seams require a Wide Weld kit for the Varimat welder. The kit system includes specialized hardware to adapt the existing welder to the special 4½" (114 mm) wide nozzle and guides.

NOTE: It is important to verify that welds completed at any transition from machine to hand application is completed properly. Validate weld transition is fully bonded and no gaps, fish mouths, pin holes or cold welds exist. Probe all welds to verify weld is completed properly.

3. Vertical Splices

Handheld welders are to be used on vertical welds or where an automatic welder is not practical or cannot be used.

- T-Joint and Membrane Transition Patches:
 - Install T-joint patches at reinforced membrane seam intersections when membrane thicker than .045" (1.14 mm) is used.
 - Install T-Joint patches wherever TPO reinforced membrane seams extend through angle changes 1:12 or greater.
 - Membrane to receive T-joint cover shall have the edge chamfered by heating and rolling to minimize any step-down. Refer to Lap Splice and T-Joint Detail Section of GenFlex's Technical Manual.

Seam Inspection

Probe all completed welds with a dull cotter pin puller type tool to verify seam integrity, paying special attention to hand welded areas (i.e., corners, t-joints, angle changes, etc.). Do not probe welds until they have cooled. Any welds found to be insufficiently fused need to be repaired daily. Avoid damaging membrane when checking welds.

Seal Cut Edges

1. Ensure that all cut edge areas are clean and dry. Clean with Solvent Cleaner to remove any contamination.
2. All edges of EZ TPO reinforced membrane with scrim exposed are to be sealed daily with GenFlex EZ TPO Clear Cut Edge Sealant or Clear Cut Edge Sealant LVOC.



NOTE: Solvent welding is NOT acceptable.

ADDITIONAL MEMBRANE SECUREMENT AND BASE TIE-IN FLASHING

Secure the membrane at all locations where the membrane goes through an angle change greater than 1" (25 mm) in 12" (305 mm). i.e.: roof edges, curbs, interior walls, etc.

Using Screws and Plates

1. Mechanically fasten GenFast Seam Plates for TPO membrane with GenFast Fasteners either horizontally into the deck or vertically into the wall in accordance with GenFlex Base Tie-In Details (typically 12" (305 mm) o.c. for standard applications).
2. Refer to the GenFlex EZ TPO Design Guide or GenFlex Product Data Sheets (PDS) of this manual to determine the applicable fastener and the associated penetration requirements for the specific substrate conditions.

Using Coated Metal

1. Fasten GenFlex EZ TPO Coated Metal into wood nailers as shown in GenFlex Details.
2. The GenFlex coated metal must be completely supported by wood nailers in accordance with GenFlex Details.
3. Heat weld membrane to GenFlex EZ TPO Coated Metal flashing.
4. Seams made with an automatic welder must be a min. of 1½" (38 mm) wide. Seams made with hand welders must be a min. of 2" (51 mm) wide.

Using EZ TPO Peel & Stick Reinforced Perimeter Strip (RPS)

1. Attach the RPS to the parapet wall or deck using GenFast Seam Plates fastened a max. of 12" (305 mm) o.c. Roll the membrane into place and then fold back, exposing the underside of the membrane and the RPS.
2. Apply the appropriate GenFlex Primer to the membrane where it will mate with the FlexWhite or TPO Seam Tape on the RPS and allow to dry completely. Apply GenFlex EZ TPO Bonding Adhesive to the membrane that is to be bonded to the penetration or wall, and to the penetration or wall itself.
3. After the primer has dried completely and the adhesive has flashed off properly as determined by using the Touch-Push Test, remove the release paper from the RPS and roll the membrane into place, assuring a tight fit into the transition between the horizontal and vertical surfaces. Continue to roll the membrane up the wall and broom in place with a stiff push broom. Roll the membrane over the FlexWhite or TPO Seam Tape portion with a 1½" to 2" (38 mm to 51 mm) wide silicone roller across the tape and then along its length.

Flashing – Penetrations

General

- Remove all loose existing flashing (i.e., metal, bituminous materials, mastic, etc.).
- Flash all penetrations passing through the membrane.
- The flashing seal must be made directly to the penetration.

Pipes, Round Supports, Structural Steel Tubing, Etc.

1. Flash penetrations with GenFlex Pre-Molded EZ TPO Pipe Flashings wherever possible. Do not cut or patch Pre-Molded Pipe Flashings vertically to assist in their installation.
2. Flash penetrations using GenFlex EZ TPO Non-Reinforced Flashing when the use of Pre-Molded Pipe Flashings is not feasible.
3. Refer to GenFlex's Product Data Sheet for min. and max. pipe diameters that can be successfully flashed with Pre-Molded TPO Pipe Flashings.
4. Structural Steel Tubing: Use a field-fabricated pipe flashing detail when the corner radius is greater than ¼" (6.4 mm) and the longest side of the tube does not exceed 4" (102 mm). When the tube exceeds 4" (102 mm), use a standard curb detail including base-tie in and suitable termination.
5. GenFlex can manufacture custom pipe flashings round, square, or conical, with or without a split. Contact a GenFlex Sales Representative for additional information.

Roof Drains

The following applies to new or reused cast iron drains. For all other drain types contact a GenFlex Regional Technical Coordinator.

1. Remove existing clamping ring. Remove any broken clamping hardware and replace.
2. Remove all existing flashing (including lead flashing), roofing materials and cement from the existing drain in preparation for membrane and Water Stop.
3. Provide a clean even finish on the mating surfaces between the clamping ring and the drain bowl.
4. Install tapered insulation with suitable bonding surfaces around the drain to provide a smooth transition from the roof surface to the drain. Slope into drain cannot be greater than 1" in 12" (25 mm in 305 mm).
5. Position the membrane and cut a hole for the roof drain allowing ½" (13 mm) to ¾" (19 mm) of membrane inside the clamping ring. Make round holes in the membrane to align with clamping bolts (a paper punch may be used). Do not cut the membrane back to the bolt holes.
6. Install GenFlex Water Stop on the clamping ring seat flange below the membrane. Use a min. of one half of a 10 oz (295 cc) tube for a 10" (254 mm) drain.
7. Install the roof drain clamping ring and all clamping bolts. Tighten the clamping bolts to achieve constant compression.

Insert Drains

Insert Drains are intended for installation when existing drains are deteriorated and not suitable for reuse or for re-roofing situations where existing drain sumps exceed GenFlex's min. requirements. For conditions outside of these, contact a GenFlex Regional Technical Coordinator.

1. Remove existing clamping ring. Remove any broken clamping hardware and debris.
2. Remove all existing flashing (including lead flashing), roofing materials and cement from the existing drain.
3. Install wood blocking as required to support, level and square drain insert with new insulation sump.
4. Install insulation, flat and tapered, with suitable bonding surfaces around the drain to provide a smooth transition from the roof surface to the drain. Slope into drain cannot be greater than 1" in 12" for reinforced membrane.
5. Install GenFlex Insert Drain, securing to a solid substrate in accordance with instructions, in preparation to receive the roof membrane.
6. Install GenFlex Waterstop in a continuous bead on the clamping ring seat flange below the membrane. Use a min. of one half of a 10 oz (295 cc) tube for a 10" (254 mm) strainer basket/clamping ring.
7. Install GenFlex roof membrane as prescribed and secure with strainer basket and bolt assembly.

Rigid Pipe Clusters and Unusual Shaped Penetrations

1. Install the GenPocket T molded penetration pockets per instructions. Allow a min. clearance of 1" (25 mm) between the penetration(s) and from all sides of the penetration pocket.
2. Flash detail with shop fabricated penetration pockets per GenFlex Details.
3. Fill penetration pockets with GenFlex Pourable Sealer and mound to shed water. Pourable Sealer must be a min. of 2" (51 mm) deep and 1" (25 mm) thick around all penetrations. Be sure to prime penetration and inside of pocket before installing sealer using Clear Primer or Clear Primer LVOC.

Hot Pipes

Protect the EZ TPO components from direct contact with steam or heat sources when the in-service temperature is more than 160 °F (71 °C). In all such cases flash to an intermediate “cool” sleeve per GenFlex Details.

Flexible Penetrations

1. Provide a weathertight gooseneck set in Waterstop and secured to the deck.
2. Flash in accordance with current GenFlex Details.

Scuppers

Scuppers shall refer to all primary and overflow devices for roof drainage.

1. Install welded watertight sleeve and flashing assembly.
2. Set sleeve in Water Stop.
3. Round all corners of metal flange.
4. Fasten flange 4" (102 mm) o.c.
5. Flash in accordance with current GenFlex Details.

Expansion Joints

1. Install where specified by the project designer in accordance with GenFlex details.
2. Expansion Joint assemblies shall be sized as needed to provide for all anticipated movement and make logical transition to other materials at perimeters.

FLASHING – WALLS, PARAPETS, MECHANICAL EQUIPMENT CURBS, ETC.

General

Using the largest pieces of EZ TPO membrane, flash all walls, parapets, curbs, etc., to a min. height of 8” or as specified by the project designer.

1. Evaluate Substrate
The following substrates require an overlay of 5/8” (16 mm) exterior grade or “Wolmanized” plywood, mechanically fastened in accordance with project designer’s requirements:
 - Interior Gypsum board
 - Stucco
 - Cobblestone
 - Textured Masonry
 - Corrugated Metal Panels
 - Other Uneven Substrates



NOTE: All loose existing flashing must be removed.

2. Install additional membrane securement at curbs, penetrations, walls, etc.: Refer to “Wood Nailer” portion of this specification.
3. Provide Termination in accordance with GenFlex specifications and details.
4. EZ TPO membrane can be installed up to a maximum height of 72” (182.9 cm) without intermittent attachment as long as the following conditions are present:
 1. Wall surface is smooth without noticeable high spots or depressions: such as plywood, poured or pre-cast concrete, hollow core block or masonry walls where mortar joints are flush with masonry surface, **AND**
 2. The termination of membrane flashing is a Termination Bar or membrane flashing extending completely under coping to the outside wall to the outside face edge.
 3. Intermittent termination IS REQUIRED:
 - When flashing heights exceed 72” (182.9 cm), intermittent termination is required at 36” o.c (91.44 cm) on center beyond the maximum height.
 - When the wall surface does not meet the conditions stated above, intermittent termination is required at 36” o.c (91.44 cm).
 - When the wall or substrate is non-structural (see detail EZT-T-26), intermittent termination is required at 36” o.c (91.44 cm).

SHEET METAL WORK

General

- Sheet metal work is not waterproofing. The installed membrane roofing system must be made watertight before metal application.
- No roof system is complete until all the edges are terminated in such a way as to prevent water infiltration into the roofed structure. This typically involves the use of manufactured or shop fabricated metal detailing, such as coping caps, gravel stops, roof edging, flashing and counter-flashing components.

- All sheet metal work should be fabricated and installed according to SMACNA and National Roofing Contractors Association (NRCA) guidelines. Unless specifically agreed to in writing by GenFlex prior to installation, sheet metal work manufactured by others is not included in the GenFlex warranty coverage.

Codes and Standards

- The designer and roofing contractor should be aware that many municipalities and states are beginning to enforce metal codes that, until recently, were merely used as guidelines. These metal codes relate to min. standards on material, fabrication, and testing of roof related sheet metal work. It is the contractor's responsibility to review and know the building codes relating to their roofing projects to avoid costly remedial work to bring a project into compliance.
- If a metal flashing product by others is submitted via a deviation request for inclusion in the warranty coverage, the following are min. requirements for consideration:
 - The sheet metal work must be shop- or factory-formed or extruded.
 - The sheet metal work must be configured and installed in accordance with SMACNA guidelines and NRCA installation instructions.
 - Min. requirements regarding sheet metal work material are 24 ga (0.61 mm) G-90 Kynar pre-finished steel or 0.040" (1.02 mm) aluminum (mill finished, pre-finished or anodized).
 - A deviation request for inclusion of sheet metal work in warranty coverage must accompany the PIN form submitted by the installing contractor.
 - The deviation request must include shop drawings of the sheet metal work to be included and a roof plan showing the installed location and linear dimension for each profile.
 - Should the deviation request be granted, the installing contractor will be responsible to GenFlex for a period of two years from the date of GenFlex's inspection and acceptance under their installer's agreement.

Application

- Sheet metal work installation, regardless of material source, must be according to the sheet metal manufacturer's instructions available from the manufacturer or supplier.
- Sheet metal work formed by roofing contractors must be fabricated and installed in accordance with SMACNA and NRCA recommendations.
- All flange-mounted sheet metal work must be flashed per the appropriate GenFlex material type's standard details.
- Sheet metal work formed by contractors is not eligible for warranty coverage unless the conditions listed above are met and GenFlex accepts the sheet metal work for warranty coverage in writing.
- Sheet metal work by roofing contractors must have metal joints stripped-in to the uppermost edge of the metal dam on the roof side.
- Projects utilizing EZ TPO Flashing to strip-in sheet metal work with a gravel dam (or a formed configuration that can hold water on the edge of the installed cover tape) must have EZ TPO Edge Caulk applied on both sides of the cover tape, and the vertical metal joints are to be covered with a section of TPO Peel & Stick Flashing.
- Gravel stop type sheet metal work on EZ TPO roof systems may be fabricated from EZ TPO Coated Metal to provide a suitable welding surface to seal the roof system to the sheet metal work.
- As an alternative on some EZ TPO applications, it may be appropriate and permissible to use a two-piece snap on fascia assembly instead of EZ TPO Coated metal.
- The approval of sheet metal work for inclusion in warranty coverage is conditional upon acceptance by GenFlex, and, if approved, is subject to the "terms, conditions and limitations" of the requested warranty. Under no circumstance will any warranty coverage for sheet metal work exceed the wind speed limitation of the warranty issued for the roof system. Aesthetic appearance is expressly excluded from warranty coverage.

FLASHING GRAVEL STOPS OR ROOF EDGE METALS



USING GenFlex EZ TPO PEEL & STICK FLASHING

Install Edge Metals (fascia, coping, gutter, accessories)

1. Prepare substrate and roofing membrane as required by product installation details and instructions.
2. Install metals and accessories in the longest sections possible in accordance with GenFlex details.

Flash Edge Metal with EZ TPO Peel & Stick Flashing

1. Prime Area to Receive Flashing.
 1. Clean the application surfaces to remove heavy debris or contaminants with a rag or broom.
 2. Stir the approved GenFlex Primer thoroughly before and during use.
 3. Dip the GenFlex Scrub Pad into the bucket of primer, keeping the scrubber flat.

4. Apply the primer to the TPO membrane and metal edging to receive EZ TPO Peel & Stick Flashing using long back and forth type strokes with heavy pressure along the length of the splicing area.
 5. Additional scrubbing is required at areas of heavy contamination.
 6. Change the scrub pad every 200' (61 m) or when the pad will no longer hold the proper amount of primer.
 7. Allow the primer to dry completely before installing flashing.
2. Install GenFlex EZ TPO Peel & Stick Flashing
 1. Place the roll of GenFlex EZ TPO Peel & Stick Flashing on the roof a few feet prior to the application starting point, positioned so that it unrolls from the top of the roll (release liner will be on top).
 2. Remove approximately 2' to 3' (.6 m to .9 m) of release liner and apply flashing to the metal flange and EZ TPO membrane.
 3. Lap adjacent rolls of flashing a min. of 1" (25 mm).
 4. Roll the Peel & Stick Flashing with a 2" (51 mm) wide silicone hand roller to assure proper adhesion.
 5. Apply heat while rolling to form EZ TPO Peel & Stick Flashing at steps, laps, and angle changes.
 6. Refer to published GenFlex details and specifications for additional information.

Special Considerations (End Laps, T-Joints, etc.)

1. Apply a 6" (152 mm) length of EZ TPO Peel & Stick Flashing or an TPO T-Joint Patch to the inside edge of the EZ TPO Peel & Stick Flashing at all overlaps and intersections. Refer to roof edge details for additional information.
NOTE: EZ TPO Peel & Stick products must be heat-formed to conform to seam step-offs, metal laps, angle changes, etc.
2. Optimal Application:
 - The optimal application of EZ TPO Peel & Stick Flashing is where a 3" (76 mm) edge metal flange is used. This will provide the min. 2" (51 mm) bonded area to the EZ TPO roofing membrane, with the remaining 3" (76 mm) of the flashing materials covering the metal flange.
 - If more than ½" (13 mm) of metal flange is exposed at the sheet metal laps, the laps of the metal flange must be stripped in using additional Peel & Stick Flashing set in an appropriate TPO primer, after the primary flashing is complete (see GenFlex roof edge details).
 - It is recommended that 3" (76 mm) FlexWhite or TPO Seam Tape be placed in the sheet metal lap to help seal the metal edge.
3. Special Considerations for Copper Edging:
 - Copper may be weathered or coated with an anti-tarnish lacquer which makes adhesion difficult. Therefore, GenFlex requires that special cleaning techniques be used to prepare the copper surface to receive the TPO Peel & Stick Flashing.
 - Scrub the copper with acetone or lacquer thinner, using clean cotton cloths. Cleaning before installation is recommended but can take place after metal is attached if care is taken not to allow the solvents to encounter the membrane.
 - After the cleaner dries, apply the appropriate GenFlex primer and flashing per GenFlex Specifications.

ROOF WALKWAYS

General

1. GenFlex EZ TPO Walkway Pads or acceptable pavers are required at all access points to the roof system and recommended anywhere routine traffic on the membrane surface is anticipated. Walkway pads are used to protect the weatherproofing membrane from damage or excessive wear and tear.
2. Traffic-related roof damage is not covered by the Roofing System Limited Warranty. In areas of extreme traffic, contact GenFlex for options to enhance the roof system to prevent or mitigate damage to roofing components.
3. Install walkway pads in locations as specified by the project designer and in accordance with published GenFlex specifications.
4. Walkway maintenance is the responsibility of the building owner and not part of the warranted waterproofing assembly.

Walkway Pad Application Instructions – Taped EZ TPO Walkway Pads

1. Ensure the existing area to which new EZ TPO Walkway Pads are to be mated is clean, smooth, and free of all contaminants. If the membrane has been installed more than thirty (30) days, thoroughly clean the work area with detergent and water. It is recommended that a water-soluble granular cleaner be used such as T-M-T brand, which is manufactured by the U.S. Borax Company. Liquid cleaners can leave a film residue that can interfere with adhesion quality.
 - It is recommended that a polypropylene scouring pad be used for maximum cleaning. This is the type manufactured by 3M. Coupled with the granular detergent it allows for enough abrasive action to thoroughly clean the sheet without causing damage.
 - DO NOT use steel wire brushes under any circumstances.
 - Thoroughly rinse the area several times to remove all detergent and contaminants.
 - The areas cleaned must be allowed to dry completely before continuing.

2. Unroll each roll of EZ TPO Walkway Pad and allow it to relax for a minimum of 30 minutes PRIOR TO cutting and installing the Walkway Pad. Once the Walkway Pad is sufficiently relaxed, measure and cut the Walkway Pad into maximum 10' (3 m) long sections. Plan to position each section with a minimum 4" gap to allow for positive drainage and at least 4" from any system seam or penetration. Allow a minimum of 18" (0.45 m) between Walkway Pad and any roof drainage device. Walkway Pad may be cut lengthwise or widthwise to ensure minimum spacing requirements. To achieve the best aesthetic quality, install when ambient temperature is between 60 and 80 °F (16 and 27 °C). Chalk lines may be used but excessive chalk should be shaken off the line to avoid contaminating the cleaned area.
3. Place each cut section of Walkway Pad with the textured side down. For each section, measure and cut to length strips of Seam Tape that will be applied around the entire perimeter of the Walkway Pad and lengthwise down the middle of the Walk Pad. NOTE: For this application, DO NOT use black EPDM Seam Tape. Only use 3" White Seam Tape.
4. Apply GenFlex Clear Primer or Clear Primer LVOC using a Scrub Pad and handle, according to the instructions on the Technical Information Sheet. Apply primer in 4" wide strips around the entire perimeter of the Walkway Pad and down the center of the Walkway Pad. Once the primer is tacky but firm to the touch, carefully lay the FlexWhite or TPO Seam Tape into the primer with the removeable paper backing facing up. Lay the Seam Tape into the primer gradually, starting at one end and apply consistent pressure as the tape makes contact with the primer. Do not lay the Seam Tape over the primer all at once. With the paper backing still in place, smooth the seam tape into place using your hand then roll the Seam Tape with a 1½" to 2" (38 mm to 51 mm) wide silicone roller to ensure good adhesion of the 3" White Seam Tape to the Walkway Pad. NOTE: Shelf life of FlexWhite or TPO Seam Tape will be shortened if exposed to GenFlex temperatures.
 - Every five (5) Lf, leave a 1" gap in the Seam Tape running down the middle of the Walkway Pad and the low side of the Walkway Pad (based on the flow of water). This will allow any accumulated moisture to drain.
5. Ensure the EZ TPO roof surface is clean, completely dry, and free of debris. For existing roofs and new roofs that have been in service, it is necessary to remove accumulated dirt. Proper membrane preparation is made by scrubbing the membrane with a scrub brush and warm soapy water, rinsing with clear water, and drying with clean cotton cloths. After this initial cleaning, clean the area again using clean cotton cloths and GenFlex Solvent Cleaner. Additional cleaning using GenFlex Solvent Cleaner is often necessary. The entire area must be cleaned, and cleaning must extend a minimum of 6" GenFlex past the edges of the Walkway Pad's final position.
6. Once the EZ TPO membrane is completely clean and dry, position each section of Walkway Pad over the membrane. Do not remove the paper backing from the Seam Tape at this time. Simply position each section of Walkway Pad where it will be installed. Using a chalk-line, mark the areas of the membrane to be primed. Then, remove the Walkway Pad from the area until it is ready to install.
7. Prime the EZ TPO membrane with Clear Primer in 4" wide strips to align with the Flexwhite or TPO Seam Tape applied to the Walkway Pad. Allow the primer to set up.
8. Install each section of Walkway Pad over the properly cleaned and primed TPO membrane:
 1. First, set each section of Walkway Pad into position. NOTE: Do not remove the paper backing from the FlexWhite or TPO Seam Tape and do not apply downward pressure to the Walkway Pad at this time. Simply lay the Walkway Pad in place over the TPO membrane and ensure the primed areas align with the FlexWhite or TPO Seam Tape.
 2. Fold back each section of Walkway Pad length-wise, making sure to keep the Walkway Pad, 3" White Tape, and primed membrane aligned. Only fold back the Walkway Pad approximately 10" initially to make it easier to keep the entire section in place. With the Walkway Pad folded back, remove the exposed portions of paper backing from the Seam Tape, then return the Walkway Pad to its original flat position.
 3. Repeat this process but fold the Walkway Pad back farther this time to fully expose the 3" White Tape running down the center of the Walkway Pad. Ensure all paper backing has been removed before returning the Walkway Pad to its original flat position.
 4. Roll the Walkway Pad with a 1½" to 2" (38 mm to 51 mm) wide silicone roller to ensure good adhesion of all mated surfaces.

NOTE: To achieve the best quality of the application, follow these guidelines:

- When possible, apply the Walk Pad when ambient temperature is between 60 and 80 °F (16 and 27 °C).
- Cut Walk Pad as required to avoid applying directly over a welded seam in the roofing membrane or any other flashing application (Walk Pad should be bonded directly to the field sheet – not flashings).
- Round corners on cut Walk Pad.
- Apply FlexWhite or TPO Seam Tape along perimeter of Walk Pad extending 1/8" to 1/4" beyond edge of Walk Pad so tape is slightly exposed upon completion of the application.
- Be sure to leave a 2" gap in the middle and lower side seam tape in the center of the Walk Pad run to allow for drainage of any water that should get below the Walk Pad during the service life of the roof. When in doubt about the direction of slope, leave a 1" wide gap in the center of all three long runs of seam tape.

Walkway Pad Application Instructions – Welded EZ TPO Walkway Pads

1. Ensure the existing area to which new EZ TPO Walkway Pads are to be mated is clean, smooth, and free of all contaminants. If the membrane has been installed more than thirty (30) days, thoroughly clean the work area with detergent and water. It is recommended that a water-soluble granular cleaner be used such as T-M-T brand, which is

manufactured by the U.S. Borax Company. Liquid cleaners can leave a film residue that can interfere with adhesion quality.

- It is recommended that a polypropylene scouring pad be used for maximum cleaning. This is the type manufactured by 3M. Coupled with the granular detergent it allows for enough abrasive action to thoroughly clean the sheet without causing damage.
 - **DO NOT** use steel wire brushes under any circumstances.
 - Thoroughly rinse the area several times to remove all detergent and contaminants.
 - The areas cleaned must be allowed to dry completely before continuing.
2. Unroll each roll of EZ TPO Walkway Pad and allow it to relax for a minimum of 30 minutes PRIOR TO cutting and installing the Walkway Pad. Once the Walkway Pad is sufficiently relaxed, measure and cut the Walkway Pad into maximum 10' (3 m) long sections. Plan to position each section with a minimum 4" gap to allow for positive drainage and at least 4" from any system seam or penetration. Allow a minimum of 18" (0.45 m) between Walkway Pad and any roof drainage device. Walkway Pad may be cut lengthwise or widthwise to ensure minimum spacing requirements. To achieve the best aesthetic quality, install when ambient temperature is between 60 and 80 °F (16 and 27 °C). Chalk lines may be used but excessive chalk should be shaken off the line to avoid contaminating the cleaned area.
 3. Fully heat weld the perimeter of each section of the EZ TPO Walkway Pad to the EZ TPO roof membrane, leaving one or two 1" gaps in the weld at the low side of the pad to allow for the escape of inadvertent moisture.

TEMPORARY CLOSURE AND TIE-INS

1. At the completion of each day's work or before the onset of inclement weather, a watertight temporary seal must be established by the roofing applicator at any loose edge of membrane.
2. Install a temporary seal or flashing strip to ensure that moisture does not flow beneath or damage any completed section of the new roofing system.
3. Membrane contaminated with the sealant or flashing used as a night seal must be cut away and discarded prior to resumption of work.

FINISHED ROOF PROTECTION

1. When it becomes necessary for other trades to work over a completed area of new roof, the roofing membrane and flashing must be protected from physical damage.
2. Proper and adequate protection includes installation of a slip-sheet in the work area overlaid with plywood or OSB, to minimize damage to the finished roof surface due to construction equipment and activities that encounter the membrane.
3. If damage does occur to the roof system, it should be repaired immediately to preserve the integrity of the roofing components.

MEMBRANE REPAIR

Clean the Membrane

When repairing "in-service" GenFlex EZ TPO Membrane it is necessary to remove accumulated field dirt. The membrane is properly prepared by scrubbing with a scrub brush and warm soapy water, rinsing with clear water, drying with clean cloths, then wiping with a clean cotton cloth dipped in GenFlex Solvent Cleaner or All Purpose LVOC Cleaner.

Install Repair Patch

1. Repair damaged GenFlex EZ TPO Membrane with like material.
2. The repair material must extend a min. of 2" (51 mm) beyond the boundary of the affected area in all directions. Example: A pinhole will require a min. 4" x 4" (102 mm x 102 mm) patch.
3. Round all corners of the repair piece.

Multiple Repairs

1. If the membrane is damaged in more than six (6) locations within a 100 ft² (9.3 m²) area, new membrane extending 6" (152 mm) beyond the border of the damaged area must be installed over existing membrane in accordance with published GenFlex specifications.
2. Secure the replacement membrane in the same manner as the existing membrane.
3. Contact a Regional Technical Coordinator with questions on how to address comprehensive damage.

CLEAN UP

If required by the specifier to ensure the aesthetics of the GenFlex EZ TPO membrane, (i.e., handprints, footprints, general traffic grime, industrial pollutants, and environmental dirt), the membrane may be cleaned by scrubbing with non-abrasive soapy water and rinsing the area completely with clean water. GenFlex Solvent Cleaner or All Purpose LVOC Cleaner can be used sparingly to clean small areas of membrane.

Cleaning Procedure for In-Service Thermoplastic Membrane

1. Ensure that the existing area to which new thermoplastic membrane is to be mated is clean, smooth, and free of all contaminants.
2. Thoroughly clean this area with detergent and water. It is recommended that a water-soluble granular cleaner be used such as T-M-T brand, which is manufactured by the U.S. Borax Company. Liquid cleaners tend to leave a film residue that can interfere with heat-weld quality. The cleaner must be completely rinsed/removed from areas where welding may occur and allowed to completely dry before any welding is performed.
3. It is recommended that a polypropylene scouring pad be used for maximum cleaning. This is the type manufactured by 3M. Coupled with the granular detergent it allows for enough abrasive action to thoroughly clean the sheet without causing damage to it.



NOTE: DO NOT USE STEEL WIRE BRUSHES UNDER ANY CIRCUMSTANCES.

4. It is imperative that the area be thoroughly rinsed several times to remove all cleaner and contaminants before heat welding. Further, the area must be allowed to dry completely before continuing. If blisters form upon heat welding, the area has not been allowed to dry sufficiently and heat welding should discontinue.
5. After allowing to dry sufficiently, the heat-welding areas on the existing membrane shall be cleaned a second time with denatured alcohol and wiped clean with a clean cotton rag to remove all surface impediments and eliminate any surface curing which may have occurred.



AGAIN: THOROUGH CLEANING WITH DENATURED ALCOHOL IS THE MOST CRITICAL PROCEDURE TO ENSURE THE PERFORMANCE OF THE NEW TO EXISTING MEMBRANE HEAT-WELD.

6. All heat welding shall be in accordance with GenFlex thermoplastic details and specifications as published. Keep in mind that the existing sheet is aged, which may call for more allowance. Care should be taken not to overheat and scorch either membrane.
7. Upon completion, allow newly welded seams to cool.



IMPORTANT: ALL WELDS MUST BE THOROUGHLY PROBED AND CHECKED FOR COMPLETE INTEGRITY AND REWELDED OR STRIPPED IN AS REQUIRED.

WELD WINDOWS

Table 2: GenFlex EZ TPO and GenFlex EZ Fleece Backed TPO Membrane Weld Windows

GENFLEX EZ TPO AND EZ FLEECE BACK TPO MEMBRANE WELD WINDOWS						
Material Thickness (Mil)	Leister Varimat V Robot Welder (15 lb weight)			Leister Varimat V2 Robot Welder (15 lb weight)		
	Speed (ft/min)	AirFlow Setting (%)	Temp (°F)	Speed (ft/min)	AirFlow Setting (%)	Temp (°F)
45-80	2.2	80	789	2.2	70	858
45-80	3.2	80	813	3.2	70	884
45-80	4.2	80	836	4.2	70	911
45-80	5.2	80	860	5.2	70	937
45-80	6.2	80	883	6.2	70	963
45-80	7.2	80	907	7.2	70	990
45-80	8.2	80	930	8.2	70	1016
45-80	9.1	80	951	9.1	70	1039
45-80	10.2	80	977	10.1	70	1066
45-80	11.2	80	998	11.1	70	1092
45-80	12.1	80	1022	12.1	70	1118
45-80	13.1	80	1045	13.1	70	1145
45-80	14.1	80	1069			
45-80	15	80	1090			
45-80	16	80	1113			
45				9.1	80-100	1148
45-60				10.1	80-100	1148
45-60				11.1	80-100	1148
45-60				12.1	80-100	1148
45-60				14.1	80-100	1148
45-60				16.1	80-100	1148
80				12.1	80	1148
80				14.1	80-90	1148
80				16.1	80-90	1148
80				18.1	80-90	1148

NOTE:

1. Leister Varimat V Robot Welder with 2 additional weight plates (15 lbs).
2. Leister Varimat V2 Robot Welder with 2 additional weight plates (15 lbs).
3. Validate temperature settings and weld quality at the various times throughout the day including start/stop times and change in weather.
4. Visual observation should occur during welding to avoid scorching/burning of membrane. Adjust temperature as needed to avoid membrane damage.

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