

WeatherBond TPO

Reinforced Membrane



Overview

WeatherBond TPO reinforced membrane is a premium, heat-weldable, single-ply thermoplastic polyolefin (TPO) sheet designed for new roof construction and re-roofing applications.

WeatherBond TPO membranes use advanced polymerization technology that combines the flexibility of ethylene-propylene (EP) rubber with the heat weldability of polypropylene. All WeatherBond TPO membranes include OctaGuard XT™, an industry-leading, state-of-the-art weathering package. OctaGuard XT enables WeatherBond TPO to withstand extreme weatherability testing intended to simulate exposure to severe climates.

Physical properties of the membrane are enhanced by a strong polyester fabric that is encapsulated between the TPO-based top and bottom plies. The combination of the fabric and TPO plies provides high breaking and tearing strength, as well as excellent puncture resistance. The relatively smooth surface of the membrane produces a total surface fusion weld that results in consistent, watertight, monolithic roof assembly. The membrane is environmentally friendly and safe to install.

WeatherBond TPO is available in highly reflective white, tan and gray, in both 45-mil and 60-mil. Special colors are also available (see WeatherBond TPO Color Palette brochure). WeatherBond's TPO is offered in 4- and 6-ft perimeter sheets and 8-, 10- and 12-ft field sheets. WeatherBond special color TPO membranes are available in limited sizes.

WeatherBond's tan and white TPO membranes are ENERGY STAR®-qualified and California Title 24 compliant and can contribute toward LEED® (Leadership in Energy and Environmental Design) credits.



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Optional APEEL Protective Film

WeatherBond TPO reinforced membrane is available with APEEL™ Protective Film, saving time and labor by eliminating the need for roof cleaning upon project completion. WeatherBond's innovative APEEL Protective Film can be left in place for up to 90 days without affecting the integrity of the film, guarding the TPO membrane's surface from scuffs and dirt accumulation during installation. Durable and easy to remove, APEEL Protective Film improves aesthetics and long-term reflectivity and is ideal for re-roofing, re-cover, and new construction projects.

Features and Benefits

- Outstanding puncture resistance
- Excellent fire resistant assemblies
- Environmentally friendly and stable formulations
- Excellent resistance to impact and low temperature
- Excellent chemical resistance to acids, bases and restaurant exhaust emissions
- Exceptional resistance to heat, solar UV, ozone and oxidation
- UL 2218 Class 4 hail rating
- Manufactured using a hot-melt extrusion process for complete scrim encapsulation
- APEEL Protective Film guards the TPO membrane's surface from scuffs and dirt accumulation during installation, improving the roof system's appearance and long-term performance
- APEEL Protective Film can be left in place for up to 90 days without degrading due to its excellent heat and UV-resistance
- WeatherBond TPO is 100% recyclable
- Enhanced with the OctaGuard XT weathering package



Installation

WeatherBond TPO Roofing Systems are quick to install as minimal labor and few components are required. TPO systems are installed using an automatic heat welder, making sheet welding fast, clean, consistent, and easy to learn, while reducing strain on the roofing technician.

APEEL Protective Film should be removed from within areas that are to be heat-welded together. In areas that do not require heat-welding, the APEEL Protective Film can be left in place for up to 90 days. When the installation of the entire TPO roofing system is complete, remove and discard the APEEL Protective Film.

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Mechanically Attached Roofing System installation starts by attaching the insulation with a minimum of 4 fasteners per 4' by 8' board. The membrane is mechanically attached to the deck using HPWX Fasteners and Plates. Adjoining sheets of membrane are overlapped over fasteners and plates and joined together with a minimum 1½"-wide (4 cm) hot-air weld.

Fully Ahered Roofing System installation begins by fastening the insulation at the required density necessary to meet the appropriate wind load requirement. The substrate and membrane are coated with an approved WeatherBond TPO Bonding Adhesive and the membrane is rolled into place.

REVIEW CURRENT WEATHERBOND INSTALLATION INSTRUCTIONS FOR SPECIFIC INSTALLATION REQUIREMENTS.

Precautions

1. Sunglasses that filter out ultraviolet light are strongly recommended as tan and white surfaces are highly reflective. Roofing technicians should dress appropriately and wear sunscreen to protect skin.
2. Surfaces may become slippery due to frost and ice buildup. Exercise caution during cold conditions to prevent falls.
3. Care must be exercised when working close to a roof edge when surrounding area is snow-covered as the roof edge may not be clearly visible.
4. Use proper stacking procedures to ensure sufficient stability of the rolls.
5. Exercise caution when walking on wet membrane. Membranes may be slippery when wet.
6. Store WeatherBond TPO membrane in the original undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. WeatherBond TPO membrane that has been exposed to the weather must be prepared with Weathered Membrane Cleaner prior to hot-air welding.
7. Take care not to stand or place heavy objects on the edge of folded-over membrane, as this could cause a hard crease in the membrane.
8. Maximum sustained temperature not to exceed 160°F (71°C) for TPO membrane.
9. Do not use razor blades or other sharp tools to cut the APEEL Protective Film while it is still adhered to the TPO membrane as damage to the underlying membrane may occur. Pull the protective film away from the membrane prior to cutting.
10. Remove APEEL Protective Film by pulling toward the center of the roof. Do not remove the film by pulling toward the roof edge.

11. A static electric charge may develop when removing APEEL Protective Film from the surface of the membrane sheet. To avoid the possibility of ignition, lids must be closed on any flammable products and a fire extinguisher should be readily available.
12. Color membranes will 'fade' over time mainly due to the ultraviolet portion of sunlight. Since most roof surfaces are exposed to variable sunlight, some areas will be more susceptible to color changes caused by UV fading. Warranties for color membranes do not cover fading of colors.

Extreme Testing for Severe Climates

ASTM Standard D6878 is the material specification for Thermoplastic Polyolefin Based Sheet Roofing. It covers material property requirements for TPO roof sheeting and includes initial and aged properties after heat and xenon-arc exposure. As stated in the scope of the standard, "the tests and property limits used to characterize the sheet are values intended to ensure minimum quality for the intended purpose." WeatherBond's goal is to produce TPO that ensures maximum performance for the intended purpose of roofing membranes. Maximum performance requires the membrane to far exceed the requirements of ASTM D6878.

Heat Aging accelerates the oxidation rate that roughly doubles for each 10°C (18°F) increase in roof membrane temperature. Oxidation (reaction with oxygen) is one of the primary chemical degradation mechanisms of roofing materials.

Extreme Testing - Heat Aging

	ASTM Requirement	WeatherBond TPO Requirement
ASTM Test 240°F	32 weeks	>128 weeks†

† Heat exposure comparable to 3,120 weeks (60 years) at 185oF for 8 hours/day.

- Test specimen is 2" by 6" piece of 45-mil membrane unbacked, placed in a circulating hot-air oven.
- Criterion - no visible cracks after bending aged test specimen around 3"-diameter mandrel.

Q-Trac testing combines accelerated weathering with real world conditions using an array of ten mirrors to reflect and concentrate full spectrum sunlight onto membrane test specimens. The Q-Trac device automatically tracks the sun's path from morning to night. Also, it adjusts to compensate for seasonal changes in the sun's altitude. Eight years in Q-Trac testing is equal to 40 years of real-world exposure. WeatherBond requires its WeatherBond TPO membranes to pass the equivalent of 40 years of exposure in the Q-Trac.

WeatherBond Test - Q-Trac

	ASTM D6878 Requirement	WeatherBond TPO Results
ASTM Test	N/A	Equivalent of 40 years of exposure



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Environmental Cycling subjects the membrane to repeated cycles of heat aging, hot-water immersion and xenon-arc exposure.

- ASTM requirement - none
- WeatherBond EXTREME test^{††}:
 - 10 days heat aging at 240°F (116°C) followed by
 - 5 days water immersion at 158°F (70°C) or with another specimen set
 - 5040 kJ/m² (2000 hrs at 0.70 W/m² irradiance) xenon-arc exposure

^{††} Test specimen is 2.75" by 5.5" piece of membrane with edges sealed.

^{††} Criterion - after 3 complete cycles, test specimens shall remain flexible and not have any cracking under 10x magnification while wrapped around a 3"-diameter mandrel.

Supplemental Approvals, Statements and Characteristics

1. WeatherBond TPO meets or exceeds the requirements of ASTM D6878 Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing.
2. Radiative properties for ENERGY STAR, Cool Roof Rating Council (CRRC) and LEED.
3. WeatherBond TPO membranes conform to requirements of the U.S.E.P.A. **Toxic Leachate Test** (40 CFR part 136) performed by an independent analytical laboratory.
4. WeatherBond TPO reinforced membrane was tested for **dynamic puncture** resistance per ASTM D5635-04 using the most recently modified impact head. 45-mil was watertight after 12.5 J (9.2 ft-lbf). The 80-mil product was watertight after an impact energy of 30.0 J (22.1 ft-lbf).
5. NSF-P151 Certification for rainwater catchment system components.
 - Plant 91/White Only

LEED Information

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Locations	Senatobia, MS Tooele, UT Carlisle, PA
Solar Reflectance Index	White: 99; Tan: 86

Radiative Properties for ENERGY STAR[®], Cool Roof Rating Council (CRRC) & LEED[®]

	Test Method	White TPO	Tan TPO	Gray TPO
ENERGY STAR initial solar reflectance	Solar Spectrum Reflectometer	0.79	0.71	N/A
ENERGY STAR initial solar reflectance after 3 years	Solar Spectrum Reflectometer (after cleaning)	0.70	0.64	N/A
CRRC initial solar reflectance	ASTM C1549	0.79	0.71	0.46
CRRC solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.70	0.64	0.43
CRRC initial thermal emittance	ASTM C1371	0.90	0.86	0.89
CRRC thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.86	0.87	0.88
LEED thermal emittance	ASTM E408	0.90	0.86	0.86
Solar Reflectance Index (SRI)	ASTM E1980	99	86	53
Solar Reflectance Index (SRI) 3 years aged		85	77	48

Radiative Properties (Initial) for Special Colors

	Reflectance	Emittance	SRI
Medium Bronze	0.28	0.86	29
Rock Brown	0.25	0.87	26
Slate Gray	0.38	0.87	42
Terra Cotta	0.25	0.86	25
Patina Green	0.25	0.88	25

Solar Reflectance Index (SRI) is calculated per ASTM E1980. The SRI is a measure of the roof's ability to reject solar heat, as shown by a small temperature rise. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is 0 and a standard white (reflectance 0.80, emittance 0.90) is 100. Materials with the highest SRI values are the coolest choices for roofing. Due to the way SRI is defined, particularly hot materials can even take slightly negative values and particularly cool materials can even exceed 100.

*ENERGY STAR recommends that using the Roof Savings Calculator (rsc.cml.gov), which factors in both heating and cooling costs, to determine whether a cool roof will be an energy efficient choice for your geographic climate and building type.



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Typical Properties and Characteristics

Physical Property	ASTM D6878 Requirement	45-mil	60-mil	80-mil
Tolerance on nominal thickness, % ASTM D751 test method	+15, -10	± 10	± 10	± 10
Thickness over scrim, in. (mm) ASTM D7635 optical method, average of 3 areas	0.015 min (0.380)	0.018 typ (0.457)	0.024 typ (0.610)	0.034 typ (0.864)
Breaking strength, lbf (kN) ASTM D751 grab method	220 (976 N) min	225 (1.0) min 320 (1.4) typ	250 (1.1) min 360 (1.6) typ	350 (1.6) min 425 (1.9) typ
Elongation break of reinforcement, % ASTM D751 grab method	15 min	15 min 25 typ	15 min 25 typ	15 min 25 typ
Tearing strength, lbf (N) ASTM D751 proc. B 8 in. x 8 in.	55 (245) min	55 (245) min 130 (578) typ	55 (245) min 130 (578) typ	55 (245) min 130 (578) typ
Brittleness point, °F (°C) ASTM D2137	-40 (-40) max	-40 (-40) max -50 (-46) typ	-40 (-40) max -50 (-46) typ	-40 (-40) max -50 (-46) typ
Linear dimensional change, % ASTM D1204, 6 hours at 158°F	± 1 max	± 1 max -0.2 typ	± 1 max -0.2 typ	± 1 max -0.2 typ
Ozone Resistance, no cracks 7X ASTM D1149, 100 pphm, 168 hrs	PASS	PASS	PASS	PASS
Water absorption resistance, mass % ASTM D471 top surface only 166 hours at 158°F water	± 3.0 max	± 3.0 max 0.9 typ	± 3.0 max 0.9 typ	± 3.0 max 0.9 typ
Factory seam strength, lbf (N) ASTM D751 grab method	66 (290) min	66 (290) min	66 (290) min	66 (290) min
Field seam strength, lbf/in (kN/m) ASTM D1876 tested in peel	No requirement	25 (4.4) min 50 (8.8) typ	25 (4.4) min 60 (10.5) typ	40 (7.0) min 70 (12.3) typ
Water vapor permeance, Perms ASTM E96 proc. B	No requirement	0.10 max 0.05 typ	0.10 max 0.05 typ	0.10 max 0.05 typ
Puncture resistance, lbf (kN) FTM 101C, method 2031 (see supplemental section)	No requirement	250 (1.1) min 325 (1.4) typ	300 (1.3) min 350 (1.6) typ	400 (1.8) min 450 (2.0) typ
Properties after heat aging ASTM D573, 32 weeks @ 240°F or 8 weeks @ 275°F Weight change, % No cracking when bent around 3" diameter mandrel	PASS No cracking ±1.5 max	PASS No cracking 1.0 max	PASS No cracking 1.0 max	PASS No cracking 1.0 max
Typical Weights		0.23 lb/ft ² (1.1 kg/m ²)	0.29 (1.4)	0.40 (2.0)

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.



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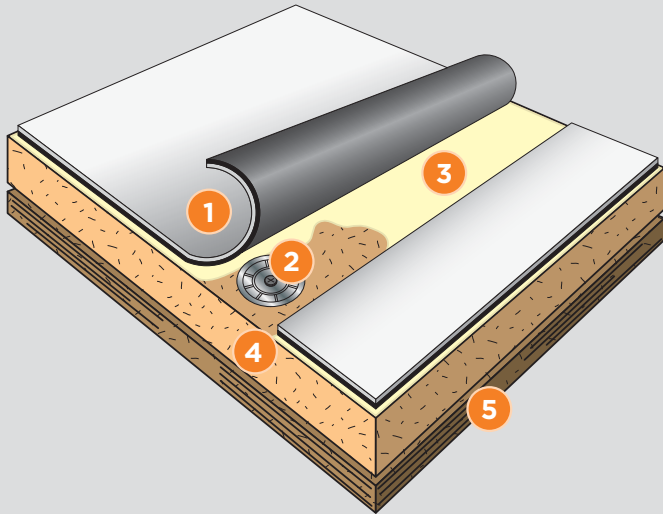
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WeatherBond TPO

Fully Adhered Roofing System



Typical Application

- 1 WeatherBond TPO Reinforced Membrane
- 2 Insulation Fasteners and Plates
- 3 TPO Bonding Adhesive or CAV-GRIP III Low-VOC Adhesive/Primer
- 4 Acceptable Insulation
- 5 Approved Roof Deck

Colors:	White, Gray, Tan
Standard Thicknesses:	45-, 60- and 80-mil
Standard Widths:	6', 8', 10' and 12'
Standard Lengths:	100'

System Features And Benefits:

- Heat-weldable membranes
- High wind uplift performance
- High hail and puncture resistance
- Top-ply membrane thickness adds improved long-term weatherability and durability
- White and tan membranes are ENERGY STAR®*-qualified

Installation

The WeatherBond TPO Fully Adhered Roofing System utilizes white, gray, or tan 45-, 60-, or 80-mil thick reinforced TPO membrane.

Insulation, where required, is secured to an acceptable roof deck. WeatherBond TPO membrane sheets are fully adhered to the insulation or substrate with TPO Bonding Adhesive. Adjoining sheets are hot-air welded.

The above information represents a typical WeatherBond TPO Fully Adhered Roofing System. Refer to WeatherBond's installation instructions for more complete information.



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Existing or New Deck Type	New Construction						Re-roofing		
	Steel	Plywood or OSB	Lt. Wt. Concrete	Structural Concrete	Wood Planks	Gypsum & Fibrous Cement	Smooth-Surface BUR	Gravel-Surfaced BUR	Existing Single-Ply
Insulation Required	Yes	No	*Refer to Specs	No	Yes	Yes	No	Yes	Yes
Recommended Insulations	Polyiso, Recovery Board or Polystyrene with an Approved Coverboard						← Refer to New Construction		
Insulation Attachment	Adhesive (non-penetrating), Insulation or HPW Fasteners						← Refer to New Construction		
Membrane Attachment	TPO Bonding Adhesive or CAV-GRIP III Low-VOC Adhesive/Primer						← Refer to New Construction		

FOR TEAR OFF OPTIONS REFER TO NEW CONSTRUCTION ABOVE.



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Fully Adhered and
Mechanically Attached **TPO**
Installation Guide



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WeatherBond TPO Installation Guide

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Introduction

This manual has been developed to serve as a reference guide for those responsible for actual roof installation, primarily the roofing foreman or lead man.

The following pages contain routine pre-installation precautions, safety reminders, basic installation procedures, and the most often utilized details pertaining to WeatherBond TPO Roofing Systems.

This manual is offered as a supplement to the Specification Manual and must always be considered as such.

What is WeatherBond TPO?

WeatherBond TPO membrane is a thermoplastic polyolefin based on advanced polymerization technology that combines the durability and weatherability of ethylene-propylene (EP) rubber with the heat weldability of polypropylene. The membrane is specifically formulated for long-term weather resistance without the use of plasticizers.

Physical properties of the membrane are enhanced by a strong polyester fabric that is encapsulated between the TPO-based top and bottom plies. The combination of the fabric and TPO plies provide WeatherBond TPO reinforced membranes with high breaking and tearing strength and puncture resistance, all critical to the performance of mechanically fastened roofing assemblies.

Thermoplastic polyolefin material has been successfully used in the automotive industry since the early part of 1980 as trim accessories, bumpers and dashboard coverings. In 1989, TPO was sought as a replacement to other heat-weldable roofing materials and continues to gain popularity, especially in those locations where light-colored membrane is desired.

The WeatherBond TPO membrane offers:

- 0.045", 0.060", and 0.080" thicknesses
- Available in white, gray and tan
- Environmentally sensitive membrane, contains no plasticizers or chlorine
- Greater thickness above scrim compared to most manufacturers
- Easy installation and fewer components
- Wider sheets allowing for labor and material savings during installation
- Greater welding speeds
- Energy efficiency; obtained the **U.S. Environmental Protection Agency ENERGY STAR®** label (white WeatherBond TPO Membrane)
- Color stability and superior weather resistance

Roof System Description

WeatherBond Mechanically Fastened TPO Roofing System

- Incorporates 12' (3.7 m), 10' (3 m), or 8' (2.4 m) wide, 0.045" (1 mm), 0.060" (1.5 mm), or 0.080" (2.03 mm) thick scrim-reinforced, white WeatherBond Thermoplastic Polyolefin (TPO) membrane field sheets.
- Insulation is mechanically fastened to an acceptable roof deck.
- WeatherBond TPO perimeter sheets (6' or 4'-wide respectively), installed along building edges, and field membrane sheets are mechanically fastened to the roof deck with the appropriate WeatherBond Fasteners and Fastening Plates.
- Adjoining sheets of WeatherBond TPO membrane are overlapped and joined together with a minimum 1½" (4 cm)-wide hot-air weld.

WeatherBond Adhered TPO Roofing System

- The primary membrane is fully adhered to an approved insulation or substrate with WeatherBond TPO Bonding Adhesive.
- Adhesive is applied to both the membrane surface and the substrate at a coverage rate of approximately 60 square feet per gallon per finished surface (includes coverage on both membrane and substrate).

Products

The following is a brief outline of WeatherBond TPO products including descriptions, shelf life, packaging, application procedures and cautions and warnings. For additional information, refer to "Attachment I," Products, in the Design Criteria section of the WeatherBond TPO Specification or the applicable Technical Data Bulletins.

WeatherBond TPO Membrane

WeatherBond standard reinforced 0.045" (1 mm), 0.060" (1.5 mm), or 0.080" (2.03 mm) thick Thermoplastic Polyolefin (TPO) is available in white. Special colors are also available. Membrane rolls of 12', 10' and 8' feet (3.7 m, 3 m, and 2.4 m) wide by 100' (30 m) lengths are used as field sheets. Perimeter sheets are available in 6' and 4' (1.8 m, 1.2 m) widths by 10' lengths. 6-foot-wide perimeter sheets are used with 10'- and 12'-wide field sheets and 4'-wide perimeter sheets are used with the 8'-wide membrane.

0.045" thick standard membrane weighs approximately 0.25 pounds per square foot (1.2 kg/m²), 0.060"-thick membrane weighs 0.34 pounds per square foot (1.7 kg/m²), and 0.080"-thick membrane weighs 0.40 pounds per square foot (2.0 kg/m²).

For complete physical properties, refer to "Attachment I" of the Design Criteria Section of the WeatherBond TPO Specification.

Adhesives and Sealants

TPO Cut-Edge Sealant

Description: Used to seal cut edges of reinforced WeatherBond TPO membrane where scrim reinforcement is exposed. Available in clear and white.

Shelf Life: 1 year

Packaging: Eight 16-ounce (.45 kg) bottles per carton

Coverage: Approximately 225–275 linear feet per squeeze bottle when applied with ⅛" (3 mm) diameter bead.

Application:

1. All surfaces must be clean, dry and free from oil, grease, dirt and other foreign materials. Do not apply to vertical surfaces.
2. Sealant should be tack-free in 2 hours and fully cured in 24 hours depending on weather conditions and application thickness.

Cautions and Warnings:

- Flammable; contains solvents that are fire and explosion hazards when exposed to heat.
- Do not smoke while applying.
- Avoid using in confined or unventilated areas.
- Vapors are heavier than air and may travel along the ground to a distant ignition source and flashback.
- Avoid breathing vapors; keep container closed when not in use.
- Avoid contact with eyes; safety glasses or goggles are recommended.
- Avoid contact with skin; wash thoroughly after handling.
- Review the TPO Cut-Edge Sealant Material Safety Data Sheet for complete safety information prior to use.
- Keep out of the reach of children.

WeatherBond TPO Bonding Adhesive

Description: A high-strength, solvent based contact adhesive used for bonding WeatherBond TPO membrane to various surfaces.

Packaging: 5-gallon (19 l) pails

Shelf Life: 1 year

Coverage: 60 square feet per gallon (5.6 m²/l) finished surface (includes coverage on both surfaces). Coverage rate is average and may vary due to conditions on the jobsite. Porous surfaces and substrates may require more bonding adhesive than the typical coverage rate.

Application:

1. The surface should be clean, smooth, dry, free of fins, sharp edges, loose and foreign materials, oil and grease.
2. Remove all sharp projections by sweeping, blowing or vacuuming.
3. Do not thin. Thinning will affect performance. Excessively thick or gelled material should be discarded.
4. After thoroughly stirring (minimum 5 minutes), apply to substrate and membrane using a ½" (13 mm)-thick, medium nap roller.
5. Avoid globs or puddles.
6. Do not apply to splice areas that are to be hot-air welded.
7. The adhesive should be dry to the touch prior to closing the membrane.
8. Roll membrane onto the adhesive-coated substrate while avoiding wrinkles.
9. Immediately brush down the bonded portion of the sheet with a soft bristle push broom or clean, dry roller applicator to achieve maximum contact.
10. Opened containers of adhesive should be used within 48 hours.
11. Adhesive must be allowed to dry thoroughly before closing membrane. If excess solvent remains in adhesive layer when membrane is installed, blisters may form under the membrane. Typically, these blisters will not dissipate over time.

Cautions and Warnings:

- Flammable.
- Contains solvents that are dangerous fire and explosion hazards when exposed to heat.
- Do not smoke while applying.
- Do not use in confined or unventilated areas.

- Vapors are heavier than air and may travel along the ground to a distant ignition source and flashback.
- Ground containers when transferring from one container to another.
- Avoid breathing vapors; keep container closed when not in use.
- Avoid contact with eyes; safety glasses or goggles are recommended.
- Avoid contact with skin; wash thoroughly after handling. Gloves are recommended to be worn when using this product.
- Review the WeatherBond TPO Bonding Adhesive Material Safety Data Sheet for complete safety information prior to use.
- Keep out of the reach of children.

TPO Low-VOC Bonding Adhesive

Description: A high-strength, solvent-based contact adhesive that allows bonding of WeatherBond TPO membrane to various porous and non-porous substrates. It is specially formulated using a blend of VOC-exempt and non-exempt solvents to be in compliance with the state of California Clean Air Act of 1988 (updated in 1997) and as further regulated by California's Air Quality Control Districts listing VOC grams per liter limitations.

This product does not comply with the following California counties' VOC regulations: Alameda, Contra Costa, El Dorado, Los Angeles, Marin, Napa, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Mateo, Santa Clara, Solano, Sonoma and Tehama. These areas require WeatherBond's Low-VOC Bonding Adhesive 1168.

Packaging: 5-gallon (19 l) pails

Shelf Life: 1 year

Coverage: 60 square feet per gallon (5.6 m²/l) finished surface (includes coverage on both surfaces). Coverage rate is average and may vary due to conditions on the jobsite. Porous surfaces and substrates may require more bonding adhesive than the typical coverage rate.

Application:

1. The surface should be clean, smooth, dry, free of fins, sharp edges, loose and foreign materials, oil and grease.
2. Remove all sharp projections by sweeping, blowing or vacuuming.
3. Do not thin. Thinning will affect performance. Excessively thick or gelled material should be discarded.
4. After thoroughly stirring (minimum 5 minutes), apply to substrate and membrane using a ½" (13 mm)-thick, medium nap roller.

5. Avoid globs or puddles.
6. Do not apply to splice areas that are to be hot-air welded.
7. An open time of 5 to 50 minutes based on drying conditions is recommended before assembly. The adhesive should not string.
8. Roll membrane onto the adhesive-coated substrate while avoiding wrinkles.
9. Immediately brush down the bonded portion of the sheet with a soft-bristle push broom or clean, dry roller applicator to achieve maximum contact.
10. Opened containers of adhesive should be used within 48 hours.
11. Adhesive must be allowed to dry thoroughly before closing membrane. If excess solvent remains in adhesive layer when membrane is installed, blisters may form under the membrane. Typically, these blisters will not dissipate over time.

Cautions and Warnings:

- Extremely flammable.
- Contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or sparks.
- Do not smoke while applying.
- Do not use in confined or unventilated areas.
- Vapors are heavier than air and may travel along the ground to a distant ignition source and flashback.
- Ground containers when transferring from one container to another.
- A red caution label is required when shipping.
- A fire extinguisher should be available. In case of fire, use water spray, foam, dry chemical or carbon dioxide.
- Avoid breathing vapors; keep container closed when not in use. Use with adequate ventilation.
- Avoid contact with eyes; safety glasses or goggles are recommended.
- Avoid contact with skin; wash thoroughly after handling. Gloves are recommended to be worn when using this product.
- If swallowed, DO NOT INDUCE VOMITING. Call a physician immediately.
- Review the Low-VOC Bonding Adhesive Material Safety Data Sheet for complete safety information prior to use.
- Keep out of the reach of children.

Weathered Membrane Cleaner

Description: Used to prepare membrane for heat welding that has been exposed to the elements for a period of 7 days or longer.

Packaging: 1- and 5-gallon pails (3.8 and 19 liters)

Shelf Life: 1 year

Coverage: 400 ft² (37 m²) per gallon for a typical 1½" (4 cm)-wide standard hot-air-welded splice area.

Application:

1. Apply to the surface of the material that has been exposed to weather for a period of 7 days or longer.
2. White natural fiber rags should be used to wipe along the direction of the seam.
3. A Primer Pad may be necessary to remove a heavy build-up of dirt. Pour a small amount of Weathered Membrane Cleaner over a primer pad and rub the area to be welded using a circular motion. Wipe away residual dirt with natural fiber rags.

Cautions and Warnings:

- Combustible liquid. Close lid when not in use.
- Avoid contact with eyes. Use of safety glasses or goggles is recommended.
- Avoid contact with skin; wash thoroughly after handling.
- Use of oil-resistant gloves is recommended.
- Review the Weathered Membrane Cleaner Material Safety Data Sheet for complete safety information prior to use.
- Keep out of the reach of children.

TPO Primer

Description: WeatherBond's TPO Primer is a high solids content, clear (translucent color) polymer-based splice primer used to prepare TPO membrane for improved adhesion to TPO Pressure Sensitive Coverstrip and TPO RUSS. TPO primer is also utilized to coat the inside of the sealant pockets and penetrations prior to filling with sealant.

Packaging: One carton contains six 1-gallon containers.

Coverage: Approximately 200 to 250 square feet (19–24 m²) (one surface) per gallon.

Shelf Life: Up to twelve months (unopened container)

Application:

1. The surface to which the primer is being applied must be clean and dry. TPO membrane can be cleaned with Weathered Membrane Cleaner prior to primer application.
2. Thoroughly stir primer until all settled materials are blended into the solution.
3. Apply the primer with a clean natural fiber rag, paint brush, or 4"-wide short nap paint roller to achieve a thin, even coating on the membrane. The properly primed area will be free of globs or puddles. Apply primer to a wider area than the actual bonding area to insure complete coverage.
4. The excessive use of TPO Primer will not significantly enhance the adhesion of the Pressure Sensitive products or TPO Molded Pocket Sealant. Use only the amount necessary to obtain 100% coverage of the area where the tape or sealant will be applied.
5. Allow the TPO Primer to dry completely before applying TPO Coverstrip or TPO RUSS. Drying conditions will vary depending on ambient air conditions.
6. Install the Pressure Sensitive material or pocket sealant per instructions.

Cautions and Warnings:

- **Warning! Harmful if swallowed. Flammable liquid. May be irritating to skin and eyes.**
- If swallowed, do not induce vomiting. Call physician immediately.
- In case of fire, handle as a solvent or gasoline fire. Use dry chemical, carbon dioxide or foam fire extinguishers.
- Precautions should be taken to keep the primer away from heat, flame and sparks during storage and use. Do not smoke while using. Keep lid closed when not in use.
- Use with adequate ventilation. Avoid breathing vapors.
- Permeation resistant gloves (that meet ANSI/ISEA) recommended.

- Jobsite storage temperatures in excess of 90°F (32°C) may affect product shelf life. Should the primer be stored at temperatures lower than 60°F (15°C), restore at room temperature prior to use.
- Review the TPO Primer Material Safety Data Sheet for complete safety information prior to use.
- Keep out of the reach of children.

Universal Single-Ply Sealant

Description: Universal Single-Ply Sealant is a 100% solids, solvent-free, Low-VOC, one-part, polyether sealant that provides a weather tight seal to a variety of building materials. It is white in color and is used for general caulking such as above termination bars and metal counter flashings and at scupper details.

Packaging: 24 cartridges, 10.1 fl. oz. each

Coverage: A 3" diameter bead will cover approximately 25 linear feet.

Shelf Life: 12 months unopened container @ 90°F

Application:

1. Joint surfaces shall be clean and dry, clean and free of all dust, or contamination, which may adversely affect the adhesion of the sealant. In the event mechanical cleaning is required, area shall be wiped with Weathered Membrane Cleaner and the solvent allowed to evaporate prior to sealant application.
2. Apply sealant with standard caulking equipment using sufficient pressure to ensure uniform coverage.
3. TPO Primer must be applied to TPO membrane and TPO flashings prior to application of Universal; Single Ply Sealant. This will ensure proper adhesion to the TPO surfaces.
4. Universal Single-Ply Sealant typically is tack free in 25 minutes and skins over within 45 minutes. Full cure occurs in 3 to 7 days depending on temperature and humidity.

Cautions and Warnings:

- Avoid prolong contact with skin. Uncured adhesive irritates eyes. In case of contact with eyes, immediately flush with water. Consult a physician if ill effects occur.
- See Material Safety Data Sheet for complete safety information prior to use.
- Keep out of the reach of children.

Thermoplastic One-Part Pourable Sealer

Description: TPO One-Part Pourable Sealer is a single-component, moisture-curing, elastomeric polyether sealant providing rapid skin time when exposed to atmospheric moisture, forming a waterproof rubber surface in less than an hour. Moisture curing continues for fourteen to twenty-eight days, until a 2"-deep solid rubber seal encases the penetration. Complete cure time will vary depending on relative humidity and temperature.

Packaging: Four 0.5-gallon pouches per bucket (four 2 liter)

Coverage: One 0.5-gallon pouch (2 liters) will fill 122 cubic inches of volume within a sealant pocket. One 6" TPO Molded Sealant Pocket will require 0.23 gallons (0.87 liters) to fill completely (with no penetrations).

Shelf Life: 18 months unopened container. After opening, any unused sealant remaining in a pouch will remain useable up to 30 days if the pouch is resealed with original cap.

Application:

1. Bonding surfaces must be free of moisture, dirt, or any contaminants. Any previously applied asphalt, caulking, or sealants must be removed from the penetration(s). Clean all surfaces with Weathered Membrane Cleaner.
2. Fill any voids in the roof deck around the penetration(s) to prevent sealant from seeping through roof.
3. TPO Primer is required. Apply TPO Primer to all bonding surfaces including penetration(s), TPO membrane, inside walls and rim of TPO Molded Sealant Pocket. Allow primer to dry.
4. Remove cap from pouch and pour Thermoplastic One-Part Pourable Sealer directly into pocket. Fill pocket completely until rim is covered with Thermoplastic One-Part Pourable Sealer making sure all voids are filled.
5. To save unused sealant, squeeze air from pouch and replace cap. Unused sealant should be used within 30 days.
6. For best result maintain this product at room temperature before application.
7. For cold weather applications remove any frost or moisture from inside pocket using a hand held heat gun. Proceed with installation steps 1-5.

Cautions and Warnings:

- Uncured adhesive irritates eyes.
- Avoid prolonged skin contact.
- In case of eye contact immediately flush with water and call a physician.

- Review the Thermoplastic One-Part Pourable Sealer Material Safety Data Sheet for complete safety information prior to use.
- Keep out of the reach of children.

WeatherBond Water Cut-Off Mastic

Description: WeatherBond Water Cut-Off Mastic is used to prevent moisture migration at drains, compression terminations and beneath conventional metal edging.

Packaging: 25 tubes per carton

Coverage: 10' (3 m) per tube using a ½" (13 mm) bead

Shelf Life: 1 year unopened container

Application:

1. All surfaces to be sealed with WeatherBond Water Cut-Off mastic must be a masonry, metal or glass substrate and free of moisture, oil, dirt and other foreign materials.
2. Apply a ½" (13 mm) bead of WeatherBond Water Cut-Off mastic between the substrate and the edge of the membrane.
3. Apply appropriate termination material and secure to provide constant compression for the WeatherBond Water Cut-Off Mastic.

Cautions and Warnings:

- WeatherBond Water Cut-Off mastic is flammable. It contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or sparks. Store away from all sources of heat, flame or sparks. Do not smoke while applying. Do not use in a confined or unventilated area.
- Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation.
- Avoid contact with eyes. Safety glasses are recommended. If splashed in eyes, immediately flush eyes with clean water for at least 15 minutes. Contact a physician immediately.
- Avoid contact with skin. Wash hands thoroughly after handling.
- Review the WeatherBond Water Cut-Off Mastic Material Safety Data Sheet for complete safety information prior to use.
- Keep out of the reach of children.

Pre-Molded Accessories

TPO Outside Corners

Description: A one-piece injection molded corner used for flashing outside corners on a variety of details. Available in white 0.060" (1.5 mm) thick.

Installation:

1. Begin welding at the innermost corner point and work away from the corner.
2. Use a lower temperature setting on the heat welder than when welding the reinforced membrane.
3. Use the edge of the roller to crease the corner flashing into any membrane step off for a proper seal.

Packaging: 12 corners per bag

TPO Inside Corners

Description: A pre-molded flashing product used for flashing inside corners on a variety of details. Available in white. Inside Corners are 0.060" (1.5 mm) thick.

Installation:

1. Position the Inside Corner into the building corner, begin welding at the innermost corner point and work away from the corner.
2. Use a lower temperature setting on the heat welder than when welding the reinforced membrane.
3. Use the edge of the roller to crease the corner flashing into any membrane step off for a proper seal.

Packaging: 12 corners per bag

TPO Molded Pipe Seals



Description: An injection-molded, pre-formed flashing for pipes $\frac{3}{4}$ – 8" (19.0 – 203.2 mm). Available in white, gray and tan.

Installation:

1. Cut pipe seal adjacent to raised "ring" one size smaller than pipe diameter. The boot should fit snug around the pipe.
2. Pull pipe seal over pipe until base flange is in contact with the membrane. Heat may have to be applied to the top portion of the pipe seal to allow installation over pipe.
3. Mark pipe around the top of the pipe seal.
4. Pull pipe seal upward until mark on pipe is visible.
5. Install WeatherBond Water Cut-Off Mastic below mark that indicates the top of the installed pipe seal.
6. Pull pipe back down and into position.
7. Heat-weld the pipe seal base flange to deck membrane.
8. Install a stainless steel universal clamping ring to provide constant compression of the sealant. On a 1"-diameter pipe, double wrap the clamping ring to achieve proper bite of the clamping screw.

Packaging: Boxes of 8 including universal clamping rings

TPO Molded Sealant Pockets



Description:

- A two-piece, interlocking injection-molded flexible pocket with a rigid polypropylene vertical wall and pre-formed deck flanges. Available in white.
- Pockets can be adjusted from 7½ to 11 ½" in length.
- Used in conjunction with TPO Molded Pocket Sealant and TPO Primer.
- Used to waterproof pipe clusters or other odd-shaped penetrations on WeatherBond TPO Roofing Systems.

Installation:

1. Clean the inside of the Molded TPO Sealant Pocket as well as the areas where the pocket flange overlaps, the underside of the pocket flange and the deck membrane with Weathered Membrane Cleaner. (Use a Primer Pad with the cleaner if the membrane has been exposed for an extended period of time).
2. Place the Molded TPO Sealant Pocket around the penetration(s), overlapping the two sections of the pocket.
3. Cut a piece of cardboard (approx. 4" by 4") and place between the overlapping area of the Molded TPO Sealant Pocket and the deck membrane. The cardboard prevents the pocket from welding to the membrane when first welding the overlaps.
4. Using a hand welder, weld the angle change in the overlap area. Using the end of a seam probe assists in this process. (The hand welder temperature setting should be between 5 and 6).

5. Hand-weld the remainder of the horizontal overlap.
6. Repeat steps 4 and 5 to weld the overlap on the other side of the Molded TPO Sealant Pocket.
7. Position the Molded TPO Sealant Pocket so that the vertical overlap is against the penetration. This will allow proper pressure to be applied to the overlap with the 2" silicone roller.
8. Weld both vertical overlaps starting at the angle change and progressing to the top of the pocket.
9. Make tack-welds on all four sides of the sealant pocket to hold it in place.
10. Weld the entire horizontal flange to the deck membrane.
11. Using a seam probe, check all splices for voids and cold-welds. Make any needed repairs.
12. Apply a thin coat of TPO to the inside and around the top rim of the pocket, to the deck membrane inside the pocket, and to the penetration using a small paint brush.
13. Fill the pocket with Thermoplastic One-Part Pourable Sealer. Use an adequate amount of sealant to ensure that contact is made with the top rim of the pocket.

Packaging: Five TPO Molded Sealant Pockets per carton

Prefabricated Products

TPO Split Pipe Seals



Description: A prefabricated flashing made of 45-mil reinforced WeatherBond TPO membrane for pipes 1" (25.4 mm) to 6" (152.4 mm) in diameter. A split (cut) and overlap tab are incorporated into these parts to allow the pipe seals to be opened and wrapped around a round pipe with an obstruction. Such obstructions prevent the use of a standard pre-molded pipe seal. Sizes are available in white only.

Installation: Order the proper size pipe seal. The following outlines the method to determine the proper size.

The nominal diameter of the pipe seal indicates the maximum size the part will effectively fit. Each pipe seal can accommodate a pipe $\frac{1}{8}$ " smaller in diameter than the nominal size indicates. For example, the 2" part can be utilized to flash pipes from $1\frac{1}{8}$ " to 2" in diameter, the 3" part will fit pipe diameters from $2\frac{1}{8}$ " to 3" in diameter, etc.

1. Open pipe seal by pulling apart the tack welds located on the vertical leg of the flashing.
2. Wrap the pipe seal around the pipe until the vertical leg is tight against the outside diameter of the pipe.
3. Tack-weld the back edge of the pipe seal's vertical leg ensuring that good contact is maintained between the pipe seal and the pipe. This process will hold the pipe seal in place.
4. Heat-weld the entire width of the vertical overlap. Hand-roll against the outer surface of the pipe to create the pressure necessary to achieve an acceptable weld.

5. Heat-weld the base flange to the deck membrane and complete the horizontal overlap weld.
6. Install a bead of WeatherBond Water Cut-Off Mastic between the installed pipe seal and the pipe.
7. Install a stainless steel universal clamping ring to provide constant compression of the sealant.
8. Apply TPO Cut-Edge Sealant to all edges of the pipe seal that are located on the horizontal plane. Do not apply the sealant to vertical surfaces.

Packaging: Boxes of 8 including universal clamping rings

TPO Square Tubing Wraps



Description: A prefabricated flashing made of 60-mil reinforced WeatherBond TPO membrane. A split (cut) and overlap tab are incorporated into these parts to allow the seals to be opened and wrapped around square tubing with an obstruction. Stock sizes include: 3" (76 mm) by 3" (76 mm), 4" (102 mm) by 4" (102 mm), 5" (127 mm) by 5" (127 mm), and 6" (152 mm) by 6" (152 mm). Overall height of the flashings is 11 inches. Stock sizes are available in white only.

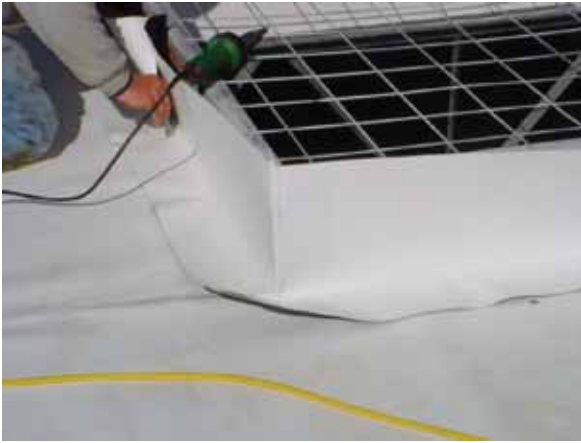
Installation:

1. Clean the penetration to eliminate any rust or scale and wipe with a natural fiber rag saturated with Weathered Membrane Cleaner.
2. Open square tubing wrap by pulling apart the tack welds located on the vertical leg of the flashing.
3. Wrap the square tubing wrap around the penetration until the vertical leg is tight against the penetration.
4. Mark the tubing $\frac{1}{4}$ " above the top of the square tubing wrap.
5. Remove the square tubing wrap from around the pipe.
6. Prime the areas of the tubing and square tubing wrap where the tape will contact with the TPO Primer.
7. Wrap a piece of 3"-wide White Peel & Stick Seam Tape (included in the box) around the penetration at the mark made previously. The tape should overlap approximately one inch.

8. Wrap the square tubing wrap around the penetration until the vertical leg is tight against the penetration. Use a 2" roller to roll the membrane into the tape.
9. Tack-weld the back edge of the square tubing wrap's vertical leg ensuring that good contact is maintained between the tubing wrap and the penetration. This process will hold the square tubing wrap in place.
10. Heat-weld the entire width of the vertical overlap. Hand-roll against the outer surface of the penetration to create the pressure necessary to achieve an acceptable weld.
11. Heat-weld the base flange to the deck membrane and complete the horizontal overlap weld.
12. Using a probe, check all splices for voids and cold-welds. Make any needed repairs.
13. Apply a bead of Universal Single-Ply sealant at the top of the tubing wrap so the seam tape and the top of the square tubing wrap are covered with sealant.
14. Apply WeatherBond TPO Cut-Edge Sealant to all edges of the square tubing wrap that are located on the deck. Do not apply the sealant to vertical surfaces.

Packaging: TPO Square Tubing Wraps are packaged in boxes of eight and include the necessary pressure-sensitive tape to complete the topside termination.

TPO Curb Wrap Corners



Description: A prefabricated flashing made of 60-mil reinforced WeatherBond TPO membrane designed to reduce installation time to flash a curb when compared to conventional methods. Each corner is fabricated with a 6" (150 mm)-wide base flange and a 12" (300 mm) overall height. Available in three sizes to fit curbs up to 36" x 36" (0.9 m x 0.9 m) in size. One curb requires 4 corners for a complete installation. Stock sizes are available in white only; gray and tan are available on a special order basis. Custom sizes are also available on a special order basis.

Installation:

1. Remove curb wrap corners from the shipping box. Crease the flashing to create the 90-degree angle change at the curb base. Complete this on both legs of the corners.
2. Clean the deck membrane with Weathered Membrane Cleaner. (Use a Scotch-Brite Pad with the cleaner if the membrane has been exposed for an extended period of time.)
3. Position four TPO Curb Wrap Corners around the curb ensuring each remains plumb and tack-weld in place.
4. Weld the four corners together after placing a piece of cardboard between the deck membrane and the deck flange overlaps. (The cardboard prevents the horizontal deck flange from fusing to the deck membrane, allowing the entire flange to be welded with an autowelder later in the installation process.)
5. After removing the cardboard pieces, weld the horizontal deck flanges of the curb wrap to the deck membrane with an auto- or hand-held welder. If an autowelder is utilized, at each outside corner the nozzle must be removed to change directions. Leave an opening large enough to insert the nozzle of a handheld welder and weld these areas tight once the rest of the deck flange is welded in place.

6. Using a seam probe, check all splices for voids and cold-welds. Make any needed repairs.
7. Nail off or tack-weld the flashing to the top of the curb.
8. Apply WeatherBond TPO Cut-Edge Sealant to all edges of the flashing on the deck. Do not apply the sealant to vertical surfaces.

Packaging: TPO Curb Wrap Corners are packaged in boxes of twelve.

Other Products

TPO Coated Metal

Description:

- 24-gauge (.9 mm) galvanized steel sheet coated with a layer of .035" (.9 mm)-thick, non-reinforced WeatherBond TPO Flashing.
- The sheet is cut to the appropriate width and used to fabricate metal drip edges or other roof perimeter edging profiles.
- WeatherBond TPO Membrane may be heat-welded directly to the coated metal. Coated metal is available in sheets 4' X 10' (1.2 m x 3 m) and comes packaged 10 or 25 sheets per pallet.
- Available in white, gray and tan.

TPO Heat-Weldable Walkway Rolls

Description:

- Made from specially compounded TPO offering superior flexibility and tear, puncture, and weather resistance.
- Herringbone tread pattern offers superior slip resistance.
- Designed to protect the WeatherBond TPO membrane in those areas exposed to repetitive foot traffic or other hazards.
- May be heat-welded to the WeatherBond TPO membrane using an automatic heat welder or hand-held heat welder.
- Walkway Rolls are 34" (86.36 cm) wide by 50' (15.25 m) long and are nominal 170 mils (3.1 mm) thick.
- Stocked in white, gray and tan.

Packaging: 97 pounds per roll

Installation:

1. If membrane or walkway has been exposed for over 7 days, use Weathered Membrane Cleaner and a Primer Pad to prepare the area to be welded to the walkway material.
2. Once the cleaner has dried completely, position the walkway material. Cut the Walkway Rolls into maximum 10' length and position with a 1" gap between adjacent pieces to allow for water drainage. Cut the walkway so a 4" minimum gap is created over any field splices. (Since the attachment of the walkway to the membrane is permanent, this will allow for access to the field seams.)
3. Using an automated welder, weld all four sides of the walkway material to the membrane. (Typically the same speed and temperature settings will be used for this procedure as for welding membrane to membrane. A test weld is always recommended prior to performing welds to the installed membrane.) A hand-welder may be utilized, however, productivity will be decreased.

Cautions and Warnings:

- Walkway Rolls are a maintenance item and are not covered under the WeatherBond membrane systems warranty.

Peel & Stick Molded Walkway Pads

Description: White Peel & Stick Walkway Pads consist of molded EPDM with a slip-resistant surface. The product combines Peel & Stick Seam Tape technology with an EPDM-based walkway pad, providing a laborsaving alternative for the applicator. Three-inch-wide Peel & Stick Seam Tape on poly release film eliminates the need for additional heat welding.

Installation:

1. Clean the existing membrane (and metal if applicable) with Weathered Membrane Cleaner.
2. Prime the membrane (and metal if applicable) using standard TPO Primer.
3. Once the primer has dried to the touch, the Peel & Stick Walkway Pad is applied and secured by applying pressure to the areas where Seam Tape is in contact with the membrane.

Packaging: 50 30" x 30" pads per pallet

TPO Pressure-Sensitive Cover Strip

Description:

- A 6"-wide, 30-mil non-reinforced WeatherBond TPO membrane laminated to a 30-mil-thick, fully cured, synthetic rubber, pressure-sensitive adhesive.
- The cover strip is suitable for stripping in metal drip edge or rows of fasteners and plates used for membrane securement and is available in white.
- **Pressure-Sensitive Cover Strip cannot be used for flashing corners, pipes, T-joints or any angled metal flanges such as gravel stops or other canted metal edgings. PS Cover Strip cannot be used on 20-year warranted projects.**
- Storage and use of PS Cover Strip at temperatures below 40°F (4°C) will result in a loss of adhesive tack. Hot boxes for jobsite storage must be provided to maintain a minimum product temperature of 40°F (4°C).

Installation:

1. Clean the existing membrane (and metal if applicable) with Weathered Membrane Cleaner.
2. Prime the membrane (and metal if applicable) using standard TPO Primer.
3. Once the primer has dried to the touch, the TPO Pressure-Sensitive Cover Strip is applied and rolled using a 2"-wide roller.
4. **In areas where the TPO PS Coverstrip crosses a metal joint, a membrane seam (T-joint) or at an end lap, use a hot-air gun to heat the top surface (TPO membrane) of the TPO PS Coverstrip and crease the material into the step-off. This process reduces the possibility of a water channel forming.**

Packaging: Two 100-foot rolls per carton

TPO 6" Pressure-Sensitive RUSS

Description:

- A nominal 0.045" (1.14 mm) thick reinforced TPO membrane strip with a nominal 0.035" (0.89 mm) thick, fully cured, synthetic rubber, pressure-sensitive adhesive laminated along one edge.
- The reinforced TPO membrane is 6" (150 mm) wide while the adhesive strip is 3" (75 mm) wide.

Installation:

1. TPO Pressure-Sensitive RUSS may be used with WeatherBond TPO membrane and should only be installed on horizontal surfaces using an appropriate WeatherBond or WeatherBond approved fastener below the deck membrane to provide additional securement at angle changes.
2. For WeatherBond TPO membrane, HPWX fasteners and HPWX Plates are utilized for RUSS securement. Contact WeatherBond for a list of approved fasteners for WeatherBond EPDM membrane.
3. This product allows a continuous piece of membrane to be run up a parapet wall without fastener penetrations at the angle change.

Packaging: Two 6" (150 mm) wide X 100' (30 m) long rolls per carton

TPO 10" Pressure-Sensitive RUSS

Description:

- TPO 10" Pressure-Sensitive RUSS is used in place of narrow sheets to secure membrane in the perimeter area of the roof. The use of this product allows field membrane to be utilized over the entire roof area.
- The 10" TPO PS RUSS consists of a strip of nominal 0.045" (1.14 mm)-thick reinforced TPO membrane and a strip of nominal 0.035" (0.89 mm)-thick, fully cured, synthetic rubber, pressure-sensitive tape laminated along each edge.
- The use of this product is ideal when multiple perimeter sheets or non-standard perimeter spacings are required.

Installation:

1. The TPO 10" Pressure-Sensitive RUSS is installed by first fastening the RUSS to the deck with an appropriate WeatherBond fastener and plate.
2. The underside of the membrane is then cleaned with Weathered Membrane Cleaner (if necessary) and coated with TPO Primer in the area that is to come in contact with the pressure-sensitive tape.
3. Once the primer has dried to the touch, the membrane is positioned onto the tape and rolled using a hand roller.

Packaging: One 10" (250 mm) wide x 100' (30 m) long roll per carton

TPO Reinforced Flashing

Description:

6" wide, 0.045" thick or 9" wide, 0.060" thick reinforced WeatherBond TPO membrane. The reinforced flashing is suitable for stripping in rows of fasteners and plates used for membrane securement. The product is available in white, gray and tan.

Packaging: Three 100-foot rolls per carton

TPO Non-Reinforced Flashing

Description:

12"– or 24"–wide, 0.060"–thick non-reinforced WeatherBond TPO used where membrane must be formed to complete specific details. The product is available in white, gray and tan.

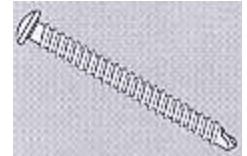
Packaging: One 50-foot roll per carton

Fasteners and Plates

HPWX Fastener

Description:

- A heavy-duty #15 threaded fastener with a #3 Phillips head design.
- Deep buttress threads (12 per inch) provide an increased surface area in contact with the bottom of the deck, increasing pullout and backout resistance.
- Black epoxy electro-deposition coating provides excellent corrosion resistance values of less than 15% red rust after 25 cycles (FM 4470 corrosion test requirement is 15% red rust after 15 cycles) in the Kesternich cabinet



Installation:

1. No predrilling necessary.
2. Insert the HPWX Fastener through the HPWX Plate (Mechanically Fastened Roofing Systems) or 3" (8 cm) diameter Insulation Plate (Adhered Roofing System) and install with a standard clutch drive electric screw gun, (2,500 rpm maximum).

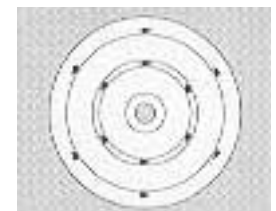
Packaging: Fasteners are packaged 1,000 or 500 per container. Plates are packaged 1,000 per container.

Pullout: Steel decks (22 gauge) – 700 pounds (318 kg) typical. Wood plank (minimum 1⁵/₃₂" plywood) – 375 pounds (170 kg) typical.

HPWX Plate

Description:

A 2³/₈" (6 cm) diameter, 20-gauge (0.9 mm), metal barbed fastening plate required for membrane securement with WeatherBond HPWX Fasteners for membrane securement. This plate can also be used for insulation securement on Mechanically Fastened Roofing Systems.

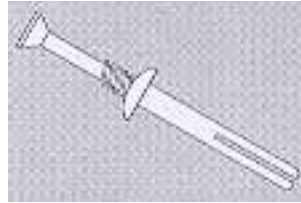


Packaging: 1,000 per container

Termination Bar Nail-Ins (By Others)

Description:

- A zinc-plated steel pin is used to provide excellent corrosion resistance while the zinc alloy body provides excellent holding power.
- Used with termination bar or Seam Fastening Plates to secure membrane to concrete block, brick or concrete walls.



Installation:

1. Drill a pilot hole with an ANSI standard 1/4" (6 mm) diameter masonry drill bit. The pilot hole must be pre-drilled to a sufficient depth to prevent contact between the fastener tip and any accumulated dust in the pre-drilled hole.
2. Insert Term Bar Nail-In and tap gently until anchor body head is set tightly against the termination bar or seam plate.
3. Hammer the drive pin flush with the head to expand the anchor body.

Jobsite Considerations

Material Safety Data Sheets must be on location at all times during the transportation, storage and application of materials. The MSDS contains important information on products including ingredients, physical characteristics, flammability, safe handling instructions, etc.

Wear sunglasses (UV filtering) to filter out ultraviolet light since the membrane surface is highly reflective.

Wear appropriate clothing (long-sleeved shirt and long pants) and **sunscreen to protect skin** from sunlight since the WeatherBond TPO membrane reflects heat and light.

Exercise care (rope off perimeter of roof) when working close to the roof edge especially when the surrounding area is snow covered. The roof edge may not be clearly visible.

Exercise caution during cold conditions to prevent falls. The **membrane surface may promote slippery conditions** due to frost and ice buildup.

Exercise caution when walking on wet membrane. **Membranes are slippery when wet.**

Place a waste can on the roof designated for oily rags to safely contain used rags that have come in contact with solvents.

Storage and Handling

Do not store adhesive containers with opened lids due to loss of solvent which occurs from flash-off.

Store WeatherBond TPO membrane in the original undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable tarpaulins.

Insulation and underlayment must be stored so they are kept dry and protected from the elements. Store insulation on a skid and completely cover with a breathable material such as tarp or canvas (weight to prevent possible wind damage).

Substrate Preparation

Defects in the substrate surface must be reported and documented to the specifier, general contractor and the building owner for assessment.

Do not proceed with the installation unless the defects are corrected.

1. **On retrofit – recover projects**, cut and remove wet insulation, as identified by the specifier. Fill all voids created by such removal with new insulation so it is relatively flush (+/- ¼") with the existing surface.
 - a. **For existing PVC membranes**, if the membrane is not removed, it must be cut into maximum 10' X 10' (3 m x 3 m) sections. All PVC flashings or PVC-coated metal at the perimeter, roof drains and roof penetrations must be removed.
 - b. When installing the roofing system over an **existing gravel surface built-up roof, loose gravel must be removed**. Power-brooming is recommended by WeatherBond to remove the loose gravel that may trap moisture. Any uneven areas of the substrate must be leveled to prevent insulation from bridging.
2. Substrate must be relatively even without noticeable high spots or depressions.
3. Accumulated water, ice or snow must be removed to prevent the absorption of moisture in the new roofing components and roofing system.
4. Prior to the placement of membrane underlayment, clear the substrate of debris and foreign material.

Wood Nailers

Factory Mutual (FM) publishes design recommendations for the attachment of wood nailers to various substrates and for the attachment of perimeter flashing details to wood nailers.

This information is contained in Factory Mutual's Loss Prevention Data Bulletin 1-49. In accordance with that bulletin, the information listed below should be referenced when selecting an appropriate perimeter attachment method.

General Criteria

1. Wood nailers that are anchored to steel, wood or masonry decking should not be less than 2" X 6" (5 cm x 15.5 cm) nominal (minimum 1½" X 5½").
2. Wood nailers should be Douglas Fir, Southern Yellow Pine or of wood having similar decay- resistant properties.

Attachment to Masonry Walls

When fastening to a masonry wall, a ½" (13 mm) corrosion-resistant anchor bolt is placed 48" (1.2 m) on center at an 8" (20 cm) minimum depth (12" minimum when masonry walls are composed of lightweight aggregate or cinder) as shown in **Figure 1**. Each anchor bolt is positioned (staggered if the wood nailer is wider than 6") in a block core or air space and tightly filled with concrete to the depth of the bolt.

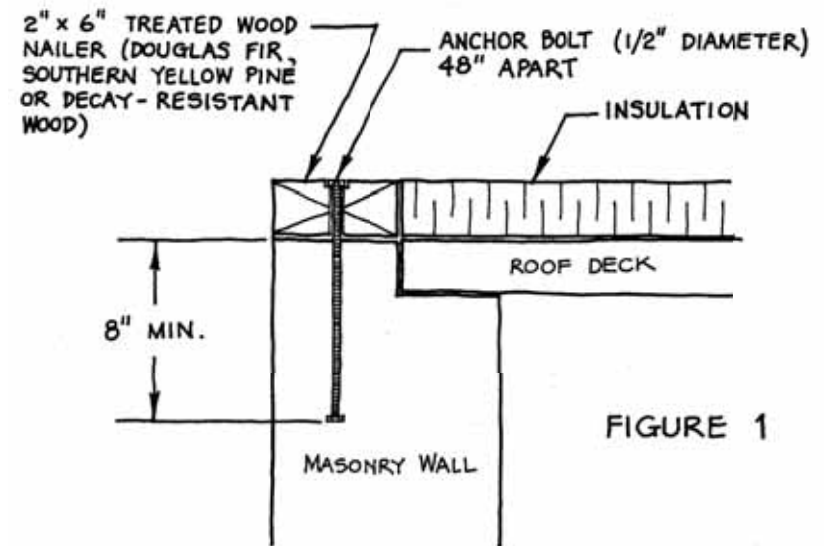


FIGURE 1

Note: Plastic parts must not be used with masonry anchors.

Factory Mutual has specific requirements concerning filling of cores or voids in the top course of cinder blocks. Projects in FM I-90 securement zones or higher, the entire top course of cinder blocks must be filled.

Projects in FM I-60 securement zones only require fill where anchor bolts are positioned.

At outside corners, the fastening density must be increased within the first 8' (2.4 m) in each direction by positioning anchor bolts 24" (61 cm) on center.

An alternate method may be used by installing 3/8" (1 cm) diameter corrosion-resistant anchor bolts spaced 32" (81 cm) apart. For outside corners, bolts are fastened 16" (41 cm) apart, 8' from each side of the corner. If additional wood nailers are needed, refer to **Figure 5** for attachment.

Attachment to Steel and Wood Decking

Penetration of the fasteners should be to the top flutes only. The fasteners must be staggered as shown in **Figure 2**.

Caution: Attention should be paid to the Factory Mutual requirement that calls for corrosion-resistant steel washers (minimum 5/8" outside diameter) to be used in conjunction with corrosion-resistant screws. This requirement is not recognized in most cases and often forgotten.

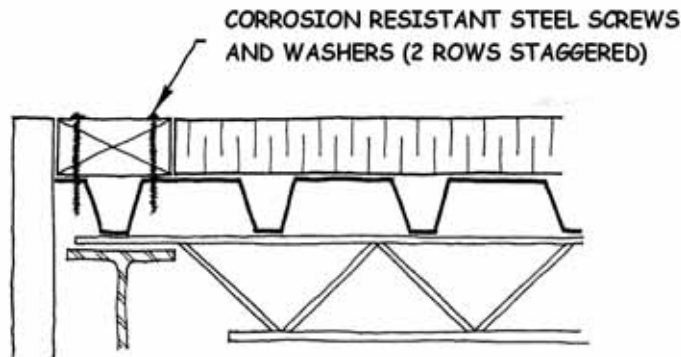


FIGURE 2

The staggered fastening pattern should be increased within 8' from outside corners as shown in **Figure 3-1**.

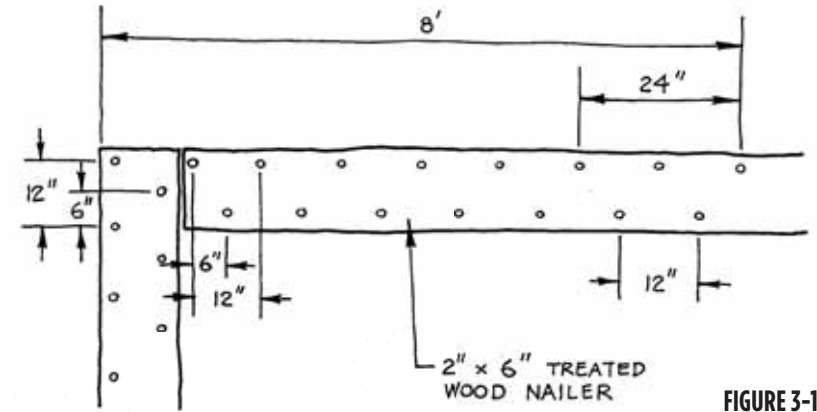


FIGURE 3-1

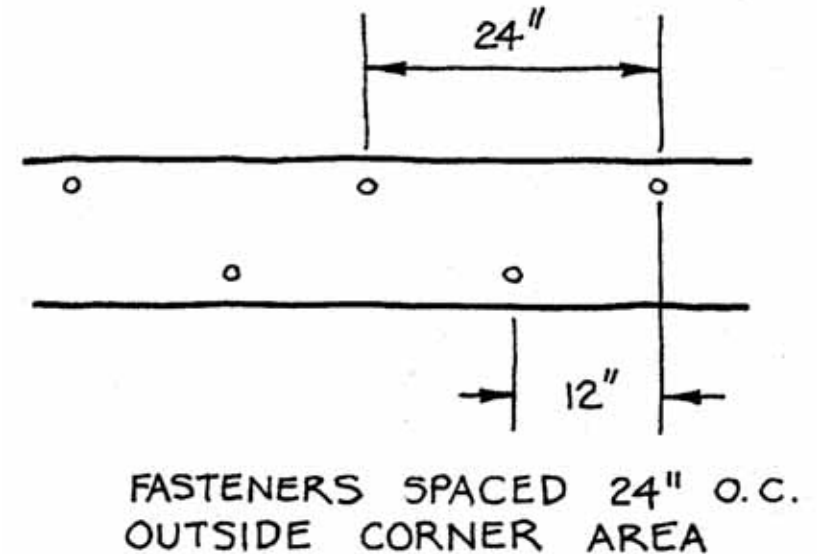


FIGURE 3-2

If the perimeter nailer is to be secured to a steel angle, anchor bolts must be positioned at 48" (1.2 m) centers as show in **Figure 4-1 and 4-2.**

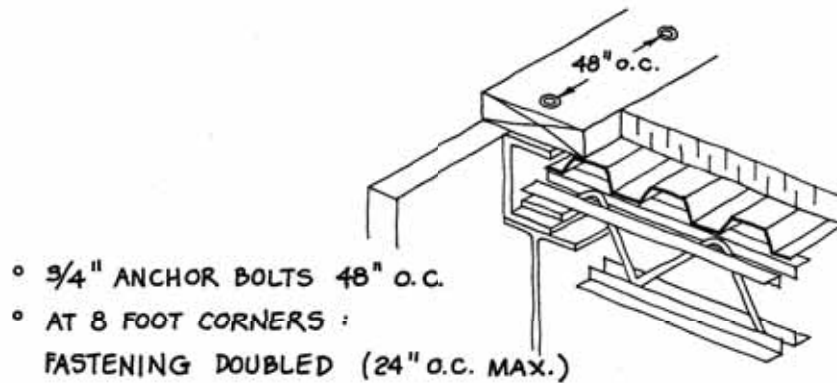


FIGURE 4-1

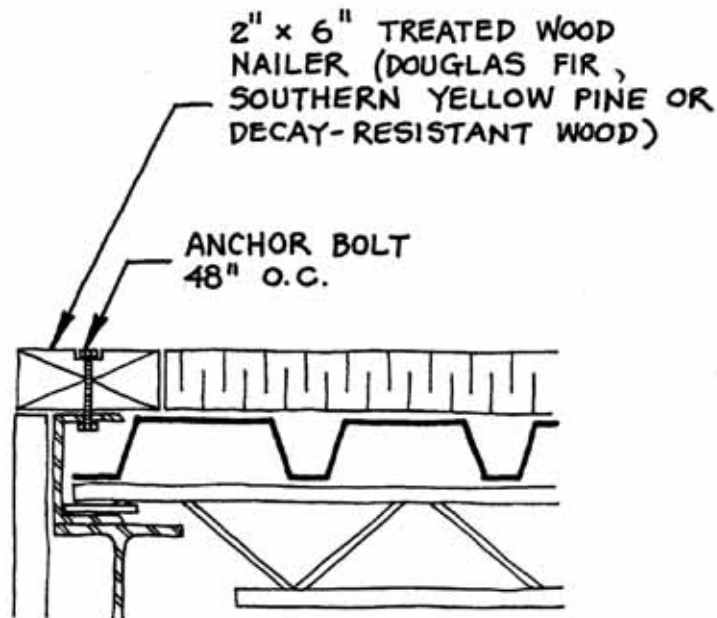


FIGURE 4-2

On wood decks, the staggered fastening pattern with corrosion-resistant steel screws should be utilized as shown in **Figure 2.**

Attachment of Additional Wood Nailers

When additional wood nailers are required, they must be attached with corrosion-resistant nails or lag screws that penetrate into the bottom nailer at 1 1/4" (3.5 cm) using a staggered fastening pattern in two rows at 24" (61 cm) apart as shown in **Figure 5.**

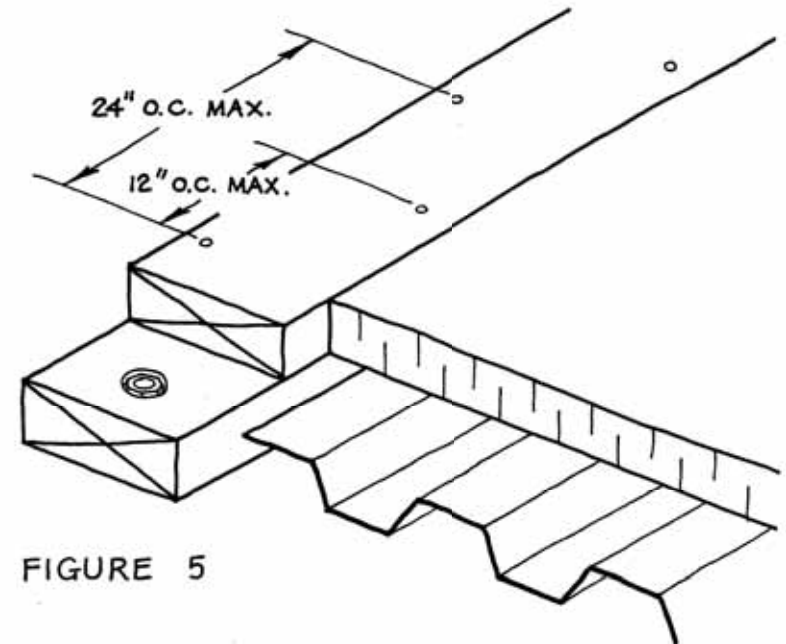


FIGURE 5

The increased fastening density within 8' from outside corners is still required and must comply with **Figure 3-1 shown previously.**

WeatherBond strongly emphasizes the importance of the perimeter wood nailer securement and compliance with Factory Mutual Loss Prevention Data Bulletin 1-49 to improve wind performance and minimize roof edge disturbance. The bulletin also contains important information pertaining to attachment of metal fascia/edging especially for those edgings that are shop fabricated.

Even though not emphasized in the bulletin, contractors should examine or question existing conditions to determine if existing wood nailers are attached in compliance with the above criteria. If not, existing wood nailers should be refastened using one of these options and additional wood nailers must be secured as shown in **Figure 5.**

Insulation Placement and Securement

1. Do not install more insulation/underlayment than can be covered by membrane in the same day.
2. All insulation boards must be butted together with no gaps greater than 1/4" (6 mm). Gaps greater than 1/4" are not acceptable.
3. When multiple layers of insulation are specified, staggering joints between layers is recommended.

Mechanically Fastened Roofing Systems

- a. Insulation must be mechanically fastened to the roof deck with WeatherBond Fasteners and Seam Fastening Plates, Insulation Plates or HPWX Plates.
- b. Refer to WPMA-27.X Details for fastening density requirements located in the detail section of this guide. Fastener tolerance shall be ± 1" (2.5 cm).
- c. When gypsum board is specified as the membrane underlayment to meet certain fire ratings, it must be fastened at the same rate as outlined in Detail WPMA-27.1.

Adhered Roofing Systems

- a. Insulation must be mechanically fastened to the roof deck with WeatherBond Fasteners and 3" (7.5 cm) diameter Insulation Fastening Plates.
- b. Refer to WPMA-27.X Details for fastening density requirements located in the detail section of this guide.

Membrane Placement and Securement

1. **Ensure** water does not flow beneath any completed sections of the membrane system by completing all flashings, terminations and daily seals by the end of each workday.
2. **Sweep** all loose debris from the substrate.
3. On Mechanically Fastened Roofing Systems, the type of WeatherBond Fastener and Fastening Plate used for membrane securement is dependent on the deck type.

Acceptable Membrane Fasteners and Criteria

Deck Type	Min. Pullout	Approved Fasteners & Plates*	Min. Penetration
Steel, 22 gauge or heavier	500 lbs. Mech. Fast.	HPWX Fasteners & HPWX Plates	3/4"
	360 lbs. Adhered	HPWX	
Steel, less than 22 gauge	300 lbs. Adhered Only (3)	HPWX Fasteners	3/4"
Lightweight Insulating Concrete over steel (4)	360 lbs.	HPWX Fasteners & HPWX Plates	3/4"
		HPWX Fasteners (Adhered)	
Structural Concrete, rated 3,000 psi or greater	800 lbs	Contact WeatherBond	1"
Wood Planks, minimum 1 5/8" thick Plywood (8)	360 lbs.	HPWX Fasteners and HPWX Plates (Mech. Fast.)	1" (Max. 1 1/2" on wood planks)
		HPWX Fasteners (Adhered)	
Minimum 7/16" thick Oriented strand board (OSB)	360 lbs. Mech. Fast.	Contact WeatherBond	1 1/2"
	250 lbs. Adhered	HPWX Fasteners	1"
Cementitious Wood Fiber and Gypsum	300 lbs.	Contact WeatherBond	1 1/2"

* For membrane attachment on Mechanically Fastened systems (1) and approved fasteners for insulation attachment on Adhered Systems.

Notes:

1. For membrane fastening density requirements, refer to Attachment III in the WeatherBond Thermoplastic Design Criteria Specification.
2. Mechanically Fastened Roofing Systems are not permitted over corrugated steel decks, regardless of gauge.
3. Mechanically Fastened Roofing Systems are not permitted over steel decks less than 22 gauge unless used in conjunction with lightweight, insulating concrete and acceptable pullouts are obtained using HPWX Fasteners.
4. Fasteners are installed through the lightweight, insulating concrete into the steel deck below.
5. If the minimum pullout into plywood decks cannot be achieved, a trial test should be conducted with an acceptable fastener to determine acceptability (refer to Note 3 on the next page).
6. On OSB decks 3/8" thick or greater, WeatherBond HPWX Fasteners may be used if a minimum pullout value of 360 pounds can be achieved.
7. For adhered systems, only 3"-diameter insulation fastening plates can be used for insulation attachment.

Field Sheet Securement Requirements

Wind Zone	Deck Type	Building Height	Field Membrane Width	Fastening Density (Field & Perimeter Sheets)
Zone 1 Up to 100 MPH	Steel, Lightweight Insulating Concrete Over Steel, Structural Concrete, Wood Planks	Max. 75'	12'	12" O.C.
	Steel, Lightweight Insulating Concrete Over Steel, Structural Concrete, Plywood, Wood Planks or Oriented Strand Board (3)	Max. 75'	10'	12" O.C.
	Gypsum Cementitious Wood Fiber	Max. 75'	10'	9" O.C.
8'			12" O.C.	
Zone 2 100 – 119 MPH	Steel, Lightweight Insulating Concrete Over Steel or Wood Planks (New or Tearoff)	Max. 40'	12'	6" O.C.
	Steel, Lightweight Insulating Concrete Over Steel or Wood Planks (Reroof /No Tearoff)	Max. 40'	12'	12" O.C.
	Steel, Lightweight Insulating Concrete Over Steel, Plywood, Wood Planks or Oriented Strand Board (3)	Max. 50'	10'	12" O.C.
	Structural Concrete	Max. 40'	12'	12" O.C.
		Max. 75'	10'	12" O.C.
	Gypsum and Cementitious Wood Fiber	Max. 50'	10'	9" O.C.
8'			12" O.C.	
Zone 3 120 – 129 MPH (4)	Steel or Lightweight Insulating Concrete over Steel	Max. 75'	10'	9" O.C.
			8'	12" O.C.
	Structural Concrete	Max. 50'	10'	12" O.C.
Plywood, Wood Planks (2), Oriented Strand Board, Gypsum & Cementitious Wood Fiber	Max. 50'	8'	9" O.C.	
Zone 4 130 MPH or Greater	Steel or Lightweight Insul. Concrete over Steel	Max. 75'	10'	6" O.C.
			8'	9" O.C.
	Structural Concrete	Max. 50'	8'	12" O.C.
Plywood, Wood Planks (2), Oriented Strand Board, Gypsum or Cementitious Wood Fiber	NOT ACCEPTABLE (2)			

Notes:

1. Refer to Attachment II in the WeatherBond Thermoplastic Specifications, for minimum roof deck/pullout requirements and the required WeatherBond Fasteners.
2. On plywood or wood plank decks, if pullout tests exceed 425 pounds per fastener, the membrane securement requirements for steel decks may be followed providing the pullout tests are submitted to WeatherBond for approval.
3. On oriented strand board decks less than 5/8" in thickness, approved fasteners are required for membrane securement. For oriented strand board decks 5/8" thick or greater, HPWX Fasteners may be used for membrane securement if a minimum pullout value of 360 pounds can be achieved.
4. Those areas located between wind zone contours of 90–100 MPH within 20 miles of the coastline shall be considered as a Zone 4 Wind Zone.

Perimeter Sheet Securement Requirements

Wind Zone	Building Height	# of Perimeter Sheets Required (Note 1)
Zone 1 Up to 100 MPH	Up to 50' 51' to 75'	1 or 2 (Note 2) 2
Zones 2 & 3 100 to 129 MPH	Up to 75'	2 (Note 2)
130 MPH or greater	Up to 75'	4

Notes:

1. Fastener spacing for perimeter membrane sheets are equivalent to the fastener spacing for field sheets.
2. Two perimeter sheets required when 12' sheets are fastened 12" on center.
3. Gypsum and cementitious wood fiber decks in Zone 3 require 3 perimeter sheets.
5. **Position** WeatherBond thermoplastic perimeter membrane sheets along perimeter of the roof over the acceptable insulation/underlayment.

Expansion joints, control joints, and fire walls in the field of the roof or roof ridges with slopes less than 3" (8 cm) to the horizontal foot shall not be considered as part of the roof perimeter.

When using **10' (3 m) and 12' (3.7m) wide field sheets, 6' (1.8 m) wide perimeter sheets shall be used.**

When **8' (2.4 m) wide field sheets are to be utilized, perimeter sheets shall be 4' (1.2 m) wide.**

The roof perimeter is defined as all edges of each roof section. Where multi-level roofs meet at a common wall, the adjacent edge of the upper roof is treated as a roof perimeter if the difference in height is greater than 3' (91 cm).

Perimeter sheets are not required at the base of the wall at the lower level. Refer to Detail WBPMA-OPT. 1 or 2 at the end of this section for further information.

6. **Secure the membrane** at the approved fastening density with the required WeatherBond Fastener and Fastening Plates.
7. **Position** adjoining field membrane sheets (12', 10' or 8' wide) to allow an approximate overlap of 5½" to 6" (14 to 15.5 cm) at locations where Fastening Plates are located (along the length of the membrane).

Overlap end roll sections (the width of the membrane) a minimum of 2" (5 cm).

As an option to using perimeter sheets, 10"-wide TPO Pressure-Sensitive RUSS can be used beneath the field sheets for perimeter securement.

1. The underside of the deck membrane must be primed with TPO Primer where contact with RUSS will occur.
2. When field sheets are positioned parallel to the roof perimeter, 10"-wide Pressure-Sensitive RUSS is placed approximately down the center of the field sheet. When a RUSS divides a field sheet in half, two perimeter sheets are created.
3. When field sheets extend perpendicular to the edge of the roof, install 10"-wide Pressure-Sensitive RUSS beneath the field membrane sheets approximately 4-5' from the edge of the roof. When multiple perimeter sheets are required, additional RUSS shall be positioned 4-5' from the previous RUSS.

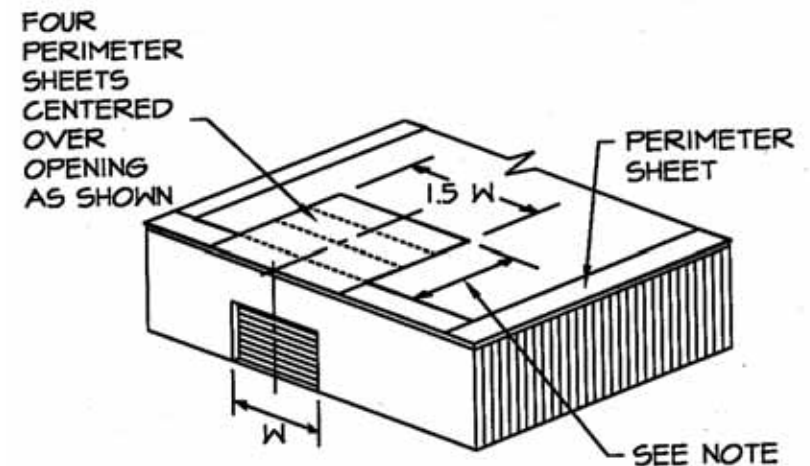
Note: When fastening 10" Pressure-Sensitive RUSS, position approved fasteners/plates along the center line or the RUSS. Six-inch-wide TPO Pressure-Sensitive RUSS cannot be used to create perimeter sheets.

Buildings with Large Openings and Overhangs

When any wall contains major openings with a combined area which exceeds 10% of the total wall area on which the openings are located, four (4) perimeter sheets (centered over the opening) must be specified as shown.

1. When using 12' (3.7 m) and 10' (3 m) wide field membrane sheets, 6' (1.8 m) wide perimeter sheets are utilized. When using 8' (2.4 m) wide field sheets, 4' (1.2 m) wide perimeter sheets are utilized.
2. As an option to the above perimeter securement, an adhered membrane section may be used in lieu of the mechanically fastened membrane at large openings in accordance with the WeatherBond Specification for WeatherBond TPO Adhered Roofing Systems.

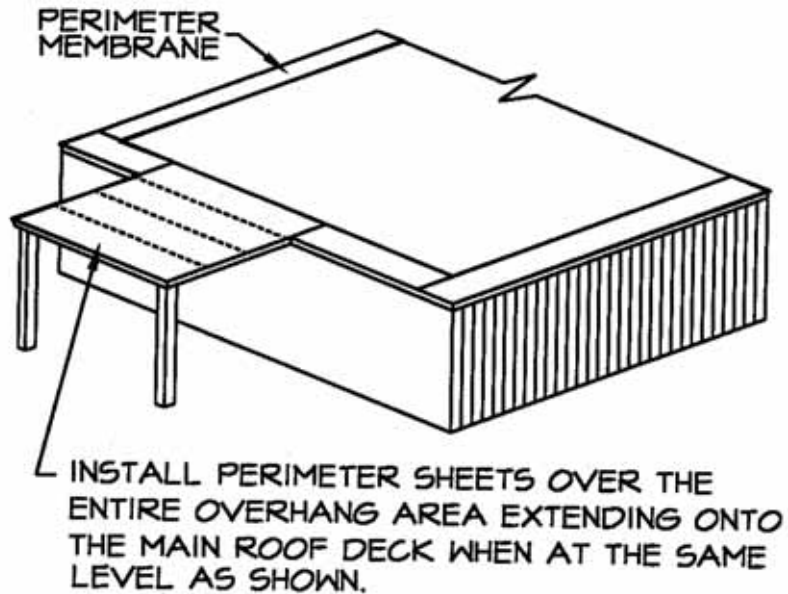
Large Openings



Note: Fastening plates are required at the end laps of the perimeter membrane sheets on both sides of the opened area.

Overhangs

The membrane must be specified with perimeter sheets installed over the entire overhang area extending onto the main roof deck when at the same level.



Membrane Fullness

When dealing with installation of membrane with fullness, tighten the sheet between fasteners as follows:

1. Unroll sheets and position.
2. Place a fastener and plate in one end of the sheet on the appropriate fastener mark. Go to the opposite end of the sheet, pull it tight and place a fastener and plate at the appropriate mark. Place the remaining fasteners into the sheet.
3. Proceed to weld the sheet in place and continue across the roof.

Windy Conditions

Outlined below is a method to prevent membrane distortion during windy conditions:

1. Unroll sheet approximately 5' (1.5 m) and position edge of membrane with overlap line on adjacent sheet.
2. Install fasteners along the 5' exposed edge.
3. While the 5' of exposed membrane is being fastened, begin welding the overlapped edge using the Automatic Hot-Air Welder.
4. As sheet is being welded and fastened concurrently, unroll membrane. Unroll only enough membrane to stay a few feet ahead of the welding and fastening process. This reduces the amount of unsecured membrane to be distorted by the wind.
5. Continue this process for each adjoining sheet.

Membrane Creeping or Moving

What to do when the membrane is creeping or moving, causing wrinkles throughout the membrane surface:

1. The operator of the robot must apply foot pressure to the membrane, kicking and sliding the membrane under the robot to keep the membrane tight.

Always have the operator stand on the unfastened sheet of membrane to prevent sheet movement.

Do not release foot pressure from the membrane until the pressure wheel rolls over the membrane in front of the foot that is holding the membrane in place.

2. **Use of welding tracks:**

Set lengthwise along the splice, close to the robot air dam wheels to reduce the effect of the membrane movement caused by the robot welding process.

The operator must continue to apply foot pressure to the welding tracks to help hold the membrane splice in place.

Welding tracks are moved as welder progresses along seam.

Welding tracks can be:

- a. Sheet metal, 22 gauge – 12" (31 cm) wide by 10' (3 m) long.
- b. Aluminum or steel plates – ¼" by 3" (6 mm by 8 cm), 4' to 6' (1.2 to 1.8 m) long.
- c. Lay flat tubing filled with sand - 4' to 6' long.
- d. Wood planks – 2" by 12" (5 cm by 31 cm) by 4' to 6' long.
- e. Heavy plywood – ¾" by 24" (19 mm by 61 cm) by 8' (2.4 m) long

Note: Always round corners of metal welding tracks to prevent accidental puncturing of membrane.

Repair Procedure for Aged WeatherBond TPO Membrane

Surface oxidation of WeatherBond TPO membrane will occur upon exposure to heat and sunlight. After approximately 7 days exposure to the elements, membrane must be cleaned with Weathered Membrane Cleaner prior to hot-air welding.

The following procedure should be used when standard cleaning with the Weathered Membrane Cleaner and a rag is not sufficient to produce an effective weld.

The membrane may be repaired up to 6 months to a year with the standard cleaning method; however, each project will vary due to the differences in exposure to UV and accumulated dirt.

1. Scrub the area to be welded with a Primer Pad and Weathered Membrane Cleaner. The cleaner will become discolored with dissolved membrane during this procedure.
2. Clean all residue from the area to be welded with a clean rag. If natural fiber rags are used, they must be white to prevent fabric dye from discoloring the membrane.
3. Weld the membrane to the cleaned area using standard welding procedures.

Heat-Welding Equipment

1. Automatic Hot-Air Welding Machine

- a. **Welding speed:** A recommended initial speed of 12.5' per minute is an optimum speed setting. The speed of the welding machine must be no faster than necessary to produce a good hot-air weld, and will vary according to environmental conditions.
- b. **Temperature recommendations:** Operating temperature is approximately 1000°F (#8 temperature setting). WeatherBond TPO Membrane will not “bleed out” (membrane begins to flow out from edge).

Typically, the colder the ambient temperature (and likewise the membrane temperature) the slower the Automatic Hot-Air Welding Machine speed control must be adjusted to produce proper seams. See the following pages for additional welding speed and temperature information.

2. Hot-Air Hand Welder

Used to hot-air weld WeatherBond TPO membrane and flashing. A hand-held silicone rubber roller is used in conjunction with the welder to apply the pressure that fuses the heated membrane surfaces together.

The hand-held welder is typically used to repair seams, or when the use of the automatic hot-air welding machine is inappropriate (such as flashing penetrations and on high-sloped surfaces).

Initial temperature settings are typically 8' for reinforced membrane and 5'–6' for non-reinforced flashing.

- 1. **Electrical Cords:** For generator requirements and maximum length of electrical cords, refer to Generator/Electrical Requirements as follows.
- 2. **Seam Prober:** WeatherBond recommends the use of a cotter pin puller to probe all hot-air-welded seams. All seams must be probed (**after the seam has thoroughly cooled**) with the seam prober. All deficiencies must be repaired accordingly with a hand-held hot-air welder no later than the end of each work day.
- 3. **Silicone Rubber Roller:** A 2" (5 cm)-wide rubber roller used for rolling hot-air-welded splices.

3. Generator/Electrical Requirements

Building power supplies do not typically provide the proper amount of power necessary for consistent hot-air welding. The use of a portable generator conforming to the following guidelines is strongly advised.

- a. A **minimum 6500-watt generator** with a minimum output of 210 volts is required for one Automatic Hot-Air Welding Machine; however, a **7500-watt generator is recommended**.

Reduced power availability will result if additional equipment is connected to the generator and may result in faulty hot-air-welded seams. GFI (Ground Fault Interrupter) protection is recommended.

Additional generators will be required for operating other power tools and hand-held hot-air welders.

Electrical cords (3 conductor) of the maximum length indicated must be used with the corresponding wire as listed:

Maximum Length	Wire Size
50 feet (15 m)	#12
100 feet (30 m)	#10
300 feet (90 m)	#8

- b. A **minimum 3,000-watt generator** may be used to power a maximum of **two hand-held welders** as long as no other equipment is connected. This generator should service a minimum of 110 volts and be GFI (Ground Fault Interrupter) protected.

Electrical cords (3 conductor) of the maximum length indicated must be used with the corresponding wire as listed:

Maximum Length	Wire Size
50 feet	#14
100 feet	#12

For extension cords longer than 100', consult an electrician or electrical contractor to ensure proper size of generator and wire.

4. Hot-Air Welding Precautions

- a. Check the welding machine set up to ensure proper alignment of the heating nozzle, weight plate (air dam), pressure wheels, or moving parts to see they move properly or are free spinning.
Test run the welding machine to ensure it moves forward following a straight line. If the alignment is off, make necessary adjustments.
- b. Make sure the air intake is open. Clean out the air intake for the blower unit at each start up.
- c. Check the machine for worn or broken parts that need to be replaced. Exercise care to protect the pressure wheel from notches or cuts to prevent incomplete sealing of the welded seam.
- d. Before the machine is connected to the power source, make sure it is switched off to prevent a power surge that could damage the unit.
Turn the unit on and allow the blower/heater unit to warm up for approximately 5 to 10 minutes to reach operating temperature.
- e. Clean the heat nozzle with a wire brush to remove any build-up of membrane, as needed.
- f. To extend the life of the heating element of the Hot-Air Welding Equipment, always turn the temperature adjustment down so the welder can cool prior to switching the machine off.
- g. Follow all care and maintenance instructions recommended by the respective manufacturer.
- h. It is recommended that two Automatic Hot-Air Welding Machines and two generators be available at the project site in the event of mechanical failure.

Hot Air Welding Procedures

Hot-air-weld the WeatherBond TPO membrane sheets using the Automatic Hot-Air Welding Machine or Hot Air Hand Welder and silicone roller.

When roof slope exceeds 5" per horizontal foot (13 cm/m), use of the Automatic Hot-Air Welding Machine may become more difficult; use of the Hand-Held Hot-Air Welder is recommended.

Check the surfaces of the WeatherBond TPO membrane to be hot-air welded to ensure they are properly prepared as outlined below:

- a. **Membrane Cleaning** – The surfaces to be hot-air welded must be clean. Membrane overlaps that become contaminated with field dirt must be wiped with a clean, natural fiber rag containing Weathered Membrane Cleaner. No residual dirt or contaminants should be evident. When natural fiber rags are used, they must be white to prevent fabric dye from discoloring the membrane.
Weathered Membrane Cleaner will achieve approximately 600 linear feet (one surface) of coverage per gallon for a standard hot-air-welded splice area.
- b. **Exposed Membrane Seam Preparation** – Surface oxidation of WeatherBond TPO membrane will occur upon exposure to heat and sunlight. **After a period of 7 days or more of exposure** to the elements, membrane must be cleaned with **Weathered Membrane Cleaner** or a complete fusion weld cannot be achieved. If the dirt is not easily removed. **A Primer Pad application will be necessary prior to hot-air welding:**
 1. Scrub the area to be welded with a Primer Pad and Weathered Membrane Cleaner. The cleaner will become discolored with dissolved membrane during this procedure.
 2. Clean all residue from the area to be welded with a clean rag. No residual dirt or contaminants should be evident. If natural fiber rags are used, they must be white to prevent fabric dye from discoloring the membrane.
 3. Weld the membrane to the cleaned area using standard welding procedures.

Temperature Settings

When making a WeatherBond TPO splice, no one temperature setting or speed can be used to describe the temperature setting or speed to set the robot. The splice must be tested to determine the quality of the splice.

Consult the respective heat-welding machine manufacturer for recommendations concerning proper temperature setting and speed control of their equipment. Typically, the colder the ambient temperature (and likewise the membrane temperature) the slower the Automatic Hot-Air Welding Machine speed control must be adjusted to produce proper seams.

As a general guide, WeatherBond TPO membrane will weld at a lower temperature (1000°F) and faster speed (10' to 15' per minute) than most other heat-welded membrane materials.

With the Leister Varimat Automatic Welder, the suggested heat setting is 1000°F at 10' to 13' (3 to 4 m) per minute. With any other brand of robot welder, the temperature should be set at the manufacturer's recommended temperature to obtain the correct splice results.

The following is a list of items to be checked to determine the temperature setting and the speed at which a splice should be completed:

1. Early morning welder speed settings should be set slower than midday heat welder speeds due to typically colder temperatures in the morning.
2. As the membrane surface temperature increases, the welder speed may also be increased.
3. When the membrane is in direct sunlight, the temperature or robot speed may have to be adjusted. When moving into a shaded area, check the splice results.
Remember, the membrane surface in a shaded area will be cooler than a membrane surface that is in sunlight.
4. Dampness on the membrane from dew, a passing rain shower or misting condition will reduce heat from the splice due to evaporating moisture from the membrane surface.
The heat-welding temperature (increased) or the robot speed (slower) will have to be adjusted to produce a good splice.
Water must be wiped from the welding surface prior to welding the splice.
5. Wind has a cooling effect as it blows over the surface. It will also affect the air-flow in the splice reducing the effectiveness of the hot-air gun. This will require the operator to increase heat from the hot-air gun or reduce the welder speed.

6. Substrates make a big difference in the amount of heat required to produce a proper heat-welded splice. The robot will have to be adjusted accordingly:
 - a. Plywood and concrete act as heat sinks and will take a higher temperature or slower speed setting than insulation.
 - b. Cool, damp substrates will take a higher temperature or slower speed setting than dry substrates.
7. Membrane "bleed-out" from between sheets will not occur with WeatherBond TPO membrane if properly welded.

If bleed-out is occurring (the dark underside of the membrane begins to melt and flow), the welder speed should be increased to reduce welding temperature.

Equipment Set Up

Equipment set up is the responsibility of the Applicator. When poor welding is occurring check the following:

1. If the membrane is overheated on one side or the other, check the nozzle to be sure it is distributing the heat evenly between the two sheets.
2. If the heat is bypassing the edge of the sheet, producing a cold weld along the edge of the splice, be sure the nozzle is completely under the sheet and the air dam is in place and functional.
3. If the probed splice is tight at the edge but a cold weld is present in the center of the splice (the heat is melting the edges but does not melt the center of the splice), check to be sure the robot is not running too fast.
4. Ensure the silicone pressure wheel is intact with no voids in the silicone. If voids are present, incomplete welding will result.
5. Be sure all wheels on the air dam are not binding. Binding wheels will cause sheet movement and distortion during the welding process.
6. The Automatic Heat Welder nozzle should be adjusted as close to the pressure wheel as possible.

If the nozzle is too far away from the pressure wheel, distortion of the membrane may occur due to heat expansion.

NOTE: Adjust welder nozzle so the curved portion (heel) extending outside the seam area does not contact or drag on the exposed surface of the membrane. This portion of the nozzle should be $\frac{1}{16}$ " – $\frac{1}{8}$ " above membrane surface.

7. Overheating the membrane will cause poor welds. It is recommended that the automatic welder be run not less than 10' (3 m) a minute on average temperature days. Only on very cold days would the welder be run below this speed. The temperature and welder speeds must be determined based on test welds prior to actual sheet welding.
8. Clean screen of dirt and debris on air inlet of heat gun every day. Accumulation of contaminants on screen will reduce air flow and heat output of welder.

Membrane Welding

1. Prepare the Automatic Hot-Air Welding Machine and allow to warm for approximately 5 to 10 minutes to reach operating temperature.
2. Position the Automatic Hot-Air Welding Machine properly prior to seaming with the guide handle pointing in the same direction the machine will move along the seam.
3. Lift the overlapping membrane sheet and insert the blower nozzle of the Automatic Hot-Air Welding Machine between the overlap.

Immediately begin moving the machine along the seam to prevent burning the membrane.

4. Proceed along the seam ensuring that the small guide wheel in front of the machine aligns with the edge of the top membrane sheet. Guide the machine from the front only.

CAUTION: Ensure the power cord has plenty of slack to prevent dragging the machine off course (which could result from a tightly stretched cord).

5. At all splice intersections, roll the seam with a silicone roller to ensure a continuous hot-air-welded seam (the membrane should be creased into any membrane step-off with the edge of the silicone roller).

A false weld may result due to surface irregularities created by multiple thicknesses of WeatherBond TPO membrane sheets.

NOTE: When using .060" (1.5 mm) thick or heavier WeatherBond TPO Membrane, a TPO T-Joint Cover or a surface splice of Non-Reinforced Flashing must be applied over all T-joint splice intersections, refer to Detail WBPMA-2.4.

6. To remove the Automatic Hot-Air Welding Machine from the finished splice, stop the movement of the machine and immediately remove the nozzle from the seam area.
7. Mark the end of the hot-air-welded seam with a water-soluble marker for easy identification. A Hand-Held Welder will be necessary to complete the weld in the area between where the Automatic Hot-Air Welding Machine is stopped and restarted.
8. **Perform a test cut** at least at the start of work each morning and afternoon. Test cuts should be taken if any changes in substrate or weather conditions occur.

Test Cuts

WeatherBond recommends that the test weld sample be made from a piece of scrap TPO to eliminate the need to remove a section from a completed seam.

Only when necessary should a test cut be taken from the installed roofing system.

1. The test cut should be approximately 1" (2.5 cm) wide and longer than the width of the seam (cut across the hot-air-welded seam).
2. Peel the test sample apart after it has thoroughly cooled (approximately 30 minutes) and examine for a consistent 1½" (4 cm)-wide minimum weld.

Delamination of the membrane from the scrim reinforcement is an indication of a properly welded seam.
3. Repair the test seam area by using an overlay of WeatherBond TPO reinforced membrane (with rounded corners) and hand-weld around the entire repair area.

Identify the following seam problems to ensure seam quality:

Discolored or melted membrane – Increase speed or decrease temperature setting if membrane discolors or exhibits melting (membrane begins to flow).

Voids and wrinkles – A proper hot-air-welded seam has no voids or wrinkles and must be at least 1½" (4 cm) wide. Refer to Seam Probing procedures outlined below for proper inspection of seam deficiencies.

Hand-Held Welder Settings

1. Temperature setting for hand-held welders when used for flashing should be approximately 6 (on a scale from 1 to 10).
2. Temperature settings for hand-held welders when used for membrane should be approximately 8 (on a scale from 1 to 10).
3. Exact settings will vary based on ambient temperatures, substrate and type of welder.
4. The Silicone roller should always be placed flat against membrane to be welded. **Do not turn roller on edge to weld membrane or flashings.**

Seam Probing

A WeatherBond Seam Probe is recommended for use to probe all hot-air-welded seams.

Probing seams must be done once hot-air welds have thoroughly cooled. Hot-air-welded seams must be probed throughout the day to check seam quality and to make proper adjustments to hot-air welding equipment. **The repair of deficiencies must be done routinely throughout the day but no later than the end of each workday.**

1. Allow hot-air-welded seams to cool thoroughly for approximately 30 minutes. Premature probing can damage warm seams.
2. Draw the probing tool tip along the edge of the hot-air-welded seam. Apply firm pressure to probe the seam junction, but not into the bottom membrane sheet. The tool will not penetrate into the lap area of a properly welded seam.
3. If the seam probing tool penetrates into the lap area, mark the seam using a water-soluble marker at the beginning and the end of voids or wrinkles in the seam edge.
4. Repair seam deficiencies as soon as possible using the hand-held welder. WeatherBond recommends that repairs be made the same day they are discovered.
5. Probe **repaired seams** after they have cooled completely. If the repair is acceptable, wipe off the water soluble marker lines; if not acceptable, repair the seam using the procedures for repair of hot-air-welded seams as outlined in Repair Procedures for Aged WeatherBond TPO Membrane.

Probing Notes:

- All laps must be probed each day soon after it has cooled to verify the welder set up is effective.
 - Particular attention must be given to all membrane intersections and hot-air-welded seams at insulation joints.
 - In addition, there should be periodic checks (including at the start of each day) to verify good peel strength.
6. **Apply TPO Cut-Edge Sealant** on all cut edges of the reinforced membrane (where the scrim reinforcement is exposed) **after seam probing** is completed. TPO Cut-Edge Sealant is not required on vertical splices.

When a ⅜" (3 mm) diameter bead of TPO Cut-Edge Sealant is applied, approximately 225–275 linear feet of coverage per squeeze bottle can be achieved.

Additional Membrane Securement

Securement must be provided at the perimeter of each roof level, roof section, expansion joint, curb, skylight, interior wall, penthouse, etc., at any inside angle change where slope exceeds 2" to one horizontal foot, and at all penetrations as identified on the WeatherBond details.

As an option, 6"-wide TPO Pressure-Sensitive RUSS may be installed in conjunction with WeatherBond Fasteners and HPWX plates spaced a maximum of 12" on center below the membrane. The securement strip shall be installed horizontally at the base of walls or penetrations.

The underside of the deck membrane must be primed with TPO Primer. Membrane is spliced to the RUSS and continued as wall flashing resulting in continuous membrane flashing without penetration of the deck membrane.

On Mechanically Fastened Systems, when membrane securement is not provided in some details (i.e., pipes and sealant pockets), additional fasteners/plates must be used to provide securement. Refer to applicable WeatherBond Detail.

1. The same WeatherBond Fastener and Fastening Plate required for membrane attachment must also be used for additional membrane securement.
2. Securement of the membrane shall be a maximum of 12" (31 cm) on center. Fasteners shall be positioned 6" minimum to 9" (23 cm) maximum from the inside or outside corner.
3. Refer to the "Membrane Fasteners and Criteria" chart in this manual for the required WeatherBond Fastener/Plate with the corresponding deck type.
4. After securing the membrane, flash in accordance with the appropriate detail.

Flashing

General Flashing Conditions

Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using WeatherBond TPO **reinforced** membrane.

WeatherBond TPO non-reinforced membrane may be used for flashing pipe penetrations, Sealant Pockets and scuppers as well as inside and outside corners when the use of pre-molded or Pre-fabricated accessories are not feasible.

When possible, all reinforced membrane splices are hot-air welded with the Automatic Hot-Air Welding Machine.

The Hand-Held Hot-Air Welder should be utilized in hard-to-reach areas, smaller curbs, vertical splices and when using non-reinforced membrane.

- a. All existing **loose** flashing must be removed prior to application of WeatherBond TPO membrane especially when the new TPO Flashing is to be adhered.
The new WeatherBond TPO membrane must totally conceal all existing intact flashing, but must not conceal weep holes or cover existing throughwall counterflashing.
- b. Install surface-mounted reglets and compression bar terminations directly to the wall surface.
- c. **Application of WeatherBond TPO Bonding Adhesive and Low-VOC Bonding Adhesive:**
On vertical surfaces such as walls, curbs and pipes, **Bonding Adhesive is not required** when the **flashing height is 12"** (31 cm) or less and the membrane is **terminated under metal counterflashing** (nailed).

When a coping or termination bar is used for the vertical termination, the **Bonding Adhesive may be eliminated when the flashing height is 18" (46 cm) or less.**

1. When required, as noted on WeatherBond's installation details, membrane shall be adhered to vertical surfaces with WeatherBond TPO Bonding Adhesive or Low-VOC Bonding Adhesive.
The Bonding Adhesive shall be applied continuously, without globs or puddles, with a plastic-core, medium nap paint roller.
A 9" (23 cm) roller will easily fit into the 5-gallon (20 l) containers.
2. The Bonding Adhesive must be applied to both the membrane and the surface to which it is being bonded to achieve a coverage rate of approximately 120 square feet per gallon per one surface (membrane or substrate) or approximately 60 square feet per gallon per finished surface (includes coverage on both membrane and substrate).

Roof Walkways

3. After the Bonding Adhesive has dried to the point that it is tacky but does not string or stick to a dry finger touch, roll the membrane into the adhesive.

Note: When installing a WeatherBond TPO Adhered System, Bonding Adhesive is applied to the back of the membrane and the substrate as identified above.

- d. Care must be taken when setting the flashing to avoid bridging greater than $\frac{3}{4}$ " (19 mm) at angle changes (i.e. where a parapet or roof penetration meets the roof deck). This can be accomplished by creasing the membrane into the angle change.
- e. Terminate the edges of the installed membrane in accordance with WeatherBond's applicable Termination Details.
- f. In areas where metal counterflashing or surface mounted reglets are used as the vertical termination, the counterflashing must be sealed with a rubber-grade caulking to prevent moisture migration behind the new wall flashing.

1. Install walkways in those locations as designated by the specifier in accordance with "Design Criteria", Part I of the WeatherBond TPO Specification.
2. WeatherBond TPO Heat-Weldable Walkway Rolls.
 - a. If WeatherBond TPO membrane or Walkway Roll has been exposed for a period of 7 days or more, use Weathered Membrane Cleaner to prepare the area to be welded to the walkway material.

If the membrane has been exposed for an extended period of time or is heavily contaminated by dirt, a Primer Pad may be used with the Weathered Membrane Cleaner to expose a weldable surface. See previous section of this guide for cleaning procedures to aged WeatherBond TPO membrane.
 - b. Position the walkway material, and cut the Walkway Rolls into maximum 10' lengths and position with a minimum 1" (2.5 cm) gap between adjacent pieces to allow for water drainage.

Cut the walkway so a 4" (10.5 cm) minimum gap is created over any field splices. (Since the attachment of the walkway to the membrane is permanent, this will allow access to the field seams).
 - c. Using an automatic welder, weld all four edges of the walkway material to the membrane (welding the ends of the material may be accomplished with less effort using a hand welder).

Typically the same speed and temperature settings will be used for this procedure as for welding membrane to membrane.

A test weld is always recommended prior to performing welds to the installed membrane.

A hand-held welder may be utilized; however, productivity will be decreased.
3. **Concrete Paver Blocks**

Install a slip-sheet of WeatherBond reinforced membrane under all concrete pavers for the protection of the deck membrane.

The protective layer must extend a minimum of 2" (2.5 cm) on each side of the walkway.
4. **Interlocking Rubber Pavers**

Rubber Pavers may be loose-laid directly over the membrane. Installation instruction sheets are available from WeatherBond.

Note: Pavers are not recommended for walkways when slopes exceed 2" per horizontal foot (5 cm/m).

Daily Seal

1. On phased roofing, when the completion of flashings and terminations is not possible by the end of each workday, provisions must be taken to temporarily close the membrane to prevent water infiltration.
2. Temporarily seal any loose membrane edge (down slope) using asphaltic-based roof cement, hot asphalt, spray urethane foam or a similar product so the membrane edge will not buck water.

Caution must be exercised to ensure the membrane is not temporarily sealed near drains in such a way as to promote water migration below the membrane.

3. On existing built-up roofs, remove the gravel. The surface must be clean and dry.
4. After embedding the membrane in daily seal material, CHECK FOR CONTINUOUS CONTACT. Provide continuous pressure over the length of the temporary seal with 15' (4.6 m) lengths of 2½" (6.5 cm) diameter Lay Flat Tubing filled with dry sand.

Note: The use of rigid wood is not recommended due to warping and because constant compression cannot be achieved on an uneven substrate.

5. When work is resumed, pull the WeatherBond TPO membrane free; trim and remove membrane where the daily seal material was previously applied before continuing installation of adjoining sections

Clean Up

If required by the specifier to ensure the aesthetics of the surface of the WeatherBond TPO membrane, hand prints, footprints, general traffic grime, industrial pollutants and environmental dirt may be cleaned from the surface of the WeatherBond TPO membrane by scrubbing with soapy (non-abrasive soap) water and rinsing the area completely with clean water. Membrane Cleaner can also be used to clean the surface of the WeatherBond TPO membrane.

Post-Job Inspection

Before leaving the jobsite, WeatherBond recommends a post-job review to identify problem areas that may result in a future issue. The following list should be used by the foreman as a post-job review:

- Insulation Concerns
- Membrane Securement
- Heat-Welded Field Seams
- Flashings
- Sealant Pockets
- Drains
- Pipe Seals (Molded, Split Pipe Seal and Field Fabricated)
- Corners
- Scuppers

Insulation Concerns

1. Insulation must be acceptable for use with the designated WeatherBond roofing system. Refer to the WeatherBond Specifications or contact your local WeatherBond Representative.
2. No gaps or height differences between insulation boards greater than ¼" (6 mm). Broken corners on insulation boards must be replaced to avoid gaps greater than ¼".
3. Insulation that becomes saturated during installation must be replaced.
4. Fastening patterns recommended by the insulation manufacturer must be followed. If you are not certain, contact the insulation manufacturer.
5. Insulation fastener and plate assembly must be Factory Mutual (FM) approved for single-ply roofing systems. If any fasteners other than WeatherBond Fasteners are used, check for FM approval.

Membrane Securement

Membrane securement must be installed at perimeters of each roof level, curbs, skylights, expansion joints and all inside deck angle changes greater than 2" in 12" (2.5 in 31 cm).

Membrane securement is also required around all pipe penetrations and Sealant Pockets regardless of size on Mechanically Fastened Systems. On Adhered Systems, only when the pipe diameter exceeds 18" (46 cm) in size or the Sealant Pocket exceeds 12" in size is membrane securement required.

1. Proper membrane securement requires fasteners to be installed per specification but at a maximum of 12" (31 cm) on center.
2. Perimeter membrane sheets must be fastened at the same spacing as the field sheets.
3. Six-inch-wide TPO Pressure-Sensitive RUSS may be installed in conjunction with WeatherBond Fasteners and HPWX plates spaced a maximum of 12" on center below the membrane. The securement strip shall be installed horizontally at the base of walls or penetrations.
4. No vertical or horizontal compression-type wood nailers are accepted.

Heat-Welded Field Splices

1. Splices are a minimum of 1½" (4 cm) wide. Mechanically Fastened field splices with HPWX Plates are a minimum of 5½" (14 cm) wide.
2. There must be no wrinkles or fishmouths through the heat-welded splice area.
3. Wrinkles and fishmouths in the splice area must be cut out, then covered with a surface splice using like material if insulation is exposed, otherwise, WeatherBond TPO Flashing may be used.
4. TPO Cut-Edge Sealant must be used on all cut edges of the reinforced membrane (where the scrim reinforcement is exposed). TPO Cut-Edge Sealant is not required on vertical splices.

Flashings

1. Flash all penetrations to conform to the appropriate WeatherBond Detail.
2. Remove all lead flashings, rust, etc. from pipes before installing WeatherBond flashings.
3. Make sure all flashings, except those listed below, are terminated with a WeatherBond Termination Detail.

WBPC-1.X – Metal Edging

WBPC-16.X – Molded Sealant Pockets

WBPC-18.X – Scuppers

Sealant Pockets

1. Clean penetrations of any foreign materials (i.e. asphalt, coal tar, rust, etc.) with a wire brush and always clean with Weathered Membrane Cleaner.

WeatherBond TPO Molded Sealant Pockets or TPO Prefabricated Sealant Pockets are recommended. Install the TPO Molded Sealant Pocket per the instructions listed on the previous pages of this Installation Guide.

If metal pockets are to be used, corners of the metal pan deck flanges must be continuous and rounded.

2. Run flashing up, over and down inside the Sealant Pocket Dam a minimum of ½" (13 mm).
3. Apply TPO Primer to all surfaces that will come in contact with the TPO Pocket Sealant. Completely fill Sealant Pockets to the top of the rim with TPO Pocket Sealant
4. Minimum clearance from penetration to the wall of the Sealant Pocket and between all penetrations is 1" (2.5 cm).

Drains

1. All bolts/clamps must be in place and tight.
2. WeatherBond Water Cut-Off Mastic must be used.
3. Drainage hole in the TPO membrane must be larger than drain tube.
4. Compression ring drain components must be intact, not broken.
5. Drain sump cannot exceed 6" (15.5 cm) in 12" (31 cm) slope when using insulation.

Pipe Seals

Molded Pipe Seals

1. Cannot be cut and spliced.
2. Must not be installed inside out.
3. Must have WeatherBond Water Cut-Off Mastic and stainless steel clamps at the top of the cone. Top rib must be intact.
4. Base flanges of factory boots cannot overlap or turn up angle changes.

TPO Split Pipe Seals

1. Select the correct size Split Pipe Seal for proper installation. Follow the installation instructions found on the previous pages of this Installation Guide.
2. **Apply TPO Cut-Edge Sealant** on all cut edges of the reinforced membrane (where the scrim reinforcement is exposed) **after seam probing** is completed. TPO Cut-Edge Sealant is not required on vertical splices.
3. Must have WeatherBond Water Cut-Off Mastic and stainless steel clamps at the top of the pipe seal.

Field-Fabricated Pipe Seals

1. Must be made with a least two-pieces of flashing - one base, one vertical wrap.
2. Base piece must extend 3" (8 cm) minimum away from the pipe, extend ½" (13 mm) minimum up the pipe and the cut in the base piece must be overlapped 1" (2.5 cm) minimum.
3. Vertical wrap must splice onto the base piece 1" (2.5 cm) minimum and achieve a 1½" (3.8 cm) minimum vertical splice.
4. Look for splice separation (bridging) at the angle change.
5. Stainless steel clamping rings are required at the top of the pipe flashings.

Corners

All inside and outside corners must be completed using TPO Inside and Outside Corners or be fabricated from WeatherBond TPO Flashing.

Scuppers

1. All flanges must have continuous, rounded corners.
2. WeatherBond Water Cut-Off Mastic must be applied behind the metal flange.
3. The metal flange must be fastened to provide constant compression of WeatherBond Water Cut-Off Mastic.
4. A 2" (5 cm) minimum splice is required from the point of scupper securement.

WeatherBond TPO Details

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GUIDELINES FOR ROOF PERIMETER ZONES FOR MECHANICALLY ATTACHED ROOF SYSTEM

SPLIT LEVEL ROOFS
 GREATER THAN 3 FEET (914mm)

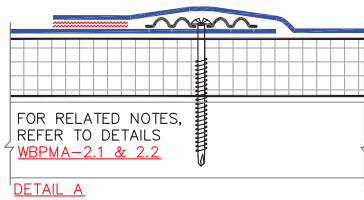
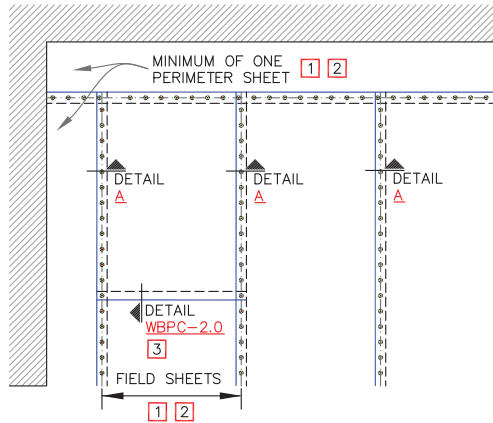
SPLIT LEVEL ROOFS
 LESS THAN 3 FEET (914mm)

CANOPY ROOF
 INSTALL PERIMETER SHEETS OVER THE ENTIRE OVERHANG (PROJECTION ROOF) AREA, EXTENDING ONTO THE MAIN ROOF DECK WHEN AT THE SAME LEVEL AS SHOWN.

LARGE OPENINGS OR LOADING DOCKS

FOUR PERIMETER SHEETS CENTERED OVER LARGE OPENINGS

PERIMETER ZONES



NOTES:

1. WHEN USING 10' (3048mm) OR 12' (3658mm) WIDE TPO FIELD SHEETS, 6' (1829mm) WIDE PERIMETER SHEETS ARE UTILIZED. WHEN USING 8' (2438mm) WIDE TPO FIELD SHEETS, 4' (1219mm) WIDE PERIMETER SHEETS ARE USED. WHEN USING 10' (3048mm) WIDE PVC FIELD SHEETS, 5' (1524mm) WIDE PERIMETER SHEETS ARE UTILIZED. WHEN USING 8' (2438mm) WIDE PVC FIELD SHEETS, 4.5' (1029mm) WIDE PERIMETER SHEETS ARE USED.
2. REFER TO WEATHERBOND SPECIFICATIONS FOR REQUIRED NUMBER OF PERIMETER SHEETS, SHEET WIDTH AND MEMBRANE FASTENING DENSITY.
3. END LAPS DO NOT REQUIRE MECHANICAL FASTENING AND SHALL BE OVERLAPPED 2" (51mm) MINIMUM. REFER TO WEATHERBOND [DETAIL WBPC-2.0](#).



MEMBRANE SECUREMENT

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WPMA-2.0A

GUIDELINES FOR ROOF PERIMETER ZONES FOR MECHANICALLY ATTACHED ROOF SYSTEM

SPLIT LEVEL ROOFS
 GREATER THAN 3 FEET (914mm)

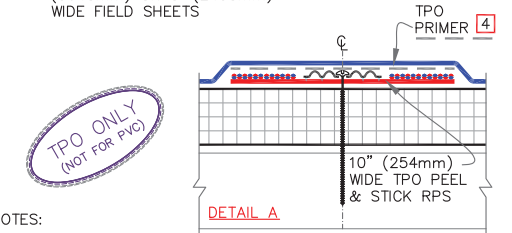
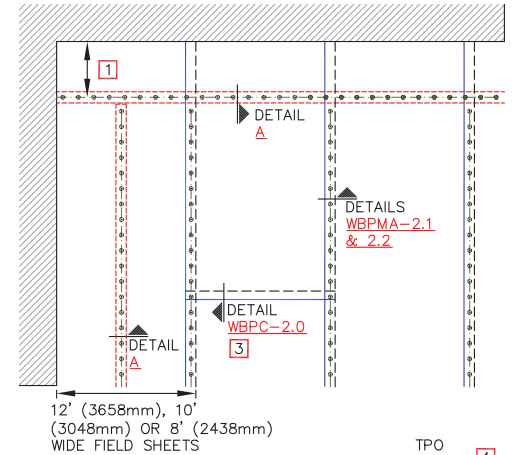
SPLIT LEVEL ROOFS
 LESS THAN 3 FEET (914mm)

CANOPY ROOF
 INSTALL PERIMETER SHEETS OVER THE ENTIRE OVERHANG (PROJECTION ROOF) AREA, EXTENDING ONTO THE MAIN ROOF DECK WHEN AT THE SAME LEVEL AS SHOWN.

LARGE OPENINGS OR LOADING DOCKS

FOUR PERIMETER SHEETS CENTERED OVER LARGE OPENINGS

PERIMETER ZONES



NOTES:

1. PEEL & STICK RPS SHALL BE POSITIONED 5' (1524mm) TO 6' (1829mm) FROM THE PERIMETER EDGE WHEN USING 10' (3048mm) OR 12' (3658mm) WIDE TPO FIELD SHEETS. WHEN USING 8' (2438mm) WIDE TPO FIELD SHEETS, PEEL & STICK RPS SHALL BE POSITIONED 4' (1219mm) FROM THE PERIMETER EDGE.
2. REFER TO WEATHERBOND SPECIFICATIONS FOR REQUIRED NUMBER OF PERIMETER SHEETS, SHEET WIDTH AND MEMBRANE FASTENING DENSITY.
3. END LAPS DO NOT REQUIRE MECHANICAL FASTENING AND SHALL BE OVERLAPPED 2" (51mm) MINIMUM. REFER TO WEATHERBOND [DETAIL WBPC-2.0](#).
4. TPO PRIMER MUST BE APPLIED TO THE BACK SIDE OF MEMBRANE SURFACE PRIOR TO ADHERING MEMBRANE TO PEEL & STICK RPS.

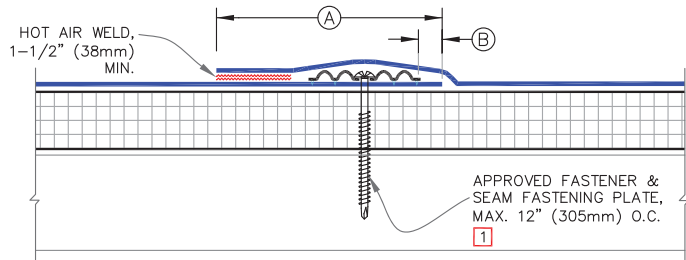


TPO MEMBRANE SECUREMENT WITH PEEL & STICK RPS

- TPO MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

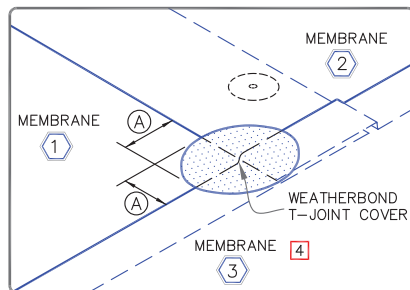
WPMA-2.0B



NOTES:

- ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL AND WOOD DECKS. ON CONCRETE DECKS, APPROVED CONCRETE FASTENERS ARE USED WITH HPWX PLATES.
- POSITION SEAM FASTENING PLATES BEYOND NON-REINFORCED ENCAPSULATED EDGE.
- APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
- WHEN USING 60 OR 80-MIL MEMBRANE, APPLY A 4-1/2" (114mm) DIAMETER WEATHERBOND T-JOINT COVER AT ALL FIELD SPLICE INTERSECTIONS.

DIMENSIONS	mm	
(A)	5-1/2"	140 APPROX.
(B)	1/2"	13 APPROX.

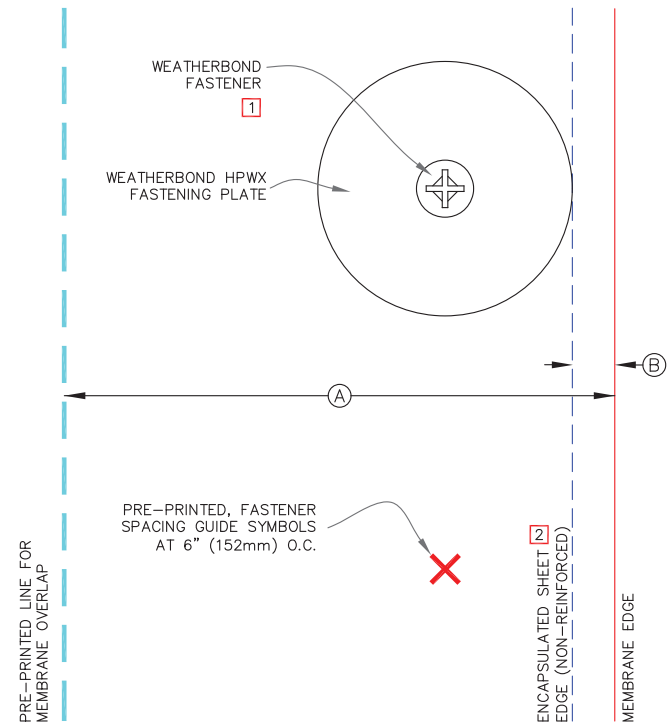


MECHANICALLY ATTACHED MEMBRANE SPLICE

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPMA-2.1



DIMENSIONS	mm	
(A)	5-1/2"	140 APPROX.
(B)	1/2"	13 APPROX.

NOTE:

- ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL AND WOOD DECKS. ON CONCRETE DECKS, APPROVED CONCRETE FASTENERS ARE USED WITH HPWX PLATES.
- POSITION SEAM FASTENING PLATES BEYOND ENCAPSULATED EDGE.

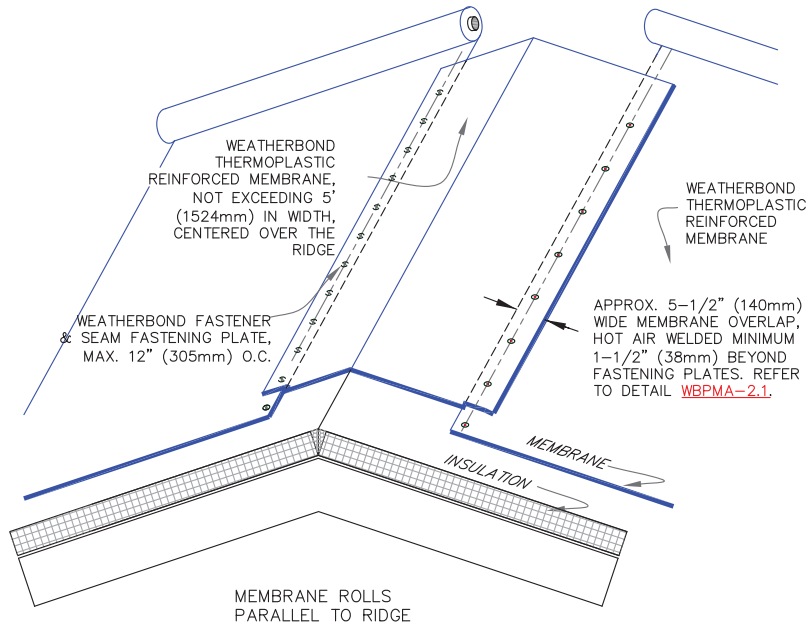


FASTENER AND PLATE PLACEMENT

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPMA-2.2



NOTES

1. RIDGE MEMBRANE ATTACHMENT IS ONLY REQUIRED WHEN ROOF SLOPE EXCEEDS 3" TO ONE HORIZONTAL FOOT [(25%),(14°)].
2. POSITION FASTENING PLATES 1/2" (13mm) MINIMUM TO 1" (25mm) MAXIMUM FROM THE EDGE OF THE DECK MEMBRANE.
3. APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHEROND PVC MEMBRANE.
4. REFER TO WEATHERBOND SPECIFICATIONS FOR REQUIRED NUMBER OF PERIMETER SHEETS, SHEET WIDTH AND MEMBRANE FASTENING DENSITY.
5. ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL AND WOOD DECKS. ON CONCRETE DECKS, APPROVED CONCRETE FASTENERS ARE USED WITH HPWX PLATES.
6. AS AN OPTION TO USING PERIMETER SHEETS, 10" (254mm) WIDE TPO PEEL & STICK RPS MAY BE USED BENEATH TPO FIELD SHEETS ONLY FOR PERIMETER SECUREMENT.

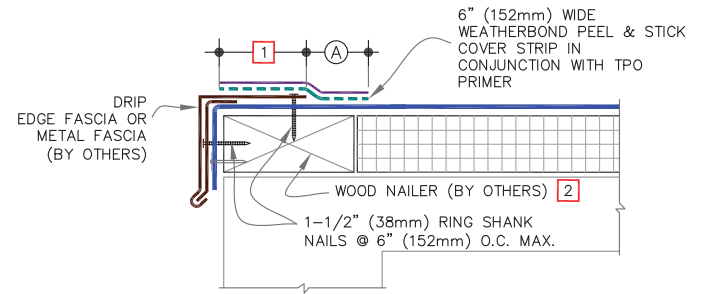


RIDGE MEMBRANE ATTACHMENT

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- 0 → SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPA-22.0

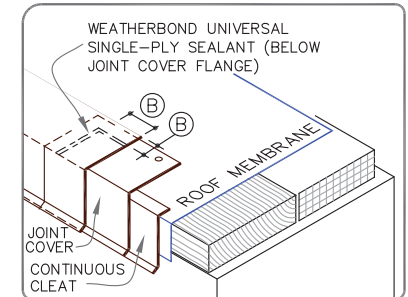


TPO ONLY
(NOT FOR PVC)

NOTES:

1. METAL FASCIA DECK FLANGE MUST BE TOTALLY COVERED BY TPO PEEL & STICK COVER STRIP WITH MINIMUM 2" (51mm) COVERAGE PAST NAIL HEADS.
2. WOOD NAILER MUST EXTEND PAST TOTAL WIDTH OF METAL FASCIA DECK FLANGE.
3. TO REMOVE FINISHING OILS, SCRUB METAL FLANGE WITH WEATHERED MEMBRANE CLEANER; ALLOW TO DRY PRIOR TO APPLYING PRIMER.
4. APPLY TPO PRIMER TO METAL FLANGE AND MEMBRANE SURFACE PRIOR TO INSTALLING TPO PEEL & STICK COVER STRIP.
5. WHEN METAL FASCIA BY OTHERS IS USED, FASTENER TYPE AND FASTENING FREQUENCY SHALL BE RECOMMENDED BY METAL EDGE MANUFACTURER.
6. TO ENSURE TPO PEEL & STICK COVER STRIP CONFORMS TO STEP-OFFS, HEAT COVER STRIP AT SPLICE INTERSECTIONS PRIOR TO ROLLING.

DIMENSIONS	mm	
(A)	2"	51 MIN.
(B)	1/2"	13 TO
	1"	25

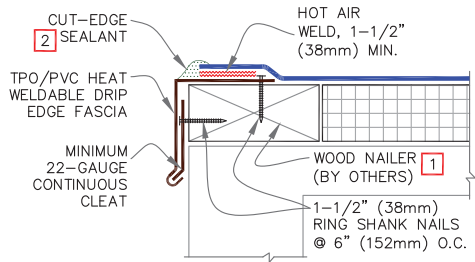


TPO DRIP EDGE FASCIA

- TPO MEMBRANE
- APPROVED SUBSTRATE
- 0 → SEE NOTE

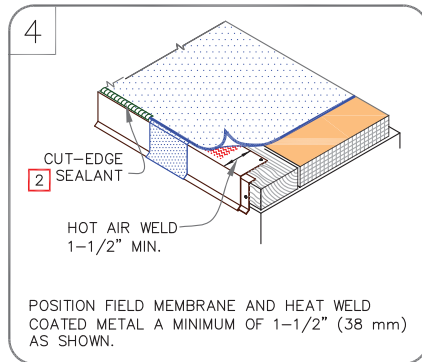
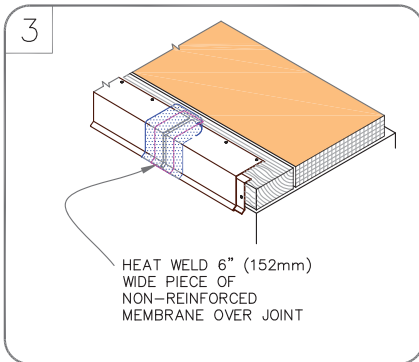
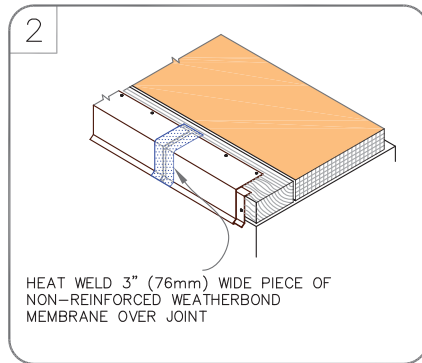
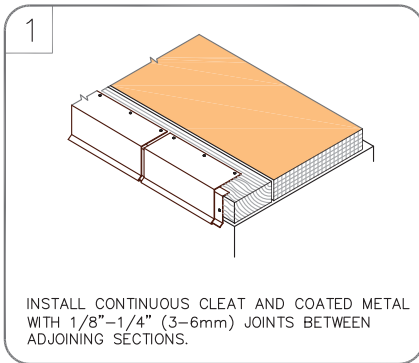
THERMOPLASTIC ROOFING SYSTEM

WBPC-1.1



NOTES:

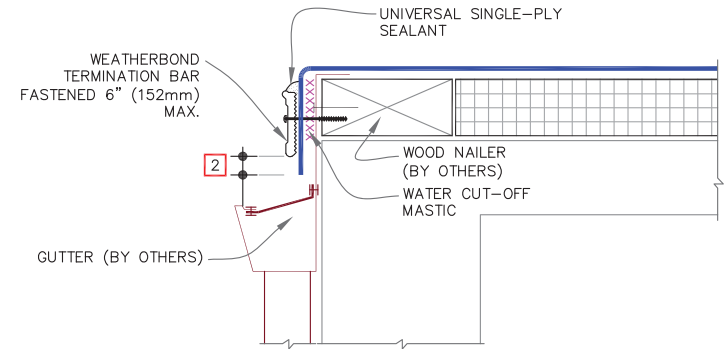
1. WOOD NAILER MUST EXTEND PAST TOTAL WIDTH OF METAL FASCIA DECK FLANGE.
2. APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.



TPO/PVC WELDABLE DRIP EDGE FASCIA

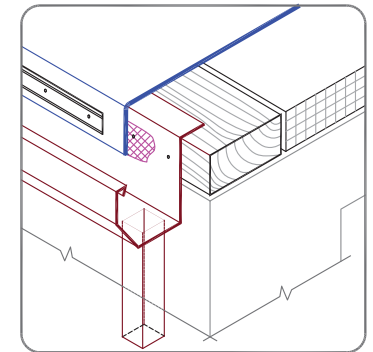
THERMOPLASTIC ROOFING SYSTEM

WBPC-1.2



NOTES:

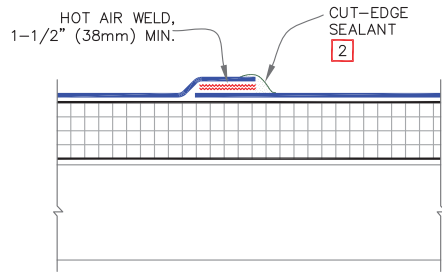
1. FASTENING OF METAL TERMINATION BAR MUST PROVIDE CONSTANT COMPRESSION ON WATER CUT-OFF MASTIC.
2. ALLOW MEMBRANE SHEET TO EXTEND 1/2" (13mm) MINIMUM BELOW THE METAL TERMINATION BAR.



METAL BAR EDGE TERMINATION

THERMOPLASTIC ROOFING SYSTEM

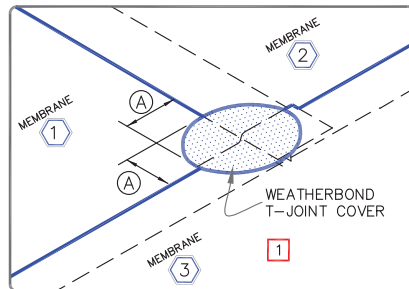
WBPC-1.3



DIMENSIONS	mm	
(A)	2-1/4"	57 MIN.

NOTES:

1. WHEN USING 60 OR 80-MIL MEMBRANE, APPLY A 4-1/2" (114mm) DIAMETER "T-JOINT" COVER AT ALL FIELD SPLICE INTERSECTIONS.
2. APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.

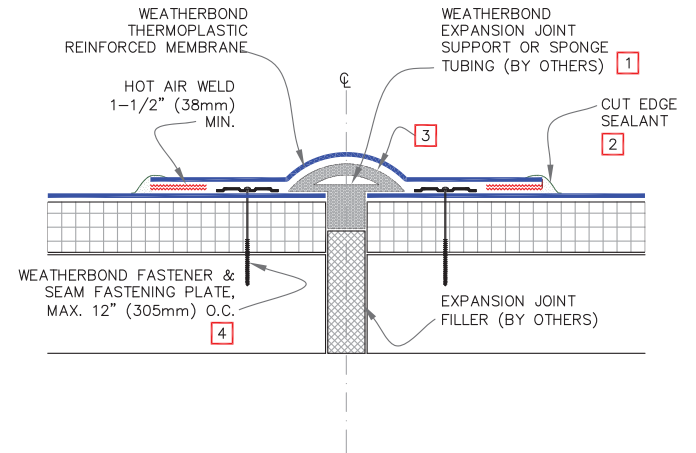


MEMBRANE SPLICE

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPC-2.0



NOTES:

1. WHEN WEATHERBOND EXPANSION JOINT SUPPORT IS USED, WIDTH OF JOINT SHALL BE A MINIMUM OF 3/4" (19mm) AND SHALL NOT EXCEED 3" (75mm).
2. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
3. MEMBRANE FLASHING SHALL NOT BE ADHERED OVER THE EXPANSION JOINT SUPPORT OR SPONGE TUBING.
4. ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL AND WOOD DECKS. ON CONCRETE DECKS, APPROVED CONCRETE FASTENERS ARE USED WITH HPWX PLATES.

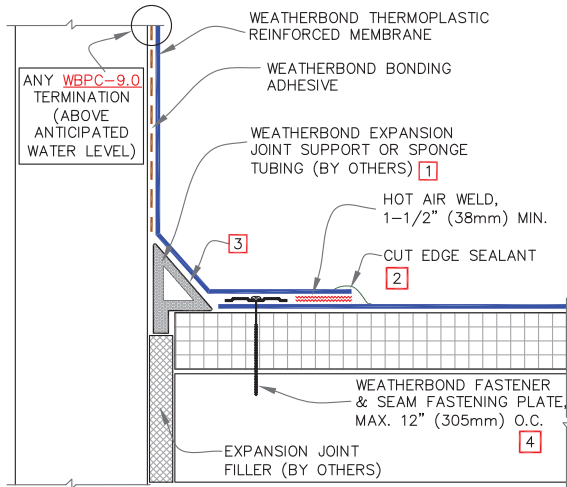


DECK-TO-DECK EXPANSION DETAIL

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPC-3.1

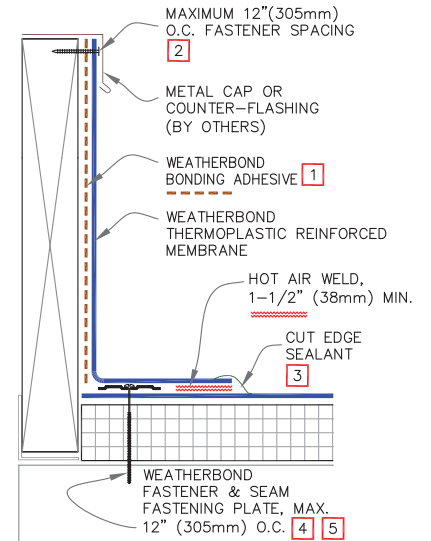


NOTES:

1. WHEN WEATHERBOND EXPANSION JOINT SUPPORT IS USED, WIDTH OF JOINT SHALL BE A MINIMUM OF 3/4" (19mm) AND SHALL NOT EXCEED 2" (51mm).
2. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
3. MEMBRANE FLASHING SHALL NOT BE ADHERED OVER THE EXPANSION JOINT SUPPORT OR SPONGE TUBING.
4. ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL AND WOOD DECKS. ON CONCRETE DECKS, APPROVED CONCRETE FASTENERS ARE USED WITH HPWX PLATES.

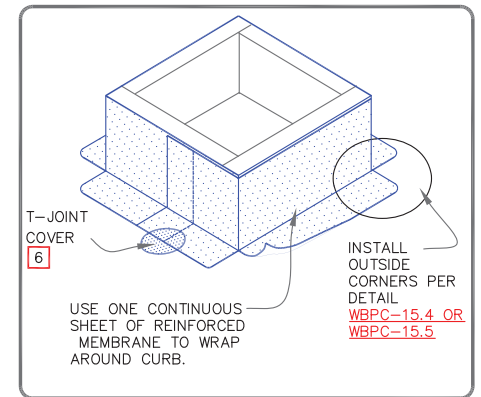


THERMOPLASTIC ROOFING SYSTEM
WBPC-3.2

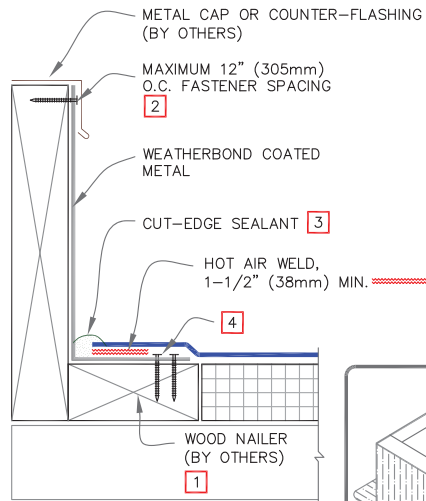


NOTES:

1. WHEN USING TPO MEMBRANE, BONDING ADHESIVE IS NOT REQUIRED WHEN THE FLASHING HEIGHT IS 12" (305mm) OR LESS AND THE MEMBRANE IS FASTENED "AS SHOWN" ON TOP OF THE CURB. WHEN WEATHERBOND TERMINATION BAR IS USED BENEATH THE COUNTER-FLASHING, BONDING ADHESIVE CAN BE ELIMINATED WHEN THE MEMBRANE HEIGHT IS 18" (457mm) OR LESS.
2. WHEN MECHANICAL FASTENERS ARE USED TO PENETRATE THE METAL COUNTER-FLASHING, USE EPDM WASHERS, APPLY WATER CUT-OFF MASTIC UNDER THE COUNTER-FLASHING OR CAULK THE FASTENER HEADS.
3. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
4. REFER TO WEATHERBOND SPECIFICATIONS FOR ACCEPTABLE WEATHERBOND FASTENERS AND PLATES.
5. MECHANICAL SECUREMENT MAY BE INSTALLED INTO THE VERTICAL SUBSTRATE.
6. WHEN USING 60 OR 80 MIL THICK CURB FLASHING, THE INTERSECTIONS BETWEEN SPLICES MUST OVERLAP WITH A WEATHERBOND "T-JOINT" COVER.

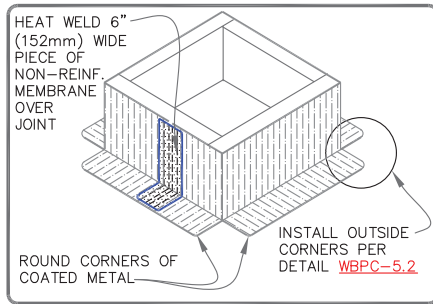
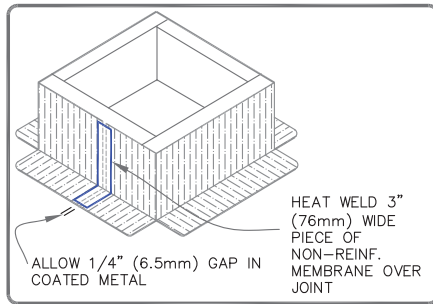


THERMOPLASTIC ROOFING SYSTEM
WBPC-5.1



NOTES:

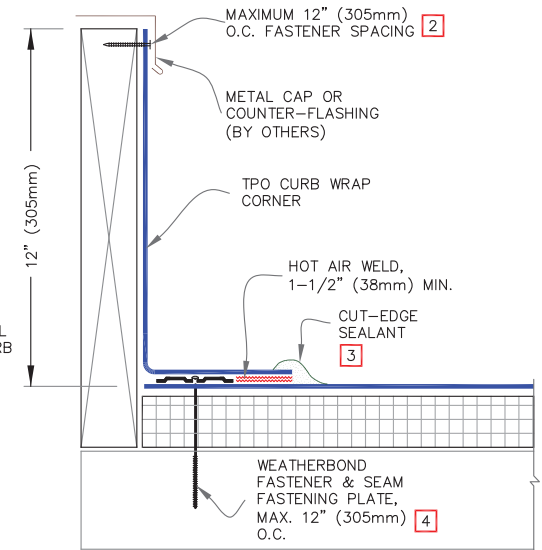
1. WOOD NAILER MUST EXTEND PAST TOTAL WIDTH OF COATED METAL DECK FLANGE.
2. WHEN MECHANICAL FASTENERS ARE USED TO PENETRATE THE METAL COUNTER-FLASHING, USE EPDM WASHERS, APPLY WATER CUT-OFF MASTIC UNDER COUNTER-FLASHING OR CAULK THE FASTENER HEAD.
3. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
4. FASTEN COATED METAL USING 1-1/2" (38mm) MIN. RING SHANK NAILS AT 6" (152mm) STAGGERED APPROX. 1/2" (13mm).



COATED METAL CURB FLASHING

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- 0 → SEE NOTE

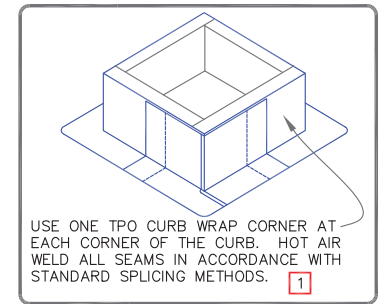
THERMOPLASTIC ROOFING SYSTEM
WBPC-5.2



NOTES:

1. FOUR (4) CURB WRAP CORNERS WILL COMPLETELY FLASH A MAXIMUM CURB SIZE OF 3'X3' (914mm X 914mm). FOR LARGER CURBS USE THE TPO CURB WRAP CORNERS IN CONJUNCTION WITH ADDITIONAL SECTIONS OF WEATHERBOND TPO MEMBRANE.
2. WHEN MECHANICAL FASTENERS ARE USED TO PENETRATE THE METAL COUNTER-FLASHING, USE EPDM WASHERS, APPLY WATER CUT-OFF MASTIC UNDER THE COUNTER-FLASHING OR CAULK THE FASTENER HEADS.
3. APPROXIMATELY 1/8" (3mm) BEAD OF CUT-EDGE SEALANT IS REQUIRED ON THE CUT EDGES OF THE TPO FIELD WRAP CORNER.
4. REFER TO WEATHERBOND SPECIFICATIONS FOR ACCEPTABLE WEATHERBOND FASTENERS AND PLATES.
5. CUSTOM SIZES ARE AVAILABLE FOR CURB FLASHING HEIGHTS GREATER THAN 12" (305mm).
6. REGARDLESS OF THE FIELD MEMBRANE THICKNESS, THE INTERSECTIONS BETWEEN SPLICES MUST BE OVERLAID WITH A WEATHERBOND "T-JOINT" COVER. IF THE PRE-FABRICATED TPO CURB WRAP IS A "CFA" LABELED PART, NO "T-JOINT" COVERS ARE REQUIRED.

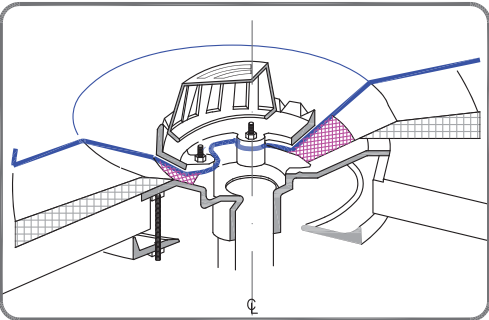
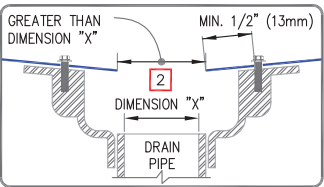
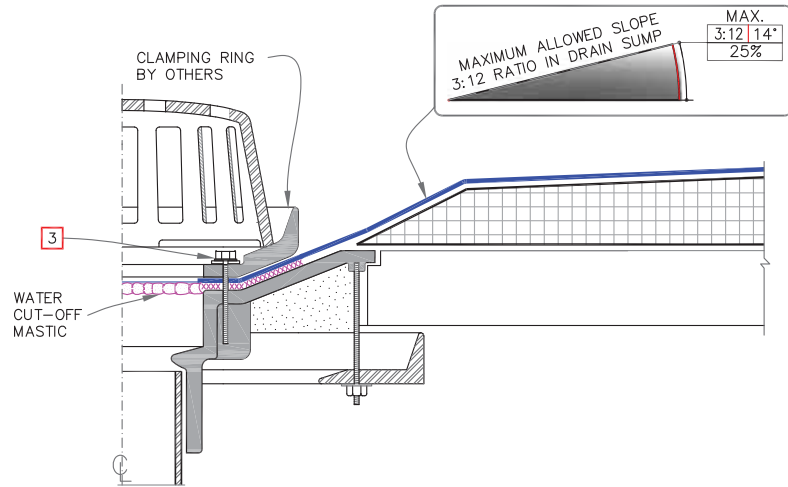
TPO ONLY
(NOT FOR PVC)



PRE-FABRICATED TPO CURB WRAP CORNER

- TPO MEMBRANE
- APPROVED SUBSTRATE
- 0 → SEE NOTE

THERMOPLASTIC ROOFING SYSTEM
WBPC-5.3



NOTES:

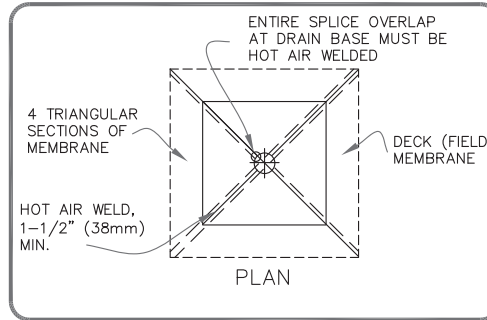
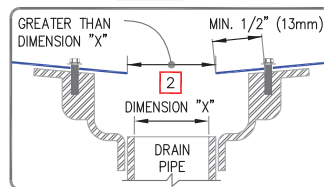
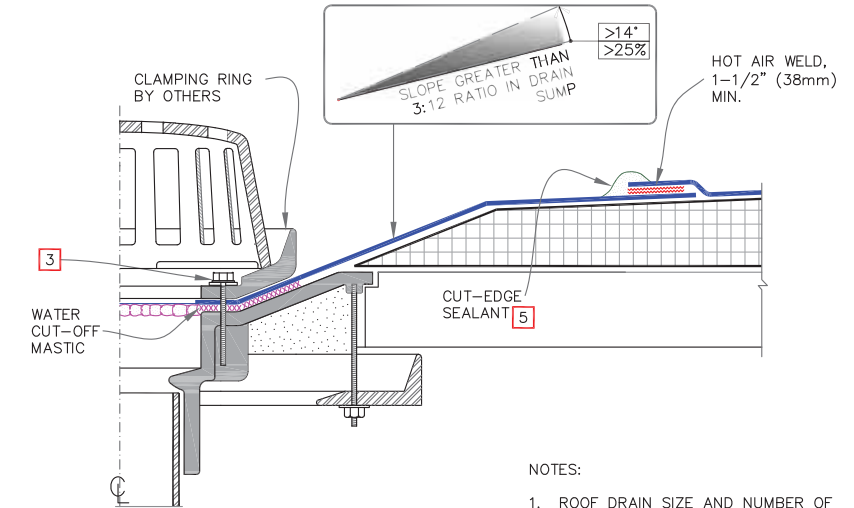
1. ROOF DRAIN SIZE AND NUMBER OF DRAINS SHALL BE IN ACCORDANCE WITH THE LOCAL CODES.
2. THE HOLE IN THE MEMBRANE SHALL EXCEED THE DIAMETER OF THE DRAIN PIPE, BUT SHALL BE NO LESS THAN 1/2" (13mm) FROM THE ATTACHMENT POINTS OF THE DRAIN CLAMPING RING.
3. ALL BOLTS OR CLAMPS MUST BE IN PLACE TO PROVIDE CONSTANT COMPRESSION ON WATER CUT-OFF MASTIC.
4. REMOVE EXISTING LEAD, FLASHING MATERIAL & ENSURE THE DRAIN RING IS COMPLETELY CLEAN DOWN TO BARE METAL.



ROOF DRAIN (DRAIN SUMP UP TO 3 INCHES TO 1 HORIZONTAL FOOT)

WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM
WBPC-6.1



NOTES:

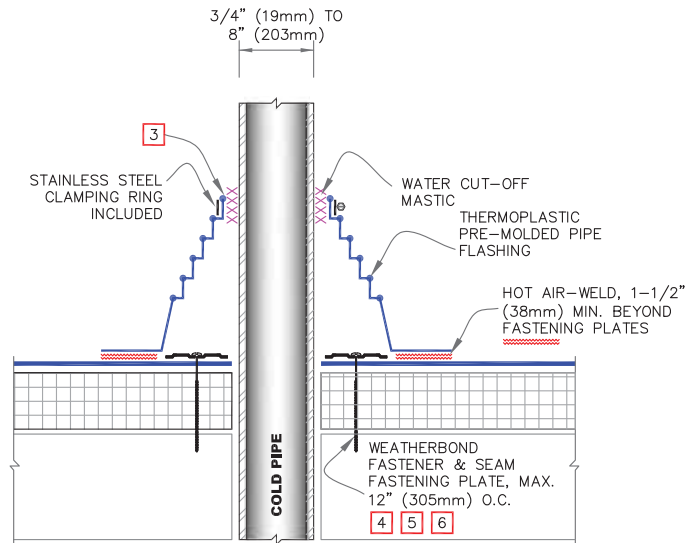
1. ROOF DRAIN SIZE AND NUMBER OF DRAINS SHALL BE IN ACCORDANCE WITH THE LOCAL CODES.
2. THE HOLE IN THE MEMBRANE SHALL EXCEED THE DIAMETER OF THE DRAIN PIPE, BUT SHALL BE NO LESS THAN 1/2" (13mm) FROM THE ATTACHMENT POINTS OF THE DRAIN CLAMPING RING.
3. ALL BOLTS OR CLAMPS MUST BE IN PLACE TO PROVIDE CONSTANT COMPRESSION ON WATER CUT-OFF MASTIC.
4. REMOVE EXISTING LEAD, FLASHING MATERIAL & ENSURE THE DRAIN RING IS COMPLETELY CLEAN DOWN TO BARE METAL.
5. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.



ROOF DRAIN (DRAIN SUMP GREATER THAN 3" TO 1 HORIZONTAL FOOT) OPTION 1

WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

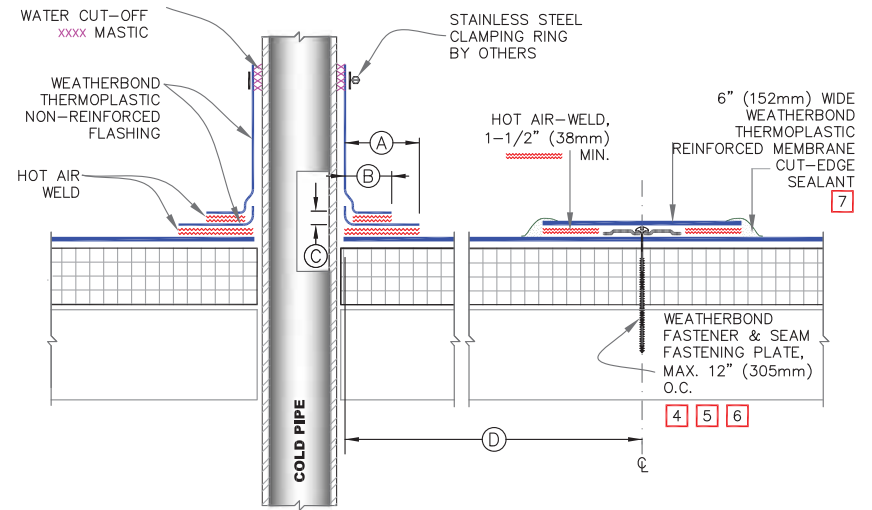
THERMOPLASTIC ROOFING SYSTEM
WBPC-6.2



NOTES:

1. REMOVE ALL EXISTING LEAD AND FLASHING MATERIAL BEFORE INSTALLING PRE-MOLDED PIPE FLASHING.
2. TEMPERATURE OF THE PIPE PENETRATION MUST NOT EXCEED 140°F (60°C) WHEN USING PVC AND 160°F (71°C) WHEN USING TPO FLASHING.
3. PIPE SEAL MUST HAVE INTACT RIB AT TOP EDGE, REGARDLESS OF PIPE DIAMETER.
4. INSTALL A MINIMUM OF 4 FASTENERS AND PLATES AROUND THE PIPE, EQUALLY SPACED. IF FASTENERS AND PLATES CANNOT BE INSTALLED AS SHOWN, THEY MAY ALSO BE POSITIONED OUTSIDE THE PIPE MAXIMUM 12" (305mm) O.C. AND FLASHED WITH WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE/CUT-EDGE SEALANT. REFER TO [DETAIL WBPC-8.2](#).
5. FASTENERS AND PLATES ARE NOT REQUIRED ON ADHERED SYSTEMS UNLESS PIPE DIAMETER EXCEEDS 18" (457mm).
6. ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL AND WOOD DECKS. ON CONCRETE DECKS, APPROVED CONCRETE FASTENERS ARE USED WITH HPWX PLATES.

<p>WEATHERBOND ROOFING SYSTEMS © 2018 WeatherBond</p>	<p>PRE-MOLDED FLASHING</p>	<p>→ WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE</p>	<p>THERMOPLASTIC ROOFING SYSTEM</p> <p>WBPC-8.1</p>
		<p>→ APPROVED SUBSTRATE</p>	
		<p>0 → SEE NOTE</p>	



NOTES:

1. REMOVE ALL EXISTING LEAD AND FLASHING MATERIAL BEFORE INSTALLING FIELD FABRICATED PIPE FLASHING.
2. TEMPERATURE OF THE PIPE PENETRATION MUST NOT EXCEED 140°F (60°C) WHEN USING PVC AND 160°F (71°C) WHEN USING TPO FLASHING.
3. WEATHERBOND THERMOPLASTIC NON-REINFORCED FLASHING WRAPPED AROUND PIPE SHALL HAVE MINIMUM 1-1/2" (38mm) VERTICAL HOT AIR WELD.
4. INSTALL A MINIMUM OF 4 SEAM FASTENING PLATES FOR PIPES WITH A DIAMETER UP TO 6" (152mm). ADDITIONAL SEAM FASTENING PLATES WILL BE REQUIRED FOR PIPES GREATER THAN 6" (152mm) IN DIAMETER AND SHALL BE SPACED 12" (305mm) ON CENTER MAXIMUM.
5. FASTENERS/PLATES ARE NOT REQUIRED ON ADHERED SYSTEMS UNLESS PIPE DIAMETER EXCEEDS 18" (500mm).
6. ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL AND WOOD DECKS. ON CONCRETE DECKS, APPROVED CONCRETE FASTENERS ARE USED WITH HPWX PLATES.
7. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.

DIMENSIONS	mm	
(A)	1-1/2"	38 TO
	2"	51
(B)	1"	25 MIN.
(C)	1/2"	13 MIN.
(D)	12"	305 APPROX.

<p>WEATHERBOND ROOFING SYSTEMS © 2018 WeatherBond</p>	<p>FIELD FABRICATED PIPE FLASHING</p>	<p>→ WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE</p>	<p>THERMOPLASTIC ROOFING SYSTEM</p> <p>WBPC-8.2</p>
		<p>→ APPROVED SUBSTRATE</p>	
		<p>0 → SEE NOTE</p>	

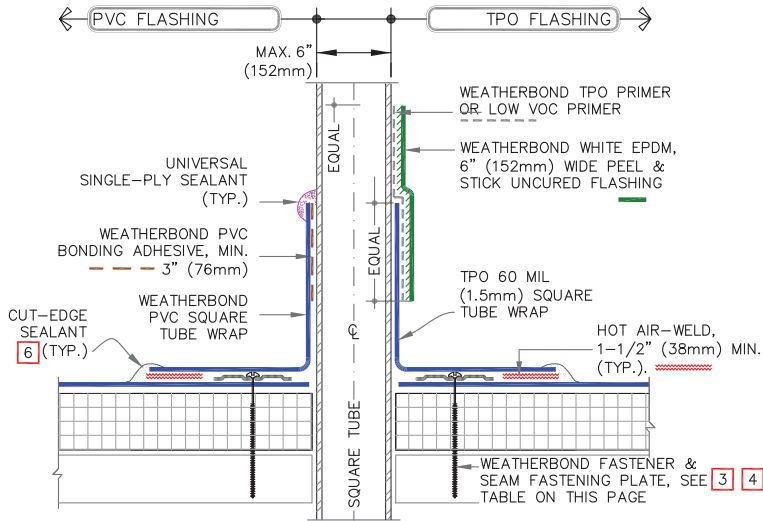
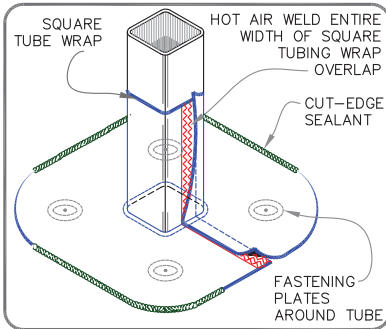


TABLE: FASTENER TYPES ON MECHANICALLY FASTENED ROOF ASSEMBLY		
DECK TYPE	FASTENERS	PLATES
STEEL, WOOD	HPWX	
CONCRETE	APPROVED CONCRETE FASTENER	HPWX



NOTES:

1. REMOVE ALL EXISTING LEAD AND FLASHING MATERIAL.
2. TEMPERATURE OF THE PIPE PENETRATION MUST NOT EXCEED 140°F (60°C) WHEN USING PVC AND 160°F (71°C) WHEN USING TPO FLASHING.
3. INSTALL A MINIMUM OF 4 SEAM FASTENING PLATES FOR TUBE SIDE DIMENSIONS UP TO 6" (152mm).
4. FASTENERS AND PLATES ARE NOT REQUIRED ON ADHERED SYSTEM. SEE TABLE FOR MF SYSTEM.
5. APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.

6. REGARDLESS OF THE FIELD MEMBRANE THICKNESS, WEATHERBOND "T-JOINT" COVERS ARE REQUIRED OVER THE SPLICE INTERSECTIONS OF THE SPLIT PIPE SEAL. IF PRE-FABRICATED SPLIT PIPE SEAL IS A "CFA" LABELED PART, NO "T-JOINT" COVERS ARE REQUIRED.



PRE-FABRICATED SQUARE TUBE WRAP

→ WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
 → APPROVED SUBSTRATE
 → SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPC-8.3

DIMENSIONS	mm	
(A)	6"	152 MAX.
(B)	1-1/2"	38 MIN.
(C)	1/2"	13 MIN.
(D)	1"	25 MIN.
(E)	12"	305 APPROX.

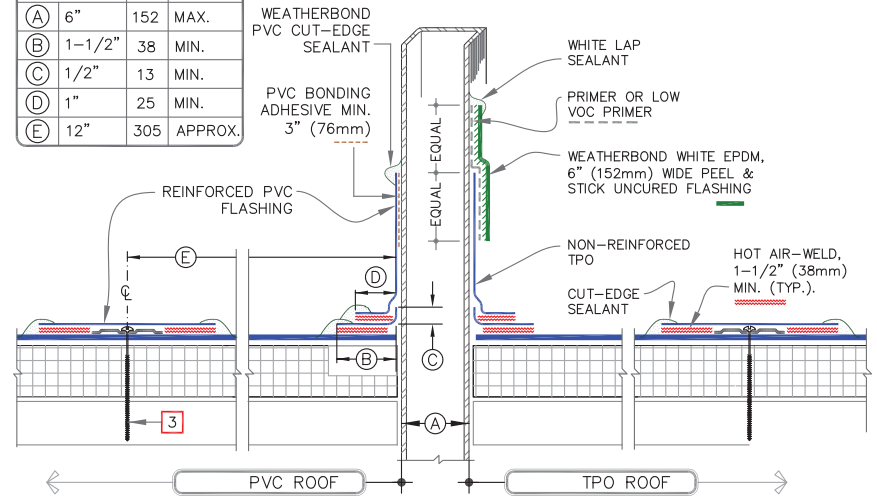
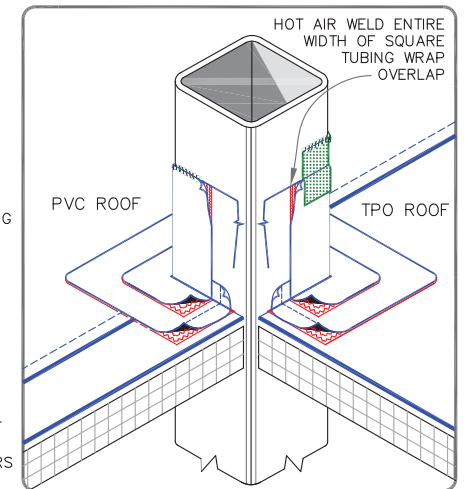


TABLE: FASTENER TYPES ON MECHANICALLY FASTENED ROOF ASSEMBLY		
DECK TYPE	FASTENERS	PLATES
STEEL, WOOD	HPWX	
CONCRETE	APPROVED CONCRETE FASTENER	HPWX

NOTES:

1. REMOVE ALL EXISTING LEAD AND FLASHING MATERIAL BEFORE INSTALLING PRE-FABRICATED SQUARE TUBE WRAP.
2. TEMPERATURE OF THE TUBE PENETRATION MUST NOT EXCEED 140°F (60°C) WHEN USING PVC AND 160°F (71°C) WHEN USING TPO FLASHING.
3. WEATHERBOND FASTENERS & SEAM FASTENING PLATES FOR MECHANICALLY FASTENED SYSTEM (NOT REQUIRED ON ADHERED SYSTEM). SEE TABLE ABOVE.
4. REGARDLESS OF THE FIELD MEMBRANE THICKNESS, WEATHERBOND "T-JOINT" COVERS ARE REQUIRED OVER THE SPLICE INTERSECTIONS OF THE SPLIT PIPE SEAL. IF PRE-FABRICATED SPLIT PIPE SEAL IS A "CFA" LABELED PART, NO "T-JOINT" COVERS ARE REQUIRED.

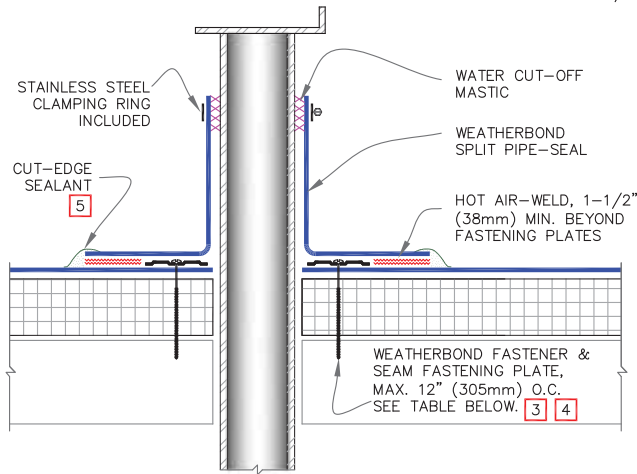


FIELD-FABRICATED SQUARE TUBE FLASHING

→ WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
 → APPROVED SUBSTRATE
 → SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

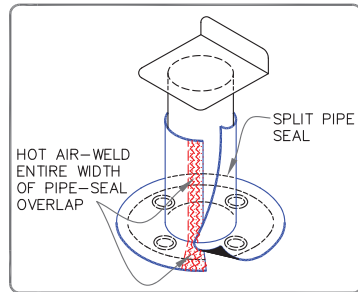
WBPC-8.4



NOTES:

1. REMOVE ALL EXISTING LEAD AND FLASHING MATERIAL BEFORE INSTALLING SPLIT PIPE FLASHING.
2. TEMPERATURE OF THE PIPE PENETRATION MUST NOT EXCEED 140°F (60°C) WHEN USING PVC AND 160°F (71°C) WHEN USING TPO.
3. INSTALL A MINIMUM OF 4 FASTENERS AND PLATES AROUND THE PIPE, EQUALLY SPACED. IF FASTENERS AND PLATES CANNOT BE INSTALLED AS SHOWN, THEY MAY ALSO BE POSITIONED OUTSIDE THE PIPE MAXIMUM 12" (305mm) O.C. AND FLASHED WITH WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE/CUT-EDGE SEALANT. REFER TO [DETAIL TPC-8.2](#).
4. FASTENERS AND PLATES ARE NOT REQUIRED ON ADHERED SYSTEMS UNLESS PIPE DIAMETER EXCEEDS 18" (457mm). SEE TABLE ON RIGHT FOR MECHANICALLY FASTENED SYSTEM.
5. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
6. REGARDLESS OF THE FIELD MEMBRANE THICKNESS, WEATHERBOND "T-JOINT" COVERS ARE REQUIRED OVER THE SPLICE INTERSECTIONS OF THE SPLIT PIPE SEAL. IF PRE-FABRICATED SPLIT PIPE SEAL IS A "CFA" LABELED PART, NO "T-JOINT" COVERS ARE REQUIRED.

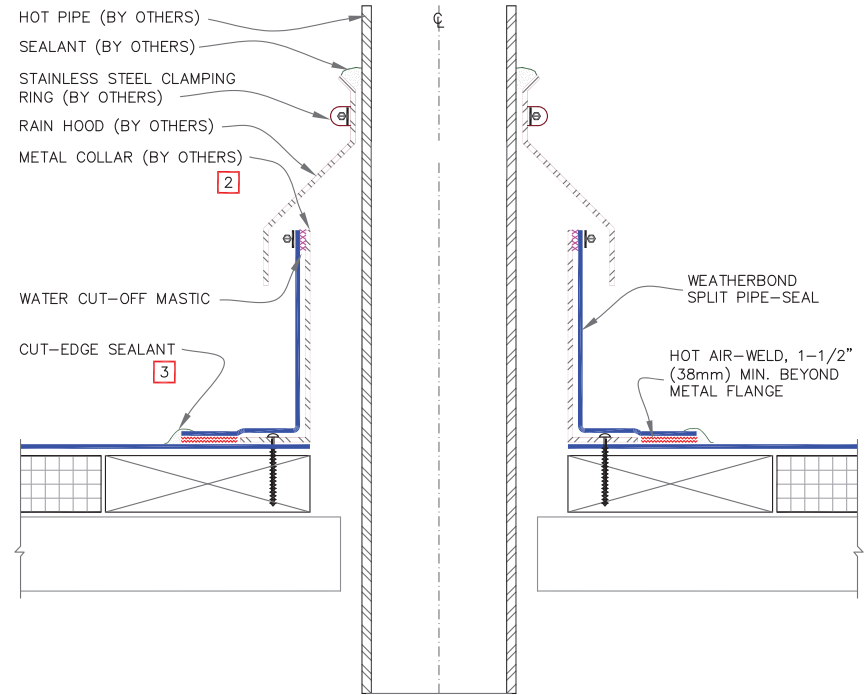
DECK TYPE	FASTENERS	PLATES
STEEL, WOOD	HPWX	
CONCRETE	APPROVED CONCRETE FASTENER	HPWX



PRE-FABRICATED SPLIT PIPE SEAL

THERMOPLASTIC ROOFING SYSTEM

WBPC-8.5



NOTES:

1. REMOVE ALL EXISTING LEAD AND FLASHING MATERIAL BEFORE INSTALLING PIPE FLASHING.
2. TEMPERATURE OF THE METAL COLLAR MUST NOT EXCEED 140°F (60°C) WHEN USING PVC AND 160°F (71°C) WHEN USING TPO.
3. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
4. REGARDLESS OF THE FIELD MEMBRANE THICKNESS, WEATHERBOND "T-JOINT" COVERS ARE REQUIRED OVER THE SPLICE INTERSECTIONS OF THE SPLIT PIPE SEAL. (IF PRE-FABRICATED SPLIT PIPE SEAL IS A "CFA" LABELED PART, NO "T-JOINT" COVERS ARE REQUIRED.

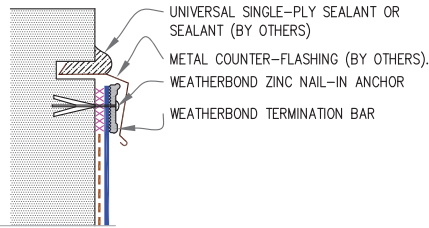


HOT PIPE FLASHING

THERMOPLASTIC ROOFING SYSTEM

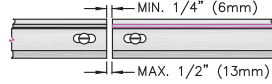
WBPC-8.6

9.1 MECHANICAL TERMINATION WITH COUNTER FLASHING

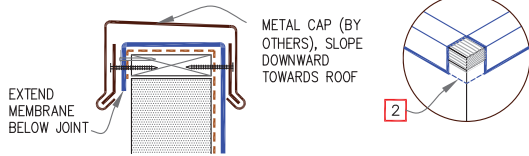


NOTES:

1. APPLY ON HARD SMOOTH SURFACE ONLY; NOT FOR USE ON EXPOSED WOOD.
2. DO NOT WRAP TERMINATION BAR AROUND CORNERS.



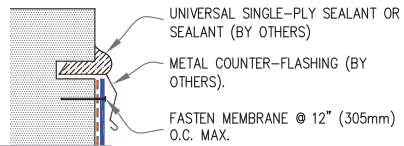
9.2 SHEET METAL COPING (BY OTHERS)



NOTES:

1. FOR WEATHERBOND COPING, REFER TO INSTALLATION INSTRUCTIONS PUBLISHED SEPARATELY.
2. MEMBRANE MUST BE EXTENDED TO CORNERS TO PROVIDE COMPLETE COVERAGE OF THE TOP WALL SURFACE.

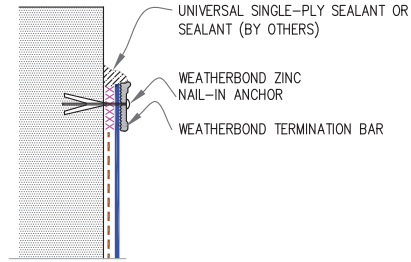
9.3 COUNTER FLASHING TERMINATION



NOTE:

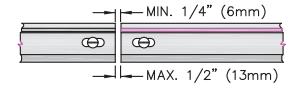
1. WHEN MECHANICAL FASTENERS ARE USED TO PENETRATE THE METAL COUNTER-FLASHING, USE EPDM WASHERS, APPLY WATER CUT-OFF MASTIC UNDER THE COUNTER-FLASHING OR CAULK THE FASTENER HEADS.

9.4 MECHANICAL TERMINATION

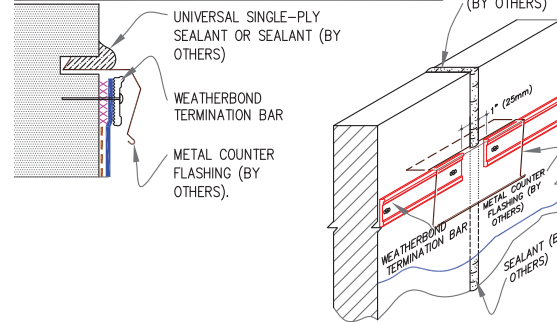


NOTES:

1. APPLY ON HARD SMOOTH SURFACE ONLY; NOT FOR USE ON EXPOSED WOOD.
2. DO NOT WRAP COMPRESSION TERMINATION BAR AROUND CORNER.



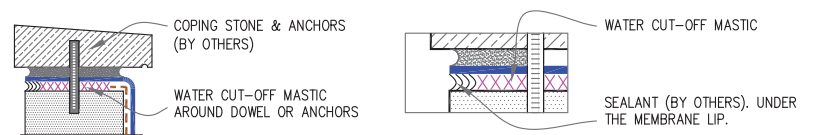
9.5 MECHANICAL TERMINATION AT VERTICAL JOINT



NOTES:

1. APPLY ON HARD SMOOTH SURFACE ONLY.
2. DO NOT WRAP COMPRESSION TERMINATION BAR AROUND CORNERS.
3. VERTICAL JOINTS IN THE PRE-CAST PANEL AS WELL AS ALL GAPS AT THE JUNCTION OF THE TILT-UP PANEL AND ROOF DECK MUST BE FULLY SEALED TO PREVENT AIR INFILTRATION.

9.6 COPING STONE TERMINATION

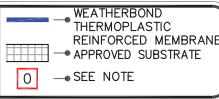


--- WEATHERBOND BONDING ADHESIVE

xxxxxxx WATER CUT-OFF MASTIC - MUST BE HELD UNDER CONSTANT COMPRESSION.



MEMBRANE TERMINATIONS,
PAGE 1 OF 2



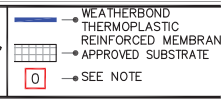
THERMOPLASTIC ROOFING SYSTEM
WBPC-9.0A

--- WEATHERBOND BONDING ADHESIVE

xxxxxxx WATER CUT-OFF MASTIC- MUST BE HELD UNDER CONSTANT COMPRESSION.



MEMBRANE TERMINATIONS,
PAGE 2 OF 2



THERMOPLASTIC ROOFING SYSTEM
WBPC-9.0B

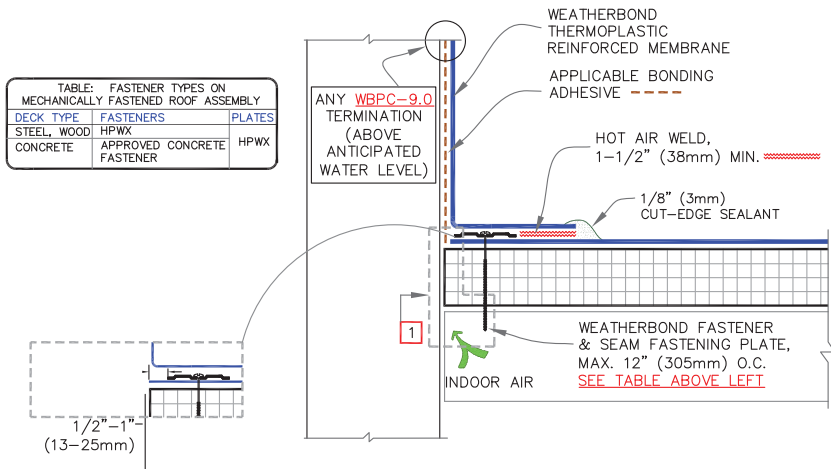
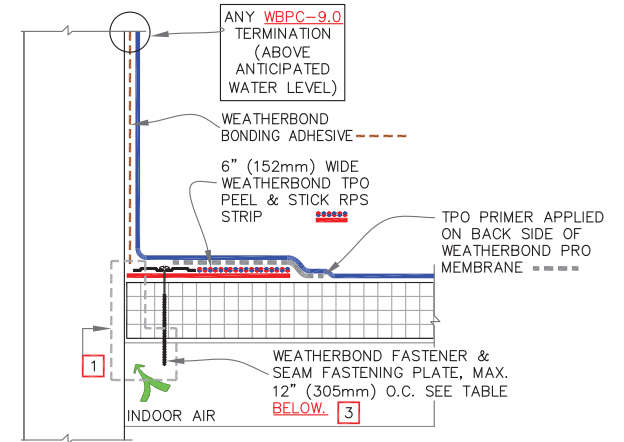
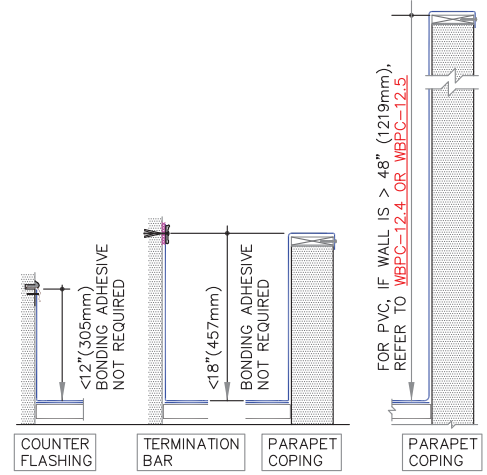


TABLE: FASTENER TYPES ON MECHANICALLY FASTENED ROOF ASSEMBLY		
DECK TYPE	FASTENERS	PLATES
STEEL, WOOD	HPWX	
CONCRETE	APPROVED CONCRETE FASTENER	HPWX



- NOTES:
- REFER TO SPECIAL CONDITION [SPEC. SUPPLEMENTS G-01-11 OR G-08-11](#):
 - TO BLOCK INDOOR AIR INFILTRATION AND HUMIDITY AT THE JUNCTION ([G-01-11](#)).
 - WHERE ROOF SYSTEM IS DESIGNED WITH A VAPOR RETARDER ([G-08-11](#)).
 - IN A CASE WHERE FASTENERS MUST BE FASTENED INTO THE VERTICAL SURFACE, CARE MUST BE TAKEN TO CREATE THE MEMBRANE TIGHTLY INTO THE ANGLE CHANGE. PLACING THE PLATES TIGHT INTO THE ANGLE CHANGE WILL HELP HOLD THE MEMBRANE IN THE PROPER POSITION.



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PARAPET FLASHING

→ WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE

→ APPROVED SUBSTRATE

→ SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

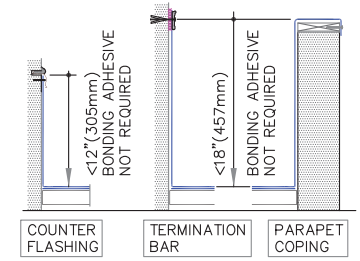
WBPC-12.1

TPO ONLY
(NOT FOR PVC)

NOTES:

- REFER TO SPECIAL CONDITION [SPEC. SUPPLEMENTS G-01-11 OR G-08-11](#):
 - TO BLOCK INDOOR AIR INFILTRATION AND HUMIDITY AT THE JUNCTION ([G-01-11](#)).
 - WHERE ROOF SYSTEM IS DESIGNED WITH A VAPOR RETARDER ([G-08-11](#)).
- FOR INSIDE CORNER AND RUSS APPLICATION SEE [WBPC-12.2B](#).
- IN A CASE WHERE FASTENERS MUST BE FASTENED INTO THE VERTICAL SURFACE, CARE MUST BE TAKEN TO CREATE THE RUSS AS WELL AS THE MEMBRANE TIGHTLY INTO THE ANGLE CHANGE TO MAXIMIZE CONTACT BETWEEN THE TAPE AND MEMBRANE. MEMBRANE MUST BE ADHERED TO THE FULL WIDTH OF THE TAPE. PLACING THE PLATES TIGHT INTO THE ANGLE CHANGE WILL HELP HOLD THE RUSS IN THE PROPER POSITION.

TABLE: FASTENER TYPES ON MECHANICALLY FASTENED ROOF ASSEMBLY		
DECK TYPE	FASTENERS	PLATES
STEEL, WOOD	HPWX	
CONCRETE	APPROVED CONCRETE FASTENER	HPWX



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PARAPET FLASHING WITH PEEL & STICK RPS, PAGE 1 OF 2

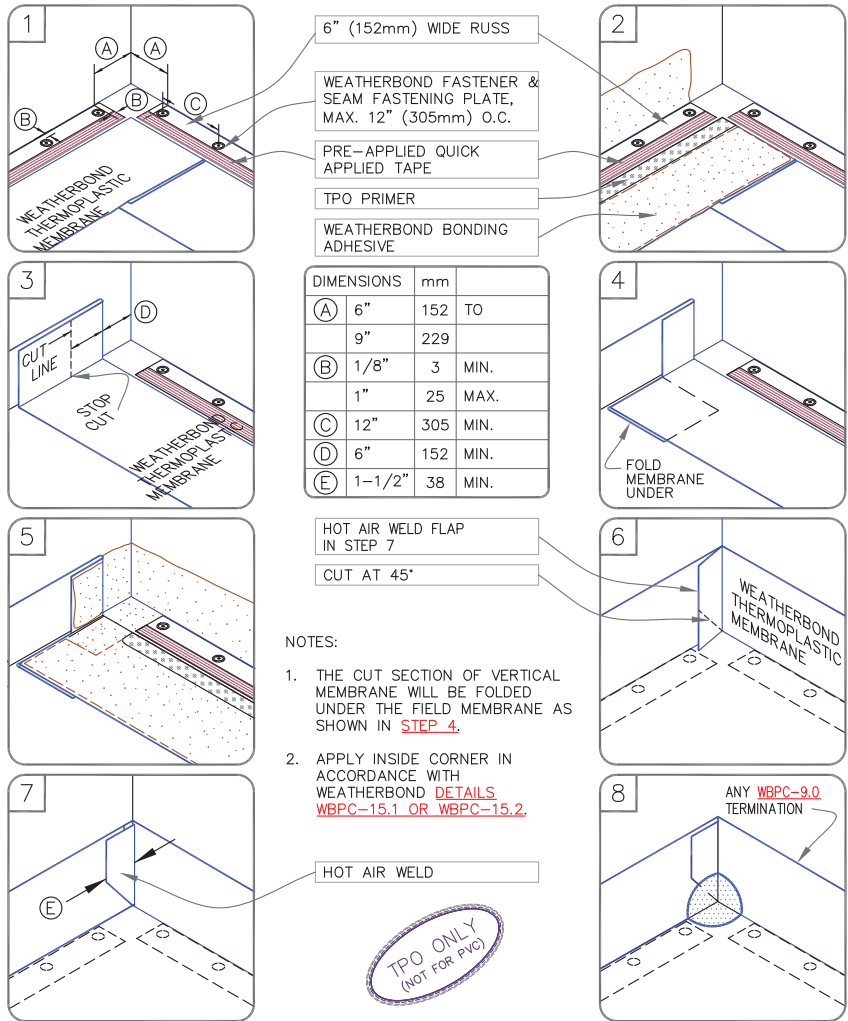
→ TPO MEMBRANE

→ APPROVED SUBSTRATE

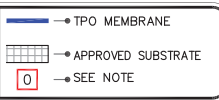
→ SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

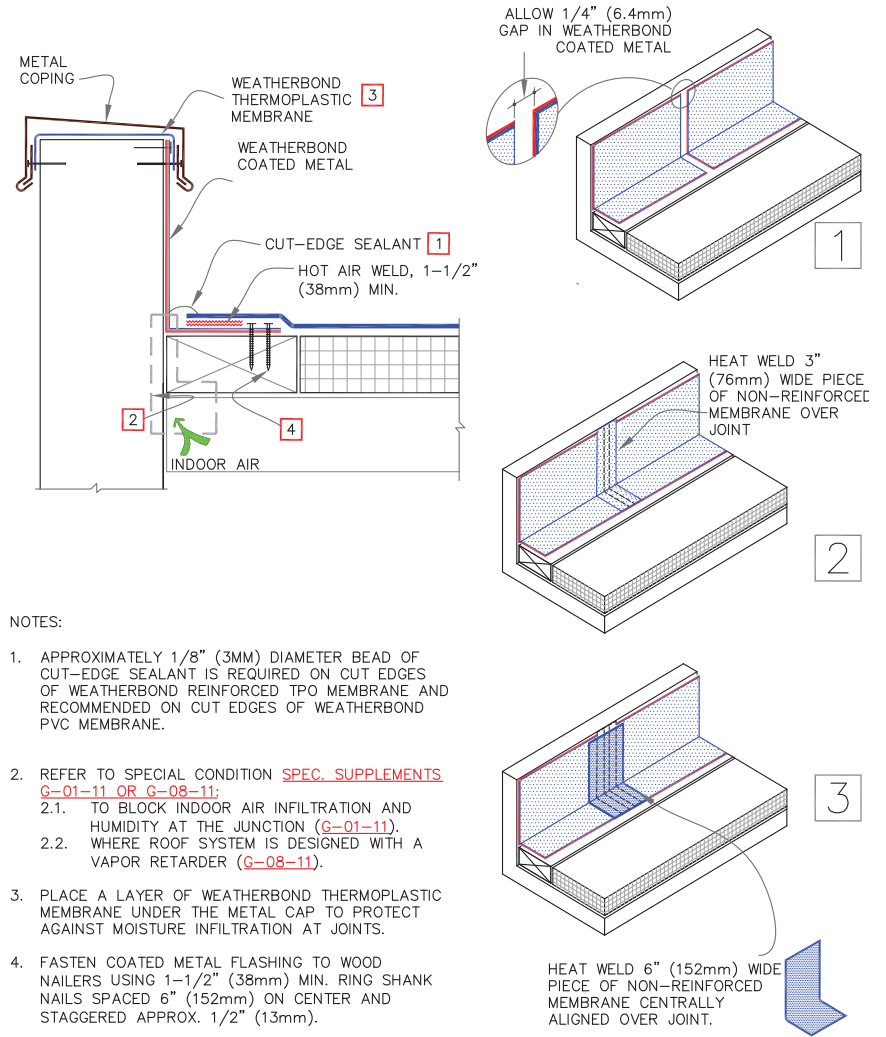
WBPC-12.2A



PARAPET FLASHING WITH PEEL & STICK RPS, PAGE 2 OF 2



THERMOPLASTIC ROOFING SYSTEM
WBPC-12.2B

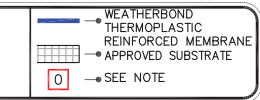


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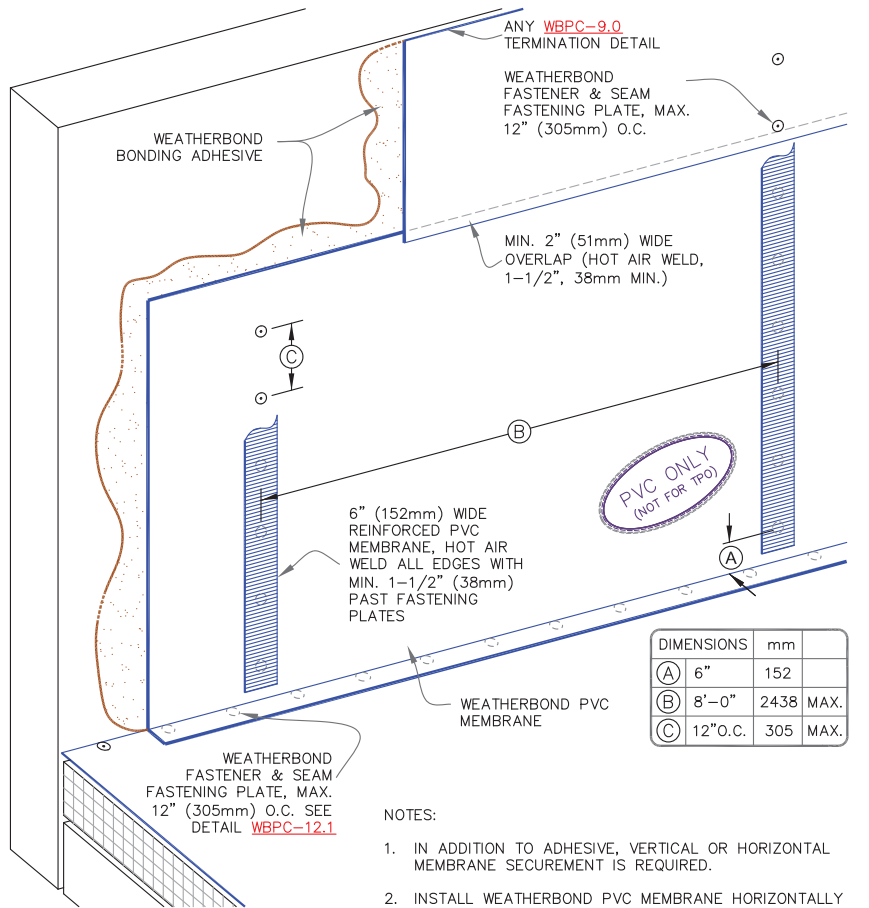
1. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
2. REFER TO SPECIAL CONDITION [SPEC. SUPPLEMENTS G-01-11 OR G-08-11](#):
 - 2.1. TO BLOCK INDOOR AIR INFILTRATION AND HUMIDITY AT THE JUNCTION ([G-01-11](#)).
 - 2.2. WHERE ROOF SYSTEM IS DESIGNED WITH A VAPOR RETARDER ([G-08-11](#)).
3. PLACE A LAYER OF WEATHERBOND THERMOPLASTIC MEMBRANE UNDER THE METAL CAP TO PROTECT AGAINST MOISTURE INFILTRATION AT JOINTS.
4. FASTEN COATED METAL FLASHING TO WOOD NAILERS USING 1-1/2" (38mm) MIN. RING SHANK NAILS SPACED 6" (152mm) ON CENTER AND STAGGERED APPROX. 1/2" (13mm).



COATED METAL WALL FLASHING



THERMOPLASTIC ROOFING SYSTEM
WBPC-12.3



DIMENSIONS	mm	
(A) 6"	152	
(B) 8'-0"	2438	MAX.
(C) 12" O.C.	305	MAX.

NOTES:

1. IN ADDITION TO ADHESIVE, VERTICAL OR HORIZONTAL MEMBRANE SECUREMENT IS REQUIRED.
2. INSTALL WEATHERBOND PVC MEMBRANE HORIZONTALLY AS SHOWN WITH LENGTH PARALLEL TO THE BASE OF THE WALL.
3. ADDITIONAL SECUREMENT IS NOT REQUIRED WHEN FLASHING TERMINATION IS 48" (1219mm) OR LESS.

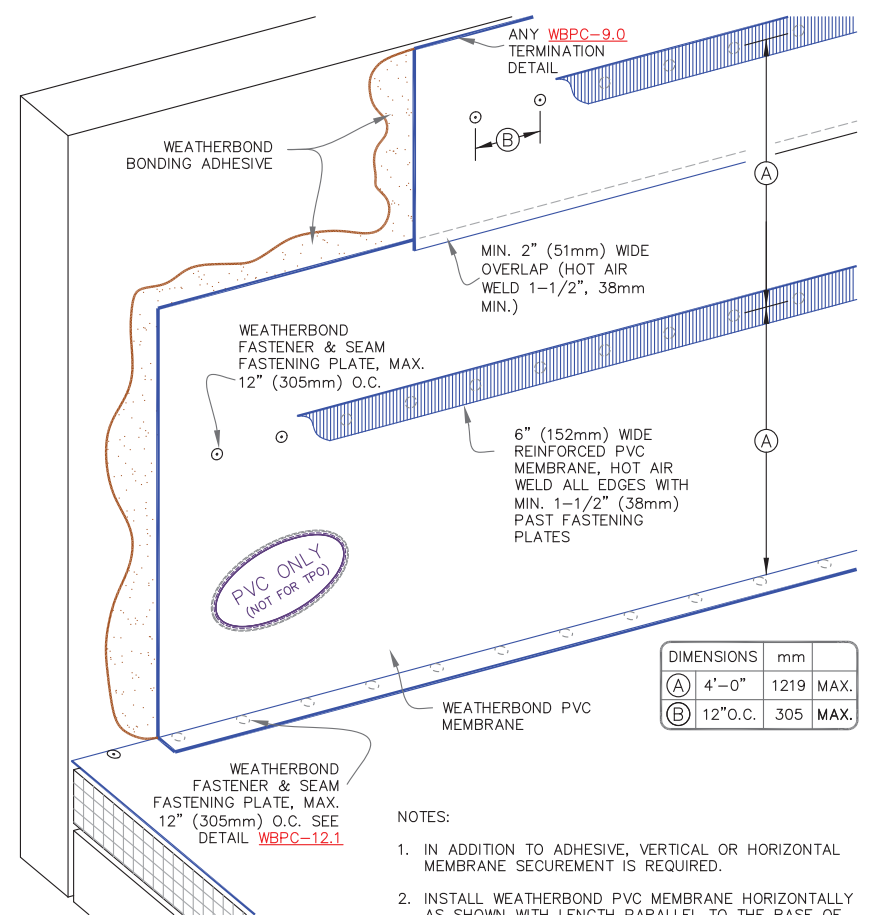


PARAPET FLASHING > 48" (1200mm) - VERTICAL SECUREMENT

PVC MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPC-12.4



DIMENSIONS	mm	
(A) 4'-0"	1219	MAX.
(B) 12" O.C.	305	MAX.

NOTES:

1. IN ADDITION TO ADHESIVE, VERTICAL OR HORIZONTAL MEMBRANE SECUREMENT IS REQUIRED.
2. INSTALL WEATHERBOND PVC MEMBRANE HORIZONTALLY AS SHOWN WITH LENGTH PARALLEL TO THE BASE OF THE WALL.
3. ADDITIONAL SECUREMENT IS NOT REQUIRED WHEN FLASHING TERMINATION IS 48" (1219mm) OR LESS.

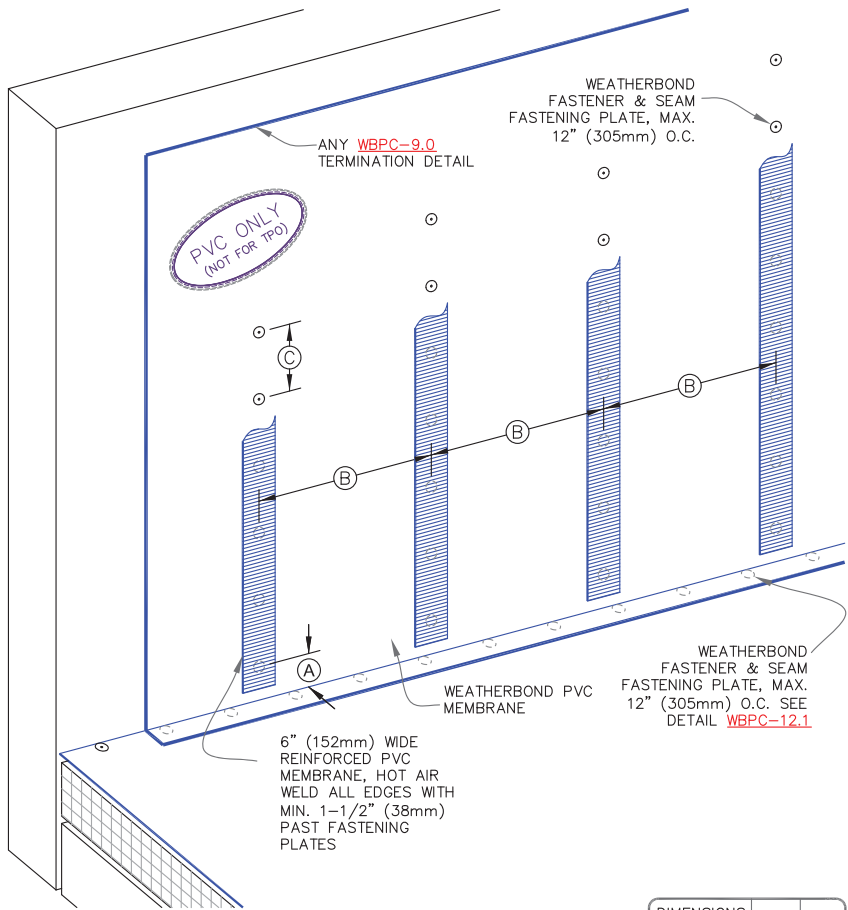


PARAPET FLASHING > 48" (1200mm) - HORIZONTAL SECUREMENT

PVC MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPC-12.5



DIMENSIONS	mm	
(A)	6"	152
(B)	32"	813 MAX.
(C)	12"	305 MAX.

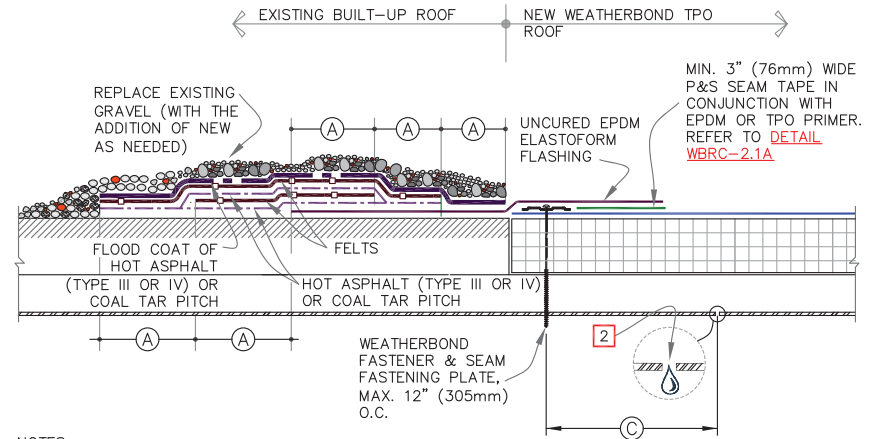


PARAPET FLASHING / NO ADHESION - ANY HEIGHT OPTION

PVC MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

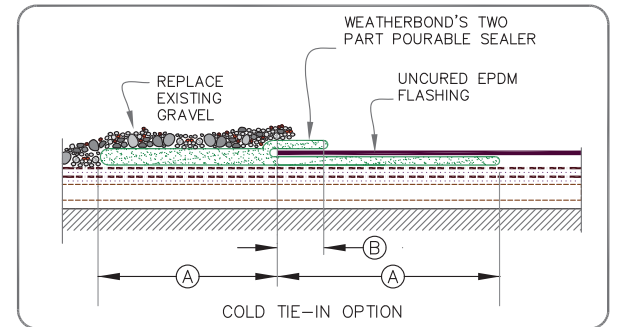
WBPC-12.6



NOTES:

1. REMOVE ALL GRAVEL AT TIE-IN.
2. DRILL A 3/8" (10mm) DIAMETER WEEP HOLE INTO THE BOTTOM FLUTES OF THE STEEL DECK ALONG THE PERIMETER TO THE TIE-IN 6" (152mm) MINIMUM TO 12" (305mm) MAXIMUM FROM THE SEAM FASTENING PLATE.
3. ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL DECKS.
4. IF WATER PONDS OR FLOWS OVER TIE-IN FROM BUR SURFACE, WEATHERBOND ROOFING SYSTEM MUST BE TOTALLY ISOLATED; SEE DETAIL **WBPC-13.2**.

DIMENSIONS	mm	
(A)	6"	152 MIN.
(B)	2"	51 ± 1/2" (13mm)
(C)	6"	152 TO
	12"	305

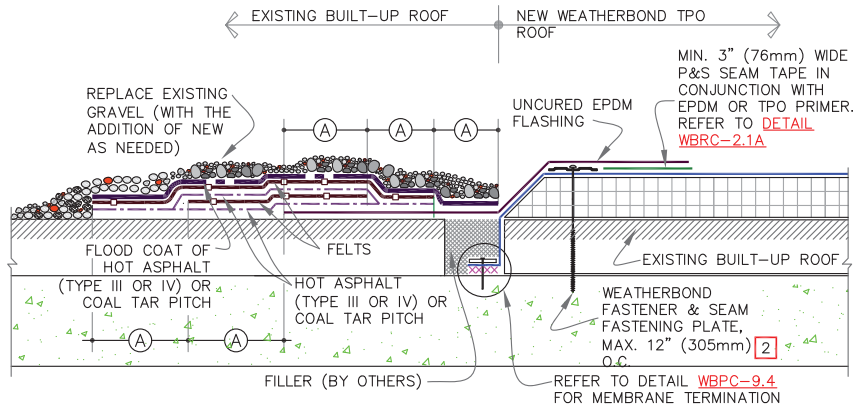


TPO TIE-IN TO BUILT-UP ROOFING OVER STEEL ROOF DECK

TPO MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPC-13.1

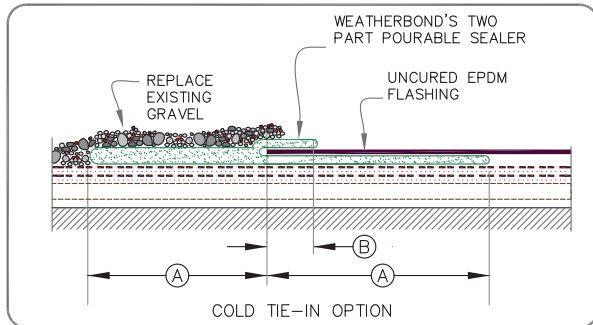


NOTES:

1. REMOVE ALL GRAVEL AT TIE-IN.
2. ON MECHANICALLY ATTACHED SYSTEMS, APPROVED CONCRETE FASTENERS AND HPWX PLATES ARE REQUIRED OVER CONCRETE DECKS.
3. WATER CUT-OFF MUST BE HELD UNDER CONSTANT COMPRESSION.
4. WEATHERBOND IS NOT RESPONSIBLE FOR DAMAGE TO THE BUILT-UP ROOF OR STRUCTURAL DECK RESULTING FROM PONDED WATER; THIS DETAIL APPLIES TO RE-ROOFING WHEN A TEAR-OFF IS NOT SPECIFIED AND WAS DESIGNED TO PREVENT MIGRATION OF WATER WITHIN THE ROOFING SYSTEM.

DIMENSIONS	mm	
(A)	6"	152 MIN.
(B)	2"	± 1/2" (13mm)

TPO ONLY
(NOT FOR PVC)

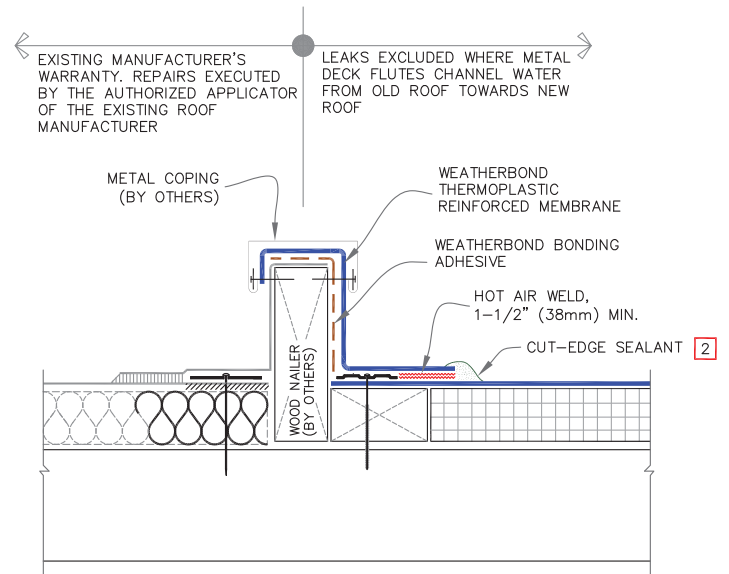


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TPO TIE-IN TO BUILT-UP ROOFING OVER CONCRETE ROOF DECK

- TPO MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM
WBPC-13.2



NOTES:

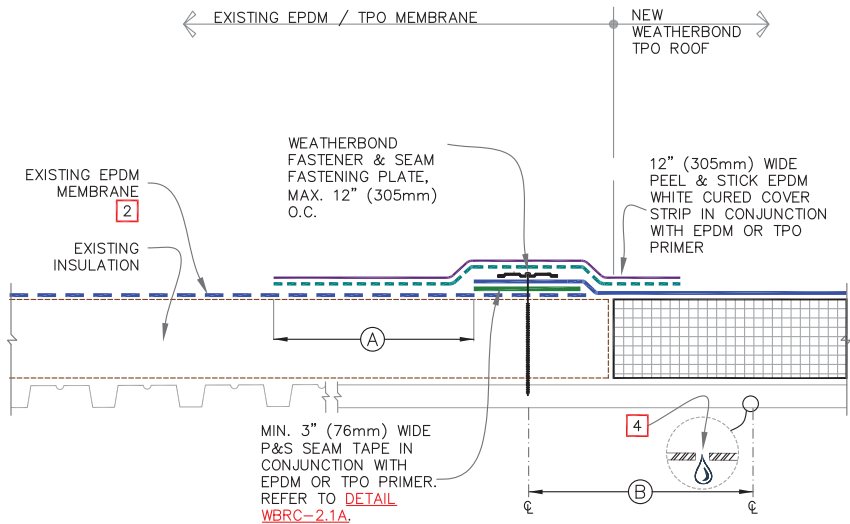
1. POSITION MEMBRANE FASTENING PLATES 1/2" (13mm) TO 1" (25mm) FROM EDGE OF DECK MEMBRANE.
2. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
3. ENSURE THE LOCATION OF CURB WILL NOT IMPEDE THE FLOW OF WATER AT EXISTING ADJACENT ROOF.

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TPO/PVC TIE-IN TO EXISTING SINGLE-PLY

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM
WBPC-13.3



NOTES:

1. PRIOR TO SPlicing, CLEAN EXISTING EPDM MEMBRANE BY SCRUBBING THE SPlice AREA WITH WEATHERED MEMBRANE CLEANER AND ALLOW TO DRY.
2. CONTACT MANUFACTURER OF EXISTING WARRANTED EPDM MEMBRANE ROOFING SYSTEM TO VERIFY ACCEPTANCE OF TIE-IN.
3. FOR EXISTING BALLASTED SYSTEMS BY OTHERS, CONSULT RESPECTIVE MANUFACTURER FOR ACCEPTABLE GRAVEL CONTAINMENT TO PREVENT GRAVEL MIGRATION.
4. DRILL A 3/8" (10mm) DIAMETER WEEP HOLE INTO THE BOTTOM FLUTES OF THE STEEL DECK ALONG THE PERIMETER OF THE TIE-IN 6" (152mm) MINIMUM TO 12" (305mm) MAXIMUM FROM THE SEAM FASTENING PLATE.
5. ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL DECKS.

DIMENSIONS	mm	
(A)	6"	152
(B)	6"	152 MIN.
	12"	305 MAX.

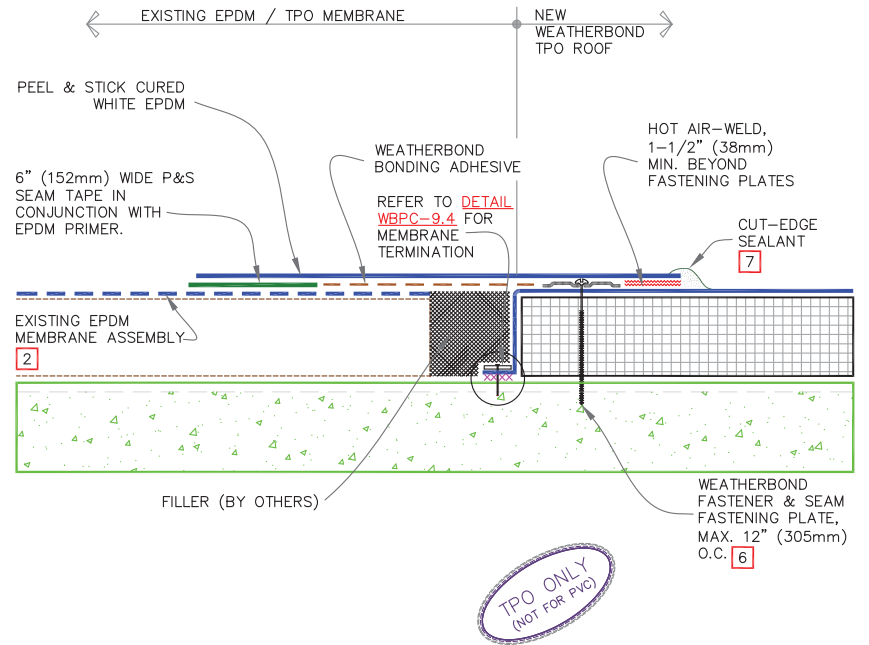
TPO ONLY
(NOT FOR PVC)



TPO TIE-IN TO EXISTING EPDM MEMBRANE

→ TPO MEMBRANE
 → APPROVED SUBSTRATE
 → SEE NOTE

THERMOPLASTIC ROOFING SYSTEM
 WBPC-13.4



NOTES:

1. PRIOR TO SPlicing, CLEAN EXISTING EPDM MEMBRANE BY SCRUBBING THE SPlice AREA WITH WEATHERED MEMBRANE CLEANER; ALLOW TO DRY.
2. CONTACT MANUFACTURER OF EXISTING WARRANTED EPDM MEMBRANE ROOFING SYSTEM TO VERIFY ACCEPTANCE OF TIE-IN.
3. ON EXISTING BALLASTED ROOFING SYSTEMS, CONSULT RESPECTIVE MANUFACTURER FOR ACCEPTABLE GRAVEL CONTAINMENT TO PREVENT GRAVEL MIGRATION.
4. WATER CUT-OFF MASTIC MUST BE HELD UNDER CONSTANT COMPRESSION.
5. WHEN RE-ROOFING OVER PRE-CAST CONCRETE, APPLY LIBERAL BEAD OF WATER CUT-OFF MASTIC IN THE JOINTS TO PREVENT MOISTURE MIGRATION.
6. ON MECHANICALLY ATTACHED SYSTEMS, APPROVED FASTENERS AND HPWX PLATES ARE REQUIRED OVER CONCRETE DECKS.
7. APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF REINFORCED TPO MEMBRANE.

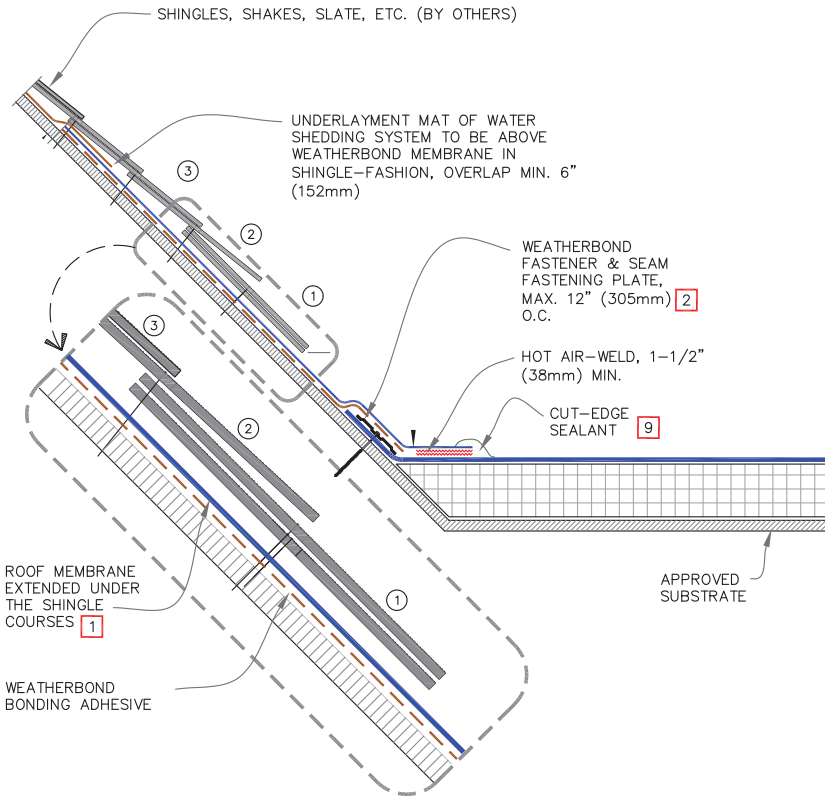
TPO ONLY
(NOT FOR PVC)



EPDM TIE-IN ON CONCRETE DECK

→ TPO MEMBRANE
 → APPROVED SUBSTRATE
 → SEE NOTE

THERMOPLASTIC ROOFING SYSTEM
 WBPC-13.5



NOTES:

- REGARDLESS OF MEMBRANE EXPOSURE EXTEND MEMBRANE UNDER FIRST 3 COURSES.
- ON MECHANICALLY ATTACHED SYSTEMS, HPWX FASTENERS AND PLATES ARE REQUIRED OVER STEEL OR WOOD DECKES.
- APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.

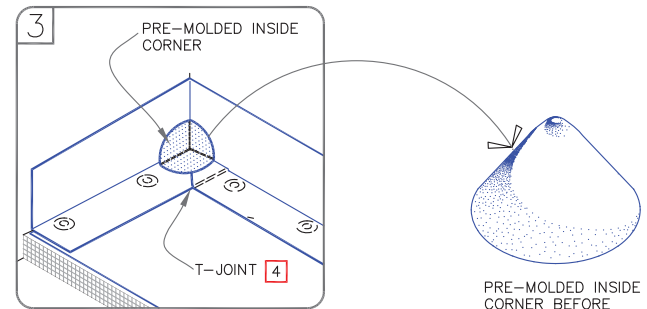
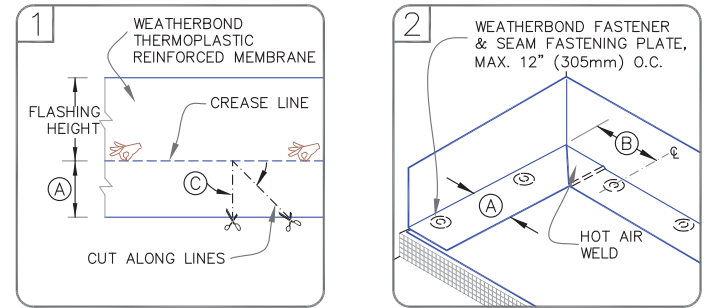


TPO/PVC TIE-IN TO SHINGLED ROOF

WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPC-13.6



NOTES:

- POSITION FASTENING PLATES 6" TO 9" (152 TO 229mm) FROM THE CORNER AND 1/2" TO 1" (13 TO 25mm) FROM EDGE OF MEMBRANE.
- APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
- REFER TO WEATHERBOND SPECIFICATIONS FOR ACCEPTABLE WEATHERBOND FASTENERS AND PLATES.
- WHEN USING 60 OR 80-MIL MEMBRANE, APPLY A 4-1/2" (114mm) DIAMETER "T-JOINT" COVER AT ALL FIELD SPLICE INTERSECTIONS.

DIMENSIONS	mm		
(A)	6"	152	APPROX.
(B)	6"-9"	152-229	
(C)	45-DEGREES APPROX.		

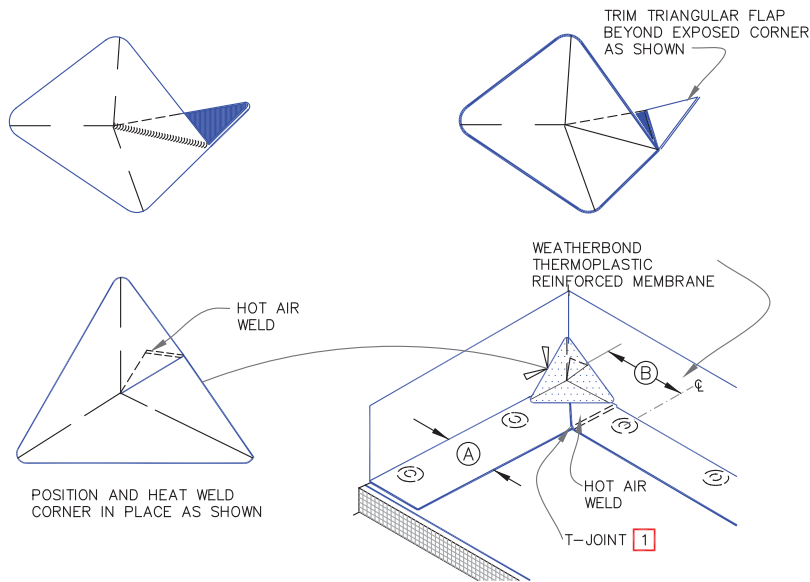
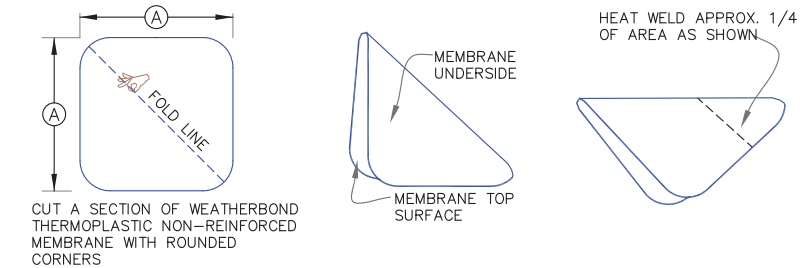


PRE-MOLDED INSIDE CORNER FLASHING

WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPC-15.1



DIMENSIONS	mm	
A	6"	152 APPROX.
B	6"-9"	152-229

NOTE:

WHEN USING 60 OR 80-MIL MEMBRANE, APPLY A 4-1/2" (114mm) DIAMETER "T-JOINT" COVER AT ALL FIELD SPLICE INTERSECTIONS.

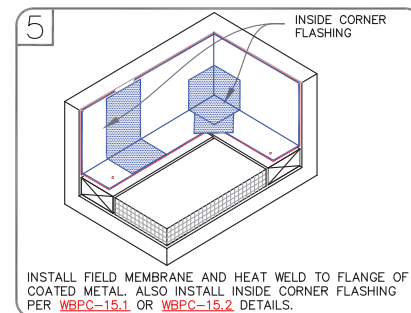
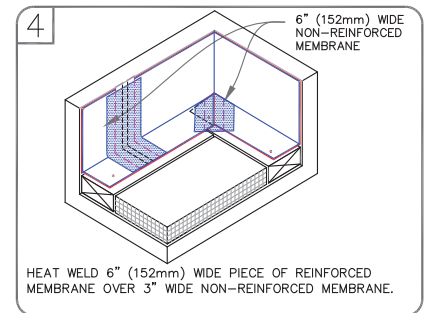
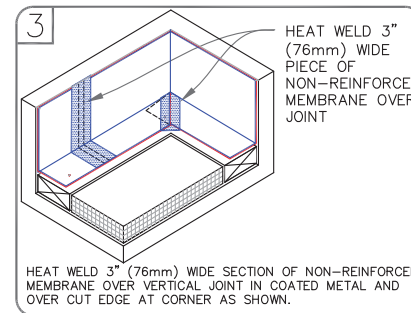
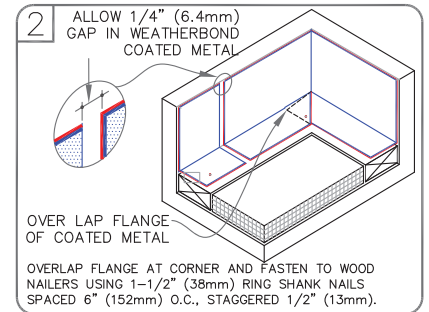
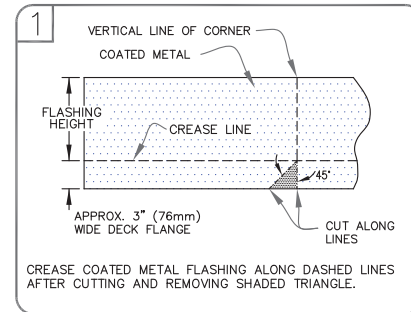


FIELD FABRICATED INSIDE CORNER FLASHING

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

WBPC-15.2



NOTES:

1. FASTEN COATED METAL FLASHING TO WOOD NAILERS USING 1-1/2" (38mm) MIN. RING SHANK NAILS SPACED 6" (152mm) ON CENTER AND STAGGERED APPROX. 1/2" (13mm).
2. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.

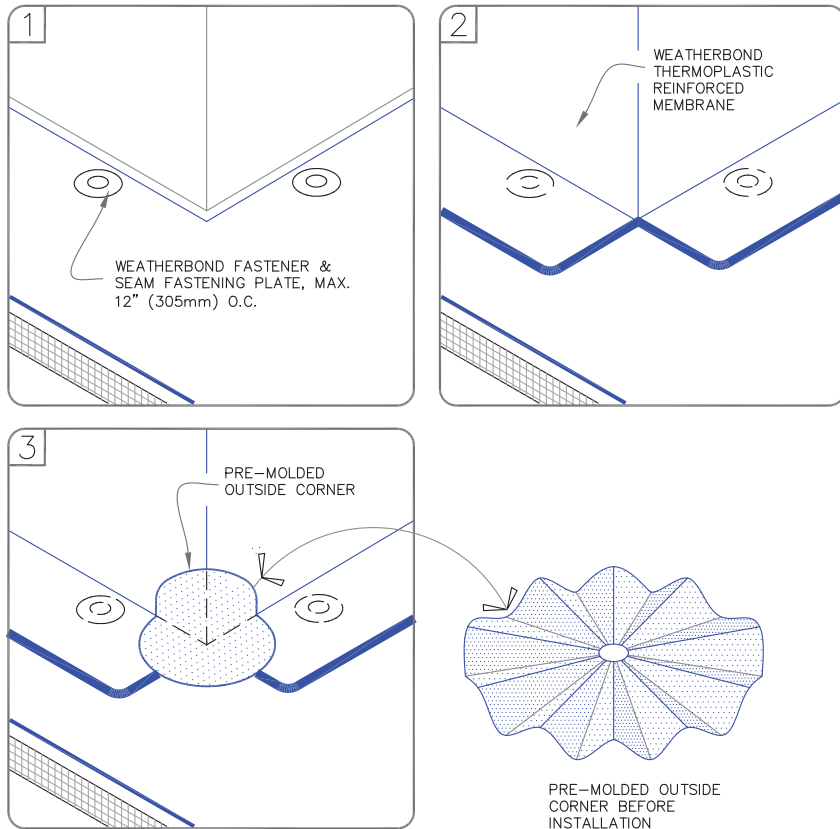


INSIDE CORNER WITH COATED METAL WALL FLASHING

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

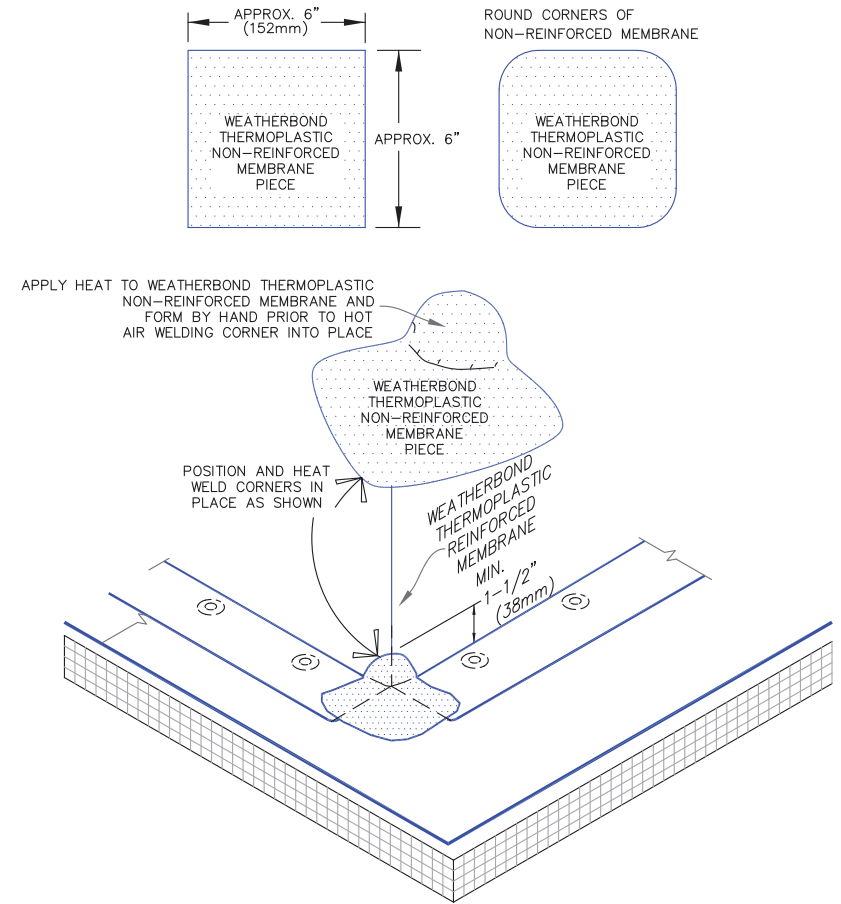
WBPC-15.3



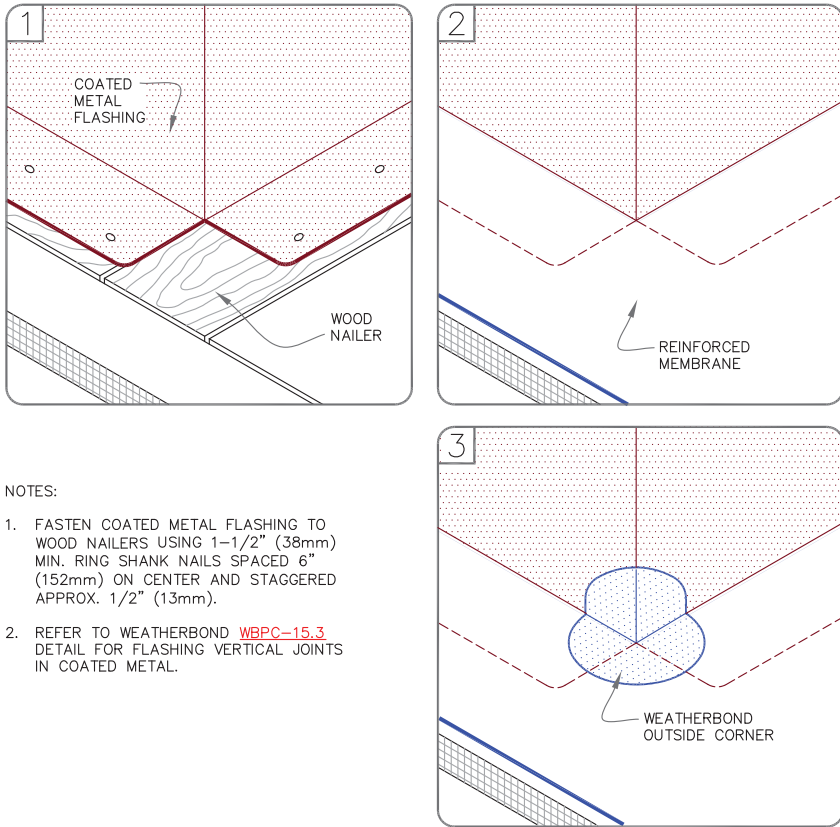
NOTES:

1. POSITION FASTENING PLATES 6" (152mm) FROM THE CORNER AND 1/2" TO 1" (13 TO 25mm) FROM EDGE OF MEMBRANE.
2. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.
3. REFER TO WEATHERBOND SPECIFICATIONS FOR ACCEPTABLE FASTENERS AND PLATES.

<p>WEATHERBOND ROOFING SYSTEMS © 2018 WeatherBond</p>	<p>PRE-MOLDED OUTSIDE CORNER FLASHING</p>	WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE	<p>THERMOPLASTIC ROOFING SYSTEM WBPC-15.4</p>
		APPROVED SUBSTRATE	
		SEE NOTE	



<p>WEATHERBOND ROOFING SYSTEMS © 2018 WeatherBond</p>	<p>FIELD FABRICATED OUTSIDE CORNER FLASHING</p>	WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE	<p>THERMOPLASTIC ROOFING SYSTEM WBPC-15.5</p>
		APPROVED SUBSTRATE	
		SEE NOTE	



NOTES:

1. FASTEN COATED METAL FLASHING TO WOOD NAILERS USING 1-1/2" (38mm) MIN. RING SHANK NAILS SPACED 6" (152mm) ON CENTER AND STAGGERED APPROX. 1/2" (13mm).
2. REFER TO WEATHERBOND [WBPC-15.3](#) DETAIL FOR FLASHING VERTICAL JOINTS IN COATED METAL.



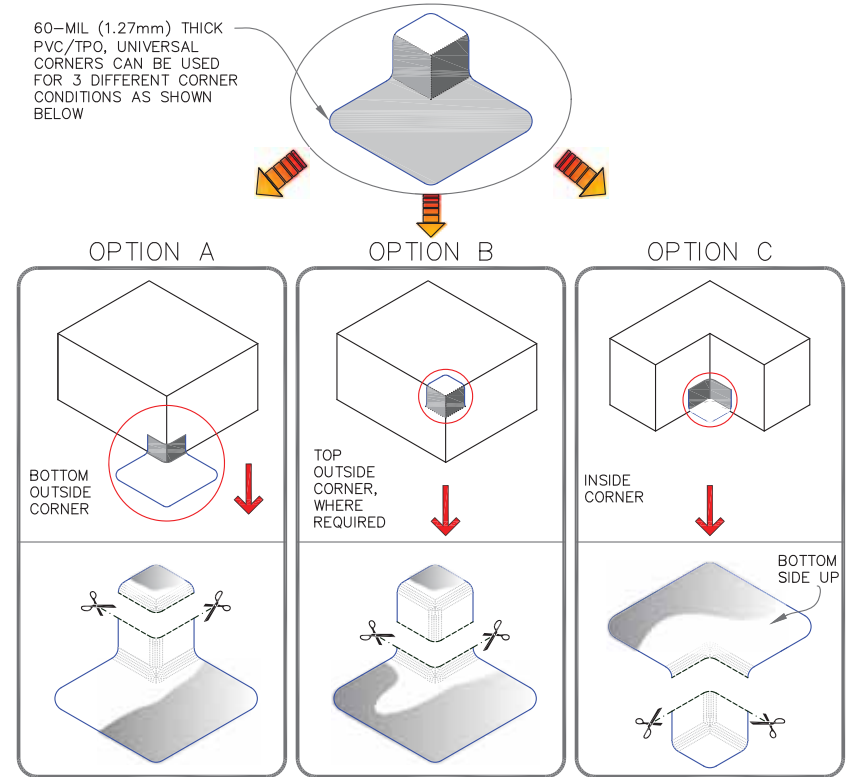
OUTSIDE CORNER WITH COATED METAL WALL FLASHING

WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

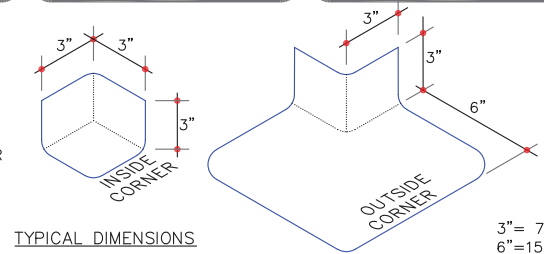
WBPC-15.6

60-MIL (1.27mm) THICK PVC/TPO, UNIVERSAL CORNERS CAN BE USED FOR 3 DIFFERENT CORNER CONDITIONS AS SHOWN BELOW



NOTES:

1. ROOF SYSTEMS MUST NOT HAVE FIELD FABRICATED OR BUILT-IN CANT STRIP.
2. REFER TO TECHNICAL DATA BULLETINS FOR COLOR AVAILABILITY.



3" = 76mm
6" = 152mm

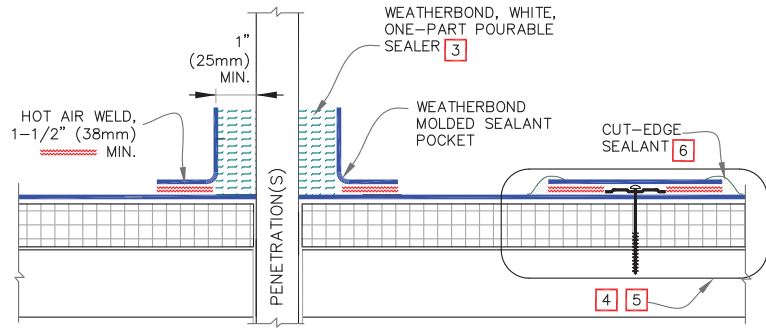


PVC OR TPO: UNIVERSAL CORNERS - COMBINATION INSIDE & OUTSIDE CORNERS

WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
 APPROVED SUBSTRATE
 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM

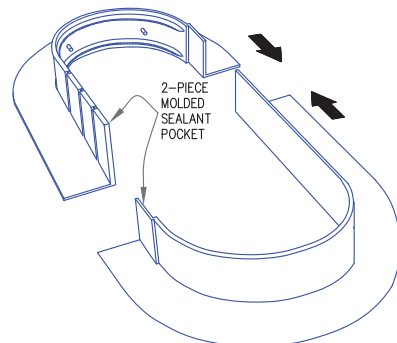
WBPC-15.7



NOTES:

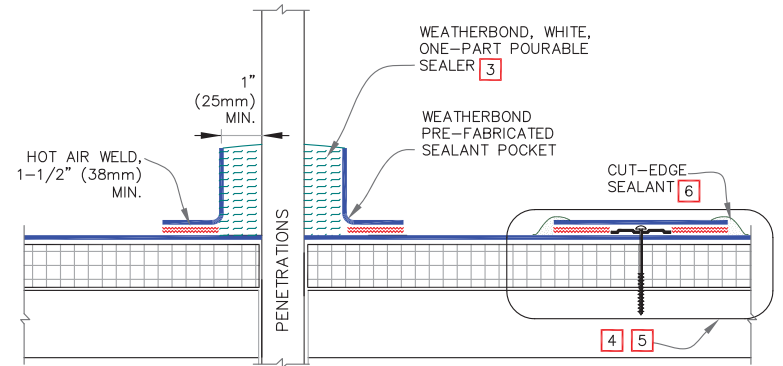
1. TEMPERATURE OF PIPE MUST NOT EXCEED 160° F (71° C).
2. WHEN USING TPO MOLDED SEALANT POCKET, TPO PRIMER MUST BE APPLIED TO ALL INSIDE SURFACES AND PENETRATIONS PRIOR TO FILLING WITH SEALANT. WHEN USING PVC MOLDED SEALANT POCKET, CLEAN THE POCKET WITH PVC CLEANER, APPLY TPO PRIMER TO PENETRATION(S) ONLY.
3. FILL POCKET COMPLETELY WITH WHITE ONE-PART POURABLE SEALER UNTIL RIM IS COVERED WITH SEALANT; ENSURE ALL VOIDS ARE FILLED.
4. ON MECHANICALLY-ATTACHED SYSTEMS, INSTALL A MINIMUM OF 4 FASTENING PLATES AROUND SEALANT POCKETS WITH A DIAMETER UP TO 6" (152mm). ADDITIONAL FASTENING PLATES WILL BE REQUIRED FOR SEALANT POCKETS GREATER THAN 6" IN DIAMETER AND SHALL BE SPACED 12" (305 mm) ON CENTER MAXIMUM. FASTENERS/PLATES ARE NOT REQUIRED ON ADHERED SYSTEMS UNLESS SEALANT POCKET DIAMETER EXCEEDS 12" (305mm).
5. REFER TO WEATHERBOND SPECIFICATIONS FOR PROPER FASTENERS AND PLATES.
6. APPROXIMATELY 1/8" (3mm) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.

PLACE MOLDED WEATHERBOND SEALANT POCKET AROUND PENETRATION AND OVERLAP THE TWO SECTIONS



REFER TO PRODUCT DATA SHEET FOR STEP-BY-STEP INSTALLATION PROCEDURES

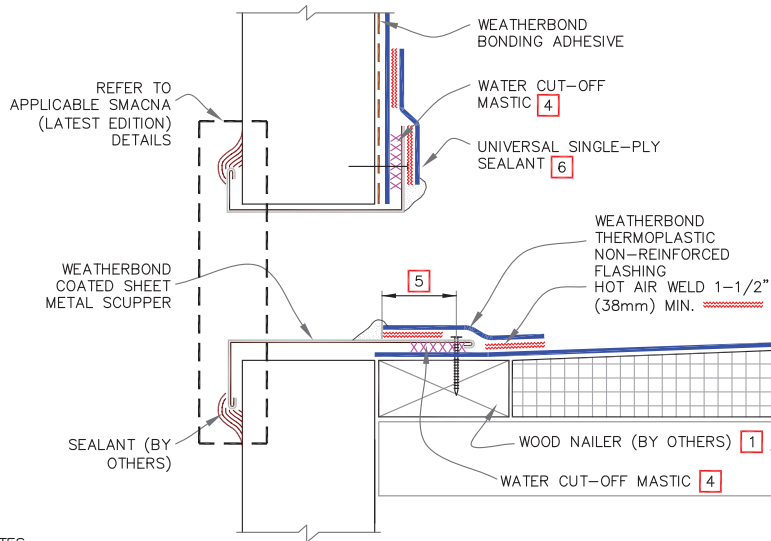
<p>WEATHERBOND ROOFING SYSTEMS © 2018 WeatherBond</p>	<p>MOLDED SEALANT POCKET</p>	<p>→ WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE</p>	<p>THERMOPLASTIC ROOFING SYSTEM</p> <p>WBPC-16.1</p>
		<p>→ APPROVED SUBSTRATE</p>	
		<p>0 → SEE NOTE</p>	



NOTES:

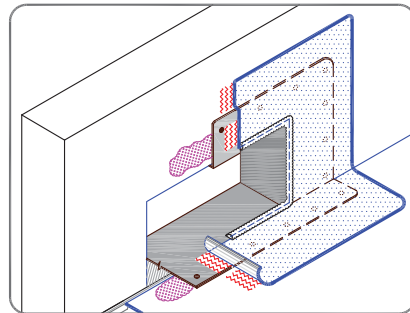
1. TEMPERATURE OF PIPE MUST NOT EXCEED 160° F (71° C).
2. WHEN USING TPO MOLDED SEALANT POCKET, TPO PRIMER MUST BE APPLIED TO ALL INSIDE SURFACES AND PENETRATIONS PRIOR TO FILLING WITH SEALANT. WHEN USING PVC SEALANT POCKET, CLEAN THE POCKET WITH PVC CLEANER, APPLY TPO PRIMER TO PENETRATION(S) ONLY.
3. WHEN USING TPO SEALANT POCKET, APPLY TPO PRIMER TO THE TPO MEMBRANE AND PENETRATION(S) SURFACES ONLY. DO NOT APPLY TPO PRIMER TO THE GALVANIZED METAL SURFACE ON THE INSIDE OF THE SEALANT POCKET.
4. FILL POCKET COMPLETELY WITH WHITE ONE-PART POURABLE SEALER UNTIL RIM IS COVERED WITH SEALANT; ENSURE ALL VOIDS ARE FILLED.
5. ON MECHANICALLY-ATTACHED SYSTEMS, INSTALL A MINIMUM OF 4 FASTENING PLATES AROUND SEALANT POCKETS WITH A DIAMETER UP TO 6" (152mm). ADDITIONAL FASTENING PLATES WILL BE REQUIRED FOR SEALANT POCKETS GREATER THAN 6" IN DIAMETER AND SHALL BE SPACED 12" (305mm) ON CENTER MAXIMUM. FASTENERS/PLATES ARE NOT REQUIRED ON ADHERED SYSTEMS UNLESS SEALANT POCKET DIAMETER EXCEEDS 12" (305mm).
6. REFER TO WEATHERBOND SPECIFICATIONS FOR PROPER FASTENERS AND PLATES.
7. APPROXIMATELY 1/8" (3MM) DIAMETER BEAD OF CUT-EDGE SEALANT IS REQUIRED ON CUT EDGES OF WEATHERBOND REINFORCED TPO MEMBRANE AND RECOMMENDED ON CUT EDGES OF WEATHERBOND PVC MEMBRANE.

<p>WEATHERBOND ROOFING SYSTEMS © 2018 WeatherBond</p>	<p>PRE-FABRICATED SEALANT POCKET</p>	<p>→ WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE</p>	<p>THERMOPLASTIC ROOFING SYSTEM</p> <p>WBPC-16.2</p>
		<p>→ APPROVED SUBSTRATE</p>	
		<p>0 → SEE NOTE</p>	



NOTES:

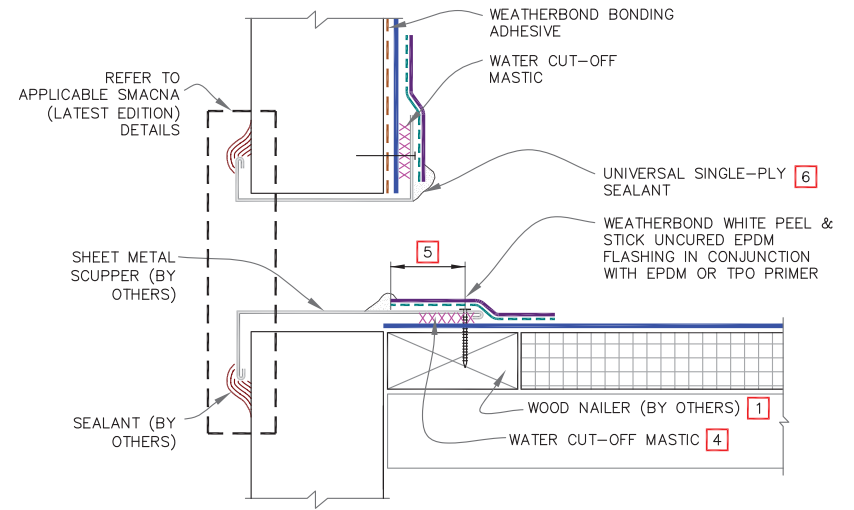
1. WOOD NAILERS ARE INSTALLED ONLY AT SCUPPERS TO SECURE METAL SLEEVE AND MUST EXTEND PAST THE WIDTH OF METAL SLEEVE FLANGE.
2. INSTALL WALL FLASHING PRIOR TO SCUPPER INSTALLATION.
3. METAL SCUPPER BOX MUST HAVE CONTINUOUS FLANGES WITH ROUNDED CORNERS.
4. WATER CUT-OFF MASTIC UNDER SCUPPER FLANGE MUST BE UNDER CONSTANT COMPRESSION.
5. SCUPPER FLANGES MUST BE TOTALLY COVERED BY NON-REINFORCED FLASHING WITH MINIMUM 2" (51mm) COVERAGE PAST NAIL HEAD.
6. UNIVERSAL SINGLE-PLY SEALANT IS REQUIRED AT FLASHING EDGES ON SCUPPER EDGE. WHEN USING TPO MEMBRANE, TPO PRIMER MUST BE USED TO PREPARE SURFACES PRIOR TO THE APPLICATION OF SEALANT.



SCUPPER WITH COATED METAL

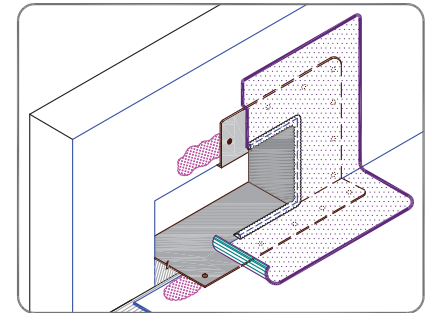
- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

THERMOPLASTIC ROOFING SYSTEM
WBPC-18.1



NOTES:

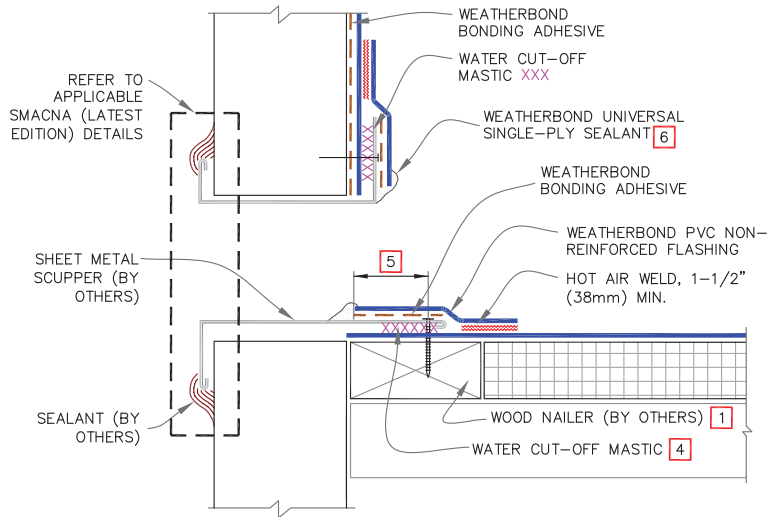
1. WOOD NAILERS ARE INSTALLED ONLY AT SCUPPERS TO SECURE METAL SLEEVE AND MUST EXTEND PAST THE WIDTH OF METAL SLEEVE FLANGE.
2. INSTALL WALL FLASHING PRIOR TO SCUPPER INSTALLATION.
3. METAL SCUPPER BOX MUST HAVE CONTINUOUS FLANGES WITH ROUNDED CORNERS, SOLDER ALL SCUPPER SEAMS WATER-TIGHT.
4. WATER CUT-OFF MASTIC UNDER SCUPPER FLANGE MUST BE UNDER CONSTANT COMPRESSION.
5. SCUPPER FLANGES MUST BE TOTALLY COVERED BY QUICK APPLIED UNCURED EPDM FLASHING WITH MINIMUM 2" (51mm) COVERAGE PAST NAIL HEAD.
6. UNIVERSAL SINGLE-PLY SEALANT IS REQUIRED AT FLASHING EDGES ON SCUPPER EDGE. TPO PRIMER MUST BE USED TO PREPARE SURFACES PRIOR TO THE APPLICATION OF SEALANT.



SCUPPER AT DECK-TPO

- TPO MEMBRANE
- APPROVED SUBSTRATE
- SEE NOTE

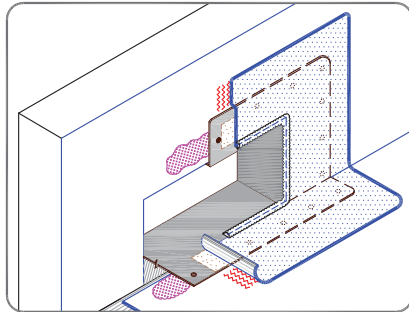
THERMOPLASTIC ROOFING SYSTEM
WBPC-18.2



NOTES:

1. WOOD NAILERS ARE INSTALLED ONLY AT SCUPPERS TO SECURE METAL SLEEVE AND MUST EXTEND PAST THE WIDTH OF METAL SLEEVE FLANGE.
2. INSTALL WALL FLASHING PRIOR TO SCUPPER INSTALLATION.
3. METAL SCUPPER BOX MUST HAVE CONTINUOUS FLANGES WITH ROUNDED CORNERS, SOLDER ALL SCUPPER SEAMS WATER-TIGHT.
4. WATER CUT-OFF MASTIC UNDER SCUPPER FLANGE MUST BE UNDER CONSTANT COMPRESSION.
5. SCUPPER FLANGES MUST BE TOTALLY COVERED BY NON-REINFORCED PVC FLASHING WITH MINIMUM 2" (51mm) COVERAGE PAST NAIL HEAD.
6. UNIVERSAL SINGLE-PLY SEALANT IS REQUIRED AT FLASHING EDGES ON SCUPPER EDGE.

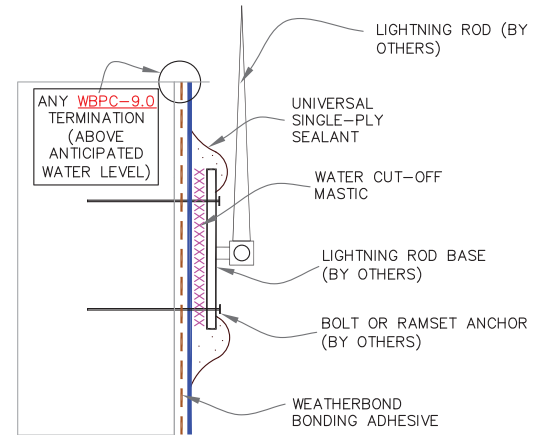
PVC ONLY
(NOT FOR TPO)



SCUPPER AT DECK-PVC

- PVC MEMBRANE
- APPROVED SUBSTRATE
- 0 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM
WBPC-18.3



NOTES:

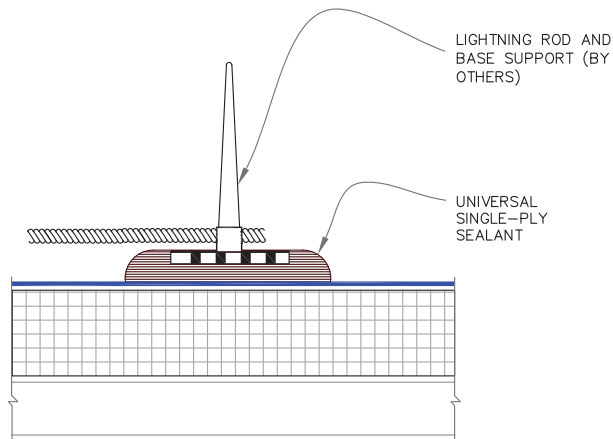
1. DETAIL MAY BE USED FOR ANY FASTENER PENETRATION (E.G., ACCESS LADDER, ANCHOR SUPPORT TO PARAPET).
2. WATER CUT-OFF MASTIC MUST BE UNDER CONSTANT COMPRESSION.
3. DETAIL UNACCEPTABLE FOR HORIZONTAL APPLICATION ON ROOF DECK.



LIGHTNING ROD AT PARAPET (VERTICAL ATTACHMENT)

- WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE
- APPROVED SUBSTRATE
- 0 SEE NOTE

THERMOPLASTIC ROOFING SYSTEM
WBPC-20.1



NOTES:

1. CLEAN EXPOSED MEMBRANE SURFACE WITH WEATHERED MEMBRANE CLEANER (WHEN USING TPO) AND PVC MEMBRANE CLEANER (WHEN USING PVC) AND ALLOW TO DRY.
2. WHEN USING TPO MEMBRANE, APPLY TPO PRIMER TO THE MEMBRANE SURFACE PRIOR TO THE APPLICATION OF UNIVERSAL SINGLE-PLY SEALANT.

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 <p>WEATHERBOND ROOFING SYSTEMS © 2018 WeatherBond</p>	<p>LIGHTNING ROD AT DECK LEVEL</p>	<p>→ WEATHERBOND THERMOPLASTIC REINFORCED MEMBRANE → APPROVED SUBSTRATE → SEE NOTE</p>	<p>THERMOPLASTIC ROOFING SYSTEM WBPC-20.2</p>
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WEATHERBOND
ROOFING SYSTEMS

Single-Ply Simplified

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