Firestone Building Products

Firestone Building Products TPO

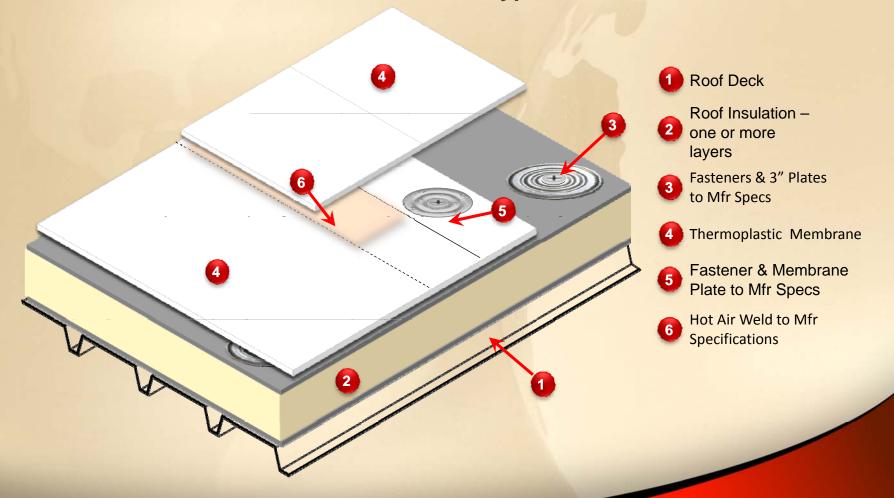


Membrane Attachment



Mechanically Attached Thermoplastic

All Membrane Types

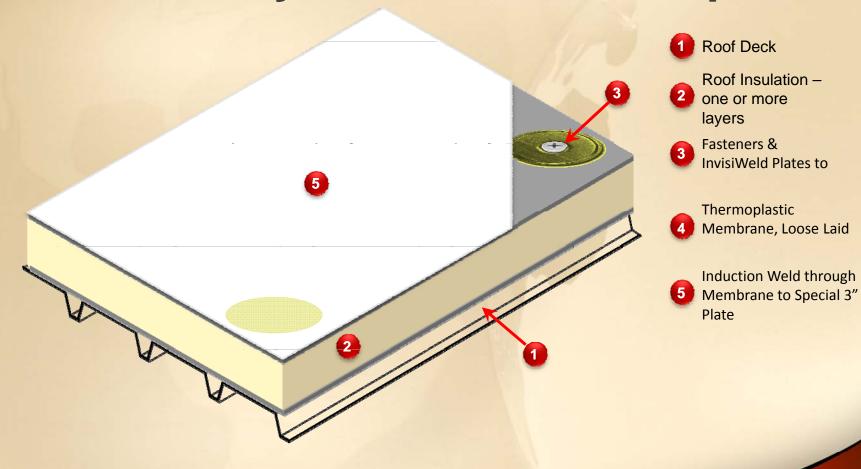






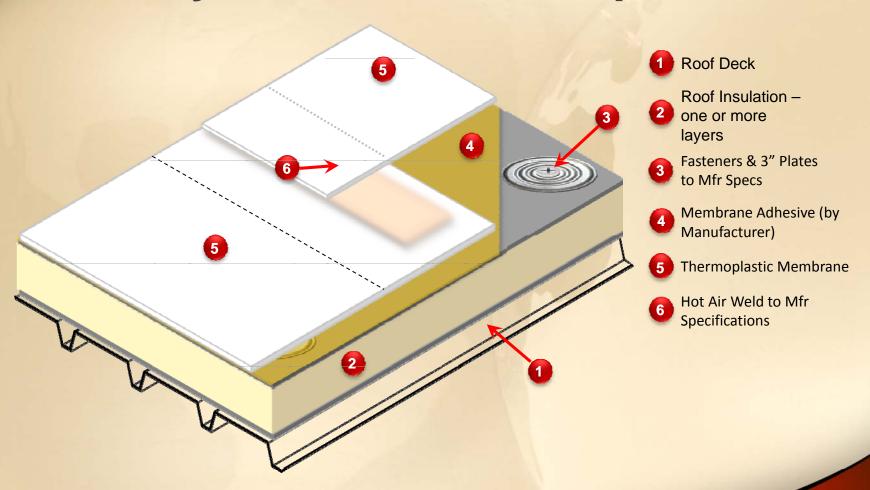


Mechanically Attached Thermoplastic



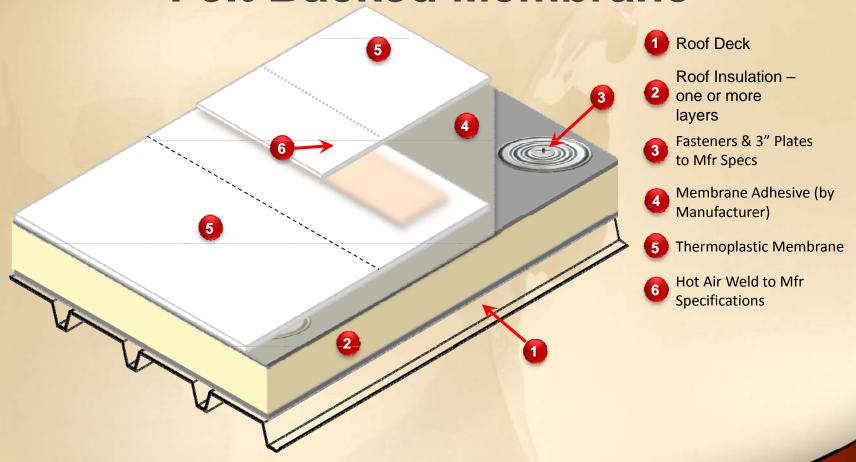


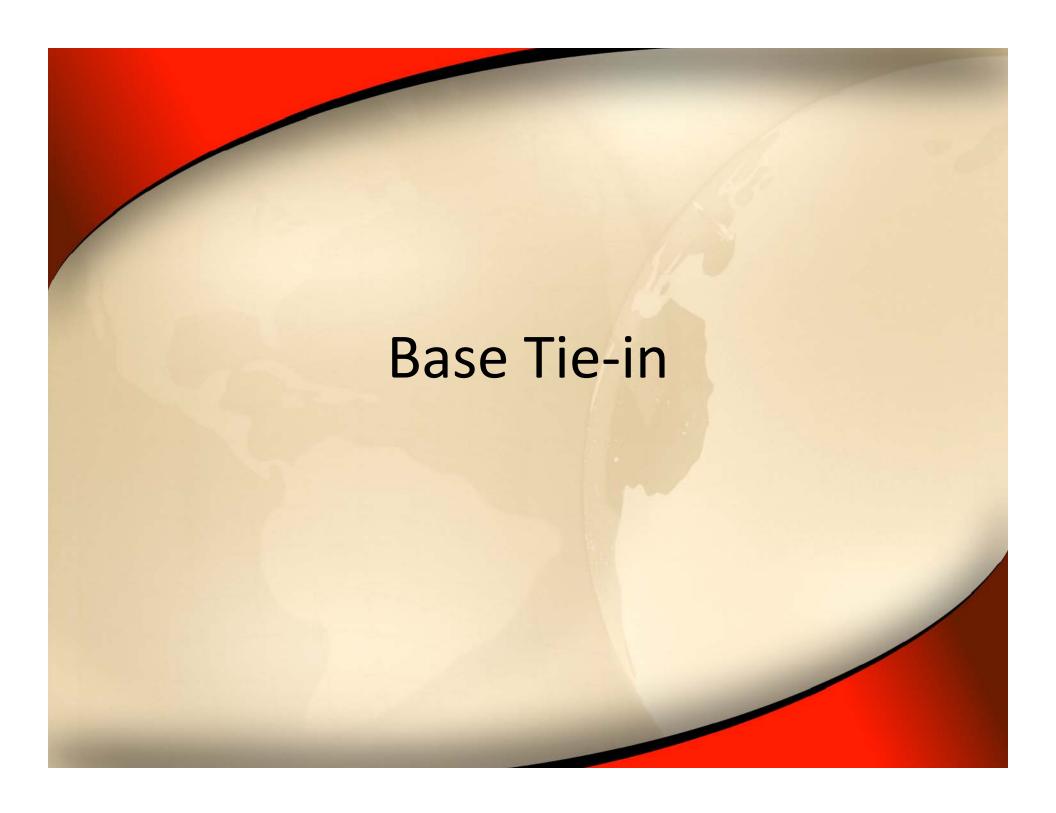
Fully Adhered Thermoplastic





Fully Adhered Thermoplastic Felt Backed Membrane

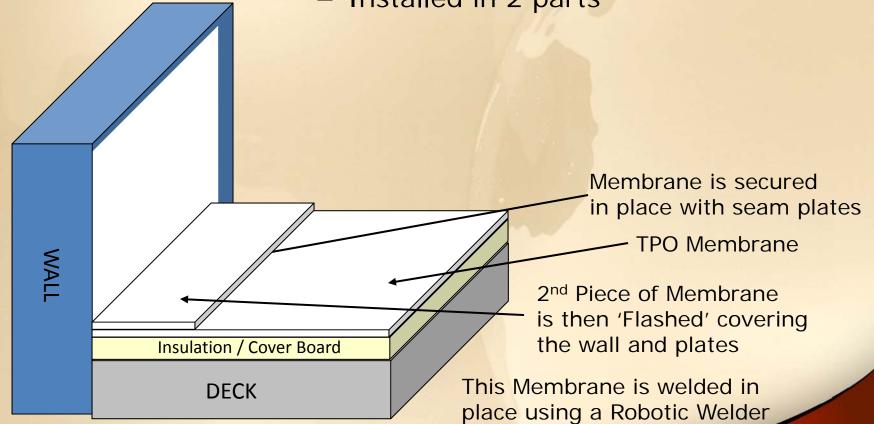






Base Tie-In

- Base Tie-Ins (BTI)
 - A Required Detail
 - Installed in 2 parts





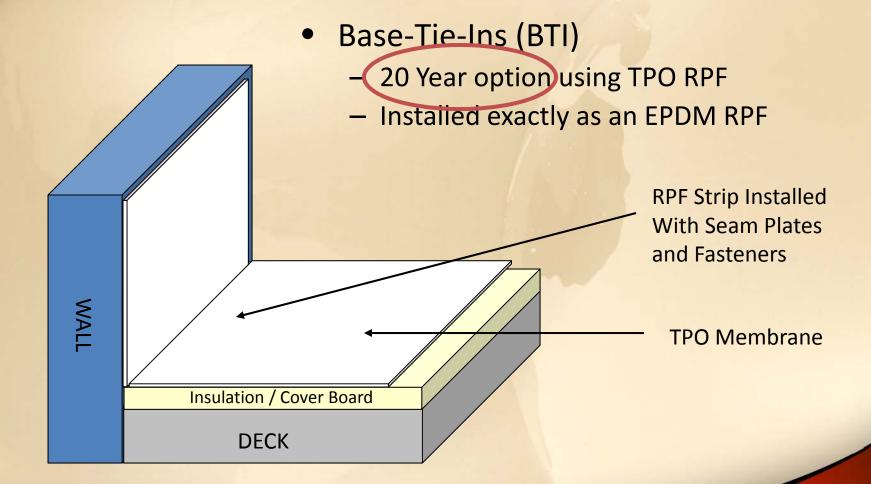
What's Wrong?







Installing a Pipe Boot:

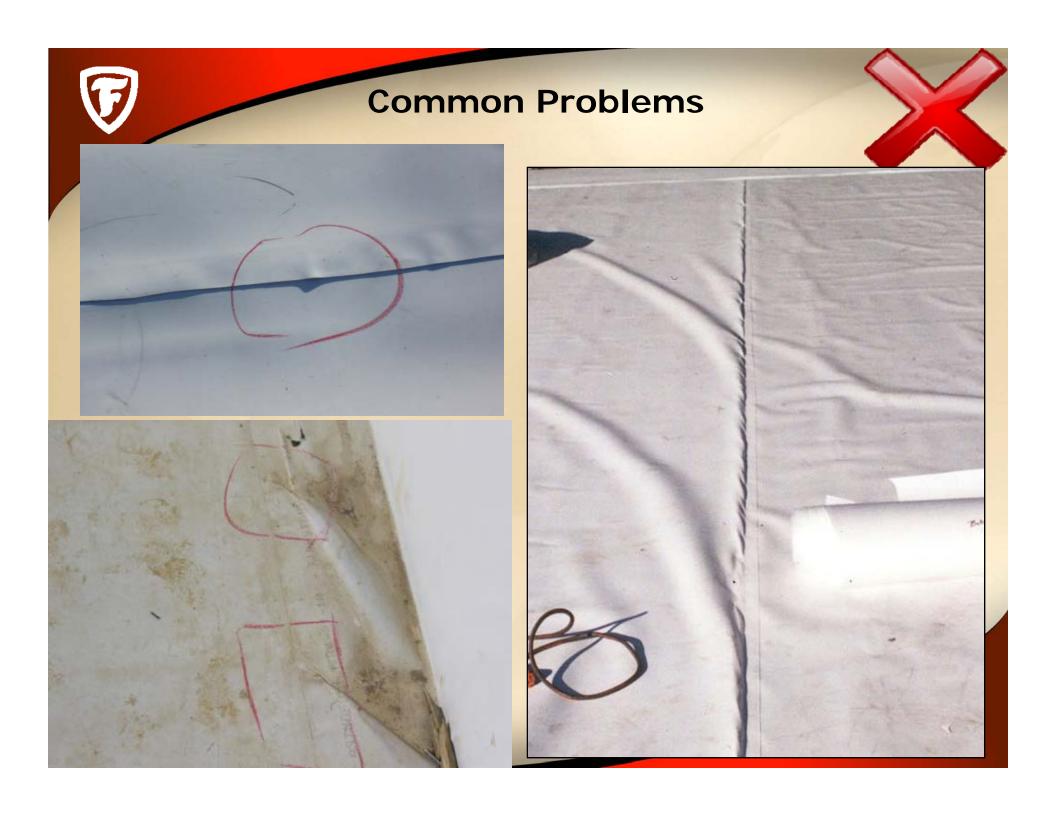




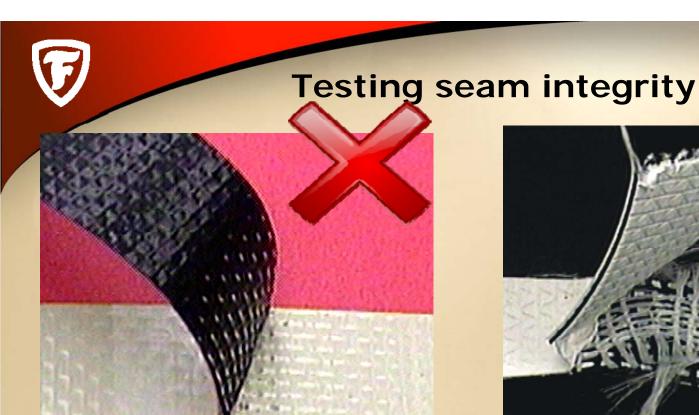


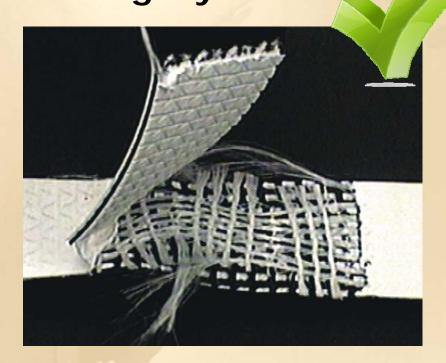
Lap Splicing

- •Lap splicing on a TPO system is defined as joining two separate sheets, by way of heat welding, into one monolithic sheet. This includes field membrane as well as details.
- This can be achieved by using a robotic welder or a hand welder
- •A robotic welder is important for having uniform seams that are quick and easy to perform.
- •Test samples are needed at the start-up of everyday to assure the robot is working properly.









- •It is important to do test welds to assure the robot set-up for each day as well as quality assurance of hand welding.
- •Sample on the left fails because there is no true weld formed and will separate easily over time.
- •Sample on the right is correct because the top sheet has fully attached to the bottom sheet, creating a monolithic sheet.



Additional Seam Testing



- •Probing of all seams completed in the day are required to be probed at the end of the day.
- •Be sure the weld has cooled before probing.
- Apply sufficient force to truly see if it is a proper weld.
 - •False welds with "pass" with a light probe.



Robotic Heat Welding



- Various manufactures.
- Adjustable settings.
- Different configurations.
- Quickest and most efficient way to create field seams.



Robotic Heat Welder Set-up and Requirements



- Tracking guide
 - •Wheel 1/8" over edge
- Nozzle
 - Placement into seam
 - Height off of membrane
 - Angle
 - Distance to wheel
- •Weight
 - Varies with machines
- Requires at least 7500 Watts
 - Preferred dedicated generator
- Parts need maintenance to assure proper operation
 - •Air Dam
 - Silicone Wheels
 - Heating Element
 - Drive Belt
 - •Nozzle clean



Hand Welding



- 2" weld required.
- Temperature settings vary from user to user.
- Speed is controlled by the user.
- All hand welds need to be checked at the end of each day.
- Several hand welder brands.
- Various tips for different applications.
- Slower and less efficient compared to robotic welders.
- Lots of practice required to weld proficiently.



Common Problems



Caused by incorrect tracking and how the robot is "placed" onto the sheet.



Cause by the stop of the robot and the start of hand welding.



Reasons to practice hand welding!

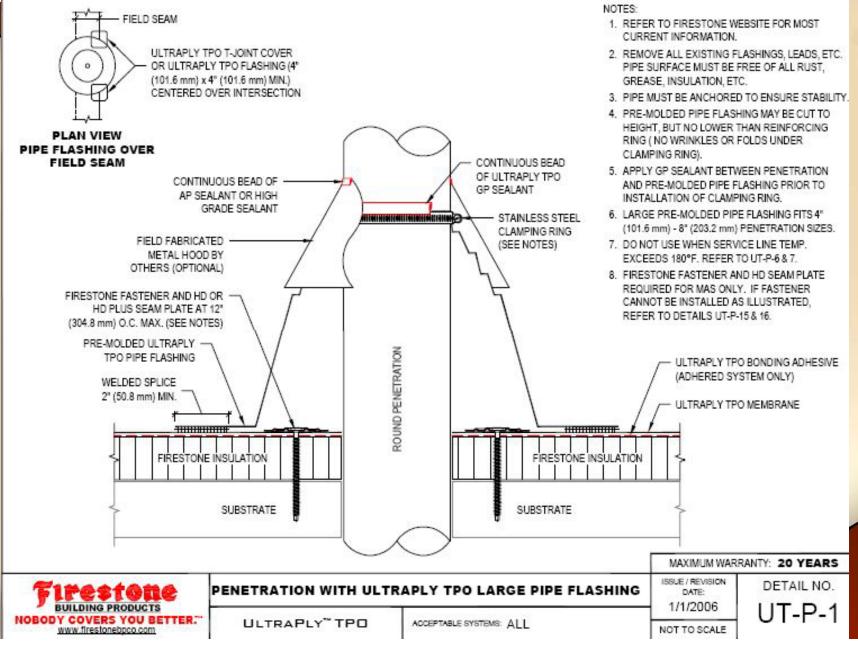




Penetrations



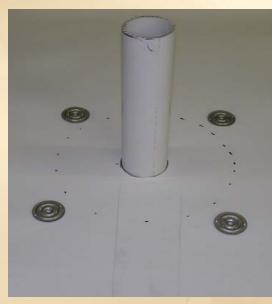
Installing a Pipe Boot:





Installing a Pipe Boot:













Are these complete?









Right or Wrong?



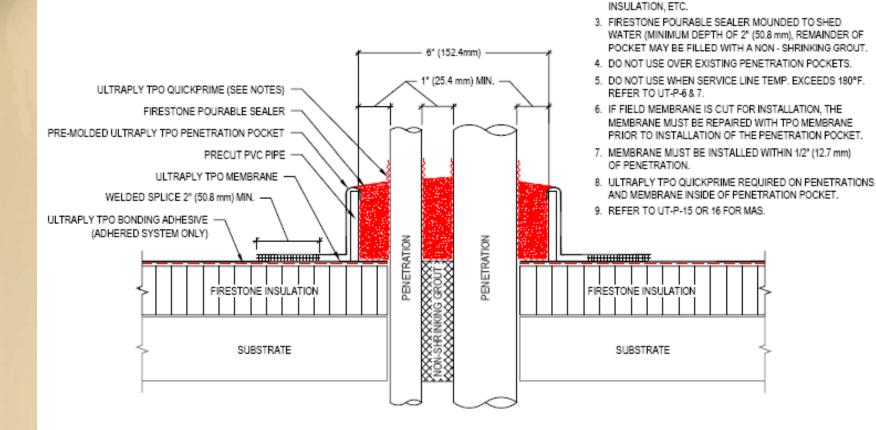




Installing a Penetration Pocket:

NOTES:

INFORMATION.



Firestone
BUILDING PRODUCTS
NOBODY COVERS YOU BETTER."

WWW.firestonebpco.com

PENETRATION WITH TPO PENETRATION POCKET KIT

ULTRAPLY™ TPO

ACCEPTABLE SYSTEMS: ALL

DATE: 1/1/2006

1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT

 REMOVE ALL EXISTING FLASHINGS, LEADS, ETC. PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE.

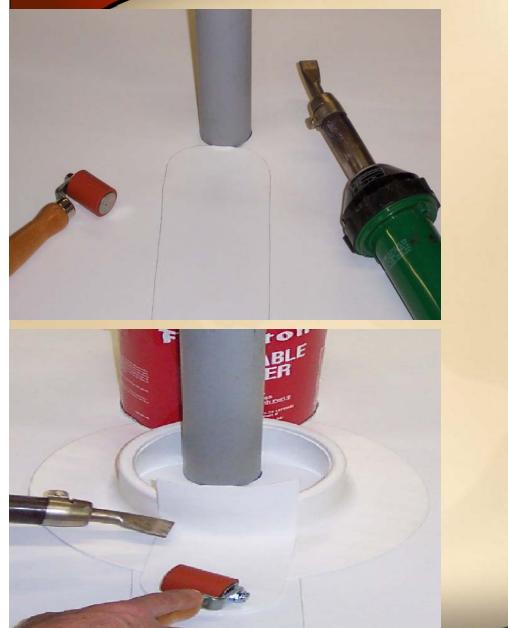
1/1/2006 UT-P-8

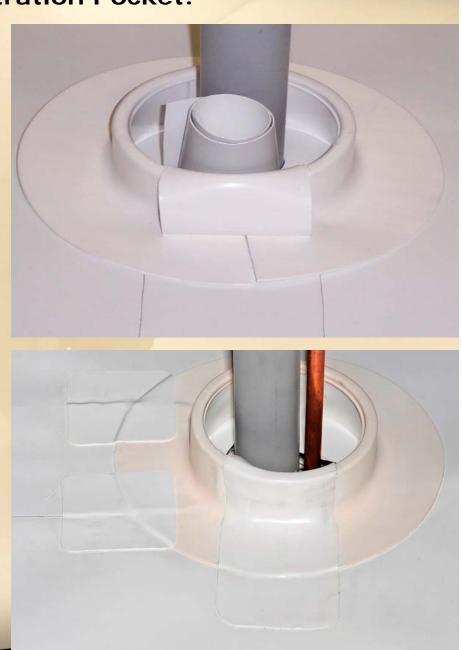
DETAIL NO.

MAXIMUM WARRANTY: 20 YEARS



Installing a Penetration Pocket:



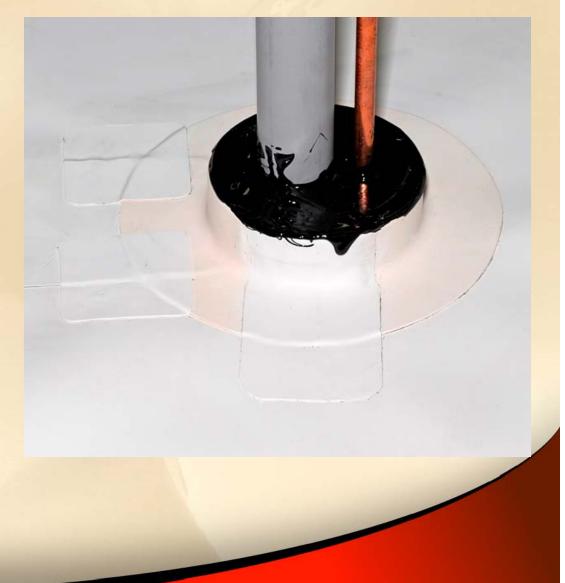




Installing a Penetration Pocket:



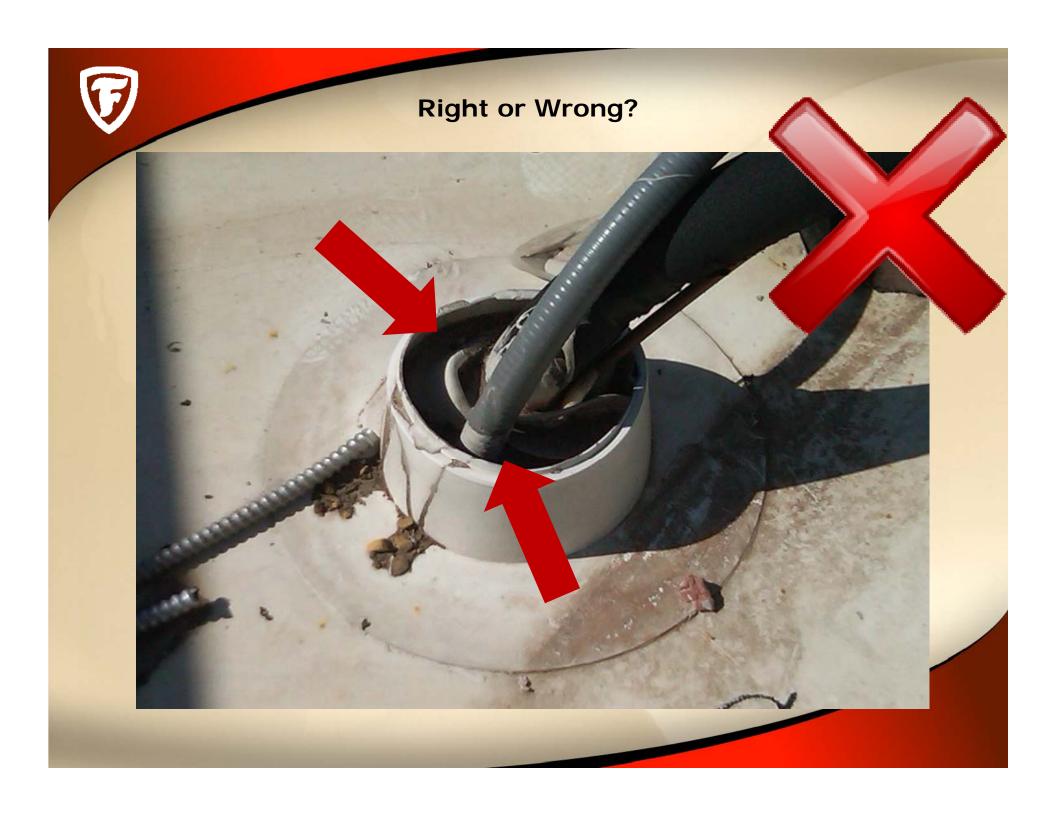






Is this complete?

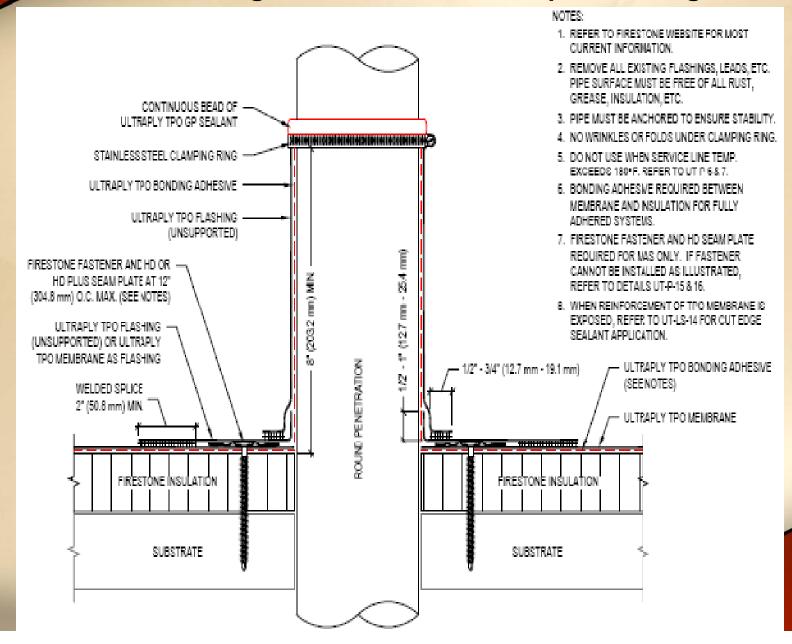








Installing a Field Fabricated Pipe Flashing:











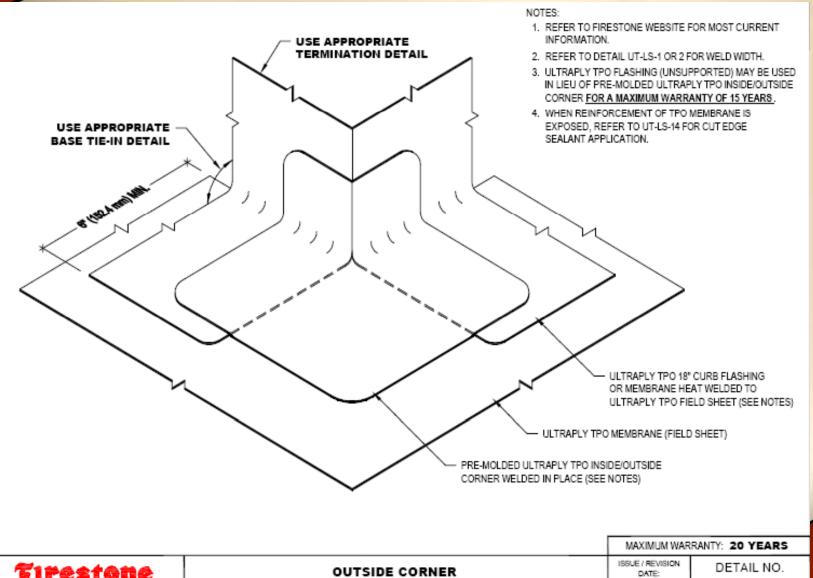








Installing an Outside Corner:



www.firestoneboco.com

ULTRAPLY™ TPO

ACCEPTABLE SYSTEMS: ALL

DATE:

1/1/2006

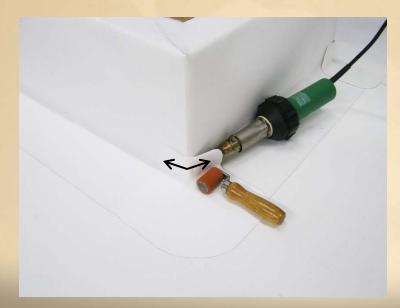
UT-C-1 NOT TO SCALE



Outside Corner Steps:



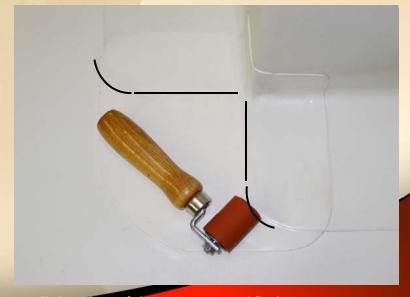
Complete field and curb membrane attachment.



Place welder tip into vertical and work your way out.



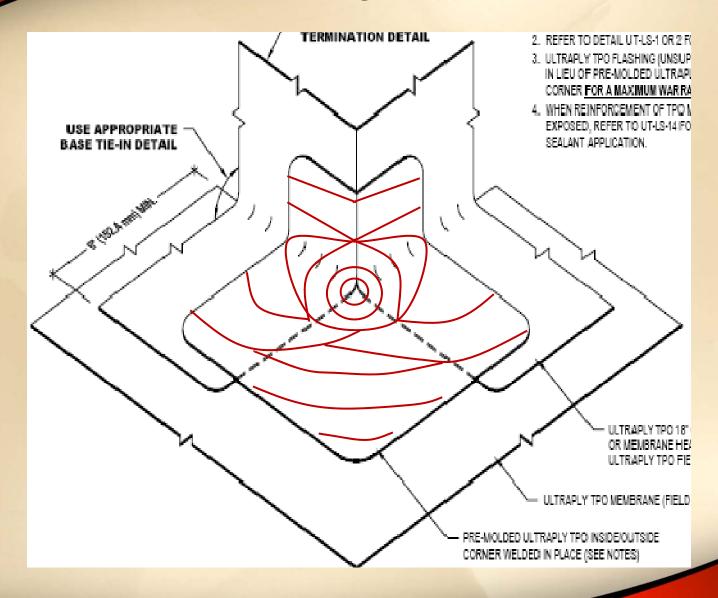
Start welding with pre-molded corner against the curb and work out onto the field sheet.



Be sure to roll the edges of the curb wrap and flashing.

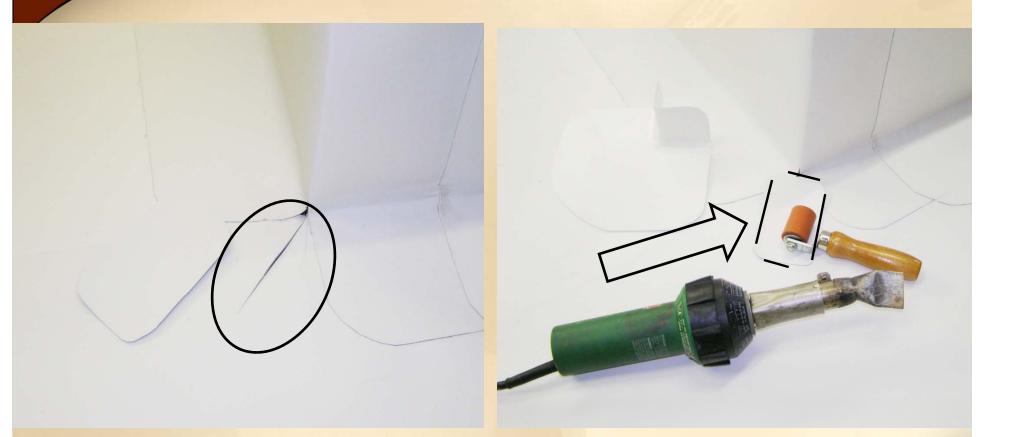


Welding Focus





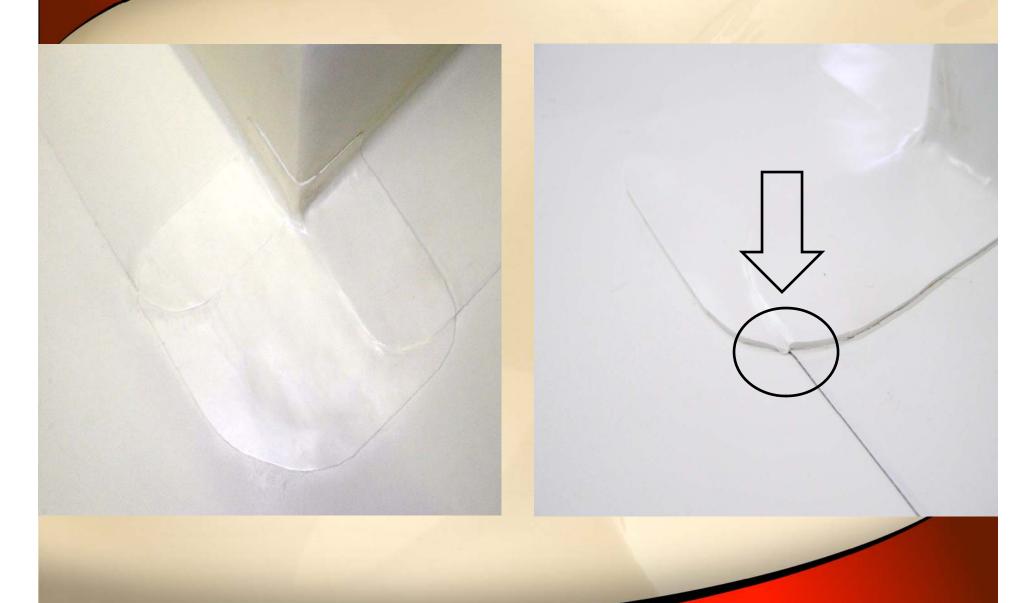
Something to look for...



If the corner cut in the field around the curb extends more than 1" into the field, a patch of TPO membrane is required and then apply the outside corner flashing.

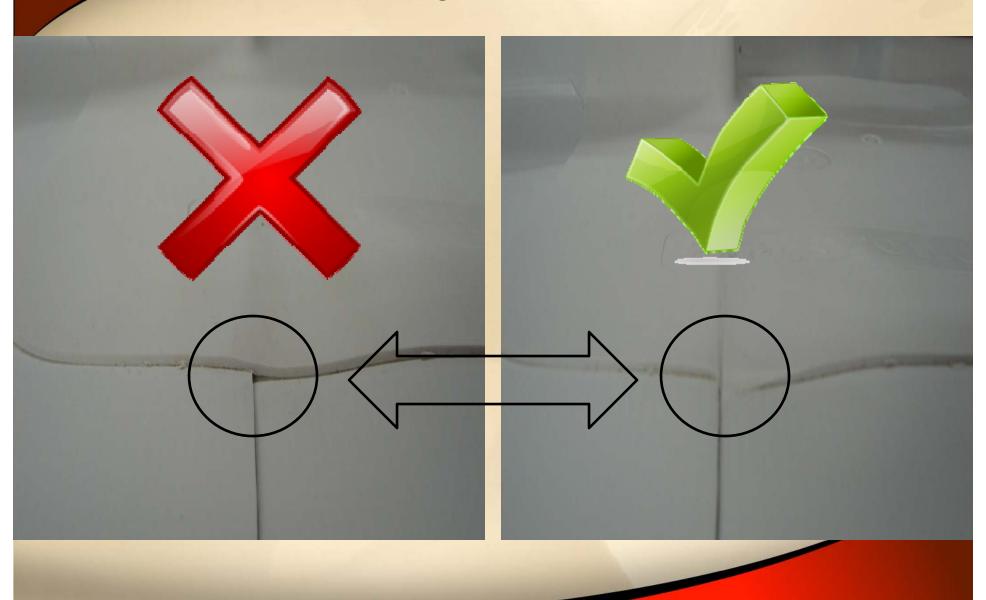


Completed Outside Corner





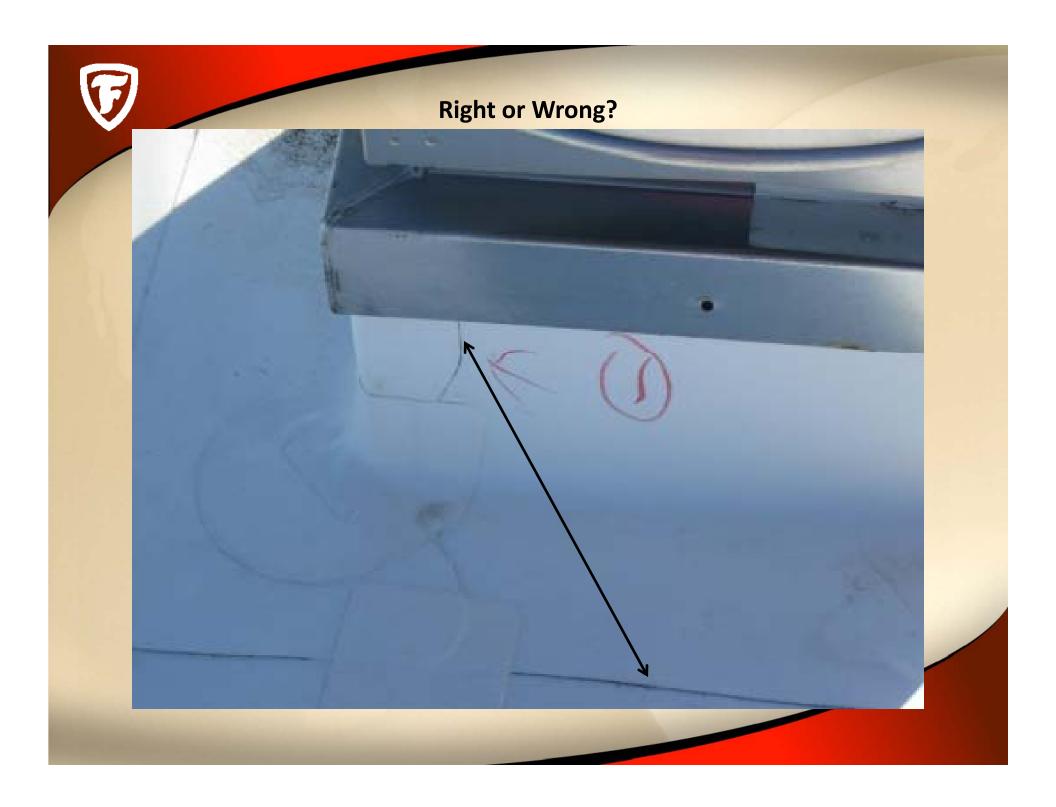
Things to look for





Right or Wrong?





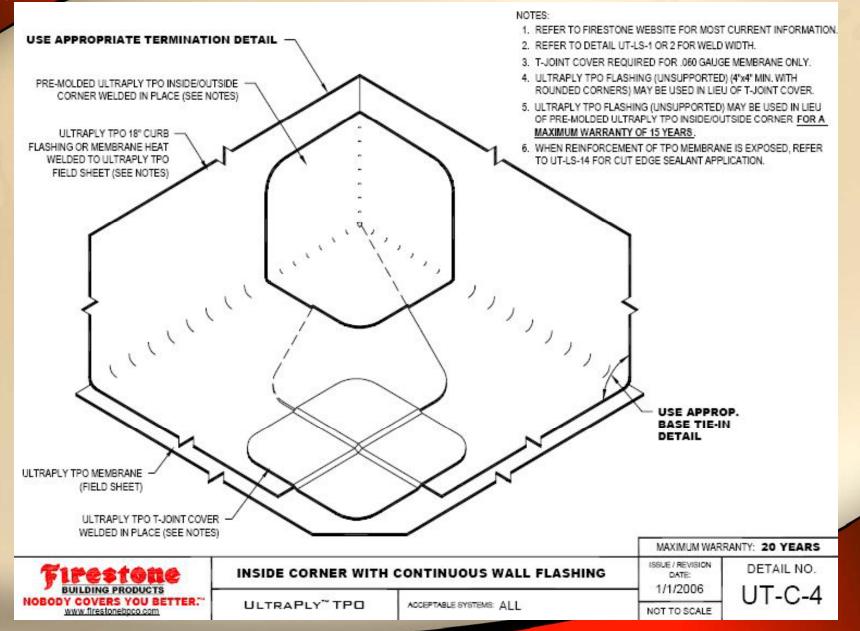


Right or Wrong?



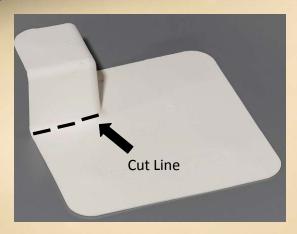


Installing an Inside Corner:

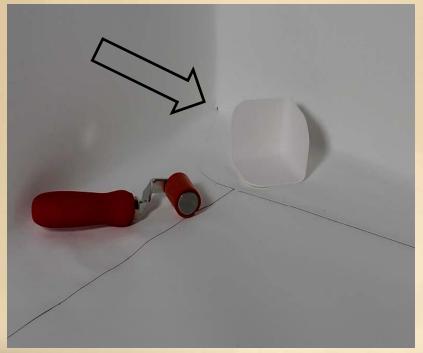




Inside Corner Steps











Installing an Outside Corner:





Right or Wrong?







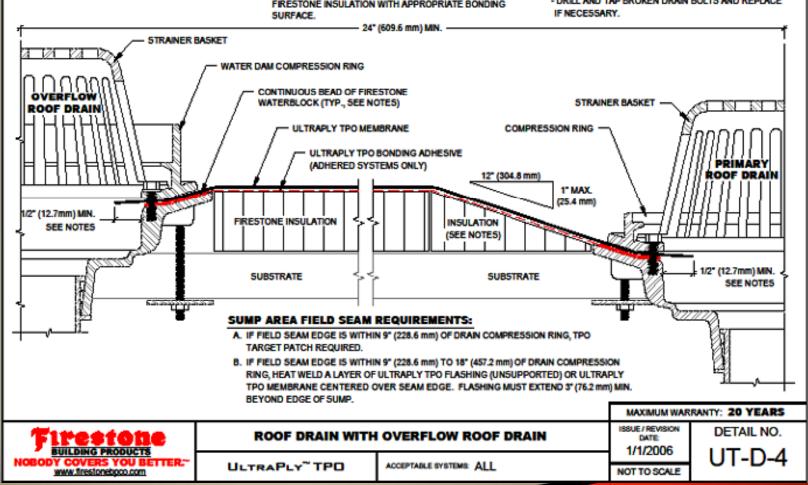
Drains, Scuppers & Roof Edge



Roof Drain and Overflow

NOTES:

- 1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
- 2. HOLE IN MEMBRANE SHOULD EXTEND A MINIMUM OF 1/2" (12.7 mm) BEYOND CLAMPING RING AND SHOULD NOT BE SMALLER THAN THE DIAMETER OF THE LEADER PIPE.
- 3. INSULATION ADJACENT TO DRAIN TO BE APPROPRIATE FIRESTONE INSULATION WITH APPROPRIATE BONDING
- 4. FIRESTONE WATERBLOCK MIN. OF 1/2 OF 10 OZ (295 ml) TUBE PER 4" DRAIN, USE ADDITIONAL WATERBLOCK FOR LARGER DRAINS.
- 5. IN REROOF APPLICATIONS:
- REMOVE EXISTING FLASHINGS DOWN TO METAL BOWL
- REPAIR OR REPLACE BROKEN DRAIN COMPONENTS
- DRILL AND TAP BROKEN DRAIN BOLTS AND REPLACE





Properly Sloped Drain and Overflow



What's Wrong?



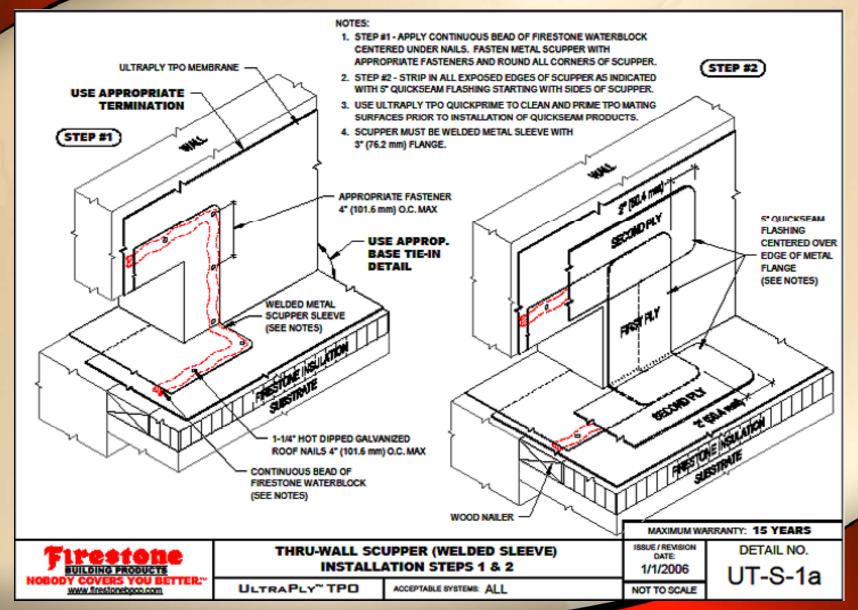


Roof Drain Tips

- All drain bolts must be in place and tight.
- Firestone Waterblock must be present between the base of the drain and the membrane. Rule of Thumb: 1 tube per drain.
- Slope should not exceed 1":12" for standard UltraPly TPO.
- Field seams within 9" require a target patch.
- Field seams within 9"-18" must be stripped in.
- Hole in membrane should extend a minimum of ½" beyond the clamping ring and should **NOT** be smaller than the diameter of the drain pipe.

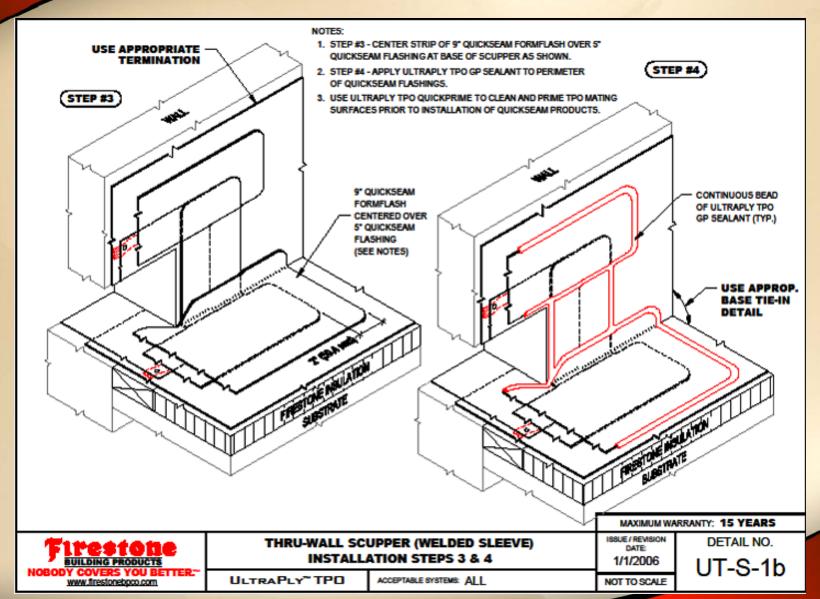


Scupper Steps 1 & 2



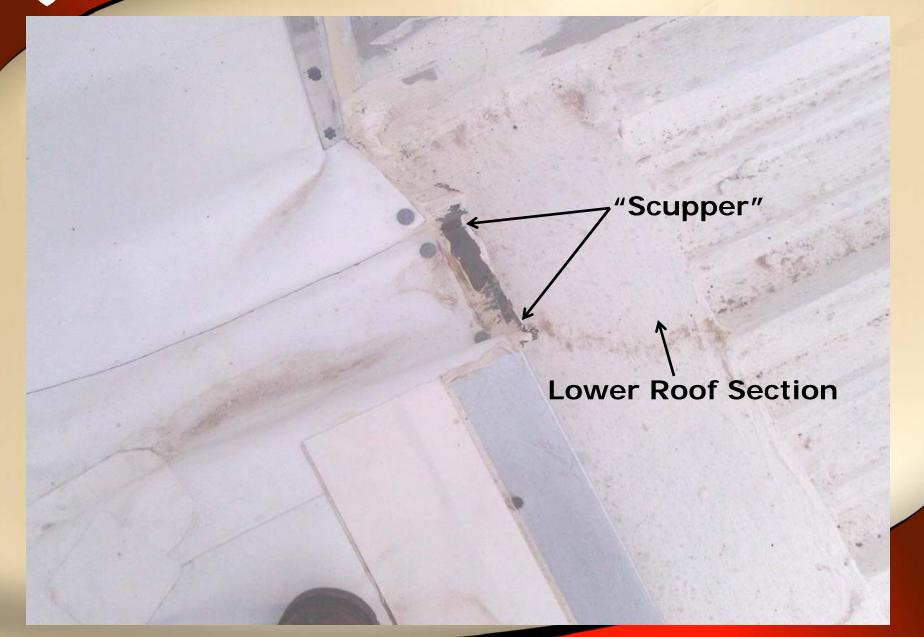


Scupper Steps 3 & 4





How many things are wrong?



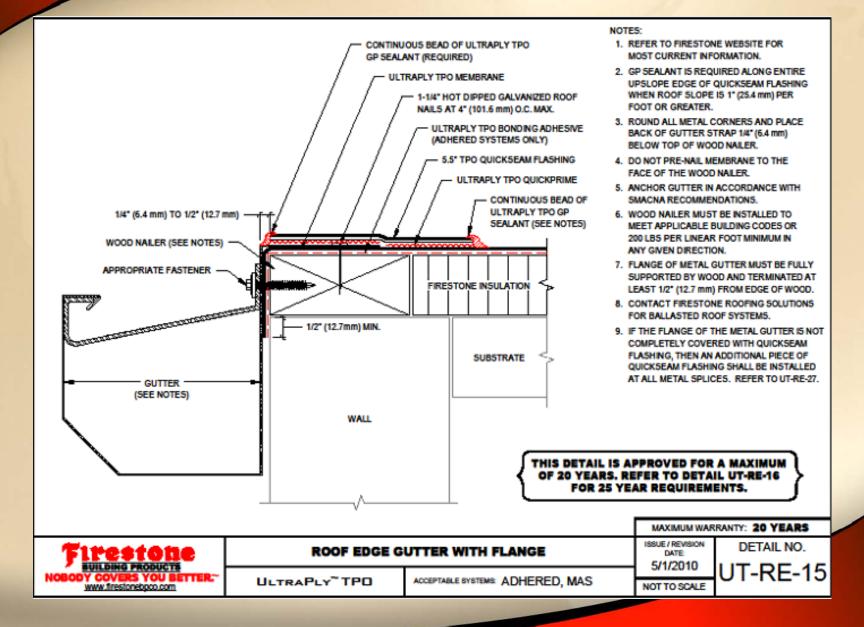


Scupper Tips

- Use Single-Ply QuickPrime Primer to clean and prime all surfaces where UltraPly QuickSeam products will be applied.
- Apply a continuous bead of Firestone Waterblock behind the metal flanges where the scupper will be nailed.
- Pay extra attention to the sequence of applying the ply's of UltraPly TPO QuickSeam.
- •A continuous bead of UltraPly TPO GP Sealant is required on all edges.

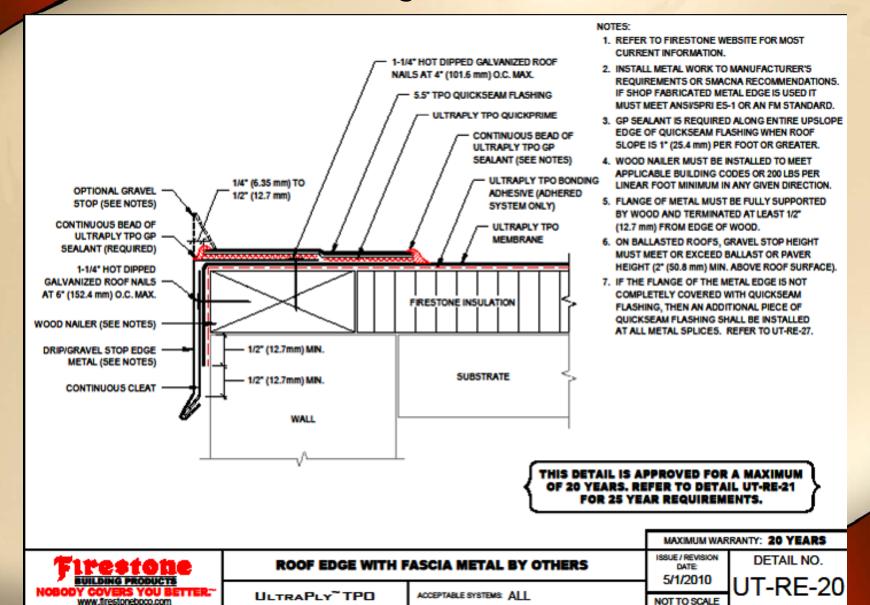


Roof Edge with a Gutter



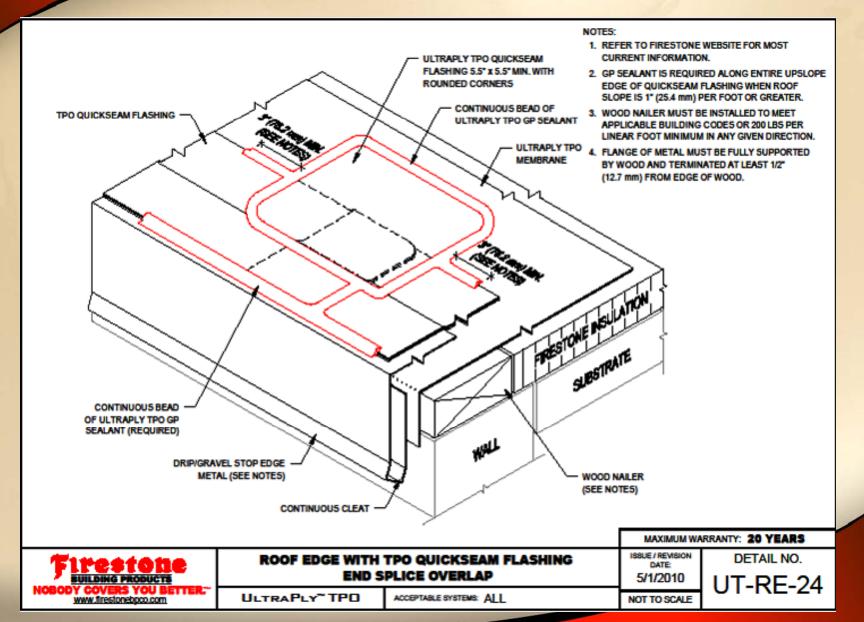


Roof Edge with Fascia





QuickSeam End Lap Splice



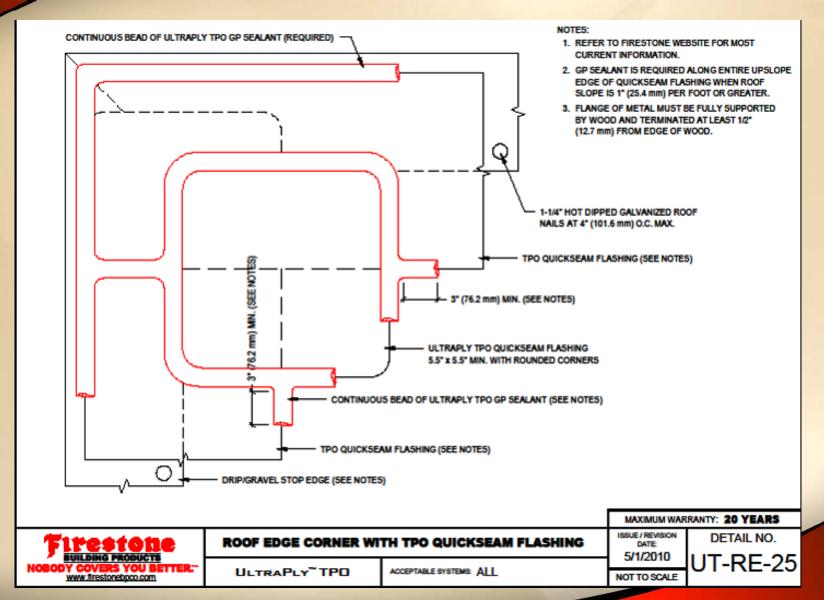


QuickSeam End Lap Splice



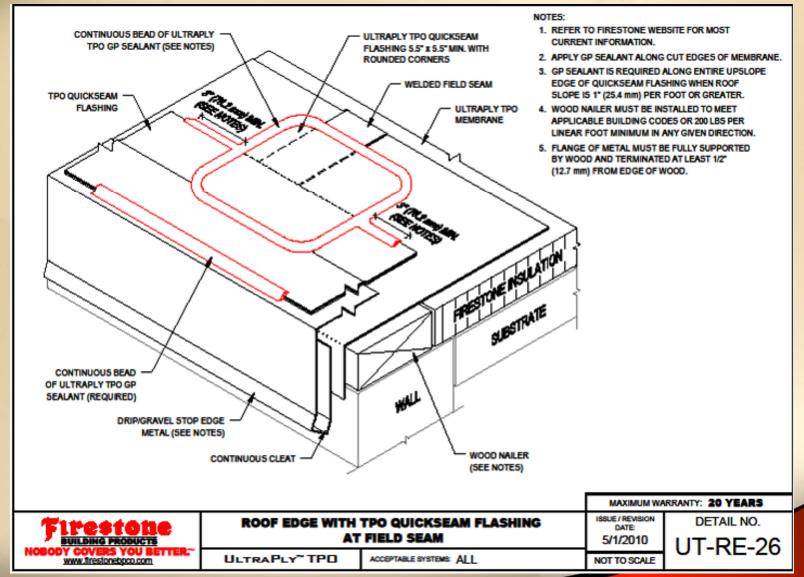


Edge Corner with QuickSeam





Roof Edge and Field Seam using QuickSeam

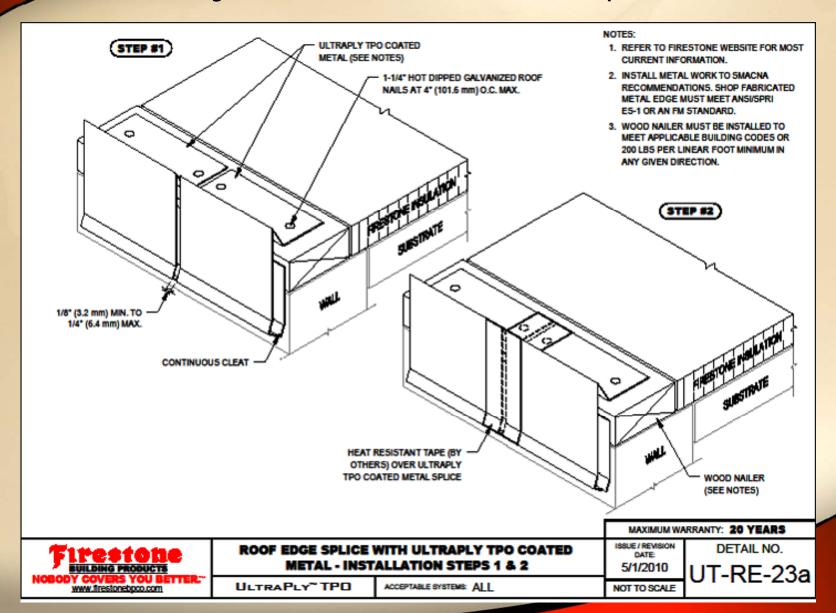






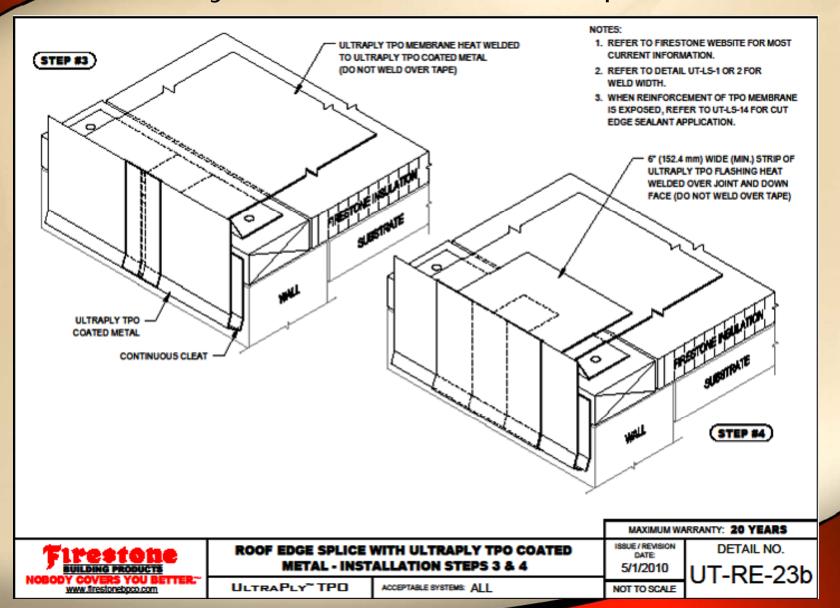


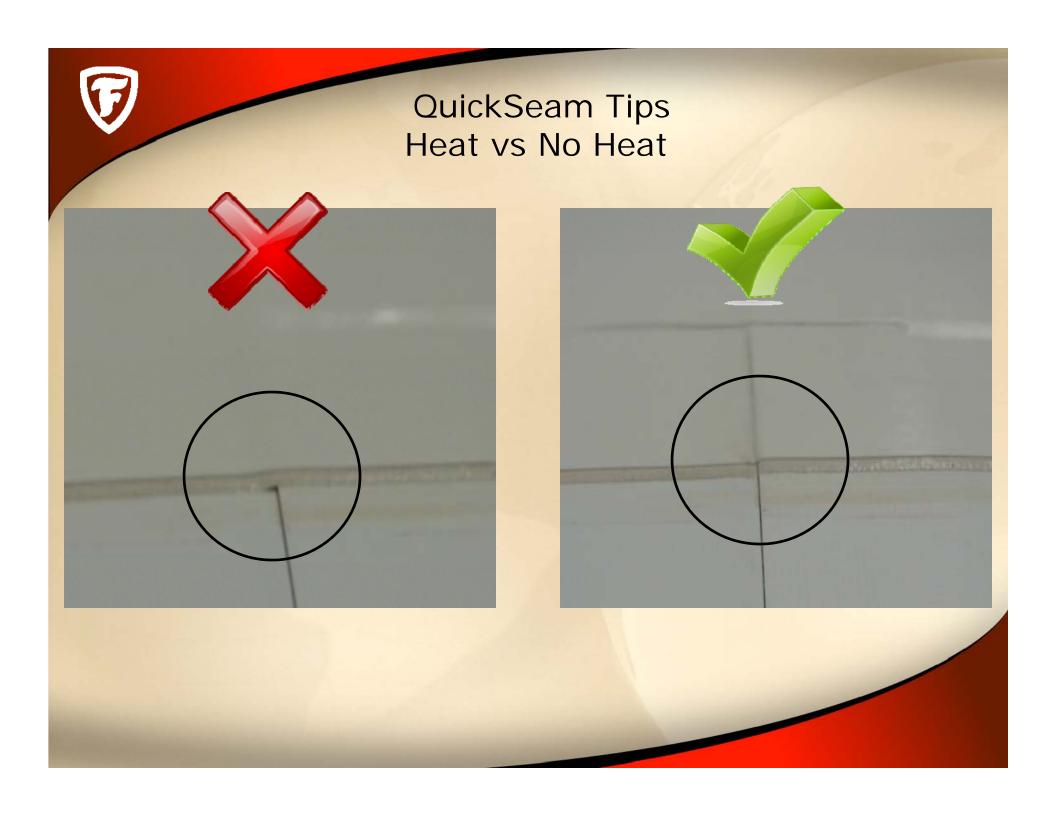
UltraPly TPO Coated Metal, Steps 1 & 2





UltraPly TPO Coated Metal, Steps 3 & 4







What's Wrong?

