

CCW MiraPLY™

Installation Instructions



www.carlisleccw.com | Support: 800.527.7092

Introduction

Carlisle Coatings & Waterproofing Incorporated (CCW) has prepared this installation guide to assist applicators in the use of MiraPLY and accessories. Every project is different, and this is a guideline that may not cover every aspect for every project. Before commencing any work, the applicator must become familiar with all product installation procedures and all project conditions.

System Description

As a self-adhering, blindside waterproofing membrane, MiraPLY is a fully adhered composite composed of a tough, durable and flexible TPO backing with a butyl alloy adhesive. MiraPLY comes in two different grades: MiraPLY-H, which is used for horizontal applications and MiraPLY-V, which is used for vertical applications.

Advantages

- Blindside applications
- Positive-side applications
- Fully adhered membrane
- Seals around fasteners
- Tremendous impermeability and excellent resistance to chemicals (i.e., acids and bases)
- Quick and easy installation
- Unaffected by weather conditions

Accessories

SecurTAPE™

Pressure-Sensitive Elastoform Flashing

CCW Detail Tape

Sure-Seal® HP-250 Primer

EPDM Low-VOC Primer

Sure-Seal Lap Sealant

Universal Single-Ply Sealant

A-1104 Butyl Sealant

CCW-703V Liqueiseal

LiquiFiber

Sure-Seal Termination Bar

CCW MiraSTOP

EJ-500

CCW MiraDRAIN® Drainage Composite

CCW MiraDRAIN HC

Weathered Membrane Cleaner

Sure-Seal Splice Wipes

CCW Tie-Back Cover

Substrate Preparation

Gravel sub-base $\frac{3}{4}$ " or smaller aggregate, level and compacted. Concrete working slabs must be level without any voids, honey-combing or protrusions. Lagging cannot have gaps larger than 1". If there are gaps larger than 1", the gaps must either be filled with grout or CCW MiraDRAIN Drainage Composite, or plywood must be installed. Shotcrete must be level without any voids, honey-combing or protrusions.

MiraPLY-H Installation

Start the installation at one corner of the building. Unroll the first sheet of MiraPLY-H square/parallel to building wall starting at one corner with the TPO side down and the adhesive/release liner facing up with the Factory-Applied Tape (FAT™) on the side for the succeeding sheet to lap onto. Unroll the next sheet of MiraPLY-H and align parallel to and overlap the preceding roll of MiraPLY-H 3" (width of the FAT) and a minimum 6" end overlap. Stagger end laps. Ensure that the membrane lays flat and no openings are visible. Make sure that the TPO side of the lap is clean, dry and free of contaminants. Leave plastic release liner on until ready for concrete pour or placement of rebar.

MiraPLY-V Installation

Start the installation at one corner of the building. Unroll the first sheet of MiraPLY-V and hang it square/parallel to building wall starting at one corner with the TPO side facing the soil retention system (lagging, sheet pile, shotcrete, etc.) and the adhesive/release liner facing out. Install a minimum of 4 fasteners across the top of the sheet and 12" on center in the lap. Fasten the field of the MiraPLY-V with approximately 1 fastener per 2 ft² (not including fasteners in the seam). Unroll the next sheet of MiraPLY-V and align parallel to and overlap the preceding roll of MiraPLY-V 3" and a minimum 6" end overlap. Stagger end laps. Ensure that the membrane lays flat and no openings are visible. Make sure that the TPO side of the lap is clean, dry and free of contaminants. Leave plastic release liner on until ready for concrete pour or placement of rebar.

MiraPLY Repair

Inspect the MiraPLY-H or -V membranes for damaged areas before placement of rebar or concrete. The membrane should be cleaned with a cloth dampened with water and the allowed to dry. Repair slices, cuts and small punctures (½" or less) with SecurTAPE, CCW Detail Tape or P/S Elastoform Flashing. Repair larger areas with a piece of MiraPLY extending beyond damaged areas by approximately 6" in all directions. Apply SecurTAPE to the cleaned TPO side of patch. Remove release liner of SecurTAPE, then position patch on damaged area and roll patch with firm hand pressure or position patch and apply CCW Detail Tape around all edges of patch and then roll with firm hand pressure.

Concrete Placement

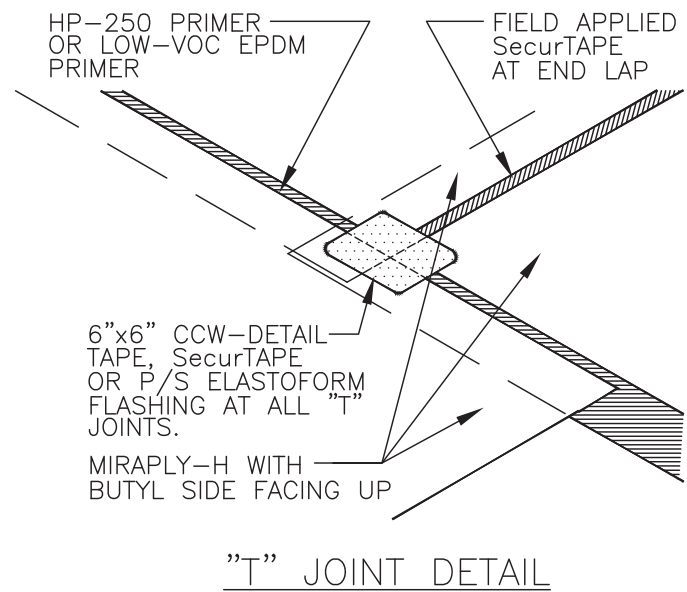
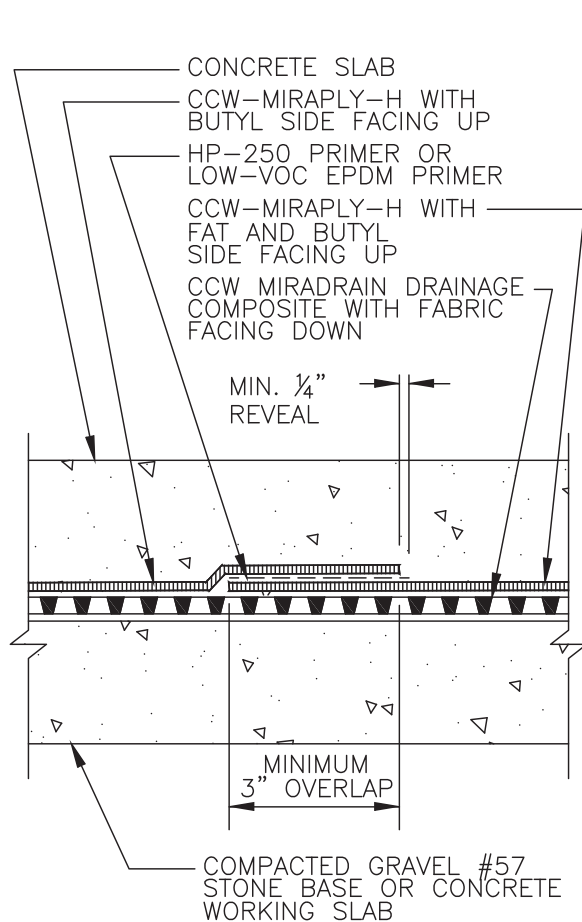
Completely remove all release liners from MiraPLY and SecurTAPE. CCW recommends that the concrete should be installed within 60 days of membrane installation.

MiraPLY-H Side Lap w/ FAT Installation

Install sheets of MiraPLY-H with minimum 3" side overlaps. Ensure the membrane lays flat and no openings are visible. Stagger end laps. Make sure that the TPO side of the lap is clean, dry and free of contaminants and prime the TPO lap area surface with Sure-Seal HP-250 or EPDM Low-VOC Primer. Allow primer to flash off and dry. Remove the release liner on the FAT and join the sheets together while simultaneously applying firm hand pressure. After the seam is fully constructed, roll the seam with a hard rubber roller using firm hand pressure.

Please Note:

- Clean seam area by using a clean rag to remove debris.
- If debris cannot be removed with a clean rag then Weathered Membrane Cleaner must be used.
- Weathered Membrane Cleaner coverage rate is approximately 1 gallon per 1,000 lineal feet of seam.
- Caution should be taken because solvent-based cleaners are extremely flammable and installers should read material safety data sheets and observe recommended safety procedures.



NOTES:

1. Install sheets of MiraPLY-H with a minimum of 3" side overlaps. Ensure the membrane lays flat and no openings are visible. Stagger end laps. Clean and prime the TPO lap area surface. Allow primer to flash off and dry. Remove the release liner on the FAT and join the sheets together while simultaneously applying firm hand pressure. After the seam is fully constructed, roll the seam with a hard rubber roller using firm hand pressure.

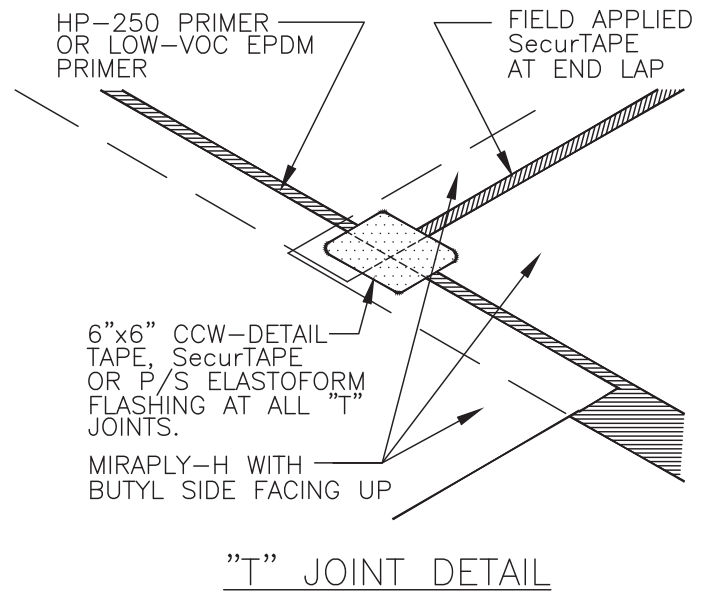
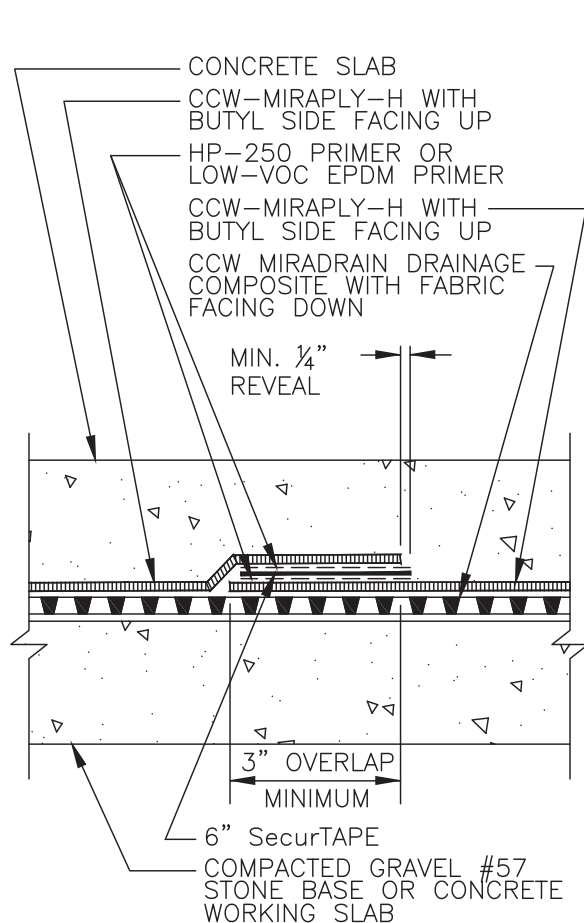
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End Laps w/ SecurTAPE

Install sheets of MiraPLY-H with a minimum 6" end overlap. Ensure the membrane lays flat and no openings are visible. Make sure that the TPO side of the lap is clean, dry and free of contaminants and prime the TPO and butyl lap area surfaces with Sure-Seal HP-250 or EPDM Low-VOC Primer. Allow primer to flash off and dry. Position the 6" SecurTAPE in the lap area. Roll SecurTAPE using a hard rubber roller and firm hand pressure. Remove release liner on the SecurTAPE and join the sheets together while simultaneously applying firm hand pressure. After the seam is fully constructed, roll the seam with a hard rubber roller using firm hand pressure.

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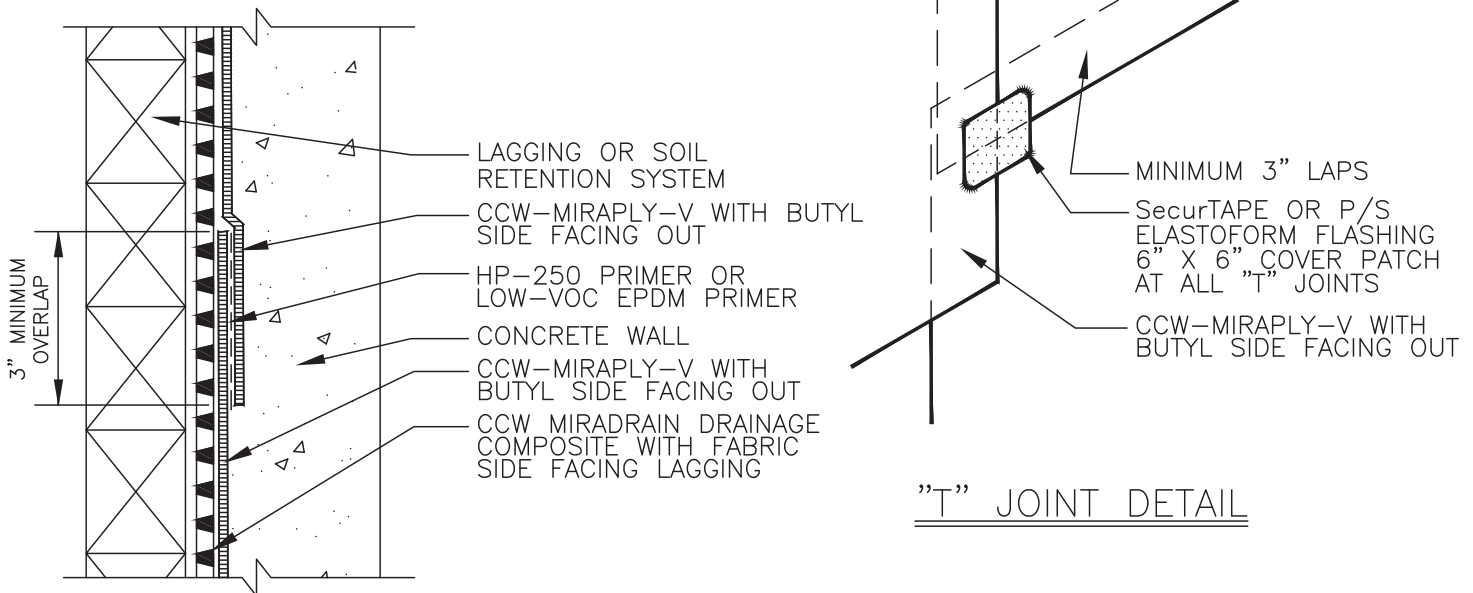
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Side & End Laps

Install sheets of MiraPLY-V with a minimum 3" overlap. Ensure the membrane lays flat and no openings are visible. Stagger end laps. Make sure that the TPO side of the lap is clean, dry and free of contaminants and prime the TPO lap area surface with Sure-Seal HP-250 or EPDM Low-VOC Primer. Allow primer to flash off and dry. Remove the release liner on the lap (edge of the sheet) and join the sheets together while simultaneously applying firm hand pressure. After the seam is fully constructed, roll the seam with a hard rubber roller using firm hand pressure.

Please Note:

- Clean seam area by using a clean rag to remove debris.
- If debris cannot be removed with a clean rag then Weathered Membrane Cleaner must be used.
- Weathered Membrane Cleaner coverage rate is approximately 1 gallon per 1,000 lineal feet of seam.
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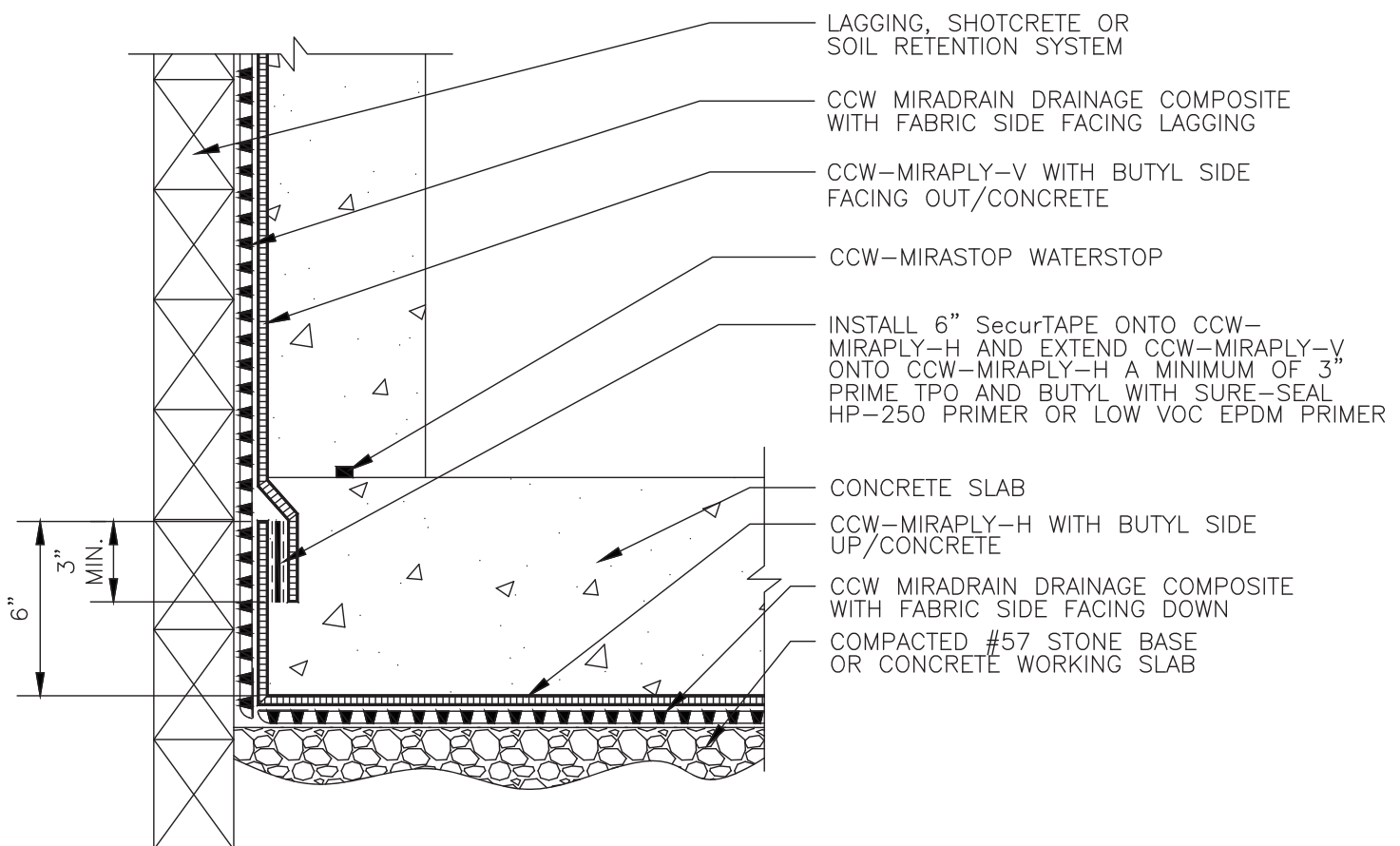


NOTES:

1. Install sheets of MiraPLY-V with a minimum 3" overlap. Ensure the membrane lays flat and no openings are visible. Stagger end laps. Clean and prime the TPO lap area surface. Allow primer to flash off and dry. Remove the release liner on the lap (edge of the sheet) and join the sheets together while simultaneously applying firm hand pressure. After the seam is fully constructed, roll the seam with a hard rubber roller using firm hand pressure.

Horizontal/Vertical Transition Installation

Start the installation at the side of the building. Unroll the first sheet of MiraPLY-H square/parallel to the building wall, starting 6" above the grade, secure to wall and turn out onto the grade. Make sure membrane is tight to corner without voids. Fold and hand-roll MiraPLY, crease it to form corners and ensure that it does not bridge corners. The FAT should be at the grade side so the succeeding sheet can lap onto it. Unroll and install the next sheet of MiraPLY-H and align parallel to and overlapping the preceding sheet of MiraPLY-H by 3" min. (width of the FAT). Make sure that the butyl side of the lap is clean, dry and free of contaminants. Prime the butyl side of the MiraPLY-H that is turned up with Sure-Seal HP-250 or EPDM Low-VOC Primer and allow to flash off and dry. Install 6" SecurTAPE on the primed MiraPLY-H that is turned up. Roll SecurTAPE using a hard rubber roller and firm hand pressure. Install MiraPLY-V with the TPO side facing the soil retention system (lagging, sheet pile, shotcrete, etc.) and the adhesive/release liner side out so as to have a 3" minimum overlap onto the MiraPLY-H. Make sure that the TPO side of the lap is clean, dry and free of contaminants. Prime the TPO side of the MiraPLY-V that is overlapped onto the MiraPLY-H and allow to flash off and dry. Remove release liner of SecurTAPE and mate the MiraPLY-V to the MiraPLY-H, roll seam with a hard rubber roller and firm hand pressure. Leave plastic release liner on until ready for concrete pour or placement of rebar.



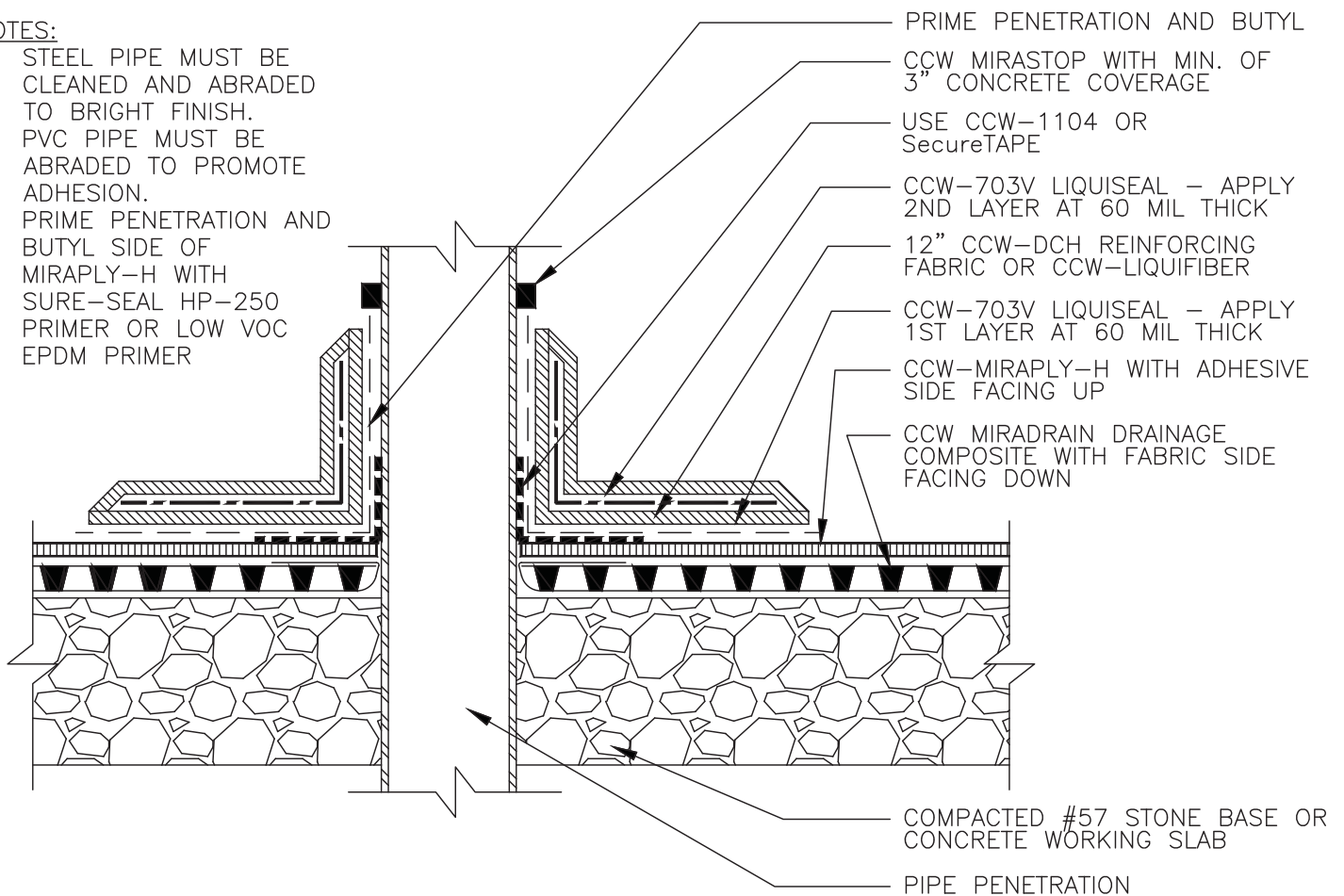
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Slab Penetrations (Option 1)

All penetrations must be secured to prevent any movement. Penetrations must be clean, dry and free from rust. Make sure that the Butyl side of the lap is clean, dry and free of contaminants. Cut a 4' x 4' piece of MiraPLY-H and cut a hole in the center the size and shape of penetration. Slide the 4' x 4' sheet over the penetration and remove plastic release liner. Apply Sure-Seal HP-250 or EPDM Low-VOC Primer to penetration and butyl portion of MiraPLY-H and let dry. Use CCW-1104, CCW Detail Tape or SecurTAPE to detail inside angle change to eliminate gaps and keep CCW-703V in place. Apply a 60-mil first layer of CCW-703V 3" up penetration and 3" onto MiraPLY-H. Immediately place CCW LiquiFiber Reinforcing Fabric in the first layer of CCW-703V. Apply 60-mil second layer of CCW-703V, fully covering reinforcing material. Above reinforced 120 mils of CCW-703V, wrap penetration with CCW MiraSTOP with a minimum 3" concrete coverage.

NOTES:

1. STEEL PIPE MUST BE CLEANED AND ABRADED TO BRIGHT FINISH.
2. PVC PIPE MUST BE ABRADED TO PROMOTE ADHESION.
3. PRIME PENETRATION AND BUTYL SIDE OF MIRAPLY-H WITH SURE-SEAL HP-250 PRIMER OR LOW VOC EPDM PRIMER



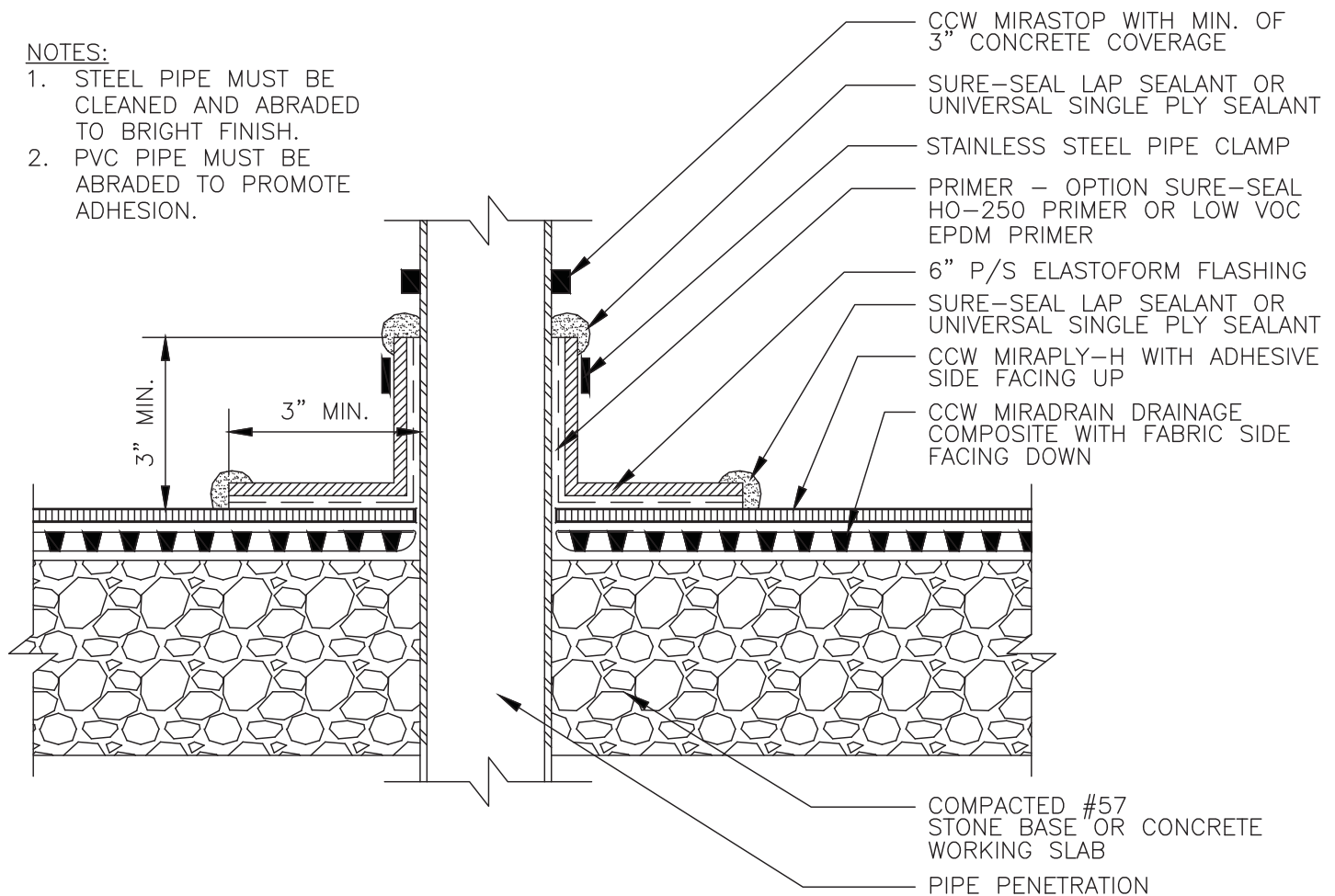
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Slab Penetrations (Option 2)

All penetrations must be secured to prevent any movement. Penetrations must be clean, dry and free from rust. Make sure that the butyl side of the lap is clean, dry and free of contaminants. Cut a 4' x 4' piece of MiraPLY-H and cut a hole in the center the size and shape of the penetration. Slide the 4' x 4' sheet over the penetration and remove plastic release liner. Apply Sure-Seal HP-250 or EPDM Low-VOC Primer to penetration and butyl portion of MiraPLY-H and let dry. Apply a 6" minimum P/S Elastoform Flashing, 3" minimum onto the primed penetration and then 3" minimum onto the primed MiraPLY-H. Install a stainless steel pipe clamp to secure P/S Elastoform Flashing to the pipe. Apply Sure-Seal Lap Sealant or Universal Single-Ply Sealant to the lap edges of P/S Elastoform Flashing. To ensure a watertight bond, roll P/S Elastoform Flashing with a hard rubber roller and firm hand pressure.

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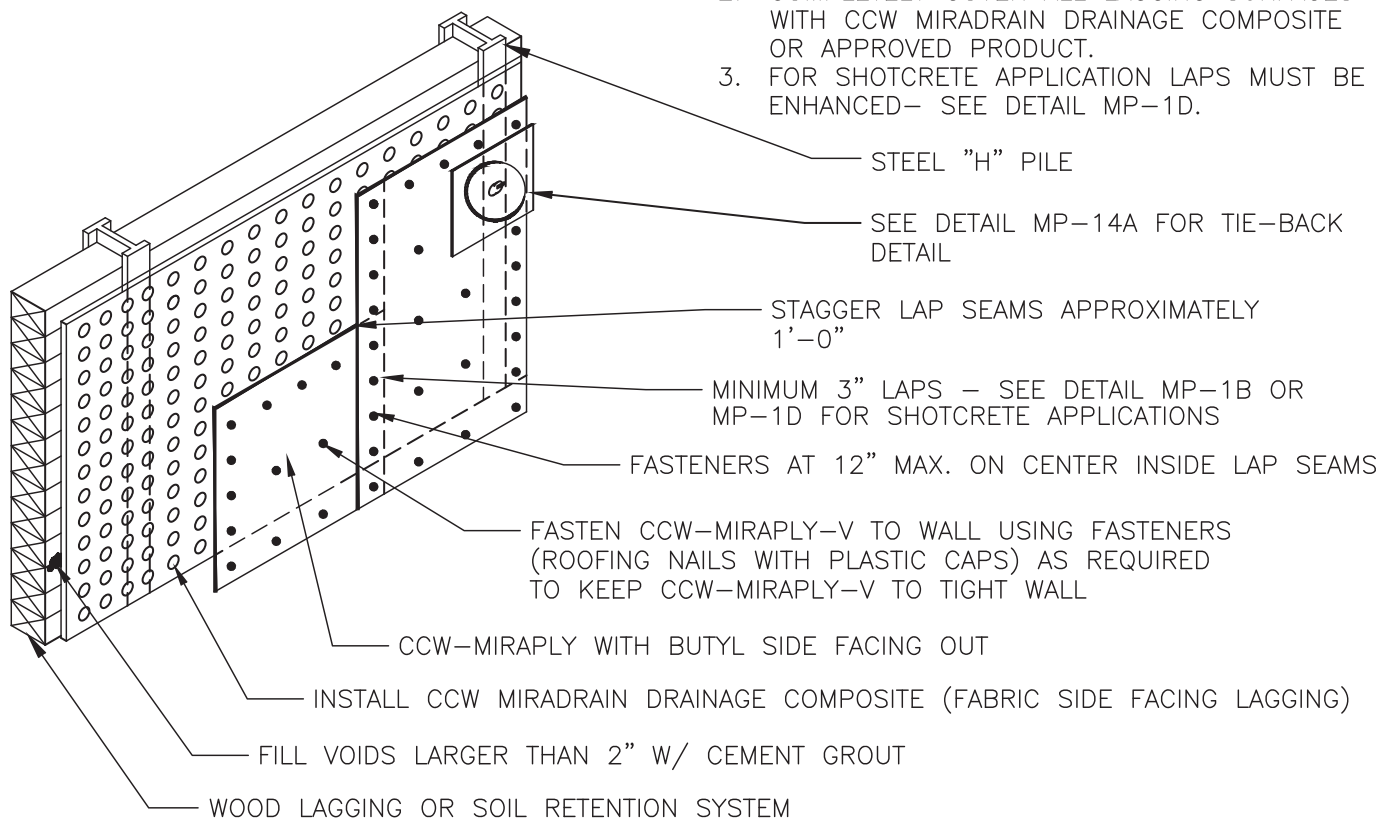
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Vertical Installation

Start the installation at the one end of the wall working from the base up the wall. Remove perforated release liner along edges and mechanically fasten the membrane vertically, using fasteners with plastic washer heads that are compatible with the substrate. The MiraPLY-V TPO side should be facing the substrate with the adhesive side/release liner facing the installer. Fasten lap seams every 12" on center. Fasten the MiraPLY in the field of the membrane as required to keep membrane from blousing. Install the MiraPLY-V in suitable lengths for ease of installation. Install the next row of MiraPLY-V and align parallel to and overlapping the preceding roll of MiraPLY-V by 3". Make sure that the TPO side of the lap is clean, dry and free of contaminants and prime the TPO lap area surface with Sure-Seal HP-250 or EPDM Low-VOC Primer. Allow primer to flash off and dry. Mate the two sheets of MiraPLY-V together, making sure the lap is tight and secure without wrinkles. To ensure a watertight bond, roll P/S Elastofrom Flashing with a hard rubber roller and firm hand pressure. Stagger end laps by approximately 12". Leave plastic release liner on until ready for concrete pour or placement of rebar. Cover fasteners with a 3" x 3" piece of SecurTAPE or CCW Detail Tape.

NOTES:

1. FILL GAPS GREATER THAN 2" WITH CEMENT GROUT. TROWEL SMOOTH.
2. COMPLETELY COVER ALL LAGGING SURFACES WITH CCW MIRADRAIN DRAINAGE COMPOSITE OR APPROVED PRODUCT.
3. FOR SHOTCRETE APPLICATION LAPS MUST BE ENHANCED— SEE DETAIL MP-1D.



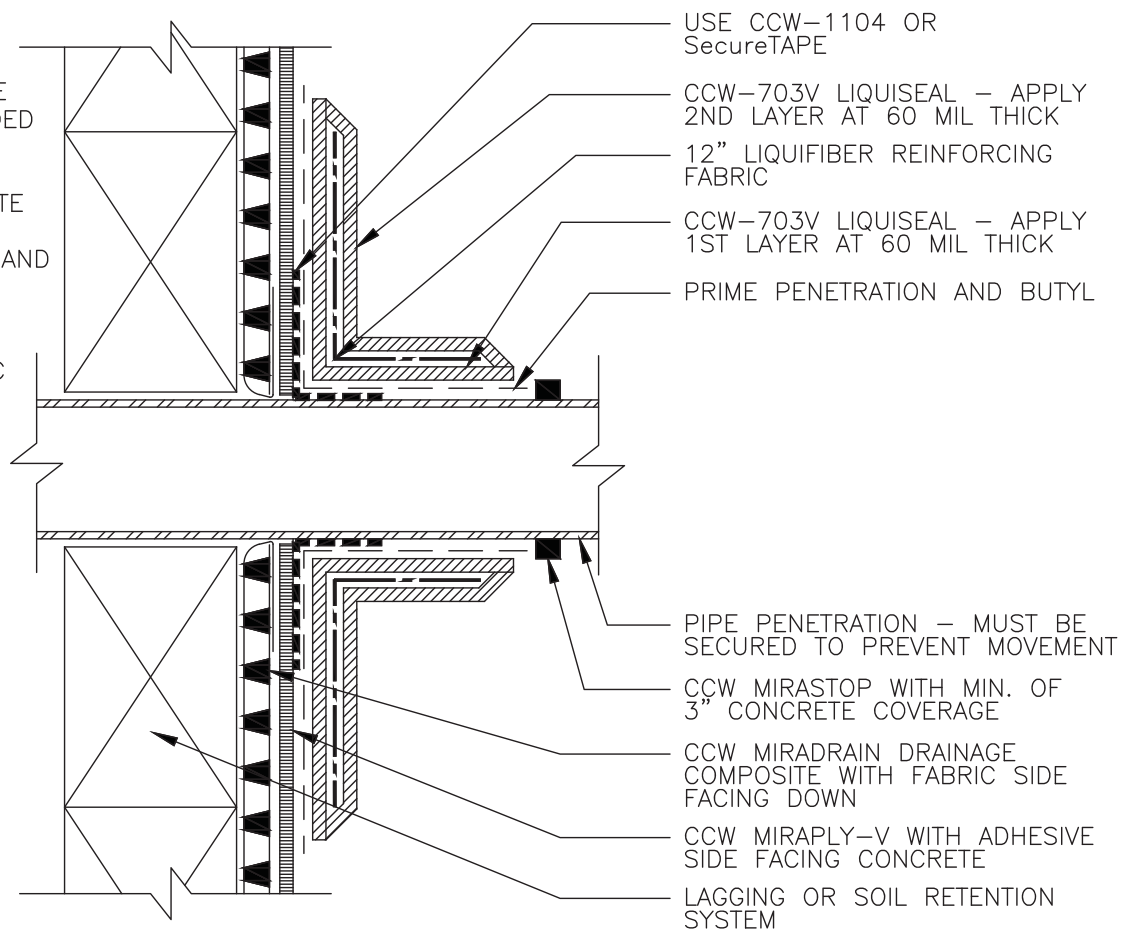
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Wall Penetrations (Option 1)

All penetrations must be secured to prevent any movement. Penetrations must be clean, dry and free from rust. Make sure that the butyl side of the lap is clean, dry and free of contaminants. Cut a 4' x 4' piece of MiraPLY-H and cut a hole in the center the size and shape of penetration. Slide the 4' x 4' sheet over the penetration and remove plastic release liner. Apply Sure-Seal HP-250 or EPDM Low-VOC Primer to penetration and butyl of MiraPLY-H and let dry. Use CCW-1104, CCW Detail Tape or SecurTAPE to detail inside angle change to eliminate gaps and keep CCW-703V in place. Apply a 60-mil first layer of CCW-703V 3" up penetration and 3" onto MiraPLY-H. Immediately place CCW LiquiFiber Reinforcing Fabric in the first layer of CCW-703V. Apply 60-mil second layer of CCW-703V, fully covering reinforcing material. Above reinforced 120 mils of CCW-703V, wrap penetration with CCW MiraSTOP with a minimum 3" concrete coverage. Above reinforced 120 mils of CCW-703V, wrap penetration with CCW MiraSTOP with a minimum 3" concrete coverage.

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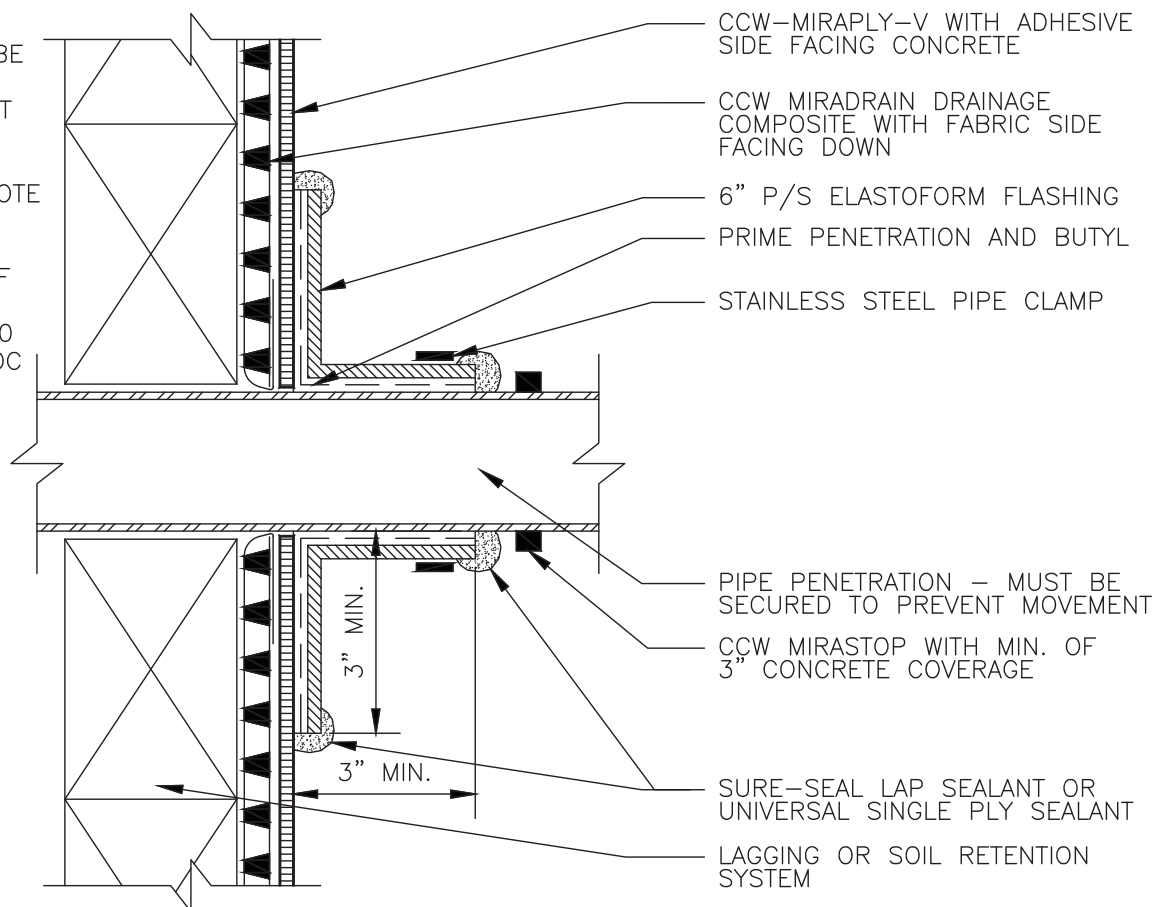
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Wall Penetrations (Option 2)

All penetrations must be secured to prevent any movement. Penetrations must be clean, dry and free from rust. Make sure that the butyl side of the lap is clean, dry and free of contaminants. Cut a 4' x 4' piece of MiraPLY-H and cut a hole in the center the size and shape of the penetration. Slide the 4' x 4' sheet over the penetration and remove plastic release liner. Apply Sure-Seal HP-250 or EPDM Low-VOC Primer to penetration and butyl of MiraPLY-H and let dry. Apply a 6" minimum P/S Elastoform Flashing, 3" minimum onto the primed penetration and then 3" minimum onto the primed MiraPLY-H. Install a stainless steel pipe clamp to secure P/S Elastoform Flashing to the pipe. Apply Sure-Seal Lap Sealant or Universal Single-Ply Sealant to the lap edges of P/S Elastoform Flashing. To ensure a watertight bond, roll P/S Elastoform Flashing with a hard rubber roller and firm hand pressure.

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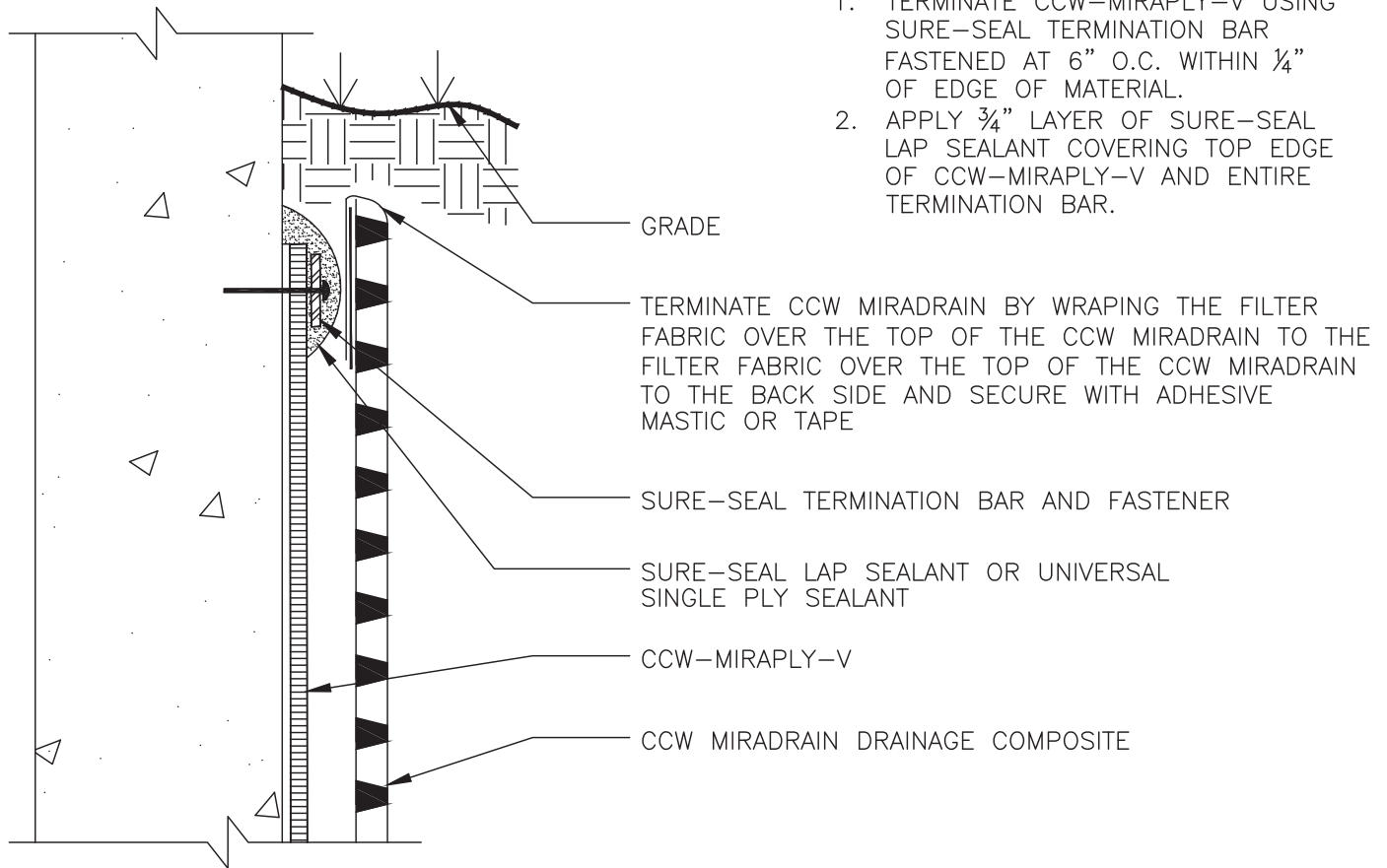
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Wall Terminations

Terminate the MiraPLY-V with the Sure-Seal Termination Bar and Sure-Seal Lap Sealant. Make sure termination is below grade approximately 6". Install Sure-Seal Termination Bar by fastening the termination bar, compressing the MiraPLY-V to the concrete at 6" minimum on center with fasteners compatible with the termination bar and substrate. Cover top edge of MiraPLY-V and termination bar with Sure-Seal Lap Sealant.



NOTES:

1. TERMINATE CCW-MIRAPLY-V USING SURE-SEAL TERMINATION BAR FASTENED AT 6" O.C. WITHIN 1/4" OF EDGE OF MATERIAL.
2. APPLY 3/4" LAYER OF SURE-SEAL LAP SEALANT COVERING TOP EDGE OF CCW-MIRAPLY-V AND ENTIRE TERMINATION BAR.

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