MODEL PTC AND PTCW INSTALLATION INSTRUCTIONS

IMPORTANT INFORMATION

Prior to the commencement of installation, all materials MUST be inspected for damage. Any damage must be reported to CONSTRUCTION SPECIALTIES, INC., as soon as possible, so that replacement materials may be furnished without delay.

All work must be completed as per Architect's Approved "Shop Drawings", and in accordance with these Installation Instructions. When installation is complete, all materials must be protected from damage until the Architect's FINAL INSPECTION.

All materials should be arranged in the order that they are to be installed. All hardware required for each portion of the work should be placed with the appropriate materials.

Please review all Approved Shop Drawings and this document to familiarize yourself with all the details and components of this assembly.

IMPORTANT:
READ THROUGH ALL INSTRUCTIONS PRIOR TO STARTING INSTALLATION

2/18/20

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GENERAL INSTALLATION NOTES:

1. Read through entire instructions before beginning work to see all conditions that may need to be addressed in a run.
2. Joint Width and Blockout sizes **must be** in accordance with the architectural details and CS shop drawings before installation can begin. The blockout width dimensions indicated are minimum dimensions.
3. Blockouts **must be** flat and level. All repairs or leveling of the mounting surfaces **must be** done prior to the installation of the joint cover system.
4. The installer should follow all safety instructions listed in these installation documents and/or listed on the MSD sheets provided.
5. The CS shop drawings are required for use in conjunction with these installation instructions. Many of the dimensions shown vary with joint width and movement requirements. Refer to the shop drawings for the appropriate dimensions for each location and model size.

STEP 1

PTC VAPOR BARRIER INSTALLATION

Note:
The Vapor Barrier should be installed in as long of runs as possible to reduce the number of splices. All sizes of Vapor Barrier are provided in 100' rolls. Specialized installation instructions are provided for splicing, drain installation and end closures. See these instructions if any of these conditions are required.

The outside edges of the Vapor Barrier are to align with the outside edges of the frames. Do not extend the Vapor Barrier beyond the frames as this can reduce the bond of the elastomeric concrete to the bottom of the blockout.

If floor-to-wall joint applications (model PTCW) occur, refer to Step 10 for PTCW vapor barrier instructions.

Step 1:

1. Measure and mark on the Rotational Frame blockout side of the joint 6 1/4" back from joint edge locating the Vapor Barrier edge. Snap a chalk line. (See Fig. 1A-1B) Measure the Slide Frame, mark the blockout at the location of the outside edge of frame and snap a chalk line. (See Fig. 1C - 1E)

Fig. 1A

Fig. 1B

Fig. 1C

Fig. 1D

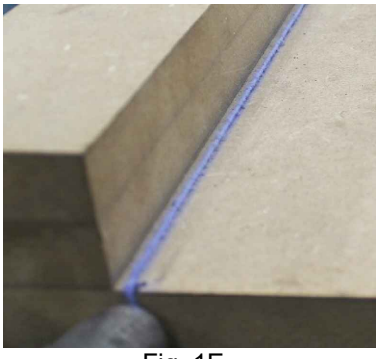


Fig. 1E

STEP 1 Con't.

PTC VAPOR BARRIER INSTALLATION

2. Select the proper Vapor Barrier for joint width and location. Place the Vapor Barrier in the bottom of the blockout. Align the edge of the Vapor Barrier with the chalk line marks and hold in place with duct tape.

3. Drape the Vapor Barrier into the joint, pressing the water stop material into the joint to create a drape. It may be necessary to place a block of wood or a tool in the drape to hold it down into the joint until the installation of the frames is complete. This will simplify the rest of the installation. (See Fig. 1F)

Fig. 1F

STEP 2

PTC BASE AND ROTATIONAL FRAME INSTALLATION

Step 2:

1. Place the first length of PTC Base Frame in the 2" deep blockout, align the the back edge of the Base Frame with the outside edge of the vapor barrier and chalk line. (See Fig. 2A)

2. While holding the Base Frame in position, drill through the Frame at each pre-drilled anchor hole using the proper drill bit for the CS supplied anchors. (See Fig. 2B)

3. At the outside edge of the Frame and vapor barrier mark a couple of reference lines across the frame, vapor barrier and the blockout to assist in properly repositioning the Frame and vapor barrier. (See Fig. 2C)

Fig. 2A

Fig. 2B

Fig. 2C

STEP 2 Con't

PTC BASE AND ROTATIONAL FRAME INSTALLATION

Step 2:

4. Remove the Base Frame and clean/vacuum away the concrete debris and dust. Lift the vapor barrier and clean/vacuum away all concrete debris and dust at each anchor hole. Note: It is important to remove all debris to assure that the frame sits flat and solid to the blockout surface and does not rock. (See Fig. 2D-2E)

5. Reposition the vapor barrier and align with the reference marks.

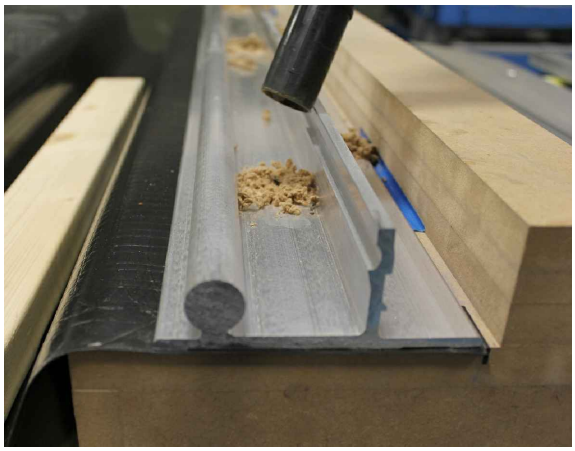


Fig. 2D

Fig. 2E

6. Before installing the Base Frame, apply grease to the mating surfaces of both the Base and Rotational Frames and smear to spread evenly. Assemble the Base Frame together with the Rotational Frame. At one end, align the female portion of the Rotational Frame with the male portion of the Base Frame. (Note the orientation of the Rotational Frame.) Slide the Rotational Frame onto the Base Frame and continue until the end of the frames align. (See Fig. 2F-2I)

7. Reposition the Base Frame/Rotational Frame into the blockout and align the frame with the reference marks and check that the anchor holes align with the holes in the vapor barrier.

8. At each anchor hole in the Base Frame, begin to install one of the CS supplied anchors into each hole. Drive the anchors in approx. $\frac{1}{2}$ of the anchor length according to the anchor instructions. Note: Do not tighten the anchors until all anchors have been started to allow for small adjustments. Once all of the anchors have been started, return and tighten all of the anchors. (See Fig. 2J)

Fig. 2F

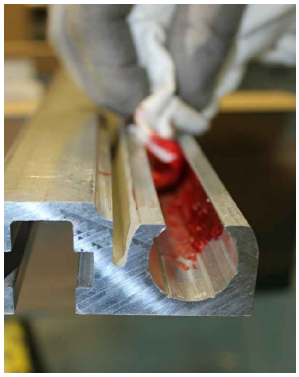


Fig. 2G

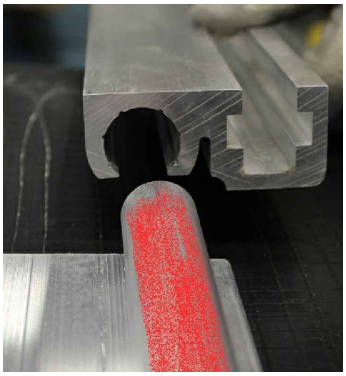


Fig. 2H

Fig. 2I

Fig. 2J

STEP 3

PTC SLIDE FRAME INSTALLATION

Note: The following instructions will show the Slide Frame positioned along the edge of the joint, however, at larger joint width and increased movement requirements the frame will be moved back away from the joint edge. Refer to the CS shop drawings for the specific set back dimensions.

Step 3:

1. Place the first length of PTC Slide Frame in the 1 1/2" deep blockout. Align the outside edge of the Frame with the outside edge of the vapor barrier and chalk line.

2. While holding the Slide Frame in position, drill through the Frame at each pre-drilled anchor holes at the outside leg of the frame using the proper drill bit for the CS supplied anchors. At the countersink holes at the inside anchor location, drill through the Frame at each pre-drilled anchor holes using the proper drill bit for the CS supplied anchors. (See Fig. 3A)

3. At the outside edge of the Frame and vapor barrier, mark a couple of reference lines across the frame, vapor barrier and the blockout to assist in properly repositioning the Frame and vapor barrier. (See Fig. 3B)

Fig. 3A

Fig. 3B

5. Remove the Slide Frame and clean/vacuum away the concrete debris and dust. Lift the vapor barrier and clean/vacuum away all concrete debris and dust at each anchor hole. Note: It is important to remove all debris to assure frame sits flat and solid to the blockout surface and does not rock. (See Fig. 3C-3D)

6. Reposition the vapor barrier and the Slide Frame and align with the reference marks. Check anchor holes that they align with the vapor barrier holes.

7. At each anchor hole in the outside leg of the Slide Frame, begin to install CS supplied anchors. Drive the anchors in approx. $\frac{1}{2}$ of the anchor length according to anchor instructions. Note: Do not tighten the anchors until all anchors have been started to allow for small adjustments. Once all of the anchors have been started, return and tighten all of the anchors. (See Fig. 3E)

8. Repeat and install anchors at the countersunk holes in Slide frame in accordance with the anchor instructions. (See Fig. 3F)

Fig. 3C

Fig. 3D

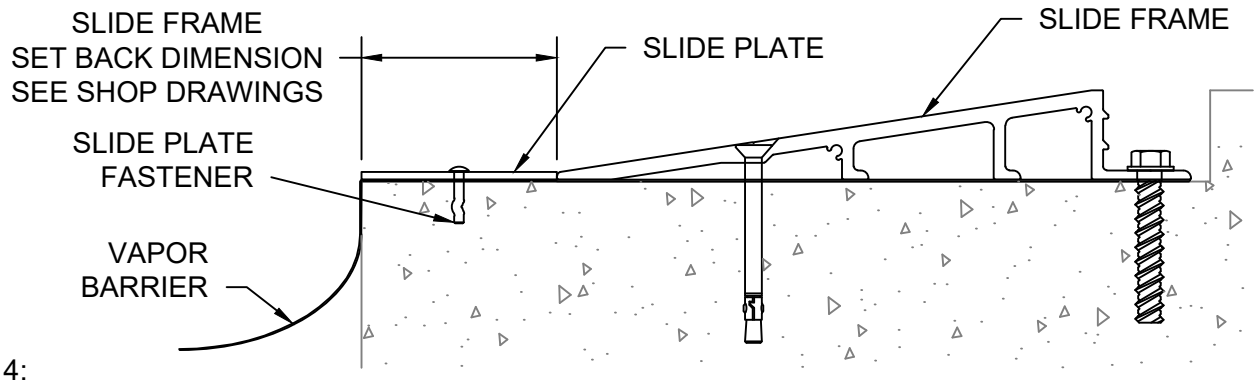
Fig. 3E

Fig. 3F

STEP 4

SLIDE PLATE INSTALLATION

Note: A Slide Plate is only required if the Slide Frame is set back from the joint edge and the Cover Plate will contact the bottom surface of the blockout during full movement. If the Slide Frame is mounted on or near the edge of the joint a Slide Plate is not required and installation should continue with the next step.



Step 4:

Note: A Slide Plate should be installed every 36" o.c. for the entire run. Locating the first and last slide plates 18" from the end of the aluminum plate will maintain 36" centers for a 12'-0" plate size. Please insure that at least two slide plates are installed on every run, even on runs with plate sizes of 3'-0" or less.

1. Place the PTC Slide Plate between the Slide Frame and the edge of the joint. The Slide Plate will butt up against the leading edge of the Slide Frame and align with the edge of the joint. See additional notes below for locating the slide plates lineally. Using the Slide Plate as a template mark the location of the mounting fastener.

2. Remove the Slide Plate and drill the holes with the appropriate bit for the fasteners indicated on the shop drawings.

3. Reposition the Slide Plate, align with the mounting holes and fasten into place with the appropriate fasteners.

STEP 5

ALIGNMENT PIN & T-NUT INSTALLATIONS

Note: Prior to installing additional lengths of frames, T-nuts and Alignment Pins are to be installed in the frames.

Step 5:

1. At the Rotational Frame, install T-Nuts used for attachment of the Cover Plate. Note the orientation of the T-Nut and slide each into the slot within the Rotational Frame. For typical 12' lengths of Frame/Cover Plate, insert (8) T-Nuts. For shorter lengths of frame and cover, insert the required number of T-nuts. See Steps 7 and 8 to establish the number required at shorter lengths. (See Fig. 5A)

2. To maintain alignment of the Slide Frame, alignment pins are installed prior to installation of additional Slide Frame sections. At the exposed end of the Slide Frame, using a hammer tap in the alignment pin approx. $\frac{1}{2}$ of its length into the alignment pin slot. Repeat at the second pin slot. (See Fig. 5B)

Fig. 5A

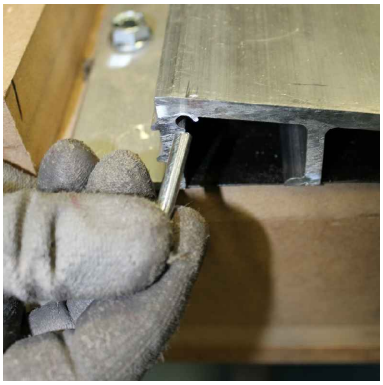


Fig. 5B

STEP 6

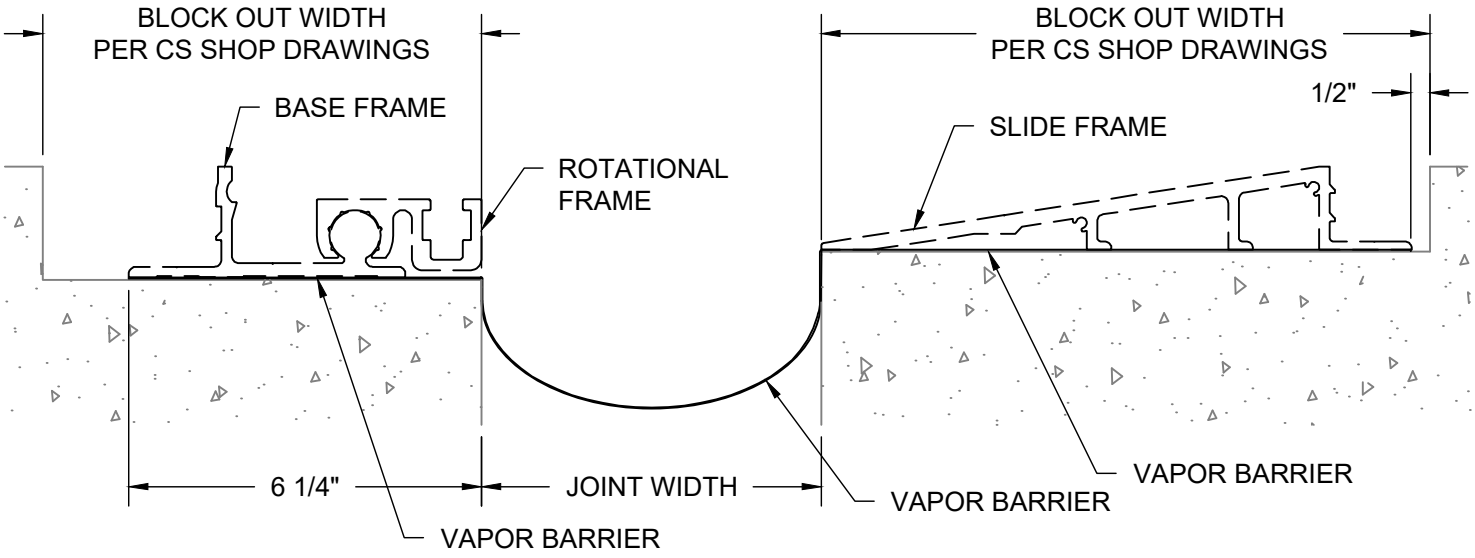
INSTALL ADDITIONAL FRAME LENGTHS

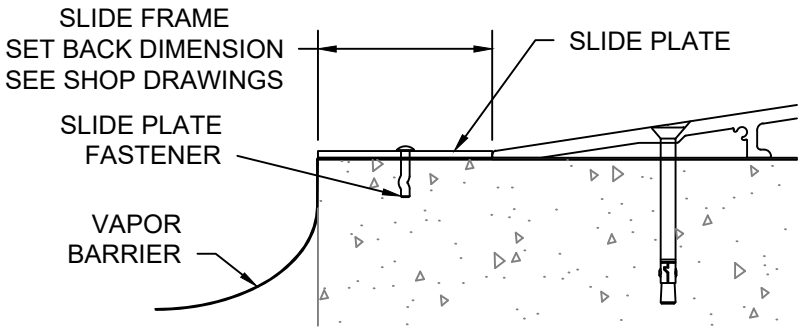
Step 6:

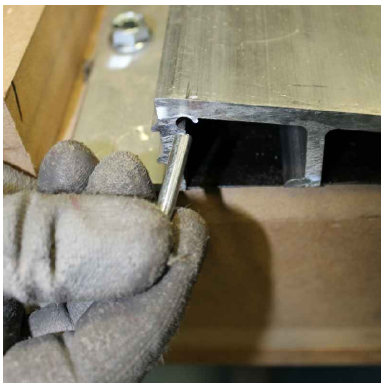
1. Repeat Steps 2 and 3 to install additional lengths of frame as needed for the length of the run.

2. Where needed, install Slide Plates per Step 4.

3. Install Alignment Pins and T-Nuts per step 5.







STEP 7

CUTTING AND INSTALLING REDUCED LENGTHS

Note: At the end of a run, it may be necessary to cut lengths of frame and cover to complete the run.

Step 7:

1. Measure the distance from the last installed frame to the end of the run. Measure, mark and cut an length of Base Frame, Rotational Frame and Slide Frame at the required length. Measure and mark a length of Cover Plate for this length **but do not cut at this point.**

2. Follow Steps 2-4 to install the cut lengths of frame. Note: Do not install Alignment Pins in the last piece of Slide Frame. Count the number of countersunk holes in the required length of Cover Plate and insert this number of T-Nuts into the Rotational Frame before the Base Frame/Rotational Frame assembly is anchored.

STEP 8

PTC COVER PLATE INSTALLATION

Note: If lateral shear movement is required (refer to CS shop drawings and contract documents) Cover Plate - End Plates are required. Refer to Step 9 when End Plates are required.

Step 8:

1. Beginning at the same end of the run where installation of the frames began, place a length of Cover Plate on top of the frames with the edge with the countersunk holes resting on the Rotational Frame and the beveled end resting on the Slide Frame. Align the ends of the Cover Plate with the end of the first length of frames. (See Fig. 8A)

2. Looking into the countersunk holes, slide the plate towards or away from the joint until the top surface of the Rotational Frame can be seen. Using the countersunk holes to place a mark on the surface of the Rotational Frame. Slide the Cover Plate over onto the Slide Frame. (See Fig. 8B-8C)

3. At the Rotational Frame, slide T-Nuts and align the hole of the T-Nut with each mark on the Rotational Frame. (See Fig. 8D)

4. At the space between the Rotational Frame and the leg of the Base Frame, place a 1 $\frac{1}{4}$" x 1 $\frac{1}{4}$" x 2" long Rubber Spring into the space and centered with each mark on the Rotational Frame. Note: The 2" length is to be visible from the top. If there is an anchor bolt at this location, simply place the Rubber Spring beside the anchor, closest to the mark. The Rubber Springs, when placed under compression, will apply a downward force at the beveled end of the Cover Plate to reduce noise and to facilitate vertical movement. (See Fig. 8E)

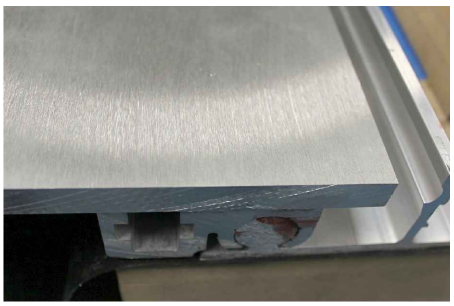


Fig. 8A

Fig. 8B

Fig. 8C

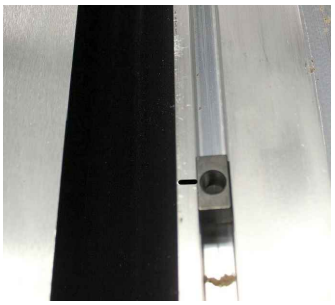


Fig. 8D

Fig. 8E

STEP 8 Con't.

PTC COVER PLATE INSTALLATION

Step 8:

5. Reposition the Cover Plate over the joint and align the holes in the cover with the T-Nuts and with the ends of the plate aligned with the ends of the frame. Use a screwdriver or similar to reach through the holes to adjust the T-Nuts to center them with the holes.

6. Take one of the CS supplied, 1/2-13 x 1 1/2" Hex Socket Head, Flat Head Bolts and apply a small amount of CS supplied Loctite Threadlocker to the threads near the tip of the bolt. (See Fig. 8F)

7. Begin at one end of the Plate and insert the Flat Head Bolt through the counter sunk hole, and by hand, begin to thread it into the T-Nut, care should be taken not to cross thread the nut. Repeat the threadlocker application and hand threading of the bolts at all the Cover Plate attachment holes. (See Fig. 8G)

8. Once all of the fasteners have been started, work back across the plate and tighten each screw by hand. Once hand tight, using a Torque Wrench with a 5/16" Hex Bit Socket tighten each bolt to 60 ft.lbs.. (The use of an impact wrench or power drivers is not recommended.) Note: Once all of the bolts have been tightened, the top edge of the cover plate should be flush with the top of the Base Frame or slightly below. If the top edge of the plate is above the frame, increase torque to 70 ft.lbs. and tighten the bolts in this area. If the plate edge is still slightly above, leave it as is. (See Fig. 8H)

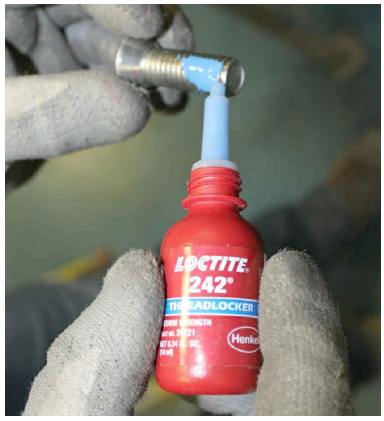


Fig. 8F

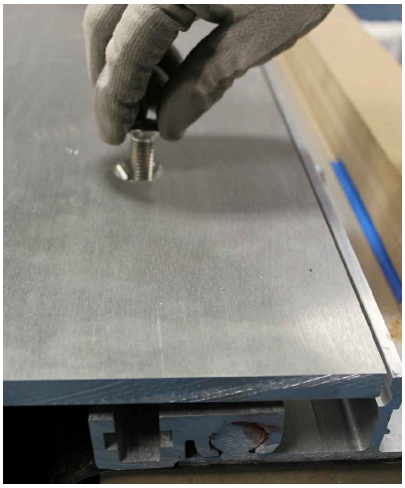


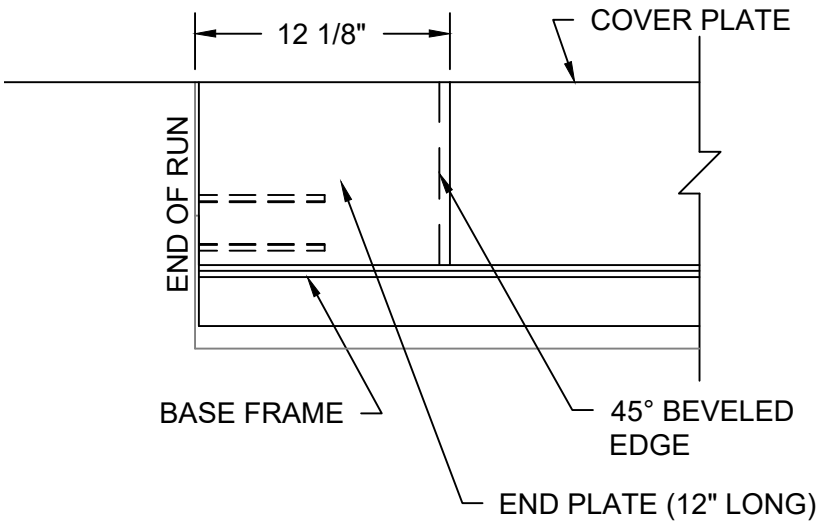
Fig. 8G

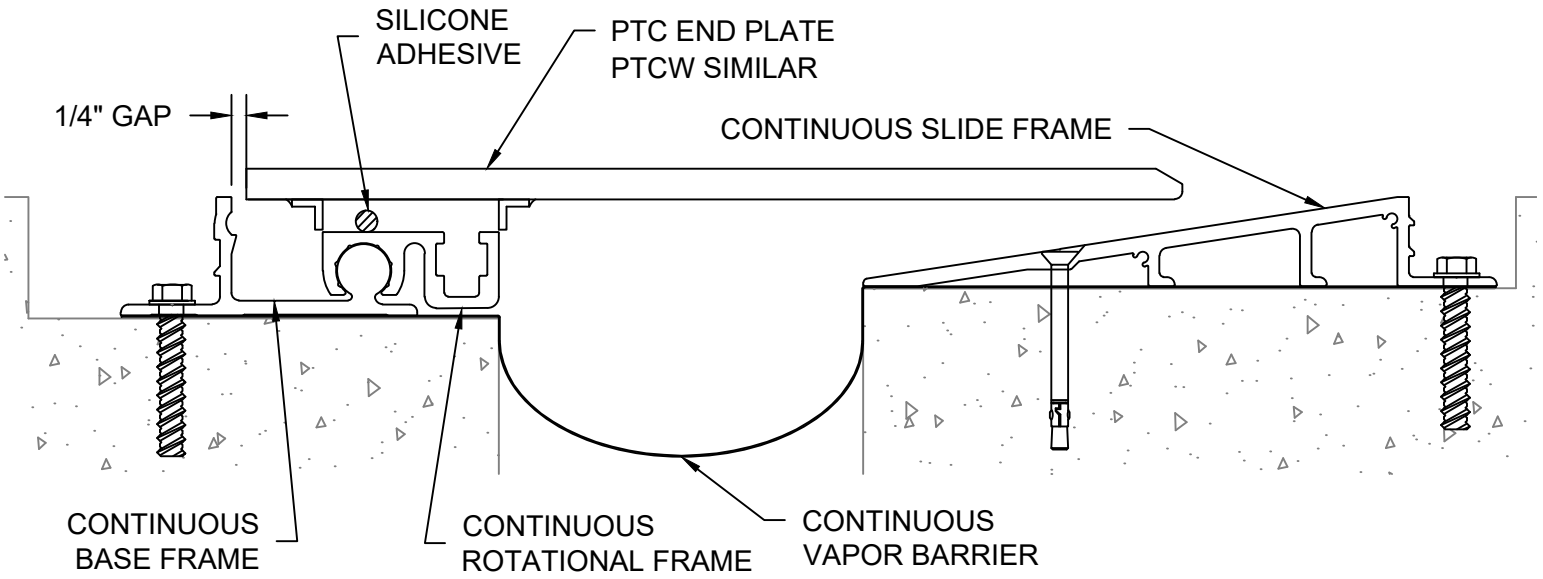
Fig. 8H

STEP 9

END PLATE INSTALLATION

Notes:
The PTC and PTCW End Plates are installed where lateral shear is a requirement. The End Plates will detach during a seismic event and allow the PTC cover system to perform lateral movement without damaging the Cover Plate or any surrounding material. After the End Plate has been detached, reattach with silicone adhesive according to these instructions.





End plates are required at each end of a run of PTC/PTCW cover.

Step 9:

1. When lateral movement is required, prior to beginning installation of the Cover Plates in Step 8, position a CS supplied End Plate next to the joint at the end of the run where installation began.

2. Apply a 1/2" bead of Silicone Adhesive to the top of the Rotational Frame at the beginning of the run.

3. Place the PTC End Plate on top of the Rotational Frame with the beveled edge down and towards and resting on the Slide Frame. Seat the End Plate on top of the Rotational Frame with the angle on the underside straddling the Rotational Frame, the end of the plate is to align with the end of the Rotational Frame and Slide Frame. Press the End Plate into the Silicone Adhesive to bond it in place.

4. Proceed with Cover Plate installation per Step 8 leaving only a hairline gap between the End Plate and the end of the standard Cover Plate.

5. At the opposite end of the run, prior to installing the final Cover Plate, install the End Plate per instructions above and measure and cut the final Cover Plate as needed.

STEP 10

PTCW VAPOR BARRIER INSTALLATION

Note:
The Vapor Barrier should be installed in as long of runs as possible to reduce the number of splices. All sizes of Vapor Barrier are provided in 100' rolls. Specialized installation instructions are provided for splicing, drain installation and end closures. See these instructions if any of these conditions are required.

The outside edges of the Vapor Barrier are to align with the outside edges of the frames. Do not extend the Vapor Barrier beyond the frame as this can reduce the bond of the elastomeric concrete to the bottom of the blockout.

Step 10:

1. Where the PTCW floor-to-wall condition occur, transfer the elevation at the bottom of the blockout across the joint and onto the face of the wall or column. Using a square or straight edge in the bottom of the blockout extend it across the joint to the face of the wall and place a mark. Do this at several locations along the run. These marks should be nearly level. (See Fig. 10A)

2. From the marks, measure up 3 5/8" and place another mark at each location. Snap a level chalk line at the 3 5/8" elevation. (This line is the mounting point for the top of the vapor barrier and the top edge of the floor-to-wall Cover Plate.) (See Fig. 10B)

3. In the blockout, measure and mark the bottom of the blockout at the dimension to the outside edge of the Slide Frame (refer to Step 1) and snap a chalk line.

4. Select the proper Vapor Barrier for joint width and location. Place the Vapor Barrier in the bottom of the blockout. Align the edge with the chalk line and hold in place with duct tape. At the opposite edge, align the edge of the Vapor Barrier with the chalk line on the wall/column and hold in place with duct tape. Press the Vapor Barrier material into the joint to create a drape. It may be necessary to place a block of wood or a tool in the drape to hold it down into the joint until the installation of the frames is complete. This will simplify the rest of the installation. (See Fig. 10C-10D)

Fig. 10A

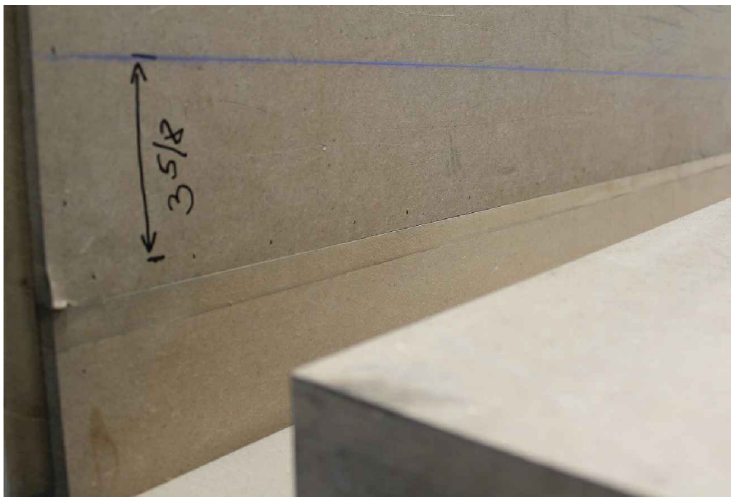


Fig. 10B

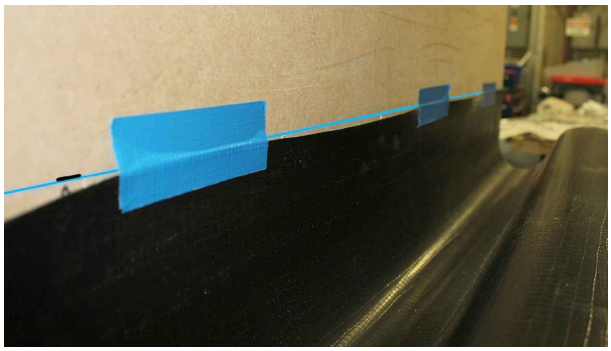


Fig. 10C

Fig. 10D

STEP 10 CON'T.

PTCW VAPOR BARRIER INSTALLATION AT TRANSITION AREAS

Note at Transition Areas of PTC to PTCW (Floor to Floor to Floor to Wall) follow instructions steps of 1 through 6 below.

1. Where a floor-to-floor (PTC) cover transitions to a floor-to-wall (PTCW) condition, mark and snap chalk lines for the PTC per Step 1 and for the PTCW as indicated above.

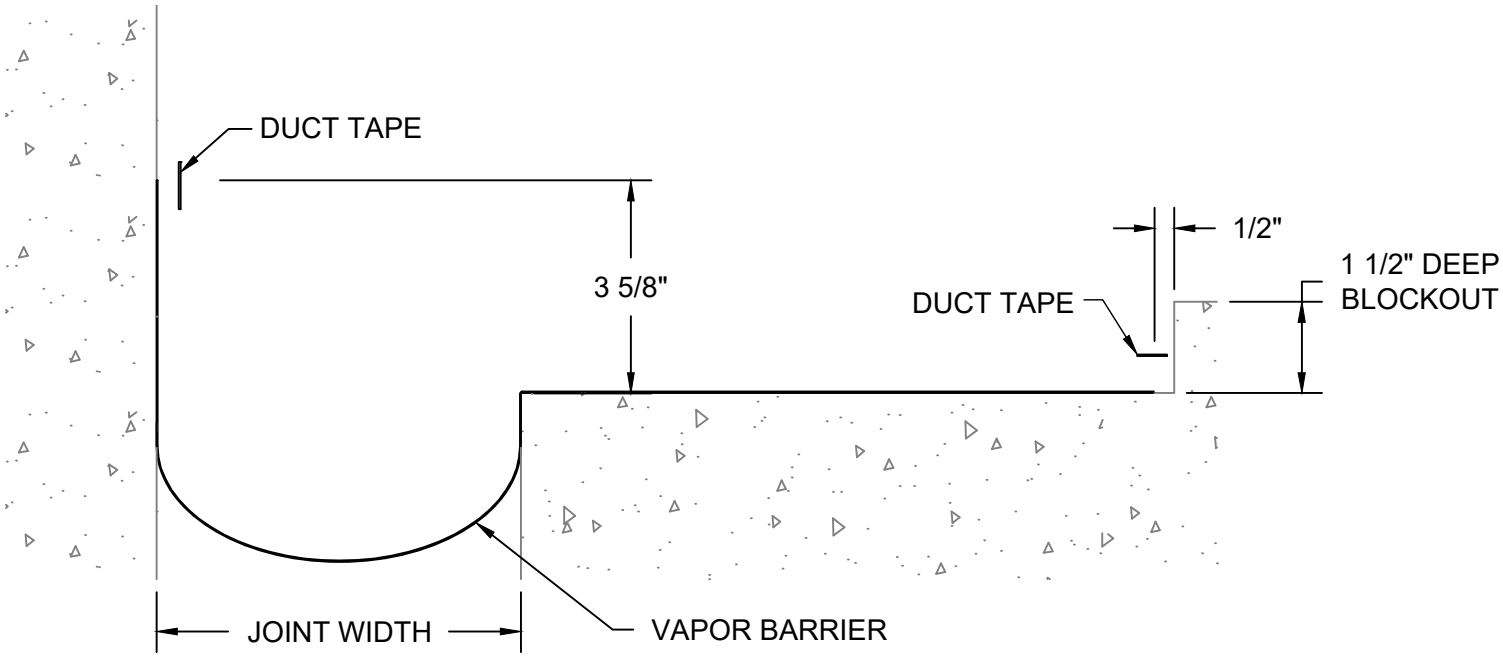
2. Select the proper Vapor Barrier for joint width and location. Place the Vapor Barrier in the bottom of the floor-to-floor blockouts. Align the edge with the chalk lines and hold in place with duct tape.

3. Where the blockout reaches the transition to the wall column, use a straight edge and utility knife to place a slit in the Vapor Barrier from the outside edge 6 1/4" in towards and perpendicular to the joint.

4. Turn the flap of the Vapor Barrier up the face of the wall/column keeping the other flap flat in the bottom of the blockout. Tape the vertical flap to the wall/column with duct tape.

5. Mark the face of the wall flap at the 3 5/8" mark and snap a chalk line. Using a straight edge and utility knife, cut along the chalk line and remove the top of the flap.

6. Press the Vapor Barrier material into the joint to create a drape. It may be necessary to place a block of wood or a tool in the drape to hold it down into the joint until the installation of the frames is complete. This will simplify the rest of the installation.



STEP 11

PTCW SLIDE FRAME INSTALLATION

Step 11:

1. See PTC Slide Frame Installation Instructions in Step 3 for positioning and installation along the edge of the joint . (See Fig. 11A)

2. See Slide Plate installation instructions in Step 4 where the frame is set back from the joint edge.

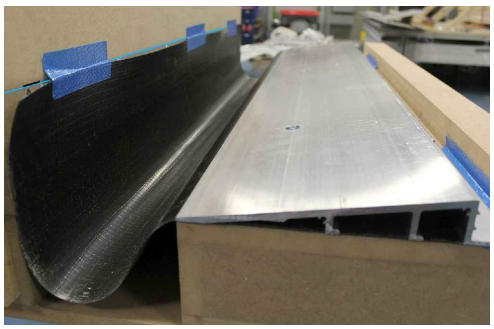


Fig. 11A

STEP 12

PTCW COVER PLATE INSTALLATION

Step 12:

1. Place a length of PTCW Cover Plate along side the joint. If needed, measure, mark and cut the cover to the required length. Note: The Cover Plate must have at least (2) anchors. If the cut length has only one hole drill a new $\frac{7}{16}$" hole at 3" in from the plate end.

2. Position the PTCW Cover Plate against the wall or column with the top edge aligned with the top edge of the vapor barrier and chalk line. The beveled edge is to rest flush on the top surface of the slide frame. While holding the wall frame in position mark all anchor hole locations. Remove the PTCW Cover Plate and place a couple of reference lines along the outside edge of the vapor barrier and wall/column to assist in properly repositioning the frame and vapor barrier. (See Fig. 12A-12B)

3. Drill the wall/column at each anchor hole as required for the appropriate CS supplied anchors. Clean dust and debris out of the vapor barrier. Clean away any dust and debris out from behind the vapor barrier. Reposition the vapor barrier and align with the reference marks. (See Fig. 12C-12D)

4. Reposition the Wall Cover Plate and align anchor holes with the holes in the vapor barrier. Install the Rotational Compression Washer and Flat Washer onto each anchor and install the anchors. (See Fig. 12E-12F)

5. Caulk the top of the Cover Plate.

Fig. 12A

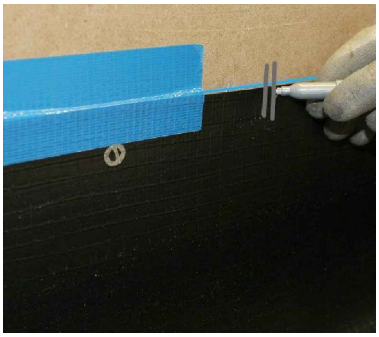


Fig. 12B

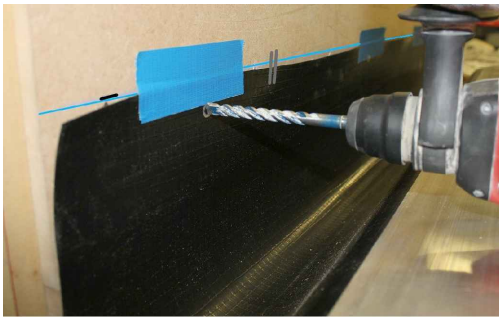


Fig. 12C

Fig. 12D

Fig. 12E

Fig. 12F

STEP 13

ELASTOMERIC CONCRETE INSTALLATION

NOTE:
CS Elastomeric Concrete protects the exposed concrete edges at the back of the blockouts and provides a water tight seal between the frames and the concrete. Care should be taken to protect the surrounding surfaces from stains caused by the Elastomeric Concrete.

Step 13:

1. All surfaces of the joint cover system must be taped or covered to prevent contact with the elastomeric concrete. A strip of duct tape must be placed adjacent to each blockout to be filled with Elastomeric Concrete.

2. CS Elastomeric Concrete should be mixed according to the instructions provided with the components of the system. The chemical compounds in the Elastomeric Concrete are moisture and temperature sensitive. Be sure to read all of the instructions carefully. Elastomeric Concrete will fill the remaining voids in the blockout and create a smooth driving surface. (See Fig. 13A)

3. Fill the voids between the Base Frame and Slide Frame and the edges of the blockout, then smooth with a trowel.

4. Allow the Elastomeric Concrete to harden before allowing traffic on the cover system.

Fig. 13A

STEP 14

BACKER ROD & CAULK INSTALLATION

Backer Rod and Caulking are installed between the Cover Plate and the exposed edge of the Base Frame to prevent water and debris from collecting in the Compression Spring recess. The exposed metal surfaces on both edges of the joint to be caulked should be protected by duct tape prior to beginning the installation.

Step 14:

1. Place the 3/8" Backer Rod in the gap between the Cover Plate and the exposed edge of the Base Frame.
2. Push the Backer Rod into the gap with a screwdriver or similar tool until it snaps or expands into the receiver in the Base Frame.
3. Once the Backer Rod is in place, apply the caulk provided to the top of the Backer Rod sealing the joint.
4. Smooth the caulking with a trowel or similar tool.

Fig. 14A

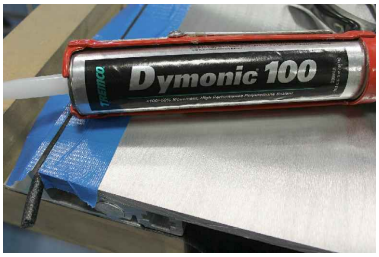


Fig. 14B

Fig. 14C

This completes the linear installation of the PTC/PTCW Model. The following instructions are for the installation of Corner conditions. (See Fig. 14D)

Fig. 14D

STEP 15

CORNER CONDITION INSTALLATION

These instructions are for the installation of Inside, Outside, and Odd Angle Corners. The end of each frame and cover plate must to be miter cut to fit the corner condition and allow for at least a 1/4" gap between the Cover Plates and Rotational Frames.

Step 15:

1. Miter cut the end of each Base Frame and install as normal leaving only a hairline space between the frame sections.
2. Miter cut the Rotational Frames and install as normal leaving at least a 1/4" gap between the frame sections.
3. For a PTC installation where lateral shear is not a requirement, the ends of the Cover Plates should be miter cut, aligned with the ends of the Rotational Frames, allowing for the 1/4" gap, and attached as normal.
4. For a PTC installation where lateral shear is a requirement, an End Plate must be installed on either side of the corner miter. The End Plates must be miter cut, aligned with the end of the Rotational Frame, allowing for the 1/4" gap, and attached with Silicone Adhesive as normal.

Note:

The 1/4" gap between the Cover or End Plates in the lateral shear installation can be filled with caulking if desired or required by the project.