

# SMP 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**

6/17/19



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# GENERAL NOTES

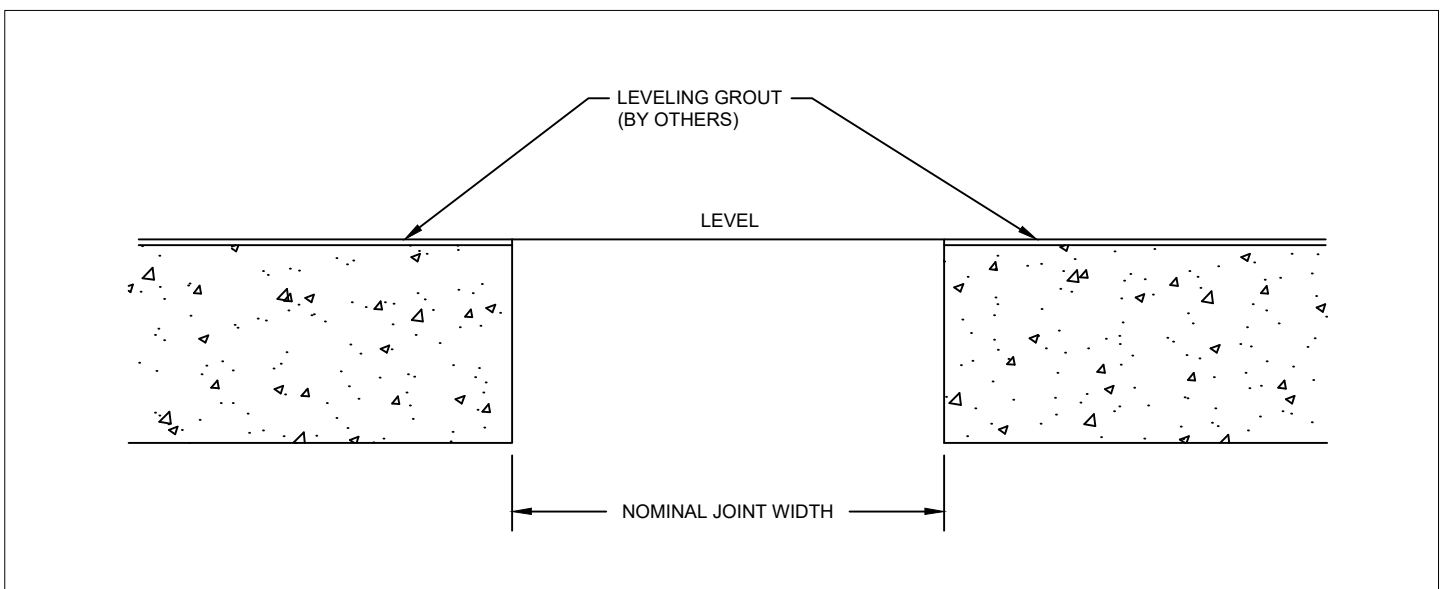
## Notes:

Before beginning installation of these joint covers, review the architectural drawings and approved CS shop drawings to familiarize yourself with the joint cover models and locations.

Check all of the joint cover components to confirm that the correct joint cover model and size have been received. Also check for materials that may have been damaged during shipping. Report all incorrect and/or damaged components to CS at 800-233-8493.

SMP Series joint covers must be securely mounted to structurally sound substrates. Repair all cracks or spalled areas of the concrete deck. The mounting surface must be sandblasted to expose new concrete and remove all foreign materials. The mounting surface must be clean and free from any loose dust, dirt, debris and oils that would affect the installation of the seal, or adhesion of the epoxy.

If CS Fire Barrier is to be installed in the joint, review the Fire Barrier Installation Instructions provided. Coordinate the installation of Vapor Barrier, Fire Barrier (if required) and the installation of CS SMP Expansion Joint aluminum Turnbar Frames.

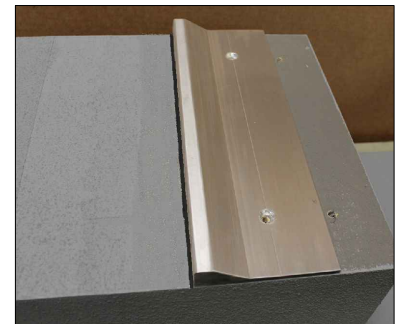
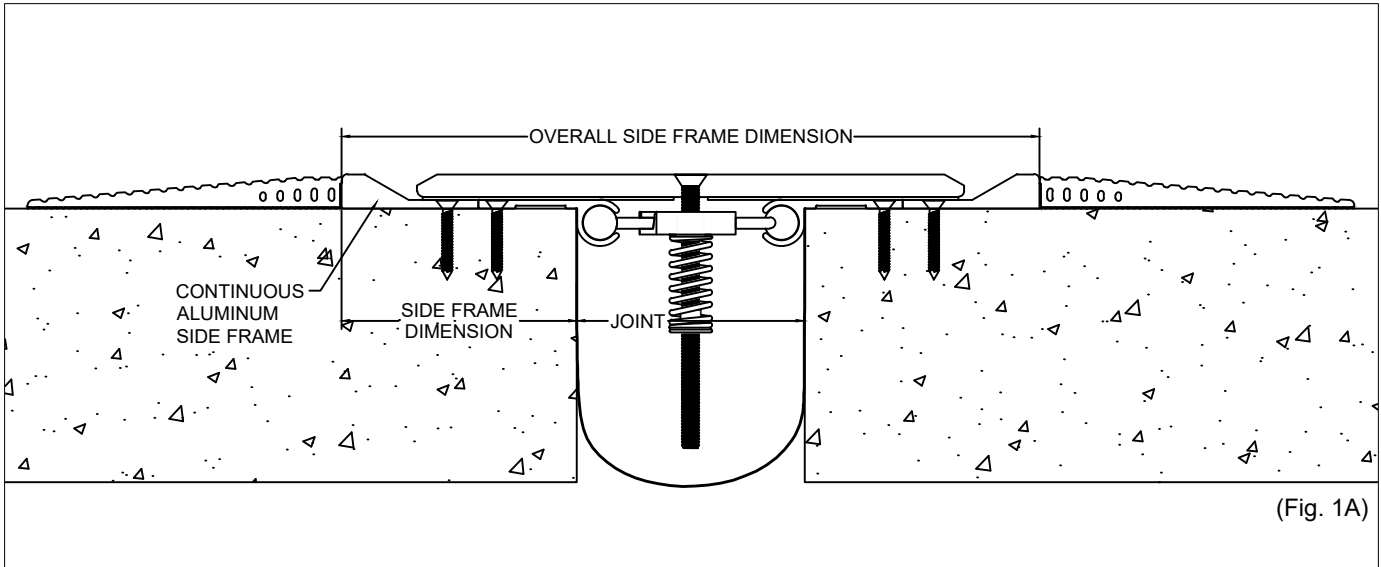


# STEP 1

## SIDE FRAME INSTALLATION

**Note:** If required the installation of the Fire Barrier is installed before the Vapor Barrier.

- 1.1) To locate the Side Frame outside edge use the dimension as indicated on the Construction Specialties Shop Drawings from the joint edge. (See Fig. 1A) Measure from the joint edge over and mark the concrete slab. Using a chalk line snap a line along the marked location, for the full length of the run. (See Fig. 1B-1C)
- 1.2) Place a length of Side Frame along the chalk line and using the frame as a template mark the hole locations. (See Fig. 1D) Remove the Side Frame and drill all holes for the supplied fasteners per the manufacturer specifications. Reposition the Side Frame and install using the supplied fasteners.



# STEP 2

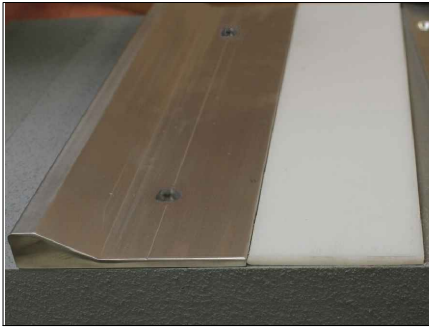
## SLIDE BEARING INSTALLATION

**Note:** The continuous Slide Bearings are used to allow the plate to glide smoothly in expansion and contraction movement. Continuous Slide Bearings are installed on larger joint sizes of 20" and up.

- 2.1) Position the first length of Slide Bearing against the inside edge of the Side Frame. Using the Slide Bearing as a template, mark the hole locations and drill for the supplied fasteners. (See Fig. 2A) Place the Slide Bearing against the Side Frame and anchor to the slab. (See Fig. 2B)

# STEP 2 CON'T

## SLIDE BEARING INSTALLATION



(Fig. 2A)



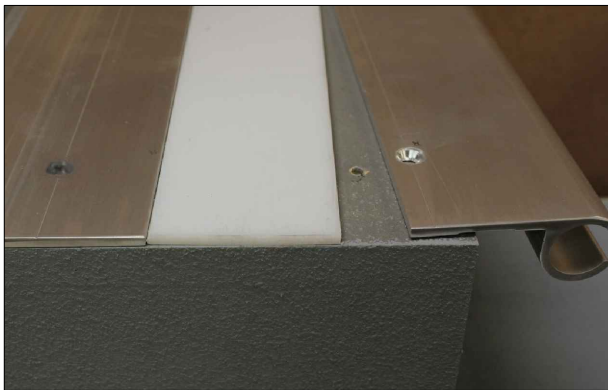
(Fig. 2B)

# STEP 3

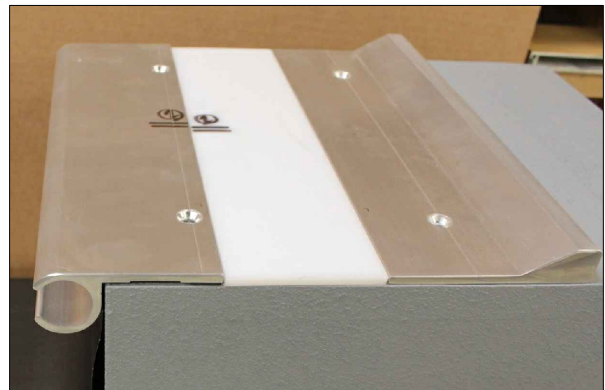
## TURNBAR FRAME & VAPOR BARRIER INSTALLATION

Note: The Turnbar Frame is to be located so that they nest over the corner of the slab. Due to irregularities in the edge of the slab, the Turnbar Frame may cantilever out from the face of the slab by up to 1/4".

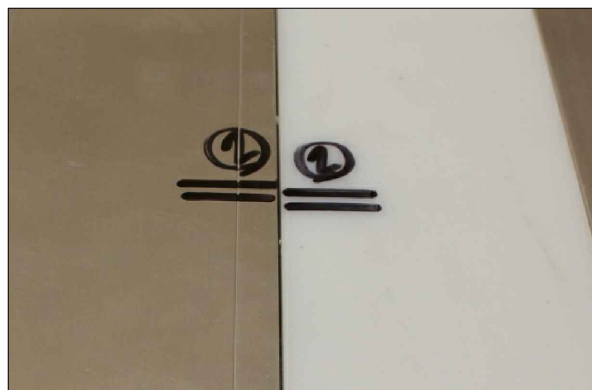
- 3.1) Position the first length of Turnbar Frame on the corner of the slab and butted against the Slide Bearing strip. Using the Turnbar Frame as a template, drill the holes for the supplied fasteners. Follow the installation specifications provided by the fastener manufacturer. (See Fig. 3A-3B)
- 3.2) Remove the Frame and clean out the holes. Reposition the Turnbar Frame aligning fastener holes with the drill holes. Draw a reference mark on the Turnbar Frame and the Slide Bearing. (See Fig. 3C) The reference mark will help you to align and install the Turnbar Frame drilled fastener holes with the drilled slab holes after the vapor barrier is installed.
- 3.3) Repeat STEPS of 1 through 3 for the opposite side of the joint and for any additional lengths of the run.



(Fig. 3A)



(Fig. 3B)



(Fig. 3C)

# STEP 3 CON'T

## TURNBAR FRAME & VAPOR BARRIER INSTALLATION

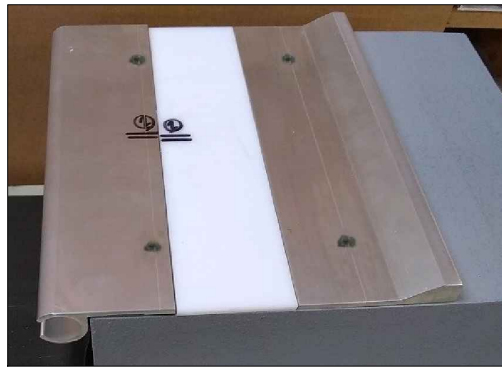
Note: The Vapor Barrier should be installed in as long of runs as possible to reduce the number of splices. All sizes of Vapor Barrier are provided in 100' rolls. Specialized installation instructions are provided for splicing, drain installation, and end closures. See these instructions if any these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

- 3.4) Unroll a section of Vapor Barrier for installation, but do not cut from the roll length. Place the edge of the Vapor Barrier against the Slide Bearing and duck tape to hold in place.
- 3.5) Draping the Vapor Barrier into the joint space, place the opposite side of the Vapor Barrier edge against the Slide Bearing and tape it to hold in place. (See Fig. 3D)



(Fig. 3D)

- 3.6) Place the Turnbar Frame along the joint edge butting against the Slide Bearing and align the two reference marks. (See Fig. 3E) Fasten the Turnbar Frame in place using the supplied fasteners.



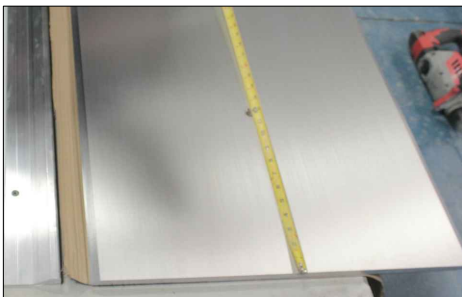
(Fig. 3E)

# STEP 4

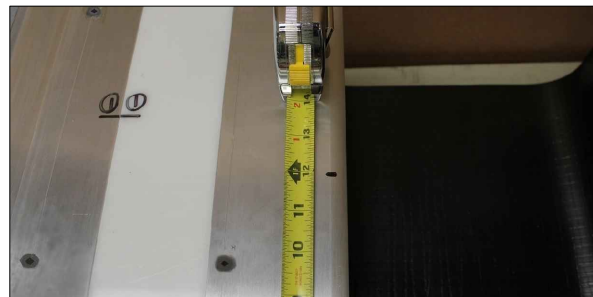
## TURNBAR INSTALLATION

Note: The spacing and quantity of the Turnbar Assemblies varies with joint size. Refer to the approved shop drawings for the appropriate Turnbar spacing.

- 4.1) Using the Center Plate hole locations as a template, measure and mark the centerline locations on the Turnbar Frame. (See Fig. 4A-4B)



(Fig. 4A)



(Fig. 4B)

# STEP 4 CON'T

## TURNBAR INSTALLATION

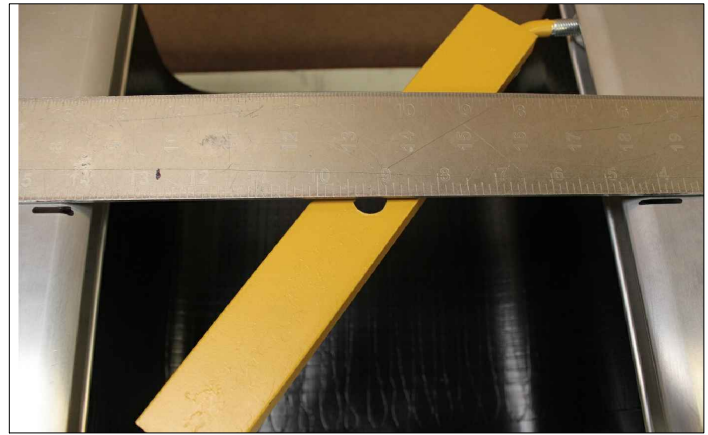
Note: The orientation of the Turnbars, the bent angle of the ball pins are to face outward, towards the Frames, so that the channel does not contact the Frames.

- 4.2) Insert the first Turnbar Assembly into the Frames. Place the ball, at one end of the assembly, into the Turnbar Frame and slide inward until the ball at the opposite end can be inserted into the opposite side Turnbar Frame.
- 4.3) Repeat the inserting procedure for the remaining number of Turnbars as required for the length of Frame. (See Fig. 4C)
- 4.4) Align the Turnbar Assemblies to the measured on center Center Plate locations marked on the Turnbar Frames. (See Fig. 4D)

\*NOTE: At an end condition, the Turnbars may have to be inserted before the final length of Frame is anchored.



(Fig. 4C)

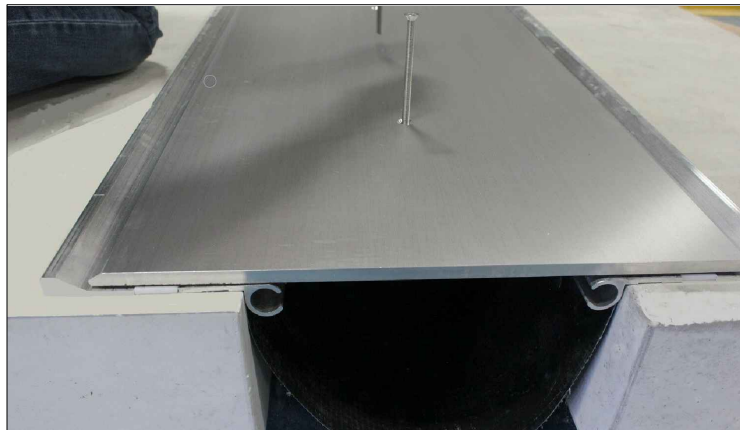


(Fig. 4D)

# STEP 5

## CENTER PLATE INSTALLATION

- 5.1) Begin installation of the Center Plate by measuring and cutting to the length needed.
- 5.2) Position the Center Plate over the joint/frames, make sure that the holes of the Center Plate and Turnbars are aligned. Attach the Center Plate with the supplied fasteners. (See Fig. 5A)
- 5.3) Repeat this installation procedure for any additional lengths of Center Plates.



(Fig. 5A)

# STEP 6

## EPOXY & WING SEAL INSTALLATION

**\*IMPORTANT NOTE:** Do not use Epoxy or install this Wing Seal if either the substrate temperature or air temperature will drop below 40°F [5°C] during the installation or cure time of 8 hours. Check to ensure that the concrete is free from loose dirt, debris and oils. It is critical that the concrete surface area is clean to allow the epoxy to achieve the proper bond.

- 6.1) Unroll each length of Wing Seal. Wire brush the bottom of the Wing Seal thoroughly. Wire brushed areas should have a dull black appearance when finished. There should be no gloss or white residue left on these surfaces. Use a wire brush, drill or grinder with a wire wheel mounted in the chuck to achieve the dull finish. The Epoxy may not bond properly if the seal is not thoroughly wire brushed. (See Fig. 6A)
- 6.2) Place each length of the cleaned/wire brushed Wing Seal upside-down next to the joint area where it is to be installed. This will allow the seal some time to flatten before it is bonded in place. Clean the Seal using compressed air to remove any loose rubber particles left behind from the wire brush. Wipe down Seal with Isopropyl Alcohol to remove any dirt or dust residue.
- 6.3) Using the Wing Seal dimension measure over from the installed side frame and mark the concrete slab. Using a chalk line snap a line along the marked location, for the full length of the run. Apply tape along the outside edge of the chalk line. Repeat for the opposite side of the joint. (See Fig. 6B - 6D)



(Fig. 6A)



(Fig. 6B)



(Fig. 6C)



(Fig. 6D)

### APPROXIMATE WORK LIFE OF EPOXY

TEMPERATURE	WORK LIFE
50°F [10°C]	35 MINUTES
70°F [21.11°C]	25 MINUTES
85°F [29.44°C]	20 MINUTES

- 6.4) Mix the supplied, 2 component Epoxy measuring equal amounts of Part A and Part B by volume. Pour both Part A and Part B into a container and mix thoroughly for three minutes until a uniform gray color is achieved. Do not mix in direct sunlight as this will decrease the work life of the Epoxy. Only mix the amount of epoxy that can be used within its gel time (see chart for gel time based on temperature). (See Fig. 6E)

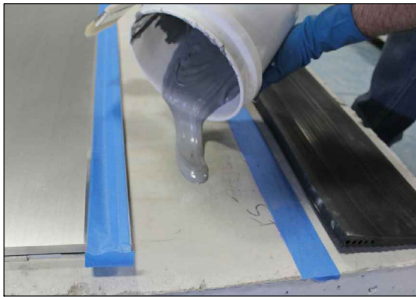


(Fig. 6E)

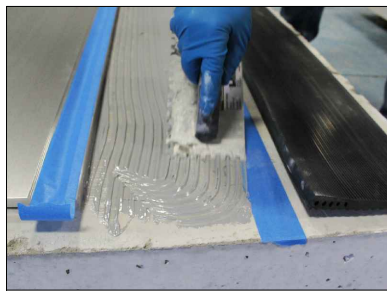
# STEP 6 CON'T

## EPOXY & WING SEAL INSTALLATION

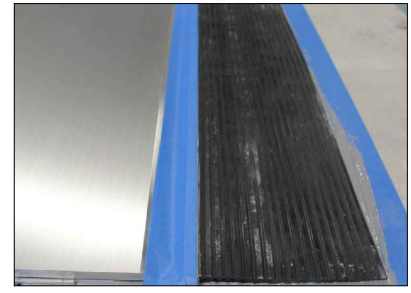
- 6.5) Apply the Epoxy onto the concrete surface from the installed edge of Side Frame to the tapped line of the Wing Seal. Spread the Epoxy with a trowel until it is approximately 1/16" - 1/8" thick. The Epoxy must be applied quickly to allow time for the Wing Seal to be installed before it begins to gel. Once the Epoxy has begun to gel or get hot, a proper bond will not be achieved. (See Fig. 6F-6G)
- 6.6) Position a length of the Wing Seal as shown, duct tape the Wing Seal to the frame every foot or so. Place boards on the Wing Seals with concrete blocks, sandbags or something of similar weight every couple of feet on top the boards. This will force the Wing Seals to set into the Epoxy during the cure cycle to ensure it is properly seated. \*NOTE: This is especially important at splice locations, to be sure the ends of the Wing Seals are flat and lined up. Allow the weights and boards to remain on the seal for approximately 8 hours. (See Fig. 6H-6M)



(Fig. 6F)



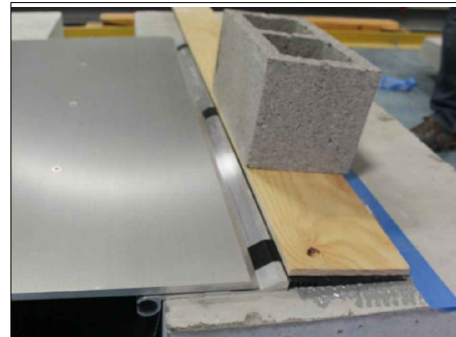
(Fig. 6G)



(Fig. 6H)



(Fig. 6L)



(Fig. 6M)

# STEP 7

## WING SEAL SPLICING INSTALLATION

\*NOTE: SPLICE KITS SOLD SEPARATELY

NOTE: The ends, splices, and transitions of the Wing Seal must be cut square and smooth to ensure a good seal. To aid in cutting spray the Wing Seal and the supplied saw blade with water, using long strokes while applying a downward force while cutting. Mark the square cut ends of the Wing Seal to identify mating pieces.

- 7.1) Apply the supplied instant adhesive to the grooved end of the alignment pin and place 1/2 of its length in the oval slot of the installed Wing Seal closest to the aluminum frame. (See Fig. 7A)



(Fig. 7A)



# STEP 7 CON'T

## WING SEAL SPLICING INSTALLATION

- 7.2) Follow Step 6 to mix and apply epoxy for the next section of Wing Seal installation.
- 7.3) Apply the supplied Splice Sealant to the end of the next section of Wing Seal to be installed. Place the end of next section of Wing Seal against the end of the installed section so that the alignment pin will slide into the corresponding cell. Ensure that there is no gap between the end of the Wing seal. (See Fig. 7B-7C)
- 7.4) Install the remaining length of Wing Seal according to Step 6.



(Fig. 7B)

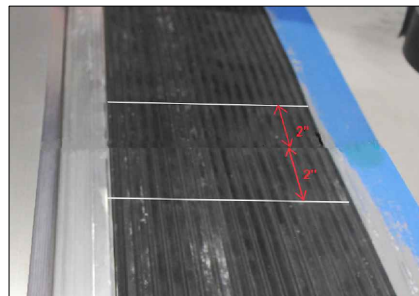


(Fig. 7C)

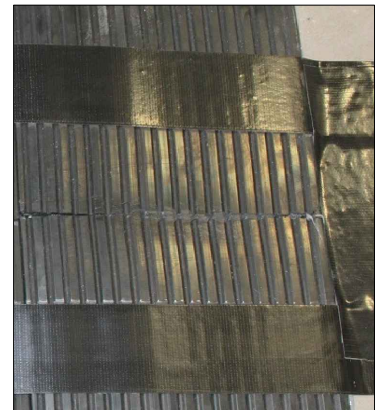
- 7.5) From the centerline of the splice measure back 2" from the centerline on both sides of the Wing Seal and mark. (See Fig. 7D-7E)
- 7.6) At the Splice location wire brush to the 2" marked line on seal to create a rough surface. This will ensure that the seal surface and splice sealant have a good bond. Wire brushed areas should have a dull black appearance when finished. Clean the seal thoroughly using compressed air to remove any loose rubber particles left behind from the wire brush.
- 7.7) Apply 2" wide tape, both sides of the splice, along the top surface of the Wing Seal approximately 2" away from the joint splice. Apply a second piece of 2" tape ovetop of the first tape line. Add a piece of 2" tape along the side edges of the Wing Seal to minimize and contain the Splice Sealant along the edge. (See Fig. 7F)



(Fig. 7D)



(Fig. 7E)



(Fig. 7F)

# STEP 7 CON'T

## WING SEAL SPLICING INSTALLATION

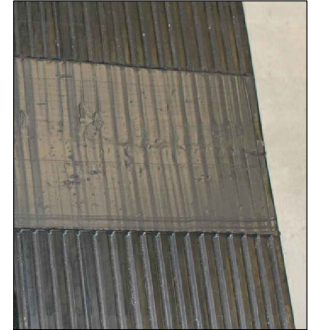
- 7.8) Apply the Splice Sealant in a zigzag pattern across the splice area, between the two tape lines. Apply sufficient amount of Splice Sealant to create, when smoothed out, an approximate thickness of 1/8" to 3/16". Use a putty knife to smooth out the supplied Splice Sealant evenly over the entire width of the Wing Seal. (See Fig. 7G-7H)
- 7.9) Carefully remove the tape from the seal along the splice joint. Allow the Splice Sealant to cure for 24-48 hours, depending on temperature, keeping all vehicles away from the splice minimizing the amount of movement of the seal. (See Fig. 7J)



(Fig. 7G)



(Fig. 7H)



(Fig. 7J)

# STEP 8

## FLOOR TO WALL INSTALLATION

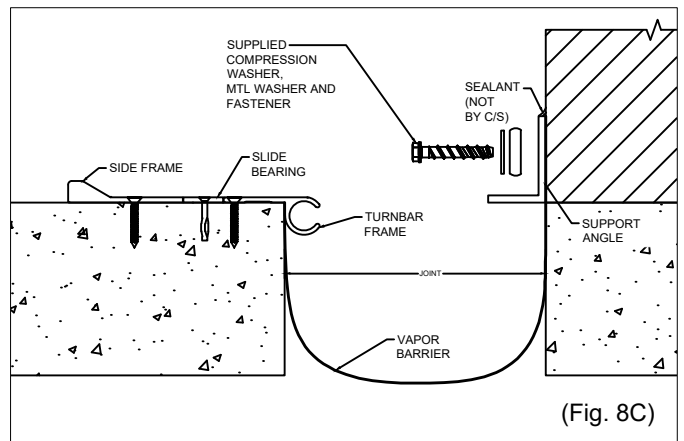
- 8.1) Follow Steps 1 through 3 for installation of the Side Frame, Slide Bearing (if required) and the Turnbar Frame and one side of the Vapor Barrier.
- 8.2) To install the wall Support Angle, on the opposite side of the joint, for the SMPW models you will need to establish a level chalk line, for the top of the Support Angle. Measure up 3" from the concrete slab and mark a chalk line parallel to the top of the concrete slab. (See Fig. 8A)
- 8.3) Position the top edge of the Support Angle along the chalk line and using as a template drill the fastener holes per the manufacturer specifications.
- 8.4) Place the other Vapor Barrier edge against the opposite side of the joint and 1/2" below the chalk line. Tape to hold in place. (See Fig. 8B)
- 8.5) Reposition the Support Angle and fasten in place with the supplied metal washers, compression washers and fasteners. (See Fig. 8C) Remove any exposed tape above the installed Support Angle.
- 8.6) Follow Steps 5 and Steps 6 to complete the installation of the Center Plate and Wing Seal.



(Fig. 8A)



(Fig. 8B)



(Fig. 8C)

# STEP 9

## COMPLETING THE INSTALLATION

- 9.1) Remove all tape from the seal and concrete. If required, clean tape residue off of seal with denatured alcohol. Clean the CS Joint Cover and adjoining surfaces with proper cleaner.
- 9.2) Clean and protect the Center Plate and Wing Seal until the Architect/Owner's final inspection.



(Fig. 9A)