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**INSTALLATION INSTRUCTIONS
FOR 2" THRU 5" FACE SEAL
EXPANSION JOINT COVER
SYSTEMS**

INSTALLATION INSTRUCTIONS FOR BALCO, INC. 2" THROUGH 5" FACE SEAL EXPANSION JOINT COVERS

The following installation instructions are very important. Read them carefully, and be sure you understand them completely before you begin any work.

STORAGE & HANDLING

The expansion joint covers are shipped unassembled. Upon receipt, this product should be stored in the horizontal position in a clean, dry location. This is a finished product. Store this pof the wall. If the wall is of

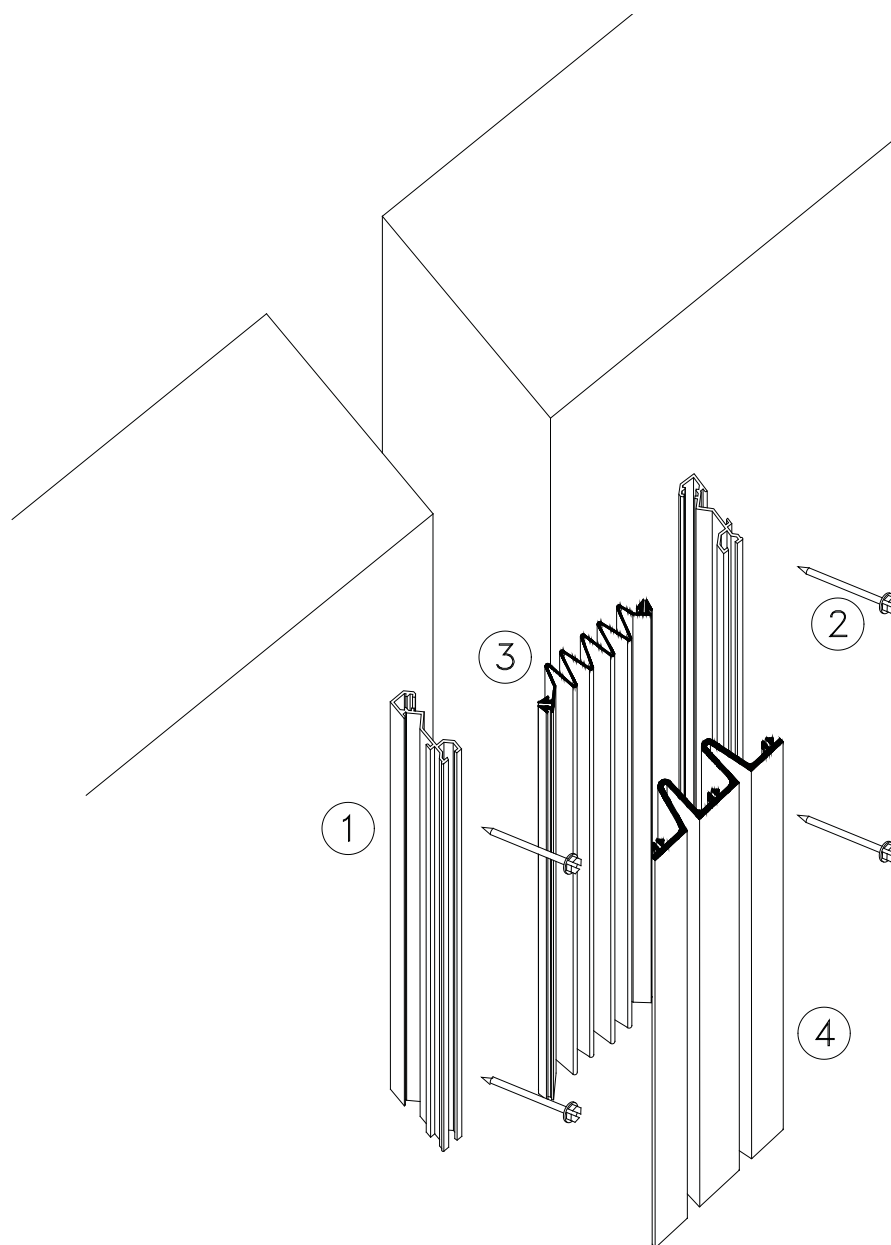
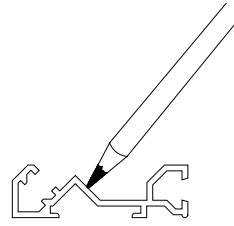


Figure 1

PARTS

1. Base Member Subchannel
2. Fasteners
3. Back Seal
4. Face Seal (UV-Rated or Non-UV-Rated)*

* UV-Rated Face Seals are differentiated by a continuous indentation mark on the back side of the seal.



TOOLS REQUIRED

This is a list of tools and materials recommended for use in the installation of these joint systems. Tools and materials in this list are not provided by Balco, Inc.

- A. Drill Bits for Base Members (Metal)
- B. Drill Bits for Concrete (if required)
- C. Electric Drill
- D. Hammer Drill
- E. Phillips Head Drill Bit
- F. Caulk Gun
- G. Weatherproofing Sealant
- H. Miter Box
- I. Hacksaw (for cutting Face Seal)
- J. Wallpaper Roller (1/2")
- K. Sealant Adhesive (for Corner Installations)

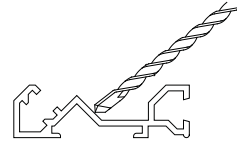


Figure 2

INSTALLATION

These installation instructions are for use in the installation of Expansion Joint Cover Types FCWW-2 through FCWW-5, TCWW-2 through TCWW-5, FCVS-2 through FCVS-5, and TCVS-2 through TCVS-5. The system is illustrated in Figure 1. The joint cover system shall be installed as follows:

STEP 1. Review Balco, Inc. approved shop drawings for types and locations.

STEP 2. Select one base member extrusion, RAL1. If the anchor holes have not been drilled into the base member at the factory, mark the locations for the anchor holes on the selected extrusion along the extrusion's I.D. mark. Standard anchor spacing is 20" o.c. with anchor holes an anchor hole a maximum of 3" from each end of the extrusion. Drill the anchor holes into the base member extrusions at the marked locations, see Figure 2.

STEP 3. If fire barrier is provided with the system, install it at this time. See the installation instructions for the appropriate fire barrier type provided.

STEP 4. If the wall is stud and gypsum wallboard construction, proceed directly to Step 8. If the wall



Figure 3

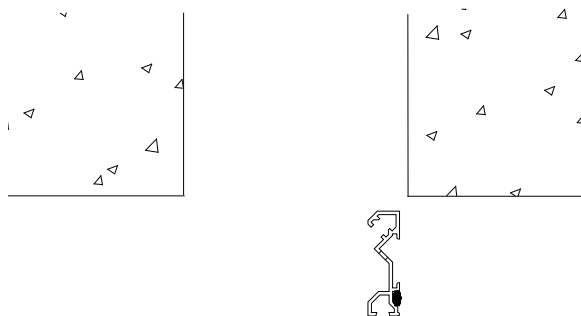


Figure 4

is concrete or masonry construction, follow the instructions given in Step 5 through Step 7.

STEP 5. Select one of the drilled base members and place it in proper position against the wall. Ensure that the front of the base member is 1/8" from the surface of the wall. This will allow the face seal to be nominally flush with the wall. Also ensure that the base member is level and properly aligned. If the wall construction is stud and gypsum wallboard, proceed directly to Step 9.

STEP 6. Using the base member as a template, mark the locations for the anchor holes on the substrate (see Figure 3).

STEP 7. Remove the base member from its installed position, and drill the anchor holes into the substrate at the locations marked in Step 9.

NOTE: OBSERVE NORMAL SAFETY PRECAUTIONS WHEN DRILLING INTO CONCRETE OR MASONRY TO AVOID ALL UTILITIES AND RE-BAR. CLEAN AWAY ALL REFUSE FROM THE INSTALLATION AREA.

STEP 8. Select the base member. If the installation is exterior, place a continuous bead of silicone sealant onto the back side of the base member (see Figure 4).

STEP 9. Place the base member back into its installed position in the joint. Ensure that the base member is properly aligned and level and that the front of the base member is set back 1/8" from the surface of the wall. If the wall is concrete or masonry, ensure that the anchor holes in the base member align properly with the anchor holes in the wall.

STEP 10. Using the fasteners provided by the factory, attach the base member to the wall (see Figure 5). Ensure that the base member remains properly aligned and level.

STEP 11. Repeat the procedures, as directed, in Step 5 through Step 10 for the corresponding opposite base member (see Figure 6).

Alternative Base Member Installation Method

NOTE: IN LIEU OF MECHANICAL FASTENERS, AN APPROPRIATE SEALANT/ADHESIVE MAY BE USED TO CONTINUOUSLY THOROUGHLY



Figure 5

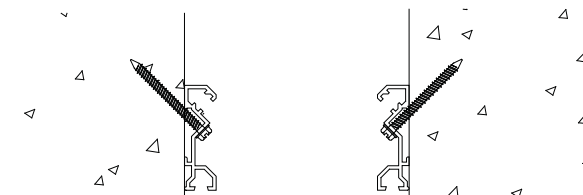


Figure 6

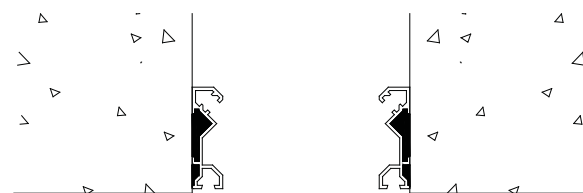


Figure 7

COAT THE BACK OF THE BASE MEMBERS AND TO AFFIX THE BASE MEMBERS TO THE ASSEMBLY SUBSTRATE (SEE FIGURE 7). AN EPOXY ADHESIVE OR A SEALANT, SUCH AS SIKAFLEX 1A, IS ACCEPTABLE, PROVIDED THE SELECTED ADHESIVE SEALANT IS APPROPRIATE FOR USE WITH THE SUBSTRATE TO WHICH THE BASE MEMBERS WILL BE ADHERED.

For Corner Wall Condition:

STEP 12. Base members for 2" through 4" joints and base members for corner wall joints (where installation using of a standard anchor is not possible) may be installed using a suitable adhesive. Suitability of the sealant/adhesive is determined by the capability of the product to bond aluminum to the substrate. Thoroughly coat the back of the aluminum base member with the adhesive (see Figure 8). If use of an adhesive is not possible, Balco, Inc. offers a joint cover system for corner installation (FCWWE, see Figure 9).

STEP 13. Place the base member in position against the wall. Ensure that it is properly aligned, level, and that its front is 1/8" from the surface of the wall.

STEP 14. Use blocks spaced at 36" o.c. to hold the base member tightly in place against the wall. Do not deform the base member. Styrofoam or a similar material is recommended as the material used for the blocks. Allow the adhesive to cure in accordance with the adhesive manufacturer's instructions.

STEP 15. Remove the blocks. If the opposite base member is not mechanically fastened to the wall and an adhesive is to be used to install the base member, install it in the same manner as given in Step 12 through Step 14.

Back Seal Installation:

This section of the installation instructions is only applicable to FCWW Series and FCVS Series Expansion Joint Cover Systems. If a TCWW Series or a TCVS Series Expansion Joint Cover is being installed (a system without a back seal), proceed directly to the section of these instruction entitled "Face Seal Installation".

STEP 16. Fill the back seal retainer tracks of the installed base members with silicone sealant (by others) as illustrated in Figure 10.

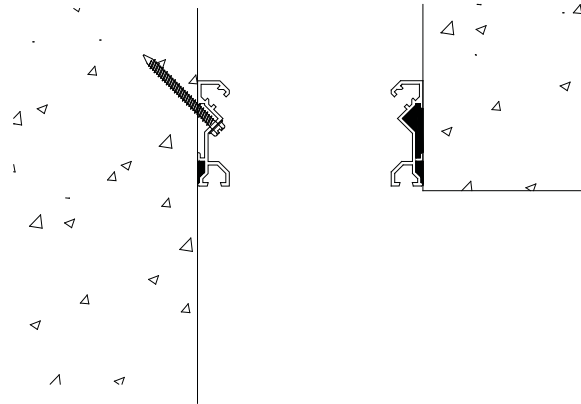


Figure 7

NOTE: FCWWE - Optional Base Member for specific applications, Ref. Step 12

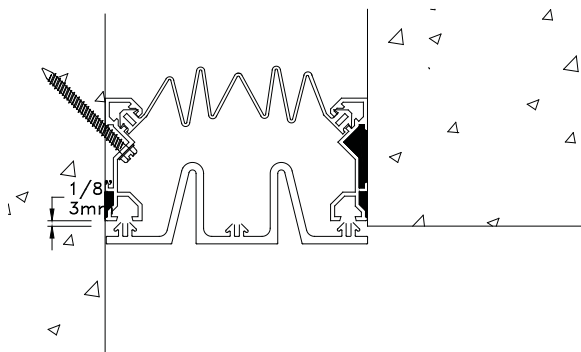


Figure 9

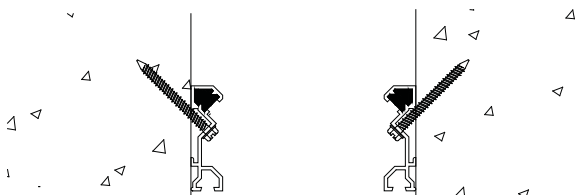


Figure 10

STEP 17. Measure 3" from the end of the back seal (BS400 or BS800) and mark the back seal at the 3". This 3" excess back seal will be left at the bottom of the joint system to funnel water out of the building.

STEP 18. Beginning from the bottom of the joint and leaving the 3" of excess back seal at the bottom of the joint, insert the back seal's arrows into the corresponding base member back seal retainer track. Use a wall paper roller (by others, 1/2" width) to roll the arrows into the tracks continuously along the length of the back seal (see Figure 11).

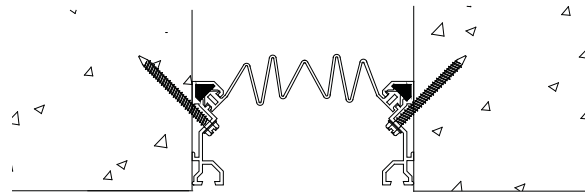


Figure 11

STEP 19. If splicing the back seal is necessary, cut the arrows away from the top mating section of the back seal (a minimum of 6") and lap the mating section of back seal under it.

Face Seal Installation:

STEP 20. Determine the length of face seal required for the installation. Mark the face seal at the location at which it needs to be cut to attain the required length.

STEP 21. If splicing or transitions are needed, fabricate the splice or the transition. Place the face seal into the miter box at the mark made in Step 24.

STEP 22. Flooding the area with water to lubricate the saw blade, cut the face seal by applying constant downward force on the hacksaw frame. Note that the cut should be made with one stroke to minimize ragged edges.

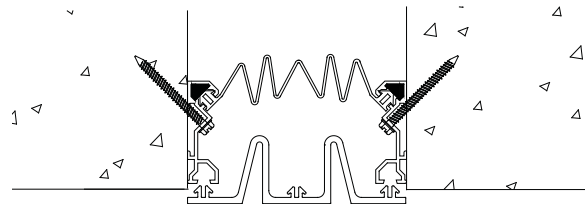


Figure 12

STEP 23. Beginning 1/4" from the bottom of the joint, insert the arrows of the trimmed section of face seal

into the corresponding base member face seal retainer track. Use a wall paper roller (by others, 1/2" width) to roll the arrows into the tracks continuously along the length of the face seal (see Figure 12 and Figure 13). Lubricating the face seal's arrows with soapy water or liquid soap can make installation of the face seal easier. Do not use oils or oil based lubricants on the face seal arrows.

NOTE: THE 1/4" GAP AT THE BOTTOM OF THE FACE SEAL ALLOWS WATER TO DRAIN FROM THE SYSTEM (FIGURE 14).

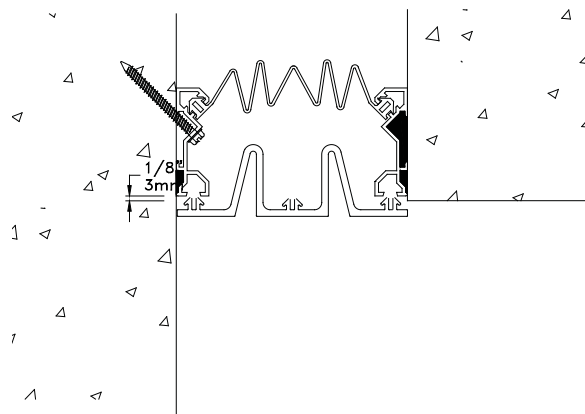


Figure 13

STEP 24. If splicing the face seals is necessary, heat welding of mating Santoprene face seals is

recommended. Santoprene face seals must be heat welded in accordance with "Instructions For Splicing Santoprene Face Seals".

NOTE: FOR VERTICAL FACE SEAL RUNS GREATER THAN 20 FEET, PLACE A BEAD OF SIKAFLEX-1A (OR EQUIVALENT SEALANT) INTO THE TOP 12" OF THE BASE MEMBERS.

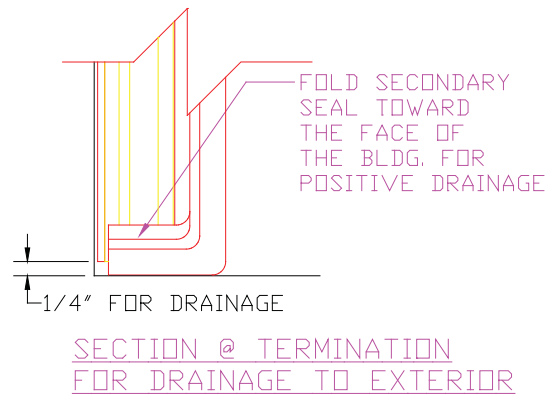


Figure 14

WARRANTY POLICY

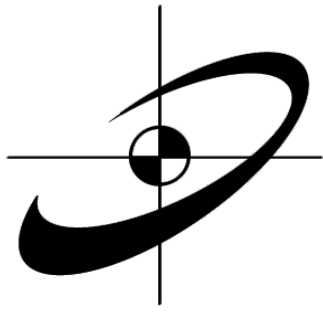
Balco, Inc. warrants to its purchasers that all products sold by it will be free from manufacturing and material defects. Any defective product will be replaced or repaired free of any charge, provided a claim is brought to our attention, in writing, within the established warranty period following the date of shipment by us and provided our examination shows the product has failed under the terms of this warranty. The established warranty period for exterior joint cover systems (Duraflex™) is five (5) years provided the systems are installed by a Balco Certified Installer. The established warranty period for grids and mats is two (2) years. The established warranty period for all other Balco, Inc. products is one (1) year. Balco, Inc. will not be responsible for installation costs involved in such repair or replacement. Balco, Inc. shall have no obligation under this warranty if owner subjects materials to improper conditions (refer to Balco's installation instructions) This is in lieu of all other warranties, expressed or implied, and is the sole warranty extended by Balco, Inc. Our liability under this warranty is limited to repair or replacement and does not include any responsibility for consequential or other damage of any nature. It is further agreed and understood that the price stated for the seller's products is consideration for the limitation of seller's liability hereunder.

REGISTERED TRADEMARKS:

"VINYLINES" "SAF-T-GLO"
"METAFLEX" "SAF-TEN BEVEL"
"SENTRY" "DURAFLEX"
"ILLUMI-TREAD" "METABLOCK"
"MICHAEL RIZZA COMPANY"

BALCO, INC. PATENT NUMBERS:

5,782,044; 5,829,216; 5,832,678;
6,014,848; 6,115,980; 6,581,347;
6,942,419; 6,955,017; 6,962,026;
7,104,717; 7,856,781; 7,946,784;
8,079,190; 8,245,471; 8,464,485;
8,607,519; 8,601,760; 8,646,235;
Fire Resistant Joint Covers Patents
Pending



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***SPLICING INSTRUCTIONS
FOR
SANTOPRENE
FACE SEALS***

INSTRUCTIONS FOR SPLICING BALCO, INC. SANTOPRENE FACE SEALS

The following installation instructions are very important. Read them carefully, and be sure you understand them completely before you begin any work.

STORAGE & HANDLING

Store this product in a clean, dry location. This is a finished product. Store this product in a protected area.

TOOLS REQUIRED

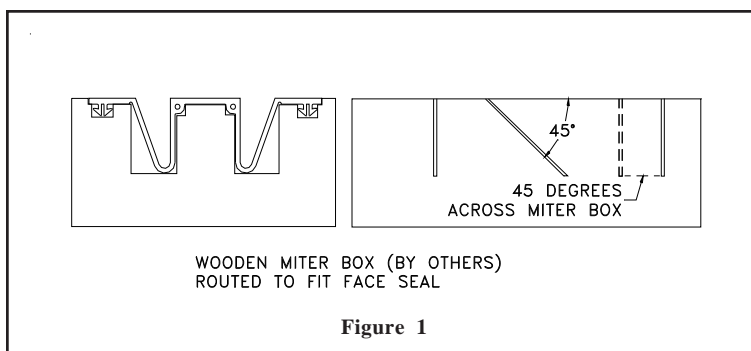
This is a list of tools and materials recommended for use in the splicing of Santoprene Face Seals. These tools and materials are not provided by Balco, Inc.

- | | |
|---------------------------------------|---------------------------------------|
| A. Hack Saw | E. Heat Knife ³ (optional) |
| B. Miter Box ¹ (by others) | F. Soldering Iron (optional) |
| C. Utility Knife | G. Wire Brush |
| D. Splicing Iron ² | |

¹ The Miter Box must be wide enough to easily accommodate the face seal width. Balco, Inc. recommends that the Miter Box be fabricated in the field and that it conform to the general configuration illustrated in Figure 1 below.

² Balco, Inc. recommends use of a Splicing Iron such as those commercially available from JP Specialties, Inc., 551 Birch Street, Lake Elsinore, CA 92530; phone: (951) 674-6869; toll-free: (800) 821-3859. The dimensions of the Splicing Iron required are dependent on the width of the face seal.

³ Balco, Inc. recommends use of a Thermocutter (Heat Knife) such as those commercially available from Abbeon Cal, Inc., 123 Gray Avenue, Santa Barbara, CA 93101; phone: (805) 966-0810; toll-free: (800) 922-0977.



INSTRUCTIONS:

These instructions are for use in splicing Balco, Inc. Face Seals types SANW200 through SANW600C and VS200S through VS600S used in FCWW Series, TCWW Series, FCVS Series and TCVS Series Expansion Joint Cover Systems. Splices of the Face Seals can be accomplished using one of the following two methods. Splices can be easily completed in the field by using a heat fusing process as described in METHOD I below. Splices can also be easily completed in the field using an optional adhesive splice kit and the procedures described under METHOD II below.

METHOD I - HEAT FUSING STRAIGHT-LINE SPLICES

Whenever straight-line splices occur, always splice the base members and the face seal at different locations along the joint run. The minimum required spacing between the splice locations is 1'-0".

- STEP 1.** Review Balco, Inc. approved shop drawings for types and locations.
- STEP 2.** Install the joint cover system's base members and back seal (if provided),
- STEP 3.** Select the mating sections of face seal.
- STEP 4.** Select the splicing iron.
- STEP 5.** Allow the splicing iron to heat in accordance with the manufacturer's recommendations.
- STEP 6.** Place the end of each mating section of face seal against the heated splicing iron. Allow the splicing iron to heat the end of each of the face seal sections to be spliced. Continue heating the end of each section of face seal until the Santoprene is molten. Do not allow the Santoprene to heat until the material begins to bubble.
- STEP 7.** Before the face seal ends have time to cool, remove the splicing iron and press the heated ends of the face seal sections tightly together. Ensure that the sections of face seal are properly aligned and level with one another.

NOTE: A HEAT KNIFE (THERMOCUTTER) MAY BE USED IN PLACE OF
A SPLICING IRON. AFTER EACH SPLICE OPERATION, CLEAN
THE SURFACE OF THE SPLICING IRON OR HEAT KNIFE BLADE
USING A WIRE BRUSH.

- STEP 8.** Allow the splice to cool for two (2) minutes. Ensure that the splice seal is adequate.
- STEP 9.** If the surface appearance of the face seal splice is unsatisfactory, use a heated soldering iron to burnish (smooth) the front surface of the splice.
- STEP 10.** Complete the installation of the face seal in accordance with the installation instructions appropriate for the system provided.

90° CORNER SPLICES

The following procedures are for use in the fabrication of 90° face seal splices, both horizontal-to-vertical and vertical-to-horizontal.

- STEP 1.** Review Balco, Inc. approved shop drawings for types and locations.
- STEP 2.** Miter one end of the base members of the first section of the joint cover system to be installed at the corner. Miter the base members at a 45° angle.
- STEP 3.** Install the mitered base members in accordance with the installation instructions appropriate for the system provided. Ensure that the mitered ends are installed at the corner.
- STEP 4.** Select the mating base member sections for the corner.
- STEP 5.** Miter one end of the each of the base members selected in Step 4. These base members will mate with the installed corner base members mitered in Step 2. Miter these base members so that they will fit with the mitered base members already installed at the corner.

- STEP 6.** Install the mating base members mitered in Step 5 in accordance with the installation instructions appropriate for the system provided. Ensure that the mitered sections of the base members abut together as tightly as possible.
- STEP 7.** Select the back seal (if specified and purchased).
- STEP 8.** Install the back seal (if required) in accordance with the installation instructions appropriate for the system provided.
- STEP 9.** Select the mating sections of face seal.
- STEP 10.** Using a miter box and a hack saw, miter the end of one section of the face seal for the first corner section of the joint cover system . Miter the face seal at a 45° angle. Ensure that the face seal is of sufficient length so that entire miter will extend just above the corner of the substrate when the face seal section is installed.
- STEP 11.** Miter the mating section of the face seal so that it will fit with the face seal mitered in Step 10. Ensure that the face seal is of sufficient length so that entire miter will extend just beyond the corner of the substrate when the face seal section is installed.
- STEP 12.** Select the splicing iron.
- STEP 13.** Allow the splicing iron to heat in accordance with the manufacturer's recommendations.
- STEP 14.** Select the mating sections of face seal.
- STEP 15.** Place the end of each mating section of face seal against the heated splicing iron. Allow the splicing iron to heat the end of each of the face seal sections to be spliced. Continue heating the end of each section of face seal until the Santoprene is molten. Do not allow the Santoprene to heat until it bubbles.
- STEP 16.** Before the face seal ends have time to cool, remove the splicing iron and press the heated ends of the face seal sections tightly together. Ensure that the sections of face seal are properly aligned and level with one another.
- NOTE: A HEAT KNIFE MAY BE USED IN PLACE OF A SPLICING IRON.
AFTER EACH SPLICE OPERATION, CLEAN THE SURFACE OF
THE SPLICING IRON OR HEAT KNIFE BLADE USING A WIRE
BRUSH.
- STEP 17.** Allow the splice to cool for two (2) minutes. Ensure that the splice seal is adequate.
- STEP 18.** If the surface appearance of the face seal splice is unsatisfactory, use a heated soldering iron to burnish (smooth) the front surface of the splice.
- STEP 19.** Engage the face seal splice with the installed base members and complete the installation of the face seal in accordance with the installation instructions appropriate for the system provided.

METHOD II - ADHESIVE STRAIGHT-LINE SPLICES

Whenever straight-line splices occur, always splice the base members and the face seal at different locations along the joint run. The minimum required spacing between the splice locations is 1'-0".

- STEP 20.** Review Balco, Inc. approved shop drawings for types and locations.
- STEP 21.** Install the joint cover system's base members and back seal (if provided),
- STEP 22.** Select the mating sections of face seal.
- STEP 23.** Ensure that the mating ends of the seal sections to be spliced together have fresh, straight cuts.
- STEP 24.** Select the Adhesive Splice Kit. Ensure that the mating surfaces of the seal sections are clean. Clean them, if necessary, using soapy water. Rinse the mating surfaces using clean water. Allow the mating surfaces to dry.
- STEP 25.** Select the Primer and one brush from the Splice Kit, and using the brush, apply the primer to the mating seal surfaces.
- STEP 26.** Select the Adhesive and the other brush (clean) from the Splice Kit. Using the brush, apply the adhesive to one of the mating ends.
- STEP 27.** Press the mating seal ends together and hold them together for at least one (1) minute.

90° CORNER SPLICES

The following procedures are for use in the fabrication of 90° face seal splices, both horizontal-to-vertical and vertical-to-horizontal.

- STEP 28.** Review Balco, Inc. approved shop drawings for types and locations.
- STEP 29.** Miter one end of the base members of the first section of the joint cover system to be installed at the corner. Miter the base members at a 45° angle.
- STEP 30.** Install the mitered base members in accordance with the installation instructions appropriate for the system provided. Ensure that the mitered ends are installed at the corner.
- STEP 31.** Select the mating base member sections for the corner.
- STEP 32.** Miter one end of the each of the base members selected in Step 31. These base members will mate with the installed corner base members mitered in Step 29. Miter these base members so that they will fit with the mitered base members already installed at the corner.
- STEP 33.** Install the mating base members mitered in Step 32 in accordance with the installation instructions appropriate for the system provided. Ensure that the mitered sections of the base members abut together as tightly as possible.
- STEP 34.** Select the back seal (if specified and purchased).
- STEP 35.** Install the back seal (if required) in accordance with the installation instructions appropriate for the system provided.
- STEP 36.** Select the mating sections of face seal.
- STEP 37.** Using a miter box and a hack saw, miter the end of one section of the face seal for the first corner section of the joint cover system . Miter the face seal at a 45° angle. Ensure that the face seal is of sufficient length so that entire miter will extend just above the corner of the substrate when the face seal section is installed.

- STEP 38.** Select the Adhesive Splice Kit. Using soapy water and a clean rag, clean the mating seal surfaces. Rinse the mating surfaces with clean water. Allow the mating surfaces to dry.
- STEP 39.** Select the Primer and one brush from the Splice Kit, and using the brush, apply the primer to the mating seal surfaces.
- STEP 40.** Select the Adhesive and the other brush (clean) from the Splice Kit. Using the brush, apply the adhesive to one of the mating ends.
- STEP 41.** Press the mating seal ends together and hold them together for at least one (1) minute.

WARRANTY POLICY

Balco, Inc. warrants to its purchasers that all products sold by it will be free from manufacturing and material defects. Any defective product will be replaced or repaired free of any charge, provided a claim is brought to our attention, in writing, within the established warranty period following the date of shipment by us and provided our examination shows the product has failed under the terms of this warranty. The established warranty period for exterior joint cover systems (Duraflex™) is five (5) years provided the systems are installed by a Balco Certified Installer. The established warranty period for grids and mats is two (2) years. The established warranty period for all other Balco, Inc. products is one (1) year. Balco, Inc. will not be responsible for installation costs involved in such repair or replacement. Balco, Inc. shall have no obligation under this warranty if owner subjects materials to improper conditions (refer to Balco's installation instructions) This is in lieu of all other warranties, expressed or implied, and is the sole warranty extended by Balco, Inc. Our liability under this warranty is limited to repair or replacement and does not include any responsibility for consequential or other damage of any nature. It is further agreed and understood that the price stated for the seller's products is consideration for the limitation of seller's liability hereunder.

REGISTERED TRADEMARKS:

"VINYLINES" "SAF-T-GLO"
"METAFLEX" "SAF-TEN BEVEL"
"SENTRY" "DURAFLEX"
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6,942,419; 6,955,017; 6,962,026;
7,104,717; 7,856,781; 7,946,784;
8,079,190; 8,245,471; 8,464,485;
8,607,519; 8,601,760; 8,646,235;
Fire Resistant Joint Covers Patents
Pending