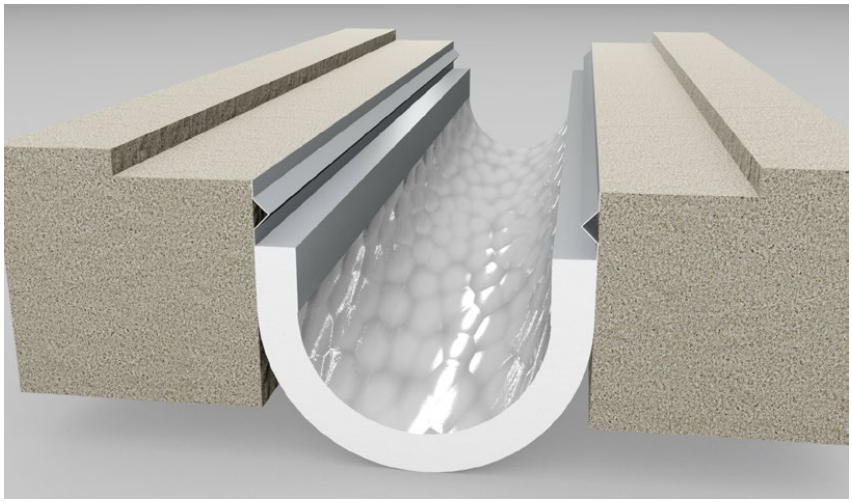

Wabo® FireFlex

INSTALLATION Sheet

For technical information contact Emseal
(508) 836-0280

EMSEAL

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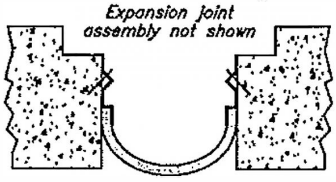
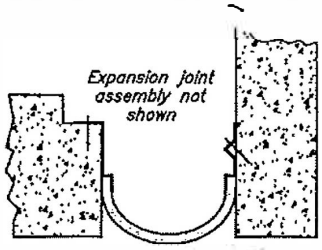
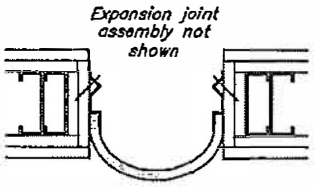
Sika



Horizontal: (Flush)
HFF–01–2
HFF–02–2
HFF–03–2
HFF–04–2
HFF–05–2
HFF–06–2



Horizontal: (Corner)
HFW–01–2
HFW–02–2
HFW–03–2
HFW–04–2
HFW–05–2
HFW–06–2



Vertical: (Flush)
VFF–01–2
VFF–02–2
VFF–03–2
VFF–04–2
VFF–05–2
VFF–06–2

General Instructions:

- *Fire Barriers must be installed in accordance with installation instructions to maintain UL® Rating.*
- *These instructions are for horizontal and vertical fireflex installations for 1"~6" nominal joint widths.*
- *If splicing is required, see the separate splicing instructions.*
- *The galvanized flanges are always required for installation.*
- *Fasteners are supplied by others for all the horizontal and vertical installations. U.O.N.*
- *Wear heavy duty work gloves and eye protection during the entire installation process.*

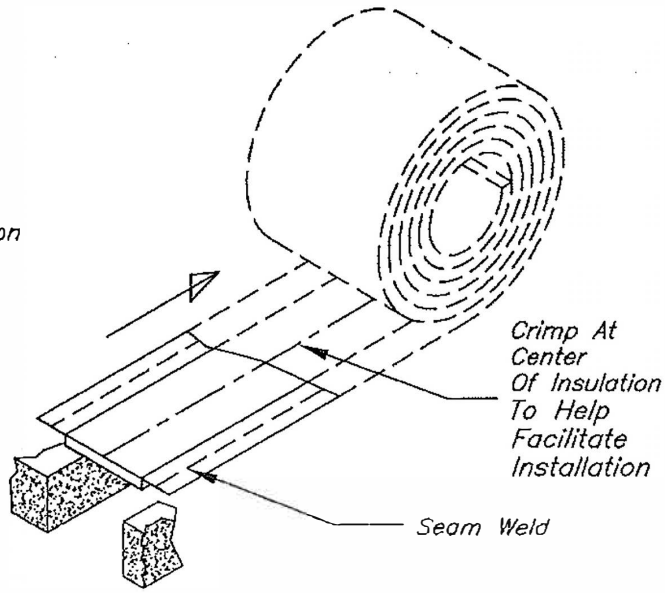
Packaging:

Each carton contains one 25 foot roll of Fireflex Fire Barrier, one kit with the necessary material for splicing, the installation instructions and the splicing instructions.
The galvanized flanges necessary for installation are packaged separately.

Material Preparation:

Roll out product face up (the side with the UL® label) and cut to length (if required). The insulation portion of the product can be formed into a "U" or "V" shape to help it fit into the expansion joint. This can be done by crimping the insulation along the center line with a pipe or board. (See Fig. A)
Note: Prior to proceeding to step #1 it is recommended to read and understand the splicing procedure outlined on pages 6 thru 9.

Fig. A
Material Preparation



**Patent Pending*

P/N: 20156
Rev. 9/19/00

Installation Procedure
Horizontal (HFF) Flush Applications

Step 1
After completing material preparation described on page 1 and as shown in Fig. A, place the fire barrier in the expansion joint. With the Low Profile (LP) galvanized flange, the foil flanges will be folded along the seam weld line down inside the expansion joint void so that no part of the barrier is on the exposed surface of the floor. (See Fig. B)

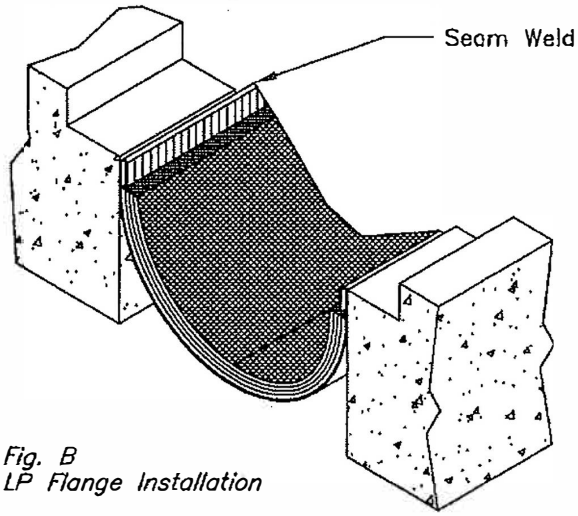
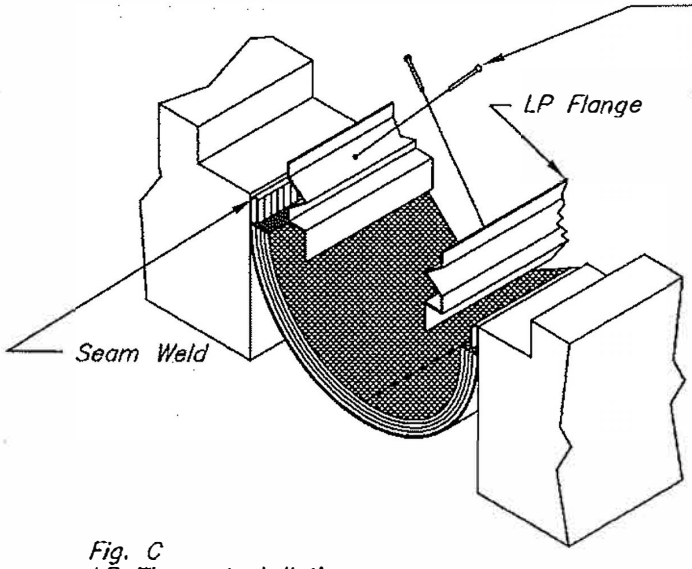


Fig. B
LP Flange Installation

Step 2
Note: Prior to proceeding with Step 2 review expansion joint system and verify all vertical height and clearances that may affect final location of LP metal retainer.
Cut the galvanized flanges to length (if required) and drill appropriate size holes with maximum spacing of 18".Install the flanges with the appropriate fasteners as shown below. (See Fig. C)



- *For concrete substrate: 3/16" Dia. x 2-1/4" LG. hex head threaded concrete anchor (BY OTHERS)*
- *Other substrates: 3/16" Dia. x 1-1/2 Lg. (min) fastener (by others) utilize appropriate fastener for construction.*

Fig. C
LP Flange Installation

Step 3
Install the expansion joint system over the joint or in the blockout with appropriate anchors. Request appropriate installation procedure.

Installation Procedure
Horizontal (HFW) Corner Apllications

Step 1
After completing material preparation described on page 1 and as shown in Fig. A, place the fire barrier in the expansion joint with the low profile (LP) galvanized fold foil flanges along the seam weld line down inside the expansion joint void. On the opposing wall face foil flange may be folded in similiar manner. See Fig D
Note: Prior to proceeding with step 2 review expansion joint system and verify all vertical height and clearances that may affect final location of LP metal retainer.

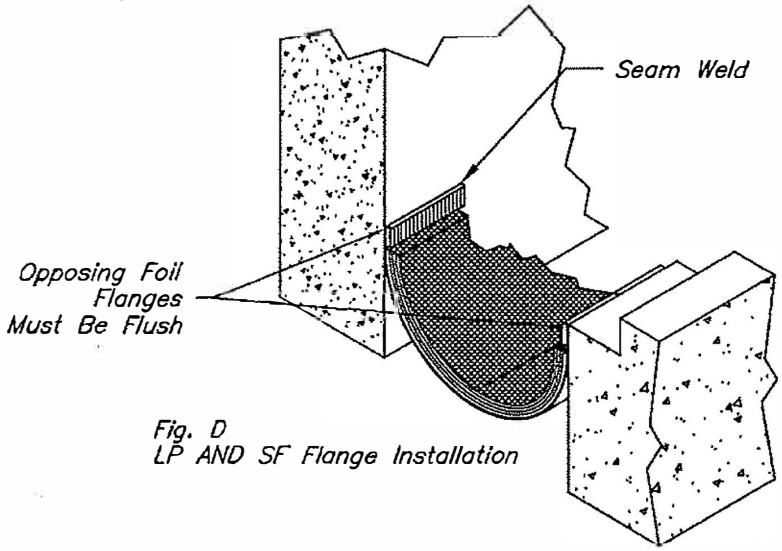


Fig. D
LP AND SF Flange Installation

Step 2
Cut the galvanized flanges to length (if required) and drill appropriate size holes with maximum spacing of 18". Install the flanges with appropriate fasteners as shown below. (See Fig. E)

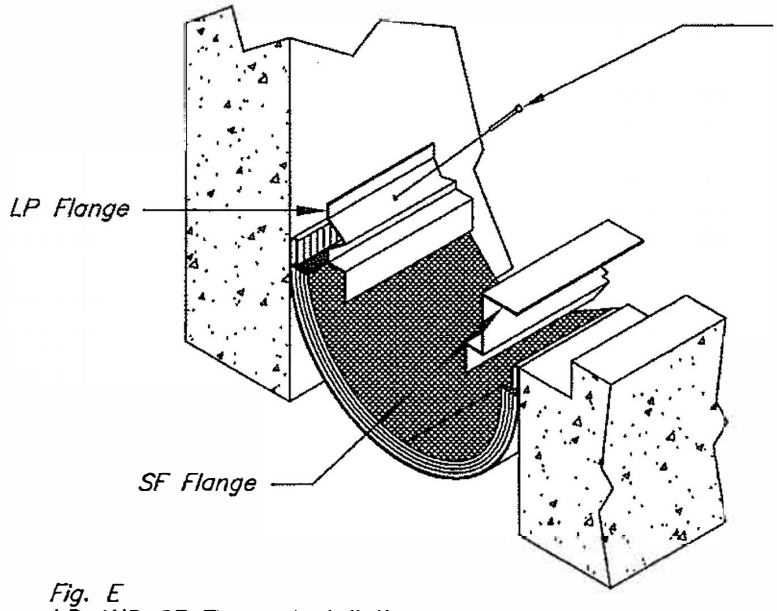


Fig. E
LP AND SF Flange Installation

Step 3
**SF flange is dependent on what E.J. system is being utilized. consult submittal drawings or contact Emseal.*
Install the expansion joint system over the joint or in the blockout with appropriate anchors. Request appropriate installation procedure.

Installation Procedure
Vertical (VFF) Flush Condition

Step 1
After completing material preparation described on page 1 and as shown in Fig. A, place the fire barrier in the expansion joint. With the Low Profile (LP) galvanized flanges, install and align the foil flanges inside the joint cavity so that no part of the barrier is on the exposed surface of the wall. (See Fig. F)

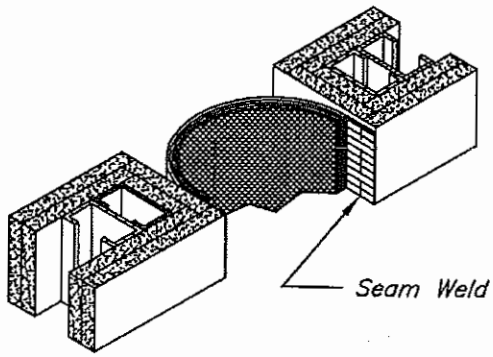


Fig. F
LP Flange Installation

Step 2
Note: Prior to proceeding with Step 2 review expansion joint system and verify all vertical height and clearances that may affect final location of LP metal retainer.
Cut the galvanized flanges to length (if required) and drill appropriate size holes with maximum spacing of 18".Install the flanges with the appropriate fasteners as shown below. (See Fig. G)

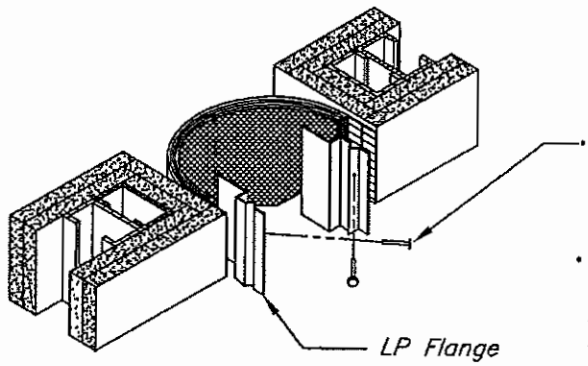


Fig. G
LP Flange Installation

Step 3
Install the expansion joint covers on either side or both sides of the wall when accessible with appropriate anchors. Request appropriate installation procedure.

Installation Procedure
Vertical (VFF) Corner Condition

Step 1
After completing material preparation described on page 1 and as shown in Fig. A, place the fire barrier in the expansion joint. The foil flanges can be folded along the seam weld line onto the exposed face of the wall. With the Low Profile (LP) galvanized flange configuration on the wall side, the foil flange can be folded over itself as shown before the galvanized flange is fastened into into place.(See Fig. H)

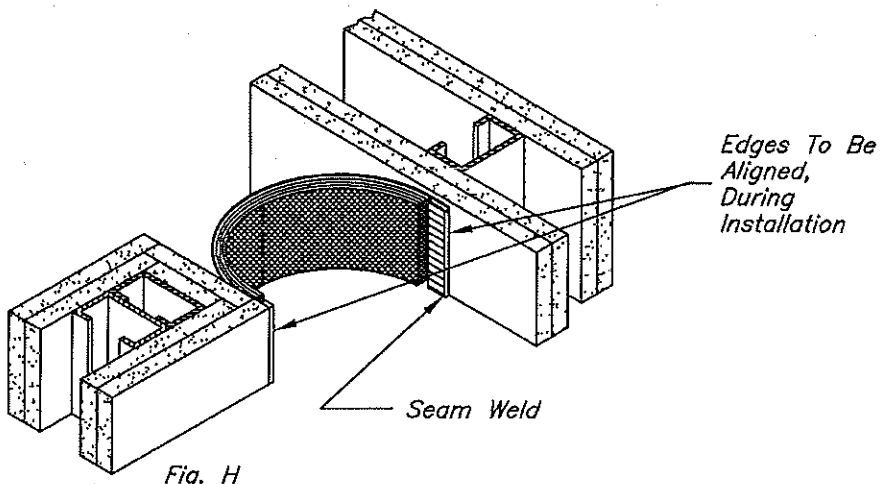


Fig. H
LP Flange Installation

Step 2
Note: Prior to proceeding with Step 2 review expansion joint system and verify all vertical height and clearances that may affect final location of LP metal retainer.
Cut the galvanized flanges to length (if required) and drill appropriate size holes with maximum spacing of 18".Install the flanges with the appropriate fasteners as shown below. (See Fig. I)

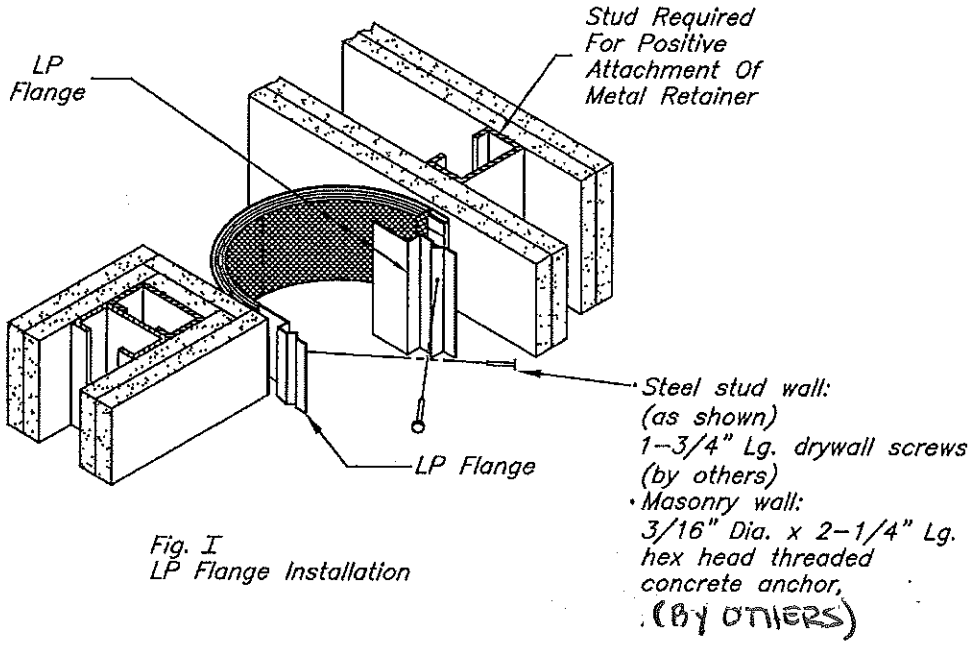


Fig. I
LP Flange Installation

Step 3
Install the expansion joint system over the joint or in the blockout with appropriate anchors. Request appropriate installation procedure.

Splicing Procedures

The following instructions are to be used to splice two or more lengths togethor. It is highly recommended that this procedure be performed prior to installation in the wall or floor, as this procedure is less time consuming when performed on a flat surface. After the splicing is completed, the installation procedure remains the same as described in these instructions.
Note: Fire Barriers must be spliced in accordance with splicing instructions to maintain UL® Rating.

Step 1
Lay each blanket segment on a flat surface. Measure out 12" from the ends of each blanket to be spliced. Draw a line directly across each package at the 12" mark. This will be the splice zone. Remove all of the tie pins from within the splice zone of each blanket. (See Figs. 1 & 2)

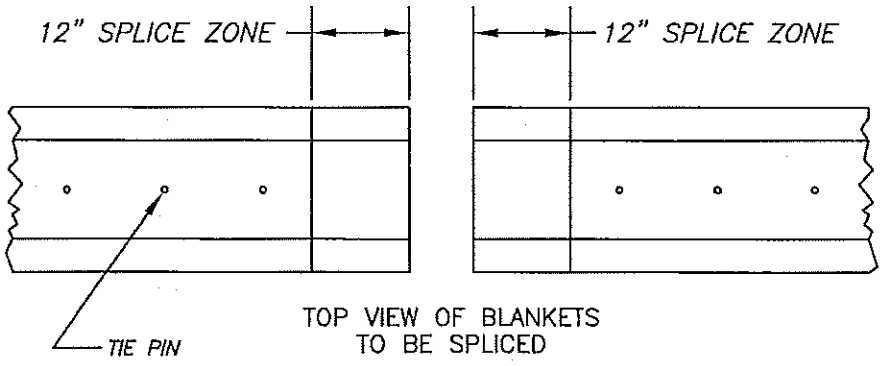


Fig. 1

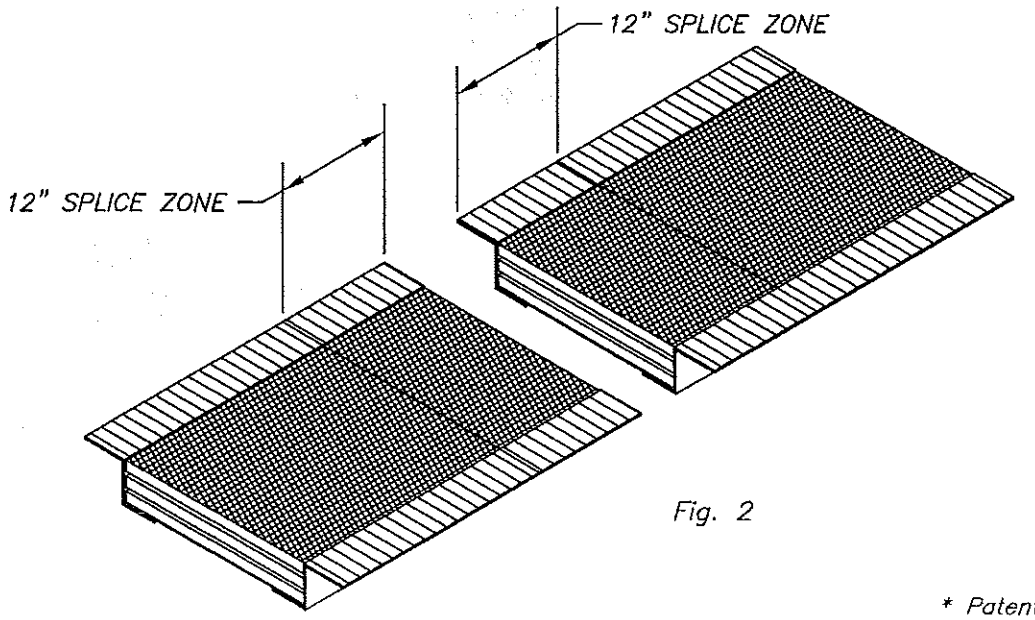


Fig. 2

** Patent Pending*

Splicing Instructions:

Step 2
Make a "tongue and groove" type splice by cutting away every other layer of insulation in the splice zone on each blanket segment and save the scraps for future use. Make the opposite cuts on the other half of the splice. Trim the metallic septum layers the same length as the insulation adjacent to them. All cuts must be made square and true to ensure proper seal between opposite blanket segments.
(See Figs. 3 & 4)
Note: If flanges are pre-welded to the blanket segments, the flanges must be cut back in one of the splice zones. Overlapping galvanized flanges are not allowed.

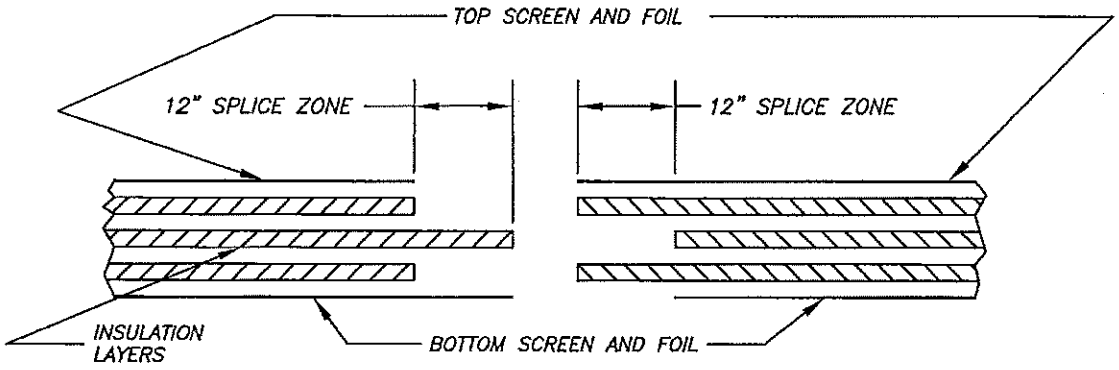


Fig. 3 Cross-Section of Splice Zone

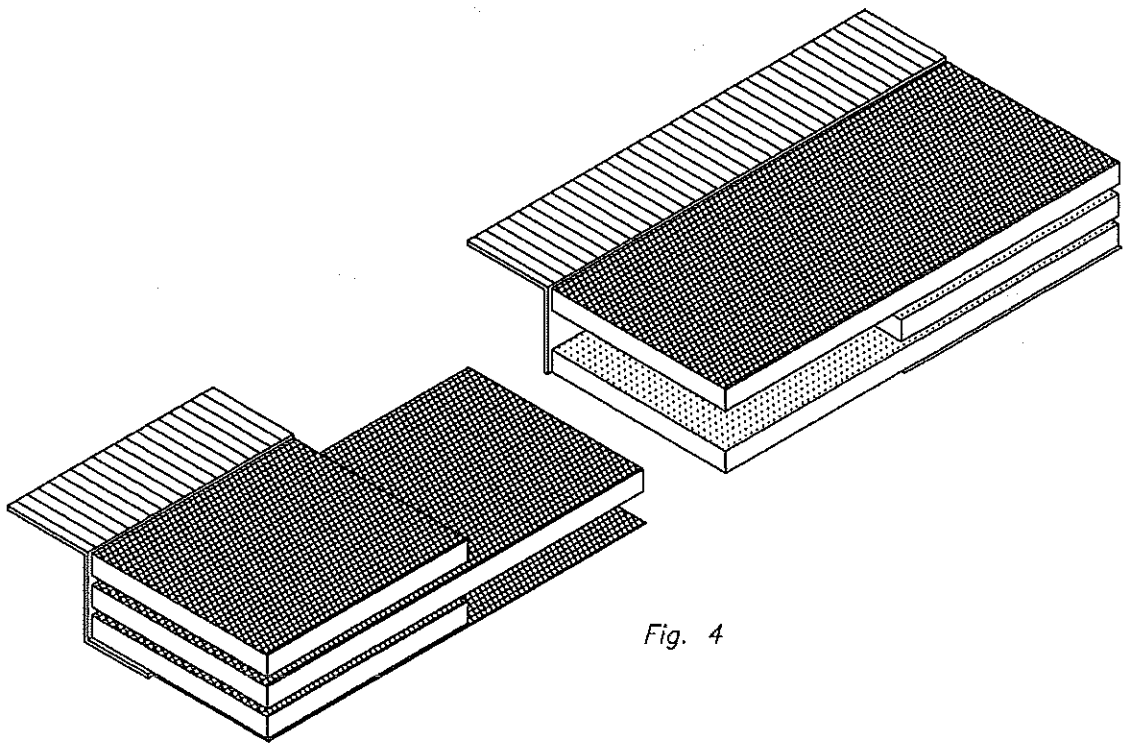


Fig. 4

Splicing Instructions:

Step 3
Assemble the two blanket segments, interweaving the insulation layers. (See Figs. 5 & 6)

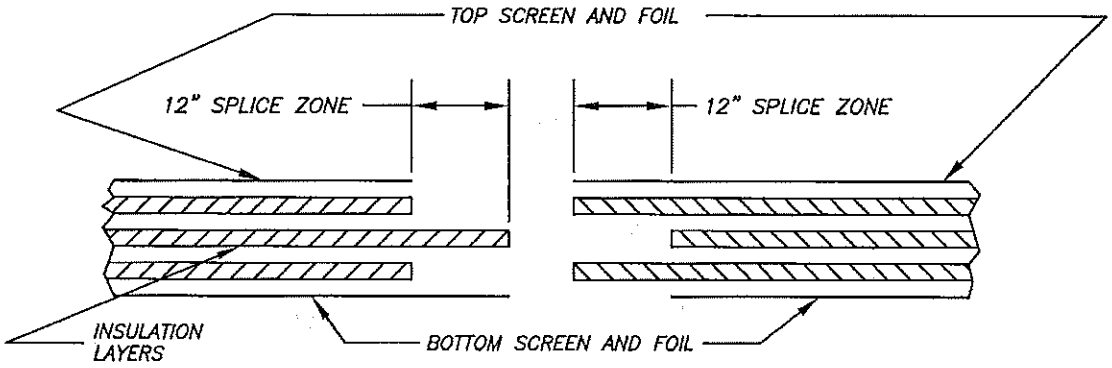


Fig. 5 Cross-Section of Splice Zone

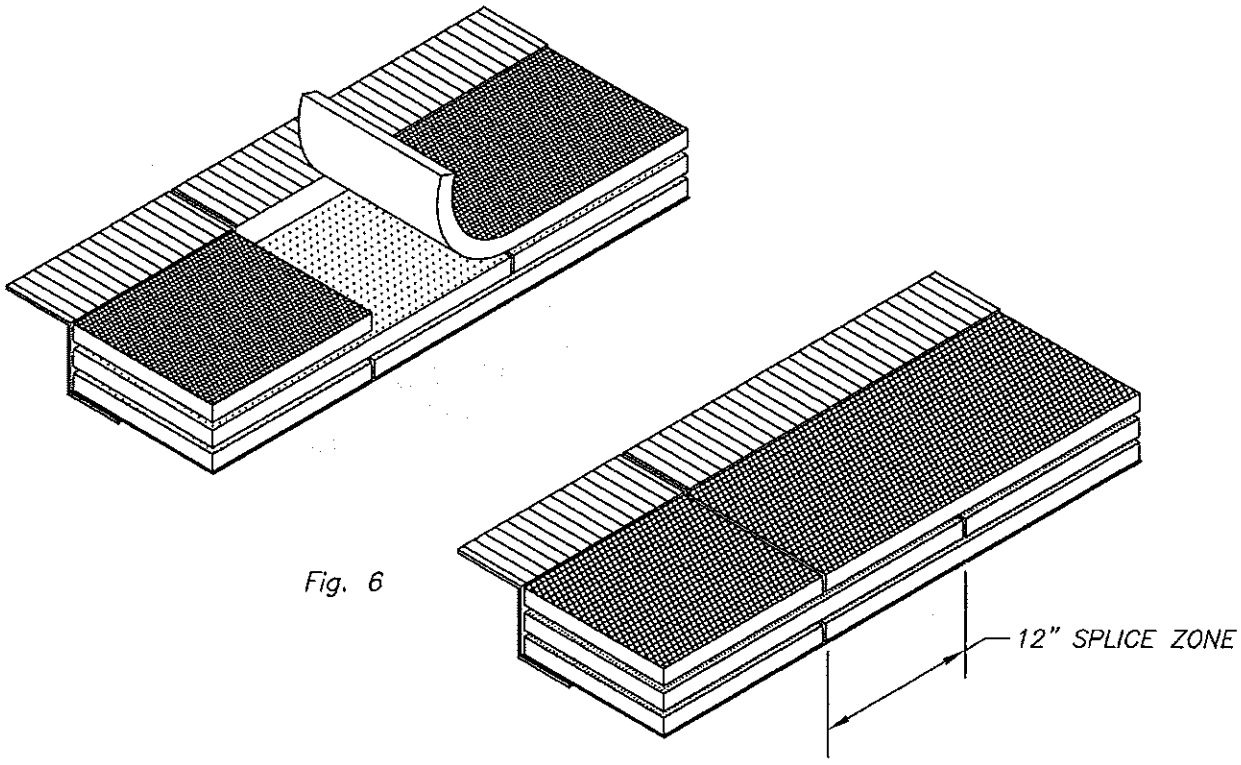


Fig. 6

Splicing Instructions:

Step 4
Pin the four corners of the splice zone together, through the insulation and the foils, but not through the outer screen layers. (See Figs. 7 & 8)
Place 6 equally spaced pins down the center of the splice zone, through the insulation, through all foil layers and both of the outer screen layers. (See Figs. 7 & 9)
Inspect the splice to ensure:
a. The splice does not have any gaps.
b. The splice is tied together with pins, down the center line, through the screen.
c. The four corner pins of the splice do not go through the screen.
After the splice has passed inspection, lay the scraps over the splice. These scraps were saved for future use during the completion of Step 2 and should now be laid in over the splice for added thermal protection.

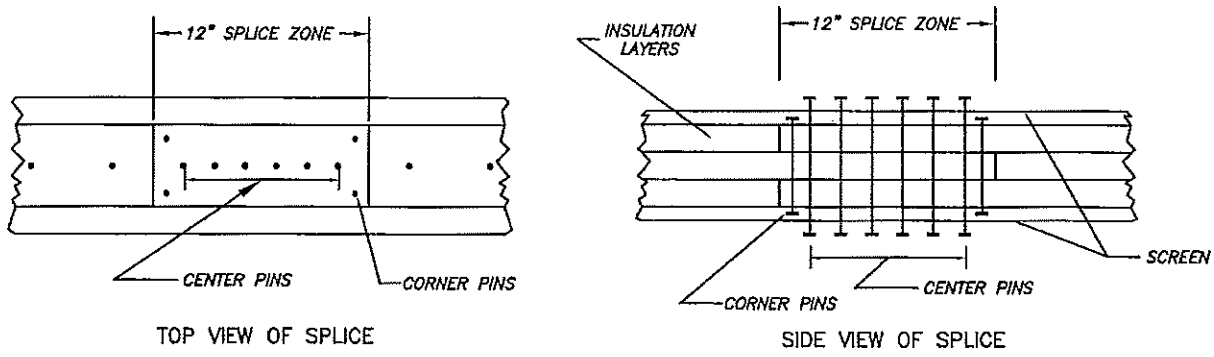


Fig. 7 Assembly of the Splice.

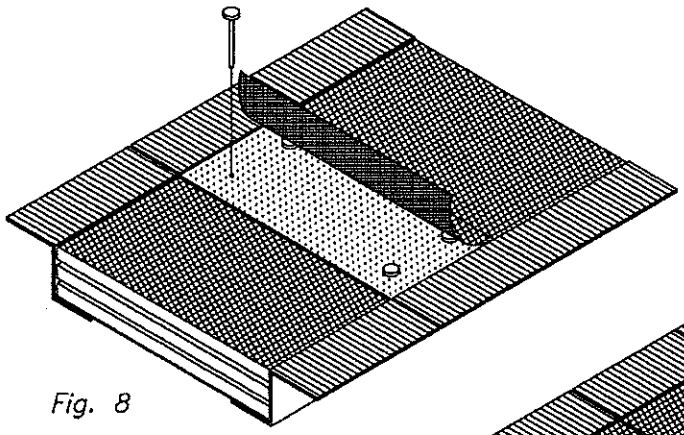


Fig. 8

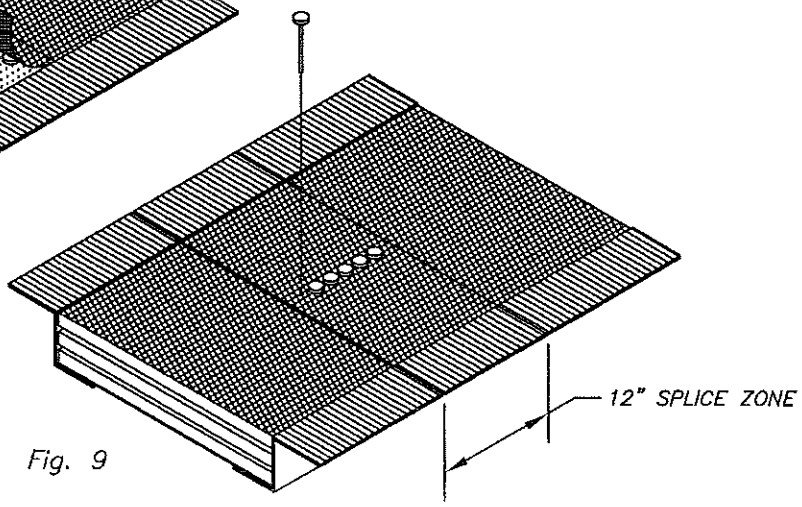
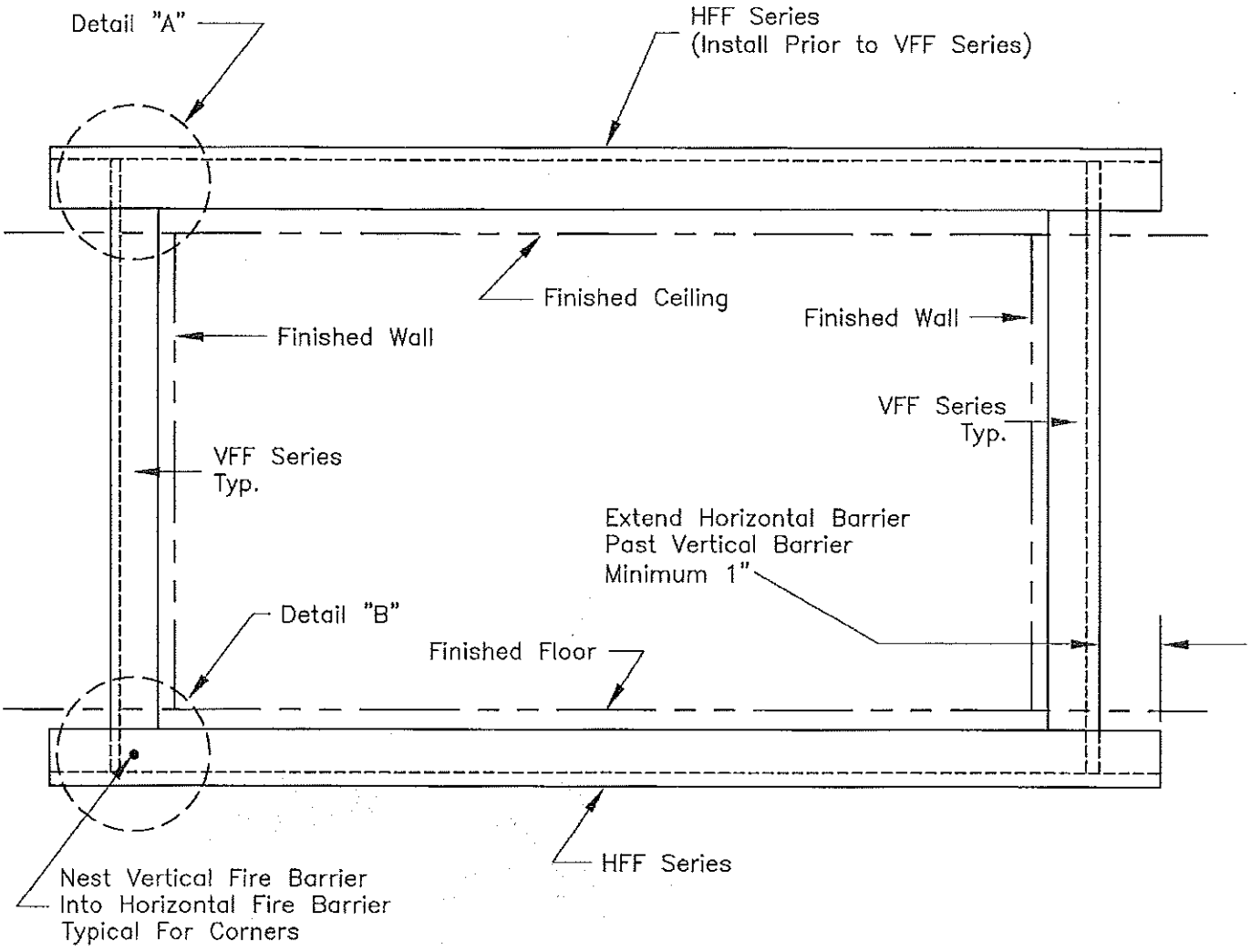


Fig. 9

Corridor Wrap Splicing Procedure

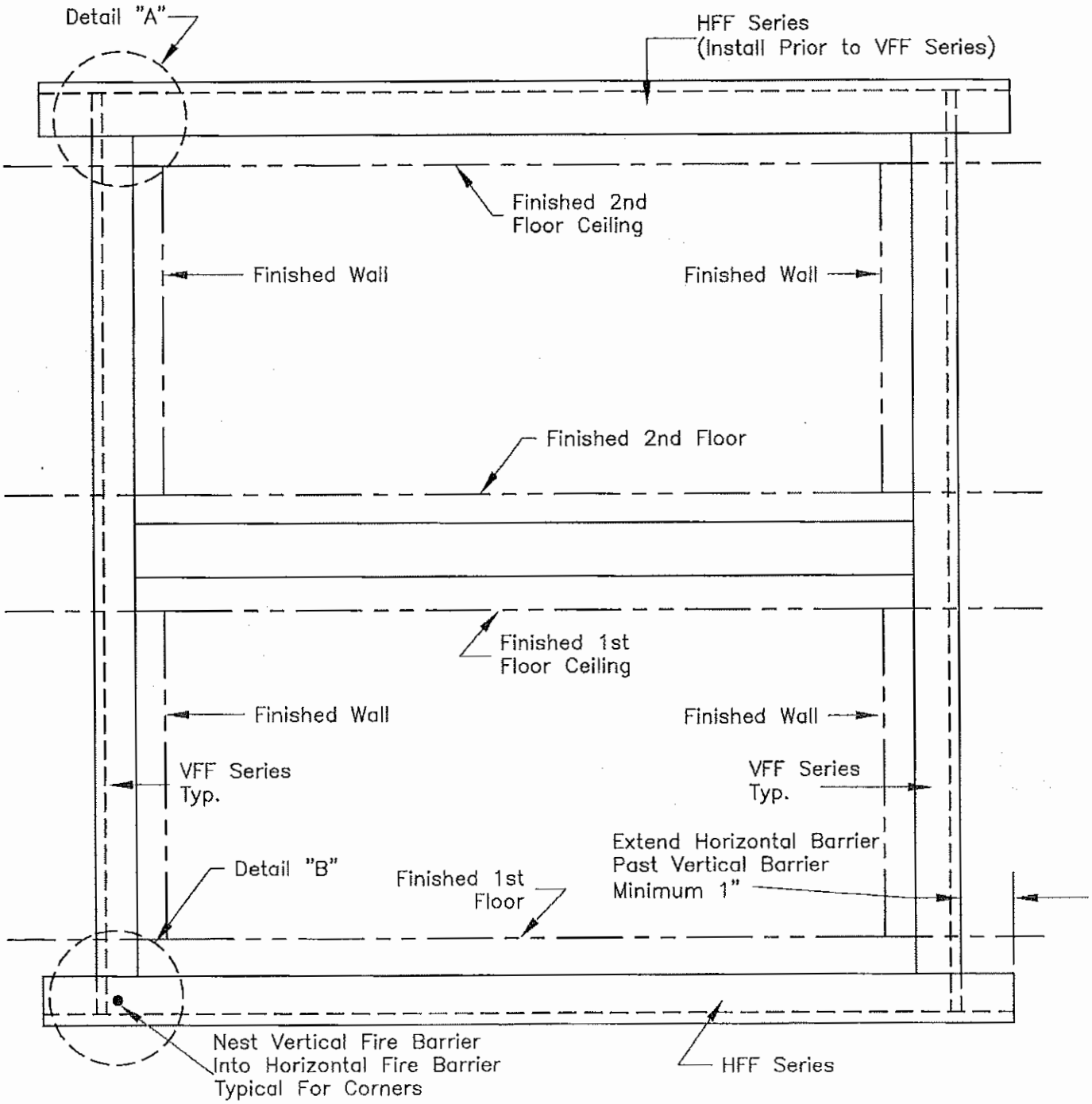
For Wabo® Fireflex Fire Barrier



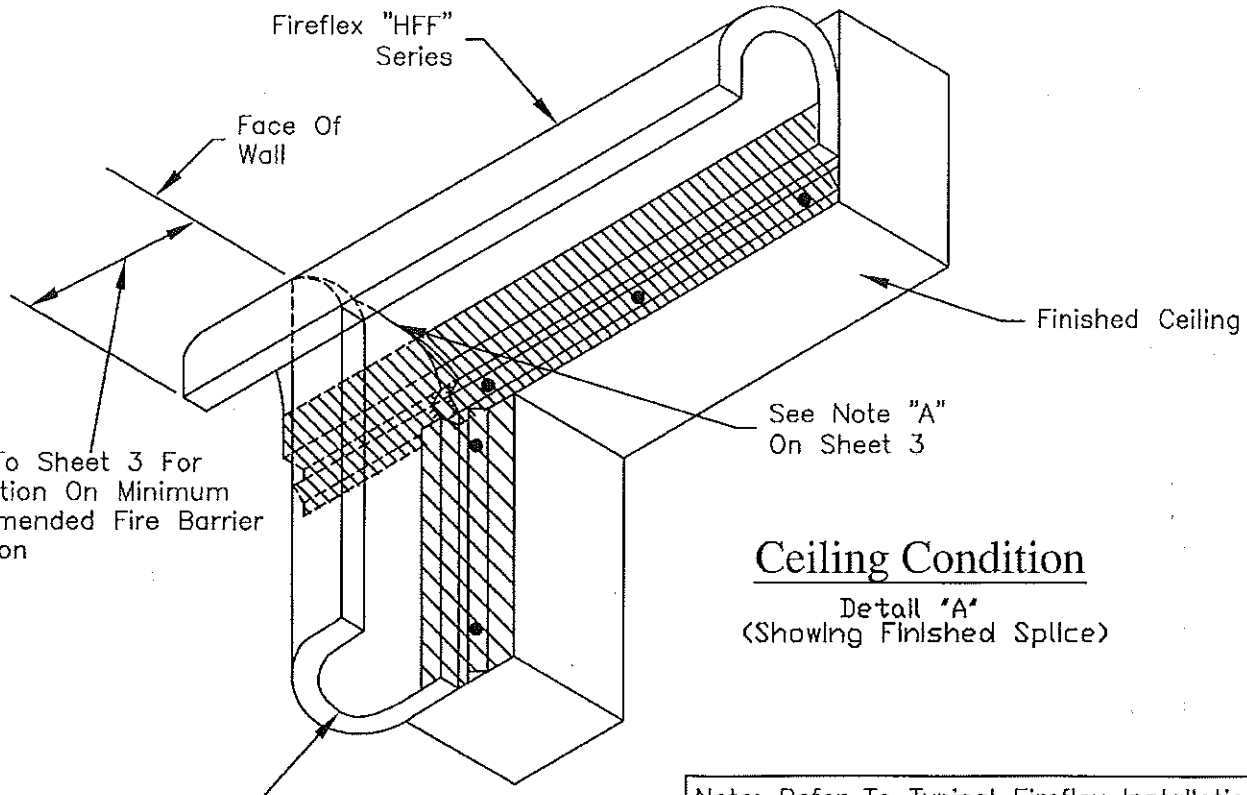
** Patent Pending*

Multi-Level Splicing Procedure

For Wabo®Fireflex Fire Barrier



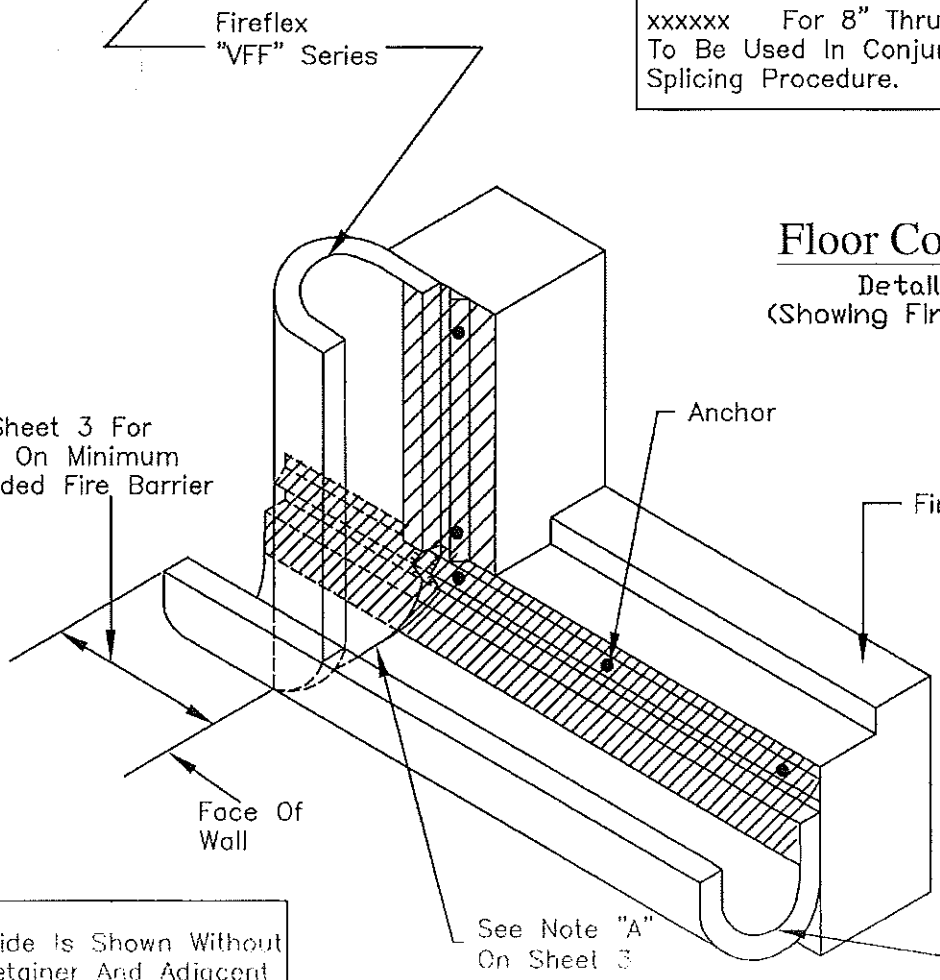
* *Patent Pending*



Ceiling Condition

Detail "A"
(Showing Finished Splice)

Note: Refer To Typical Fireflex Installation Procedure Part No.
xxxxxx For 1" Thru 6" Sizes
xxxxxx For 8" Thru 20" Sizes
To Be Used In Conjunctin With This Splicing Procedure.

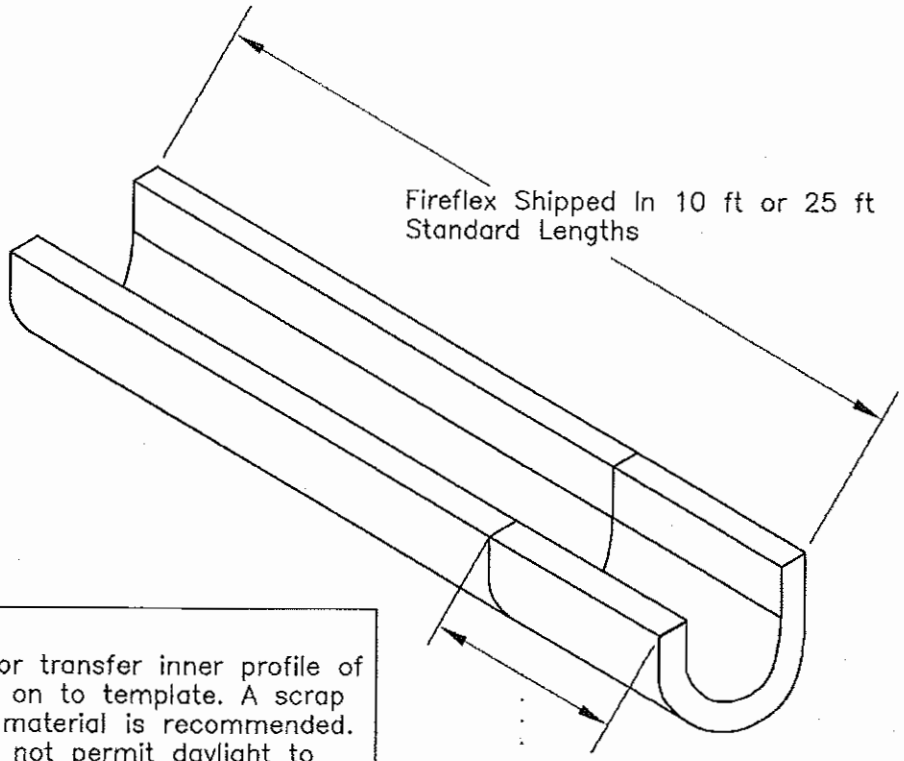


Floor Condition

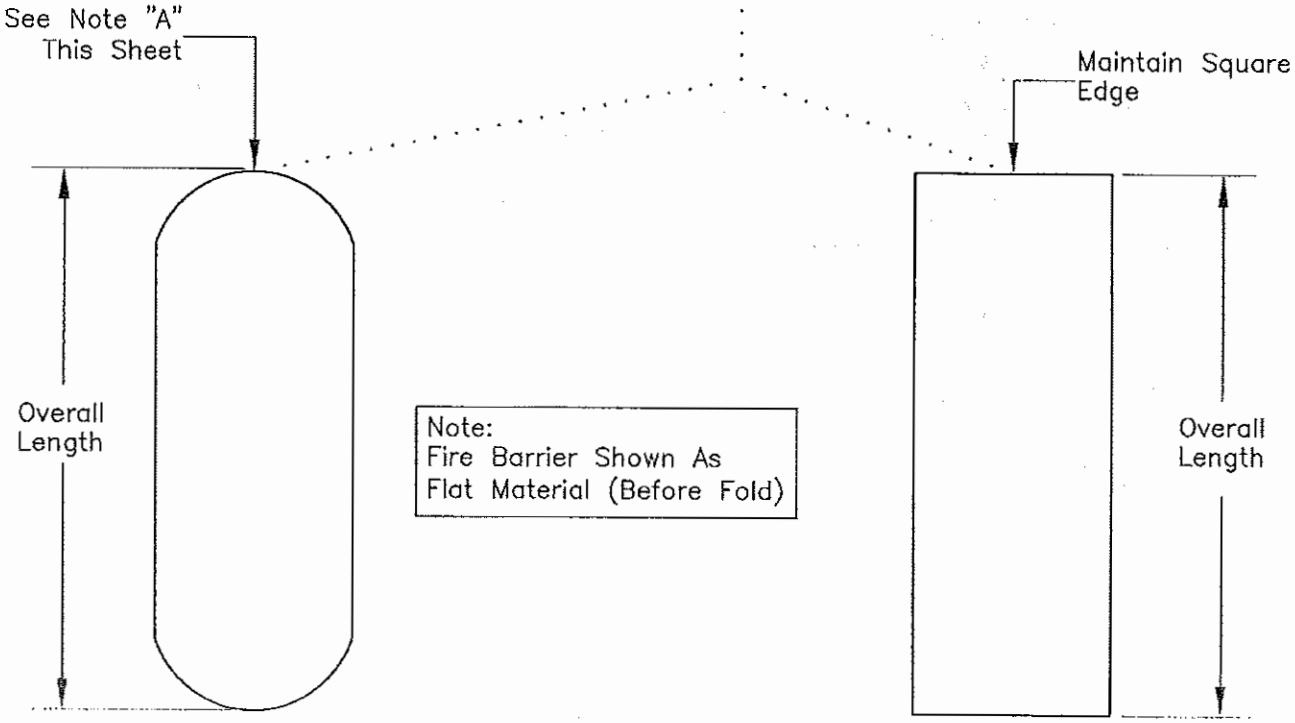
Detail "B"
(Showing Finished Splice)

Note:
The Near Side Is Shown Without Its Metal Retainer And Adjacent Constuction To Show Clarity.

* Patent Pending



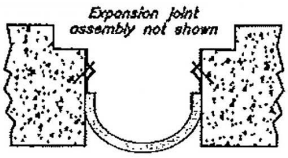
Note "A":
Through trial and error transfer inner profile of horizontal fire barrier on to template. A scrap piece of fire blanket material is recommended. Final template should not permit daylight to show through spliced areas. With template flat and unfolded transfer lines onto vertical fire barrier and cut through material carefully with sharp utility knife or quality tin snips if laminated with stainless steel foil. Fold and insert vertical fire barrier into final position. All material edges and interfaces are to be under compression with no visible daylight present. Close all voids with ceramic fiber felt material.



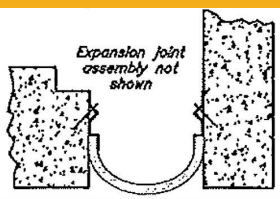
Vertical Fireflex Fire Barrier

Horizontal Fireflex Fire Barrier

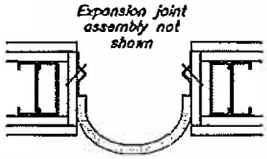
* Patent Pending



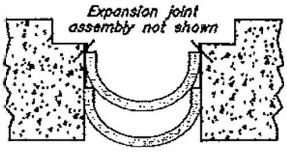
Horizontal: (Flush)
HFF–08–2
HFF–10–2
HFF–12–2



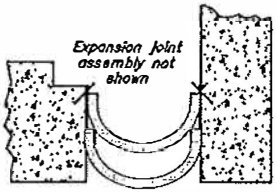
Horizontal: (Corner)
HFW–08–2
HFW–10–2
HFW–12–2



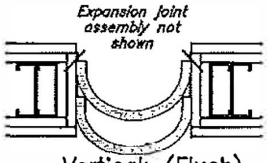
Vertical: (Flush)
VFF–08–2
VFF–10–2
VFF–12–2



Horizontal: (Flush)
HFF–14–2
HFF–16–2
HFF–18–2
HFF–20–2



Horizontal: (Corner)
HFW–14–2
HFW–16–2
HFW–18–2
HFW–20–2



Vertical: (Flush)
VFF–14–2
VFF–16–2
VFF–18–2
VFF–20–2

General Instructions:

- *Fire Barriers must be installed in accordance with installation instructions to maintain UL Rating.*
- *These instructions are for horizontal and vertical Fireflex installations for 8"~20" nominal joint widths.*
- *The 8"~12" nominal joint width barriers are a single draped system.*
- *The 14"~20" nominal joint width barriers are a double draped system.*
- *The galvanized flanges are factory welded to the fire barriers and are always required for installation.*
- *Fasteners are supplied by others for all the horizontal and vertical installations. U.O.N.*
- *Wear heavy duty work gloves and eye protection during the entire installation process.*

Packaging:

Each carton contains: 10 foot lengths of Fireflex Fire Barrier with galvanized flanges attached
One kit with the necessary material for splicing.
The installation and splicing instructions.

Material Preparation:

Roll out product face up (the side with the UL® label) and cut to length (if required). The insulation portion of the product can be formed into a "U" or "V" shape to help it fit into the expansion joint. This can be done by crimping the insulation along the center line with a pipe or board. (See Fig. A)
Note: Prior to proceeding to step #1 it is recommended to read and understand the splicing procedure outlined on pages 6 thru 9.

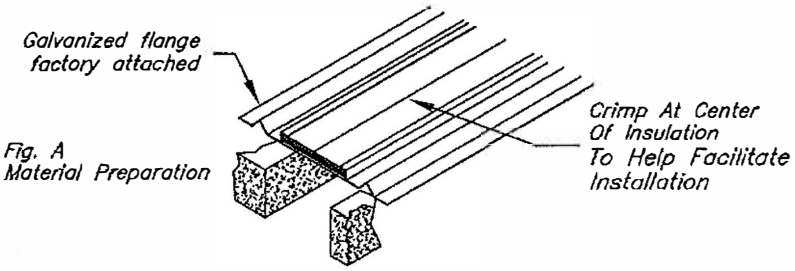


Fig. A
Material Preparation

**Patent Pending*

P/N: 20176
Rev. 9/19/00

Installation Instructions
Horizontal or Floor and Roof Joints

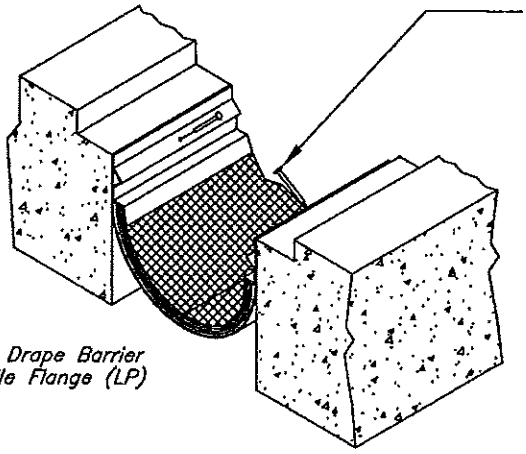
Single Draped Fire Barrier Installation: 8"~12" Nominal Joint Widths

Step 1

After completing material preparation described on page 1 and as shown in Fig. A, place the barrier into the expansion joint opening. Drill the appropriate size holes and secure the flanges with fasteners with a maximum spacing of 18 inches (See Fig. B) .

Step 2

Install the expansion joint system over the joint or in the blockout with appropriate fasteners (by others).



- *For concrete substrate: 3/16" Dia. x 2-1/4" LG. hex head threaded concrete anchor (BY OTHERS)*
- *Other substrates: 3/16" Dia. x 1-1/2 Lg. (min) fastener (by others) utilize appropriate fastener for construction.*

Fig. B Single Drape Barrier w/ Low Profile Flange (LP)

Double Draped Barrier Installation: 14"~20" Nominal Joint Widths

Step 1

After completing material preparation described on page 1 and as shown in Fig. A, place the lower fire barrier into the expansion joint opening (See Fig. C).

Optional: Prior to installing the upper fire barrier, if the lower fire barrier requires fastening to hold it in place, drill appropriate size holes to the flanges and secure with fasteners (by others).

Step 2

Install the upper fire barrier and drill the appropriate size holes as shown in Fig. C. The fasteners need to be installed with a maximum spacing of 18 inches.

Step 3

Install the expansion joint system over the joint or in the blockout with appropriate fasteners.

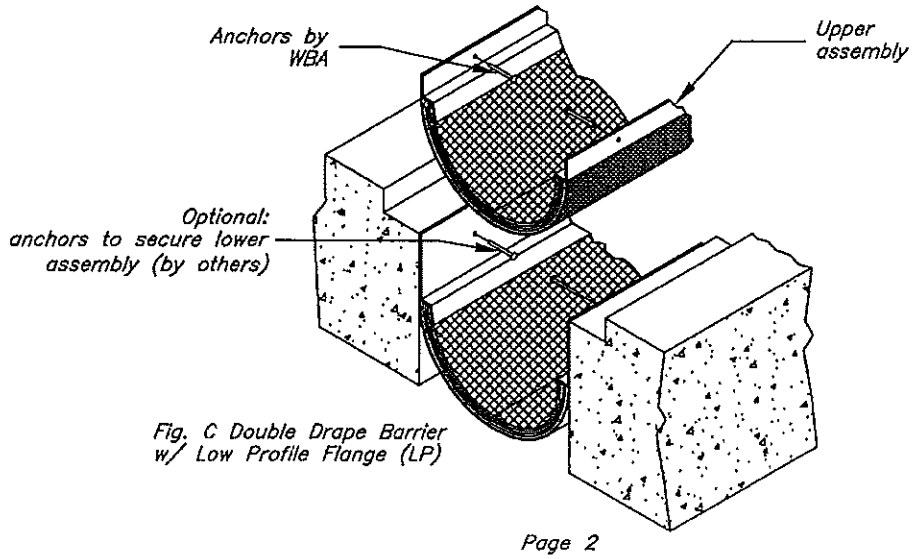


Fig. C Double Drape Barrier w/ Low Profile Flange (LP)

Installation Instructions
Floor to Wall
Roof to Wall

Single Draped Fire Barrier Installation: 8"~12" Nominal Joint Widths

Step 1

After completing material preparation described on page 1 and as shown in Fig. A, place the barrier into the expansion joint opening. Drill the appropriate size holes and secure the flanges with fasteners with a maximum spacing of 18 inches (See Fig. D).

Step 2

Install the expansion joint system over the joint or in the blockout with appropriate fasteners (by others).

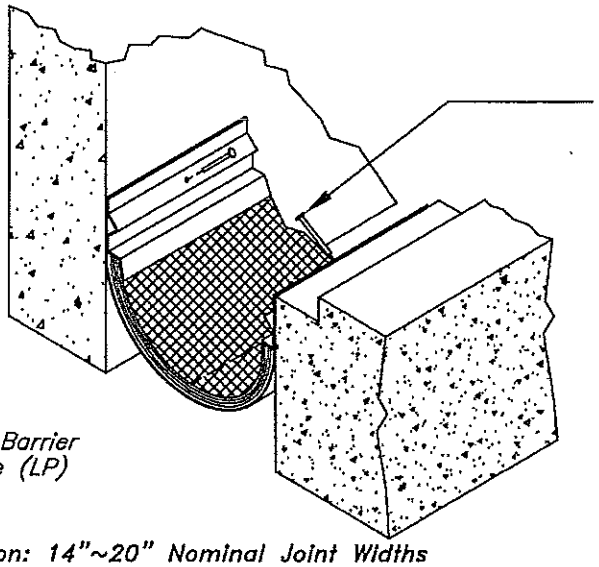


Fig. D Single Draped Barrier w/ Low Profile Flange (LP)

Double Drape Barrier Installation: 14"~20" Nominal Joint Widths

Step 1

After completing material preparation described on page 1 and as shown in Fig. A, place the lower fire barrier into the expansion joint opening (See Fig. E).

Optional: Prior to installing the upper fire barrier, if the lower fire barrier requires fastening to hold it in place, drill appropriate size holes to the flanges and secure with fasteners (by others).

Step 2

Install the upper fire barrier and drill the appropriate size holes as shown in Fig. E. The fasteners need to be installed with a maximum spacing of 18 inches.

Step 3

Install the expansion joint system over the joint or in the blockout with appropriate fasteners (by others).

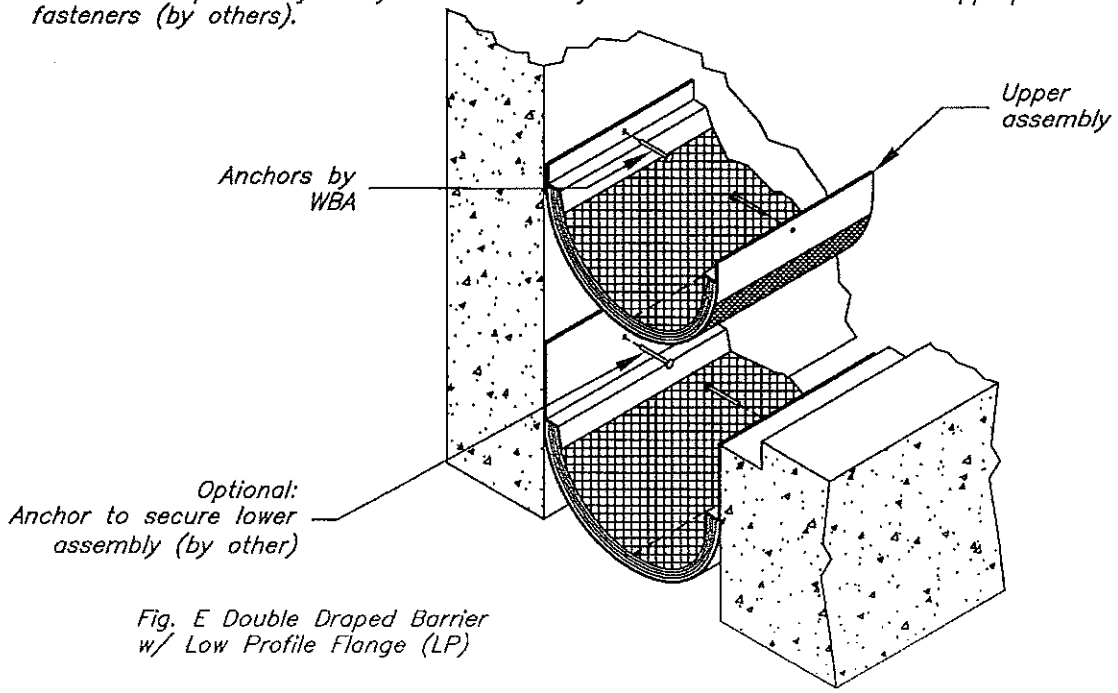


Fig. E Double Draped Barrier w/ Low Profile Flange (LP)

Installation Instructions
Wall Joints

Single Draped Fire Barrier Installation: 8"~12" Nominal Joint Widths

Step 1

After completing material preparation described on page 1 and as shown in Fig. A, place the barrier into the expansion joint opening. Drill the appropriate size holes and secure the flanges with fasteners with a maximum spacing of 18 inches (See Fig. F).

Step 2

Install the expansion joint system to either side or both sides of the wall when accessible with appropriate fasteners.

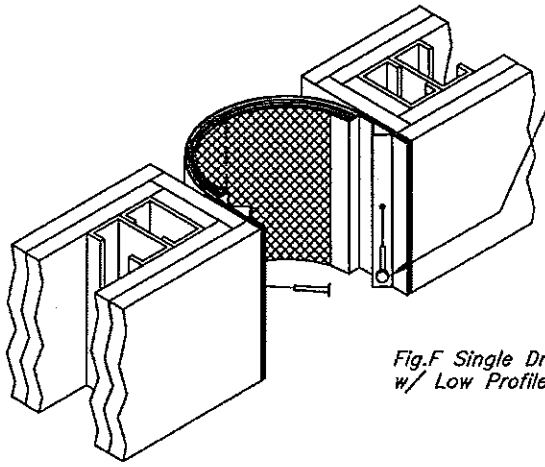


Fig.F Single Draped Barrier
w/ Low Profile Flange (LP)

Double Draped Barrier Installation: 14"~20" Nominal Joint Widths

Step 1

After completing material preparation described on page 1 and as shown in Fig. A, place the inner fire barrier into the expansion joint opening (See Fig. G).

Optional: Prior to installing the inner fire barrier, if the inner fire barrier requires fastening to hold it in place, drill appropriate size holes to the flanges and secure with fasteners (by others).

Step 2

Install the outer fire barrier and drill the appropriate size holes as shown in Fig. G. The fasteners need to be installed with a maximum spacing of 18 inches.

Step 3

Install the expansion joint system to either side or both sides of the wall when accessible with appropriate fasteners.

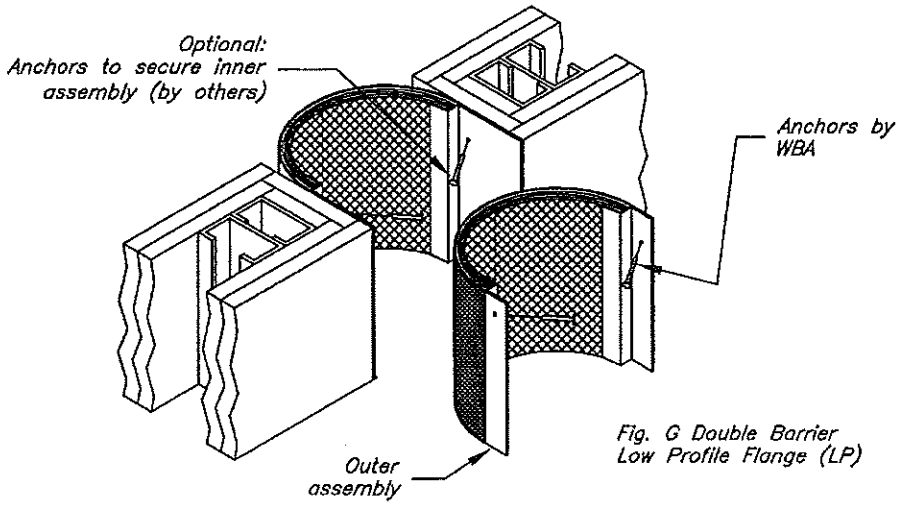


Fig. G Double Barrier
Low Profile Flange (LP)

Installation Instructions
Corner Wall

Single Draped Fire Barrier Installation: 8"~12" Nominal Joint Widths

Step 1

After completing material preparation described on page 1 and as shown in Fig. A, place the barrier into the expansion joint opening. Drill the appropriate size holes and secure the flanges with fasteners with a maximum spacing of 18 inches (See Fig. H).

Step 2

Install the expansion joint system to either side or both sides of the wall when accessible with appropriate fasteners.

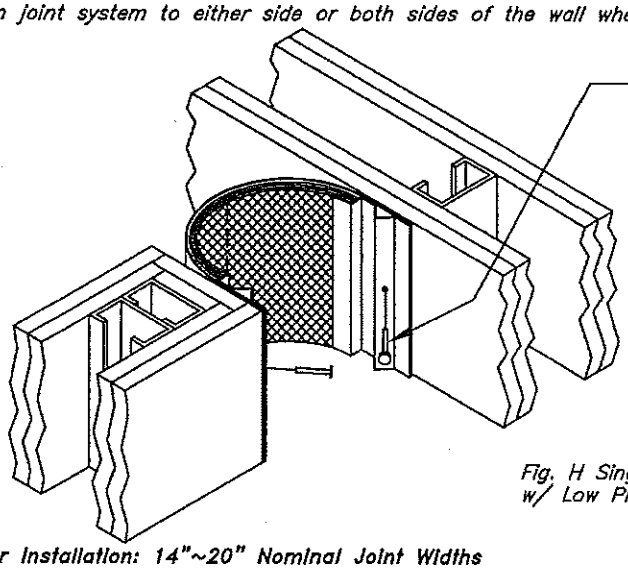


Fig. H Single Draped Barrier w/ Low Profile Flange (LP)

Double Drape Barrier Installation: 14"~20" Nominal Joint Widths

Step 1

After completing material preparation described on page 1 and as shown in Fig. A, place the inner fire barrier into the expansion joint opening (See Fig. I).

Optional: Prior to installing the outer fire barrier, if the inner fire barrier requires fastening to hold it in place, drill appropriate size holes to the flanges and secure with fasteners (by others).

Step 2

Install the outer fire barrier and drill the appropriate size holes as shown in Fig. I. The fasteners need to be installed with a maximum spacing of 18 inches.

Step 3

Install the expansion joint system to either side or both sides of the wall when accessible with appropriate fasteners.

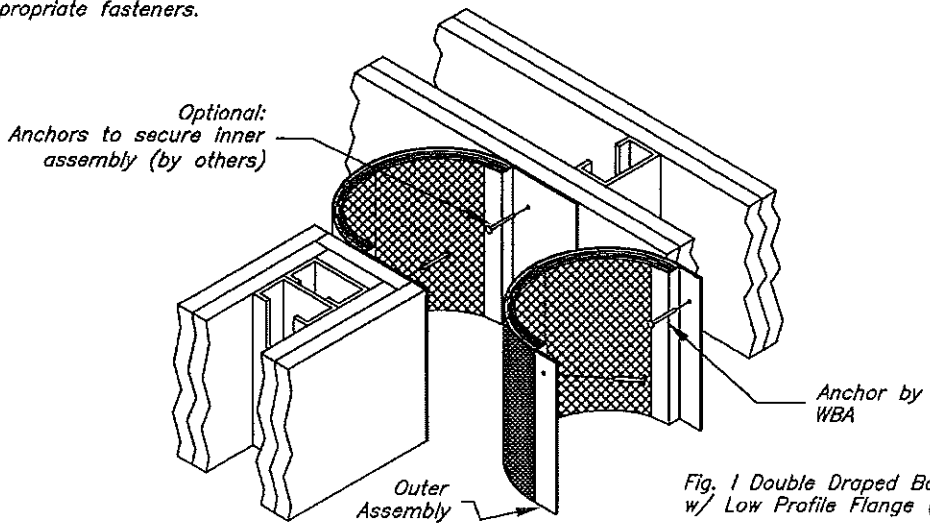


Fig. I Double Draped Barrier w/ Low Profile Flange (LP)

Splicing Procedures

The following instructions are to be used to splice two or more lengths togethor. It is highly recommended that this procedure be performed prior to installation in the wall or floor, as this procedure is less time consuming when performed on a flat surface. After the splicing is completed, the installation procedure remains the same as described in these instructions.

Note: Fire Barriers must be spliced in accordance with splicing instructions to maintain UL® Rating.

Step 1

Lay each blanket segment on a flat surface. Measure out 12" from the ends of each blanket to be spliced. Draw a line directly across each package at the 12" mark. This will be the splice zone. Remove all of the tie pins from within the splice zone of each blanket. (See Figs. 1 & 2)

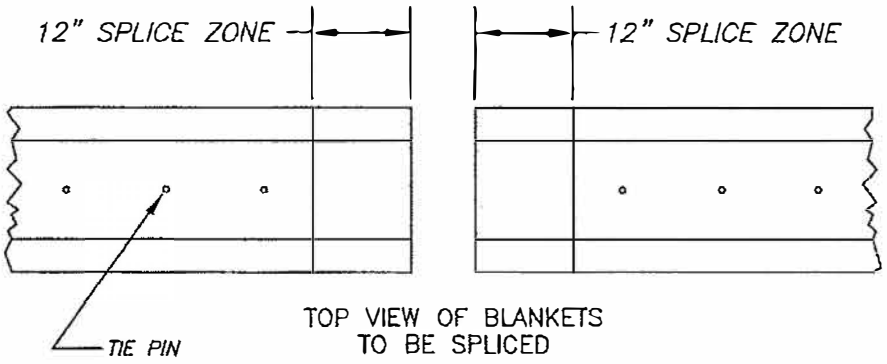


Fig. 1

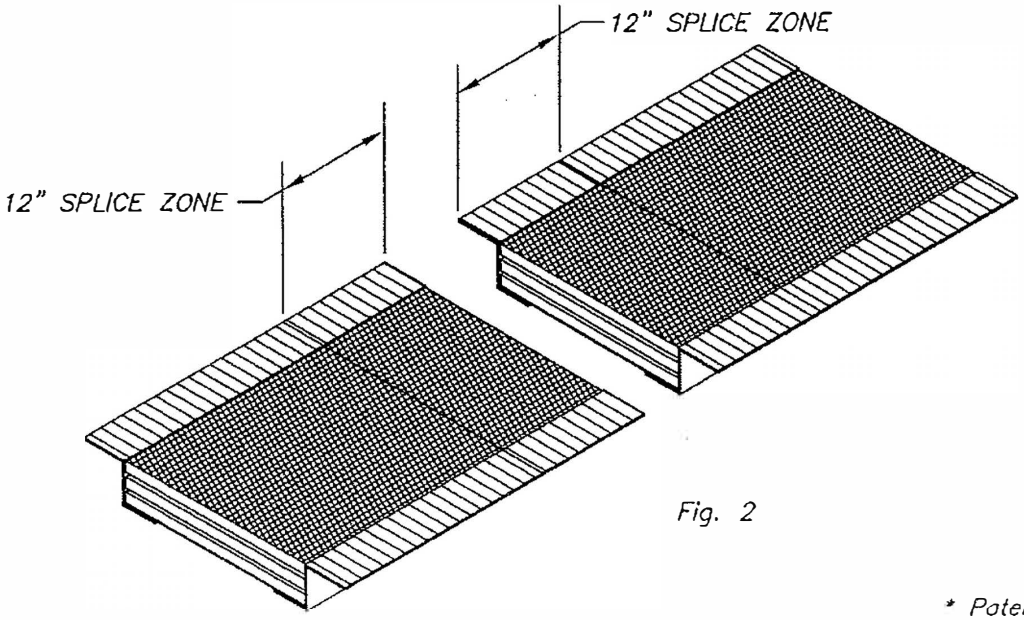


Fig. 2

* *Patent Pending*

Splicing Instructions:

Step 2

Make a "tongue and groove" type splice by cutting away every other layer of insulation in the splice zone on each blanket segment and save the scraps for future use. Make the opposite cuts on the other half of the splice. Trim the metallic septum layers the same length as the insulation adjacent to them. All cuts must be made square and true to ensure proper seal between opposite blanket segments.

(See Figs. 3 & 4)

Note: If flanges are pre-welded to the blanket segments, the flanges must be cut back in one of the splice zones. Overlapping galvanized flanges are not allowed.

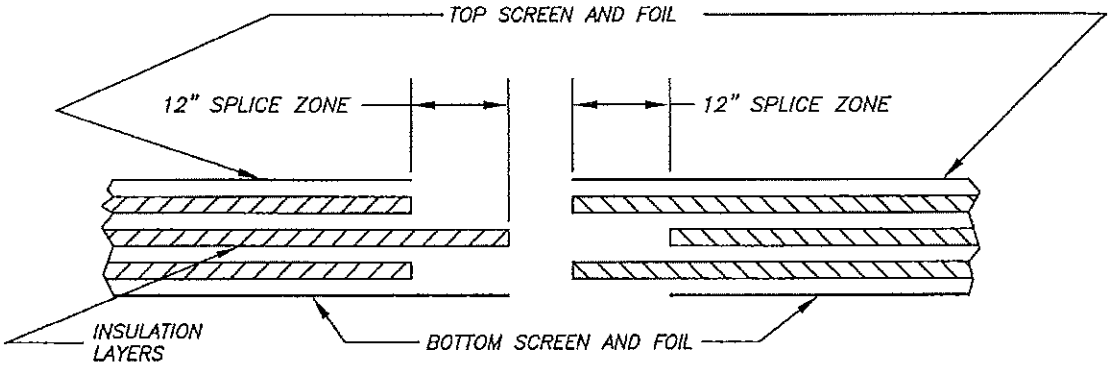


Fig. 3 Cross-Section of Splice Zone

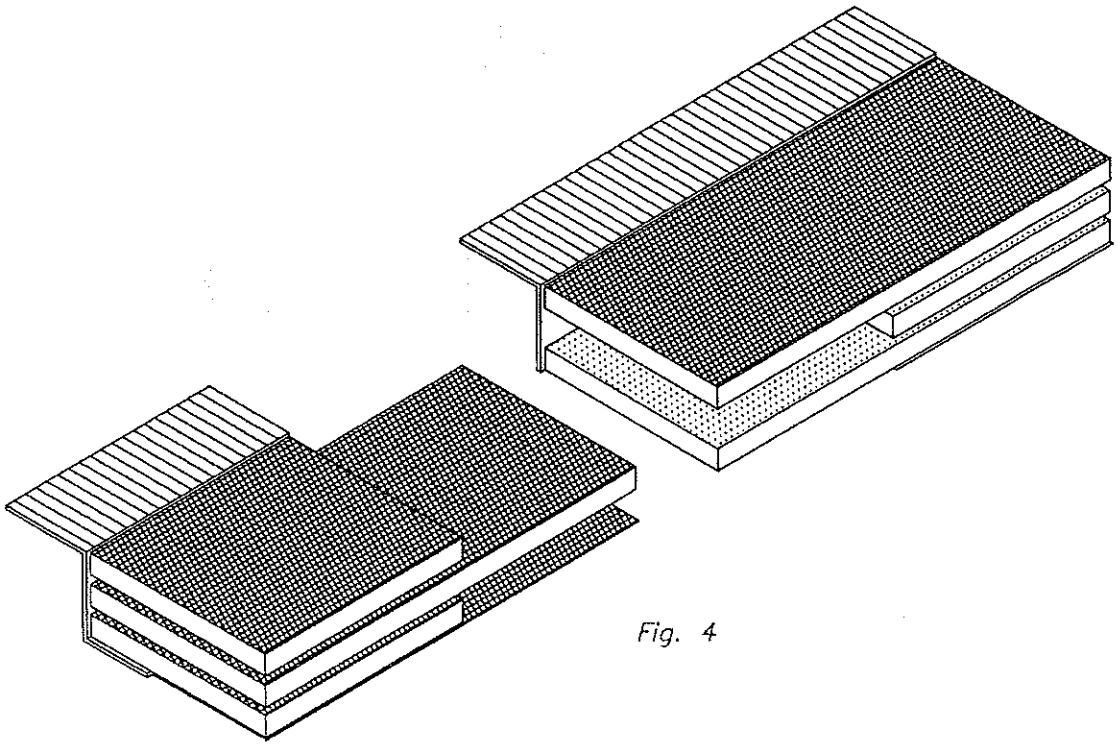


Fig. 4

Splicing Instructions:

Step 3
Assemble the two blanket segments, interweaving the insulation layers. (See Figs. 5 & 6)

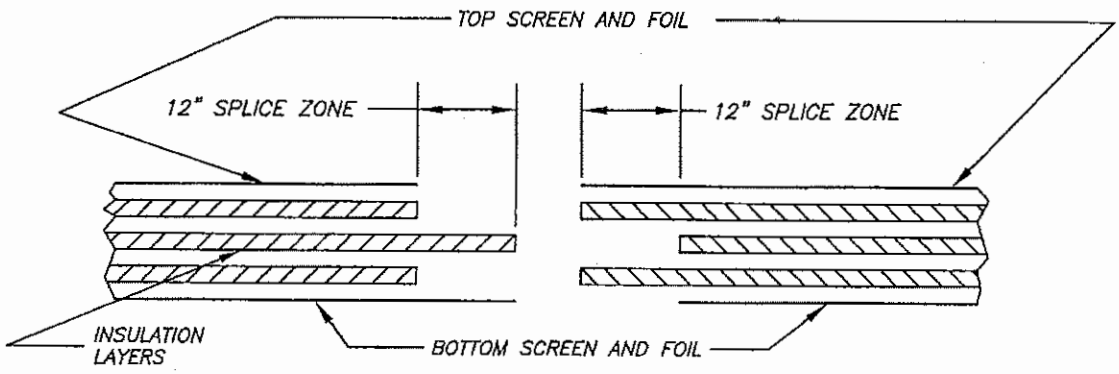


Fig. 5 Cross–Section of Splice Zone

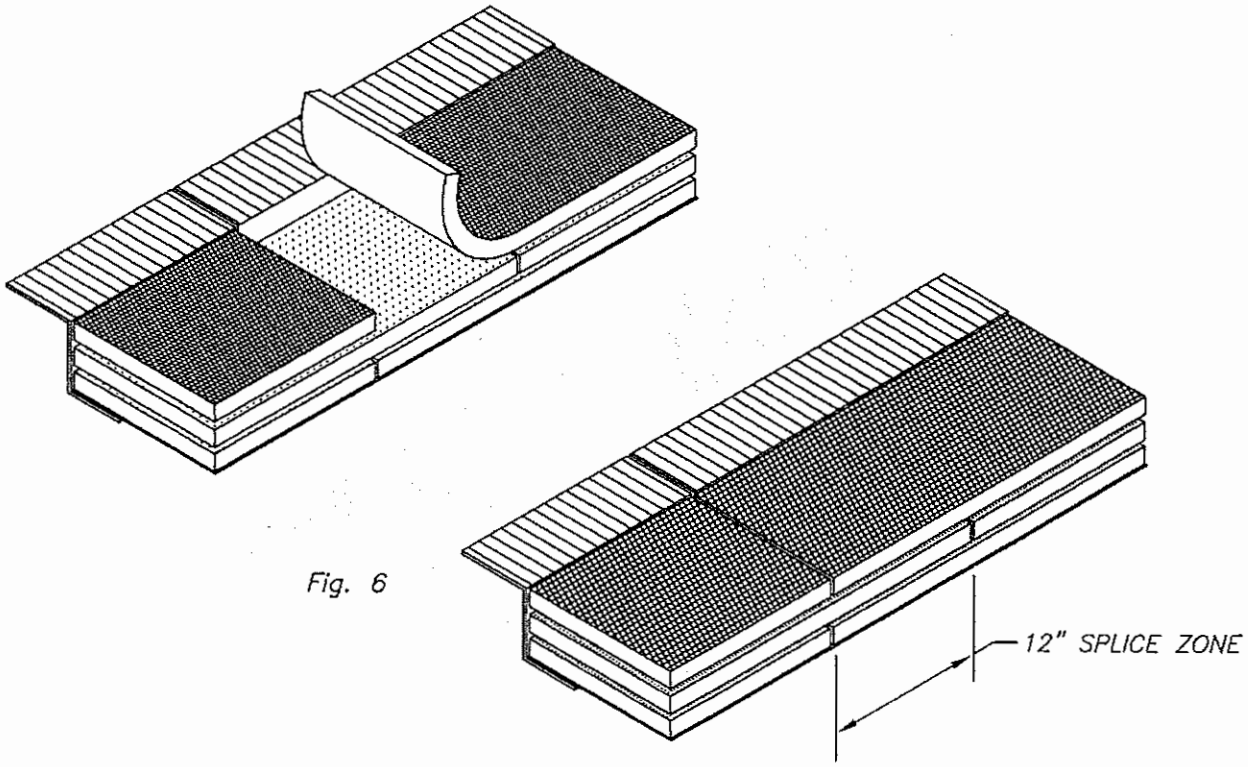


Fig. 6

Splicing Instructions:

Step 4
Pin the four corners of the splice zone together, through the insulation and the foils, but not through the outer screen layers. (See Figs. 7 & 8)
Place 6 equally spaced pins down the center of the splice zone, through the insulation, through all foil layers and both of the outer screen layers. (See Figs. 7 & 9)
Inspect the splice to ensure:

a. The splice does not have any gaps.
b. The splice is tied together with pins, down the center line, through the screen.
c. The four corner pins of the splice do not go through the screen.

After the splice has passed inspection, lay the scraps over the splice. These scraps were saved for future use during the completion of Step 2 and should now be laid in over the splice for added thermal protection.

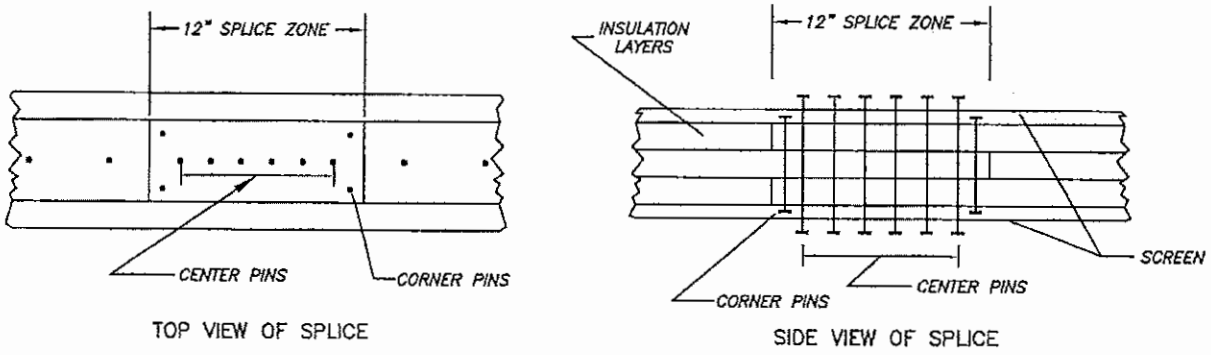


Fig. 7 Assembly of the Splice.

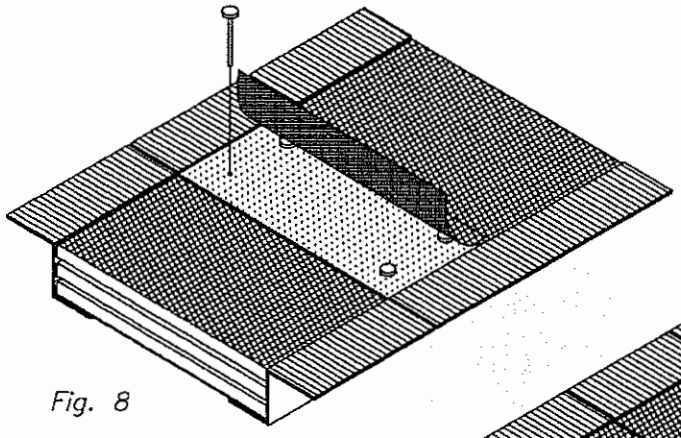


Fig. 8

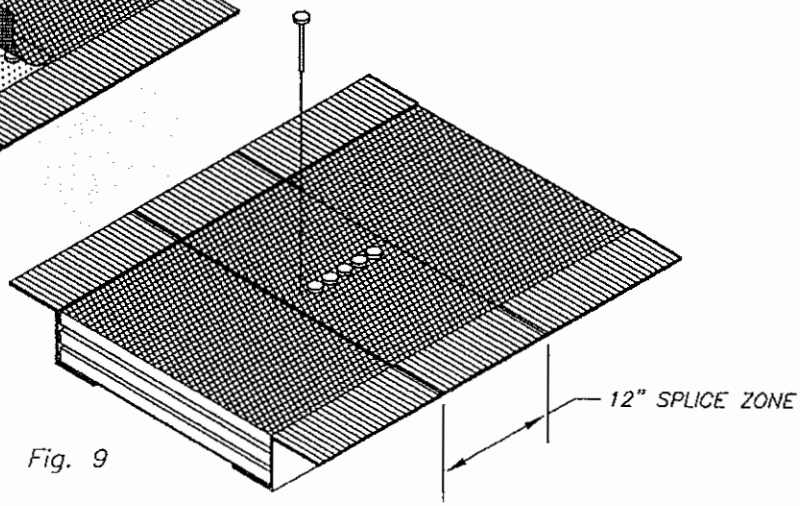
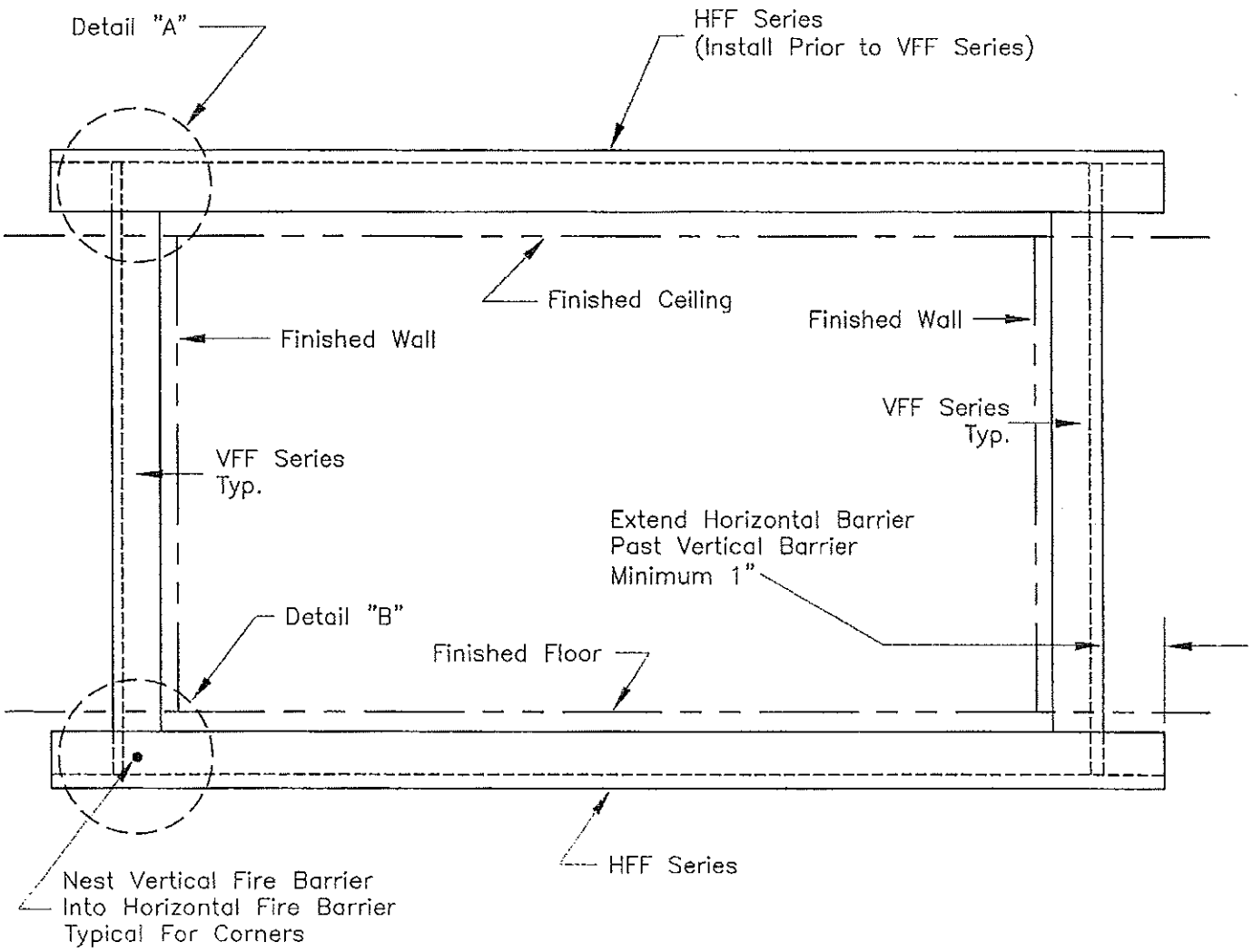


Fig. 9

Corridor Wrap Splicing Procedure

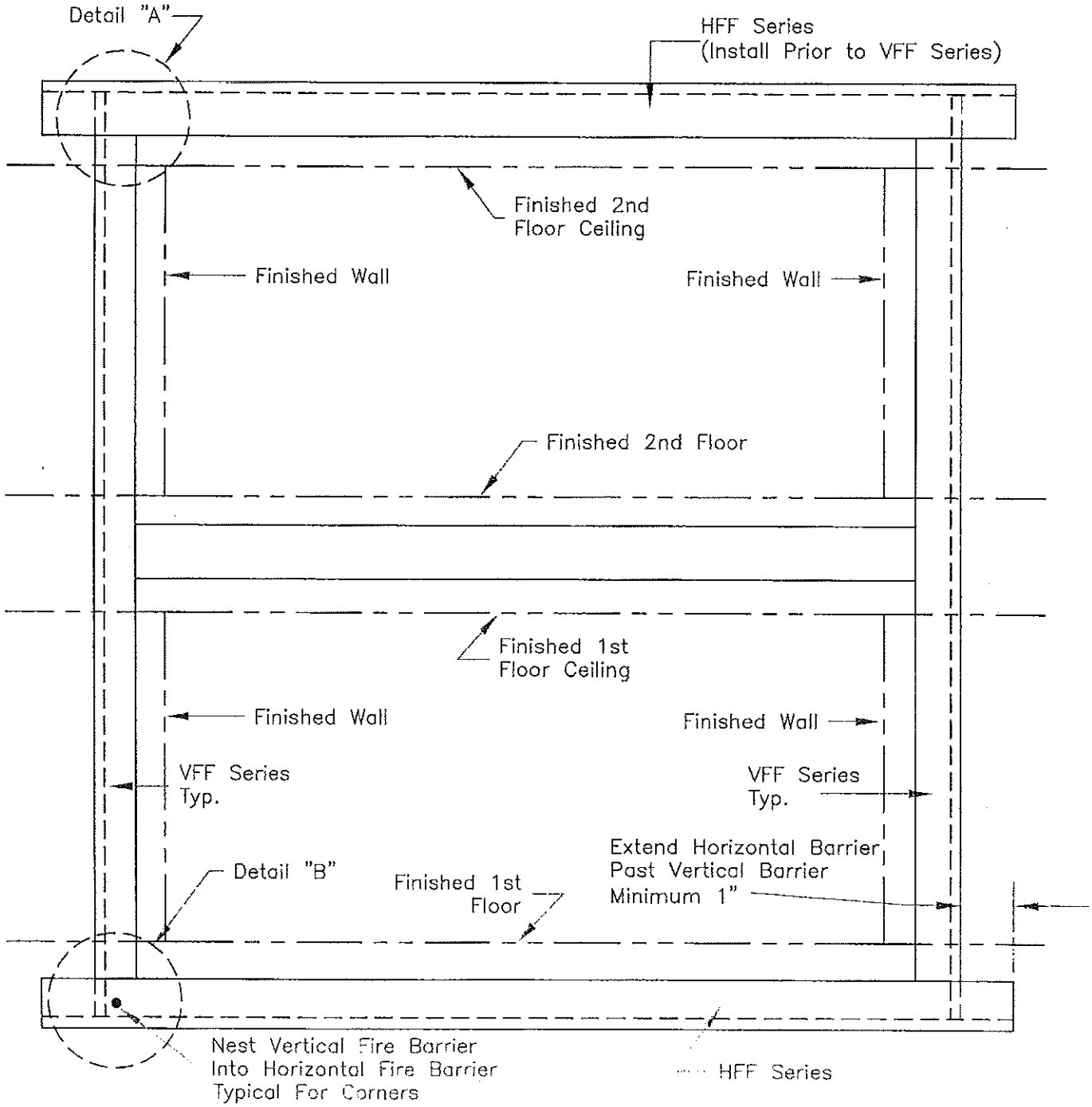
For Wabo® Fireflex Fire Barrier



* Patent Pending

Multi-Level Splicing Procedure

For Wabo®Fireflex Fire Barrier



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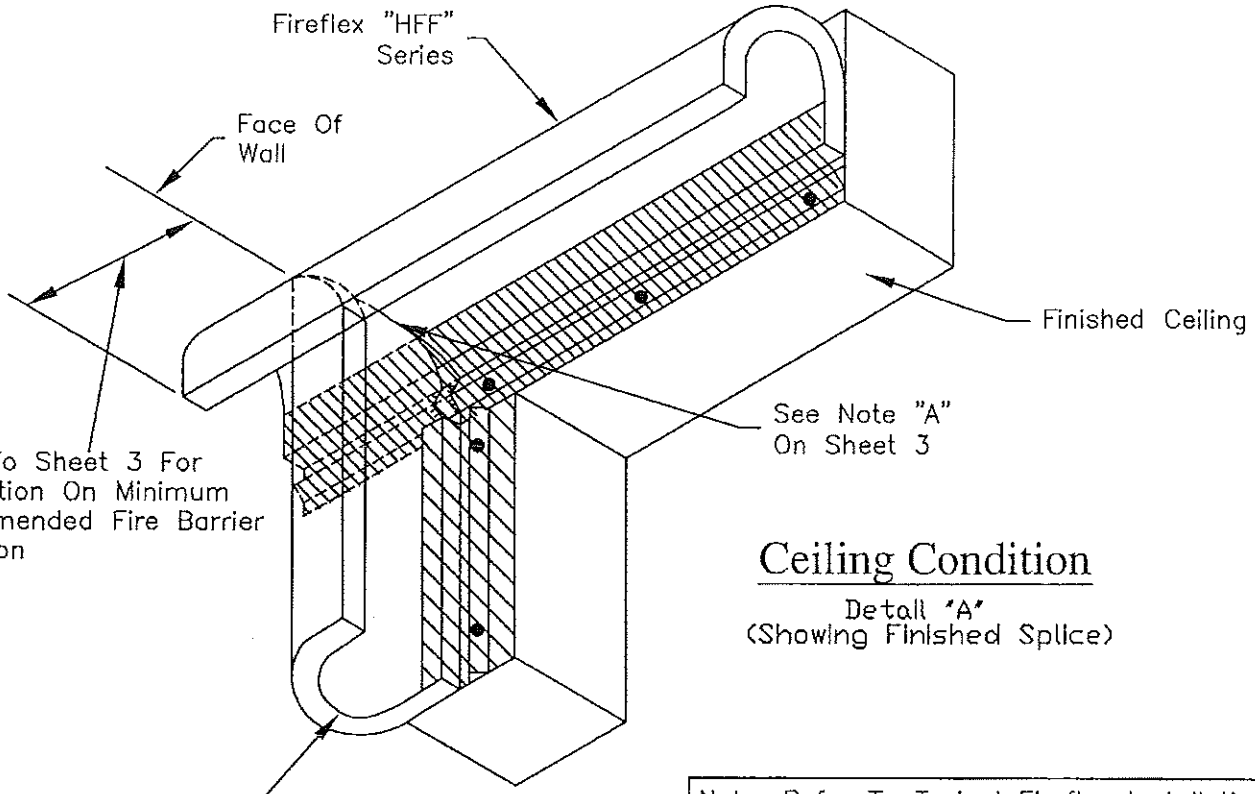
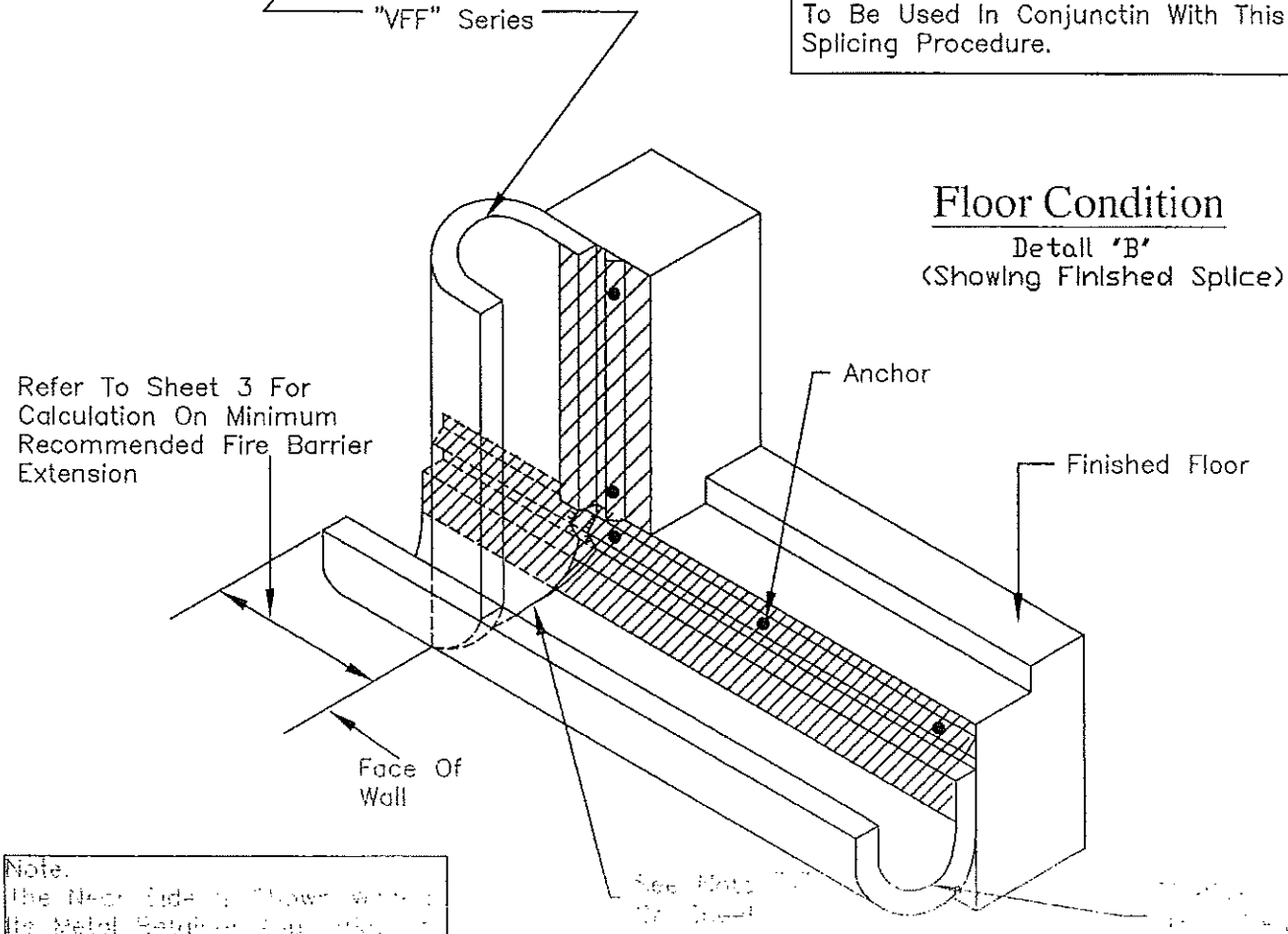


Ceiling Condition

Detail 'A'
(Showing Finished Splice)

Note: Refer To Typical Fireflex Installation Procedure Part No.
xxxxxx For 1" Thru 6" Sizes
xxxxxx For 8" Thru 20" Sizes
To Be Used In Conjunctin With This Splicing Procedure.

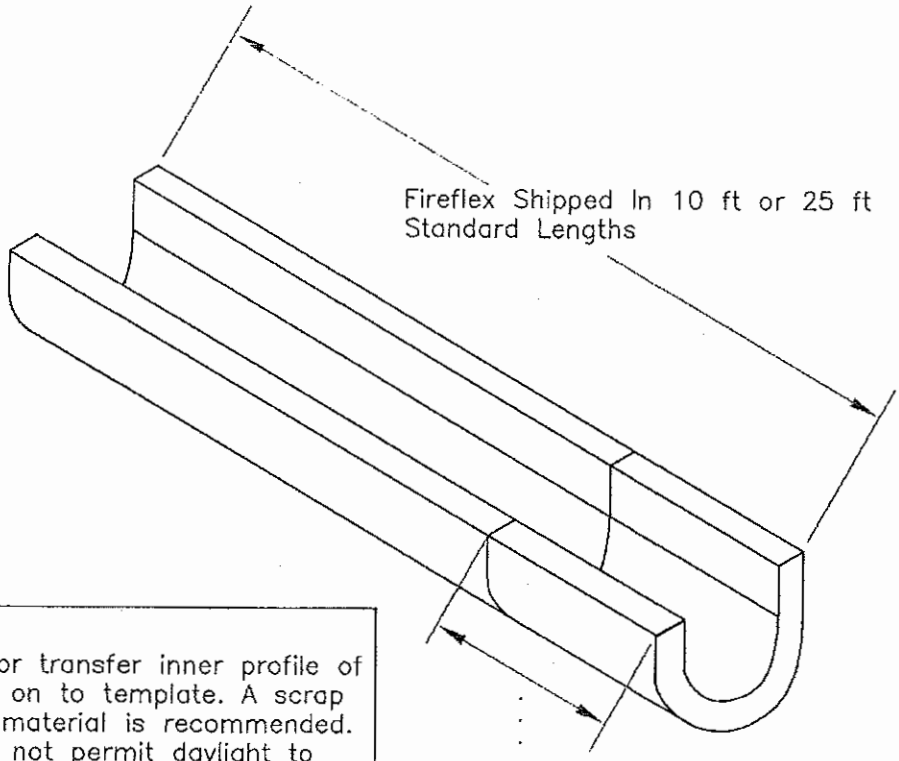


Floor Condition

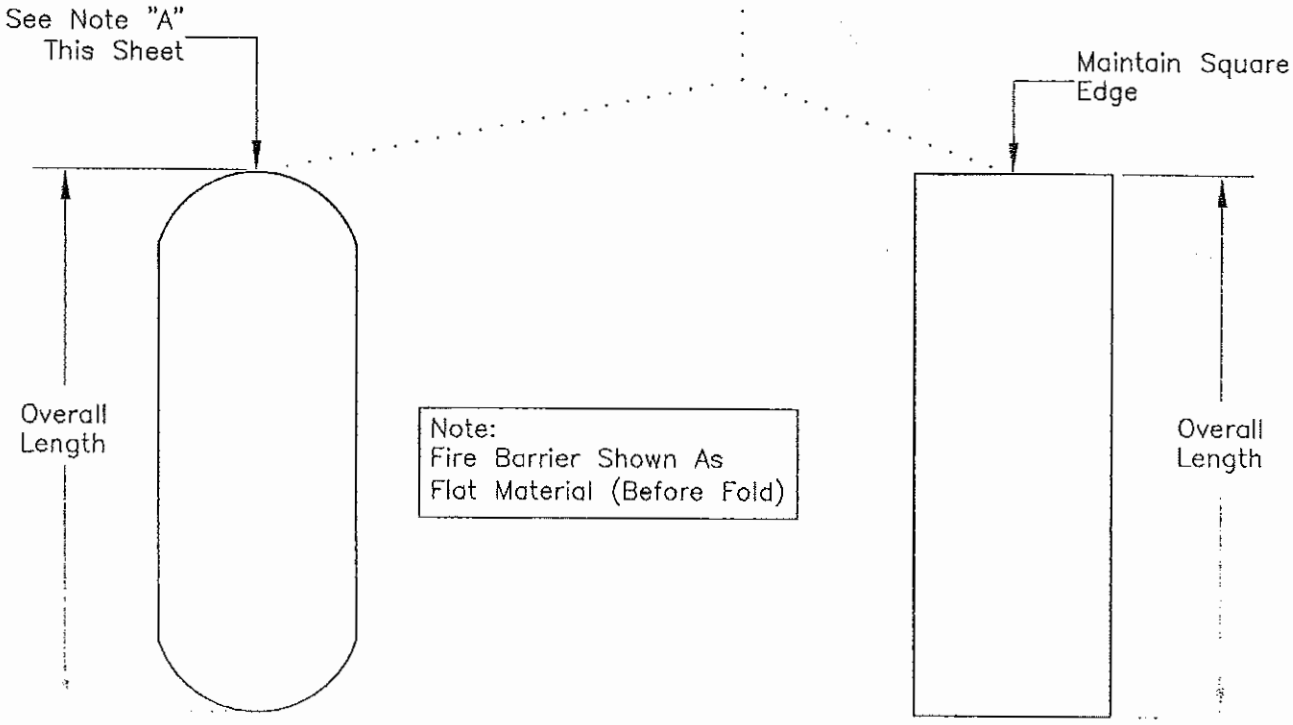
Detail 'B'
(Showing Finished Splice)

Note.

* Patent Pending



Note "A":
Through trial and error transfer inner profile of horizontal fire barrier on to template. A scrap piece of fire blanket material is recommended. Final template should not permit daylight to show through spliced areas. With template flat and unfolded transfer lines onto vertical fire barrier and cut through material carefully with sharp utility knife or quality tin snips if laminated with stainless steel foil. Fold and insert vertical fire barrier into final position. All material edges and interfaces are to be under compression with no visible daylight present. Close all voids with ceramic fiber felt material.



Note:
Fire Barrier Shown As
Flat Material (Before Fold)

Sika Emseal
25 Bridle Lane, Westborough, MA 01581 USA
Phone: 508-836-0280 / Fax 508-836-0281
www.emseal.com

Rev. 1.0 04-02-2024

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