Installation Procedure

Watson Bowman Acme Corp. 95 Pineview Drive, Amherst, NY 14228

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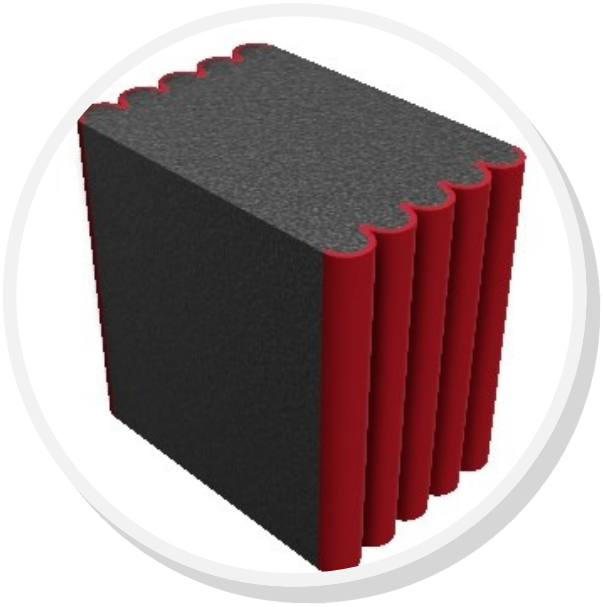

Wabo® FireShield
Model: “FSV”
Vertical Expansion Control Fire Barrier System

The following installation procedure is very important and must be fully understood prior to beginning any work. To ensure proper installation and performance of expansion joint system the following actions must be completed by the installing contractor. Failure to do so will affect product warranty.

1. Carefully read and understand installation procedure. Contact WBA's Technical Service Department at (800) 677-4922 for product assistance.
2. Inspect all shipments and materials for missing or damaged components and hardware. Contact Customer Service at (800) 677-4922 with WBA's order number and invoice for prompt assistance.
3. Inspect substrate or adjacent construction for acceptance before beginning work. Report unacceptable construction to the project manager for scheduled repair work.
4. Review WBA shop drawings for project specific detailed information if Engineering services were purchased at time of order.

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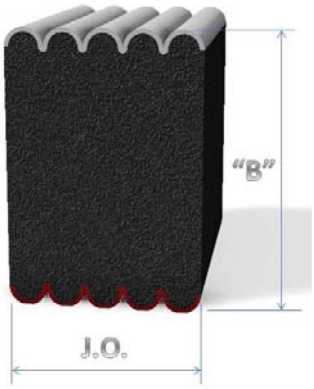
1. Recommended Tools & Storage

- Tape measure
- Sharp knife
- Miter Saw
- Painters Tape
- Mineral Spirits
- Clean Cloth
- Isopropyl Alcohol
- Duct tape
- Jiffy Mixer
- Margin Trowel
- 2 empty clean containers
- Caulking tool
- Wood wedges

⇒ Store material at minimum of 68°F (20°C) for a minimum of 24 hours prior to installation.

⇒ Store material in a dry enclosed area making sure materials are off the ground and out of direct sunlight. Shaded areas recommended. See sheet #3 for additional storage information.

2. Standard Components



Model Number	Joint Opening "A" Min. in	Min. mm	Max. in	Max. mm	Total Mov. in	Total Mov. mm	Size when ordering @ Mean Temperature A' @ Mid. Nominal Install J.O. in	A' @ Mid. Nominal Install J.O. mm	System Depth "B" in	System Depth "B" mm
13FSV	0.38	10	0.63	16	0.25	6	0.50	13	4.00	102
25FSV	0.75	19	1.25	32	0.50	13	1.00	25	4.00	102
40FSV	1.13	29	1.88	48	0.75	19	1.50	40	4.00	102
50FSV	1.50	38	2.50	64	1.00	25	2.00	50	4.00	102
65FSV	1.88	48	3.13	80	1.25	32	2.50	65	4.00	102
75FSV	2.25	57	3.75	95	1.50	38	3.00	76	4.00	102
100FSV	3.00	76	5.00	127	2.00	51	4.00	102	4.00	102
115FSV	3.38	86	5.63	143	2.25	57	4.50	114	4.00	102

Other intermediate sizes are available up to 4.5" wide, contact WBA for details. Contact your WBA Representative with your special design needs.

Standard Components (cont'd on next page)

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2. Standard Components (cont'd)

Two Part Epoxy Adhesive
Part A = WBA P/N: #80050
Part B = WBA P/N: #80051
(2 qt kits[A&B] = 40ft)

Flexible Sealant
Silicone 790 - #80080-92
(1 tube for 40ft)

Intumescent Caulk
Sil300 (for splicing) - #80070
(1 tube for 40ft)

3. Clean and Prepare Joint Substrate

Concrete:

- Prior to beginning work, installer shall inspect and verify that the joint is clean, sound and will provide an appropriate surface (depth) for the installation of the Wabo®FireShield. Installer shall verify that the joint is uniform and that any spalls are repaired using proper materials and methods. Joint faces must be parallel.
- All Concrete surfaces must be abrasive blasted or grounded to achieve proper surface preparation for epoxy adhesive otherwise failure of system will occur: CSP 2 or 3 Profile.
- Confirm joint substrate is dry, clean and ready for the epoxy adhesive.

Metal:

- Confirm that the metal is clean and ready for the epoxy adhesive. Solvent wipe the substrate just prior to applying the epoxy.
- Ensure that there is no rust or loose paint on metal substrates before the epoxy is applied.

Gypsum:

- See UL for listed fire rated wall assemblies that yield the endurance rating equal to the installed WaboFireShield expansion joint.

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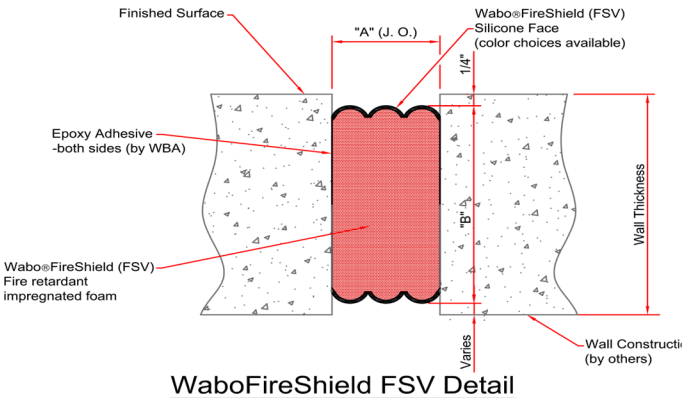
4. Measure Joint Width to Confirm Correct Size Material

1. Check the material for appropriate length, width and depth.
2. Material sizing is based on the mean temperature field-measured joint widths. Supplied material should be pre-compressed to a size smaller than the intended opening.
3. Verify width of material supplied against the mean joint width. Joint depth must allow for the installed material to be recessed 1/8”-1/4”.
4. Temperature can affect the expansion properties of the material during installation. Material will expand faster when hot, slower when cold.
5. Joints must be sized every 5-7ft (1.5-2.1m) to ensure gap opening is uniform and depth is sufficient for the supplied material.
6. Use miter saw to make any cuts to the Wabo®FireShield foam before removing the clear shrink packaging.

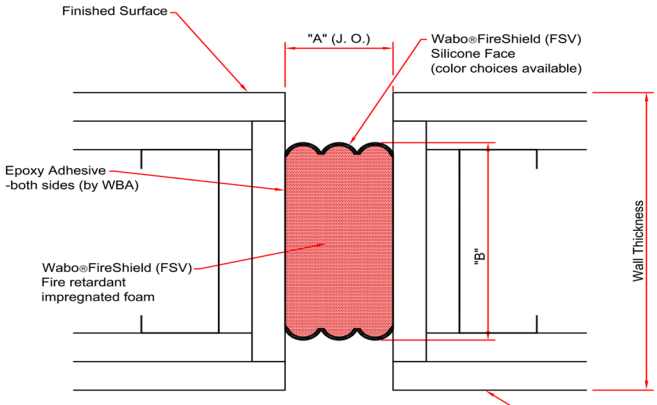
INSTALLATION TIP: In cold temperatures, store material in a heated area 24hrs prior to installation. In hot temperatures, store material out of direct sunlight and not in an enclosed storage container where temperatures may exceed 100°F (38°C).

WARNING: Do not remove the outer shrink wrapping from the Wabo®FireShield expansion joint system until you have read and understand the full instructions for a proper installation. Failure to follow these directions may degrade fire endurance performance or make the material unsuitable for installation.



WaboFireShield FSV Detail
Concrete to Concrete Condition
NOT TO SCALE

...llation guide for information on splices,
...ditional details concerning adjace...



WaboFireShield FSV Detail
Gypsum to Gypsum Condition
NOT TO SCALE

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5. Mask Joint and Mixing Epoxy Adhesive

1. Before installation of Wabo®FireShield, tape off edges of the substrate to prevent the epoxy from coming into contact with the exposed surface.

Mix Epoxy

1. Epoxy adhesive may be used in the >40°F (5°C) to 95°F (35°C) temperature range.
2. Transfer the contents of Part B (hardener) into the contents of Part A (base). Always add Part B to Part A in a 1:1 ratio.
3. Mix the material thoroughly with a low speed drill (300rpm) and mixing paddle. Scrape the walls and bottom of the container to ensure uniform and complete mixing with no streaks. Failure to scrape all the contents out of the containers will cause you not to get the required yield out of each unit.
4. Important: Do not thin the epoxy.

TIPS

1. Mix only the required amount of epoxy that will be used within 20-30 minutes to prevent the epoxy from curing prematurely.
2. Mix equal parts of A & B for at least 3 minutes until the material is a uniform gray color.
3. Epoxy will not cure when the temperature is below 40°F.
4. For every +17°F, the epoxy cures twice as fast.
5. For every –17°F, the epoxy twice as long to cure.

6. Apply Epoxy to Substrate, Unwrap Material

1. Mix only the required amount of epoxy that will be used within a 30 minute time frame to prevent the epoxy from curing prematurely.
2. WARNING: Epoxy will harden more quickly when left in the pot. Apply mixed epoxy onto the joint face as soon as possible.
3. IMPORTANT: The epoxy must still be uncured and tacky when installing the Fire Rated expansion joint sealant into the joint.
4. If the epoxy cures before installing the Wabo®FireShield Foam, new epoxy can be reapplied within 2 hours.
5. After 2 hours, the substrate must be abraded to eliminate the amine blush that occurs in the final cure.
6. IMPORTANT: While others are applying the epoxy to the joint faces, others must prepare the Wabo®FireShield Foam. The foam should be kept under compression in the original packaging until immediately needed.
7. Cut the plastic packing by cutting on the side with the hardboard and remove hardboard and inner liner. DO NOT cut along the silicone face.
8. After cutting the shrink wrap, work quickly to avoid the material expanding beyond a usable size. Do not pull or twist the material to avoid tearing the release liner.
9. Apply epoxy to ensure contact with full height of Wabo®FireShield expansion joint system profile.

- See Epoxy Detail - (cont'd on next page)

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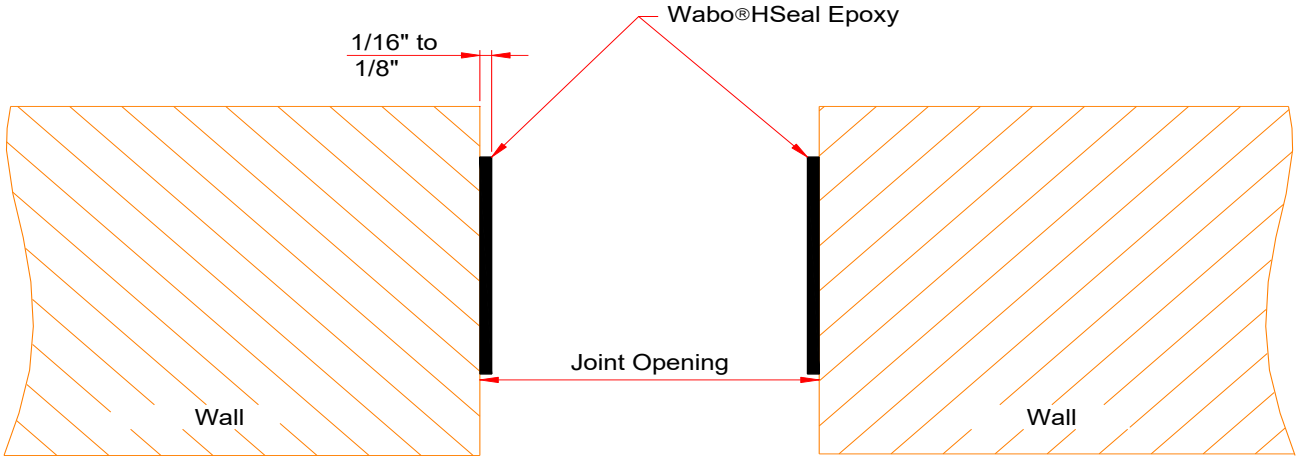
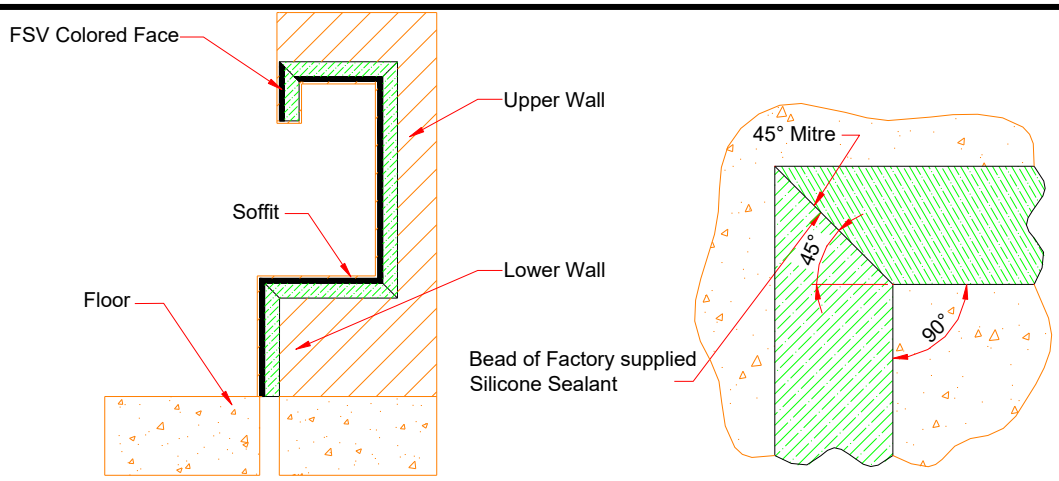
6. Apply Epoxy to Substrate, Unwrap Material (cont'd)



1. Apply a 1/16" - 1/8" coating of epoxy to both sides of the joint substrate using a 1" margin trowel (or gloved hand) to the depth of the foam. The epoxy must still be wet upon the installation of the Wabo®FireShield.



"L" Transitions

1. For "L" Transitions, cut the material at a 45 angle and for a "T" and "X" Transitions simply just "butt" the material together.

NOTE: At all spice locations, contractor shall apply a bead of the Silicone Sealant supplied to ensure a water tight splice connection.

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7. Wipe Release Agent off Silicone Facing

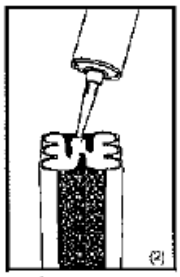
1. Silicone facing may be coated in the factory with a release agent. Prior to installation, this agent must be wiped off in order for the finish bead to adhere along the edge of the WaboFireShield Expansion joint.
2. To remove the release agent, lightly, quickly and thoroughly wipe the cured silicone facing with a lint free rag dampened with water.
3. Repeat cleaning for all WaboFireShield expansion joint sticks as they are installed.

8. Apply Silicone & Intumescent Caulk to Profile End Face & Install First Foam Length Into Joint Opening

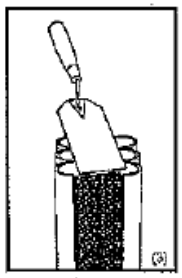
1. On the end of the first stick, apply the supplied liquid silicone to the exposed faces of the silicone face membrane (see examples below).
2. Apply the supplied intumescent sealant to the exposed face of the foam. (see examples below).
3. Spread the intumescent sealant over the face of the foam to an even 1/16” (2mm) thickness. (see examples below).
4. Starting at one end of the joint, install the foam into the joint. Ensure that the epoxy on the joint face has not cured.
5. Note: when material is expanded for a secure fit it will support its own weight in the joint. Insert material into joint, starting from one end. The material should fit securely and must be installed into the joint with adequate pressure to the fully installed depth of the seal.
6. When installed, foam must be recessed so that the silicone face membrane is slightly (1/8”-1/4”) recessed from the face of wall.

IMPORTANT: Intumescent caulk must be applied to top, bottom and all terminations and splices.

Silicone



Intumescent



Spread Intumescent

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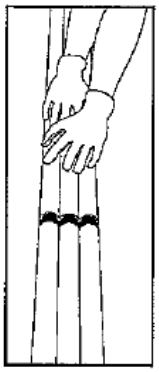
8. Install Next Length and Repeat Until Finished



1. Starting at the base of wall apply bedding compound to provide tight seal. If an exterior application refer to project shop drawings for base of wall termination detail for expansion joint.
2. Coat top end of first stick, and insert into joint opening ensuring proper alignment and contact with adjacent substrate and base of wall bedding compound.
3. Continue to coat top end of consecutive sticks working vertically being careful not to stretch the foam material.
4. Complete installation of each consecutive stick by taking the uncoated bottom end and applying it to the coated end of the previous stick. Ensure tight and positive contact by applying slight pressure. Ensure there are no voids at joint unions.
5. In cold temperature installations, provide as much ambient heat as possible around work area to accelerate expansion of the installed Wabo®FireShield foam. Tenting and heating the work area may be required in colder climates.
6. Remove excess silicone left on exposed surfaces or adjacent substrates for a clean and workmanlike installation. Be sure not to fill in the valleys on the face of the Wabo®FireShield foam as this will restrict movement

9. Silicone Sealant Bead at Substrates and Tool Excess Silicone.

1. Remove any excess epoxy from the face of material using a clean, dry rag.
2. Install a bead along the edge of the joint and tool the silicone firmly to bond with the substrates and cured silicone facing, and to ensure a proper bond and seamless appearance.
3. Where the WaboFireShield foam meets at butt joints, tool the excess silicone that squeezes out from the top and between the bellows.

IMPORTANT: Silicone left between the fold or valleys of the foam may restrict movement. Using a utility knife or caulking tool, gently remove the excess sealant and smoothly blend with a finish surface.

NOTE: Silicone sealant is only applied to the weather side of the foam. No sealant is required on the other side.

10. Coat Exposed Foam Ends.

IMPORTANT: Any WaboFireShield expansion joint stick that terminates with an exposed end and not terminating into another stick or structural termination, must be coated on the exposed foam end using the liquid silicone sealant provided. This is important to ensure the expansion joint is properly terminated.

11. Finish.

1. Remove any excess epoxy or silicone left on the surface of the material or substrate.
2. Remove tape from the joint surface.