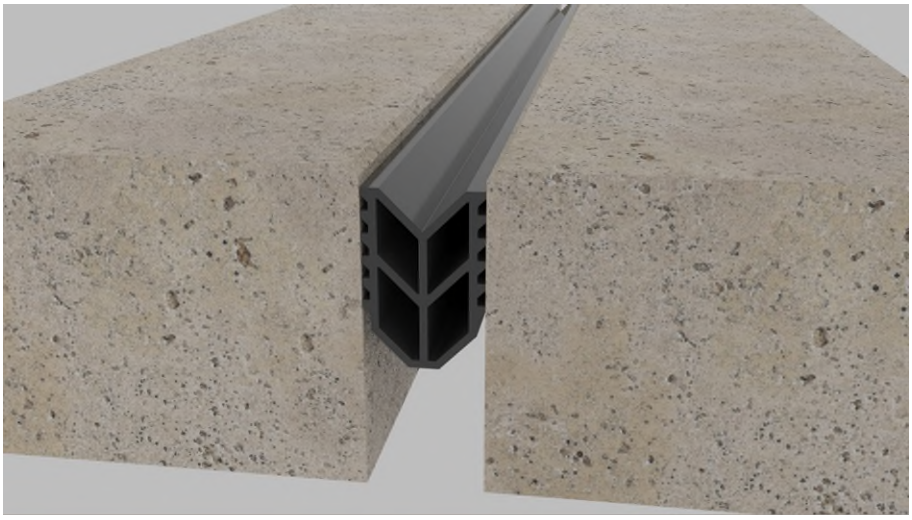
Installation Procedure



Epoxy Bonded Seal (EBS)

One-piece, extruded seal w/ integral epoxy channels Expansion Joint 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 typical cut sheet drawings for project specific detailed information.

WBA P/N #20501

Health & Safety

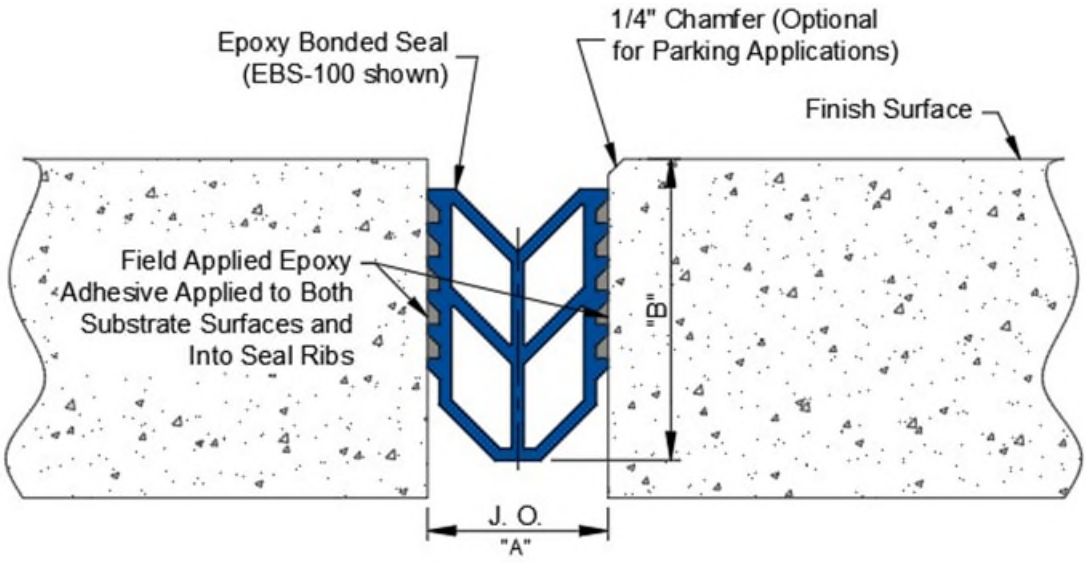
During the installation of any Watson Bowman Acme product, appropriate personal protective items should be worn at all times, including but not limited to the following:

- Proper work clothing
- Safety glasses
- Safety boots
- Gloves
- Hard hat

Local rules and regulations regarding safe work environments and health should be followed.

Product Components

The following components are required for the installation of this product:



Epoxy Bonded Seal (EBS)
(Refer to chart below for size and part number)

Model Number	WBA Part Number	Nominal Relaxed Seal Width	Joint Opening "A" @ Install (Midrange Temp)	Minimum Joint Opening @ Install	Min. Joint Opening "A"	Max Joint Opening "A"	Total Movement Rating (MR)	Seal Depth "B"
EBS-100	2211	1 ½" (38)	1" (25)	7/8" (22)	½" (13)	2-1/2" (64)	2" (51)	2-1/2" (64)
EBS-200	2213	3" (76)	2" (51)	1-3/8" (35)	1" (25)	4" (102)	3" (76)	2-3/4" (70)

(Minimum and Maximum values reflect values after movement occurs.)

Pre-Installation Notes

The work shall consist of furnishing and installing the Epoxy Bonded Seal in accordance with the details shown on the plans. Placement of the Epoxy Bonded Seal shall consist of proper surface preparations, material and application of materials. Epoxy adhesives will be shipped in manufacturer's labeled containers. Seals shall be cut to length on jobsite where required. Miter cut or bend seal (depending on size) in the field to conform to directional changes unless otherwise recommended by manufacturer.

Joint Preparation

- Store material at a minimum of 50° F (10° C) for a minimum of 24 hours prior to installation, regardless of temperature at location of installlation. Store materials in a dry, enclosed area. Make sure materials are off the ground and out of direct sunlight.

- Forming materials should be carefully removed to avoid edge spalling of the concrete. Edge spalling conditions should be repaired and allowed to properly cure prior to installation of the Epoxy Bonded Seal. Repairs shall be made as directed by the Engineer.

- The substrate sidewalls must be sound and free of all contaminants such as grease, oil, form release agents, etc. prior to installation of Epoxy Bonded Seal.

- The preferred method of surface preparation to produce laitance-free, roughened sidewalls is abrasive blasting. Where this is not permitted, disc grinding should be employed. Ensure a coarse disc is used to produce an abraded surface. The gap openings should be blown out with clean air to remove dust. Vacuum with HEPA rated equipment to remove dust if required by OSHA or another authority.

- Installation must be performed in joint gap openings with sound, clean and dry substrates. Any loose portion of substrate at the gap must be removed and the substrate properly repaired as directed by the engineer.

Preparation of Concrete - New or Aged Concrete

- The concrete substrate must be clean (free of dirt, coatings, rust, grease, oil and other contaminants), sound and durable. New concrete must be cured (minimum of 14 days) and all latinance removed. Suitable preparation methods include sandblasting, chipping and scarification.

    - Durable Concrete - Sound and durable concrete should have a cap pull-off strength that meets or exceeds ACI 503R, Appendix A.

    - Unsound Concrete – Loose, contaminated, weak, spalled, deteriorated and/or delaminated concrete must be removed to sound concrete and repaired. Prior to placement, any spalling, voids or structural cracking at the joint interface must be repaired. Follow International Concrete Repair Institute (ICRI) and American Concrete Institute (ACI) concrete repair and maintenance guidelines.

Preparation of Steel – New or Existing

- Steel surfaces must be abrasive blasted immediately prior to installing the Epoxy Bonded Seal. This is a requirement in new or existing construction. All oxidation must be removed and "white steel" revealed (SP-10 or "nearly white"). Where abrasive blasting is not permitted, steel surfaces will be aggressively disc-ground to roughen and abrade the surface to achieve the "white steel" condition.

- Stainless steel surfaces require aggressive grinding and/or blasting to remove the smooth, glassy surface to achieve SP-10 or "nearly white" for acceptable installations.

- On galvanized steel surfaces, galvanizing material should have good adhesion to steel. Steel must be solvent wiped with Denatured Alcohol using clean white cotton rags just prior to installation.

For Best Results

- Protect the work area with appropriate plastic sheeting. Utilize plastic sheeting on the underside of the joint opening to protect from objects, dripping liquids, or other materials from falling through the opening to lower levels.

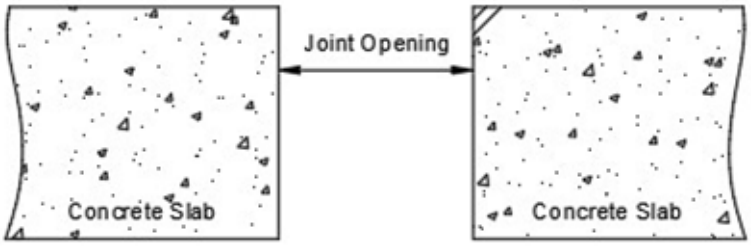
- Do not allow any of the epoxy components to freeze prior to installation. Store all epoxy components out of direct sunlight in a clean, dry location between 50°F (10°C) & 95°F (35°C).

- Epoxy shelf life is 12 months.

- Proper application is the responsibility of the user. Field visits by Watson Bowman Acme personnel are for the purposes of making technical recommendations only.

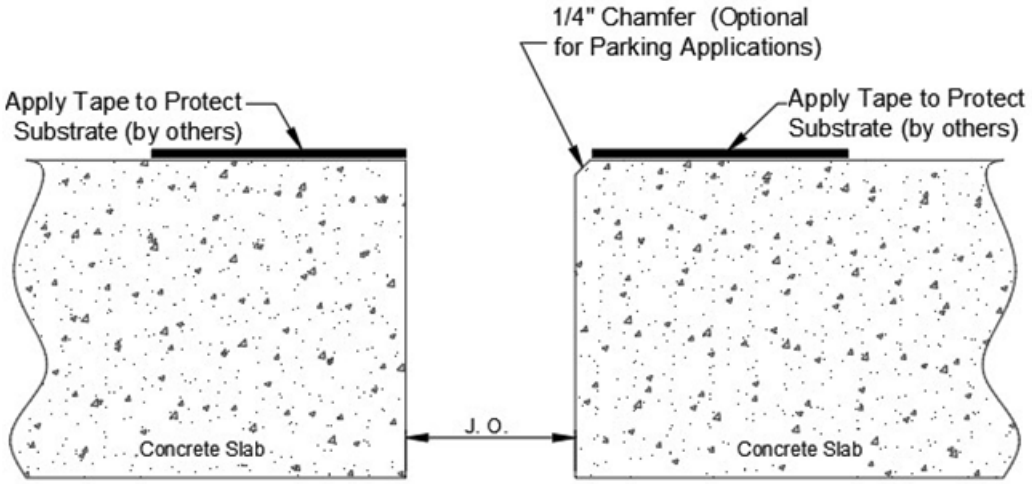
Installation

1 Prior to beginning work, installer shall inspect for proper joint interface and ensure that joint opening has enough depth to accept the Epoxy Bonded Seal. Verify joint opening as called for on chart. Accomodations for adjacent construction temperature shall be considered when sizing the seal. Deficiencies in joint opening must be corrected prior to beginning work, such as spalled edges and protruding objects to ensure a clean, smooth, dry surface for installation of the Epoxy Bonded Seal. Recommended Concrete Surface Profile is 2-4.



Model	Joint Opening @ Midrange Temp 68°F (20°C)	Nominal Relaxed Seal Width
EBS-100	1” (25)	1-1/2” (38)
EBS-200	2” (51)	3” (76)

2 Before installation of the Epoxy Bonded Seal, tape off edges of the substrate to prevent the epoxy from coming into contact with the exposed surface.



2a Prior to installing seal, solvent wipe the seal with denatured alcohol using clean white cotton rags (ribbed area on sides only).

3. Mixing of Adhesive

3A Stir each component separately. Mix 1-part A with 1-part B equally by volume (1:1 mix ratio) in a clean mixing container. Mix the epoxy using a slow speed drill with a mixing paddle attachment. Carefully scrape the sides and bottom of the pail during mixing with a paint stirring stick. Blend for 3 minutes. Mix only the amount of material that can be used within the pot life (pot life @ 77°F/ 25°C = 45 minutes). Please note large batches of epoxy will cure faster than small batches. Mixed epoxy will cure much faster in hot weather than in cold weather.

4. Seal Installation with Adhesive

4A Apply a uniform coating - approximately 1/8" (3 mm) thick to both substrate surfaces receiving the seal and to the material itself. Use a trowel to spread the adhesive onto the substrate & seal. Unused quantity can be resealed and used at a later date, if stored properly. Continue applying the adhesive on both substrate surfaces by applying it in the direction ahead of the seal material, but not more than 20 feet (6 m) ahead. Next, apply the adhesive to both sides of the seal material (ribbed area only). Apply enough to coat and fill the grooves, approximately 1/8" (3 mm) thick.

4B Install the coated seal material where the adhesive was initially applied on the substrate. The seal material should be installed approximately ¼" (6mm) below the joint opening edge and should not protrude above the joint opening edge. Continue installation of the seal in the same direction as the adhesive was initially applied. NOTE: Seal must be installed under compression.

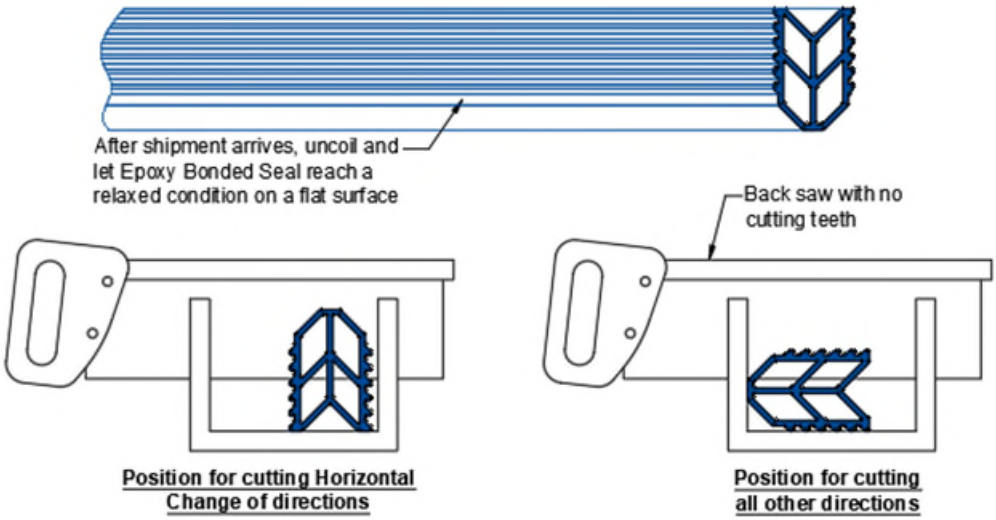
4C With gloved hands, compress the material and with the help of a blunt probe push down into the joint until it is recessed approximately 1/4" (6mm) below the surface. Using only denatured alcohol or isopropyl alcohol clean all excess epoxy from the edges of the joint and from the top of the seal as soon as it is pushed into the desired depth. DO NOT allow the adhesive to cure before removing it. Use care not to use excess pressure while cleaning the seal as the seal could inadvertently be pushed lower or out of the joint opening. DO NOT allow any adhesive near any area to be cut until the weld is completed, or the weld will not hold (i.e., a clean area is needed for adhesive during splice process). Stop adhesive approximately 12" (300mm) short from end of seal if doing Phase Work.

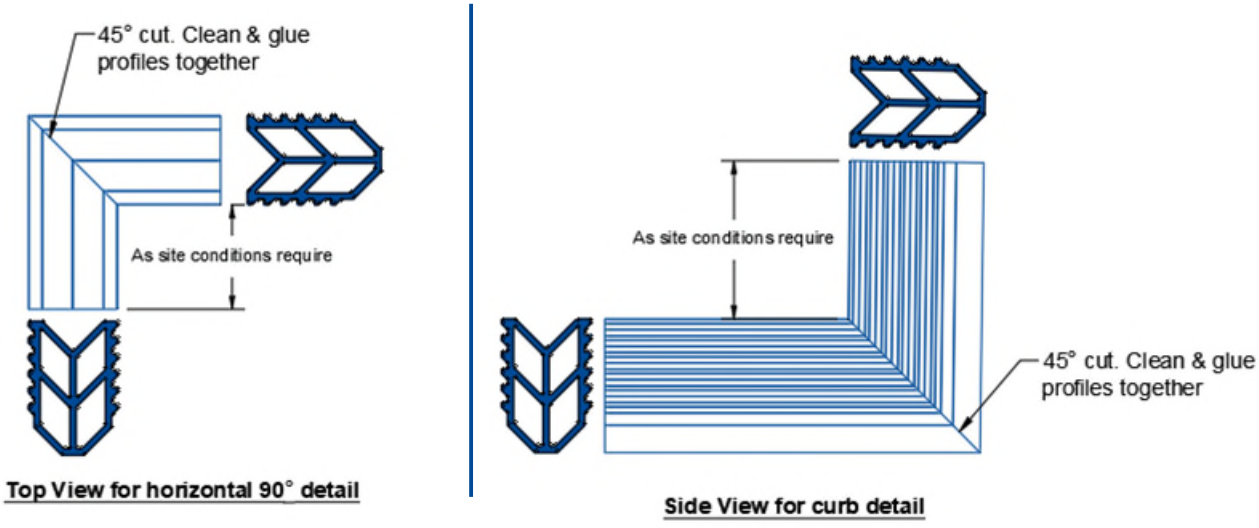
4D Allow the adhesive to set approximately 20 minutes @75° F (24°C) before traffic is allowed onto the joint, slightly longer times are required during cooler weather. When a continuous joint cannot be finished, the adhesive on the substrate and on the seal material must end evenly. Install the seal past the epoxied surfaces at least 12 inches (150-300mm) dry or without epoxy. This can be pulled out later to be re-glued and the installation continued.

4E When installation is finished, completely wipe up any excess epoxy, and immediately pull up tape, etc. Failure to do so could cause system to not perform as designed.

5 All starting and ending pieces must be square to the termination point.
Allow seal to be uncoiled and relaxed before cutting seal into desired lengths or for butt splicing.

NOTE: Manufacturer recommends to grind off all teeth of the back saw and squirt some denatured alcohol at cutting location(s) to ensure the cleanest and straightest cut.
Use #241 glue if required (optional add-on) on end profiles for butt splices. Profile not required to be prepped by Drummel Tool, but must be clean and smooth for proper splice applications. At upturn locations, “caps” should be glued to the end of each open profile (material not included).





6 For transitions other than a Butt Splice, please contact Watson Bowman Acme for optional Factory Fabricated Transitions.