

Installation Instructions

Joint System: AR/BR Series

Note: Seals are delivered in either cardboard reels or large wooden cable reels. Store and protect cardboard reels from moisture to keep the cardboard from deteriorating. Store large wooden cable reels with a tarpaulin to keep the seals clean and damage free. Lubricant and adhesive should be kept from freezing.

A. Preparation of the Work Area

1. Make sure the width and depth of the joint face are 90° to the slab's surface.
2. If spalling occurs due to saw cutting, repair it prior to seal installation.
3. Correct any horizontal deviation greater than 1/16" from one slab to the next before seal installation. If this isn't corrected, the installation machines (if used) may experience difficulty in installing the seal.
4. To ensure successful installation, clean the blockout of all contaminants and impurities, such as water repellents, laitance, surface dirt/rust and old sealants, by sandblasting or wire brushing before installation.

B. Placement of Membrane Seal

5. **STRETCHING THE SEAL DURING INSTALLATION IS THE MAJOR CAUSE OF PREMATURE SEAL FAILURE.** Inspect for stretch very early in the sealing process. To inspect for stretch, loosely lay a piece of seal the entire length of the joint opening. Then, install the seal in the joint. Any excess amount of seal remaining at the end of the joint is due to stretch. The length of this excess is measured and a stretch percentage is calculated by dividing the excess length by the original length:

$$\text{stretch percentage} = \frac{\text{excess length}}{\text{original length}}$$

Stretch greater than 3% is unacceptable. Some projects specify stretch of 1% or less.

6. For large jobs, use an installation machine. The machine should install the seal at the specified depth, with a maximum of 3% stretch and without cutting, nicking or twisting the seal.
7. If installing the seal by hand, take extra care to ensure seal is not damaged, e.g. punctures or excess stretching caused by hand tools.
8. Match the correct seal to the joint width and application from the chart below. When choosing a compression seal, consider:
 - Compression seals are designed to be in a minimum of 15% compression at all times. Therefore, it is not advisable to choose a seal that is the same width as the expansion joint opening in its nominal state.
 - The selection chart below lists the minimum and maximum widths of the joint opening in its nominal state. The nominal or design width of the joint opening (before compression or expansion occurs) should fall as close as possible to the midpoint of this range.

C. Lubricant / Adhesives

9. The lubricant or adhesive must contain an adequate solids percentage, be uniform, contain no lumps, have the correct viscosity and have a drying time between eight and twenty minutes. Also, make sure the lubricant or adhesive contains an MSDS sheet for user safety. Refer to chart below for coverages.
10. The lubricant or adhesive will begin thickening at 32°F. When installing at temperatures below 32°F, store the lubricant or adhesive in a heated warehouse until needed.

Selection Chart:

Application	System	Nominal Seal Width US	Nominal Seal Width mm	Minimum Joint Width US	Minimum Joint Width mm	Maximum Joint Width US	Maximum Joint Width mm	H1 Seal Height US	H1 Seal Height mm	H2 Seal Depth US	H2 Seal Depth mm
Architectural Compression Seals	AR-200	2"	51	1 ⁵ / ₁₆ "	24	1 ¹¹ / ₁₆ "	43	1 ³ / ₄ "	44	1 ⁵ / ₁₆ "	49
	AR-225	2 ¹ / ₄ "	57	1"	25	1 ⁷ / ₈ "	48	1 ³ / ₄ "	44	1 ⁵ / ₁₆ "	49
	AR-250	2 ¹ / ₂ "	64	1 ¹ / ₈ "	28	2 ¹ / ₈ "	54	2"	51	2 ³ / ₁₆ "	56
	AR-300	3"	76	1 ⁷ / ₁₆ "	37	2 ¹ / ₂ "	64	2 ¹ / ₈ "	54	2 ⁷ / ₁₆ "	62
	AR-400	4"	102	1 ⁵ / ₈ "	41	3 ³ / ₈ "	86	2 ³ / ₄ "	70	2 ¹⁵ / ₁₆ "	75
Bridge Deck Compression Seals	AR-500	5"	127	2"	51	4 ¹ / ₄ "	108	3 ¹ / ₄ "	83	3 ⁷ / ₁₆ "	87
	BR-175	1 ³ / ₄ "	44	3 ¹ / ₄ "	19	1 ¹ / ₂ "	38	1 ³ / ₄ "	44	1 ⁵ / ₁₆ "	49
	BR-200	2"	51	7 ¹ / ₈ "	22	1 ³ / ₄ "	44	2"	51	2 ³ / ₁₆ "	56
	BR-225	2 ¹ / ₄ "	57	1"	25	1 ⁷ / ₈ "	48	2 ¹ / ₂ "	64	2 ¹ / ₁₆ "	68
	BR-250	2 ¹ / ₂ "	64	1 ¹ / ₈ "	28	2 ¹ / ₈ "	54	2 ¹ / ₂ "	64	2 ¹ / ₁₆ "	68
	BR-300	3"	76	1 ³ / ₈ "	35	2 ¹ / ₂ "	64	3 ¹ / ₄ "	83	3 ⁷ / ₁₆ "	87
	BR-350	3 ¹ / ₂ "	89	1 ⁵ / ₈ "	41	3"	76	3 ¹ / ₂ "	89	3 ¹ / ₁₆ "	94
	BR-400	4"	102	1 ³ / ₄ "	44	3 ³ / ₈ "	86	4"	102	4 ³ / ₁₆ "	106
	BR-450	4 ¹ / ₂ "	114	2"	51	3 ³ / ₄ "	95	4 ¹ / ₂ "	114	4 ¹ / ₁₆ "	119

Adhesive Chart:

System #	Adh. Coverage
AR-200	250 LF/GAL
AR-225	200 LF/GAL
AR-250	175 LF/GAL
AR-300	150 LF/GAL
AR-400	100 LF/GAL
AR-500	75 LF/GAL
BR-175	275 LF/GAL
BR-200	250 LF/GAL
BR-225	200 LF/GAL
BR-250	175 LF/GAL
BR-300	150 LF/GAL
BR-350	125 LF/GAL
BR-400	100 LF/GAL
BR-450	75 LF/GAL

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D. Installation For Longitudinal Seals

11. First, apply adhesive. Adhesive can be applied to inside joint walls, seal or both.

Figure 1

12. Compress seal and insert into expansion joint opening.
13. Make sure seal is installed at proper depth. If the seal is too deep, the joint may gather incompressible material (such as nails) and spall the concrete. If the seal is too shallow, the seal may receive abrasive wear from tire contact or be pulled out by snowplows.

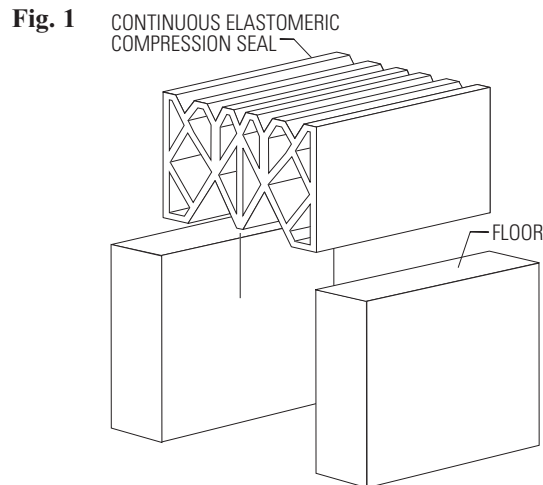


Figure 2

Therefore, it is recommended that the seal be recessed 3/16" from the surface of the slab +/- 1/16".

Fig. 2

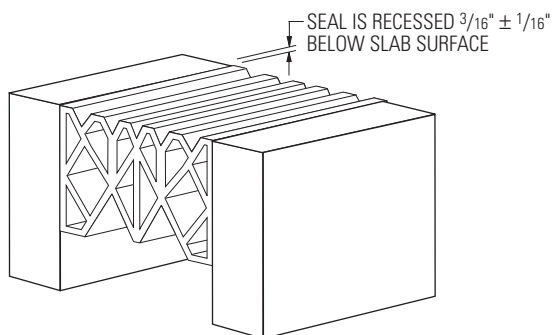
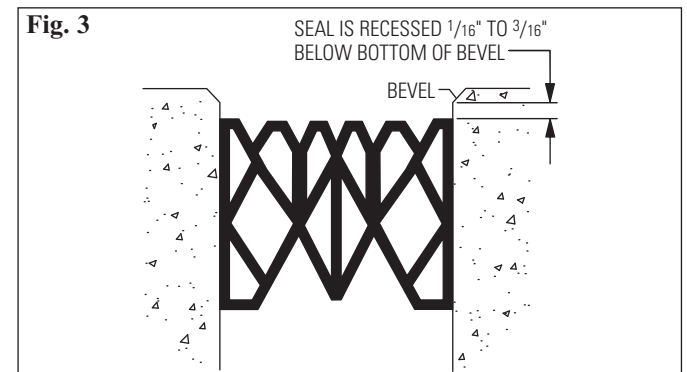


Figure 3 (inset drawing)

NOTE: When joint edges are beveled, the top of the seal should be 1/16" to 3/16" below the bottom edge of the bevel.



For Intersecting Seals

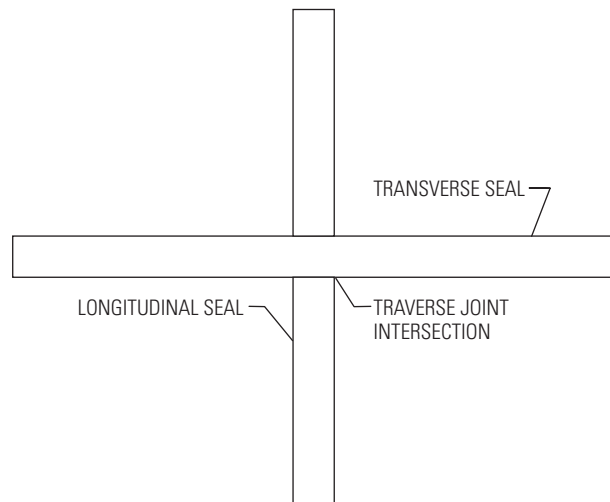
14. After approximately 20 minutes when the glue dries, cut the longitudinal seal with a sharp blade at the traverse joint intersection.

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Figure 4

15. Then, install the traverse joint seal through the cut in the longitudinal seal to form a tight intersection. The traverse seal will exert outward force on the end cut of the longitudinal seal to form a tight intersection.



E. Inspection

16. **STRETCHING THE SEAL DURING INSTALLATION IS THE MAJOR CAUSE OF PREMATURE SEAL FAILURE.** Refer to step 5 for instructions on inspecting seal stretch.
17. Make sure seal is installed at proper depth. Refer to step 13 for instructions on inspecting seal depth.
18. Visually inspect for twists, cuts, pop-ups and separation of butt joints. A rule of thumb is any situation that causes the top outer edge of the seal from making contact with the face of the joint is unacceptable and must be repaired.