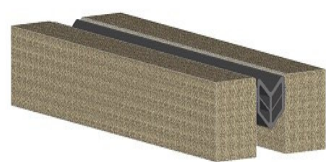


TENSION/COMPRESSION JOINT SYSTEMS

J-Series



Description

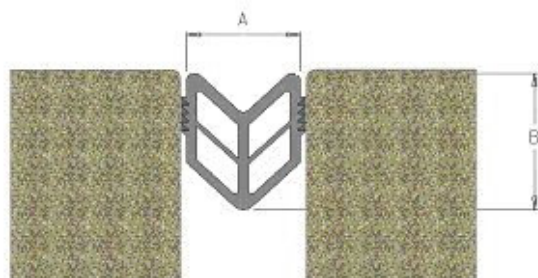
The J-Series system includes an extruded elastomeric profile and a high-strength, two-part epoxy based structural adhesive. When inserted into a

contraction or expansion joint in a substrate, the system will seal the opening from the intrusion of water and debris. The unique design allows the seal to work under compression or tension.

High-strength adhesive is used with the J-Series profiles to compete specifically with those seals that claim movement in the tension cycle. The standard J-Series seal can be used for airport and bridge applications, where normal horizontal and vertical movements are a design parameter. The J-Series is specifically designed for applications requiring +/-50% movement to accommodate thermal change and 25% longitudinal movement in skewed conditions.

The larger size seals (greater than 2 inches) are installed using a vacuum pump to depressurize and collapse the lower internal chambers, thereby facilitating ease of insertion. After insertion, the vacuum is released and the air pressure returns to normal. The stiffer webs of the seal provide constant compression on the adhesive as it cures.

The internal web structure is an improvement over similar seals that rely on the inflation to make the bond adhere. Reliance on air pressure to make a bond indicates the seal profile is not a true compression seal. Some contractors have difficulty controlling the 20-psi requirement. Excessive air pressure can squeeze the adhesive out of the gap and move the profile out of place.



Physical Properties

The J-Series system consists of two items: an elastomeric seal profile and a high-strength adhesive.

The seal profile is available in several specific designs. The seal material is a high-quality, polychloroprene (neoprene) rubber, meeting ASTM D3542 with physical requirements as shown in Table 1.

The adhesive is a high-strength, two-part, modified epoxy-based material. It is 100% reactive and will develop a strong bond in approximately twenty-four hours at room temperature. For typical physical properties, see Table 2.

TABLE 1 – Physical Properties of the Neoprene Seal

Property	ASTM Test Method	Requirement
Tensile strength, min.	D412	2000 psi
Elongation at break, min.	D412	250%
Hardness, Type A durometer	D2240	55 +/-5
Oven aging, 70h @ 212° F	D573	
Tensile strength, max.		20% loss
Elongation, max.		20% loss
Hardness, Type A duro.		0 to +10 pts
Oil swell, ASTM Oil No. 3		
70h @ 212° F		
Weight change, max.	D471	45%
Ozone resistance, 20% strain	D1149	
70 hours aging, D573, 3 ppm in air		No cracks

TABLE 2 – Physical Properties of the High Strength Adhesive

Property	Requirement
Adhesive type	2-Component thixotropic paste
Tensile strength	4500 psi
Axial compression	8775 psi
Solids Hardness	5 MOHS
Pot life	45 minutes at 68°F
Flash point	> 200°F (both components)
Non-volatile content	100% Reactive
Initial cure @ 70° F	24 hours

PRODUCT	MIN. WIDTH IN (MM) -50%	MID-RANGE IN (MM)	MAX. WIDTH IN (MM) +50%	TOTAL MOVEMENT IN (MM) 100%	DIM. A: IN (MM)	DIM. B: IN (MM)
J-100	0.50" (12.7)	1.00" (25.4)	1.50" (38.1)	1.00" (25.4)	1.00" (25.4)	1.19" (30.2)
J-150	0.75" (19.0)	1.50" (38.1)	2.25" (57.2)	1.50" (38.1)	1.50" (38.1)	1.88" (47.8)
J-200	1.00" (25.4)	2.00" (50.8)	3.00" (76.2)	2.00" (50.8)	2.00" (50.8)	2.44" (62.0)
J-250	1.25" (31.8)	2.50" (63.5)	3.75" (95.3)	2.50" (63.5)	2.50" (62.0)	2.94" (74.7)
J-300	1.50" (38.1)	3.00" (76.2)	4.50" (114.3)	3.00" (76.2)	3.00" (76.2)	3.94" (100.1)
J-400	2.00" (50.8)	4.00" (101.6)	6.00" (152.4)	4.00" (101.6)	4.00" (101.6)	4.50" (114.3)
J-500	2.50" (63.5)	5.00" (127.0)	7.50" (190.5)	5.00" (127.0)	5.00" (127.0)	5.50" (139.7)