

X.J.S.[®] Expansion Joint System

Two Times the Technology To Meet Your Expansion Joint Requirements

The X.J.S.^{®1} Expansion Joint System² is a revolutionary new concept in expansion joint construction and rehabilitation, combining a tough, wear-resistant polymer for expansion joint nosing and a rapid-curing, high movement silicone for joint sealing. The system, which is cold applied, is specifically designed to provide a watertight, chemical-resistant seal to accommodate high traffic loads and remain pliable in cold and warm temperatures. Also, the silicone sealant in the system will bond to itself. This is ideal for maintenance applications where only one traffic lane can be sealed at a time, but where a continuous seal is required when the adjacent lanes are eventually sealed.

The rapid curing ability of the X.J.S. System makes it an excellent choice for highways, bridges, airfields, parking decks and other high volume traffic areas that require short closure times. Non-rush hour installation time is possible, helping avoid traffic backups and costly overtime. These traffic areas may be opened shortly after complete installation of the X.J.S. System.

The X.J.S. System is also a cost-effective, easily repairable method for reconstruction of failed expansion joints, at a fraction of the cost of conventional joint repair alternatives.

System Components

Silspec^{®1} 900 Polymer Nosing System (PNS): A two-component, rapid curing liquid polymer. Due to its relatively low viscosity, Silspec 900 PNS is easy to mix and place. It cures to a dense, semiflexible polymer that

is resistant to chemicals, weather, abrasion and impact. The polymer is mixed with Silspec[®] Blended Aggregate. This combination forms a polymer-based mortar for joint repair or nosing. Silspec 900 PNS can also be cured in the “neat” form as a combination sealant/primer for the silicone seal and as a protective coating for steel.

Dow Corning[®] 902 RCS Joint Sealant: A two-component, easy-to-install, 100 percent silicone rubber sealant designed to seal expansion joints. The rapid curing ability of Dow Corning 902 RCS Joint Sealant allows it to accommodate typical daily thermal movements and/or

differential joint movement caused by traffic. Since it is self-leveling, Dow Corning 902 RCS Joint Sealant can conform to irregularly shaped joints without tooling.

Applications³

Bridges: The X.J.S. System is ideally suited for bridge repair and maintenance work. The system is an excellent choice for repairs on armor joints, “T” joints, elastomeric expansion devices, asphalt overlays and strip seals. See Figures 1 through 5.

On bridges with either asphalt or concrete overlay joints that have closed beyond functional limits, the X.J.S. System enables the overlay joint

Figure 1: Armor Joint Repair

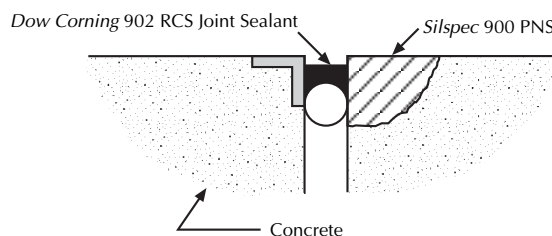
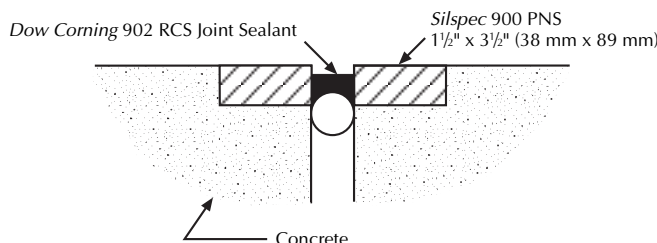


Figure 2: New Construction “T” Joint Repair or Elastomeric Joint Repair



¹X.J.S. and Silspec are registered trademarks of Silicone Specialties Inc.

²U.S. and foreign patents.

³Refer to The X.J.S.[®] Expansion Joint System Installation Guide, Form No. 62-316, for complete installation instructions.

to be resized to the proper dimensions (see Figure 5).

The ultra-low modulus of *Dow Corning 902 RCS Joint Sealant* also allows the system to accommodate the high degree of movement associated with expansion joints on bridges.

Highways and Airfields: Because of its rapid cure ability, the *X.J.S. System* is ideally suited for highway bridges, airfields and other structures where closure time is an important factor.

Safe Handling Information

Product safety information required for safe use is not included in this document. Before handling, read product and Material Safety Data Sheets (MSDS) and container labels for safe use, physical and health hazard information.

The Material Safety Data Sheet for *Dow Corning 902 RCS Joint Sealant* is available from your *Dow Corning* representative, or distributor, or from *Dow Corning Customer Service*, (517) 496-6000.

The Material Safety Data Sheet for *Silspec 900* is available from your *Silicone Specialties Inc.* representative or from *Silicone Specialties Inc.*, (918) 587-5567.

Warranty Information

Dow Corning and *Silicone Specialties Inc.* (SSI) believe that the information in this publication is an accurate description of the typical characteristics and/or uses of the product or products, but it is your responsibility to thoroughly test the product in your specific application to determine its performance, efficacy and safety. Suggestions of uses should not be taken as inducements to infringe any particular patent.

Unless *Dow Corning* provides you with a specific written warranty of

Figure 3: Asphalt Overlays

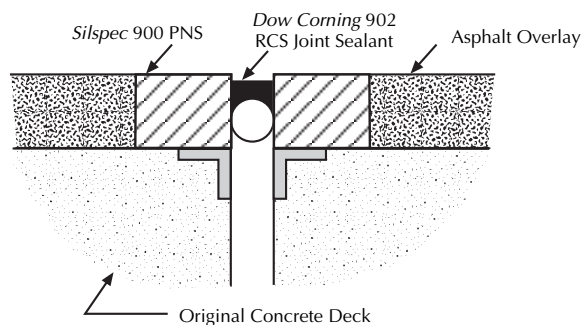


Figure 4: Strip-Seal Repair

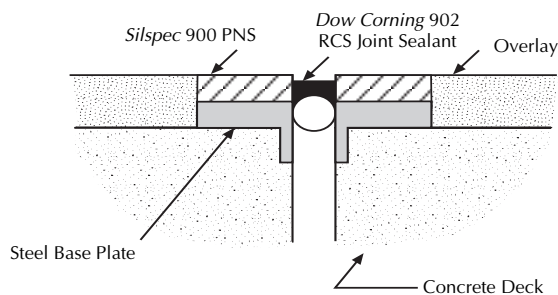
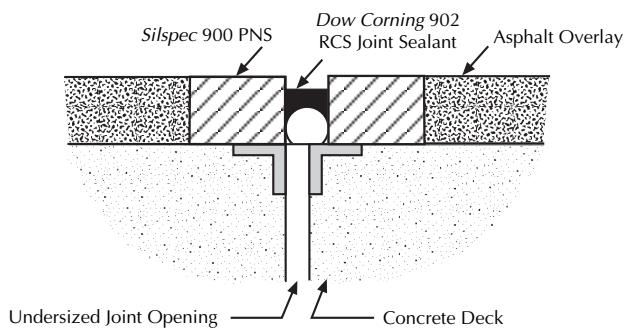


Figure 5: Resized Joint (Asphalt Overlay or Concrete Overlay)



Typical Properties of Dow Corning 902 RCS Joint Sealant
These values are not intended for use in preparing specifications.

Test Method	Test	Value¹
As Supplied		
MIL-2-8802	Extrusion Rate, g/min	200-550
ASTM D 1475	Specific Gravity	1.25-1.35
As Installed – At 25°C (77°F) and 50 percent RH		
CTM ² 0098	Skin-Over Time, minutes, maximum	20
CTM 0208	Non-Volatile Content, percent minimum	93
ASTM D 3583 ^{1,3}	Joint Elongation, percent minimum	600
ASTM D 3583	Joint Modulus at 100 percent, psi (kPa)	3-12 (21-83)
	Joint Cure Rate, percent of total cure, hours	
	50 percent	4-6
	75 percent	24
	100 percent	48-160
Performance		
ASTM C 719	Movement, 10 cycles at +100/-50 percent, joints 1-3" (25.4-76.2 mm) wide	Pass
ASTM C 793	Accelerated Weathering at 5,000 hours	No cracks, blisters or bond loss

Specification Writers: Please obtain a copy of the Dow Corning Sales Specification for this product, and use it as a basis for your specifications. It may be obtained from any Dow Corning Sales Office, or from Dow Corning Customer Service in Midland, MI. Call (517) 496-6000.

¹Joint size of 1/2" x 1/2" x 2" (12.7 mm x 12.7 mm x 50.8 mm), except as noted.

²CTMs (Corporate Test Methods) correspond to standard ASTM tests in most instances. Copies of CTMs are available upon request.

³Section 14 Modified.

Typical Properties of Silspec 900 PNS
These values are not intended for use in preparing specifications.

Note: *Silspec* 900 PNS is comprised of two components: a base and a reactor. Both must be combined prior to use in the proper ratio.

Test Method	Test	Value
Combined Liquid Components¹ (Base and Reactor)		
	Mixing Ratio, by volume or weight	1:1
ASTM D 2393	Viscosity, Brookfield Model LVT, Spindle No. 2, 30 rpm, 25±2°C (75±2°F), Poises	9-20
	Color	Black
AASHTO M-200-73	Gel Time, minutes	25-50
ASTM D 638 ²	Elongation, percent	40-55
ASTM D 538 ²	Tensile Strength, minimum, psi (kPa)	900 (6200)
ASTM D 2240	Hardness, Shore D, at 25°C (77°F)	45-75
Cured Mortar³ Properties with Aggregate		
ASTM C 579	Compressive Strength, Method B, 24 hr, minimum, psi (kPa)	2500 (17,200)
ASTM C 882	Bond Shear Strength, minimum, psi (kPa)	700 (4800)
ASTM C 501	Abrasion Resistance, Taber H-22 Wear Index, maximum	1.0
Special	Compressive Stress, minimum, psi (kPa)	350 (2400)
Special	Resilience, minimum, percent	70
	Aggregate	Well graded flint, supplied by manufacturer

Specification Writers: Please obtain a copy of the sales specification for this product, and use it as a basis for your specifications. It may be obtained from Dow Corning or SSI.

¹Test Method Type 1, molded specimens, 0.25" (6.4 mm) thickness.

²Type A certification on liquid components furnished on each lot.

³Type B certification on cured mortar on one randomly selected lot per year.

fitness for a particular use, Dow Corning's sole warranty is that *Dow Corning* 902 RCS Joint Sealant, as supplied, will meet Dow Corning's then current sales specifications. DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR USE. Your exclusive remedy and Dow Corning's sole liability for breach of warranty is limited to refund of the purchase price or replacement of any product shown to be other than as warranted, and Dow Corning expressly disclaims any liability for incidental or consequential damages.

Unless SSI provides you with a specific written warranty of fitness for a particular use, SSI's sole warranty is that *Silspec* 900 Polymer Nosing System (PNS), as supplied, will meet SSI's then current sales specifications. SSI SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR USE. Your exclusive remedy and SSI's sole liability for breach of warranty is limited to refund of the purchase price or replacement of any product shown to be other than as warranted, and SSI expressly disclaims any liability for incidental or consequential damages.

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