SILSPEC® 900 POLYMER NOSING SYSTEM

**DESCRIPTION**
SILSPEC® 900 POLYMER NOSING SYSTEM (PNS) is a two-component rapid curing liquid polymer that cures to a dense, semi-flexible, weather, abrasion and impact resistant polymer mortar for the construction or repair of expansion and construction joints on bridge and parking decks. The combined polymer is mixed with SILSPEC® 900 Blended Aggregate to form a polymer based mortar for nosing or joint repair. It can also be cured in the "neat" form as a combination sealant primer and protective coating for steel.

SILSPEC® 900 PNS is 100% non-volatile. Due to its relatively low viscosity, SILSPEC® 900 PNS is easy to mix and place. SILSPEC® 900 PNS is one of the more versatile and economical polymer systems available.

**USES**
- SILSPEC® 900 PNS, upon curing, develops a tough, chemical, wear, and impact resistant surface for use in areas exposed to foot or vehicular traffic. (Contact SSI for procedures for obtaining skid resistance.)
- It is ideally suited for use as binder for mortar preparations.
- When combined with SILSPEC® AGGREGATE, it can be used to repair damaged expansion and construction joints in bridges, roadway pavements, and parking structures. It can also be used for small repairs.
- Due to its low water absorption, it provides excellent protection against freeze-thaw cycles.
- When used in conjunction with Dow Corning 902 RCS Silicone Sealant it provides an alternative for strip seals, compression seals, and elastomeric devices in new bridge deck expansion joints; and results in substantially improved performance at lower cost.

**TYPICAL PHYSICAL PROPERTIES**

### Combined Liquid Components

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixing Ratio</td>
<td>1:1 By Volume</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>15-25 Poises (Spindle No. 2, 30 RPM, 25º C. ±2º)</td>
<td>ASTM D 2393</td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
<td></td>
</tr>
<tr>
<td>Gel Time</td>
<td>15-25</td>
<td>AASHTO M-200-73</td>
</tr>
<tr>
<td>Elongation</td>
<td>45-65</td>
<td>ASTM D 638#</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>2000</td>
<td>ASTM D 638#</td>
</tr>
<tr>
<td>Shore D Hardness</td>
<td>65-75</td>
<td>ASTM D 2240</td>
</tr>
</tbody>
</table>

*Test Method Type 1, Molded Specimens, 6.4 mm (.25 in) Thickness

### Cured Mortar

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Strength</td>
<td>PSI @ 24 hrs. (Method B)</td>
<td>3000 Min</td>
</tr>
<tr>
<td>Bond Strength</td>
<td>PSI</td>
<td>2000 Min</td>
</tr>
<tr>
<td>Abrasion Resistance</td>
<td>Wear Index (Taber H-22)</td>
<td>1.0 Max</td>
</tr>
</tbody>
</table>

Aggregate – Supplied by manufacturer.

**STANDARD TYPE**
Will permit cure to a minimum of 7º C. (45º F.) SILSPEC® 900/950 ACCELERATOR can be added to speed curing at low temperatures. Contact SSI for recommendations.

No modification of the material should be attempted without consulting SSI.

Shelf Life is two (2) years from date of shipment if stored below 32ºC (90ºF).

**GENERAL USE PROCEDURES**

### Surface Preparation
Regardless of substrate, SILSPEC® 900 PNS must be applied to clean, dry and sound surfaces for effective bond.

All unsound material must be removed from substrate by chiphammering, sandblasting, or similar mechanical methods.

All loose material must be removed by brushing, vacuuming or blowing.

Old paint, rust or other coating must be removed by the proper methods.

### Asphalt/Bituminous Substrates
Observe above methods carefully. Do not use solvents. NOTE: While SILSPEC® 900 PNS adheres to asphalt, the asphalt itself has little structural strength. Consequently, we recommend whenever possible, that SILSPEC® 900 PNS be bonded to concrete or sound steel substrate.

### Steel Substrates
Surface shall be sandblasted to near white condition.

### Mixing of Liquid Components
SILSPEC® 900 PNS is a two-component product (Resin and Hardener); these must be thoroughly combined prior to use in a separate container, in the proper ratio of one volume Base to one volume Reactor. We strongly recommend that the cans be wiped out with a spatula (if this is not done, 10% or more of the material can be left in the container). Therefore, it is critical that the material be scraped out of the cans in order to assure adequate liquid/aggregate ratio. In small batches only, Base and Reactor can be hand-mixed. However, mechanical mixing, using a heavy-duty low speed drill motor with paint-type paddle stirrers, is strongly recommended. Mixing time should not be less than three minutes. Care should be taken to ensure thorough mixing from top to bottom as well as the sides of the container.

**CAUTION...**water retards the cure of SILSPEC® 900 PNS, therefore if a mixture of clean aggregate and water is used to clean the mixer, extreme care should be taken to ensure that the mixer is thoroughly dry and any uncured material is removed prior to mixing new material.

**NOTE...** do not mix more material than can be used at one time.

### MIXING AND PLACING OF MORTAR

#### Patching and Repairs
The mixed SILSPEC® 900 PNS is made into a mortar by combining one (1) volume of mixed polymer with three and one-half (3.5) volumes of SILSPEC® BLENDED AGGREGATE. After combining the Base and Reactor for a minimum of 3 minutes, it is then placed in a suitable mixer, then add...
the SILSPEC® AGGREGATE to produce a mortar. When mixing mortar in a bucket with a drill mixer, never mix more than 1/2 kit at a time. Always measure the materials to insure the proper ratios. Extreme care should be taken to insure that the aggregate is mixed uniformly from top to bottom in the bucket. It is extremely important that the material be thoroughly compacted. Care should be taken to assure good compaction on the vertical face of the joint and along the side of the Styrofoam form. Simply smoothing the top with a steel float is not compacting the mix. A small margin trowel, or other means, should be used for compaction.

The blended batch must be applied to the surface in 5-10 minutes. Once spread out, working time will be approximately 1/2 hour depending upon temperature. Clean equipment immediately with Citrus Cleaner or other approved solvent.

When using Silspec 900 as an expansion joint header, care should be taken to insure the mortar is even with the plane of the bridge deck or a fraction lower. Leaving the mortar higher than the plane of the bridge deck can subject it to snowplow or other impact damage. If after removal of the forming material the mortar is found to be higher than the adjacent bridge deck or overlay, it may be re-profiled using a hand-held grinder with a diamond cup wheel.

**Cure**

At 21°C. (70°F) (substrate & air temperature), the mortar will cure sufficiently to accept traffic in four hours. Higher temperatures will shorten the cure while lower temperatures will lengthen the cure time. For temperatures in excess of 38°C. (100°F), or lower than 15°C. (60°F), contact S.S.I. for recommended procedures and cure time. In cold weather, we recommend that liquid and aggregate be stored in a heated area until just prior to use.

<table>
<thead>
<tr>
<th>TEMP</th>
<th>WORKING TIME</th>
<th>INITIAL CURE TIME*</th>
</tr>
</thead>
<tbody>
<tr>
<td>50°F</td>
<td>40 min</td>
<td>12 hrs</td>
</tr>
<tr>
<td>60°F</td>
<td>30 min</td>
<td>8 hrs</td>
</tr>
<tr>
<td>70°F</td>
<td>25 min</td>
<td>5 hrs</td>
</tr>
<tr>
<td>80°F</td>
<td>20 min</td>
<td>3 hrs</td>
</tr>
<tr>
<td>90°F</td>
<td>15 min</td>
<td>2 hrs</td>
</tr>
<tr>
<td>100°F</td>
<td>10 min</td>
<td>1.5 hrs</td>
</tr>
</tbody>
</table>

*Compressive Strength reaches approximately 1000 psi.

**CAUTION**

- During all operations, established safety codes and workman protection must be observed.
- Use of protective creams, clothing, goggles, and rubber gloves are recommended during all phases of handling and use. Read and follow handling precautions on labels. Use common sense in handling SILSPEC® 900 PNS and all other chemicals.
- Observe good housekeeping rules and regulations during all phases of use and handling of either unmixed or mixed product.
- Aample ventilation should be provided during all periods of sandblasting, mixing and application procedures.
- In accordance with ICC Regulation #49, Item 173.4: Containers containing less than one (1) fluid ounce of liquid are considered non-hazardous material. Empty containers may be crushed and should be disposed of in accordance with state and local regulations.
- Remove epoxy immediately with clean, dry towel and wash skin thoroughly with soap and water.
- Good housekeeping rules are always important. Provide ample ventilation in all areas of handling, mixing and use. Avoid prolonged breathing of possible fumes. Minimize skin contact. Use of goggles, rubber gloves and protective creams is recommended. If material gets into eyes, flush thoroughly with clean water for 20 minutes; then seek medical treatment. Observe all safety precautions when using any type of solvent for cleaning tools and equipment.

**CLEAN UP**

All tools, other application or mixing equipment must be cleaned at frequent intervals and while SILSPEC® 900 PNS remains soft and uncured.

For cleaning hand tools, CITRUS CLEANER or other approved solvents are most effective, or cleaning can be accomplished using waterless hand cleaner.

NOTE... some solvents are FLAMMABLE and all safety codes and regulations governing their use must be observed.

**Contact S.S.I. for further information or installation instructions.**

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