

DESCRIPTION

Premera SCI – Structural Crack Injection resin- is a two component, high modulus structural epoxy formulation designed to repair cracks in concrete. Due to its ultra-low viscosity, Premera SCI is perfect for gravity feed repair of fine to medium size cracks. Also a thixotropic gel-like consistency version of this product is available which is ideal for medium blind-side crack repair, as it flows when under pressure and gels once injection stops. The usable temperature range is between 50 °F and 100 °F (10 °C and 38 °C).

FEATURES

- Pressure injection of fine to medium size cracks of approximately 1/8 in. to 1/4 in. (3.2 mm to 6.4 mm) width
- Self-leveling, low viscosity and surface tension allows product to deeply penetrate into cracks

TYPICAL USES

- Crack injection for concrete repair
- Bonding agent for fresh to hardened concrete or hardened to hardened concrete
- Non-shrink and moisture insensitive allows for installation in most applications

COLORS

Part A (Resin): Clear, Part B (Hardener): Amber, Mixed: Amber.

PACKAGING

16 oz. (473 ml) cartridges. 10 Cartridges per case.

COVERAGE

Ask for Crack injection usage estimating guide from NCSI.

STORAGE

Twenty-four months in factory delivered, unopened containers. Keep away from extreme heat, freezing, and moisture. Store at temperatures between 55 °F and 80 °F (13 °C and 27 °C).

TECHNICAL DATA (All values @ 77 °F / 25 °C)	US	Metric
Solids by volume (ASTM D2697)	100%	100%
Volatile organic compounds (EPA CFR 40, Part 60)	0.175 lb./gal	21 gm/ lit
Theoretical coverage	40 ft ² /gal @ 40 mils	1m ² / lit @ 1mm
Specific Gravity of materials (ASTM D792)	A: 9.34, B: 7.9 lbs./gal	A: 1.121, B: 0.95 kg/ liter
Viscosity at 77 °F/25 °C (ASTM C881)	500 cp	

Shelf life @ 77 °F /25 °C	24 Months	24 Months
Elongation (ASTM D412-C)	4.4%	
Tensile strength (ASTM D638)	7,230 psi	49.8 MPa
Compressive yield strength (ASTM D695) - 7 days	10,150 psi	70.0 MPa
Compressive Modulus (ASTM D695) - 7 days	300,000 psi	2,068 MPa
Bond strength. Hardened to hardened concrete (ASTM C882) – 2 days	1,580 psi	10.9 MPa
Bond strength. Hardened to hardened concrete (ASTM C882) – 14 days	2,950 psi	20.3 MPa
Bond strength. Fresh to hardened concrete (ASTM C882) – 14 days	1,720 psi	11.9 MPa
Water absorption -14 days (ASTM D570)	0.3 %	
Linear coefficient of shrinkage (ASTM D2566)	0.0003 %	0.00015 %
PROCESSING PROPERTIES (Under standard lab conditions)		
Mix Ratio V/V	2:1	
Gel time	27 Minutes	
Pot life	19 Minutes	
Working time	30 Minutes	
<i>Properties and values are highly dependent on equipment, spray gun, mix chamber temperature, pressure and related parameters. Variations are possible and expected. Values included above are per NCSI standard lab practices & methodology at various dry film thicknesses</i>		

SURFACE PREPARATION

Surface preparation will be dependent upon the application of the product. Old concrete must be clean and profiled or textured. New concrete should be a minimum of 28 days old. All dirt, oil, debris, wax, grease or dust must be removed. Prepare the surface mechanically using a scarifier, sandblast, shotblast or other equipment that will give the surface profile needed for the application. A roughened surface is imperative for good adhesion. Always be sure the bonding surfaces are prepared in advance before starting a new cartridge or mixing product. If possible, schedule dispensing to consume an entire cartridge at one time with no interruption of epoxy flow. For bulk, mix only enough product that can be used within the pot life, see Table 2

CARTRIDGE PREPARATION:

1. Shake the cartridge vigorously for 60 seconds, then stand cartridge upright for at least 1 minute allowing any bubbles to rise to the top.

2. Insert cartridge into the dispenser. Make sure it is properly positioned with the shoulder of the cartridge flush with the front/top bracket of the dispenser. Point upward at about a 45° angle. Remove the plastic cap and plug from the top of the cartridge.
3. Continue to point the upward away from yourself and others while slowly applying pressure to dispenser moving any bubbles and product up through the nozzle until it reaches the tip. Dispense this first full stroke of material into disposable container. The cartridge is now purged and ready for flow control installation.
4. Find the flow control inside the threaded end of the mixing nozzle attached to a tape strip. Insert flow control into the two holes at the top of the cartridge where the product comes out. Make sure it is securely seated in place. Install mixing nozzle onto cartridge. Holding the dispenser straight up, slowly apply pressure to the dispenser moving any bubbles and product up through the nozzle until it reaches the tip. Tilting only slightly, dispense this first full stroke of material into a disposable container.
5. Schedule dispensing to consume an entire cartridge at one time with no interruption of flow to prevent material from hardening in mixing nozzle. If you have any problems in dispensing product, replace the nozzle; the product may have begun to cure in the nozzle which will affect the mix ratio. Never transfer a used nozzle to a new cartridge. Repeat the cartridge balancing steps listed above after replacing the nozzle.

MIX INSTRUCTIONS FOR BULK PACKAGING:

Thoroughly stir each component separately before mixing them together. Mix only the amount of material that can be used before the working time expires. Proportion parts by volume into a clean pail at the exact and proper mix ratio for that product. (For Premera SCI use 2 parts by volume of component “A” and 1 part by volume of component “B”). Mix thoroughly with a low speed drill (400 – 600 rpm) with a mix paddle attachment (i.e. a jiffy mixer). Carefully scrape the sides and the bottom of the container while mixing. Keep the paddle below the surface of the material to avoid entrapping air. Proper mixing will take at least 3 minutes.

BONDING AGENT APPLICATIONS:

Bonding fresh concrete to hardened concrete or when used as a bonding agent for repairing concrete spalls: Using a brush, roller or airless sprayer, apply an even coat of the bulk mixed Premera SCI to the clean and prepared concrete surface. While the epoxy is still tacky, place fresh concrete over the top of the mixed epoxy.

SPALL REPAIR APPLICATIONS:

To avoid a feathered edge, cut around the spall into sound concrete with a grinder or circular saw using a diamond or concrete abrasive blade. The edge cut should be equal to the maximum depth of the spall or to at least, a minimum depth of 3/4 in. (19 mm). Chip out all loose concrete within the entire spall to a minimum depth of 3/4 in. (19 mm). Follow surface preparation instructions above to clean the spall. Estimate the amount of bulk product needed and mix Part A and Part B, 2 to 1 by volume. Mix part A and B thoroughly. Slowly add 3-4 parts by volume of kiln-dried sand or aggregate of choice and mix well, pour and trowel until smooth/level. Note: The low viscosity of Premera SCI will aid in wetting out aggregate to create a repair mortar. Maximum mortar thickness is 1.5 in. (38 mm) per lift.

GRAVITY FEED CRACK REPAIR FOR HORIZONTAL APPLICATIONS:

Premera SCI is formulated for fine to medium cracks. 0.0025 in. to 0.125 in. (0.06 mm to 3.2 mm). For best results, cut a groove to open up the crack using an abrasive or diamond blade to a width of 1/8 in. (3.2 mm) and minimum depth of 3/8 in. (9.5 mm). Use wire brush to abrade and then blow out the crack to remove all dust, dirt, grease, wax, oil or any other contaminants. Pour or inject Premera SCI into the crack and its self-leveling ability will fill the entire area. Repeat application if necessary, to completely fill crack. Follow the cartridge preparation set-up. For medium cracks, use Premera SCI-G.

LOW PRESSURE CRACK INJECTION FOR VERTICAL, HORIZONTAL AND OVERHEAD STRUCTURAL REPAIR:

Before repairs are attempted, examine the crack to determine the type of repair that is required. Cracks in concrete and wood members are classified as either dynamic (moving) or static (dormant). Static cracks may occur from a one-time overload event such as an earthquake or flood. For static cracks in a structure that is to be rehabilitated, structural crack injection is recommended. By contrast, dynamic cracks are those which are caused by inadequate design, seasonal heaving, temperature swings or repeated over-loading. Dynamic cracks CANNOT effectively be repaired using crack injection. Dynamic cracks can be sealed using a flexible repair material such as Nukote JF HM.

CRACK INJECTION PREPARATION:

Clean the surface surrounding the crack with a wire brush to achieve proper bond. Remove all dust, debris, oil and any other contaminants from the crack by blowing out with clean, oil-free compressed air. For best results crack must be dry at the time of injection. If water is seeping from crack, steps must be taken to stop the flow of water in order to achieve desired repair.

CAPPING PASTE CARTRIDGE PREPARATION:

1. Premera PolyBond MB is the perfect product to be used as a capping paste for crack injection. Its non-sag/fast-set properties are ideal for rapid installations (horizontal, vertical and overhead). Unscrew plastic cap from threaded end of cartridge and remove plug. Place cartridge into dispenser.
2. Balance the cartridge by dispensing a small amount of material into a disposable container until both materials flow evenly from the cartridge. Part A is white, Part B is dark gray.
3. Attach the mixing nozzle to the cartridge of Premera PolyBond MB and dispense a small amount of material until uniform gray color without streaks is achieved.
4. Place and secure injection ports, or port bases, with the capping paste material. Port spacing should be approximately 6 -12 in. (152 - 305 mm) apart (typically the width of the concrete member). Do not allow the epoxy to block the passage between the port and the crack face.
5. Place additional Premera PolyBond between the ports making sure the entire face of the crack is sealed off and ports are securely fastened to the concrete. If the crack is evident and accessible on the back side of the concrete member, seal with capping paste.

PUMP AND PNEUMATIC DISPENSING:

DO NOT EXCEED 40 psi (0.28 MPa) PRESSURE TO THE PNEUMATIC DISPENSING TOOL OR INJECTION PUMP. An air pressure regulator MUST be used with a pneumatic dispenser. Start at a low setting and gradually increase pressure as needed until desired epoxy flow is achieved. Use maximum 40 psi (0.28 MPa) air pressure. Excessive pressure may result in cartridge plunger leakage. Begin the injection process from the lowest port on a vertical surface moving up the wall. On horizontal surfaces, begin at the widest part of the crack (as marked prior to capping) and move outward. Inject epoxy into port until you either get flow from adjacent port or until epoxy stops flowing. Allow injection resin to cure for at least 24 hours. Ports and capping material can be removed with a chisel and/or grinder. Note: Some cracks may take more time to inject, especially hair-line cracks. Cracks may be smaller in width (or larger) than they appear from the surface .

DISPENSING AND INJECTION TIPS:

For basement walls where back side of concrete is not accessible, inject with slightly higher viscosity Premera SCI-G. This is a unique thixotropic gel that will feed into small cracks and bridge the back side without runoff. DO NOT dispense epoxy through gelled mixing nozzle. If epoxy gels in nozzle, replace nozzle before continuing.

EQUIPMENT CLEAN UP

Always wear appropriate protective equipment such as safety glasses and gloves. Clean uncured materials from tools and equipment with mild solvent. Cured material can only be removed mechanically.

LIMITATIONS

- Do not thin with solvents, as this will prevent cure
- Not intended to repair cracks subject to movement
- Product not designed to stop seeping or flowing water, however it may be applied in moist or damp environments as long as standing water is removed
- New concrete should be a minimum of 28 days old prior to application

WARRANTIES AND DISCLAIMERS

Nukote Coating Systems International, a Nevada, USA Corporation warrants that this product shall conform to the technical specifications published in the product literature. The quality and fitness of the product is dependent upon the proper mixture and application of the components by the applicator. Nukote Coating Systems has no role in the application of the finished polymer other than to manufacture and supply its two components. It is vital that the person applying this product understands the product and is fully trained and certified in the use of plural component equipment and application of plural component materials. There are no warranties that extend beyond the description on the face of this instrument, except when provided in writing, directly by Nukote Coating Systems International and executed under seal by a company officer.