

NON-SAG EPOXY ADHESIVE

**SEGMENTAL BONDING ADHESIVE (SBA)
HIGH MODULUS FIBRE REINFORCED
MOISTURE INSENSITIVE DURING & AFTER CURE
LOW TEMPERATURE CURE**

PRODUCT DESCRIPTION:

A multi-purpose, 100% solids structural adhesive used to bond concrete to concrete, steel to concrete, and fresh concrete to cured concrete. The non-abrasive gel lubricates surfaces for easy location of segmental concrete elements and positioning of shear pins. It can be pressure injected or hand applied into 15mm cracks or can be mixed with pre-package Graded Aggregate # 622 for making a patching mortar. Pro-Struct 617NS meets ASTM C881 Types I, II, IV and V, Grade 3, Class B and C.

USES:

- Bonds and seals precast elements for bridge, tilt up and roof structure construction.
- Structural adhesive for steel plate bonding and stitching with rebar to strengthening concrete or brick elements, increasing load bearing capacity especially where reinforcement corrosion, mechanical or fire damage has occurred.
- Bonding fresh concrete to hardened concrete or steel.
- Sealing overhead and vertical cracks and setting ports for pressure injection.
- Surface repair of non-moving cracks on concrete structures.
- Anchor grouting of bolts, starter bars, dowels and special fasteners.
- Pick proof adhesive for public and correctional facilities, around ceramic and steel units, door frames, windows and setting of burglar proofing.
- For bonding of Vandex Flextape rubber, over expansion joints for water retaining structures and cracked effluent or storage tanks and pipes, use Pro-Struct 617LA.

INSTRUCTIONS:

SURFACE PREPARATION: Surfaces must be clean, sound, dry or damp, but free of standing water. Exposed concrete surfaces must be sandblasted or chipped to show the well-bonded main aggregate. Steel should be grit-blasted clean, free of rust, paint or foreign matter likely to affect the bond or performance of the repair.

MIXING: Precondition material to between 10°C and 23°C before using. Premix each component of the kit. Add the activator component to the base component and mix thoroughly for 3 minutes with a slow speed drill. Do not aerate or mix more material that can be placed in 30 minutes. To prepare an epoxy mortar, slowly add pre-packaged Pro-Struct 622 dry graded aggregate to a kit of mixed resin and mix to a uniform consistency.

See also instructions "Handling of Epoxy Products"

TYPICAL PROPERTIES AT 25°C

Colour	Grey
Viscosity	Paste
Sag Index	> 10mm
Gel Time	40 to 90 Minutes
Squeezability	0.15KN
Theoretical Coverage Per Coat	1m ² /litre at 1mm thick
Thin Film Set	Approximately 3 hours
Thin Film Set At 4°C	Approximately 9 hours
Shear Bond Strength (Steel/Steel)	> 14 MPa
Water Absorption	Less than 0,15%
Compressive Strength	24Hrs: > 60 MPa 3 Days: > 75 MPa
Modulus	> 1500 MPa
Tensile Strength	> 55 MPa
45MPa Concrete Adhesion	Failure in concrete
12mm Rebar Pullout (Embedment Depth 120mm)	Steel bar failure at 52 MPa
Shrinkage	< 0,05%
Elongation at Break	2%
Thermostability	Approximately 70°C
Solids Content	100%
Mixing Ratio by Volume	Base : Activator 1:1
Application Temperature Range	4°C to 35°C
Shelf Life	18-24 Months

APPLICATION INSTRUCTIONS

These instructions are not intended to show product recommendations for specific service. They are issued as an aid in determining correct surface preparation, mixing instructions and application procedure. It is assumed that the proper product recommendations have been made. These instructions should be followed closely to obtain the maximum service from the materials.

PLACEMENT OF PRO-STRUCT 617NS

STRUCTURAL ADHESIVE:

Apply adhesive to strengthening material or prepared substrate, working into surface for positive adhesion. Secure the bonded unit firmly into place, squeezing out excess adhesive and holding until set. Glue line not to exceed 6mm.

FRESH CONCRETE TO HARDENED CONCRETE OR STEEL:

Apply onto solid surfaces and place fresh concrete while adhesive is still tacky. If adhesive becomes glossy and loses tack, remove and recoat.

PRESSURE INJECTION:

Apply over surface cracks and seal ports until cured. With appropriate high pressure equipment, inject gel adhesive until crack is filled. Refer to Pro-Struct 618LV "Specification for Crack Injection".

ANCHOR BOLTS, DOWELS AND PINS:

Annular space around bolt should not exceed 3mm. Embedment depth 10 to 15 times bolt diameter. Inject material into rear of hole to avoid air pockets and coat anchor with adhesive, inserting by slowly rotating into hole.

ALLOWABLE SPACING AND EDGE DISTANCE (D = ANCHOR DIAMETER)

	Distance for full anchor capacity (Critical Distance)	Distance for reduced anchor capacity
Edge Distance – Tensile Load	12D	4D
Spacing Between Anchors	24D	8D
Edge Distance – Shear Load	12D	4D

SECURITY PROOF ADHESIVE:

Using a caulking gun, dispense an appropriate size bead between unit and structure. Tool around area to be sealed.

Protect installed unit with masking tape, removing whilst uncured to create a neat seal.

CLEAN-UP:

Clean equipment immediately after use with Pro-Struct 105 Brush Cleaner and rinse with clean water.

LIMITATIONS:

Application temperature of substrate to be 4°C and rising. Low temperatures adversely affect flowability and time to gain strength. Hot temperature decreases working time. Do not apply over free standing water. Do not thin with solvent. Do not inject moving or leaking cracks. Minimum age of concrete must be 28 days.

CAUTION:

Contains epoxy and amine resins. Product may cause skin irritation. Do not inhale vapours. Provide adequate ventilation. Protect against contact with skin and eyes. Wear rubber gloves, protective clothing and goggles. Prior to use, refer to Material Safety Data Sheet.

See also instructions "Handling of Epoxy Products"

CAUTION: MAY CONTAIN FLAMMABLE SOLVENTS. KEEP AWAY FROM SPARKS AND OPEN FLAMES. IN CONFINED AREAS WORKMEN MUST WEAR FRESH AIRLINE RESPIRATORS. HYPERSENSITIVE PERSONS SHOULD WEAR GLOVES OR USE PROTECTIVE CREAM. ALL ELECTRONIC EQUIPMENT AND INSTALLATIONS SHOULD BE MADE AND GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. IN AREAS WHERE EXPLOSION HAZARDS EXIST, WORKMEN SHOULD BE REQUIRED TO USE NONFERROUS TOOLS AND TO WEAR CONDUCTIVE AND NONSPARKING SHOES



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SPECIFICATION FOR STEEL PLATE BONDING:

CONCRETE PREPARATION:

Concrete should be at least 28 days old and have a minimum compressive strength of 25 MPa.

Remove cement laitance by scabbling or grit blasting to sufficient depth to expose main concrete aggregate. After preparation is completed, the bonding surface must be clean, dry, sound and level.

STEEL PREPARATION:

Mild steel plates to grade as specified by the engineer shall be dry grit blasted to a white metal finish in accordance with ISO 8501 SA2½ to obtain a 100 – 140 micron blast profile.

Blasting should be done on site immediately prior to bonding and, if this is not practical, the plates can be shop-blasted but must be transported and bonded on site the same day.

In coastal environments, a Weber Reilly Soluble Salt Test should be done to ensure a figure of not exceeding 100mg/m² is indicated.

The non-bonding face must receive two coats of Carbomastic 15 to achieve a final D.F.T. of 250 microns.

PRIMING OF CONCRETE:

Apply Pro-Struct 618LV Low Viscosity Primer to the concrete surface at a spread rate of 3 – 4m²/litre.

While the primer is still wet and receptive, bond the plate as detailed below.

APPLICATION OF STRUCTURAL STEEL:

Remove the Pro-Struct 617NS Structural Adhesive from the containers and place on a clean, oil free, flat board and thoroughly mix for 4 – 5 minutes. Apply mixed adhesive to the steel plate in a triangular wedge, with apex of the adhesive at the centre of the plate. Place plate into position and support/prop and mechanical fix. Props must remain in position for at least 7 days or longer if the average day temperature is lower than 25°C.

FIREPROOFING:

Protection of bonded plates can be achieved by applying Pyrocrete 241. (Available from StonCor Africa, 011-2545500).

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