

Technical Specifications:

Description: Engineered structural system to stitch fractures in reinforced concrete

Installation Spacing: 1-foot (can vary depending on crack severity)

Stitch Tensile Strength: 115,000 psi

Anchor: 2-1/4" x 5/8" custom, expanding sleeve type

Horizontal Dimensions: Approximately 13" long x 1-1/4" wide x 1/2" thick

Bridge Length: 12" overall length extending 6" away from fracture

Hook Length: 2-1/4" epoxied into the concrete

Expanding Anchor Length: 3" overall, 2-1/4" is wedged into the concrete

Flange Material: Precision machined, case hardened 1018 steel

Bridge Material: 1144 StressProof® cold rolled steel

Channel: Saw Cut Approx. 14" long x 1-3/8" wide x 1-1/2" deep

Corrosion Resistant

Tools:

- 4" Masonry Saw, Chipping Hammer, Hammer Drill, 1/2" and 5/8" Masonry Drill Bit, 3/4" Socket Wrench, Standard caulking gun, Shop Vacuum

NOTE: All repairs to the crack itself must be completed before beginning installation of the SP-1238 Stress Proof Stitches. For a rigid, permanent, full-depth repair, the crack should first be filled using AquaBond PF-37 Polyurethane Foam (Available in a complete 10' kit as Part No. PFK-377).

Stress Proof Stitch Installation:

Step A: Locate stitches one foot apart along the length of the crack. Trace the stitch shape onto the concrete and mark where the two holes belong. (12" apart on center). Using the 1/2" masonry bit, drill the two holes approximately 4" deep. Then widen one of the holes with the 5/8" masonry bit. Do not over-drill the hole depths.

Step B: Cut and chip a 1-1/2" deep channel for each stitch, using a 4" masonry saw and chipping hammer. Remove all debris, clean out completely. Verify that the holes are 2-1/4" deep below channel bottom.

Step C: Inject AquaBond AE-2200-250 Anchoring Epoxy into the holes. ALSO, lay an ample bead of the adhesive all along the bottom of the channel - enough to anchor the length of the rod securely to the bottom of the channel. This will result in a very strong repair.

Step D: Place the sleeve anchor up through the oval hole in the stitch plate and thread the washer and nut flush with the topside of the shaft. Insert the anchor into the 5/8" hole Tap the head of the nut until sleeve is fully seated, and the entire stitch is flush in the adhesive in the bottom of the channel.

Step E: Using a socket wrench, tighten the nut on the anchor approximately 3 or 4 turns, up to 50 Ft-Lb torque. Locate each stitch carefully because this installation is designed for permanent placement. Once installed and tightened down, the anchor cannot be easily removed or relocated.

Step F: Repeat the above procedure with stitches spaced at approximately one foot apart along the length of crack. (10 AquaBond Stress Proof Stitches for a 10-foot crack).

Step G: After all of the stitches have been installed and the anchoring epoxy has had plenty of time to cure (at least 24 hours), fill each niche with non-shrink hydraulic cement. Finish the swimming pool with marble-based pool plaster or polymer modified cement for aquatic applications.

Note: A minimum 5" slab is recommended for Mechanical Stitch installation. For shallower slab thicknesses, drill the anchor hole accordingly and install and tighten the nut. Once tightened, the threaded shaft may extend upward and can be ground down flush with the top of the nut.

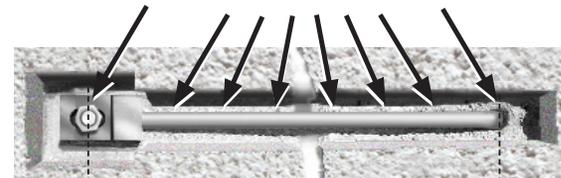


Overall Stitch Length Approx. 13"

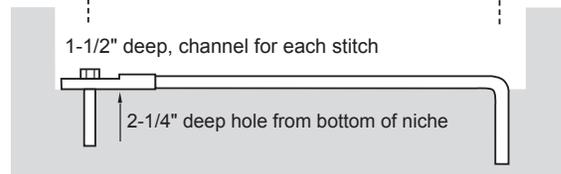


Expanding Anchor

Before inserting the device, apply an ample bead of anchoring epoxy along the base of the channel in order to adhere the rod in place. Also inject anchoring epoxy into both holes.



Drill 1/2" holes,
12" on center



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AquaStitch Technical Summary

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To correct cracking of a beam or slab the American Concrete Institute (ACI 224.1R-07) outlines post-tensioning anchor stitching as desirable to strengthen the fractured area. As with any repair, the extent and cause must be identified and addressed.

The AquaStitch technique uses Stress Proof, cold rolled 1144 steel rods, anchored into solid concrete to bridge the crack and stabilizing force across the fracture.

The AquaBond SP-1238 Stress Proof Stitches bridge the crack by extending into the unaffected, solid reinforced concrete. Future movement is prevented by embedding the 115,000 lb. tensile strength rod in high-strength anchoring epoxy along the length of the 12-inch long "stitch". The anchoring epoxy is also injected into the two holes that receive the hook and the anchor.

On the other end of the device, a flange with a slotted adjustment hole accepts the custom expanding anchor stud. When the nut on the anchor is tightened, the anchor expands, locking the SP-1238 Stitch into the concrete permanently.

Once these stitches are anchored into the structural sub-concrete, fewer loads are exerted on the weaker surface and are transferred into actual reinforced areas beneath.

The American Concrete Institute (ACI) guide covering post-tensioning is available for additional information if needed.