XYPEX® Method Statement

PIPE THROUGH WALL/SLAB REPAIR PROCEDURES

No Water Flow

2020-04

Through wall / slab details such as pipes or conduit that are completely encased in concrete at the time of the concrete pour are a common part of concrete construction. The following procedures for repair of water leaks at these through concrete utilities are based on circular shapes but may be modified for other shapes as appropriate. These repair methods have been successfully used on many common piping materials including steel, iron, PVC and HDPE.

Note that fluid bearing pipes may vibrate or move due to the hydraulics within the system or thermal expansion and contraction. This type of ongoing movement will interrupt with crystalline based healing. In these cases, contact Xypex's Technical Services Department for assistance.

No Water Flow – Not Actively Leaking

STEP 1: As shown in the drawing below chip out a "U" shaped slot completely circling the through slab pipe or conduit. The slot is to be 1" (25 mm) wide by at least 1.5" (37 mm) deep. A "V" shaped slot is not acceptable. The slot may be saw cut instead of chipped but ensure that the slot is dovetailed or otherwise shaped such that there will be mechanical interlock of materials placed into the slot at a later stage.

STEP 2: Remove all loose materials and thoroughly clean and profile (ICRI CSP-3) the surface of the concrete to 6" (150 mm) around the pipe or conduit. Thoroughly clean the slot and the surface of the pipe or conduit itself. Lightly sand the surface of the pipe or conduit to provide a profile. Saturate the prepared concrete with water. Allow water to soak into concrete and then remove all surface water.

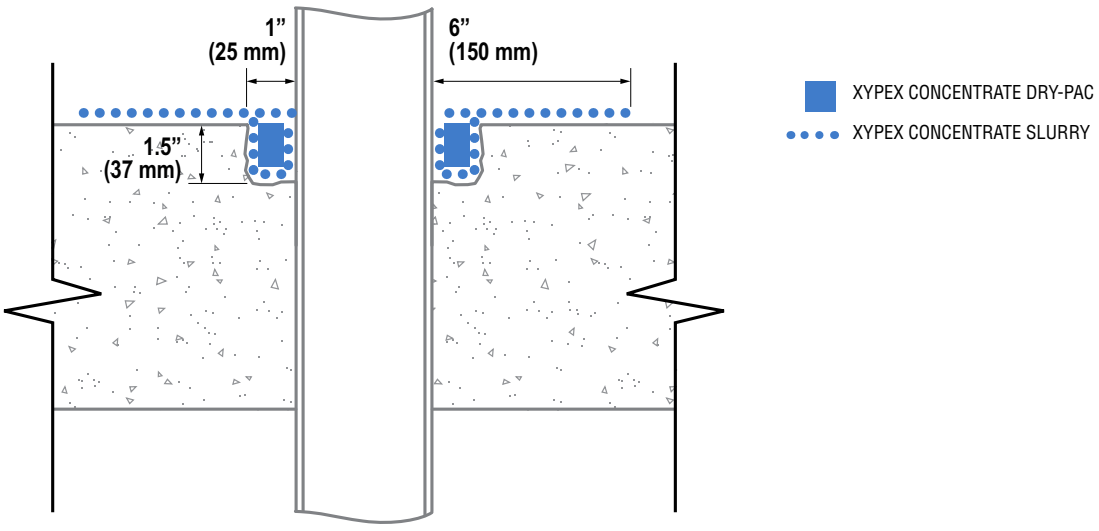
STEP 3: Apply one slurry coat of Xypex Concentrate at a coverage rate of 1.5 lb./sq.yd. (0.8 kg/m^2) up the pipe or conduit to the surface of the concrete as well as in the slot and to 6" (150 mm) onto the slab away from the slot. Application may be performed by brush or gloved hand.

STEP 4: While the slurry coat is still tacky, fill the slot to the surface with Xypex Concentrate Dry-Pac mixed in the following proportions: one part clean water to six parts Concentrate by volume. Blend Dry-Pac by trowel for 10 - 15 seconds only (lumps should be present in the mixture). Apply Dry-Pac by gloved hand, and then compress it tightly using a pneumatic packing device or a hammer and block.

STEP 5: Wet Dry-Pac surface lightly with water, then apply a slurry coat of Xypex Concentrate at coverage of 1.5 lb./sq.yd. (0.8 kg/m^2) over the repaired area and to 6" (150 mm) onto the slab away from the slot.

STEP 6: Cure by keeping moist by fog spraying periodically with water for two to three days. Open to water contact per Xypex Coatings guidelines.

Note:
When early exposure to water is required:
1. In Step 3 – apply slurry to the inside of the void only.
2. In Step 4 – replace the top 1/4" - 1/2" (6 - 12 mm) of Xypex Concentrate Dry-Pac with Xypex Patch'n Plug.
3. Step 5 and Step 6, eliminate.
4. Allow materials to gain sufficient strength for exposure to liquids.



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PIPE THROUGH WALL/SLAB REPAIR PROCEDURES

Against a Flow of Water

Active Leaking

STEP 1: As shown in the drawing below chip a "U" shaped slot completely circling the through slab pipe or conduit. The slot is to be 1" (25 mm) wide by at least 1.5" (37 mm) deep. A "V" shaped slot is not acceptable. Areas with most water flow should be identified and chipped deeper. The slot may be saw cut instead of chipped but ensure that the slot is dovetailed or otherwise shaped such that there will be mechanical interlock of materials placed into the slot at a later stage.

STEP 2: Remove all loose materials and thoroughly clean and profile (ICRI CSP-3) the surface of the concrete to 6" (150 mm) around the pipe or conduit. Thoroughly clean the slot and the surface of the pipe or conduit itself. Lightly sand the surface of the pipe or conduit to provide a profile. Saturate the prepared concrete with water. Allow water to soak into concrete and then remove all surface water.

STEP 3: To stop active water flow apply Xypex Patch'n Plug to half the depth of slot. Patch'n Plug is mixed by adding one part clean water to 3.5 parts Patch'n Plug powder by volume. Patch'n Plug should be applied to the full circumference of the chipped slot.

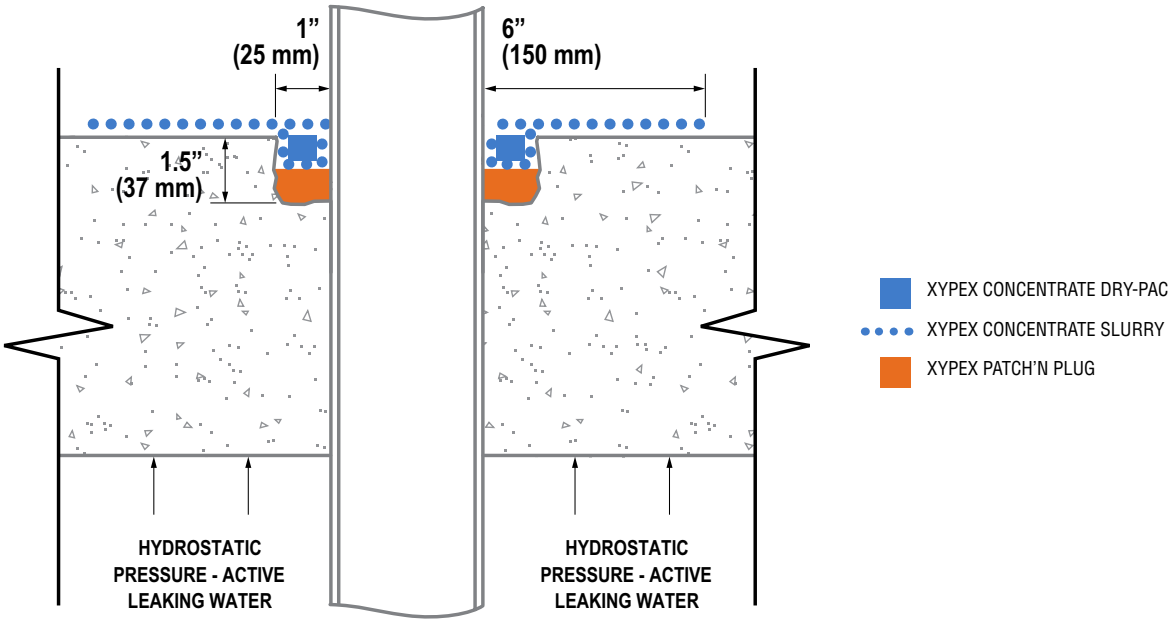
STEP 4: Apply one slurry coat of Xypex Concentrate at a coverage of 1.5 lb./sq.yd. (0.8 kg/m^2) over the Patch'n Plug, up the pipe or conduit to the surface of the concrete as well as in the slot and to 6" (150 mm) onto the slab away from the slot. Application may be performed by brush or gloved hand.

STEP 5: While the slurry coat is still tacky, fill the slot to the surface with Xypex Concentrate Dry-Pac mixed in the following proportions: one part clean water to six parts Concentrate by volume. Blend Dry-Pac by trowel for 10 to 15 seconds only (lumps should be present in the mixture). Apply Dry-Pac by gloved hand, and then compress it tightly using a pneumatic packing device or a hammer and block.

STEP 6: Wet Dry-Pac surface lightly with water, then apply a slurry coat of Xypex Concentrate at coverage of 1.5 lb./sq.yd. (0.8 kg/m^2) over the repaired area and to 6" (150 mm) onto the slab away from the slot.

STEP 7: Cure by keeping moist by fog spraying periodically with water for two to three days. Open to water contact per Xypex Coatings guidelines.

Note:
When early exposure to water is required:
1. In Step 2 – apply slurry to the inside of the void only.
2. In Step 5 – replace the top 1/4" - 1/2" (6 - 12 mm) of Xypex Concentrate Dry-Pac with Xypex Patch'n Plug.
3. Step 6 and Step 7, eliminate.
4. Allow materials to gain sufficient strength for exposure to liquids.



XYPEX® Method Statement

PIPE THROUGH WALL/SLAB REPAIR PROCEDURES

Against High Pressure Flow of Water

Active Leaking

STEP 1: As shown in the drawing below chip a "U" shaped slot completely circling the through slab pipe or conduit. The slot is to be 1" (25 mm) wide by at least 2" - 3" (50 - 75 mm) deep. A "V" shaped slot is not acceptable. The slot may be saw cut instead of chipped but ensure that the slot is dovetailed or otherwise shaped such that there will be mechanical interlock of materials placed into the slot at a later stage.

STEP 2: In area of greatest water flow, drill a hole or chip cavity 0.5" (13 mm) deeper into slot and interfacing with pipe wall to accommodate a bleeder hose. A bleeder hose is a minimum 1.5 foot (0.5 m) length of smooth surfaced, fairly rigid tubing. Its purpose is to relieve the water pressure while joint is being repaired.

STEP 3: Remove all loose materials and thoroughly clean and profile (ICRI CSP-3) the surface of the concrete to 6" (150 mm) around the pipe or conduit. Thoroughly clean the slot and the surface of the pipe or conduit itself. Lightly sand the surface of the pipe or conduit to provide a profile. Saturate the prepared concrete with water. Allow water to soak into concrete and then remove all surface water.

STEP 4: Place one end of bleeder hose into the hole or cavity and, while holding hose steady, apply Xypex Patch'n Plug to the slot around the hose. Patch'n Plug is mixed by adding one part clean water to 3.5 parts Patch'n Plug powder by volume. Multiple applications of Patch'n Plug may be necessary to secure the hose in place.

STEP 5: To stop active water flow apply Xypex Patch'n Plug to half the depth of remaining slot area. Remove bleeder hose and pack hole with Xypex Patch'n Plug to stop all active water flow.

STEP 6: Apply one slurry coat of Xypex Concentrate at a coverage of 1.5 lb./sq.yd. (0.8 kg/m^2) over the Patch'n Plug, up the pipe or conduit to the surface of the concrete as well as in the slot and to 6" (150 mm) onto the slab away from the slot. Application may be performed by brush or gloved hand.

STEP 7: While slurry coat is still tacky, fill slot to surface with Xypex Concentrate Dry-Pac mixed in the following proportions: one part clean water to six parts Concentrate by volume. Blend Dry-Pac by trowel for 10 to 15 seconds only (lumps should be present in the mixture). Apply Dry-Pac by gloved hand, and then compress it tightly using a pneumatic packing device or a hammer and block.

STEP 8: Wet Dry-Pac surface lightly with water, then apply a slurry coat of Xypex Concentrate at coverage of 1.5 lb./sq.yd. (0.8 kg/m^2) over the repaired area and to 6" (150 mm) onto the slab away from the slot.

STEP 9: Cure by keeping moist by fog spraying periodically with water for two to three days. Open to water contact per Xypex Coatings guidelines.

Note:
When early exposure to water is required:
1. In Step 3 – apply slurry to the inside of the void only.
2. In Step 7 – replace the top 1/4" - 1/2" (6 - 12 mm) of Xypex Concentrate Dry-Pac with Xypex Patch'n Plug.
3. Step 8 and Step 9, eliminate.
4. Allow materials to gain sufficient strength for exposure to liquids.