

## XYPEX CRYSTALLINE CRACK REPAIR

### TYPE 1 - Full Crack Repair, Non-Leaking (Minor Crack and Cold Joint)

2018-06

The information presented is in addition to Xypex product data sheets and is not meant to replace these or any other installation guides but rather is meant to give a general description of the installation practices and procedures surrounding the use of Xypex products for waterproofing and protecting concrete and while normally provide an acceptable final appearance they are not meant as aesthetic finishes. Refer to Safety Data Sheets for safety information, applicators need to use all products and equipment in line with manufacturers and industry requirements.

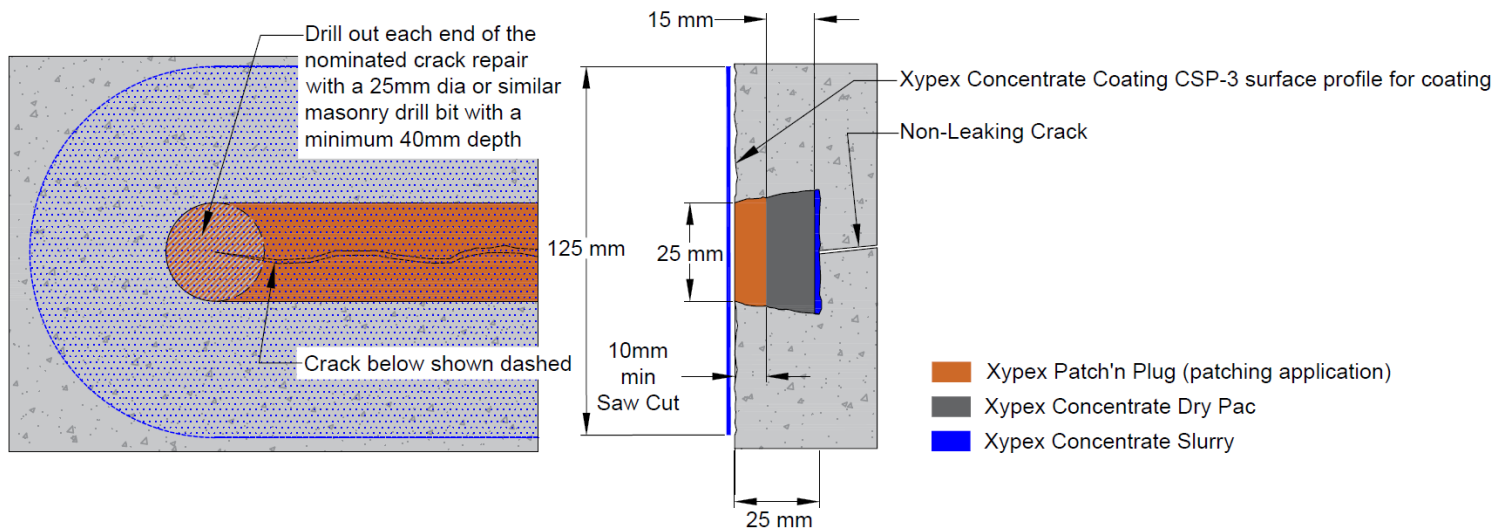


Figure 3, Details of the non-leaking crack repair/cold joint (Schematic)

#### C. NON-LEAKING CRACKS OR FAULTY COLD JOINTS

##### ROUTING

1. Form a dovetail (preferred) or rectangular shaped rout (a "V" shaped rout is not acceptable) along the entire length of the crack or construction joint with a dimension of approximately 25 mm of width and 25 mm of depth. *Saw cut the whole depth (25 mm). Remove the concrete from the rout using jackhammer (pneumatic or electro-mechanical or hydraulic). Remove all the loose and unsound materials. Care is to be taken to avoid damage to the sound concrete adjacent/below the repair. Roughen edges of the rout to a CSP-3 minimum profile. Recommend diamond based masonry with soft matrix blade for rough finish.*
2. Clean the rout including 50 mm of concrete surface from each side of the rout using high pressure water blasting (approx. 3500 – 5000 psi or as required) to remove all the dirt, debris and loose particles and saturate the substrate. Conduct test wash prior to full application. Ensure route surface is rough with a surface profile CSP-5 to International Guidelines, refer to Surface Profile Chips.
3. Ensure concrete is saturated and absorbed by concrete then remove excess surface water before the application. If concrete surface dries out before application, it must be

re-wetted. Achieve saturated surface dry (SSD) state with no glistening surface water.

##### CONCENTRATE SLURRY

4. Mix five (5) parts *Xypex Concentrate* dry powder to two (2) parts clean water by volume into slurry consistency. Allow mixture to stand and start to harden then reagitae. Apply *Xypex Concentrate* slurry coat to the base of the rout using a semi-stiff nylon bristle brush. Coating must be uniformly applied with a nominal thickness of 1.25 mm (0.65 - 0.8 kg/m<sup>2</sup>). When applying *Xypex Concentrate*, ensure the slurry penetrates and fills any minor defects such as cracks/pores/voids. Application by stiff bristle brush must use a circular or 'figure 8' brush stroke motion to create a non-uniform pattern. The application and this required method is to ensure no weak plane in the coating is developed, creates a consistent/uniform application of the slurry and achieves an appropriate slurry thickness and roughness.
5. Allow the *Xypex Concentrate* slurry coat to near initial set with some tackiness.

##### DRY PAC LAYER

6. Mix six (6) parts *Xypex Concentrate* dry powder to one (1)

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part clean water by volume as Dry Pac. Lumps should be present in mix. Compress very firmly over the entire rout surface with a hammer and block or use pneumatic packing device to an approximate depth of 15 mm.

7. Remove any loose material from the rout using a semi-stiff nylon bristle brush and ensure required thickness of *Xypex Patch'n Plug* can be applied, clean edges of rout. Apply a fine mist spray of clean water to seal Dry Pac surface.

#### PATCHING LAYER

8. Mix four (4) parts *Xypex Patch'n Plug* dry powder to one and a half (1.5) parts clean water by volume to a workable mortar consistency. DO NOT add more water. Apply *Xypex Patch'n Plug* as scrub coat and patching application over the Dry Pac to return to profile with CSP-3 (brush finish) (approximately 10 mm of thickness). Allow a minimum of 1 hour to set the applied material.

#### **NOTE**

Conduct test application of *Xypex Patch'n Plug*. *Xypex Patch'n Plug* is a very rapidly setting product. Project conditions may require variation of mix up to 3.25-3.5 parts powder to 1 part water. Water temperature should be 15°C-20°C, test application to ensure adequate finish and mixing ratios are compatible with project conditions refer to *Xypex Patch'n Plug* data sheet.

#### CONCENTRATE FINAL COATING

9. Ensure that the repaired zone including 50 mm of concrete surface from each side of the repaired rout is saturated surface dry (SSD) condition. If the surface dries out after initial water application, it must be re-wetted using a fine mist spray of clean water. Remove any excess surface water so no glistening water present.

**NOTE:** Do not use high pressure water blasting for re-wetting of repaired zone and surrounding concrete surface. High pressure water blasting may cause damage to the repaired area.

10. Apply *Xypex Concentrate* slurry (0.65 - 0.8 kg/m<sup>2</sup>) over the repaired area covering a total width of 125 mm (50 mm in each side of the rout). When applying *Xypex Concentrate*, ensure the slurry penetrates and fills any minor defects such as cracks/pores/voids. Application by stiff bristle

brush must use a circular or 'figure 8' brush stroke motion to create a non-uniform pattern. The application and this required method is to ensure no weak plane in the coating is developed, creates a consistent/uniform application of the slurry and achieves an appropriate slurry thickness and roughness. Start curing of *Xypex Concentrate* coating as soon as the coating has set to the point where it will not be damaged by a fine mist spray of clean water (about 2-4 hours after application depending on the weather conditions). Cure the applied coating with a fine mist spray of clean water at least 3 times a day for 2-3 days.

#### **NOTE:**

- For joints requiring early trafficable/hydrostatic pressure. Contact the Xypex Technical Department for possible alternatives.
- For joints subject to movement (construction joints, expansion joints, contraction joints, isolation joints) contact a Xypex Representative or Xypex Technical Department for possible alternatives.
- Information presented is in addition to Xypex Data Sheets and is not meant to replace these or any other information surrounding the use of Xypex Products.
- This joint method, while normally provides an acceptable final appearance, is not meant for aesthetic finishes.
- Refer to Xypex Concentrate Method Statement for application requirements for paints, epoxies, grout, cement pargé coat, plaster, tiles, stucco or similar products.
- Refer to Safety Data Sheet for safe application requirements.
- The suitability of this crack repair needs to be considered in relation to the structures performance, movement, usage, design, condition, reason for cracking, extent and width of cracking, potential future cracking, deflections, access, extent of deterioration, deterioration mechanisms effecting the structure, and state of corrosion. Other conditions/standards/specification may also be applicable. Specialist technical services or Xypex technical department may assist in this assessment if requested.