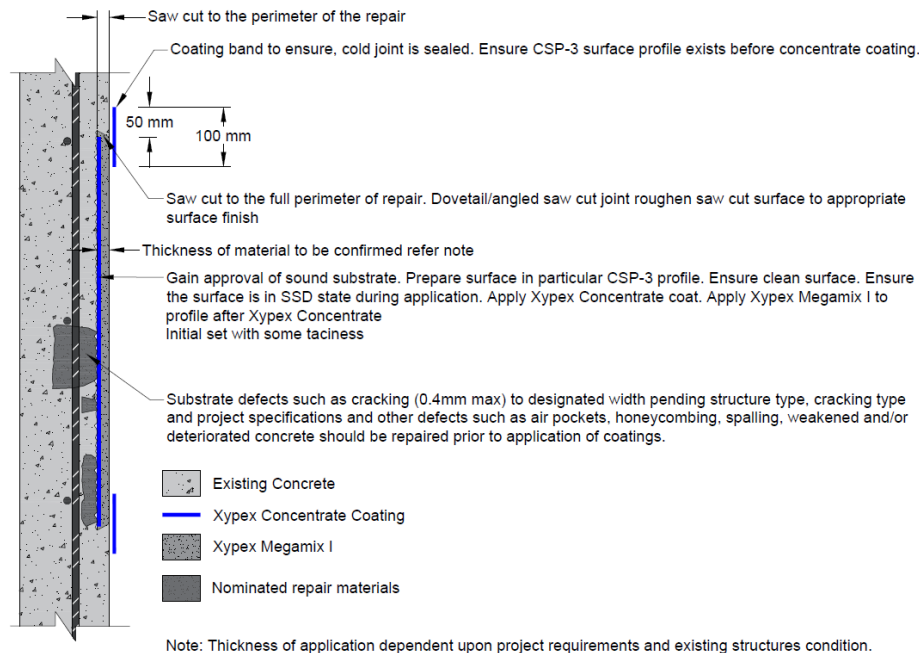


XYPEX CRYSTALLINE COATING SYSTEM

Xypex Concentrate & Xypex Megamix I Repair Coating

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.



Concrete Xypex Concentrate and Xypex Megamix I Repair Coating

GENERAL

Xypex Concentrate and *Xypex Megamix I* is recommended as a waterproofing, protection solution to new structures or as a remedial solution (surface treatment) to existing structures including, but not limited to, dams, water and wastewater treatment plants, swimming pools, bridges, culverts, retaining walls, tunnel and underground structures, parking structures, roof decks, wharves, jetties and foundations.

This Method Statement details the application of *Xypex Megamix I* as a cap coat for *Xypex Concentrate*. This method statement must be used in conjunction with the products data-sheets.

After the application of *Xypex Concentrate*, the active chemicals diffuse into the concrete substrate and react with moisture and the constituents of hardened concrete to cause a catalytic reaction. This reaction generates a non-soluble crystalline throughout the pores and capillary tracts of the concrete, as well as cracks, permanently sealing the concrete and preventing penetration of water and other liquids from any direction.

Xypex is highly resistant to aggressive chemicals (pH range between 3 and 11 constant contact) and can be applied to the positive or negative side of the concrete surface.

Xypex Megamix I is a thin parge coat for waterproofing and resurfacing of concrete surfaces as a cap coat for *Xypex Concentrate* or as an architectural rendering. *Xypex Megamix I* is a fibre-reinforced cementitious mortar. *Xypex Megamix I* is a unique blend of Portland cement, treated silica sand, fibres, and proprietary chemicals. *Xypex Megamix I* is mixed with mixing liquid, including one part *Xypex Xycrylic Admix* and two parts clean water, to produce enhanced bond with the concrete substrate. *Xypex Megamix I* is applied by trowel up to a thickness of 10 mm. The high performance characteristics of *Xypex Megamix I* are enhanced by Xypex crystalline technology. *Xypex Megamix I* testing has shown 25 MPa of compressive strength at 28 days. Refer to Data Sheet.

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PRODUCTS

Xypex Concentrate
Xypex Megamix I
Xypex Xycrylic Admix

SURFACE PREPARATION

1. Saw cut perimeter of concrete repair area to a minimum depth 5.25mm up to a maximum 11.25mm. Dove tail/angle joint and roughen saw cut to a CSP-3 profile. Recommend diamond based masonry with soft matrix blade for rough finish.
2. Remove all loose and unsound concrete preferably using hydro demolition. Alternatively use jack-hammer (pneumatic, electro mechanical or hydraulic), scalers or other specialist equipment, until a sound substrate is exposed.

NOTE: Repair depth and area for reinstatement is to be approved prior to works by supervising officer/client, should depth the officers direction or additional cracking or corrosion occur. Consult supervisor. Care is to be taken to avoid damage to the sound concrete adjacent/below the repair area.

3. Concrete surfaces, which are planning to be treated (including 50 mm of existing concrete surface from saw cut joint), must be clean and free of laitance, dirt, film, paint, coating or other foreign material. The concrete surface must also have an open capillary system to provide “tooth and suction” for Xypex treatment. A surface texture CSP-3 as per the International Concrete Repair Institute Guidelines, refer to Surface Profile Chips must be achieved.
4. Clean the prepared surface by high water pressure water blasting (approx 5000 psi or as required). Blast to remove dirt, debris, loose particals, provide an open capillary surface and surface profile. Conduct test wash prior to full application. Achieve surface profile CSP-3.
5. The concrete surface must be in saturated surface dry (SSD) condition immediately prior to the application of Xypex Concentrate. If the surface dries out after initial water application, it must be re-wetted using a fine mist spray of clean water. Remove excess water before application such that there is no glistening water on the surface.

6. For fresh concrete, the period between 24 hours and 72 hours is the optimum time to apply Xypex as the new concrete is still “green” and requires very little pre-wetting.
7. Repairs to cracks, honeycombing, airpockets, defects are to be repaired as per Xypex Methodologies prior to coating.

MIXING FOR XYPEX CONCENTRATE SLURRY

Mix Xypex Concentrate powder with clean water to a creamy consistency in the following proportions:

For Brush Application

0.65 - 0.8 kg/m²: 5 parts powder to 2 parts water
0.8 - 1kg/m²: 6 parts powder to 2 parts water

For Spray Application

0.65 kg/m² - 2 Coat Application: Mix 5 parts powder to 3 parts water (ratio may vary with specialised equipment type)

0.8 - 1.0 kg/m² Single Coat Spray Application: Mix 5 parts powder to 3 parts water (ratio may vary with equipment type).

Do not mix more Xypex material than can be applied in 20 minutes. Once mixed, allow to stand and start to harden, then reagitae. DO NOT add extra water.

MIXING FOR XYPEX MEGAMIX I

1. Prepare mixing liquid: Mix one (1) part Xypex Xycrylic Admix to two (2) parts clean water by volume.
2. Add Xypex Megamix I to the prepared mixing liquid at a rate of 4.0 – 4.2 litres mixing liquid with 20 kg of Xypex Megamix I powder.
3. Mix thoroughly to a creamy consistency and ensure fibres are not removed from mix by the mixing equipment.
4. Allow mixture to stand for three (3) to five (5) minutes (refer to note regarding temperature), re-agitate and then apply.

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COATING APPLICATION AND CURING

1. The Xypex treatment must not be applied under rainy conditions or when ambient temperature is below 4°C. Avoid application of the Xypex coating in hot and windy conditions as the coating may dry out prematurely. Recommended not installing in temperatures > 30°C.
2. Apply one coat of *Xypex Concentrate* slurry uniformly at the rate of approximately 0.65 - 0.8 kg/m², or to a nominal thickness of 1.25 mm by semi-stiff nylon bristle brush or specialised spray equipment. 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-uniformed 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. Ensure CSP-3 profile finish using stiff broom.
3. When the *Xypex Concentrate* coating reaches near final set but while it is still "green" (approx. 12 hours), dampen *Xypex Concentrate* ahead of application of *Xypex Megamix I* to gain a SSD surface. *Xypex Megamix I* can be applied as a cap coat to the thickness as per the project specifications. *Xypex Megamix I* must be applied within 12-18 hours after application of *Xypex Concentrate*.
4. The minimum thickness of *Xypex Megamix I*, as a waterproofing cap coat for *Xypex Concentrate*, is 4 - 5 mm. For non-waterproofing applications 2.0 mm cap coat may be applied. Trowel finish *Xypex Megamix I* to profile but ensure roughen finish to CSP-3 profile exists within 50 mm of saw cut joint for *Xypex Concentrate* application.
5. While *Xypex Megamix I* is still "green", and stiff to accept Xypex Concentrate, mix *Xypex Concentrate* as per mixing instructions, apply one coat of *Xypex Concentrate* slurry (0.8 - 1.0 kg/m²) on the required joint extending 50 mm both sides of the repair joint, refer to *Xypex Concentrate* method statement/data sheet.
6. Cure *Xypex Concentrate* at surface joint interface under normal conditions by maintaining moisture by applying mist spray of clean water 3 times a day for 3 days. In hot or arid conditions spraying may be required more frequently. Refer to *Xypex Concentrate* data sheet. DO NOT use *Xypex Gamma Cure* to cure *Xypex Concentrate* above *Xypex Megamix I*.
7. Under normal conditions *Xypex Megamix I* with *Xycrylic* does not require any type of curing, however in rapid drying conditions, a fine mist spray of clean water should be applied 2 or 3 times for 24 hours. The applied coating must be protected from direct sunlight, rain, frost, wind and temperatures below 4°C for a period of no less than 48 hours after applications. If plastic sheeting is used as protection it must be raised off the Xypex to allow the coating to breathe.

APPLICATION OF PAINT, EPOXY OR SIMILAR COATINGS

Consult epoxy and paint manufacturer for recommended application timeframes and additional coating instructions and restrictions. Pressure washing, blasting or etching may be required.

Prior to the installation, it is recommended that a test section be completed under ambient and project conditions to demonstrate acceptable bond.

APPLICATION OF GROUT, CEMENT PARGE COAT, PLASTER OR STUCCO

It is recommended that any cementitious system be applied over the Xypex coating after the Xypex is near final set but while it is still 'green' (8 to 48 hours). The 12 to 18 hour window is considered ideal. Applications: Contact Xypex Technical Department or your local Xypex Representative regarding surface preparation and other procedures for installations of other materials onto Xypex coatings. Removal of *Xypex Concentrate* coatings may be required after active chemicals have diffused into the substrate and reacted with moisture and the constituents of hardened concrete to have caused a catalytic reaction. This reaction generates a non-soluble crystalline throughout the pores and capillary tracts of the concrete, as well as cracks, permanently sealing the concrete and preventing penetration of water and other liquids from any direction.

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Prior to the installation, it is recommended that a test section be completed under anticipated ambient and project conditions to demonstrate acceptable bond.

Note: Xypex Australia makes no representations or warranties regarding the compatibility of Xypex products with plasters, stuccos, tiles and other surface applied materials. It is the responsibility of the installer of these surface-applied materials to take whatever measures are necessary, including testing, to ensure acceptance by or adhesion to the Xypex treated surface.

NOTE

- In potable water applications, *Xypex Megamix I* coating must be maintained at a minimum of 15°C for at least 48 hours.
- For concrete structures that hold liquids (e.g. reservoirs, swimming pools, tanks etc). Xypex should be cured for a minimum 3 days and allowed to set for 12 days. (15 days total) For partially hot liquid (waste water) and chemical retaining structures, allow 18 days setting (21 days total). Before filling the structure with liquid. Should this period not be sufficient for project reasons. Contact Xypex Technical Department for alternative methods and coatings.
- It is recommended that a small test area be completed prior to the commencement of whole surface treatment so that the method and results can be reviewed and revised where necessary, in particular bond strength/test.
- Where the coating has been applied to an external face of a wall, do not back fill for 36 hours. Protect the coating from coarse backfilling material, moisture condition backfill to a 100% Standard Optimum Moisture Content, place the backfilling material with care.
- Refer to Safety Data Sheet for product safety requirements.