



DESCRIPTION

Xypex FCM 40 is specifically designed for repairing cracks subject to movement, sealing construction joints, restoring deteriorated concrete, and waterproofing concrete structures. FCM 40 has exceptional adhesive and elongation characteristics and is often used in conjunction with the Xypex Crystalline Concrete Waterproofing and Protection System. FCM is a two component product consisting of a specialized liquid polymer dispersion and a cementitious powder. These ingredients are mixed just prior to application.

Note: Xypex FCM Products have been specially formulated to meet varying temperature conditions. FCM 40 is used under normal environmental conditions, where the lowest annual ambient temperature is not below 5°F (-15°C). Consult with a Xypex Technical Representative for the most appropriate FCM product for your project.

RECOMMENDED FOR:

- Moving Cracks
- Construction Joints
- Deteriorated Concrete Surfaces
- Concrete Block Walls
- Balconies, Terraces, and Planters
- Water-holding Structures
- Sewage and Water Treatment Tanks
- Marine Structures
- Thermal Contraction and Expansion

ADVANTAGES

- Flexible
- Superior elongation properties
- Excellent adhesive qualities
- Impermeable to water and chlorides
- Breathable, seamless
- Durable, retains properties in climatic extremes
- Non-toxic, solvent-free, odorless
- UV resistant
- Effective when subjected to thermal contraction and expansion

PACKAGING

The Xypex FCM 40 is packaged (in a carton) as a unit (kit), which includes the liquid component (1 gal. / 4 l bottle) and the powder component (22 lb. / 10 kg pail). For larger projects, customized packaging is available.

COVERAGE

When mixed, one unit will cover an estimated 32 sq. ft. (2.9 m²) at a thickness of 1/8 in. (3 mm).

STORAGE

Xypex products must be stored dry at a minimum temperature of 45°F (7°C). Shelf life is one year when stored under proper conditions.

PROPERTIES

Adhesion:

58.3 to 364.5 psi (0.4 to 2.5 MPa)
depending on mix ratio and temperature

Elongation:

1/8 in. (3 mm)

Resistance to Tearing (non-reinforced membrane):

13.1 to 291.6 psi (0.30 MPa to 2.0 MPa)
depending on mix ratio and temperature

Elongation at Tear:

70% to 100% (non-reinforced)
30% (reinforced)

Water Pressure Resistance:

Positive side: 100 ft. (30.5 m) head pressure (43 psi/0.3 MPa)
Negative side: 21 ft. (7 m) head pressure (9 psi/0.07 MPa)

Chemical Resistance:

2 to 13 pH (periodic contact)
3 to 11 pH (constant contact)

APPLICATION PROCEDURES

SURFACE PREPARATION

Concrete surfaces must be free of all bond inhibiting materials such as loose concrete, dirt, dust, oil, grease, release agents, curing and cleaning compounds. Clean the surface thoroughly by sandblasting, waterblasting or etching with muriatic (HCL) acid. Prior to the FCM application, the concrete substrate can be dry or damp but not dripping wet. Where a damp or porous (eg. masonry blocks) substrate exists, a FCM Primer slurry coat is recommended. Please consult with the Xypex Technical Department regarding your specific requirements.

MIXING

Mix by weight: one part FCM 40 liquid with 2.5 parts FCM powder. Mix thoroughly for 3 to 4 minutes to obtain a homogeneous and lump-free compound. Do not mix more material than can be used in 30 minutes.

PRIMER SLURRY

In situations where damp or porous substrates exist or where increased bond is required, a FCM Primer "slurry coat" is recommended prior to the FCM 40 membrane application. The FCM Primer slurry is mixed one part FCM Primer with one part FCM Powder by weight to a slurry consistency. Do not mix more material than can be used in 30 minutes.

Note: The FCM Primer is packaged (in a carton) as a unit consisting of a liquid component (1 gal. / 4 l bottle) and a powder component (8.8 lb. / kg pail). When applied at a thickness of 1/24 in. (1 mm), one FCM Primer unit will cover approximately 53 sq. ft. (4.8 m²).

REPAIR OF CRACKS AND FAULTY CONSTRUCTION JOINTS

No Water Flow

1. Clean and prepare the concrete surface as specified above.
2. Brush-apply one coat of Xypex Concentrate, approximately two inches wide, to the crack or joint line at the rate of 2 lb./sq. yd. (1 kg/m²) and allow to set for two hours.
3. Trowel-apply first coat of FCM 40 to a width of 4 - 6 in. (10 - 15 cm) and a thickness of 1/16 in. (1.5 mm). Allow first coat to dry for six hours, then apply second coat of FCM 40 at the same rate to a total membrane thickness of 1/8 in. (3 mm). The second coat should be applied at right angles to the first coat.

Against A Flow Of Water

1. Clean and prepare the concrete surface as specified above.
2. Rout out crack or construction joint in a "U" shaped slot one inch (25 mm) wide and 1.5 inches (37 mm) deep.
3. Utilize Xypex Patch'n Plug in the slot to control and stop water flow. In the event that there is any active water flow under high hydrostatic pressure, rout out the slot area affected to a depth of 2 inches (50 mm) and insert a "bleeder hose" using Patch'n Plug to secure it into place.
4. Fill slot to within 1/2" (12 mm) of surface with Xypex Concentrate Dry-Pac. Dry-Pac is mixed by adding one part clean water to six parts Xypex Concentrate by volume. Apply the Dry-Pac by glove, by compressing tightly and then compact it with pneumatic tool or a hammer and block.
5. Fill remainder of slot to surface with Xypex Patch'n Plug.
6. Apply the FCM Primer slurry with a brush or roller to a width of 4 - 6 in. (10 - 15 cm) along crack repair line. Work slurry into surface. Allow to dry for one hour.
7. Trowel-apply the first coat of FCM 40 to the surface to a thickness of 1/16 in. (1.5 mm). Allow first coat to dry for six hours, then apply second coat at the same rate to a total membrane thickness of 1/8 in. (3 mm). The second coat should be applied at right angles to the first coat.

Note:

1. The ambient temperature for applying FCM should be between 50°F (10°C) and 95°F (35°C).
2. To increase the tensile strength of FCM 40 over cracks and joints, use a reinforcing poly-propylene mesh (1/8 in./ 3 mm square pattern). Do not use a fiberglass mesh. Embed mesh into the initial FCM coat and fully cover with second application of the FCM membrane.
3. If significant crack movement is anticipated, a "bond-breaker" is recommended. Simply place 1 in. (25 mm) wide masking tape or hypalon tape over top of the crack or joint prior to applying the FCM membrane. This will allow for the elongation of the FCM material.

COATING APPLICATION

1. Clean and prepare the concrete substrate as specified above.
2. Apply an initial coat of the FCM 40 mixture by trowel or spray to a thickness of approximately 1/16 in. (1.5 mm). Allow coating to dry for six hours.

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13731 Mayfield Place, Richmond, British Columbia, Canada V6V 2G9
Tel: (604) 273-5265 Fax: (604) 270-0451
E-mail: info@xypex.com Website: www.xypex.com
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