



MEGAMIX II

03930 | PATCHING & RESURFACING

Concrete Rehabilitation

Description

XYPEX MEGAMIX II is a high build repair mortar for the patching and resurfacing of deteriorated concrete. Megamix II has been specifically formulated to produce superior bond, low shrinkage, chemical durability and high strength. It is a one component mortar and can be either sprayed or trowel applied at a thickness of 10 mm to 50 mm. The high performance characteristics of Megamix II are enhanced by Xypex's unique crystalline waterproofing and protection technology.

NOTE: For rehabilitation applications, where a thin parge coating (less than 10 mm) or a cap coat for Xypex Concentrate is required, refer to the product data sheet for Megamix I.

Recommended for the Rehabilitation of:

- Water Tanks and Reservoirs
- Sewage Treatment Plants
- Concrete Water and Sewer Pipes
- Manholes and Vaults
- Marine Structures
- Bridge Structures
- Tunnels and Parking Garages

Advantages

- Excellent adhesion and bond to concrete substrates
- Low shrinkage, fiber reinforced
- Low chloride penetration
- Ready to use – just add water
- Vertical and overhead concrete repair; sprayable
- VOC compliant
- AS/NZS 4020 and NSF 61 approved

Packaging

Megamix II is packaged in 20 kg buckets.

Storage

Xypex products must be stored dry at a minimum temperature of 7°C. Shelf life is one year.

Coverage

At 12.5 mm thickness, each 20 kg bucket of Megamix II will cover 0.84 m².

Test Data

Water Requirement	
2.8 litres / 20 kg bucket	
Compressive Strength (ASTM C 109)	
@ 24 hrs	21.2 MPa
@ 3 days	38.0 MPa
@ 7 days	47.2 MPa
@ 28 days	59.3 MPa
Flexural Strength (ASTM C 78)	
@ 28 days	8.2 MPa
Splitting Tensile Strength (ASTM C 496)	
@ 28 days	4.2 MPa
Direct Tensile Bond Strength to Concrete (ACI 503R Appendix A)	
@ 90 days	2.3 MPa
Rapid Chloride Permeability (ASTM C 1202)	
@ 28 days	572 coulombs
@ 90 days	420 coulombs
Scaling Resistance (ASTM C 672)	
50 cycles	no scaling
Chemical Resistance (ASTM C 267)	
mass loss (84 days)	negligible (retained 99.78% mass)
Setting Time (ASTM C 266)	
initial	4:10 hrs:min
final	7:10 hrs:min

POTABLE WATER EXPOSURE

AS/NZS 4020 "Products for Use in Contact with Drinking Water", Australian Water Quality Centre, Adelaide, South Australia

NSF 61 "Drinking Water System Component-Health Effects" NSF International, Ann Arbor, USA

Exposure testing of potable water in contact with Xypex-treated samples indicated no harmful effects.

Application Procedures

1. **SURFACE PREPARATION** Remove loose, delaminated or unsound concrete by high pressure water blast, chipping, or other means. Complete structural or reinforcing steel corrosion repairs as necessary. Saw cut perimeter of repair area to 10 mm depth. Remove dust, micro fractured particles and foreign material from the repair area by pressure washing or other suitable means necessary to clean surface and obtain desired bond.

2. MIXING PROCEDURES Best results are achieved using a mechanical mortar mixer and paddle with a capacity for low speed continuous blending. For small quantities of material a paddle mixer can be substituted. Mix requires 2.8 litres of clean water per 20 kg bucket of Megamix II. Add approximately 90% of the required amount of water to a mixer and then add the Megamix II powder. Mix briefly and add additional water as required up to a maximum of 2.8 litres per 20 kg bucket. Mix 3 to 5 minutes to achieve a uniform consistency. Over mixing or delivery delays may result in product stiffening. Do not over-water.

3. APPLYING MEGAMIX II Saturate the repair area with clean water and allow the surface to come to a "saturated, surface dry" (SSD) condition. Maintain concrete substrate in this condition during the application process. For improved bond, apply scrub coat of Megamix II onto prepared surface using a stiff bristle brush. Apply full coat of Megamix II while scrub coat is still wet (generally within 20 minutes). Apply Megamix II by low pressure spray equipment with sufficient velocity to compact and build thickness of the mortar. The spray nozzle should have a minimum 12.5 mm orifice to prevent clogging. Spray-apply Megamix II, at a right angle to surface, at a distance of 450 mm to 600 mm. Complete finishing operations as quickly as possible. Megamix II can be finished to varying surface textures, including a rough finish directly from spraying nozzle, to semi-smooth using a wood or rubber float, or smooth using a steel trowel.

NOTE:

i. For a recommendation regarding the specific type of equipment required for the mixing and for the spray application of Megamix II, please contact the Technical Department of Xypex Australia or your local Xypex representative.

ii. An application of Xypex Concentrate may be specified by an engineer or design authority to provide enhanced waterproofing and chemical protection in extremely harsh conditions.

iii. Xypex Concentrate should be applied onto the Megamix II surface immediately following moist curing (i.e. 3 days). Ensure that the Megamix surface is rough or scored and saturated to provide "tooth and suction" for the Xypex coating. Not applicable when curing compounds utilised.

4. APPLICATION THICKNESS The thickness of the Megamix II application will depend on specific job site conditions and requirements. As a general guide, application thickness should be between 10 mm and 50 mm. Single layer thickness for spray application will depend on equipment and applicator skill, but may be up to 50 mm vertical and 40 mm overhead. Roughen or score the surface before applying successive layers and apply immediately following initial set.

NOTE: For any application greater than 50 mm contact the Technical Department of Xypex Australia or your local Xypex representative.

5. CURING Curing is essential for optimum quality and durability of the repair mortar. Cure Megamix II using either AS 3799 or ASTM C 309 compliant curing compounds or by moist curing methods. For moist curing, apply continuous source of moisture by spray, or wet burlap and polyethylene sheet or other suitable means for a minimum of 3 days. Containment structures (i.e. reservoirs, tanks, etc.) can be filled with water following 3 days moist curing of the Megamix II coating.

NOTE:

i. In hot, dry, windy weather, special curing procedures may be required prior to final set. This may involve use of fog spray, or suitable curing compounds following finishing.

ii. Megamix II should not be mixed and placed at temperatures below 3°C or above 30°C. Protect from rapid evaporation (hot and/or cold and windy conditions).

Technical Services

For more instructions, alternative application methods, or information concerning the compatibility of the Xypex treatment with other products or technologies, contact the Technical Department of Xypex Australia or your local Xypex representative.

Safe Handling Information

Xypex is alkaline. As a cementitious powder or mixture, Xypex may cause significant skin and eye irritation. Directions for treating these problems are clearly detailed on all Xypex buckets and packaging. The Manufacturer also maintains comprehensive and up-to-date Material Safety Data Sheets on all its products. Each sheet contains health and safety information for the protection of employees and customers. Contact Xypex Australia or your local Xypex representative to obtain copies of Material Safety Data Sheets prior to product storage or use.

Warranty

Concrete Waterproofing Manufacturing Pty Ltd (trading as Xypex Australia) (the "Manufacturer") warrants that the products manufactured by it shall be free from material defects and of a consistent quality. Should any of the products be proven defective, the liability of the Manufacturer shall be limited to replacement of the product ex-factory. The Manufacturer gives no warranty as to fitness of the products for any particular purpose. The user shall: determine the suitability of the product for its intended use; comply with the directions for use and safe handling information available from Xypex; where necessary, engage an experienced Xypex applicator; and assume all risks and liabilities in connection with the use of this product.

