MEGAMIX II

PATCHING & RESURFACING

Concrete Rehabilitation

Description

XYPEX MEGAMIX II is a thick 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 - 50 mm per layer. 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
- Water and Wastewater Treatment Plants
- Concrete Water and Sewer Pipes
- Manholes and Vaults
- Marine Structures
- Bridge Structures
- Tunnels and Parking Garages
- Foundations
- Hydro Dams and Thermal Electric Facilities

Advantages

- Excellent adhesion and bond to concrete substrates
- Resistant to chemical attack
- Low shrinkage, fiber reinforced
- Highly resistant to chloride diffusion
- Sulfate resistant (very severe sulfate exposure)
- Ready to use – just add water
- Vertical and overhead concrete repair; sprayable
- Non-toxic, no VOCs
- NSF 61 certified
- CE certified meeting EN 1504-3

Packaging

Megamix II is available in 25 kg bags or in customized packaging to meet your specific requirements.

Storage

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

Coverage

At 12.5 mm thickness, each 25 kg bag of Megamix II will cover 1.05 m^2.

Laboratory Test Data

Compressive Strength (ASTM C 109)[1]	
@ 24 hrs @ 3 days @ 7 days @ 28 days	18 MPa 32 MPa 42 MPa 53 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 (ASTM C 1583)	
@ 90 days	2.3 MPa
Elastic Modulus (EN 13412)	
28 days	20.4 GPa
Rapid Chloride Permeability (ASTM C 1202)	
@ 28 days @ 90 days	< 572 coulombs < 420 coulombs
Carbonation Depth (EN 13295)	
@ age 49 days for 56 days in 1% CO_2	No measurable carbonation depth
Scaling Resistance (ASTM C 672)	
50 cycles	No scaling
Sulfate Resistance – (Product tested to ASTM C 1012)	
6 mo expansion 12 mo expansion	0.027% 0.029%
Acid Resistance (ASTM C 267)	
Mass loss (84 days)	Negligible (retained 99.8% mass)
Setting Time (ASTM C 266)	
Initial Final	3:25 hrs:min 5:00 hrs:min
Note: Testing completed @ 14% water content of the mass of the dry ingredients @ 6% air content.	

[1]Results may differ based on statistical variability and site conditions. Recommended minimum specified strength for field conditions are: Compressive Strength: > 45 MPa and Bond Strength: > 0.9 MPa.

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 a minimum depth of 10 - 19 mm preferred. Remove dust, micro fractured particles and

foreign material from the repair area by pressure washing or other suitable means necessary to clean surface to obtain desired bond. A roughened surface texture such as ICRI CSP 5 or greater is typically required to achieve adequate bond. Maintain surface in saturated surface dry (SSD) condition for application of Megamix II mortar.

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 typically requires 0.91 to 0.94 U.S. gallons of water per 3.45 to 3.55 litres per 25 kg bag. Use only sufficient clean water to create a medium to stiff mortar consistency. 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 to achieve the required consistency (do not exceed maximum water without consulting Xypex Technical Services Representative). Mix 3 - 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 Spray 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). When applying Megamix II by low pressure spray equipment, use sufficient velocity to compact and build the 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 - 600 mm. When applying Megamix II with a trowel ensure that the Megamix II is fully consolidated and worked well into the scrub coat and substrate. 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, contact the Technical Services Department of Xypex Chemical Corporation.

ii. For enhanced chemical protection and crack healing of the substrate Xypex Concentrate may be applied to broom finished surface of the Xypex Megamix II as soon as the surface will accept the Xypex Concentrate without being disturbed. The Xypex Concentrate must then be mist cured for as long as required to ensure a 3 day wet cure of the Megamix II below it. Gamma Cure alone is not sufficient for curing a Concentrate on Megamix II installation.

iii. Xypex Xycrylic Admix at 2 parts water to 1 part Xycrylic dilution may be used as mix liquid in place of water to improve adhesive bond. The use of Xycrylic may reduce compressive strength and change other published engineering properties of Megamix II. Contact the Xypex Technical Services Representative for additional information.

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:

i. For any application greater than 50 mm thickness contact the Technical Services Department of Xypex Chemical Corporation or your local Xypex Technical Services Representative.

ii. Megamix Ii can be extended with clean 10 mm coarse aggregate in specific applications. Consult Xypex Technical Services Representative.

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

5. CURING Curing is essential to achieve optimum quality and durability of the repair mortar. Cure Megamix II using moist curing methods. For moist curing, apply continuous source of moisture by spray, or utilize 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. When using a 2:1 water to Xycrylic Admix blend as the mix liquid, wet curing should not be done except in extremely hot and dry conditions. In these conditions consult Xypex Technical Services.

NOTE:

i. In most cases early curing procedures will be required prior to final set. This typically involves use of fog spray.

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

iii. The use of curing compounds (e.g. ASTM C 309) may be acceptable in certain conditions. Contact the Technical Services Department of Xypex Chemical Corporation or your local Xypex Technical Services Representative.

Technical Services

For more instructions, alternative application / curing methods, or information concerning the compatibility of the Xypex treatment with other products or technologies, contact the Technical Services Department of Xypex Chemical Corporation or your local Xypex Technical Services Representative.

Certification

Xypex Megamix II satisfies the requirements of EN 1504-3; Initial Type Testing (ITT) according to EN 1504-3 was certified by BSI as the Notifying Body.

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 pails and packaging. The Manufacturer also maintains comprehensive and up-to-date Safety Data Sheets on all its products. Each sheet contains health and safety information for the protection of workers and customers. The Manufacturer recommends you contact Xypex Chemical Corporation or your local Xypex Technical Services Representative to obtain copies of Safety Data Sheets prior to product storage or use.

Warranty

The Manufacturer warrants that the products manufactured by it shall be free from material defects and will be consistent with its normal high quality. Should any of the products be proven defective, the liability to the Manufacturer shall be limited to replacement of the product ex factory. The Manufacturer makes no warranty as to merchantability or fitness for the particular purpose and the warranty is in lieu of all other warranties expressed or implied. The user shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith.

CE

13731 Mayfield Place, Richmond, BC, Canada V6V 2G9 Toll-free: 1.800.961.4477
Tel: 604.273.5265 Fax: 604.270.0451 E-mail: info@xypex.com Web: www.xypex.com
XYPEX is a registered trademark of Xypex Chemical Corporation. Copyright © 2003-2025 Xypex Chemical Corporation.

ISO 9001:2015
FM 63167