SPEC MIX®

1. Product Name

SPEC MIX® Preblended Integral Water Repellent (IWR) Masonry Mortar

2. Manufacturer

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3. Product Description

BASIC USE

SPEC MIX® Preblended Integral Water Repellent (IWR) Masonry Mortar is a dry, preblended mortar mix containing Portland cement, hydrated lime or masonry or mortar cement and dried masonry sand. It is formulated for water repellency, superior bond, water retention and board life and meets compressive strength requirements.

In addition to custom mix designs that are available for specific applications or properties, the standard SPEC MIX IWR mortar is designed to be compatible with the characteristics of the specified masonry unit. Packaged dry, it offers the end-user complete assurance of laboratory controlled mortar with each batch. It is accepted for all types of masonry construction with submittals available upon request.

SPEC MIX IWR mortar is manufactured to meet the requirements of ASTM C270 and ASTM C1384, or any project specification for masonry. The mortar may be used above or below grade when manufactured to the appropriate specification.

For aesthetic appeal when matching or contrasting masonry units with colored mortar, SPEC MIX IWR-Color also is available. As with standard mortar, SPEC MIX IWR-Color is packaged dry by weight for integrally colored water repellent mortar. This product requires no field measuring and is environmentally safe. The pigments and water repellents are finely milled and specially blended to ensure maximum color effect and proper dispersion throughout the batch. It is important to note that the addition of pigment to SPEC MIX IWR-Color mortar mix does not affect the properties or performance of the final mix. Contact a SPEC MIX manufacturer or SPEC MIX, Inc., for more information.

ADVANTAGES

SPEC MIX IWR mortar has better water retention and resistance to water penetration than the reference SPEC MIX mortar in Table 1. Type S masonry cement mortar also exhibits better water penetration resistance and water retention characteristics. See Table 2. Additional product benefits include:

- Eliminates the need to meter bottles of liquid admixture onsite
- Efflorescence control
- Preblended with sand and water repellent to minimize labor costs
- Batch-to-batch consistency
- Excellent workability and board life
- No sand piles or wasted materials

COMPOSITION & MATERIALS

SPEC MIX IWR mortar is manufactured with the finest raw materials available in each market area. SPEC MIX IWR mortar is available in Types M, S, N and O. Each type produces a high quality mortar with optimal flexural bond, compressive strength, water repellency and workability.

SPEC MIX is produced under strict manufacturing standards with complete quality control in effect with each batch. A digital printout displays the proper proportions per batch and may be retained as a permanent record and produced upon request. Only SPEC MIX offers this laboratory controlled production system for preblended masonry mortars.

TYPES & SIZES

Portable SPEC MIX silos and bulk bags are delivered to the project site. The silo is loaded and the product dispensed into the mixer as required. SPEC MIX IWR colored and gray mortar are available in 3000 lb (1362 kg) bulk bags or 80 and 94 lb (36 and 43 kg) packages for easy hand loading. For increased jobsite efficiency, SPEC MIX IWR mortar is dispensed from 3000 lb (1362 kg) bulk bags into a patented silo system that charges a contractor's mechanical batch mixer.

4. Technical Data

APPLICABLE STANDARDS

ASTM International

- ASTM C91 Standard Specification for Masonry Cement
- ASTM C144 Standard Specification for Aggregate for Masonry Mortar
- ASTM C150 Standard Specification for Portland Cement
- ASTM C207 Standard Specification for Hydrated Lime for Masonry Purposes
- ASTM C270 Standard Specification for Mortar for Unit Masonry
- ASTM C476 Standard Specification for Grout for Masonry
- ASTM C595 Standard Specification for Blended Hydraulic Cements
- ASTM C780 Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
- ASTM C979 Standard Specification for Pigments for Integrally Colored Concrete
- ASTM C1072 Standard Test Method for Measurement of Masonry Flexural Bond Strength
- ASTM C1329 Standard Specification for Mortar Cement
- ASTM C1384 Standard Specification for Admixtures for Masonry Mortars
- ASTM E514 Standard Test Method for Water Penetration and Leakage Through Masonry
- ASTM E518 Standard Test Methods for Flexural Bond Strength of Masonry

American Concrete Institute (ACI) - ACI 530.1 Masonry Structures (ACI - 530.1-88/ASCE 6-88)

International Masonry Industry All-Weather

Preblended IWR mortar ensures consistency and quality for every job.

Formulated for superior bond

Council (IMIAC)

- Recommended Practices and Guide Specification for Hot Weather Masonry Construction
- Recommended Practices and Guide Specification for Cold Weather Masonry Construction

Note - Test method ASTM C780 is acceptable for preconstruction and construction evaluation of mortars for plain and reinforced unit masonry.

There is no ASTM method for determining the conformance or nonconformance of a field prepared mortar to the property specification of ASTM C270. Physical properties of field sample mortars should not be used to determine compliance with ASTM C270 or intended as criteria to determine the acceptance or rejection of the mortar.

ENVIRONMENTAL CONSIDERATIONS

Empty bulk bags and wooden pallets are returned to the plant for reuse. This silo system eliminates the use of disposable paper bags, thus reducing landfill impact.

5. Installation

PREPARATORY WORK

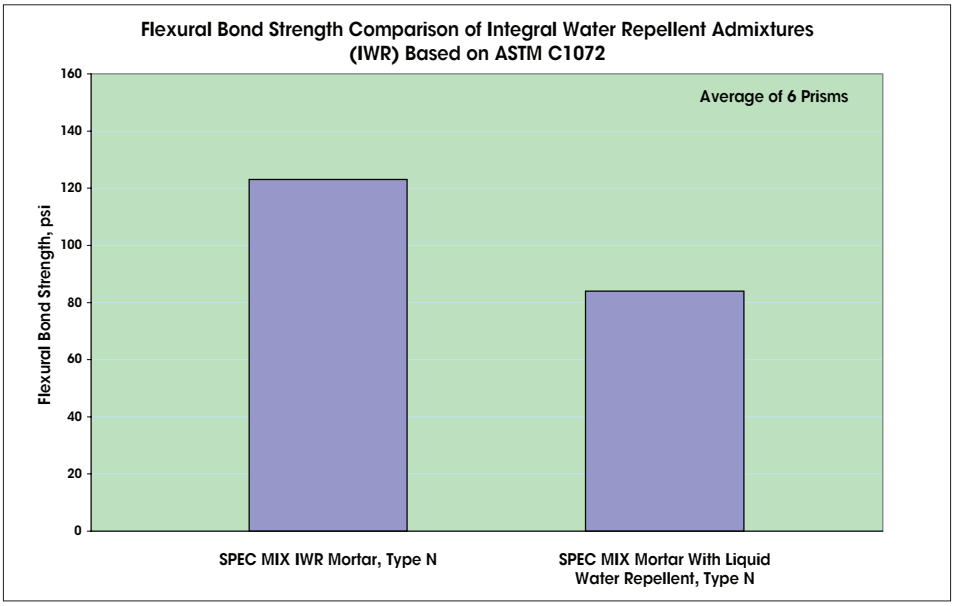
Mortar type should correlate to the particular masonry unit to be used, as certain mortars are compatible with certain masonry units. The specifier should evaluate the interaction of the mortar type and masonry unit specified.

TABLE 1 1:1:6 PROPORTIONED PORTLAND/LIME/SAND MORTARS

Test Method	SPEC MIX® Reference Type N Mortar	SPEC MIX® Type N Mortar With IWR Admixture
ASTM C270		
Water retention, %	89	93
Air, %	6.3	6.1
7 day compressive strength, psi (kPa)	1520 (10,473)	1570 (10,817)
28 day compressive strength, psi (kPa)	1730 (11,920)	1800 (12,402)
ASTM E514		
Time of first dampness, min	60	None
Time of first visible water	None	None
Area of dampness, (% of test area)	10	None
Water collected in 4 hours, liters	None	None

TABLE 2 1:3 MASONRY CEMENT/SAND MORTARS

Test Method	SPEC MIX® Reference Type S Masonry Mortar	SPEC MIX® Type S Masonry Mortar & IWR Admixture
ASTM C270		
Water retention, %	86	86
Air, %	15.8	15.3
7 day compressive strength, psi (kPa)	1570 (10,817)	1600 (11,024)
28 day compressive strength, psi (kPa)	1950 (13,436)	2040 (14,056)
ASTM E514		
Time of first dampness, min	38	None
Time of first visible water	None	None
Area of dampness, (% of test area)	12	None
Water collected in 4 hours, liters	None	None



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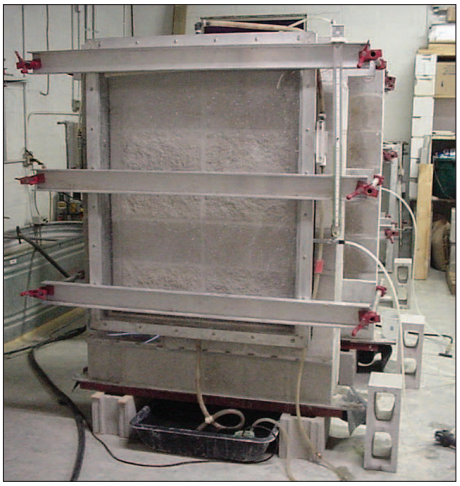

SPEC MIX® IWR Mortar provided good results during ASTM E514 testing.

Masonry units with a high initial rate of absorption will have greater compatibility with mortar of high-water retentivity. The material properties that influence the structural performance of masonry are compressive strength, bond strength and elasticity. Since the compressive strength of masonry mortar is of less importance than bond strength, workability and water retentivity, the latter properties should be given priority in mortar selection.

Mortar selection should be based on design requirements and with due consideration given to the code and specification provisions affected by the mortar selected.

MOCK-UPS

A sample of the proposed product will be provided by the manufacturer for onsite preparation of a sample panel for architectural approval and testing, if required. Preparation of this panel with all materials and systems that will be employed in the final project is imperative. Retain the mock-up or field sample through the completion of the project.

METHODS

For best results, use a mechanical batch mixer to ensure homogeneity, workability and good board life. Use clean, potable water and add the maximum amount consistent with optimum workability. Do not mix by hand. Hand mixing of the mortar should be permitted only with the written approval of the specifier, who should outline hand mixing procedures. The finished color should not be analyzed until the addition and full mixing of the cementitious materials and water are complete. Uniform color requires consistent material proportioning.

Mixing time is 5 minutes and should be held consistent from batch to batch. Follow the mixing instructions below when mixing the 80 lb (36 kg) bags. For silo mixing instructions, contact a local manufacturer or SPEC MIX, Inc.

Maintain a consistent water/cement ratio. Tool mortar joints when the surface is thumbprint hard. Keep tooling time consistent. Do not strike joints too early or too late, as the color will not remain consistent with the mock-up panel. Do not retemper colored mortar by adding water.

MIXING

Place two-thirds of the required potable water into the mechanical mixer. One bag requires approximately 1 1/2 - 2 gallons (5.7 - 7.6 L) of water. There is no sand to shovel. Dispense 1 bag of SPEC MIX IWR Mortar into the mixer.

Add the remaining amount of water necessary to achieve the desired consistency. Maintain water/cement ratios and the same mixing procedures to ensure consistency throughout the project.

APPLICATION

Place mortars in final position within 2 1/2 hours after initial mixing. Retemper mortar with caution only when mixing water is lost due to evaporation. IWR mortar should be discarded after 2 1/2 hours from the time it is mixed. Retempering colored mortar is not recommended. Handle and store product according to SPEC MIX recommendations. SPEC MIX products are custom packaged to the specification. They must be kept dry, covered and protected from weather and other damage. Under these conditions, they have a 9 month shelf life.

CURING

Mortar should be cured a minimum of 28 days.

PRECAUTIONS

Safety glasses and a dust mask are recommended when handling any mortar mixture containing silica. The cementitious materials mixed onsite are alkaline in nature and, on contact with water, will irritate the eyes and skin. In case of eye contact, flood eyes repeatedly with clean water and see a physician immediately. Do not rub eyes. Wash hands thoroughly after handling and before eating. Keep out of reach of children.

CLEANING

Clean masonry with potable water only. Colored mortar should not be cleaned with muriatic acid.

BUILDING CODES

SPEC MIX IWR mortar should be installed in accordance with the provisions of the local building code and applicable ASTM standards. Good workmanship coupled with proper detailing and design ensures durable, functional, watertight construction.

6. Availability & Cost

AVAILABILITY

SPEC MIX IWR mortar, as well as the patented SPEC MIX silo delivery system, is available through a network of more than 42 nationally licensed manufacturers with local distribution to every major market. Contact SPEC MIX, Inc., at (888) 773-2649 for more information, or visit www.specmix.com to locate a local manufacturer.

COST

Budget installed cost information may be obtained from a local SPEC MIX manufacturer or through SPEC MIX, Inc.

7. Warranty

Seller warrants that its product will conform to and perform in accordance with the product specifications. The foregoing warranty is in lieu of all other warranties, express or implied, including, but not limited to, those concerning merchantability and fitness for a particular purpose. Because of the difficulty in ascertaining and measuring damages hereunder, it is agreed that, except for claims for bodily injury, Seller's liability to the Buyer or any third party, arising out of the purchase of the Product from the Seller by Buyer shall not exceed the total amount billed and billable to the Buyer for the product hereunder.

8. Maintenance

Properly mixed and installed masonry units and mortar require little maintenance. Depending on service conditions, masonry walls may require periodic cleaning and tuckpointing.

9. Technical Services

For technical assistance, contact SPEC MIX, Inc., or a local SPEC MIX manufacturer.

10. Filing Systems

- Reed First Source
- MANU-SPEC®
- Additional product information is available from the manufacturer upon request.