

GRACE

Construction Products

1. Product Name

DRY-BLOCK® System of Integral Water Repellent Admixtures for Block and Mortar

2. Manufacturer

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3. Product Description

DRY-BLOCK® is a complete system of 2 water-repellent admixtures for concrete masonry construction. One admixture is mixed throughout the concrete during manufacture of the concrete masonry unit (CMU) by a qualified DRY-BLOCK producer; the other, a mortar admixture, is added to the mortar during the mixing process.

During the curing process, the polymeric admixtures within the CMU and mortar become an integral part of the concrete matrix by locking into the CMUs and mortar, providing long-lasting resistance to water penetration (see Figure 1). In addition, DRY-BLOCK Mortar Admixture enhances the bond between the CMU and mortar, further minimizing areas for water penetration into the wall system.

BASIC USE

DRY-BLOCK is an integral water repellent for concrete block and mortar. The DRY-BLOCK System is also a cost-effective alternative for use as dampproofing in the back-up CMU units and mortar of a cavity wall.

Normally, splitface CMUs are more prone to wicking than standard CMUs. With DRY-BLOCK throughout, the splitface CMU repels moisture and dries out rapidly after a rain; the standard CMU remains moisture saturated (see Figure 2).

COMPOSITION & MATERIALS

Liquid polymeric admixtures.

LIMITATIONS

DRY-BLOCK CMUs are only produced by qualified DRY-BLOCK producers who undergo annual qualifications of their mix designs to ensure they

are able to manufacture water repellent units.

When a fully water repellent wall system is desired, DRY-BLOCK Admixtures must be used as components of both the CMU and mortar. The DRY-BLOCK System is not designed to withstand hydrostatic pressures greater than 2" (0.50 kPa).

The DRY-BLOCK System is only one part of a moisture protection system for CMU walls. Other important elements include:

- Proper drainage within the core and cavity
- Properly installed through-wall flashing and weep system

4. Technical Data

APPLICABLE STANDARDS

ASTM International

- ASTM C90 Standard Specification for Loadbearing Concrete Masonry Units
- ASTM C780 Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
- ASTM C1314 Standard Test Method for Constructing and Testing Masonry Prisms Used to Determine Compliance with Specified Compressive Strength of Masonry
- ASTM C1357 Standard Test Method for Evaluating Masonry Bond Strength
- ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials
- ASTM E514 Standard Test Method for Water Penetration and Leakage Through Masonry

PHYSICAL/CHEMICAL PROPERTIES

The DRY-BLOCK System achieves a Class E rating for Normal Weight, Medium Weight and Lightweight CMUs when evaluated for wind driven rain resistance using ASTM E514 with the test extended to 72 hours, using the rating criteria in ASTM E514-74.

The DRY-BLOCK System of Integral Water Repellent Admixtures has been evaluated for compliance with applicable standards for CMUs, masonry mortars and concrete masonry assemblies. Test reports are available from the manufacturer upon request.

5. Installation

PREPARATORY WORK

Concrete Masonry Units

Qualified DRY-BLOCK producers manufacture water repellent CMUs incorporating DRY-BLOCK Admixture for block using qualified mix designs and dosage rates.

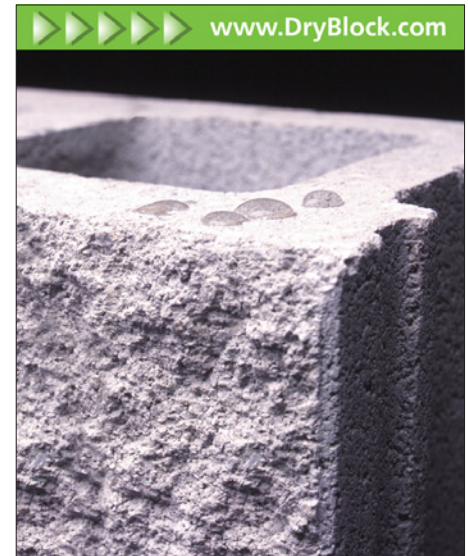


Figure 1: Water-repellent CMU with DRY-BLOCK® Admixture

Mortar

DRY-BLOCK Mortar Admixture is added at the recommended dosage rate, which is dependent on the type of mortar being used.

Mortar Mixing Procedure

Agitate DRY-BLOCK Mortar Admixture before using. DRY-BLOCK should be added to the mix water prior to charging the cement and sand. Reduce the initial water used in the mortar.

PRECAUTIONS

DRY-BLOCK Block and Mortar Admixtures must be kept from freezing. The unopened admixtures have a shelf life of 18 months. An expiration date is marked on the outer container of each unit. For additional information on dosage rates and mixing instructions, request the DRY-BLOCK Mortar Admixture Data Sheet from the manufacturer.

Trial Batches - DRY-BLOCK Mortar Admixture is compatible with other Grace Mortar Admixtures, such as MORSET® and MORTARD®. All admixtures should be added to the mix separately. Trial batches are recommended as detailed in ASTM C780, using jobsite materials and expected jobsite climatic conditions to determine compatibility of materials and the necessary adjustments to the mix design for actual addition rates, workability, color and physical properties.

METHODS

Design and construct in accordance with applicable design codes and the recommendations



Figure 2: Normally, splitface CMUs are more prone to wicking than standard CMUs. With DRY-BLOCK® throughout, the splitface CMU repels moisture and dries out rapidly after a rain; the standard CMU remains moisture saturated.

contained in the following National Concrete Masonry Association (NCMA) documents:

- TEK 10-1 - Crack Control in Concrete Masonry Walls
- TEK 10-2 - Control Joints for Concrete Masonry Walls - Empirical Method
- TEK 19-2 - Design for Dry Single-Wythe Concrete Masonry Walls
- TEK 19-4 - Flashing Strategies for Concrete Masonry Walls
- TEK 19-5 - Flashing Details for Concrete Masonry Walls

Consult the manufacturer's representative or website for details and specifications applicable to wall design selection for the DRY-BLOCK System.

MORTAR JOINTS

The water repellency of mortar joints is a function of (1) the ability of the mortar to resist water penetration, and (2) the geometry of

the mortar joint. The use of DRY-BLOCK Mortar Admixture and proper tooling increase the watertight properties of the joint and provide resistance to water penetration. A well-tooled concave joint profile has been shown by both the NCMA and the Brick Institute of America to provide the greatest resistance to water penetration. Concave or vee profile tooling is recommended whenever DRY-BLOCK Mortar Admixture is used for exterior applications. Raked, Flush, Extruded, Struck, Beaded, Weathered or other joint profiles have poor water resistance and are not recommended for exterior applications.

CLEANING

Excess mortar containing DRY-BLOCK should be removed from the face of the masonry units promptly. This is important, since standard methods for removing hardened mortar such as strong acids, sandblasting and high pressure cleaning are harmful to masonry units and

mortar joints and are not recommended. Refer to Grace Technical Bulletin 13, *Cleaning Masonry Containing DRY-BLOCK*.

6. Availability & Cost

AVAILABILITY

Water repellent concrete block and concrete brick, as well as DRY-BLOCK Mortar Admixture, are available only from Qualified DRY-BLOCK Producers throughout North America. Contact the manufacturer for the nearest Qualified Producer.

COST

Product cost varies according to the size, density and shape of the units as well as market demands. Contact the local Grace representative for details.

7. Warranty

DRY-BLOCK Admixtures carry a manufacturer's limited warranty of material specification compliance. Refer to Grace Construction Product's Conditions of Sale for more information.

8. Maintenance

None required.

9. Technical Services

Technical sales representatives are available throughout North America from Grace Construction Products.

10. Filing Systems

- Reed First Source®
- Sweet's Catalog Files
- Additional product information is available from the manufacturer.
- www.DryBlock.com

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