

## **ARCHITECTURAL SPECIFICATIONS (For Integral Water-Repellency)**

### **Division 4. Materials**

#### **PART 1. General**

Krete integral water-repellents are multi-functional admixtures designed to provide water-repellency in masonry units. For use in mortar, Krete Gard Mortar Mix, an integral polymeric mortar admixture, provides water-repellency and helps control efflorescence. The use of Krete integral water-repellent admixtures in masonry, and Krete Gard Mortar Mix in mortar, along with proper building design and workmanship, can produce durable water-repellent masonry construction. Such construction can be built with minimal maintenance, and as an alternative to surface applied water-repellents coatings, which generally require reapplication over time.

It must be recognized that care in details and workmanship, along with proper usage of the admixtures are all required to minimize potential water penetration. Proper through wall flashing and functioning weep holes at all vertical obstructions in hollow core walls are required.

A pre-construction meeting is strongly recommended, especially if the parties involved have not previously used a system of integral water-repellents products in the masonry and mortar. This meeting should briefly affirm the necessary components and special details as shown in part 3. Execution and encompass part 2. Products.

#### **PART 2. Products**

##### **Materials-Block Admixture**

All exposed masonry units must contain the necessary amount of Krete integral water-repellent, which demonstrate compliance with the recommended criteria outlined in "Quality Assurance Testing" for water repellency testing. Admixture dosage rates vary, depending on the type of admixture employed, and the mix design parameters of the masonry product.

Normal weight units using aggregates that comply with ASTM C33, *Standard Specification for Concrete Aggregates* and meeting the requirements of ASTM C90, *Standard Specification for Loadbearing Concrete Masonry Units*, grade N or heavyweight units meeting ASTM C55, *Standard Specification for Concrete Building Brick*, can be used with the admixtures to comply with the water-repellency testing.

Lightweight and mixed lightweight units meeting ASTM C331, *Standard Specification for Lightweight Aggregates for Concrete Masonry Units*, grade N can be used with the admixtures to comply with the water-repellency testing.

With the exception of low dosage accelerators, no other additives or other admixtures should be used in conjunction with either Krete integral water-repellents or Krete Gard Mortar Mix. It is preferred to use cold weather masonry techniques such as NCMA TEK 03-01C, *All Weather Concrete Masonry Construction*, instead of set accelerators. Other admixtures or additives may adversely affect performance of water-repellent admixtures.

##### **Materials-Mortar Admixture**

Mortar for use with masonry units containing Krete integral water-repellent should be proportioned in accordance with ASTM C-270, *Standard Specification for Mortar for Unit Masonry*, or per the

recommendations of the manufacturer. Type S mortar or premixed masonry cement type S is preferred. Type M mortar is also acceptable.

The recommended dosage rate of Krete Gard Mortar Mix is:

- One (1) quart per bag of Portland cement when mixed with  $\frac{1}{4}$  to  $\frac{1}{2}$  bag of lime and  $3\frac{1}{4}$  to  $4\frac{1}{2}$  ft<sup>3</sup> sand
- $\frac{1}{2}$  quart per 80 lb. bags of premixed mortar
- $\frac{1}{2}$  quart per one (1) bag of masonry or mortar cement and 3 ft<sup>3</sup> of sand

**Type N Mortars:** Laboratory tests show that twice as much water-repellent admixture is needed to achieve the desired water repellent properties with Type N. This is because Type N has much greater surface area, i.e. more sand and lime, which have more fines than cement. **Consequently, the recommended dosage rate of Gard Mortar Mix for Type N mortar, for water-repellency, is two (2) quarts per bag of Portland cement or one (1) quart per bag of Type N Masonry Cement.**

**NOTE:** According to tests by the National Concrete Masonry Association (NCMA) Research Laboratory, Krete integral water-repellent and Krete Gard Mortar Mix have been shown to provide protection against wind driven rain, in accordance with ASTM E514, *Standard Test Method for Water Penetration and Leakage Through Masonry*. Further, consistency and compressive strength of mortar with Krete Gard Mortar Mix have been tested in accordance with ASTM C780, *Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry*.

### **PART 3. Execution**

All exposed masonry units and lintels shall be laid with full mortar coverage on horizontal and vertical face and back shells. This mortar shall contain Krete Gard Mortar Mix per label directions. All exterior joints shall be tooled with concave or v-tool procedures while the mortar is “thumb print” hard. Raked joints shall **not** be permitted except in cavity walls or solid grout construction. Design documents shall include details incorporating NCMA TEKs 19-01, *Water Repellents for Concrete Masonry Walls*, 19-02B, *Design for Dry Single-Wythe Concrete Masonry Walls*, 19-04A, *Flashing Strategies for Concrete Masonry Walls*, 19-05A, *Flashing Details for Concrete Masonry Walls*, and 19-07, *Characteristics of Concrete Masonry Units with Integral Water Repellent*. Weep holes, above through wall step flashing, shall be provided for all vertical obstructions such as lintels and bond beams. Full flow weep holes shall be provided every 32” on center or “wicked” weeps every 16” on center. These weeps are necessary to provide exits, during initial construction, for incidental moisture and to help provide relief should structural, after-construction cracks develop.

**NOTE:** All components specified above are necessary and must be utilized to obtain the complete water-repellent properties as intended.

Questions regarding this specification should be directed to (800) 777-9562.