Concrete Admixtures and Fiber

AQUADRY

Integral Water Repellent Compound

PRODUCT DESCRIPTION

AQUADRY is used in all Portland cement mixes as an integral water repellent that reduces absorption of water in concrete, masonry and mortar mixes.

USES

- Cast in Place Concrete: AQUADRY is used all concrete that will be exposed to moisture below and above grade. Examples of this include, but are not limited to: slabs on grade, foundation walls, concrete piles, retaining walls, exterior panels, columns, walls and concrete roof slabs
- Precast Concrete: AQUADRY is used in all precast concrete products that will be exposed to moisture
- Concrete Masonry, Mortar and Stucco: AQUADRY is used in all exterior concrete masonry, mortar and stucco to reduce absorption upon exposure to moisture.

TECHNICAL INFORMATION

AQUADRY, used in Portland cement mixes, creates a chemical change within the concrete. AQUADRY forms an insoluble compound that acts as an impermeable lining on the sides of the pores and voids in the concrete. This condition will make the concrete water repellent. This process will impede the evaporation of water outward during the curing process and minimizing shrinkage. Because the free passage of moisture is prevented, the detrimental effects of freezing and thawing are minimized. Also, wetting and drying with subsequent cracking or spalling is minimized.

ADVANTAGES

- Minimizes plastic shrinkage cracks by reducing the rapid evaporation of water from the concrete
- Increases the resistance to freezing and thawing and also to the detrimental effects of wetting and drying
- Increases the resistance to Alkali-Silica reactivity of aggregates in concrete
- Minimizes the formation of mildew on walls and floors
- Cures within its mass improving strength and durability by retaining the hydration water of the concrete for more time

INTERNATIONAL MATERIALS INDUSTRIES, L.L.C.

2800 N. Johnson St. * New Orleans, Louisiana 70117 * PHONE: (504) 267-3344 * Fax: (504) 267-3345

- Minimizes the possibility of the corrosion of steel and the formation of cracks by expanding rust in areas where salts are present
- Eliminates efflorescence and dusting of concrete
- AQUADRY is ideal for lubrication of pumped concrete

APPLICATION

AQUADRY should be dosed at the rate of 16 oz/100 lbs of cement for concrete with severe moisture exposure applications. 12 ounces per 100 lbs of cement should be adequate for moderate moisture exposure and pumping applications.

TESTS OF AQUADRY

Since there are no established procedures for testing this type of waterproofing chemical, we developed the following absorption test procedures:

TEST ONE

Two 6"x12" concrete cylinders with AQUADRY and two identical cylinders without AQUADRY are air cured for 7 days in a dry drum and kept away from direct sunlight. After seven days, the cylinders are removed and weighed. The cylinders are then submerged in water and removed after 1 day, 4 days and 7 days. Each time the cylinders are removed from the water, they are weighed in their saturated condition and these weights are compared to the dry weights.

TEST RESULTS

	1 day	2 days	4 days	7 days
Control	0.73	0.74	0.76	0.79
Absorption	100%	100%	100%	100%
12oz. / 100 Lbs.	0.43	0.49	0.55	0.62
Absorption	59%	66%	72%	78%
16oz. / 100 Lbs.	0.32	0.41	0.49	0.51
Absorption	44%	55%	64%	64%

In order to maximize the effect of AQUADRY, the mix design should preferably be free of other admixtures and using a minimum cement factor of 470 Lbs. per cubic yard.

TEST TWO

One mix large enough to make 8 cylinders and 2 slump tests should be used for thie test. From the initial mix (without the addition of AQUADRY) one slump test and four cylinders are made. The volume necessary for this part of the procedure is 1.00 cubic foot. AQUADRY is added to the remainder of the concrete at the appropriate dosage and mixed thoroughly. From this another slump test and four more cylinders are made. One of the cylinders from each mix, not used for the absorption test is cured normally and broken at 7 days to test compressive strength. The other is exposed to the sun for one day and is reserved for use later when it will be submerged in 2" of water in order to observe how water rises by capillary action through the cylinder. Water will rise half as high in the cylinder treated with AQUADRY as in the one without. 28-day compressive strength testing is done on the cylinders used for the absorption test; two of each are cured under the same conditions.