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ESR-1515

Reissued 02/2018

This report is subject to renewal 02/2020.

DIVISION: 03 00 00—CONCRETE
SECTION: 03 15 00—CONCRETE ACCESSORIES

REPORT HOLDER:

KRYTON INTERNATIONAL, INC.

**1645 EAST KENT AVENUE
VANCOUVER, BRITISH COLUMBIA V5P 2S8
CANADA**

EVALUATION SUBJECT:

KRYSTOL INTERNAL MEMBRANE (KIM)



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DIVISION: 03 00 00—CONCRETE
Section: 03 15 00—Concrete Accessories

REPORT HOLDER:

KRYTON INTERNATIONAL, INC.
1645 EAST KENT AVENUE
VANCOUVER, BRITISH COLUMBIA V5P 2S8
CANADA
(604) 324-8280
www.kryton.com
info@kryton.com

EVALUATION SUBJECT:

KRYSTOL INTERNAL MEMBRANE (KIM)

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2009 *International Building Code*® (2009 IBC)
- 2006 *International Building Code*® (2006 IBC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)[†]
- 1997 *Uniform Building Code*™ (UBC)

[†]The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Property evaluated:

As set forth in Section 3.2 and 3.3 of the ICC-ES Acceptance Criteria for Chemical Admixtures Used in Concrete (AC198).

2.0 USES

Krytol Internal Membrane (KIM) is a chemical admixture used for the treatment of reinforced and plain concrete containing portland cement. The admixture reduces the water demand for a given slump and retards the initial and final set times of concrete.

3.0 DESCRIPTION

The KIM admixture complies as a Type D (water-reducing and set-retarding) admixture in accordance with ASTM C494/C494M 05a⁰¹, with an extended set time. The dry cementitious admixture has an unlimited shelf life when stored in dry conditions in the original, unopened containers, unless otherwise printed on the packaging. Compatibility of KIM with other admixtures is beyond the scope of this report.

4.0 INSTALLATION

KIM admixture must be added to reinforced or plain concrete in accordance with Kryton's published instructions that are packaged with the product. The admixture must be

proportioned into the concrete mix at a rate of 2 percent by dry weight of cementitious materials, to a maximum of 13.5 pounds per cubic yard (8 kg/m³). Concrete mixtures must be proportioned in accordance with the applicable code. The expected water content must be reduced 5 to 10 percent, depending on slump requirement. The water-cement ratio must be maintained between 0.39 and 0.45. Water must be clean and free of deleterious amounts of acids, alkalis, or organic materials. The mixing time must be a minimum of 10 minutes. Concrete quality, mixing, and placing must be in accordance with Section 1905 of the IBC and Section 1905 of the UBC, except as noted in this report. The minimum initial and final set times of KIM-treated concrete are expected to be 8 hours and 9 hours, respectively, prior to concrete finishing procedures and removal of framework. The exact set times will vary depending on the concrete mixture and environmental conditions. The initial and final set times of KIM-treated concrete must be at least one hour longer than that for untreated concrete. The project scheduling for labor and equipment allocation, finishing, curing, and form removal must be adjusted based on extended set times in accordance with the KIM Best Practices Guide, which specifies ACI 308R-01, *Guide for Curing Concrete*, for concrete curing and ACI 306R-88, *Cold Weather Concreting*, for cold weather concreting.

5.0 CONDITIONS OF USE

The Krytol Internal Membrane described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** Structural design of the concrete complies with the IBC or UBC, as applicable.
- 5.2** Use of the admixture in concrete under the UBC is subject to approval of the code official.
- 5.3** The admixture used in concrete under the IBC is subject to prior approval by the registered design professional.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Chemical Admixtures Used in Concrete (AC198), dated January, 2008 (editorially revised April 2010).

7.0 IDENTIFICATION

Krytol Internal Membrane (KIM) is packaged in 11- and 55-pound (5 and 25 kg) sealed pails and in 22- and 33-pound (10 and 15 kg) bags. The pails and bags of admixture are labeled with the Kryton International, Inc., name, address and contact information, the product name, the batch number, and the evaluation report number (ESR-1515).