



At the Lab. In the Field.
By Your Side.

Instructions for Site Superintendent

Use of KIM® Admixture

Technical Bulletin #303

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QUESTIONS: 1-800-267-8280 or www.kryton.com

TECHNICAL BULLETINS

IMPORTANT

You are making a waterproof membrane out of the concrete/shotcrete. This is different from traditional construction, where the concrete just forms the structure. The KIM concrete you are placing will be the only barrier to water penetration. This means that common defects found in typical concrete cannot be tolerated. Poor consolidation, unplanned cold joints, cracks, penetrations, contaminations, etc. will all result in a leaking structure. To avoid leakage and achieve success you must follow the critical instructions outlined in this document.

EFFECTS ON PLASTIC CONCRETE

- KIM reduces the water demand for a given slump. For most mixes, you can expect a slump increase of approximately 25 mm (one inch).
- KIM retards the initial and final setting times.
- KIM improves the pumpability of concrete.
- KIM entrains air *

Be aware of the differences in air entrainment between KIM and KIM-HS.

* KIM® HS

This specialized version of KIM® is available with reduced air-entrainment properties. KIM HS is designed for applications where freeze/thaw resistance is not required. Typically, concrete with lower air content will produce higher compressive strength results. KIM will add about 3-5% air entrainment while KIM-HS will increase air content by approximately 1%.

PRE-POUR SITE MEETING

- The Site Superintendent must arrange a meeting that includes himself, a Kryton representative, the concrete supplier and applicable representatives of the forming, placing, finishing, or shotcreting contractors. The meeting needs to be scheduled well in advance of the initial concrete pour in order to communicate any modifications required for a successful concrete project. Discussion will include the following:

- Delayed setting times of KIM concrete – particularly in cold weather
- How set delay may affect form pressure or stripping schedules
- How set delay and air content may affect the slab finishing
- Krystol Waterstop System™ installation considerations
- Importance of controlling water content of the concrete
- Importance of proper curing procedures
- Review technical bulletins 301 to 305 (plus 306 and 307 for shotcrete) and extended warranty documents if applicable.

SLUMP & CONCRETE HANDLING

- KIM increases the slump of the concrete. The amount of increase can vary greatly depending on the other ingredients in the mix.
- It is recommended that cast-in-place concrete be batched at water to cementitious ratio (WCR) of approximately 0.40 (0.37 for shotcrete). The maximum total WCR is either 0.45 (0.40 for shotcrete) or the specified maximum WCR. This includes all water present in the concrete and any added on route and on site.
- If the slump is below specification, add a mid or high range water reducer to achieve the required slump. Only add additional water with the approval of the quality control technician (to the maximum of specified WCR). Record all water additions on the batch ticket and do not exceed the specified water-cement ratio.
- Under some circumstances, you may observe slump loss at 25-40 minutes. This is false set and slump may recover with continued mixing. False set may be avoided by dosing KIM on the project site. Avoid placing KIM during the false set period.
- The addition of water without supervision and approval may void the manufacturer's warranty.

CONSTRUCTION JOINTS & THE KRISTOL® WATERSTOP SYSTEM

- The Internal (pyramid) joint design should be used at all horizontal joint locations such as slab-to-wall joints. See Technical Bulletin #103 for installation details.
- The External (wedge) joint design should be used at all vertical joint locations such as wall-to-wall and or slab-to-slab joints. The External method is installed in two stages. It requires a treatment application to the joint area and that a keyway be formed into the joint location. The keyway will be filled after the concrete has cured. See technical Bulletin #104 for installation details.

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PLACING AND FINISHING

- Superior consolidation of the concrete is essential to achieve the performance and benefits of KIM.
- It is very important that there be no water or debris in forms when pouring a joint that is to be watertight.
- Place and finish in accordance with ACI guidelines.
- KIM improves flow, pumpability and placement properties of plastic concrete.
- KIM treated concrete will typically delay the initial and final setting times of the concrete. Adjust your finishing or stripping schedule accordingly. Evaporation retarder may be needed.

CURING

- Proper curing is essential to achieve the performance and benefits of KIM.
- Cure in accordance with ACI 308.1 specifications.
- KIM improves the internal cure of concrete. However, KIM is not a replacement for proper curing procedures. Wet cure the concrete with a fog mist spray, sprinkler or wet burlap for five days. Protect from rain, excessive wind, and sun.
- If a curing compound is used, it must conform to ASTM C309
- Alert the manufacturer immediately of any concerns.

SAFETY

- Before using or handling, read the Material Safety Data Sheet for this product.
- Safety precautions for KIM concrete are no different than for normal concrete.
- KIM powder becomes caustic when mixed with water or perspiration. Take appropriate safety precautions to prevent contact with skin or eyes and to prevent breathing dust.