



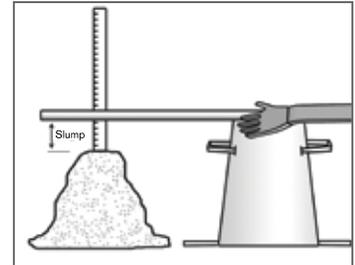
Krytol Internal Membrane™ (KIM®)

Instructions for Site Superintendent

DESCRIPTION

Krytol Internal Membrane (KIM) is a chemical admixture in powder form used to create waterproof concrete. KIM is used in place of externally applied surface membranes to protect against moisture transmission, chemical attack, and corrosion of reinforcing steel.

IMPORTANT: You are making a waterproof membrane out of the concrete. 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 to achieve success, you must follow the critical instructions outlined in this document.



EFFECT ON PLASTIC CONCRETE

KIM admixture has been specially formulated to meet the requirements of projects in different climate conditions as follows:

- KIM-HS: This version of KIM is used for most common applications. KIM-HS is compatible with common admixtures, such as plasticizers, accelerators, retarders and air-entrainers.
- KIM-AE: This version of KIM is specially designed for concrete requiring air-entrainment to resist freezing and thawing cycles. KIM-AE will increase air content by 3-5 %. Adjust or remove any air-entraining admixtures accordingly.
- KIM-ES: This version of KIM is specially designed for use in hot climates and mass concrete. KIM-ES will prolong the slump retention of the concrete and delay the initial setting time. Adjust or remove set retarding admixtures accordingly.

All versions will typically delay the setting times of concrete. Consult your Kryton representative for the most appropriate grade of KIM admixture for your project. Be aware of the differences in air entrainment and retardation between KIM-HS, KIM-AE & KIM-ES.

General influence of KIM admixture on concrete plastic properties at standard laboratory conditions (actual field setting times may be shorter):

Type of KIM	Plastic Properties	
	Initial Setting Time* (hh:mm)	Air Content* (%)
Plain	3:00	1.5
KIM-HS (2% wt/wt cementing material)	4:30	1.6
KIM-AE (2% wt/wt cementing material)	4:00	6.0
KIM-ES (2% wt/wt cementing material)	6:00	1.6

* This table is to be used as a guide only. Actual setting times and air contents depend on mix design, temperature, and the influence of other chemical admixtures. Perform trial batches.

*KIM doses at 2% of cementing materials



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.
- Review of how set delay may affect form pressure or stripping schedules.
- Review of how set delay and air content may affect the slab finishing.
- Importance of controlling water content of the concrete.
- Importance of proper curing procedures.
- Review of KIM Application Instructions 1.11 to 1.14 — Use of KIM Admixture (plus 1.21 and 1.22 – Use of KIM Admixture for shotcrete).
- Review of Application Instructions 4.11 to 4.16 — Use of Krystol® Waterstop System installation at all construction joints.
- Review of spacing and treatment of shrinkage control joints.
- Review of Application Instructions 5.12 to 5.32 — Use of Krystol Leak Repair System for crack repair, tie holes and penetrations.
- Review of Krystol Assurance Program documents (if applicable).

CONSTRUCTION JOINTS & THE KRYSTOL WATERSTOP SYSTEM

- Construction joints should be treated with the Krystol Waterstop System:
 - Cast-in-Place: Application Instruction 4.11 and 4.12 — Use of Krystol Waterstop System. This may require minor modifications to concrete forms.
 - Shotcrete: Application Instructions 4.21 and 4.22 — Use of Krystol Waterstop System.
 - Shrinkage control joints: Application Instruction 4.14 — Waterproofing Horizontal & Vertical Construction Joints.
 - Suspended Slabs: Application Instruction 4.31 — Waterproofing Suspended Slab Joints.
- Tie holes and penetrations should be treated as per Application Instruction 4.17 — Waterproofing Tie Holes and Pipe Penetrations
- Shrinkage control joints should be spaced to ACI requirements. Typical wall sections should have a shrinkage control joint every 6 m (20 ft.) or less.
- Consult a Kryton Representative for help with selecting the appropriate joint detail.

PLACING AND FINISHING

- Proper 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 must be watertight.
- Place and finish in accordance with ACI guidelines.
- 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 AND PROTECTION

- KIM improves the internal cure of concrete. However, KIM is not a replacement for proper curing procedures.
- Proper curing is essential to achieve the performance and benefits of KIM. Cure in accordance with ACI 308.1 guidelines.
- Wet curing the concrete with a fog mist spray, sprinkler or wet burlap for 5 to 7 days is recommended. Protect from rain, excessive wind, and sun.
- Alternatively, use a curing compound conforming to ASTM C309.
- Alert the manufacturer immediately of any concerns.