



MT. SAVAGE SPECIALTY REFRACTORIES COMPANY

736 WEST INGOMAR ROAD • INGOMAR, PA 15127 • (412) 367-9100
FAX (412) 367-2228 • TOLL FREE 1-800-437-6777 • E-MAIL info@mtsavage.com

ULTRA-TEK INSTALLATION INSTRUCTIONS

INTRODUCTION

These Products are formulated to incorporate self flow technology. They can be installed using conventional vibration methods or – with the addition of slightly more water – by self flow, pumping or shotcreting. For the best pumping and shotcreting results request the shotcreting formulation.

STORAGE

Store in a dry location. Exposure to water or high moisture will render the product unusable. Under proper storage conditions the shelf life will be 6 months. Time required for setting will increase as the product ages; however, installed properties are not affected. The product temperature should be above 60°F before installation.

ANCHORS

Metallic or ceramic anchors are required for walls and arches. Consult MT. SAVAGE for specific recommendations.

FORMS

All forms which will contact the product need to be coated with a waterproof barrier such as form oil, grease, plastic, tar paper or other parting material. Support the forms as necessary to allow for the considerable head pressure which will occur when the material is cast.

TEMPERATURE

The temperature of the air, water, product and forms must be between 60°F and 90°F at the time of casting and for 24 hours following casting to enable the concrete to set properly. Older material may take more than 24 hours to set – especially at temperatures below 70°F.

MIXING

Use only cool, clean drinking quality water. Avoid contamination from old cement and mortars which may significantly alter the flow properties and setting time of the product. Mix the dry product and water in a clean freshly rinsed paddle mixer. A drum type mixer is not recommended. Mix for approximately 6 minutes in a high intensity mixer. If a high intensity mixer is not available, mix for 10 minutes to obtain optimum placement properties. The product will become wetter as the mixing time increases. The product can be mixed to a vibratable consistency (ball in hand) or to a self flow consistency by adding slightly more water. In all cases use the minimum water necessary to optimize the installed properties. Proper consistency for self flow

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INSTALLATION INSTRUCTIONS (Continued)

MIXING (Continued)

is obtained when the product will flow by its own weight, tend to self level and de-air (air bubbles come to the surface) in the first few minutes after casting. Segregation and watering out on the surface are indications of excessive water addition. Follow the recommendations for water addition. Use of excess water will reduce the strength and increase the porosity of the product.

CASTING

(VIBRATION) - Casting by vibration will result in the best physical properties. Casting can be by internal or external vibration. Good vibration technique includes systematic movement of the hand held vibrator throughout the casting with a spacing of 6 – 12 inches. Do not allow the vibrator to stay in one place. Rapid movement or withdrawal of the vibrator can create a defect or “rat hole”. Avoid over vibration which can cause segregation of the aggregate and watering out on the surface.

(SELF FLOW) - The product should be cast at a controlled rate which permits the product to flow out and de-air as it is being placed. Light vibration or simple agitation will assist in the consolidation, de-airing and leveling of the product. Casting too fast may result in settling of the castable later as it de-airs. Application of a fine, light water spray to the finished surface shortly after casting will assist in the release of air bubbles from the surface as the product de-airs.

CURING

Keep the product between 60°F and 90°F for 24 hours after casting. Warmer temperatures will assist in curing the product. Keep the surface moist (after de-airing is complete) with a curing compound, plastic or fine spray.

DRY-OUT AND HEAT-UP

Special care is required for dry-out and heat-up due to the low porosity of these products. Dry the product carefully to avoid steam spalling. Avoid direct flame impingement. Follow the Dry-out and Heat-up recommendations for ULTRA-TEK products or consult MT. SAVAGE SPECIALTY REFRACTORIES for specific recommendations.

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INSTALLATION INSTRUCTIONS (Continued)

WATER REQUIREMENTS (approximate)

	<u>VIBRATION CASTING</u>		<u>SELF-FLOW CASTING</u>	
	<u>PERCENT</u>	<u>PER 100 LBS</u>	<u>PERCENT</u>	<u>PER 100 LBS</u>
ULTRA-TEK FS	5.0%	5 pints	5.5%	5 ½ pints
ULTRA-TEK 50	5.0 - 5.5%	5 – 5 ½ pints	6.0%	6 pints
ULTRA-TEK 60	5.0 - 5.5%	5 – 5 ½ pints	6.0%	6 pints
ULTRA-TEK 65	5.5 - 6.0 %	5 ½ – 6 pints	6.5%	6 ½ pints
ULTRA-TEK 70	5.0 - 5.5%	5 – 5 ½ pints	6.0%	6 pints
ULTRA-TEK 85	5.0 - 5.5%	5 – 5 ½ pints	6.0%	6 pints
ULTRA-TEK 93	4.0 - 4.5%	4 – 4 ½ pints	5.0%	5 pints
ULTRA-TEK 98	4.5 - 5.0%	4 ½ – 5 pints	5.5%	5 ½ pints
ULTRA-TEK 100	4.0 - 4.5%	4 – 4 ½ pints	5.0%	5 pints

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