



Multicrete XPR SHOTCRETE

Technical Data Sheet

Product Description

Multicrete XPR Shotcrete is a preblended dry shotcrete based on a modified hydraulic cement for a very rapid strength gain, containing blended aggregates and other carefully selected components. Multicrete XPR shotcrete also has a greatly enhanced shooting characteristics and physical properties due to specially selected admixtures

Uses

In the dry process the Multicrete XPR Shotcrete is blown through the hose and mixing water is added at the nozzle. The shotcrete impacts the surface at a high velocity resulting in a well-compacted, high-quality concrete with excellent bond. Multicrete XPR Shotcrete was specially developed for the following shotcrete applications:

- Areas requiring rapid strength gain (+/-2610 psi in 2 hours – 18 MPa)
- Spraying onto grounds such as structural tunnel linings, and ground support applications including mining, tunneling and other underground openings
- Cold weather use

Multicrete XPR Shotcrete may be used in combination with steel fibre reinforcements to enhance load-carrying capacity and accelerator to provide fast set times. It can be blended to meet ACI 506 gradations #1 or #2

Advantages

Rapid Strength Gain: Multicrete XPR Shotcrete is specially designed to meet the demands of high early strength for structural support which cannot be met with a conventional Portland cement-based product.

Stickiness: Multicrete XPR Shotcrete has vastly improved cohesion characteristics compared to conventional shotcrete; this stickiness saves time and money because:

- Rebound is significantly reduced, resulting in lower material usage
- Sagging and sloughing are eliminated
- Thick layers can be applied in a single pass in both the vertical and overhead orientations without the use of caustic accelerators. This increases shooting efficiency as passing over work two or three times to achieve a certain thickness is no longer necessary

Physical Properties: Silica fume in Multicrete XPR Shotcrete creates a higher strength shotcrete with low permeability and excellent freeze/thaw durability

Additional Performance Options:

- XPR can be accelerated to minimize set-times.
- Can be purchased with or without steel or poly fibers.
- Fiber additions will increase toughness, improve impact resistance, and reduce post crack failures.



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TEST METHOD RESULTS

Compressive Strengths	CAN3-A23-14C ASTM C42	MPA (PSI)
2 Hours		18 (2610)
1 Day		28 (4061)
7 Day		35 (5076)
28 Day		48 (6961)
Strengths Boiled/Absorption	ASTM C642	8 %
Volume of Permeable Voids	ASTM C842	14 %

Rebound, Consultants Test	8 % Vertical and < 20 % Overhead
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Note - The performance of shotcrete relies heavily upon application techniques. To determine the quality of shotcrete, material equipment and personnel should all be pre-qualified prior to project and application start up.

Technical Data shown are values achieved using proper shotcrete applications and techniques outlined in the ACI 506 publication. Data achieved is obtained in-house by Multicrete Shotcrete professionals. When rapid re-entry is required, field testing is necessary to verify all indicated technical data.

Resistance to water washout: Multicrete XPR Shotcrete in the plastic state has tremendous resistance to washout by flowing water. This resistance allows Multicrete XPR Shotcrete to be applied to moderately wet surfaces

Preparation of Receiving Surface

Surfaces receiving Multicrete XPR Shotcrete must be free from dust, grease or other substances that interfere with bonding of the XPR material.

Yield, Packaging and Shotcrete Shelf Life

- Multicrete XPR Shotcrete is available in 1650 kg bulk bags that, when mixed with water, will produce one cubic yard of concrete.
- These bulk bags are capped and wrapped in durable poly plastics to prevent water from entering these bags when stored outside.
- Additional protection (covering with tarps or placed into a structure) from the elements may be required if bags are to be left outside for longer periods of time.
- If protected from the elements, bagged materials should be used up within one calendar year. If more time has passed, a couple simple tests can determine whether this older material is good for use.
- Custom packaging between 500 kg and 2200 kg is also available. Please contact Multicrete to discuss your packaging needs

Safety Precautions

Multicrete XPR contains Portland cement and carefully selected additives. Normal safety wear such as dust mask and rubber gloves used to handle conventional cement-based products should be worn. Safety Data Sheets (SDS) Always follow the recommended SDS information as requested.



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