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XPR SHOTCRETE

For Cold Temperature Applications

Description

XPR Shotcrete is a preblended, dry shotcrete based on a modified hydraulic cement for a very rapid strength gain.

XPR Shotcrete also has greatly enhanced shooting characteristics and physical properties due to specially selected admixtures

Uses

In the dry process, the 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. XPR Shotcrete was specially developed for the following shotcrete applications:

- Areas requiring Rapid Strength gain (+/- 2500 psi in 3 hrs)
- Spraying onto frozen ground such as structural tunnel linings.
- Cold weather use.

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

Advantages

- ♦ Rapid Strength Gain. 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. 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 XPR Shotcrete creates a higher strength shotcrete with low permeability and excellent freeze/thaw durability.

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

Technical Data

TEST METHOD RESULTS

Compressive Strengths:	CAN3-A23-14C ASTM C42	Mpa (PSI)
3-hour		17 (2500)
1-day:		28 (4000)
7-day:		35 (5000)
28-day:		45 (6500)
Flexural Strengths:	ASTM 1018	7 (1000)
Boiled Absorption:	ASTM C842	5.0 percent
Volume of Permeable Voids:	ASTM C842	14.0 percent
Rebound:	Consultant's Test Vertical Overhead	8% <20%

Safety Precautions

XPR Shotcrete contains hydraulic cement. Use same safety wear as for conventional cement products. See MSDS Information for additional guidance.