Thiessen TEAM
Rock Solid Solutions

BAGGED SHOTCRETE

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Ultra-Stick Hybrid Shotcrete – Wet Application

Description

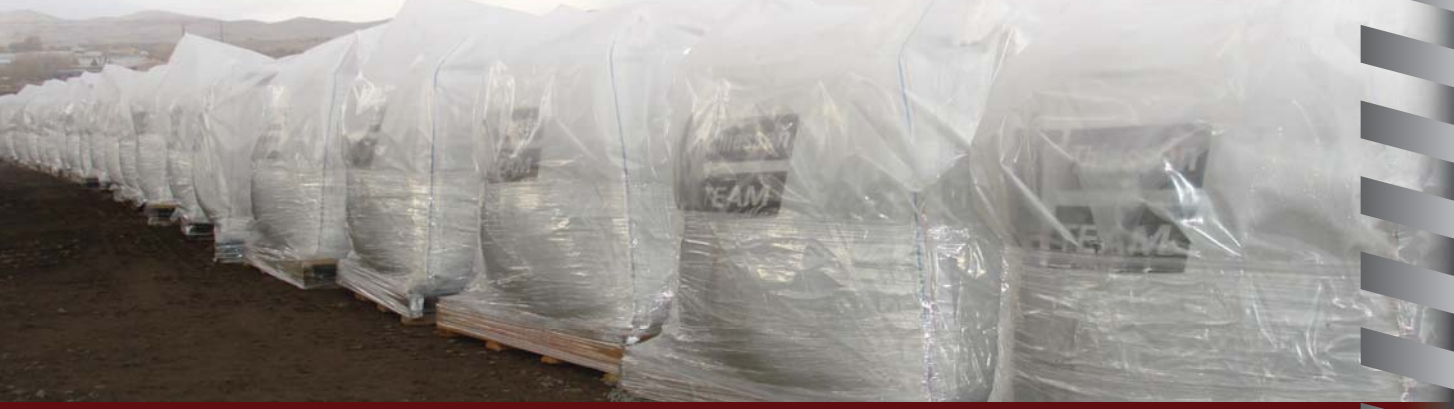
Ultra-Stick Shotcrete (Hybrid) is a dried pre-blended, cement based shotcrete that includes carefully selected materials. Ultra-Stick Shotcrete (Hybrid) has greatly enhanced shooting characteristics and physical properties.

Uses

Water is added to the dry shotcrete mix at the minesite batching plant, and is either transported wet via an underground remixer to the required location; or transported dry via an underground hybrid shotcrete carrier to the working heading where it is batched to wet mix. The wet application of Ultra-Stick Shotcrete (Hybrid) is possible through two different processes. The most common process involves the wet material being pumped with a Schwing concrete pump. Air is introduced at the nozzle. The second process involves the wet material being pneumatically conveyed through an Aliva shotcrete machine.

With both processes the shotcrete impacts at high velocity resulting in a well compacted, high quality application with excellent bond properties. Ultra-Stick Shotcrete (Hybrid) may be used with fiber reinforcement (in final batching or super sacks only) to enhance load carrying capacity. It may also be used with non-caustic and alkali-free accelerators, to provide high early strengths. Some common uses include:

- Slope stabilization
- Initial and secondary tunnel support
- Structural linings
- Concrete rehabilitation



Shotcrete / Concrete Products

Elko, Nevada, USA
Big Timber, Montana, USA
Phone: (775) 777-1205

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Advantages

- Ultra-Stick Shotcrete (Hybrid) is a dry bulk blended product with an infinite life as long as it is stored in a dry location.
- Ultra-Stick Shotcrete (Hybrid) is delivered and stored at site in a dry state for on-demand batching ability.
- Ultra-Stick Shotcrete (Hybrid) reduces waste with the ability to batch only the amount needed for the project.
- Ultra-Stick Shotcrete (Hybrid) reduces the amount of admixtures needed to deliver the material to the jobsite.

Stickiness: Ultra-Stick Shotcrete (Hybrid) has vastly improved cohesion characteristics compared to conventional shotcrete. This stickiness saves time and money because:

- Rebound is significantly reduced, resulting in lower product usage
- Volumes are increased with wet shotcreting

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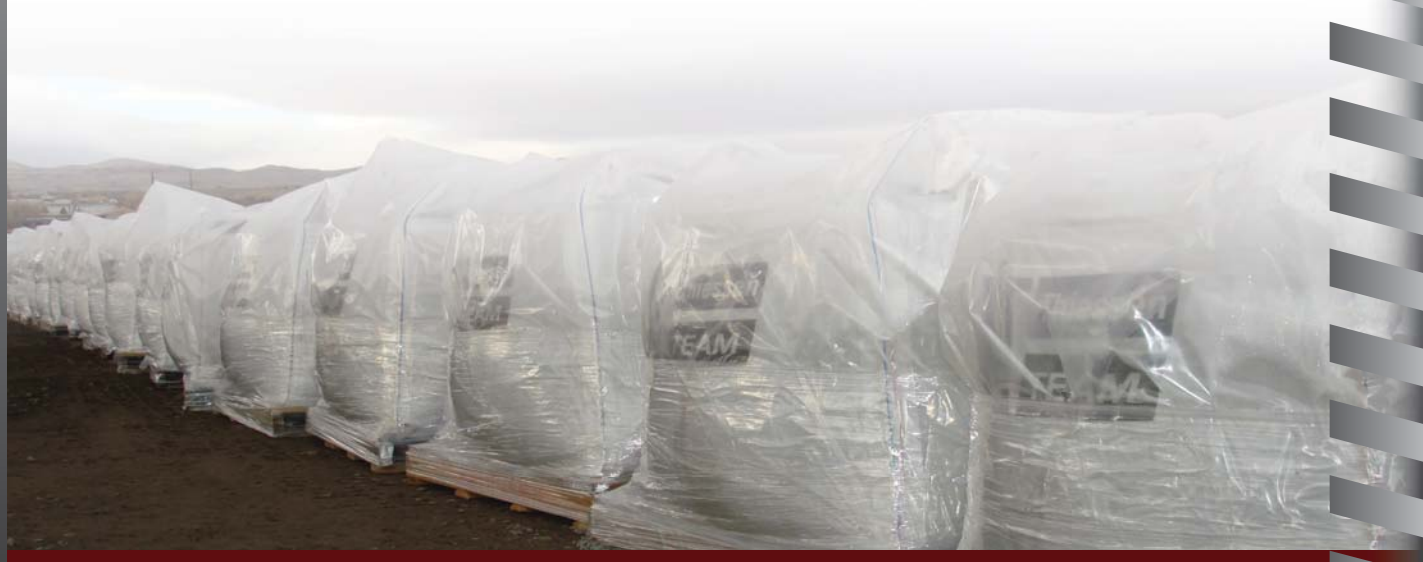
Technical Data	Test Method	MPa	PSI
Test	CAN3-A23-1 4C ASTM C42		
Compressive Strengths			
1 Day		10	1,500
7 Day		20	3,000
28 Day		30	4,500
First Crack Flexural Strength	ASTM 1018	6.8	986
Boiled Absorption	ASTM C842	5%	
Volume of Permeable Voids	ASTM C842	14%	
Toughness (10lbs.GSF/yd3)	ASTM 1018	I - 5 3.5 I - 10 5.0	
Set Times (3% accelerator)	ASTM C403	Initial set 10 minutes Final set 15 minutes	
Freeze / Thaw Resistance	ASTM C555 Acceptable 80%	Ultra-Stick Shotcrete	
95% Rebound	Consultant's Test	Vertical 5% Overhead 10%	



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