



# MEGASTICK® SHOTCRETE

## Technical Data Sheet For Dry-Mix Applications

[multicretesystems.com](http://multicretesystems.com)

### Product Description

Megastick® Shotcrete is a pre-blended dry shotcrete mixture containing aggregates, silica fume and other carefully selected additives. Megastick® Shotcrete has greatly enhanced shooting characteristics and physical properties.

In the dry process, Megastick® Dry Shotcrete is blown through the hose and mixing water is added at the nozzle. Shotcrete impacts the surface at a high velocity resulting in a well-compacted, high-quality concrete with an excellent bond. Some common uses include:

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

Megastick® Shotcrete may be used in combination with steel fiber reinforcement to enhance load carrying capacity and with non-caustic accelerator to provide high early strengths and faster set times. It can be blended to meet ACI 506 gradation #1 or #2.

### Quality

Multicrete Megastick® Dry Shotcrete conforms to ACI 506 standards and is batched in plants that are certified by provincial Ready-Mix Concrete Associations. Regular quality control tests are performed, and test reports are available upon request.

### Preparation of Receiving Surface

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

### Application

Apply Megastick® Shotcrete in accordance with the ACI 506 "Guide to Shotcrete" publication.

### Curing

Optimal curing conditions are beneficial for Megastick® Dry Shotcrete. Underground environments are often humid, which aids in curing of cementitious materials. Additional curing methods may be utilized. Refer to ACI 308 "Guide to Curing Concrete."

### Advantages

Stickiness. Megastick® Shotcrete has vastly improved cohesion characteristics compared to conventional shotcrete. This stickiness saves time and money alongside:

- Speed of Execution
- Adjustable Application thickness
- Sagging and sloughing are eliminated
- Application for curved and irregular surfaces
- Labor Saving
- Great adaptability for all projects

Thick layers of Megastick® Shotcrete can be applied in a single pass in both the vertical and overhead orientations without the use of caustic accelerators. This process increases shooting efficiency as passing over work two or three times to achieve a certain thickness is no longer necessary.



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### Technical Data

TEST	METHOD	RESULTS
<b>Compressive Strengths</b>	CSA A23.2-9C	
1 Day		17 (2500 psi)
7 Days		28 (4000 psi)
28 Days		41 (5950 psi)
<b>Flexural Strengths (When fiber is added to mix)</b>		
28 Days	CSA A23.2-8C	6.8 MPa (988 psi)
<b>Flexural Toughness</b>		
Fiber Dosage	ASTM C-1550-05	
60 kg/m <sup>3</sup>		450 joules
50kg/m <sup>3</sup>		400 joules
40kg/m <sup>3</sup>		350 joules
<b>Boiled Absorption</b>	CSA A23.2-11C	5.0%
<b>Permeable Voids</b>	CSA A23.2-11C	14.0%
<b>Set Times @ 3% accelerator</b>	ASTM C-266-21	
Initial Set		10 Minutes
Final Set		15 Minutes
<b>Freeze Thaw Resistance</b>	ASTM C-666(M15)	<b>Acceptance</b> 80% <b>Megastick® Shotcrete</b> 96%
<b>Rebound</b>	<b>Consultant Test</b>	
	Vertical	12%
	Overhead	20%
<b>Aggregate Gradation</b>	ACI 506-R	
Gradation No.2	Structural Shotcrete	
Gradation No.1	Non-Structural Shotcrete	

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.

### Performance Options:

- Megastick® 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.

### Yield, Packaging and Shotcrete Shelf Life

- Multicrete Megastick® Dry 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.



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### Safety Precautions

Megastick® Shotcrete contains Portland cement, silica fume and other carefully selected additives. Normal safety wear such as rubber gloves, dust masks and safety glasses used to handle conventional cement-based products should be worn. Safety Data Sheets (SDS) are available upon request.

### Website

For more information about Multicrete Group and all our related products visit us at <https://multicretesystems.com/> or call us at (204) 262-5900



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