

**DESCRIPTION:** MICROSIL® SHOTCRETE-FAST SET is a preblended, dry shotcrete containing cement, silica fume and other carefully selected admixtures. MICROSIL® SHOTCRETE-FAST SET has greatly enhanced setting and early strength gain shooting characteristics.

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**USES:** In the dry process, MICROSIL® SHOTCRETE-FAST SET is blown through the hose and mixing water is added at the nozzle. The shotcrete impacts the surface at high velocity resulting in a well compacted, high quality concrete with excellent bond. Some common uses include:

1. Any project where quick turnaround time is required
2. Initial and secondary tunnel support
3. Structural linings
4. Concrete rehabilitation
5. Slope stabilization

MICROSIL® SHOTCRETE-FAST SET may be used in combination with steel fibre reinforcement to enhance load carrying capacity. It can be blended to meet ACI 506 gradation #1 or #2.

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- ADVANTAGES:**
1. **QUICK SETTING AND HIGH EARLY STRENGTH:** MICROSIL® SHOTCRETE-FAST SET achieves final set within 30 minutes and achieves one day strengths within 4 hours. Typically 15 MPa at 4 hours is achieved.
  2. **STICKINESS:** MICROSIL® SHOTCRETE-FAST SET has vastly improved adhesion and 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 is 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.
  3. **PHYSICAL CHARACTERISTICS:** Silica fume in MICROSIL® SHOTCRETE-FAST SET creates a higher strength shotcrete with low permeability and excellent freeze/thaw durability.
  4. **RESISTANCE TO WATER WASHOUT:** MICROSIL® SHOTCRETE-FAST SET in the plastic state has tremendous resistance to washout by flowing water. This allows it to be applied to moderately wet surfaces and to be used in rainy weather. MICROSIL® SHOTCRETE-FAST SET is ideal for shotcreting in marine environments as rising tides and currents will not adversely affects freshly placed material.

**PROCEDURES:** See the ACI publication 506.R-90 "Guide To Shotcrete". Call BASALITE CONCRETE PRODUCTS LIMITED for further information.

# MICROSIL® SHOTCRETE – FAST SET

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**TECHNICAL DATA:** The data outlined below is typical of values achievable using proper application techniques as outlined in ACI 506.R-90 "Guide to Shotcrete". The data was obtained during project field tests and in-house shotcrete studies.

	<u>Test Method</u>	<u>Results</u>	
Compressive Strength	CAN3-A23.-14C		
MPa (psi)	ASTM C42		
4-Hour		15 (2175)	
1-Day		20 (2900)	
7-Day		35 (5075)	
28- Day		50 (7250)	
Boiled Absorption	ASTM C642	7.0%	
Volume of Permeable Voids	ASTM C642	15.0%	
Insitu Density (kg/m <sup>3</sup> )	ASTM C642	2325	
Set Times	ASTM C403	Initial Set 15 minutes Final Set 30 minutes	
Rebound	Basalite Test	<u>Vertical</u>	<u>Overhead</u>
	Microsil Shotcrete	12%	20%
	Plain Shotcrete	25%	35%

## Aggregate Gradation - ACI 506 R-90 Table 2.1

<u>Sieve (IMP.)</u>	<u>Gradation #1</u>	<u>Gradation #2</u>
	<u>% Passing</u>	<u>% Passing</u>
12 mm (1/2)	100	100
10 mm (3/8)	100	90 - 100
4.7 mm (#4)	95 - 100	70 - 85
2.4 mm (#8)	80 - 100	50 - 70
1.2 mm (#16)	50 - 85	35 - 55
600 um (#30)	25 - 60	20 - 35
300 um (#50)	10 - 30	8 - 20
150 um (#100)	2 - 10	2 - 10

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**LIMITATIONS:** The performance of in-place shotcrete relies heavily upon application techniques. To adequately determine the quality of in-place shotcrete, the material, equipment and key personnel should all be pre-qualified prior to project start up. MICROSIL®SHOTCRETE-FAST SET is designed to be used in temperatures from 5 Celsius to 30 Celsius. Liability for damages or defective goods shall be limited to the refund of the purchase price or product replacement.

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**PACKAGING:** MICROSIL®SHOTCRETE-FAST SET can be custom blended with or without steel fibre reinforcement. MICROSIL®SHOTCRETE-FAST SET is packaged in 30 kg (66lb) triple-lined bags or 1680 kg (1 cubic yard) bulk bags, with double shrinkwrap on wooden pallets. All Basalite Dry Mix can be custom packaged to meet specific project requirements.

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**SAFETY PRECAUTIONS:** MICROSIL®SHOTCRETE-FAST SET contains hydraulic cement, silica fume and other carefully selected additives. Normal safety wear such as rubber gloves, dust mask and safety glasses used to handle conventional cement based products should be worn. Material Safety Data Sheets are available on request.

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