

DESCRIPTION: MICROCEM is a microfine Portland cement used for soil and substrate stabilization, consolidation of rocky grounds, and grouting of microfine cracks and fissures. It is excellent for soil and earthworks, tunneling and environmental engineering, including hazardous waste containment.

The extreme fineness and uniform grain size distribution of MICROCEM gives it good rheological properties without excessive settlement – even at high w/c ratios.

- USES:**
1. Earthworks and soil:
 - Soil consolidation
 - Underpinnings
 - Injection piles
 - Stabilization of excavation pits
 2. Rock:
 - Grouting curtains in dam construction
 - Sealing of crevices and rock fissure
 - Foundation stabilization
 3. Tunneling:
 - Ridge stabilization in tunnel heading
 - Preceding impermeable grouting
 - Stabilization of work face
 4. Environmental techniques:
 - Grouting bottoms
 - Decreasing permeability of soil surrounding hazardous wastes
 - Alternative to dewatering methods
 - Sewer rehabilitation
 5. Concrete and masonry rehabilitation
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- ADVANTAGES:**
1. Penetrates voids as well as solution grouts
 2. Chemical grout performance, but with the durability of a mineral-based material
 3. Adjustable properties, including setting time, viscosity and strength development
 4. No blending of individual cementitious components required
 5. No sulfur fumes
 6. Easy cleanup
 7. Free of toxic substances found in some solution grouts

PROCEDURES:

1. Introduce potable water into a colloidal or high shear grout mixer, and then add MICROCEM. Mix at high speed until all particles are thoroughly wetted. Follow standard grouting procedures, keeping grout agitated until pumped. Mortar style mixers are not recommended for this purpose. The grout's pot life is approximately 30 minutes to 60 minutes, depending upon the w/c ratio (by weight). High w/c ratios can extend the working time up to 90 minutes. The maximum recommended water cement ratio is 3.0.
2. MICROCEM can be pumped at w/c ratios as low as 1.0 with the standard piston, diaphragm, plunger or progressive cavity type cementitious grout pumps. A hose diameter of 25 mm (1 inch) or more is recommended although for short pumping distances and higher w/c ratios, 19 mm (3/4 inch) hose has been successfully used.
3. In the case of high w/c ratios, continuous mixing of the suspension in an intermediate container is required.
4. MICROCEM behaves similarly to other cementitious grouts in extreme temperature conditions. Standard cold or hot weather cementitious grouting procedures should be followed when using MICROCEM in adverse temperature conditions.
5. To assist in maximizing grouting performance and optimizing consistency of the grouting mixture, Basalite offers a variety of pressure grouting agents for:
 - dispersion
 - retardation
 - anti-washout
 - cohesion (water retention)

Contact Basalite's Technical Staff for additional information.

TECHNICAL DATA:**MICROCEM**

Blaine Fineness	1500 m ² /kg (approximately)		
Specific Gravity	3.2		
W/C ratio (by weight)	1.0		
Time of efflux (ASTM C 939)	9 seconds		
Yield per 25 kg	33.1 liters (1.17 cu. ft.)		
Initial Setting Time	1 hour		
Final Setting Time	3 hours		
Compressive Strength at 28 days	62 MPa (9000 psi)		
Particle Size Distribution:	<u>MICROCEM</u>	<u>TYPE 1</u>	<u>TYPE 3</u>
< 1µm (0.002 mm)	26%	9%	12%
< 4µm (0.004 mm)	84%	24%	31%
< 8 µm (0.008 mm)	99%	38%	49%
< 16 µm (0.0016 mm)	100%	59%	76%

LIMITATIONS:

Mixing water content and installation procedures can vary depending on the grouting application. Contact Basalite's Technical Staff for additional information.

PACKAGING:

MICROCEM is packaged in 25 kg (55 lb.) triple-lined paper bags and palletized at 40 bags per pallet (1 metric tonne).

**SAFETY
PRECAUTIONS:
03/03**

MICROCEM is a cementitious product with 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. Material Safety Data Sheets are available upon request.