

MICROFINE CEMENT (SUPERFINE)

Ultrafine Cement for Specialty Grouting Applications

Product Overview

Microfine Cement (SuperFine) is an ultrafine blast furnace slag-based cement designed for specialty grouting applications. With a D95 particle size of 10 microns and a D50 particle size of 3 microns, it enables deep penetration into fine soil pores and microscopic rock fissures. This improves ground strength, reduces permeability, and enhances the effectiveness of water cut-off and consolidation grouting operations.



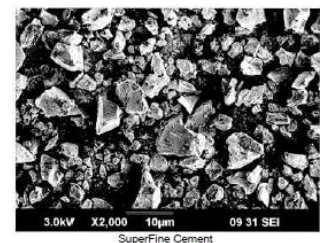
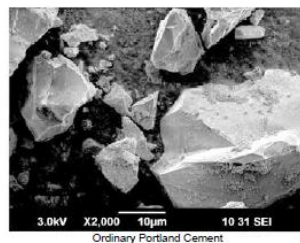
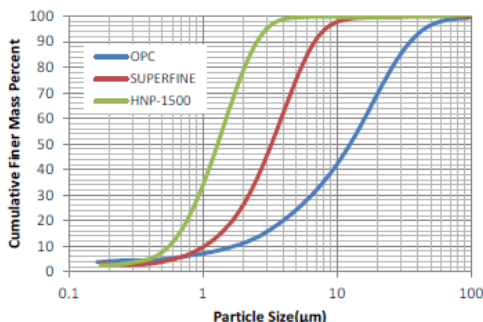
Key Features

- **Ultrafine Particle Size Distribution:** Median size of 3 μm enables excellent penetration into fine soils and rock fissures.
- **High Strength and Durability:** Produces grouts with strong in-place performance and long-term stability.
- **Adjustable Mix Design:** Water/cement ratio and superplasticizer type/dosage can be tailored to meet specific project requirements.
- **Chemical and Brine Resistance:** Performs reliably in aggressive environments, including those with high sulphate content.
- **Proven Field Performance:** Backed by a long history of successful grouting projects in challenging conditions.

Physical Properties

Specific Gravity	3.00 g/cm ³
Loose Density	1.00 g/cm ³
Median Particle Size	3 μm
Initial Set Time	8-16 hours
Final Set Time	10-22 hours
Colour	Grayish white
Physical State	Powder
Packaging	20 kg heat-sealed plastic bags, supplied 50 bags per pallet.

Particle Size Comparison



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Yield Chart

SUPERFINE Cement

Absolute Density
3g/cm³ (SG = 3.0)
(187.5 lbs/ft³)

Apparent Bulk
Density:
1g/cm³ (62.5 lbs/ft³)



Water

Absolute Density
1 g/cm³ (SG = 1.0)

Mighty 150/150R*

Absolute Density/SG
1.2g/cm³ (SG = 1.2)

Conversions

1 cubic foot = 7.48 gallons
1 cubic foot = 28.32 liters
1 gallon = 3.79 liters
1 kilogram = 2.20 pounds
5.5 fluid oz. = 2/3 cup

Water: Cement Ratio**	Water Per 20 Kg Bag			Superplasticizer Required Per 20 Kg Bag	Yield Per 20 Kg Bag		
	Gallons	Cu. Feet	Liters		Gallons	Cu. Feet	Liters
0.5 : 1	2.64	0.35	10	5 fluid oz.	4.40	0.59	16.7
0.55 : 1	2.91	0.39	11	5 fluid oz.	4.67	0.62	17.7
0.65 : 1	3.43	0.46	13	5 fluid oz.	5.20	0.69	19.7
0.75 : 1	3.96	0.53	15	5 fluid oz.	5.72	0.77	21.7
1.0 : 1	5.28	0.71	20	5 fluid oz.	7.04	0.94	26.7
1.5 : 1	7.93	1.06	30	5 fluid oz.	9.69	1.29	36.7
2.0 : 1	10.57	1.41	40	5 fluid oz.	12.33	1.65	46.7
2.5 : 1	13.21	1.77	50	5 fluid oz.	14.97	2.00	56.7
3.0 : 1	15.85	2.12	60	5 fluid oz.	17.61	2.35	66.7
3.5 : 1	18.49	2.47	70	5 fluid oz.	20.25	2.71	76.7
4.0 : 1	21.13	2.83	80	5 fluid oz.	22.89	3.06	86.7
4.5 : 1	23.78	3.18	90	5 fluid oz.	25.54	3.41	96.7
5.0 : 1	26.42	3.53	100	5 fluid oz.	28.18	3.77	106.7
5.5 : 1	29.06	3.88	110	5 fluid oz.	30.82	4.12	116.7
6.0 : 1	31.70	4.24	120	5 fluid oz.	33.46	4.47	126.7
6.5 : 1	34.34	4.59	130	5 fluid oz.	36.10	4.83	136.7
7.0 : 1	36.98	4.94	140	5 fluid oz.	38.75	5.18	146.7
7.5 : 1	39.63	5.30	150	5 fluid oz.	41.39	5.53	156.7
8.0 : 1	42.27	5.65	160	5 fluid oz.	44.03	5.89	166.7
8.5 : 1	44.91	6.00	170	5 fluid oz.	46.67	6.24	176.7
9.0 : 1	47.55	6.36	180	5 fluid oz.	49.31	6.59	186.7
9.5 : 1	50.19	6.71	190	5 fluid oz.	51.95	6.95	196.7
10.0 : 1	52.83	7.06	200	5 fluid oz.	54.60	7.30	206.7

Material packaged 50 - 20 kg (44 lb.) bags per pallet (1 metric ton per pallet)

*Mighty 150 or Mighty 150R superplasticizer included at 1% by weight of cement

** Water: cement ratio by weight and by volume

Applications

Microfine Cement (SuperFine) is used in:

- Water cut-off and pre-excavation grouting in tunnel construction
- Foundation and consolidation grouting of dams and embankments
- Maintenance grouting for aging dams and tunnels
- Foundation stabilization for new and existing structures
- Soil consolidation to reduce liquefaction potential and strengthen weak soils

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Application Guidelines

Preparation: Perform on-site trial mixes using all intended components. Laboratory and field tests should confirm compliance with project specifications for strength, permeability, and flow.

Clean-Up: Prevent environmental contamination. Dispose of materials according to local and federal regulations.

Related Equipment & Products

- A high-shear, high-energy mixer is essential for the proper dispersion of ultrafine cement and for reducing bleed potential.
- Progressive cavity, piston, and plunger pumps are all suitable for ultrafine cement grouts.
- **Superplasticizer (Mighty 150):** Used to optimize grout flow and reduce water/cement ratio while maintaining workability.

Limitations

- Performance depends on site conditions, including temperature, water chemistry, and ground permeability.
- Requires proper mix design and quality control to achieve the intended penetration and performance.
- Should not be used without prior testing when injected into chemically aggressive or unknown environments.

Safety & Handling

Follow applicable regulations and site safety procedures. Use personal protective equipment to prevent skin and eye contact. Ensure adequate ventilation and avoid inhaling dust. This material is intended for use by trained professionals with the proper equipment. Refer to the Safety Data Sheet (SDS) for detailed first aid information.

Customer Service & Orders

For additional information, please call us at 1-800-663-6633 or email info@multiurethanes.com.

Company Overview

Multiurethanes is a leading international supplier of materials, equipment, and technical support services for all types of grouting operations, including water cut-off, soil stabilization, concrete repair, sewer rehabilitation and waterproofing.