

# DENKA MICRO CEMENT

- COLLOIDAL SUPER (ULTRAFINE CEMENT)
- COLLOIDAL CEMENT (FINE CEMENT)

## Description

**DENKA MICRO CEMENT** is a micro-fine grouting material purposed for rock and soil grouting; and can be used in conjunction with **DENKA ES**.

## Features

- Environmentally-friendly
- High soil permeability due to well-controlled particle size and specific surface area
- Resistant to cement segregation
- Achieves high strength after hardening
- Water resistance lends to long-term durability

## Applications

- Tunneling
  - Ground water sealing
  - Pre-excavation grouting
  - Post excavation grouting
- Soil stabilization
- Consolidation of weak ground

## Packaging

- 20kg paper bags
- Flexible container bags

## Shelf Life

- 8 months from production date
- Determine the production date by reference to the lot number. A lot number of "1AXXX" corresponds to production in Jan 2001; "2BXXX" to Feb 2002 and so on.

## Technical Information

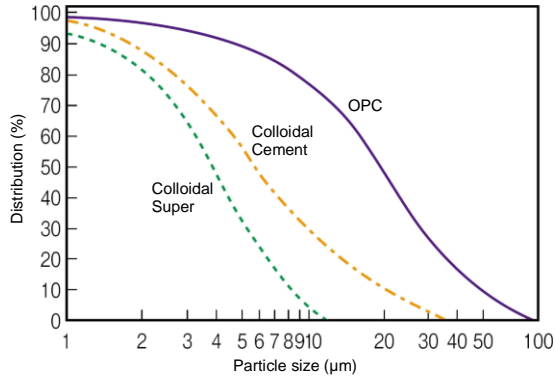
### Physical / Chemical composition

Cement	Ignition loss	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MgO	SO <sub>3</sub>	Specific gravity (g/cm <sup>3</sup> )	Blaine value (cm <sup>2</sup> /g)
<b>COLLODAL SUPER</b>	0.7	30.2	12.1	1.5	47.4	4.4	1.7	2.98	8,000~10,000
<b>COLLODAL CEMENT</b>	0.7	27.7	9.7	1.2	53.7	4.3	1.6	3.02	5,500~6000
<b>OPC</b>	0.4	22.1	5.2	3.0	64.7	1.0	1.7	3.15	3,200

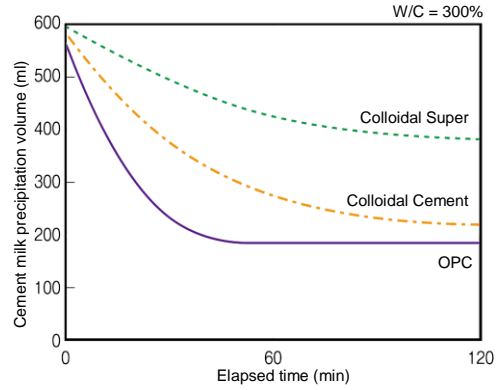
## Compressive Strength

Type	Viscosity (mPa.s)	Bleeding (%)	Compressive strength (N/mm <sup>2</sup> )		
			Day 1	Day 7	Day 28
COLLODAL SUPER	240	0.8	1.2	10.8	18.8
COLLODAL CEMENT	33	16.8	0.9	7.0	19.7
OPC	45	34.2	0.3	2.7	5.6

## Particle size parameters



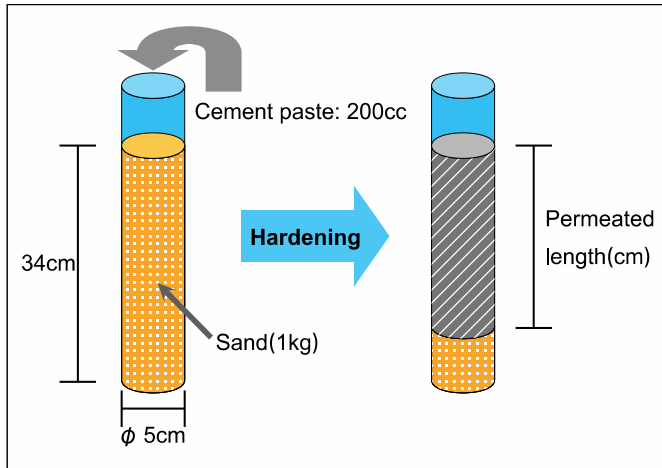
## Dispersiveness test



## Permeability of simulated soil

Cement	Permeated length (cm)	Hardening volume (cm <sup>3</sup> )	Retained cement (cm)
COLLOIDAL SUPER	19.3	379	1.8
COLLODAL CEMENT	11.7	230	5.1
OPC	2.7	53	9.0

## Permeability test method



Test method:

1. Place sand into a polyethylene tube as per the setup on the right.
2. Add cement paste into the tube.
3. After hardening, remove the tube and measure the infiltration length.

Temperature: 20°C

Mix proportion: W/C = 4.0

Sand specific gravity: 2.63g/cm<sup>3</sup>

Sand diameter: 0.15-0.6mm

Void Percentage: 43.7%

## Handling Precautions

- Refer to the Safety Data Sheet (SDS) before use.
- Wear protective gear (goggles, mask, gloves, and rubber boots) while handling the product. Do not dispose of the product in drains.
- Once opened, the product should be used up completely. Otherwise, reseal for storage.
- The product should be stored in a dry area, indoors, and out of direct sunlight
- For further information, please contact DENKA.

## Limitation of Liability

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