

CHUPOL SCF-1

Fluidizing Agent for Ground Improvement

Description

CHUPOL SCF-1 is a fluidizing agent for ground improvement. In ordinary ground improvement injecting cement milk, the same emission as the injection amount of cement milk is generated. The emission becomes construction waste and causes environmental load. CHUPOL SCF-1 can provide high workability in ground improvement by fluidizing soil cement. CHUPOL SCF-1 can keep same fluidity as conventional method even if the injection amount of cement milk is reduced.

CHUPOL SCF-1 contributes to reduction of environmental load by reducing construction waste.

Applications

Ground Improvement using cementitious materials

Advantages

CHUPOL SCF-1 provides the following benefits :

- Provides high fluidity to soil cement by highly dispersing soil and cement
 - Reduces the injection amount of cement milk while keeping same fluidity as conventional method
 - Reduces construction waste by reducing the injection amount of cement milk
 - Makes temporary storage for construction waste smaller and working space wider
 - Reduces CO₂ emission and noise pollution by reducing trucks for carrying out construction waste
 - Free of chloride ion
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Dosage

A recommended dosage range of CHUPOL SCF-1 is between 1% and 5% by weight of cementitious materials and under 10kg per cubic meter of soil. The dosage rate will vary according to kind of soil, ambient conditions and the specific requirements of ground improvement.

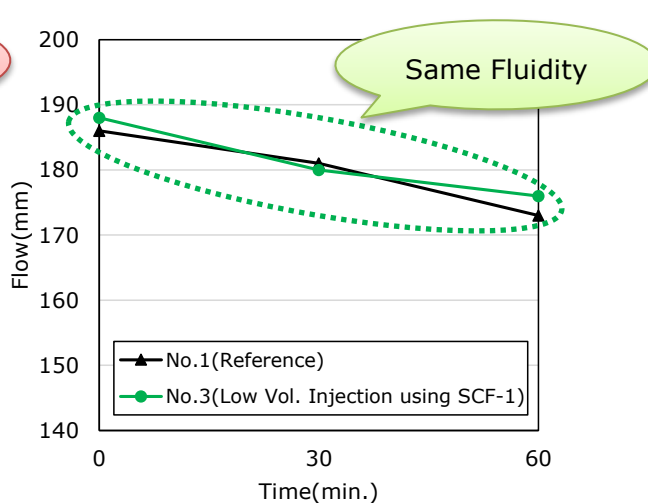
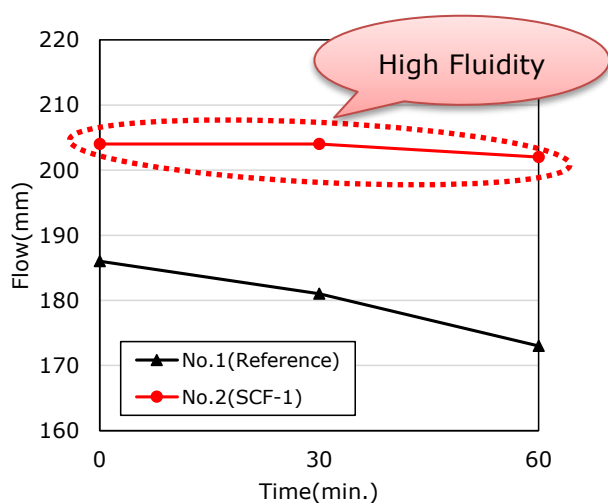
Characteristic

- Appearance : Yellowish brown liquid
 - Solid content : Approx. 31%
 - Specific gravity : Approx. 1.24
 - Chloride content : Nil
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Performance Data

No.	Injection volume (%)		Unit weight (Each materials(kg)/Soil(1m ³))				
	Injection Ratio	Reduction Ratio	W/C	Water	Cement	SCF-1	Soil (1m ³)
1	80	-	2.0	687	344	0	1,802
2	80	-	2.0	682	344	6	1,802
3	56	30	2.0	477	241	6	1,802

*Density of each materials : Water 1.00, Cement 3.04, SCF-1 1.24, Soil 1.802



Storage

CHUPOL SCF-1 should be stored in the range of 5°C to 40 °C. Although freezing does not degrade the performance of CHUPOL SCF-1, precautions should be taken to protect CHUPOL SCF-1 from freezing. If CHUPOL SCF-1 is frozen, please thaw and mix thoroughly with mechanical agitation.

Shelf Life

Shelf life of CHUPOL SCF-1 is 18 months if stored properly in original unopened packaging. Please contact TAKEMOTO regarding suitability for use if shelf life of CHUPOL SCF-1 has been exceeded.

Packaging

CHUPOL SCF-1 is supplied in 210kg drums or 1,100kg totes.

Related Documents

Safety Data Sheet

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CHUPOL SCF-1



[1]

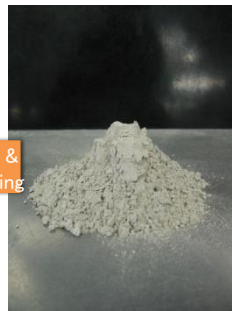
What is Ground Improvement ?

Target



Soil

Cement milk for ground improvement



セメント



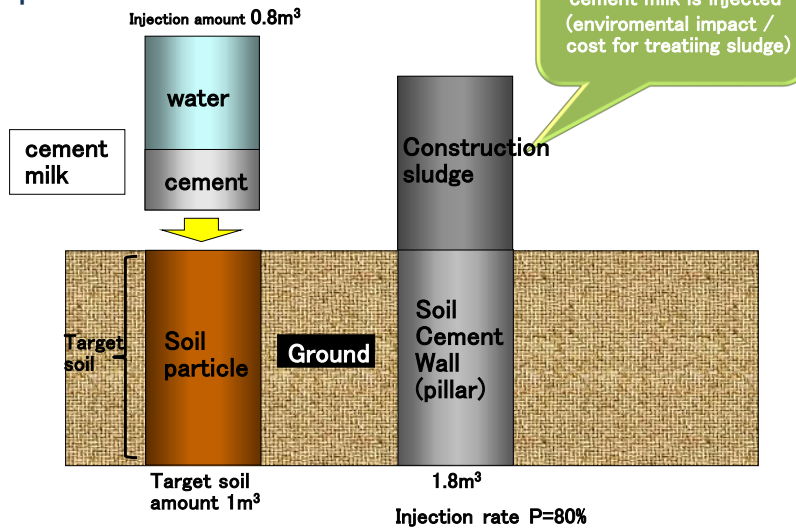
Water

mixing &
injecting

It is a method of improving strength of soft ground (soil) by mixing cement milk. The mixture of soil and cement milk is called as soil cement.

[2]

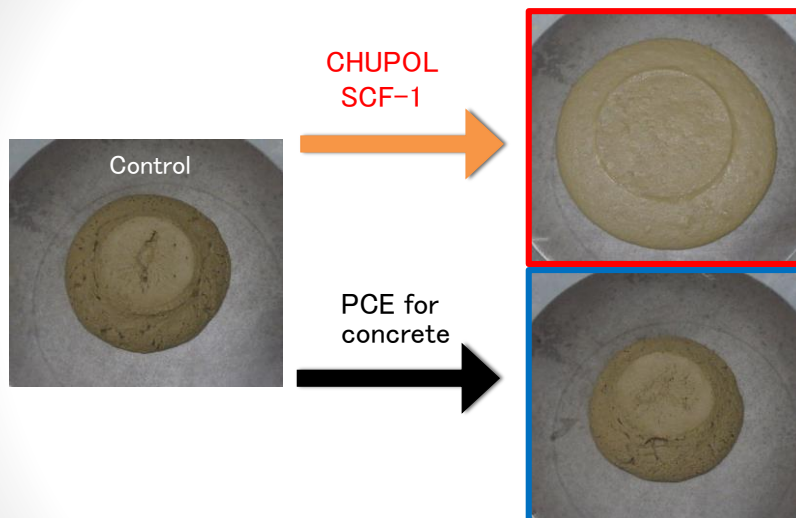
Problem of Ground Improvement Work



In order to obtain good workability, high injection rate is necessary

[3]

Effect of CHUPOL SCF-1 against soil cement



SCF-1 can improve fluidity of soil cement.
Fluidity can improve workability

[4]

Result of actual site (design example)

※kg/m³ shows the dosage as per 1m³ of target soil

種別	Injection amount of cement milk		Quantity for each material			Workability	
	Injection rate (vol.%)	Lowering rate (vol.%)	W (kg/m ³)	C (kg/m ³)	SCF-1 (kg/m ³)	Fluidity of soil cement	Fluidity of core material
Conventional mix proportion	72	-	650	217	-	-	-
Low sludge-drained proportion	49	32	437	150	7	Same as conventional mix proportion	Same as conventional mix proportion

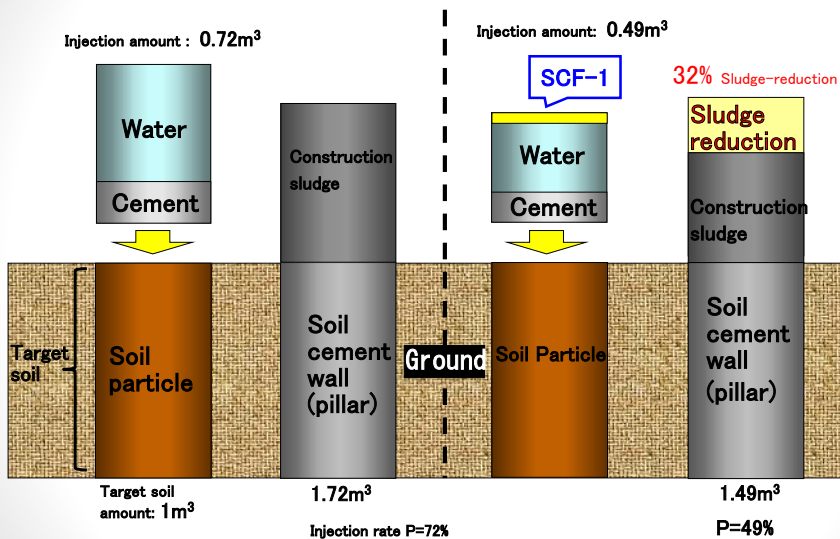
By using CHUPOL SCF-1, lower injection of cement milk can give the same workability as conventional mix proportion



It reduces approx.30% of construction sludge

(5)

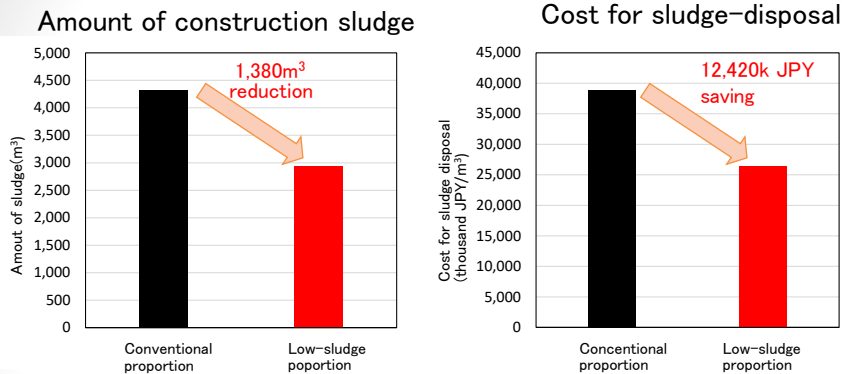
Picture of reduction of construction sludge



Even small injection rate, it can achieve good workability and reduce construction sludge.

(6)

Estimation of reduction of sludge-disposal cost



※Estimation is done based on :
 -Target soil quantity: 6,000m³
 -Sludge disposal cost: JPY9,000/m³

CHUOPOL SCF-1 can reduce 1,380m³ of construction sludge (equivalent for 10MT dump truck x 130) and save 12,420k JPY as sludge-disposal cost.

(7)

Characteristics of CHUPOL SCF-1

- By improving fluidity of soil cement, it can reduce injection amount of cement milk and reduce construction sludge. Lower construction sludge contribute to lower environmental impact.
- It can reduce the number dump trucks and it will contribute to CO2 reduction and solve noise issue
- Standard dosage of SCF-1 is 1.0 – 5.0% against cement quantity and less than 10kg against 1M3 of target soil. Please determine the dosage in lab test prior to use in actual site.

(8)

