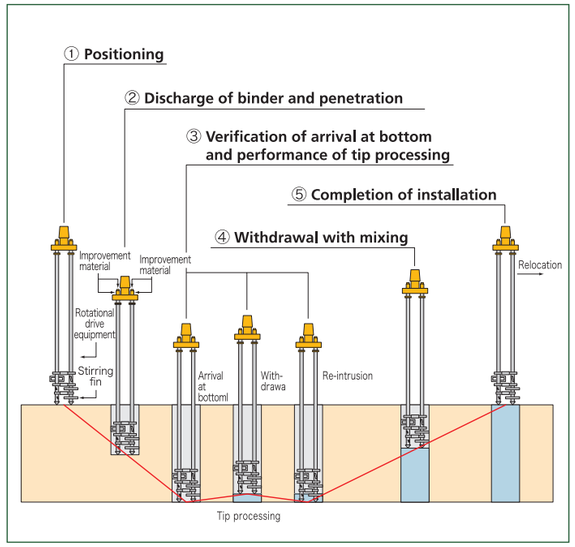
Construction Procedure



① Positioning
The construction equipment is set at the prescribed location.

② Discharge of binder and penetration
A series of intrusions are made into sedimentation while improvement materials are discharged.

③ Verification of arrival at bottom and performance of tip processing
Once the arrival of the tip at the supporting layer is verified, the discharge of improvement material is stopped and tip processing begins.

④ Withdrawal with mixing
The stirring fins are rotated in reverse while the unit is pulled out.

⑤ Completion of installation
The improvement area is reclaimed to ground level and the unit is relocated to the next construction location.

Compact Construction Equipment

The use of compact construction equipment allows for construction work at locations with restrictions on the available space or height.

Proximity Construction Work

The low displacement construction method makes construction work possible in proximity to existing buildings.

Oversea Experiences

- Vietnam, Thermal Power Plant water way slope stability
- Vietnam, Container Birth slope stability

FUDOTETRA

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ISO 9001
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Deep Mixing Method with Large Diameter and Superior Quality

CMC

Contrivance Innovation - CMC

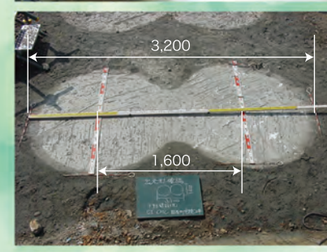
The CI-CMC construction method is a wet type deep mixing method for creating larger diameter and higher quality improvement areas. This was made possible through the development of the “ejector discharge" mechanism, which is used to spray atomized slurry with air. Peripheral displacements can be greatly reduced, making this construction method suitable for urban areas and in the vicinity of existing structures. The CI-CMC construction method reduces costs while providing superior quality and construction work in large volumes.

Benefits

High-quality, large-diameter piles
Stirring efficiency is improved, resulting in the creation of improvement areas of larger diameter and with extremely small variations.

Superior penetration ability
Penetration ability has been improved, making it possible to mixing even in ground with high resistance against penetration.

Low displacement construction method
The air lifting effect significantly reduces peripheral displacement.



- The “CI” of the “CI-CMC construction method” stands for “Contrivance” and “Innovation.”
- The CI-CMC construction method is a patented construction method.
- NETIS registration number: QS-980018-V
- The effectiveness of the ejector discharge has been certified with the “Technology Assessment Certification for Advanced Construction Technology, No. 2304” (January 15, 2012) by the Advanced Technology Center.

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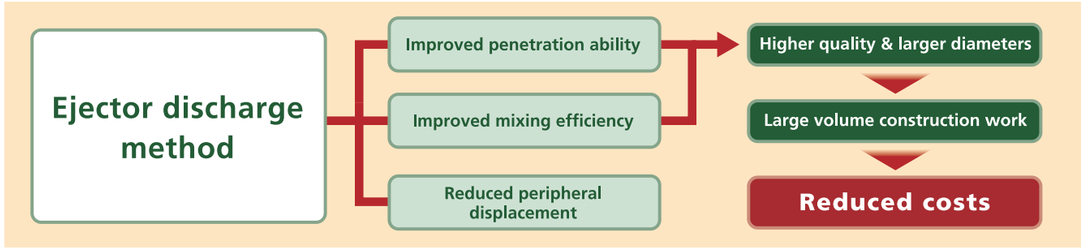
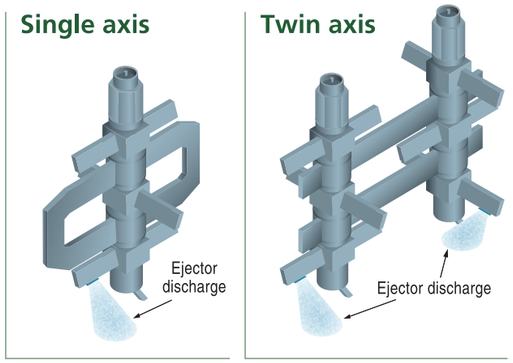
Three Features of the Ejector Discharge Mechanism



Ejector Discharge Method

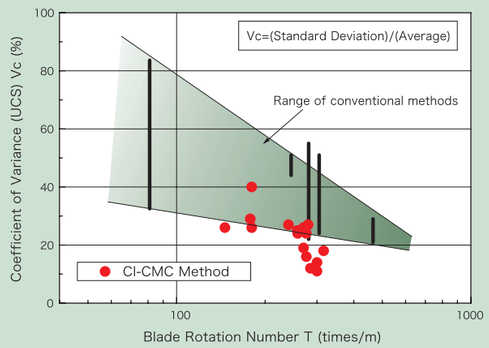
This innovative method can discharge atomized solidifying materials with air by injecting cement slurry into the air's flow with a device incorporated into the stirring fin. For this reason, it is possible to disperse solidifying materials to the entire improvement area, unlike conventional methods that merely discharge slurry from discharging spouts. It also displays a large diameter as well as a high stirring performance.

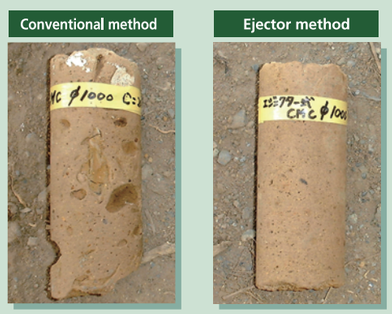
Penetrating loads are reduced, since the atomized slurry loosens the soil and raises the fluidity of soil particles. Furthermore, soil becomes easier to move due to the air lifting effects of the construction method. Soil in the mixing region is elevated smoothly as slurry is inserted, resulting in reduced peripheral displacement.



Large-diameter piles of high quality

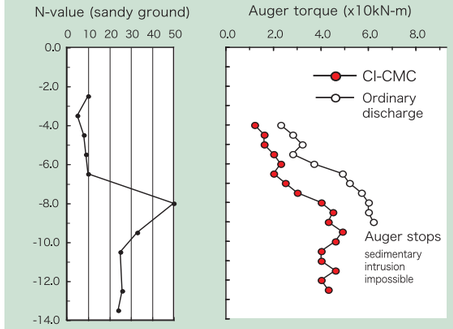
Improvement areas of high quality with extremely small amounts of variation are created.





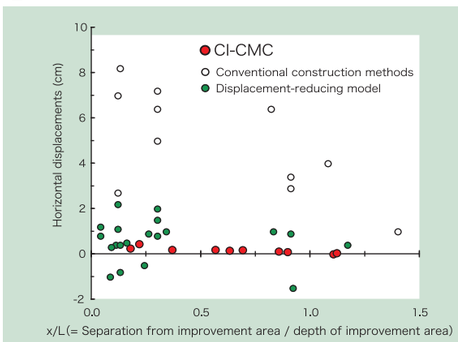
Superior penetration ability

The unit possesses superior penetration capacity.



Low-displacement construction method

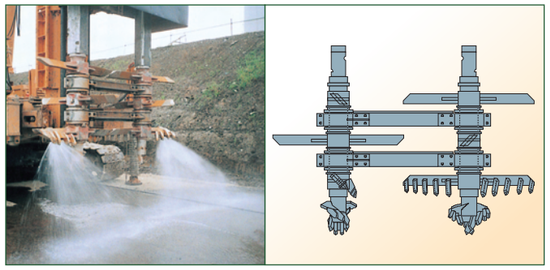
Peripheral displacement has been reduced significantly.



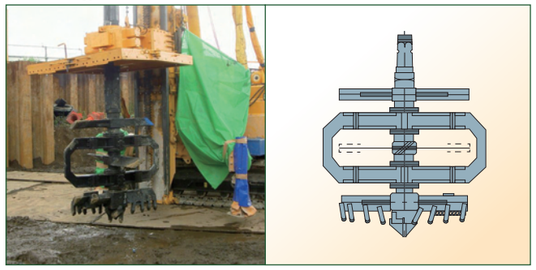
Dual-way mixing involving the raising and lowering of stirring fins, open fins that prove effective for the kneading of cohesive soil, and dual-path discharging that makes possible the massive discharge of solidifying material solutions with uniform dispersion, are other technologies also available for use.

Selections from a Diverse Range of Construction Equipment

Twin axis blades



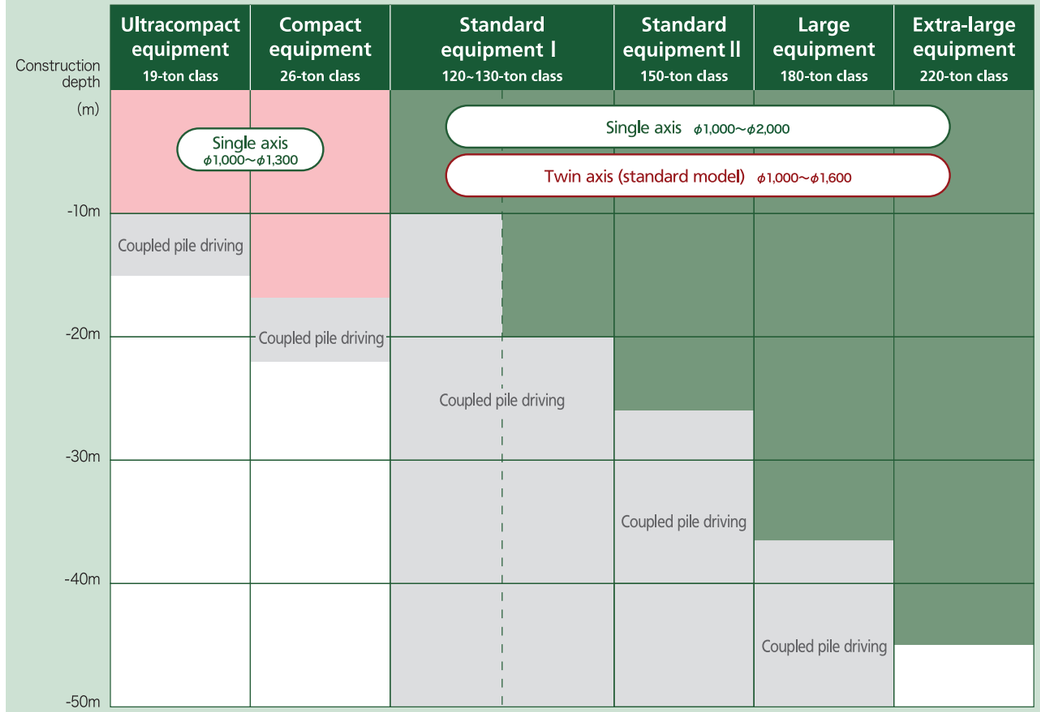
Single axis blades



Applicable ground for construction work

Sandy ground with an SPT N-value of 50 or less
Cohesive soil ground with an SPT N-value of 15 or less (including humic soil)

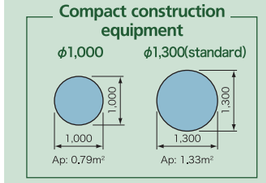
※ It may not be possible to make selections for the maximum diameters or maximum depths, depending on the strength of ground being worked on.

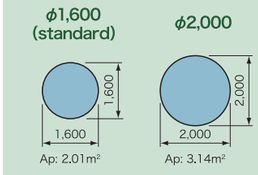


※ Excludes layers that contain stones measuring 100 millimeters or more in diameter.
※ Individual consideration will be necessary when performing construction work with twin axis equipment when spacing between the axes is more than the diameter of the improvement area.

Completed configuration of improvement areas

Single axis construction work





Twin axis construction work