

Purpose and Use of this Brochure

Purpose and Scope:

This brochure serves as a source of fundamental information regarding the products. Users should utilize this brochure as a guide while ensuring strict compliance with all applicable laws and regulations when performing functions and maintenance.

Safety Precautions:

Proper selection and utilization of the products described herein require expertise and skill in design and construction. To this end, fully trained and qualified specialists should always be engaged for the specified purposes.

Important Notes:

- All related design and installation activities must be conducted in strict accordance with a thorough and comprehensive understanding of the information contained in this brochure.
- Any product descriptions or product appearances provided herein may be subject to change without prior notice.
- The depictions of the products as presented in this brochure may differ somewhat from the actual product appearance.

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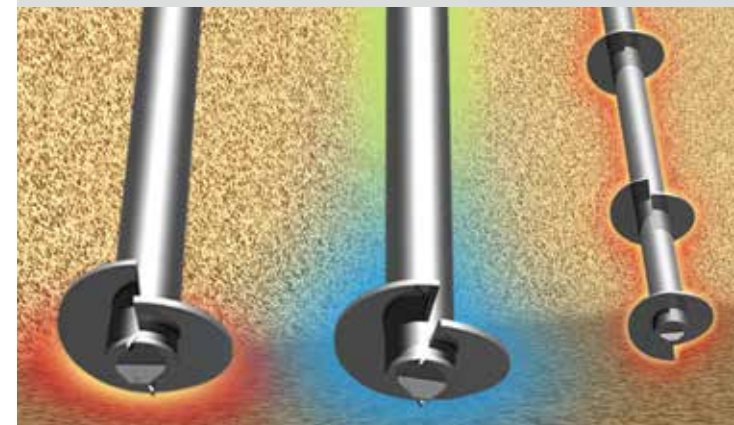
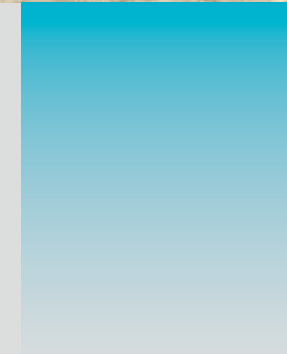
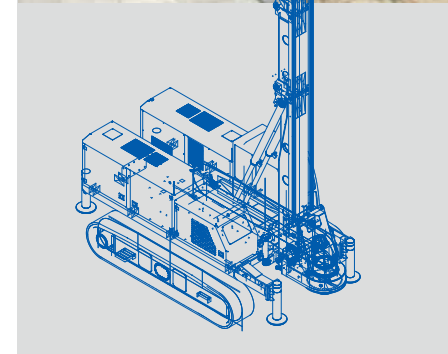
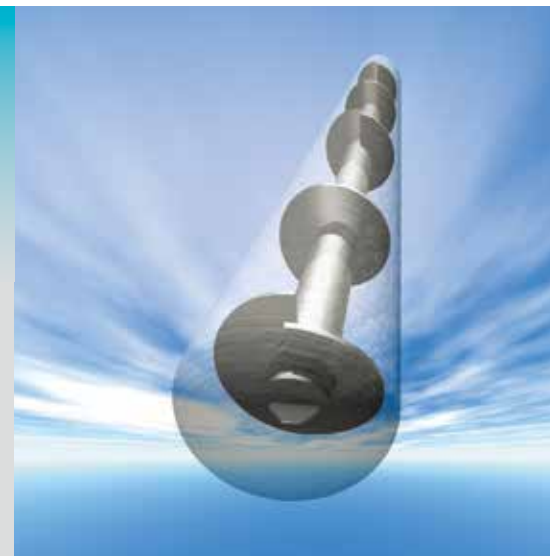


AsahiKASEI

English version

Foundation Products and Systems

EAZET ATT Column™

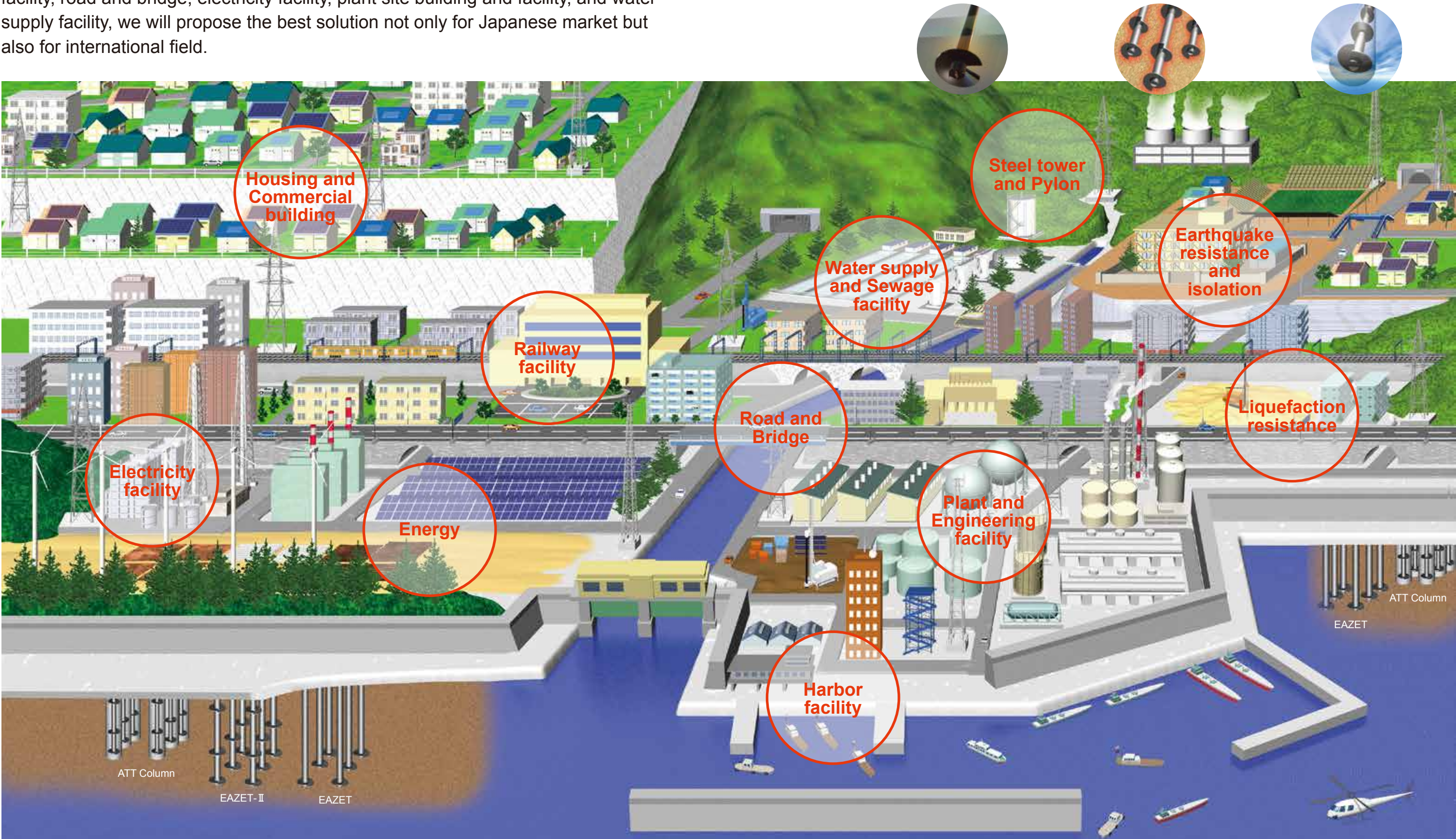


AsahiKASEI Construction Materials Foundation Products and Systems line-up

For over 40 years, we have been developing a variety of products and systems based on customers' prospective. For housing and commercial building, railway facility, road and bridge, electricity facility, plant site building and facility, and water supply facility, we will propose the best solution not only for Japanese market but also for international field.

■ AsahiKASEI Construction Materials

	Foundation and Pile products line-up		
Products brand	EAZET	EAZET-II	ATT Column
Feature	A pile method using steel pile with helical plate at the bottom	A pile method using steel pile with multi helix	A pile method combining multi-helix steel pile and soil cement column



What is "EAZET" ?



Four distinctive concepts lead to the optimal solution

EAZET is a highly sophisticated steel pile with a helix at the bottom, backed by a track record of over 45,000 successful installations. Developed with a focus on four key principles—High Performance, Environmental Friendliness, Reliability, and Adaptability—EAZET stands as the ideal solution for various applications, including factory construction, nature field projects, railway facilities, electric power installations, and seismic strengthening endeavors. Additionally, our product lineup includes EAZET-II, a multi-helix pile designed to offer enhanced bearing capacity through peripheral friction. Choose EAZET for your projects and experience outstanding performance, reliability, and adaptability.

High Performance

EAZET offers a substantial load-bearing capacity and pull-out resistance, thanks to its distinctive helix design and the method of installation into the bearing stratum. Our commitment to ongoing research and development ensures that its high performance continues to evolve year after year.



Bearing capacity determined from the ground (kN) (Peripheral friction not included)
(Typical Specification) *Safety factor: 3.0 for Long term

Pile shaft diameter Dp (mm)	Helix diameter Dw (mm)	Average N value at the tip of the pile =50	
		Ultimate	Long term
114.3	300	528	176
139.8	350	720	240
165.2	450	1191	397
190.7	500	1470	490
216.3	550	1779	593
267.4	650	2487	829
318.5	750	3312	1104
355.6	800	3768	1256
406.4	880	4560	1520

Pull-out capacity determined from the ground (kN) (Peripheral friction not included)
(Typical Specification) *Safety factor: 1.5 for Short term

Pile shaft diameter Dp (mm)	Helix diameter Dw (mm)	Average N value at the tip of the pile =50	
		Ultimate	Short term
114.3	300	92	61
139.8	350	129	86
165.2	450	201	134
190.7	500	255	170
216.3	550	315	210
267.4	650	453	302
318.5	750	615	410
355.6	800	717	478

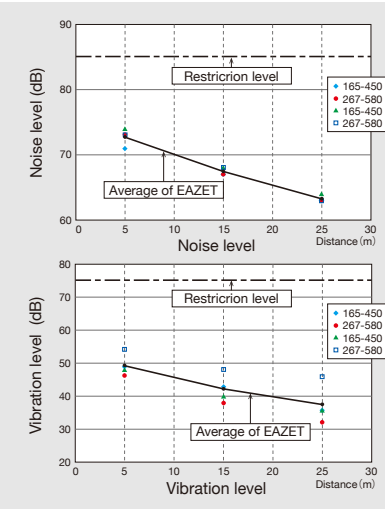
*The charts above are based on the certification in Japan. Pull out capacity of 406.4 is under experiment.
*The capacity of piles need to be compliance with local code.

Environmentally Friendly

EAZET is an environmentally friendly method achieving little wastage soil, low vibration, and low noise. Its uniquely shaped helix and the machines provide an environmentally friendly work.



Installation scene with little waste soil



The level of noise (Restricted level in Japan: 85dB)

Pile specification			The distance of surveillance		
Pile shaft diameter Do (mm)	Pile tip diameter Dw (mm)	The depth of pile installation (m)	5.0 m (dB)	15.0 m (dB)	25.0 m (dB)
165.2	450	8.0	71	67	63
267.4	580	7.0	73	67	63
165.2	450	5.5	74	68	64
267.4	580	8.0	73	68	63

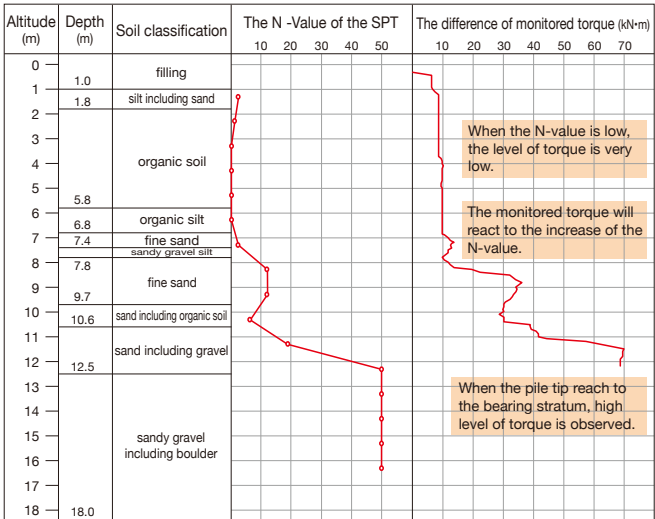
The level of vibration (Restricted level in Japan: 75dB)

Pile specification			The distance of surveillance		
Pile shaft diameter Do (mm)	Pile tip diameter Dw (mm)	The depth of pile installation (m)	5.0 m (dB)	15.0 m (dB)	25.0 m (dB)
165.2	450	8.0	49	43	36
267.4	580	7.0	46	38	32
165.2	450	5.5	48	40	36
267.4	580	8.0	54	48	46

Reliability

By comparing the monitored torque and the SPT data during the installation, we implement the highly reliable quality control.

Comparing N value with monitored torque



* The recorded torque shows the similar tendency with N value.



Construction management device



Torque data

Mechanical Joint System

We have mechanical joint system, AKJ. This can connect the piles without welding so that there are no concern about the weather nor skills of the welding engineers.



AK Joint system



Adaptability

Our compact installation machines can perform pile works in conditions where conventional methods might face difficulties. We offer a unique lineup of machines designed to adapt to various conditions and restrictions.



Standard machines



2m type



SS type



2m type



SSS type

Concerning the works at the factory sites and plant sites, there are many conditions like limitations for space, approach route, noise level, vibration level. Our wide variety of machines offer appropriate piling work for such conditions.

Adaptability to various conditions

We, EAZET, can manage the condition of upper limit for 2.5 m and 30 m² work space by utilizing SS type machine, and SSS type machine can pass through 1 m width route.

EAZET 2 m short mast machine work



ATT Column 5.5 m short mast machine work



Mechanical Joint System

Mechanical joint system can work at flame restricted sites.



AK Joint system

Installation with little waste soil



Installation scene with little waste soil

Adaptability to various conditions



Carrying the SSS machine by crane (EAZET)



Leader-less type machine work (EAZET)



EAZET work close to the pipe rack (EAZET)



Indoor work (ATT Column)



A reinforcement work for an equipment foundation inside the room (EAZET)

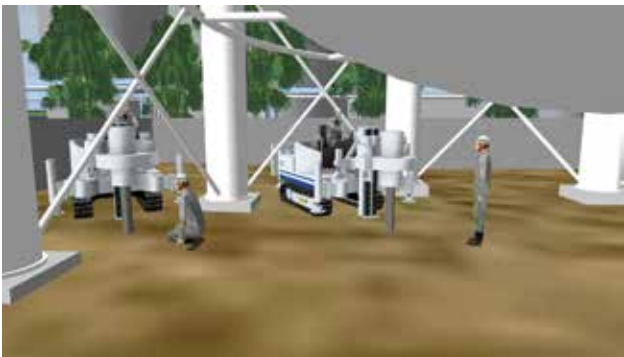


A work close to a tank (EAZET)



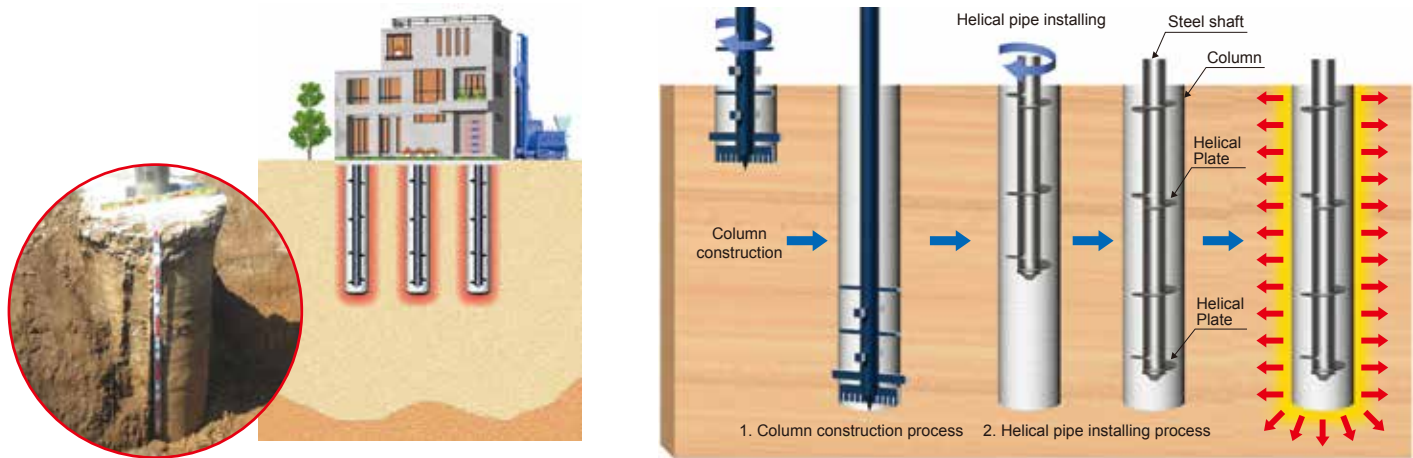
SSS type machine approaching into a building (EAZET)

Reinforcement work for equipment



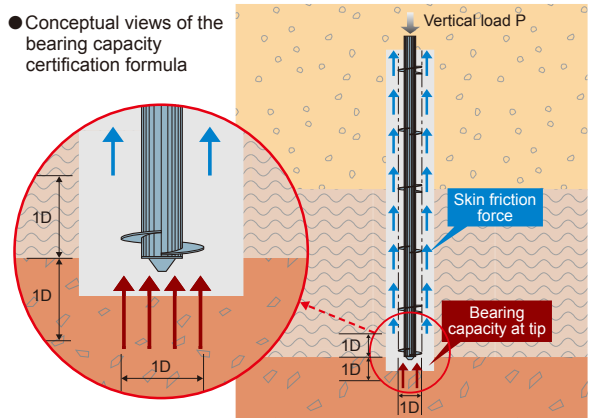
ATT Column features and performance

ATT Column is a hybrid pile system that combines the soil mixing column and steel helical pile. After making column by stirring and mixing the cement with in situ soil, multi-helix steel pile will be installed at the center of the column. It performs not only high friction force and pullout capacity between columns with surrounding soil but also perform high degree of horizontal force resistance.



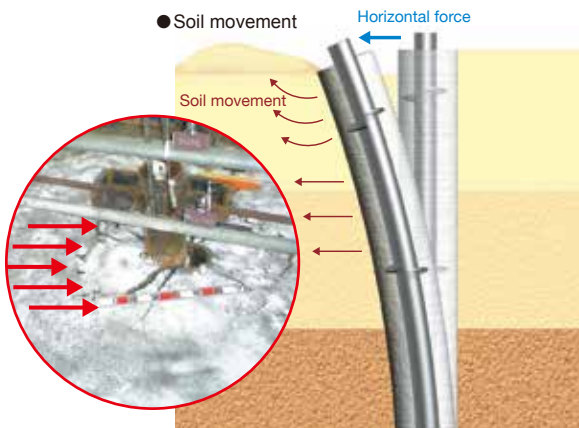
High Axial Bearing Capacity

Since the steel pile part and soil cement column are combined very firmly, and the combined hybrid column is untied with surrounding soil, it performs high degree of axial bearing capacity.



High Horizontal Resistance

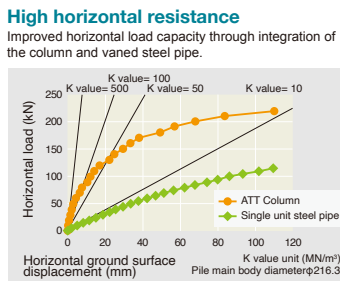
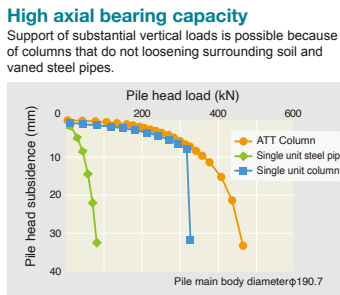
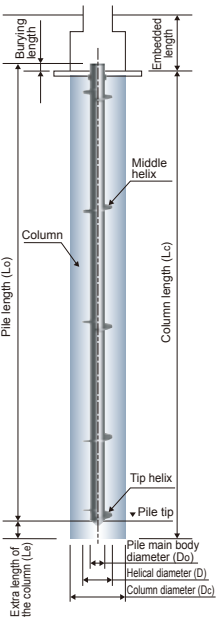
ATT Column hybrid pile has very superior reaction force for horizontal force by wind or earthquake.



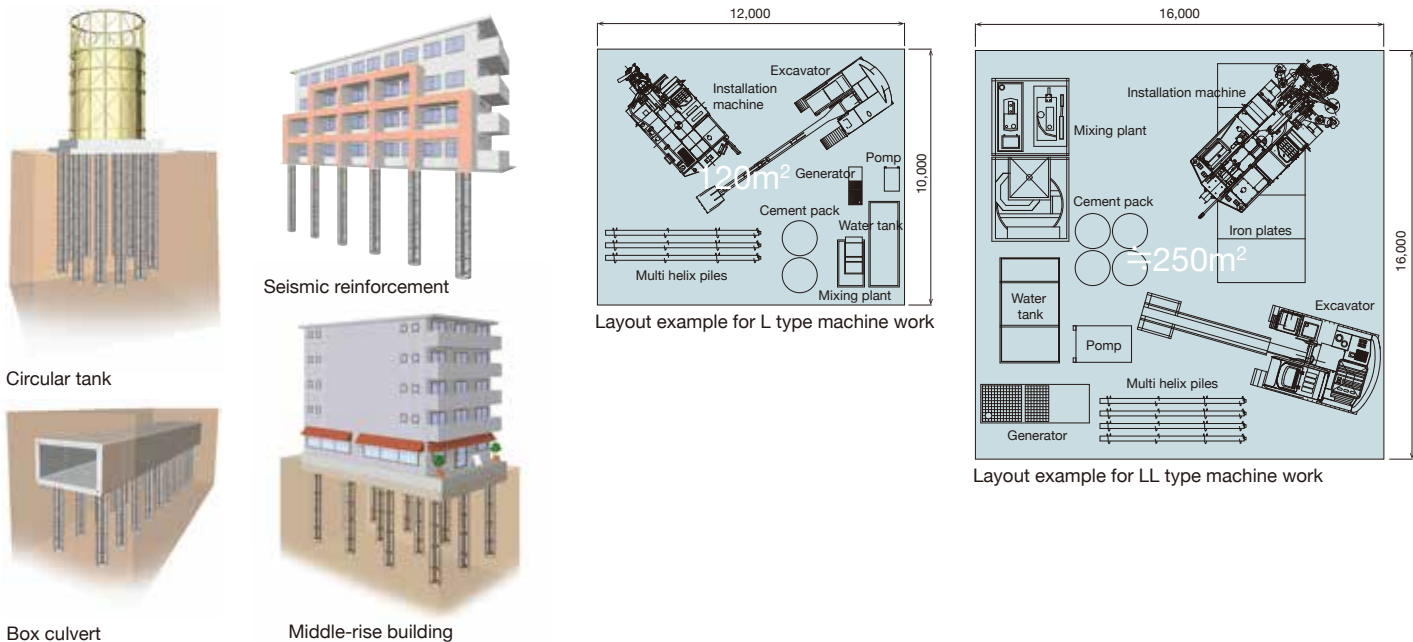
The Examples of ATT Column Pile Specifications

Pile shaft		Length of individual pile Lo (m)	Helical diameter - column diameter D (mm) - Dc (mm)	Maximum construction depth (m)
Diameter Do (mm)	Thickness of the pile t (mm)			
165.2	7.1	2 - 12	350 - 600	Sandy ground 27
190.7	7.0		400 - 600	
216.3	8.2		450 - 700	
267.4	8.0		400 - 600	
318.5	7.9		450 - 700	
355.6	7.9		500 - 700	
	12.7		500 - 700	Cohesive ground 25
	12.7		600 - 900	
	12.7		600 - 900	
	12.7		700 - 1000	
	12.7		500 - 700	Rudaceous ground 30
	12.7		600 - 900	
	12.7		700 - 1000	
	12.7		600 - 900	
	12.7		700 - 1000	
	12.7		700 - 1000	

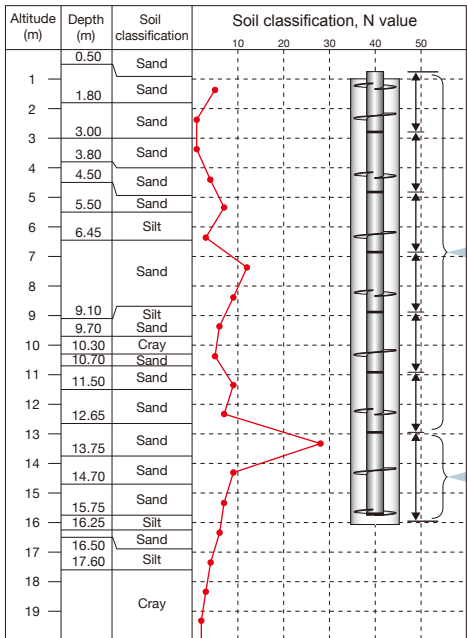
*The standard length for pile material is provided in 1 m pitch.
*The data for column diameters above is standard diameter values. The maximum column diameter for each pile main body diameter is 1000 mm.
*The standard thickness for the helical is 9 mm. However, this can vary depending on the nature of the ground and other factors. Contact us for details.



ATT Column Piling Work



Standard penetration test



Shaft diameter (mm)	Helical diameter (mm)	Column diameter (mm)	Lengths of pile (m)	Composition of pile	Long term bearing capacity (kN)
267.4	500	700	15.0	3 m + (2 m x 6)	520

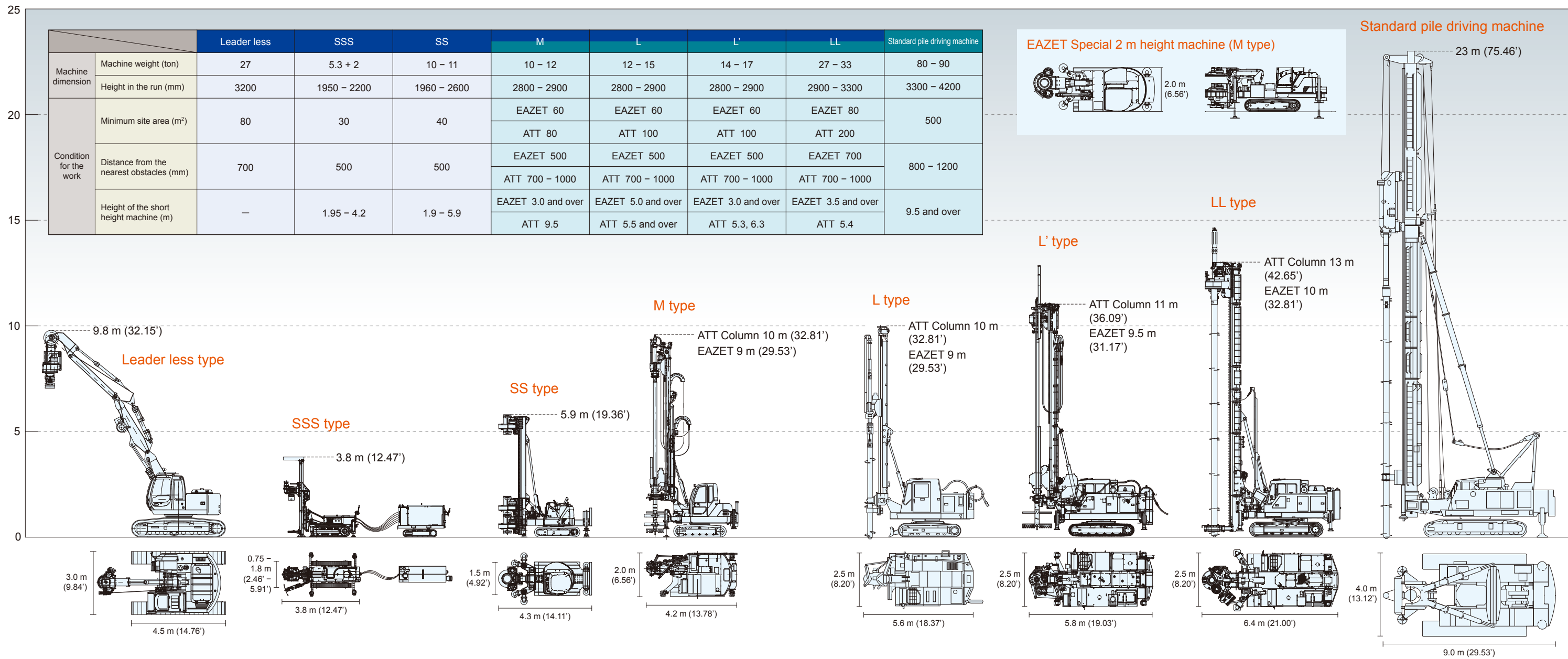
*This long term bearing capacity is based on the certification in Japan.
*The capacity of piles need to be compliance with local code.



Work view

In order to provide the solutions to customers' requests and considered tough work conditions, we have developed and utilized various specially designed machines and equipments.

Thanks to these lineup, we will propose the best solution for your project.



EAZET

ATT Column



Leader less



SSS



SS



M



L



L'



LL



Standard pile driving machine