

# Thermal Response Test Equipment Data

Fill-in Date: 10-2010

Country: Japan

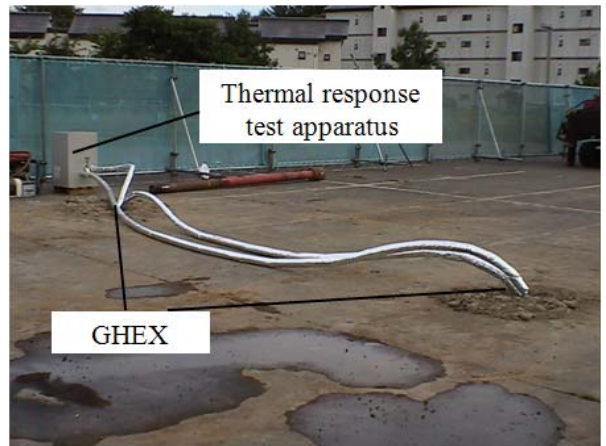
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## GENERAL TRT DATA

Type: <i>Heat injection</i>	No TRTs: 1	Size, weight: 500 mm+500 mm+800 mm, 60 kg	
Aim: <i>Research</i>		Pump: <i>Flow rate 0 ~30 L/min</i>	
Powered by: <i>Electricity</i>		Heater: 4.2 kW(AC200V), 1.05( AC100V)	
Built on/in: <i>portable</i>		HP/Cooler: <i>Nothing</i>	
<p>0V~220V Electric heater (0~4.5kW)</p> <p>Expansion tank</p> <p>To BHE From BHE</p> <p>Air Valve</p> <p>Power meter Circulation pump Data logger</p> <p>T Pt-100 Sensor F Flow meter</p>		Temperature measurements: <i>- Pt-100 sensor (Proof read in ±0.01%)</i>	
			Flow rate measurements: <i>- Electromagnetic flowmeter (Tokyo Keiso)</i>
			Voltage stabilization: <i>No</i>
			Supply Power Monitoring: <i>Yes</i>
			GPS: <i>No</i>
			Remote Control of Operation: <i>No</i>
			Remote Data Collection: <i>No</i>
		Logger: <i>Yokogawa MV100</i>	
<u>Principle outline</u>			

## TRT EXPERIENCE

Years of operation: 2004

Number of performed measurements: 13 *Research*

Typical borehole depths: 4.7 ~ 100 m

Applications: *BHE, energy piles (Steel piles, PHC piles)*

Typical collector type: 1U, 2U, type of filling: *Sand, Silica sand, Water, Concrete cement*

Typical fluid type: *Water or Antifreeze liquid*

Typical groundwater temperature: 10 ~ 20°C

Geographical area: *Hokkaido, Kanto area(Near Tokyo), Kyushu*

Analysis Method: *Numerical, Line source, Honor plot*