

# Geothermal Energy

## Case Study

### MTK Sports Park



**Sector**  
Sport



**Organization**  
Bayer Construct Zrt



**Location**  
Budapest, Hungary



**Project**  
MTK Sports Park

### The Customer

Bayer Construct is a leading Hungarian construction firm that has demonstrated its proficiency in sustainable energy development through active participation in multiple geothermal projects, highlighting its commitment to advancing low-carbon infrastructure solutions.

### The Project

#### MTK Sports Park

This project, completed in 2025, features a geothermal heating and hot water supply system, making it a landmark project in the field of geothermal energy.



#### The Challenge

Cementing of each geothermal well is a crucial process in wellbore construction, ensuring the integrity and isolation of the well.

Testing cement for geothermal energy applications requires specialized equipment due to the extreme conditions encountered in geothermal wells including Ultra HPHT Consistometers, High Temperature Ultrasonic Cement Analyzers, Static Gel Strength Analyzers, Compressive Strength Testers, Curing Chambers and Fluid Loss Test Assemblies.



#### The Solution

Chandler Engineering's HPHT line of instruments for testing wellbore cements and drilling fluids were used on this project to simulate the aggressive high temperature conditions found in geothermal wells.

## Sustainability

The MTK Sports Park utilizes **geothermal energy** for heating. This innovative approach involved drilling 1,300-meter-deep production and recovery wells to access thermal water. The geothermal system ensures that the complex is heated sustainably, with minimal environmental impact.

## Performance

Chandler Engineering is renowned for its high-performance equipment used in oil, gas and geothermal well cement testing. Below are highlights of their equipment's performance:

- **Consistometers:** Chandler's consistometers, such as the 7322 Single Cell HPHT Consistometer, are designed to test cement's thickening time under various downhole conditions. They are known for their accuracy and reliability in simulating high-pressure, high-temperature environments.
- **Ultrasonic Cement Analyzers (UCA):** These analyzers, like the 4265HT, provide non-destructive testing of cement strength development. They are highly regarded for their precision in measuring the acoustic properties of cement as it cures.
- **Compressive Strength Testers:** Compressive strength testers, such as the 4207D, are used to determine the compressive strength of cement samples under simulated downhole conditions. They are well known for their robustness and accuracy.
- **Fluid Loss Test Assemblies:** These assemblies, including the 4300 Static Fluid Loss Tester, are designed to evaluate the fluid loss characteristics of cement slurries. They are valued for their ease of use and reliable performance.
- **Curing Chambers:** Chandler Engineering's curing chambers simulate downhole pressure and temperature conditions to cure cement samples. They are essential for ensuring the cement's performance under actual well conditions.

Chandler Engineering's equipment is widely used in the industry due to its adherence to API and ISO standards, ensuring high quality and consistent results.

