



CHANDLER ENGINEERING

Model 4268-S

CEMENT SHRINKAGE CELL

A Critical Tool for Oil Well Drilling and Cementing

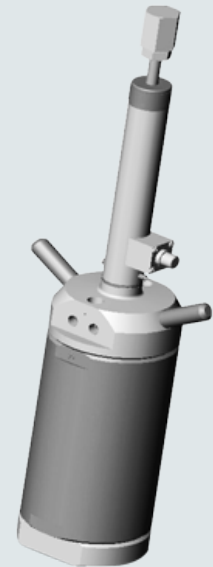
The expansion or shrinkage of oil well cement during curing can positively or negatively impact the integrity of a completed well. The Model 4268-S Cement Shrinkage Cell is an option for the Model 5265 Static Gel Strength Analyzer (SGSA), Model 4265 Ultrasonic Cement Analyzer (UCA) or Model 4265H UCA. When combined with a precision pressure controller, the system continuously measures the shrinkage of a cement sample under high temperature and high-pressure conditions.

The system measures change in volume of the sample using a diaphragm and displacement piston combined with a precision LVDT. The resulting translation of the piston is scaled in units of milliliters (mL) or percent shrinkage. Test data is presented graphically by the Chandler Engineering Model 5270 Data Acquisition and Control System.

Description

The Model 4268-S Cement Shrinkage Cell makes use of the programmable temperature controller that is a part of an existing Chandler Engineering Ultrasonic Cement Analyzer. Compatibility with Models 4265 UCA, 4265-HT UCA or 5265 SGSA. A Quizix Precision Pump and Software is also required when using the Model 4268-S.

The system is capable of precise pressure control within ± 50 psi necessary for shrinkage measurement. Multiple segment ramps and dwell temperature and pressure schedules may be defined for the sample using the controllers.



FEATURES

- ✓ Continuous Measurement Under HPHT Conditions
- ✓ Cement Sample Isolated From the Pressurizing Media
- ✓ Single Vessel Curing to Preserve Sample Conditions and Testing Integrity
- ✓ Programmable Temperature and Precision Pressure Control
- ✓ Easy to Install and Use in Chandler Engineering Model 4265 UCA; 5265 SGSA and 4265H Horizontal UCA

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Specifications

Vessel Volume

200mL

Measurements

±20 mL volume change of the cement sample, sample temperature, sample pressure. Piston displacement may reach -32 mL for initial sample compression

LVDT Measurement Range

±0.500 inches / ±12mm

Maximum Temperature

400°F / 204°C

Maximum Pressure

10,000 psi / 69 MPa

Utilities

Power

85 – 240 VAC, 50 VA or less, 50/60 Hz (LVDT electronics and related data acquisition hardware), refer to power requirements of the specific instrument (Model 5265 SGSA or 4265 UCA)

Water

Filtered pressurizing water, 20-100 psi / 140-670 kPa

Coolant

Clean water or Ethylene glycol solution

Air

Filtered, dry compressed air; 75-125 psi / 520-860 kPa

Drain

Suitable for hot water

Manufacturer's specifications subject to change without notice



AMETEK®
CHANDLER ENGINEERING

2001 North Indianwood Avenue, Broken Arrow, OK 74012
Tel: +1 918-250-7200 • Fax: +1 918-459-0165
e-mail: chandler.sales@ametek.com • www.chandlereng.com

Houston Sales and Services

4903 W. Sam Houston Parkway, N., Suite A-400, Houston, TX 77041
Tel: +1 713-466-4900 • Fax: +1 713-849-1924