For over 60 years CHANDLER ENGINEERING has produced the highest quality measurement instruments for the upstream Oil & Gas industry. Today, CHANDLER ENGINEERING, the industry's largest instrument supplier, continues its efforts to help customers improve the efficiency and productivity of their drilling and production operations.

Well known for producing the world's most capable and reliable high pressure, high temperature (HPHT) well cement testing instruments, the CHANDLER ENGINEERING portfolio of instruments and systems has grown to include reservoir testing systems, drilling fluid testing and corrosion testing instruments as well as many other unique solutions for reservoir evaluation, well construction and completions.

More Product Families From CHANDLER

Reservoir Analysis Instruments determine the flow-related properties of the reservoir fluids and formation so that producers can optimize their production and recovery techniques.

Viscometers are used to determine the flow tendencies of completion, drilling and production fluids.

HPHT Applications are uniquely designed instruments for solving the specific measurement problems in high pressure high temperature (HPHT) environments.
**Consistometers**

*High Pressure, High Temperature (HPHT) Consistometers* are designed to test a cement’s thickening time under a variety of downhole conditions in compliance with API standards. Single and dual-cell models are available.

- **Model 7322** (400°F / 204°C; 22,000 psi / 150 MPa)
- **Model 8340** (600°F / 315°C; 40,000 psi / 275 MPa)
- **Model 7025C10 Dual Cell** (400°F / 204°C; 25,000 psi / 172 MPa)
- **Model 8040D10 Dual Cell** (600°F / 315°C; 40,000 psi / 275 MPa)

*Bench-Top Consistometers* enable space-limited mobile and remote cement testing laboratories to perform the fundamentally necessary testing of cement thickening time.

- **Model 7716** (350°F / 177°C; 16,000 psi / 110 MPa)
- **Model 7720** (400°F / 204°C; 20,000 psi / 138 MPa)

*Atmospheric Consistometers* are used to perform basic atmospheric pressure thickening time tests.

- **Model 1200 Indicating** (200°F / 93°C; atmospheric pressure)
- **Model 1250 Recording** (200°F / 93°C; atmospheric pressure)

**Compressive Strength Testers**

*Ultrasonic Cement Analyzers (UCA)* provide a determination of a cement sample’s compressive strength development over time while it is being cured under downhole temperature and pressure conditions.

- **Model 4265HT** (600°F / 315°C; 20,000 psi / 137 MPa)
- **Model 4265** (400°F / 204°C; 20,000 psi / 137 MPa)
- **Model 4262 Twin Cell UCA** (400°F / 204°C; 5,000 psi / 34 MPa)

*Cement Expansion / Shrinkage Cells* continuously measure the expansion or shrinkage of a cement sample under high-temperature and high-pressure conditions. This is an option available for use with Models 4265, 4265-HT and the 5265 SGSA. A Quizix pulse free precision pump is also required.

- **Model 4268 ES** (400°F / 204°C; 10,000 psi / 68 MPa)

*Cement Cube Testing* equipment includes pressurized curing chambers and an automatic, digitally-controlled, hydraulic press for destructively determining the compressive strength of cured, standard two-inch cement cubes in compliance with API standards.

**Pressurized Curing Chambers**

- **Model 1910** (16 cubes; 700°F / 370°C; 25,000 psi / 172 MPa)
- **Model 7355** (16 cubes; 700°F / 370°C; 5,000 psi / 34 MPa)
- **Model 7360V** (4 cubes or BP settling tube test; 600°F / 315°C; 6,000 psi / 41 MPa)
- **Model 7370** (8 cubes; 700°F / 370°C; 3,000 psi / 20 MPa)
- **Model 7375 Dual Cell** (8 cubes/cyl.; 700°F / 370°C; 3,000 psi / 20 MPa)

**Compressive Strength Testers**

- **Model 4207D** (Max load: 50,000 lbf / 222 kN)
Static Gel Strength and Gas Migration Analyzers

Static Gel Strength Analyzers (SGSA) offer simultaneous measurement of a cement slurry’s static gel strength development and its compressive strength development while it is curing under downhole temperature and pressure conditions.

Model 5265 SGSA

Mechanical Gel Strength Analyzers allow operators to study the development and resulting gel strength throughout the gel phase of cement slurries. This tool equips the operator with the knowledge required to improve slurry designs to meet the critical requirements of well placement.

Model 5265MG

Cement Hydration Analyzers are precision instruments that measure three key aspects of oil-well cement: its susceptibility to gas migration, its degree of hydration, and its gas permeability.

Model 7200

Mechanical Properties Testing

Mechanical Properties Analyzers (MPRO) continually measure the elastic mechanical properties (Poisson’s ratio, Young’s modulus, bulk modulus) and the compressive strength of API cement as it cures under high-temperature and high-pressure conditions.

Model 6265 MPRO

Fluid Loss Testers

Fluid Loss Cells to measure the fluid loss properties of cement slurries or drilling fluids in accordance with API standards

Model 4300
Model 7120
Cement Viscosity

Computer Controlled Viscometers offer distinct advantages over our direct indicating, manual viscometers. These precision instruments provide complete, programmable control of the viscometer’s speed throughout a test cycle including constant speeds, step changes, and linear ramps. The Rheo 3000 software provides automatic data acquisition, graphical display and automatic analysis of the test results. A thermal cup for testing at elevated temperatures is available.

Model 3530 is a fully automated concentric cylinder viscometer designed to meet API and ISO requirements for viscosity measurements of many of the fluids used in well servicing. This viscometer is fully operational in manual mode without the use of a computer or as a computer controlled viscometer with pre-configured periodic shear rates. The Rheo 3000 Data Acquisition Software is provided with the instrument and provides a powerful tool ensuring consistent testing parameters and results.

(16 manual speeds or any speed from 0.01 to 600 rpm when computer controlled; shear rates: 0.17 to 1021 sec⁻¹)

Slurry Preparation

Constant Speed Mixers blend cement slurry at an automatically maintained, constant shear rate in accordance with API standards.

Model 3260 (Designed to be API compliant for cement testing; 1 qt / 1 liter volume; delivered preset to run the API Spec10A and RP10B2 mixing speeds of 4,000 and 12,000 rpm or fully variable speed selection from 1,000 to 18,000 rpm)

Model 3270 (Add on 4 qt / 4 liter volume cup assembly for use with the 3260 mixer; 16,000 max. rpm)

Atmospheric Consistometers prepare cement slurries for the testing of rheological properties, fluid loss and various other properties in strict compliance with API standards.

Model 1200

Model 1250 includes Chart Recorder

Wettability Testers are two instruments in one: a constant speed mixer and an instrument for the evaluation of the oil/water phase transition of oil-based drilling fluids as they interact with spacer and/or pre-flush systems. This is essential for evaluating the wettability of spacers and pre-flushes that are intended to water wet the surfaces to which cement is expected to bond.

Model 3065 (1 qt / 1 liter volume; 18,000 max. rpm)
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AMETEK OIL & GAS

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