PRODUCT RANGE BROCHURE

Pump-Actuated Rock Mechanics Testing Systems

Your supplier of high-pressure laboratory instruments and advanced geotechnical testing equipment

THE COMPLETE RANGE

PREPEAK **TRILAB** **ROCLAB** **AVS 700** **TRUTEST**

ROCK MECHANICS • TRIAXIAL SYSTEMS • ACOUSTIC & PETROPHYSICAL MEASUREMENTS

www.floxlab.com

THE FLOXLAB PORTFOLIO

Product Range at a Glance

Five complementary systems covering the full spectrum of rock-mechanics testing.

PREPEAK

Pre-Failure Triaxial Rock Compression Tester

Pump-actuated triaxial system for pre-failure stress loading — keeps the rock intact for precise, well-controlled stress states.

70 MPa — Max pressure

445 kN — Max axial load

TRILAB

Triaxial Rock Compression Tester — ASTM D7012

Versatile triaxial system with pressure-balanced deviatoric piston for complete rock-mechanics characterization including failure behaviour.

100 MPa — Max pressure

2,500 kN — Max axial load

ROCLAB

Automated Pore Volume Compressibility System

Fully automated system for hydrostatic, triaxial and uniaxial-strain pore-volume compressibility measurements under reservoir conditions.

100 MPa — Max pressure

150 °C — Max temperature

AVS 700

Acoustic Velocity System

High-precision system measuring P-, S1- and S2-wave velocities and 2/4-point electrical resistivity of saturated core samples.

70 MPa — Triaxial pressure

1 MHz — Ultrasonic freq.

TRUTEST

True Triaxial Rock Compression Test System

Independent control of σx, σy, σz on cubic specimens via six hydraulic actuators driven by three syringe pumps for full 3D stress paths.

100 MPa — Max stress / axis

0.5 µm — LVDT resolution

CHOOSE THE RIGHT TOOL

System Positioning

Which Floxlab system fits your testing objective?

PREPEAK

WHEN TO CHOOSE

Pre-failure studies needing stable, well-controlled stress without rock failure

KEY APPLICATIONS

- Creep & long-term deformation
- Stress-dependent porosity & permeability
- Acoustic velocity (Vp/Vs)
- Electrical resistivity
- Reservoir depletion simulation

TRILAB

WHEN TO CHOOSE

Full mechanical characterization including failure & post-failure (ASTM D7012)

KEY APPLICATIONS

- Triaxial compressive strength
- Elastic modulus & Poisson's ratio
- Residual strength & softening
- Fracture initiation & AE
- Hydraulic fracturing

ROCLAB

WHEN TO CHOOSE

Pore-volume compressibility under realistic reservoir stress paths

KEY APPLICATIONS

- Hydrostatic compressibility
- Triaxial compressibility
- Uniaxial strain (PPD / CPP)
- Pore & bulk compressibility
- Fully automated test sequences

AVS 700

WHEN TO CHOOSE

Standalone acoustic & petrophysical measurements on saturated cores

KEY APPLICATIONS

- P, S1 & S2 wave velocities
- Dynamic elastic constants
- Young's, Shear & Bulk modulus
- Formation Factor (FF = R_o/Rw)
- 2-point & 4-point resistivity

TRUTEST

WHEN TO CHOOSE

True triaxial loading on cubic specimens — independent σx, σy, σz for full 3D paths

KEY APPLICATIONS

- Independent X, Y, Z stress
- True triaxial strength
- Anisotropic deformation
- Wellbore stability tests
- Hydraulic fracturing 3D / AE 2D-3D

FLOXLAB SYSTEM

PREPEAK

Pre-Failure Triaxial Rock Compression Tester

PREPEAK — Pump-actuated triaxial cell with control workstation and syringe-pump skid

KEY DIFFERENTIATORS

- Pump-actuated triaxial design — built-in hydraulic piston
- Optimized for pre-failure loading — rock stays intact
- Independent radial & axial confining pressures
- Enables acoustic, petrophysical and mechanical studies
- Fully customizable — Hastelloy option for corrosive fluids

KEY SPECIFICATIONS

70 MPa Axial / Confining / Pore	**445 kN** Max axial load
150 °C Max temperature	**54.7 mm** Specimen diameter

APPLICATIONS

Creep • Stress-dependent porosity & permeability • Acoustic velocity • Electrical resistivity • Reservoir depletion

FLOXLAB SYSTEM

TRILAB

Triaxial Rock Compression Tester — ASTM D7012 compliant

TRILAB — Pressure-balanced triaxial cell with integrated control & acquisition station

KEY DIFFERENTIATORS

- Pressure-balanced deviatoric piston
- Full failure & post-failure
- ASTM D7012-compliant stress paths
- Multi-physics integration

FOUR MODEL VARIANTS

Model	Axial load	Pressure	Spec Ø
TRILAB 1000 / 70	1,000 kN	70 MPa	≤ 54.7 mm
TRILAB 1000 / 100	1,000 kN	100 MPa	≤ 54.7 mm
TRILAB 2500 / 70	2,500 kN	70 MPa	54.7–100 mm
TRILAB 2500 / 100	2,500 kN	100 MPa	54.7–100 mm

APPLICATIONS

Compressive strength • Elastic modulus • Poisson's ratio • Residual strength • Fracture initiation • Hydraulic fracturing + AE

FLOXLAB SYSTEM

ROCLAB

Automated Pore Volume Compressibility System

ROCLAB — Automated reservoir-condition compressibility test bench

THREE TEST GEOMETRIES

HYDROSTATIC

Effective stress test
Simulated reservoir stress
Pore & bulk compressibility

TRIAXIAL

Varying radial or axial stress
Pore & bulk compressibility
in 3D stress state

UNIAXIAL STRAIN

Pore Pressure Depletion
Constant Pore Pressure
Zero radial-strain condition

APPLICATIONS

Reservoir compaction • Pore-volume reduction • Subsidence studies • Depletion simulation • Effective-stress calibration

FLOXLAB SYSTEM

AVS 700

Acoustic Velocity System

AVS 700 — Standalone acoustic & petrophysical bench for saturated core samples

KEY DIFFERENTIATORS

- P, S1 & S2 wave travel-time measurement
- 2-point and 4-point brine-saturated resistivity
- Dedicated acoustic & petrophysical standalone system
- Dynamic elastic constants + Formation Factor
- Compatible with PREPEAK / TRILAB / ROCLAB ecosystem

KEY SPECIFICATIONS

70 MPa Triaxial pressure	**1 MHz** Ultrasonic freq.
120 °C Max temperature	**12 Hz–10 kHz** LCR frequency range

APPLICATIONS

Seismic property calibration • Dynamic elastic moduli • Formation evaluation • Microcrack analysis • Anisotropy characterization

FLOXLAB SYSTEM

TRUTEST

True Triaxial Rock Compression Test System

TRUTEST — True triaxial cell with six hydraulic actuators and three syringe-pump units

KEY DIFFERENTIATORS

- Independent control of σx, σy, σz on cubic specimens
- Six hydraulic actuators in three opposing pairs (X, Y, Z)
- Three syringe pumps — one per axis pair
- Closed-loop servo stress control, parasitic-free loading
- Optional acoustic velocity, AE, hydraulic fracturing

KEY SPECIFICATIONS

100 MPa Max stress / axis	**0.5 µm** LVDT resolution
100^3–300^3 mm Cubic specimens	**6 actuators** 3 axis-pairs

APPLICATIONS

3D stress reproduction • Anisotropic deformation • Wellbore stability • Hydraulic fracturing • 2D / 3D Acoustic Emission

AT-A-GLANCE SIDE-BY-SIDE

Technical Comparison

Specifications side-by-side — all five systems

Parameter	PREPEAK	TRILAB	ROCLAB	AVS 700	TRUTEST
Test type	Pre-failure triaxial	Failure triaxial	Pore compressibility	Acoustic + resistivity	True triaxial
Max axial load	445 kN	1,000–2,500 kN	—	—	—
Max pressure (axial / conf. / pore)	70 MPa	70 or 100 MPa	100 MPa	70 MPa	100 MPa / axis
Max temperature	150 °C	150 °C	150 °C	120 °C	150 °C
Specimen geometry	Ø 54.7 mm cyl.	Ø ≤ 100 mm cyl.	1” / 1.5” cyl.	1” / 1.5” / 30 mm cyl.	100^3 / 200^3 / 300^3 mm cubes
Standards	—	ASTM D7012	—	—	—
Wetted parts	SS / Hastelloy	SS / Hastelloy / Inconel	SS / Hastelloy	SS / Hastelloy	Stainless steel
Key output	Stable stress paths, Vp/Vs, permeability	Strength, elastic moduli, fracture	Pore & bulk compressibility	Dynamic moduli, Formation Factor	True 3D stress–strain, AE 3D

All five systems share the same pump technology, workstation philosophy and optional test modules where applicable.

ONE PLATFORM, FIVE SYSTEMS

Common Ecosystem

Shared pump technology, workstation and optional test modules across the entire range. Once an operator is trained on one system, the others are immediately familiar.

AUTOMATED SYRINGE PUMPS

- Independent axial / confining / pore control
- Modes: pressure, force, displacement, strain, flow
- Working pressure up to 70 or 100 MPa
- Volume 175 to 250 cc
- Flow range 0.0001 to 60 cc/min

SUPERVISION & REPORTING

- Synoptic live display, pump & heating control
- Real-time mechanical & petrophysical acquisition
- Automatic property calculation
- Standardized reporting
- Full data archiving and traceability

SIX OPTIONAL TEST MODULES

CREEP & DEFORMATION

In-vessel LVDTs and extensometer for long-term strain measurement

PERMEABILITY

LP-700 module — Darcy law, range 0.01 mD to 10 Darcy

ELECTRICAL RESISTIVITY

2-point / 4-point measurement, LCR meter 12 Hz – 10 kHz

ACOUSTIC VELOCITY

P, S1 & S2 waves at 1 MHz, operation up to 120 °C

ACOUSTIC EMISSION

Six lateral sensors, 16-bit / 10 MHz, ~2 mm location accuracy

HYDRAULIC FRACTURING

Ø 6.35 mm boreholes with real-time AE tracking

GET IN TOUCH

Contact Us

Discover our complete range of rock-mechanics testing systems

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FLOXLAB

Rock Mechanics • Triaxial Systems • Acoustic & Petrophysical Measurements • Custom Solutions

GLOBAL PRESENCE

Floxlab supplies high-pressure laboratory instruments worldwide