



FLOW LOOP TEST FACILITY



**CANADA'S ONLY
FLOW LOOP TEST FACILITY
NOW OPERATIONAL**



Operational now, Canada's only flow loop test facility enables Top-Co to focus on quality through dynamic testing of float equipment: new; re-designed; and failure analysis. Designed to test the performance of float equipment utilizing drilling mud and other simulations to ensure equipment pertains to API – IIIC, this scientific study will allow Top-Co to verify product performance and provide empirical input for its continuous improvement program.

FLOW LOOP TEST FACILITY INCLUDES:

- High pressure/high temperature test chamber
- Centralizer test bench
- Cement formulation testing
- Finite Element Analysis

HIGH PRESSURE / HIGH TEMPERATURE TEST CHAMBER

PURPOSE • Specifically designed to test the differential pressure performance of float equipment under specified temperature as per API Recommended Practice 10F

CAPABILITIES • The maximum working temperature is 400°F at a maximum working pressure of 10,000 psi.
• The fixture is equipped with two temperature probes for measuring both internal and external temperature of float equipment during testing process.

BENEFITS • Obtain data on each product configuration performance that will determine the optimum product for each type of well application.
• New product designs fully tested before introduction to marketplace.



SPECIALISTS IN PRIMARY CEMENTING EQUIPMENT



FLOW LOOP TEST FACILITY



CEMENT TESTING

- PURPOSE**
- Compression testing of concrete samples and other components requiring compression testing.
- CAPABILITIES**
- Compression testing of concrete and other material samples.
 - Load cell with load readout and data collection capability.
- BENEFITS**
- Continuous conformance testing on production cement samples to ensure all batches meet minimum engineering strength standards.
 - Developmental testing of new concrete formulation technology and other components with compressive strength requirements.



FINITE ELEMENT ANALYSIS

- PURPOSE**
- Finite Element Analysis (FEA) uses computer simulation to determine stress/strain loading in float equipment and components.
- CAPABILITIES**
- Static force simulation including axial loading and internal external pressure application.
 - Determine ultimate failure load of components.
 - Ability to simulate deformation of parts.
- BENEFITS**
- Verification of new designs; help identify potential problem areas so they are addressed prior to product launch.
 - Reduced time to market - new product design and modifications can be optimized and quickly verified, negating the requirement for time consuming prototype iteration testing.



CENTRALIZER TEST BENCH

- PURPOSE**
- Specifically designed to test performance of Bow Spring casing centralizers and ensure compliance with API Specification 10D.
- CAPABILITIES**
- Ability to test starting (run in) forces and restoring forces on all sizes of centralizers.
 - Programmable Logic Controller data collection and logging.
- BENEFITS**
- Verification of new designs.
 - Confirmation of consistency of product performance.
 - Quality control verification of weld quality and performance.