

OPENING
Q2 2011

Simulated Service Vessel (SSV)

Subsea Test Facility



FLOW
ASSURANCE

DATA SHEET



Description

ShawCor's Simulated Service Vessel (SSV) is a key part of a state of the art facility designed to simulate deep water service conditions for insulated pipe, flexible pipe and custom coated subsea structures. **Bredero Shaw will use this vessel to simulate service conditions experienced by subsea insulation coatings by controlling the water temperature and applying pressure to the water surrounding the insulation coatings while controlling the temperature inside the pipe.** By simulating these service conditions within the test vessel and measuring the heat flow and compressive creep of the insulating material, Bredero Shaw is able to advise the pipeline design engineer of both the thermal efficiency and depth rating of the insulation.

Applications



Oil & Gas
Pipelines



Subsea
Pipelines



Small Diameter
Pipelines



Large Diameter
Pipelines

Simulate Subsea Conditions

- Insulated pipe is installed in a pressurized tank and tested under subsea pressure and temperature conditions for long periods of time to determine thermal performance over time.
- Increases in pressure are conducted in steps to determine the immediate and long term response of insulation properties to changes in pressure.
- With market requirements trending towards deep and ultra deep exploration opportunities, the vessel has been designed to accommodate testing to an equivalent water depth up to 3,000 m (9842') at an internal pipe temperature of up to 180°C (356°F).

Reduce Product Qualification Time

- Bredero Shaw will be able to adjust the testing schedule to accommodate customer requirements.
- Bredero Shaw has qualified technical staff on-site and will use third party inspection to validate test results for clients.

Ability to Test Project Specific Pipe Configurations

- Testing is designed to accommodate the exact configuration of pipe that will be put into service including large diameter (up to 610 mm (24") OD) at lengths of up to 6 m (18') so that clients will more accurately know thermal performance for their installed pipe.
- The vessel also has the ability to test both the field joint and the main line insulation.

Unique Testing Capabilities

- Bredero Shaw will be able to measure how thermal conductivity and compressive response changes over time as a function of hydrostatic pressure.
- The vessel can also test for cool down time and creep to evaluate the insulation's long term reliability.
- The heating system provides precise temperature control to ensure accuracy.

Features & Benefits

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Typical Capabilities

Capability	Simulated Service Vessel
Minimum Test Pressure	25 bar (± 2)
Maximum Test Pressure	300 bar (± 5)
Chilled Water Temperature Inside Pressure Vessel.....	4°C (40°F) (± 2)
Internal Temperature.....	20°C - 180°C (68°F - 356°F)
Sample Length.....	6 m (18') max
Number of Pipe Samples.....	one pipe
Pipe Inside Diameter	95 mm - 660 mm (4" - 26")
Pipe Outside Diameter (includes insulation)	145 mm - 810 mm (6" - 32")
Coating Thermal Conductivity	0.1- 0.3 W/m K
Overall Heat Transfer Coefficient (U)	1.5 - 6 W/m ² K



SSV_rev020

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Location

North America

Toronto, Ontario (Research & Development Centre)

About Bredero Shaw

Bredero Shaw is the global leader in pipe coating solutions. With more than 80 years of experience, the largest team of dedicated pipe coating professionals, the most extensive network of strategically located plants worldwide and with proven innovative coating technologies, the company has protected more pipelines in virtually every environment and operating condition than anyone in the industry.

Bredero Shaw offers technologically advanced solutions for anti-corrosion coatings, protective and weight coatings, thermal flow assurance coatings, internal coatings, custom coatings and field joints for both onshore and offshore applications. This broad range of products and services provides Bredero Shaw with the unique capability to service the full spectrum of pipeline protection and flow assurance requirements. Consult your Bredero Shaw representative for your unique project requirements.

The information contained herein is indicative of the types of coatings provided by Bredero Shaw, and is not intended to be a guarantee that a particular coating will be suitable for a given application. Since many unique environmental, operating, and design conditions must be considered, the user shall determine the suitability of the coating for the intended use and assume all the risks and liabilities in connection therewith. Bredero Shaw's liability is stated in our standard conditions of sale.