



SOUTHWEST RESEARCH INSTITUTE

Deep Ocean Pressure Simulation Testing

With more than 50 years of experience in offshore and marine technologies, Southwest Research Institute® (SwRI®) offers a wide variety of services to meet the need for deep ocean pressure simulation testing. These services provide a final check of quality and operational integrity for clients including oil producers, manufacturers of subsea components, pipeline manufacturers and the U.S. Navy.

The SwRI Ocean Engineering and Structural Testing Laboratory has more than 10,500 square feet of climate-controlled laboratory space, with additional outdoor test facilities. Deep ocean pressure simulation test chambers range from 90 inches inside diameter, 20 feet deep to 16 inches inside diameter, 30,000 psig.

Services

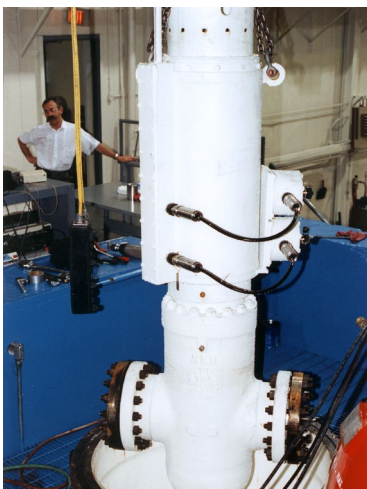
- Engineering design verification
- Product evaluation
- Prototype construction
- Design and fabrication of special test fixtures for client-specified requirements
- High-speed and still underwater photography

Testing

- Internal and external hydrostatic pressure tests
- Stress analysis and acceptance tests
- Operational tests requiring electrical and hydraulic penetrations
- Collapse and burst tests on API steel pipe casing, fiberglass pipe, titanium and stainless steel pipe
- Testing of prototype equipment, pressure housings, subsea instrumentation, cables, connectors, oil field production and safety equipment



Diving suit subjected to hydrostatic pressure test



Test chamber 20 feet deep with 90-inch inside diameter



The main pressure laboratory houses more than 10 deep ocean pressure simulation chambers which are used for static, cyclic and destruct testing.



Mini-submarine being tested for ABS recertification

DEEP OCEAN PRESSURE SIMULATION TEST CHAMBERS

Maximum Pressure (psi)	Simulated Ocean Depth (feet)	Maximum I.D. (inches)	Inside Length (inches)	Minimum Temperature (°F)	Maximum Temperature (°F)	Number of Penetrations
3,300	7,415	48	178	32	200	12
4,000	8,988	90	230	32	100	30
6,000	13,483	50	288	32	100	8
10,000	22,471	6	41	32	500	2
10,000	22,471	30	114	32	200	10
10,000	22,471	9	46	32	600	4
11,000	24,719	8	90	32	600	2
20,000	44,943	10	34	32	600	6
20,000	44,943	12	120	32	400	2
20,000	44,943	15	120	32	100	4
30,000	67,000	16	120	32	500	4



Subsea valve being placed in test chamber



Large-diameter pipe casing after collapse test

We welcome your inquiries. For more information, please contact:

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SOUTHWEST RESEARCH INSTITUTE®

Southwest Research Institute® is a premier independent, nonprofit research and development organization. With ten technical divisions, we offer multidisciplinary services leveraging advanced science and applied technologies. Since 1947, we have provided solutions for some of the world's most challenging scientific and engineering problems.

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