



SOUTHWEST RESEARCH INSTITUTE



Test Services for Offshore Insulation and Corrosion Protection Systems

Southwest Research Institute® (SwRI®) provides facilities and numerous test capabilities for the offshore industry and manufacturers of insulation and corrosion protection materials. The SwRI Structural Engineering Department test facilities include ocean simulation test chambers, mechanical test equipment, technical assistance in setting up tests and procedures, and an experienced technical staff that includes support from SwRI corrosion engineers.

Capabilities

- Simulated service tests
- Thermal testing of insulation
- Insulation materials testing
- Mechanical properties tests
- Hydrostatic water absorption

Experience

- Qualification of subsea wet insulation materials and application procedures to operator specifications by performance of short- or long-term tests simulating environmental and operating temperatures at rated depth
- Simulation of deepwater subsea conditions and thermal conditions to evaluate mechanical and thermal integrity of insulation materials in real time
- Test results used for evaluation to determine:
 - Effectiveness of different types and thicknesses of wet insulation in subsea conditions, cool-down periods
 - Verification of thermal, mechanical and application characteristics of product
 - Mechanical properties of materials for comparative analysis (exposed and unexposed samples)
 - Tensile/elongation, density, hardness, hydrostatic crush, FTIR, DMA



Simulated service insulation test samples being set up for pressure/temperature test



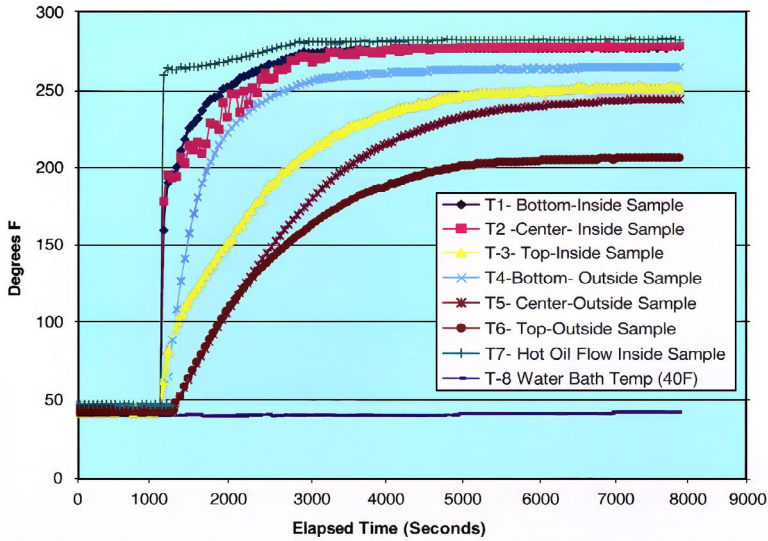
Hydroclave assembly for long-term exposure testing (Inset – Material test samples)



Adhesion strength test on insulation samples to evaluate bonding strength of insulation to steel substrate

Facilities

- Underwater Engineering Laboratory with hydrostatic test chambers that can be used to simulate temperatures and ocean depths greater than 10,000 feet
- Hot Oil Flow Unit to internally heat a pipe sample subjected to external pressure or ambient conditions



Typical plot of thermocouple sensors on insulated pipe undergoing thermal testing



Subsea insulated pipe sample at 10,000-ft depth in 40°F salt water (internal pipe temperature 280°F)

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

Paul Garza

Manager
210.522.5112
paul.garza@swri.org

Keith Roberts

Engineering Technologist
210.522.2485
keith.roberts@swri.org

Mechanical Engineering Division
Structural and Mechanical Engineering Department

deepoceansimulation.swri.org

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.

210.522.2122

ask@swri.org

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