

# INDEPENDENT TESTING SERVICES

Custom Testing to your Specifications

## SERVICE DESCRIPTION

PMI works with you to ensure survivability of your cable system at sea. PMI is capable and willing to take on new challenges to simulate service conditions experienced by underwater cable systems and devices. Our specialty is to provide insight with respect to the interaction between the strength member and attached hardware, or the complete cable assembly.

Our fully equipped facility and trained associates can offer customized testing services uniquely tailored to your needs.

## FEATURES AND BENEFITS

- Evaluation, qualification, design verification, and acceptance test programs
- Continuous monitoring of power and signal conductors and optical fibers throughout testing
- Certification and qualification to meet government, commercial, institutional, and international standards
- Testing in accordance with customer requirements and industry standards
- Confidential results and on-site record retention
- ISO 9001:2015 with Design Certification



CBOS (cyclic bend over sheave) machine



Long span tension setup



One of PMI's hydrostatic pressure chambers



100-kip straight tension machine

## TESTING SERVICES

Typical at-sea conditions can cause catastrophic failures to your system. Our facility can assist you to identify potential problems prior to use by performing extensive laboratory testing.

### TENSION

Break Strength  
 Test Load vs. Elongation Data  
 Proof Load Certification  
 Dynamic Load Simulation  
 Fatigue & Retirement Criteria  
 Cable Design Verification/Qualification  
 Certification of Cable Assemblies  
 Pre-Tensioning of Cable Prior to Terminating

### MEASUREMENT AND ANALYSIS

Tension vs. Torque  
 Tension vs. Rotation  
 Torque-Balance Verification  
 Cable Qualification  
 Verify "Non-Rotating"  
 Test for Twist Resistance  
 Torque-Restraint Testing Verification  
 Monitoring & Measurement of Conductor and/or Optical Fiber Performance

### BENDING

Static & Dynamic Cable Qualification  
 Simulate Handling System Problems  
 Qualify Cable Fairing & Hardware  
 Verify Wet / Dry Fatigue Performance  
 Cable Jacket Abrasion Tests Simulate  
 Tow Point Dynamics Fatigue Testing  
 Design Qualification

### HYDROSTATIC PRESSURE

Simulate At-Depth Pressure Loading  
 Verify Seal and Electrical and Optical Performance

## TEST EQUIPMENT & CAPABILITY

<b>TENSION</b>	Up to 19.8 m (65 ft.), tension up to 445 kN (100,000 lbf.). Proof, tension and breaking strength.
<b>CYCLIC TENSION</b>	Up to 19.8 m (65 ft.), tension up to 445 kN (100,000 lbf.)
<b>SERVO-CONTROLLED TENSION</b>	Programmable rate of load or displacement using ramp, sine, saw tooth, or recorded waveforms. Up to 19.8 m (65 ft.), tension up to 445 kN (100,000 lbf.) at a rate of 305 cm (120 in.)/minute (max).
<b>LONG SPAN TENSION SETUP</b>	Up to 457m (1500 ft.) over multiple sheaves, tension up to 53.4 kN (12,000 lbf.).
<b>HYDROSTATIC PRESSURE</b>	Up to 68,948 kPa (10,000-psig)
<b>CYCLIC BEND OVER SHEAVE</b>	Multi-sheave test frame, tension up to 267 kN (60,000 lbf.)
<b>CYCLIC TENSION OVER SHEAVE</b>	Multi-sheave test frame, tension up to 267 kN (60,000 lbf.)
<b>CYCLIC FLEXURE</b>	Repeated bends to ± 27°, tension up to 89 kN (20,000 lbf.)
<b>REVERSE BEND OVER SHEAVES</b>	Tension up to 266.9 kN (60,000 lbf.)
<b>TORQUE &amp; ROTATION</b>	In-line torque cells for Torque vs. Tension data. Torque up to 1017 Nm (750 ft-lbs), rotation to ± 1080°, tension up to 445 kN (100,000 lbf.).
<b>INDUCED TORQUE / ROTATION</b>	Controlled rotation of tensioned specimen while measuring in-line torque & twist. Torque up to 750 ft-lbs, rotation to ± 1080°, tension up to 445 kN (100,000 lbf.).
<b>ELECTRICAL</b>	High-voltage breakdown, insulation resistance, impedance, DC resistance, capacitance, attenuation, cross-talk, TDR, current capacity, etc.
<b>OPTICAL</b>	Loss measurements of fiber-optic cable elements using power meters, laser, OTDR, splicers & field-installable connectors.

## TECHNICAL SUPPORT

If you have questions or concerns about any PMI product, please contact our engineering staff directly.  
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