



About us:

India's First Laboratory to get NADCAP-MTL Accreditation.

BISS Labs operate a state-of-the-art, 24X7 mechanical testing facility with over 30 servo-hydraulic Universal Testing Machines, Structural Actuators and several customized test rigs partnering customers in Aerospace, Defence, Automotive and Energy sectors including Oil & Gas, Wind Energy and Nuclear Power. BISS LABS is ISO/IEC 17025:2017 (NABL), BIS, DGAQA certified in Mechanical Testing.

Testing Solutions:

- Composites
- Fracture Mechanics
- Plastics
- Fatigue
- Structural
- Composite Specimen Manufacturing

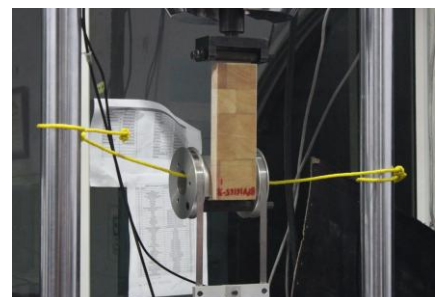
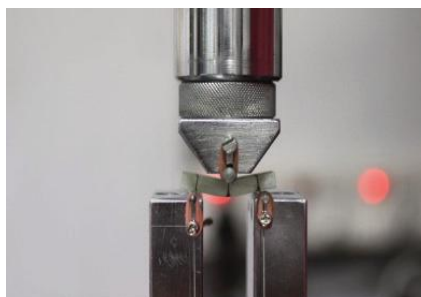
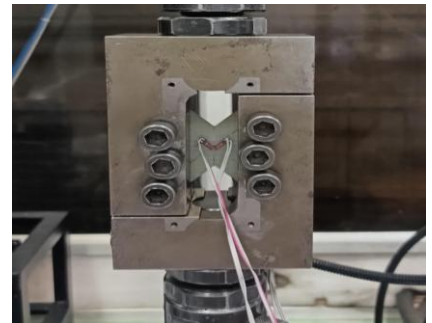
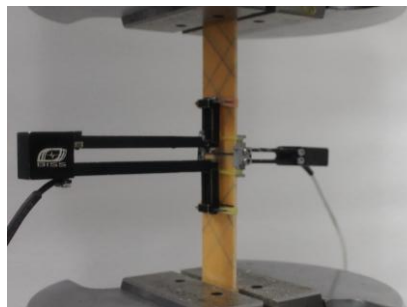
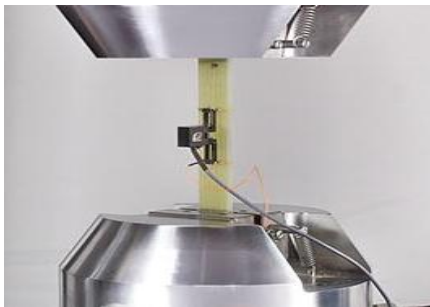


Composite Testing - GFRP

Glass fiber plays a pivotal role in the construction of modern wind turbine blades, driving their efficiency and sustainability. As a lightweight and high-strength material, glass fiber enhances the structural integrity of blades while minimizing their weight.

Typically testing temperature ranges from -55°C to 300°C and loads from 50N to 250KN. BISS LABS test systems are rated to test as per various ASTM / ISO standards

- | | |
|-------------------------------------|---------------------------------|
| ❖ Tensile Test - ISO 527- 4 | ❖ Drum Peel Test - ASTM D1781 |
| ❖ ILSS - ASTM D2344 | ❖ Compression Test - ASTM D695 |
| ❖ Core Shear Test - ASTM C273 | ❖ Compression Test - ASTM D3410 |
| ❖ Tensile Shear Test – ASTM D3518 | ❖ Flexural Test - ASTM C393 |
| ❖ Fatigue Test - ISO 13003 | ❖ Peel Test - ASTM D1781 |
| ❖ Flatwise Tensile Test – ASTM C297 | ❖ Core Shear Test - ASTM C273 |



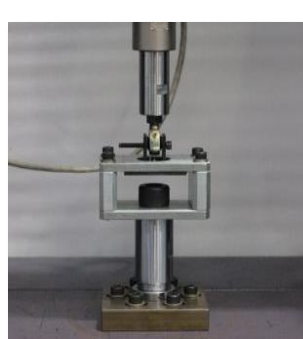
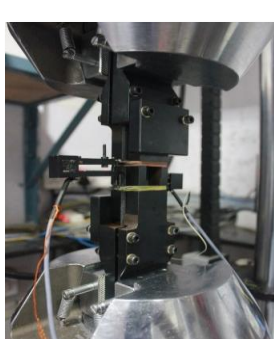
Composite Testing – CFRP

Carbon fiber plays a crucial role in the aerospace industry due to its exceptional properties. Due to its significant strength-weight ratio it is used in various aircraft components including wings, fuselages, engine cowlings. These vital applications demands extensive and crucial testing.

BISS LABS possess various test setups and expertise to evaluate mechanical properties in accordance with ASTM/ISO standards at elevated and sub-zero temperatures. BISS LABS can also take up tailor made tests for specific applications. Our dedicated design experts can customize test setups as per unique requirements.

- ❖ Unnotched Tensile Test - ASTM D3039
- ❖ Unnotched Compression – ASTM D6641
- ❖ Filled Hole Tensile Test - ASTM D6742
- ❖ Single/Double Shear Bearing Strength Test - ASTM D5961

- ❖ Filled Hole Compression test - ASTM D6484
- ❖ Thin metal Adhered single lap shear - ASTM D1002
- ❖ Thin laminate adhered single lap shear - ASTM D5868
- ❖ Open Hole Tension – ASTM D5766



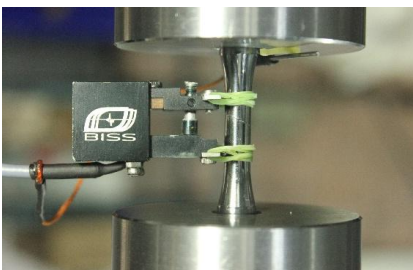
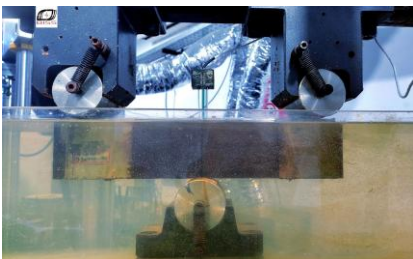
Fatigue and Fracture Testing – Metals

BISS LABS fatigue and fracture lab is designed to accommodate Tensile, Fatigue, Fracture toughness test such as K1c, J1c, CTOD, Fatigue Crack Growth Rate tests as per ASTM standards. Lab also handles long hours creep and stress relaxation tests.

- ❖ Tensile Test - ASTM E8
- ❖ Compression Test - ASTM E9
- ❖ Hot Tensile Test - ASTM E 21
- ❖ Fracture Toughness Test(K1c) - E399
- ❖ Fracture Toughness Test(J1c) - E1820
- ❖ Axial Fatigue Test - ASTM E466
- ❖ Low Cycle Fatigue Test - ASTM E606
- ❖ Fatigue Crack Growth Rate Test - ASTM E647
- ❖ Creep & Stress Relaxation Test – ASTM E139

Salient Features:

- ❖ Compact Tension (CT) - $\frac{1}{4}$ CT to 1CT
- ❖ SENB thickness specimen up to 100mm
- ❖ Tensile Test, Strain Controlled and Stress Controlled Fatigue Tests
- ❖ Temperature ranges from -196°C to 1000°C
- ❖ Tests under corrosive environment

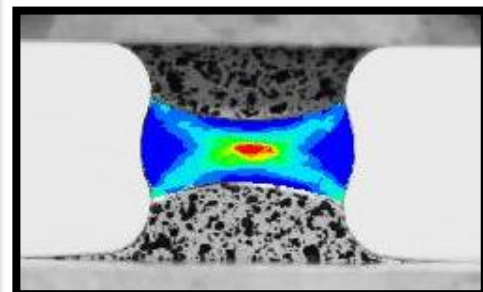
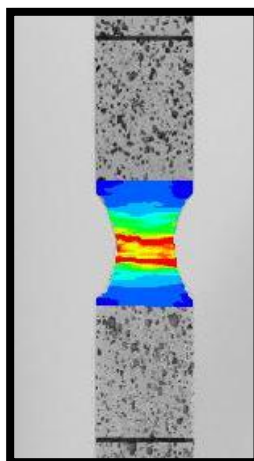
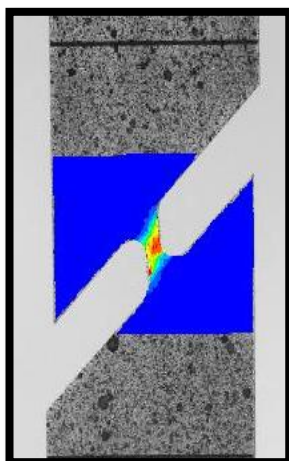
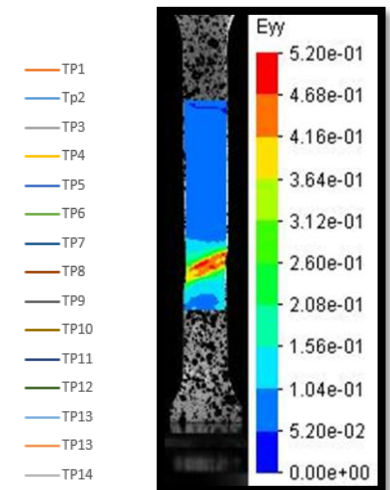
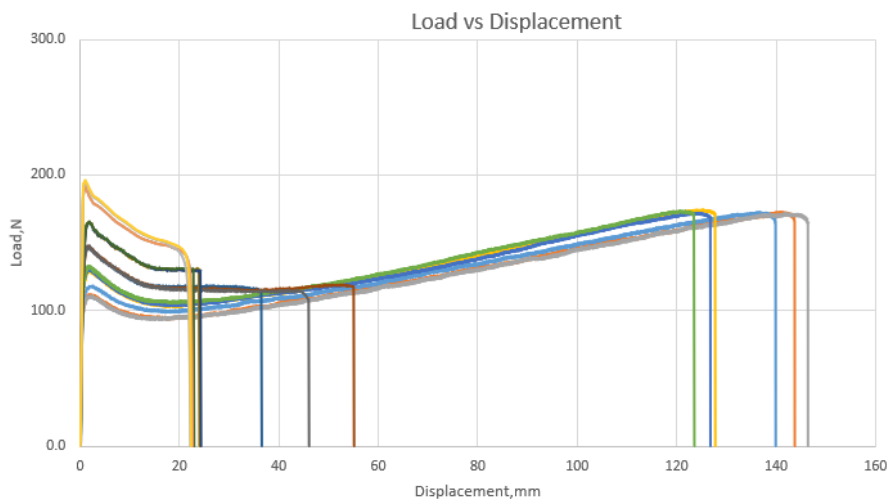


Digital Image Correlation

Digital Image Correlation (DIC) is a powerful optical method used to capture full-field displacement and strains in a non-contacting manner. DIC is widely used in various fields, including material testing, biomechanics, civil engineering, and more. It provides full-field data, unlike strain gauges or extensometers.

Advantages of DIC:

- Non-contact: No physical probes are attached to the specimen.
- Full-field: Captures deformation across the entire surface.
- High resolution: Provides detailed information about local strain.

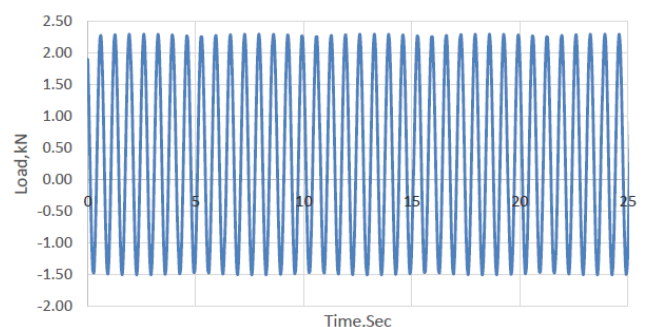
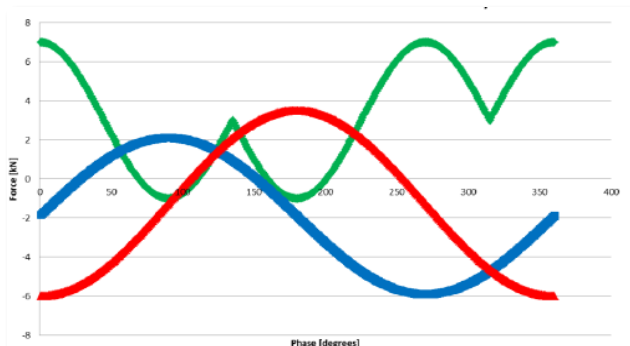
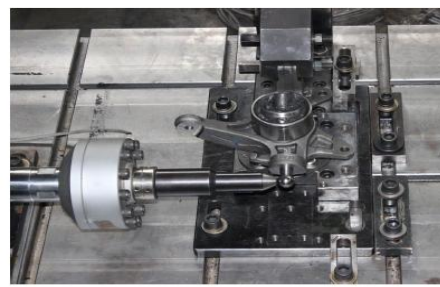
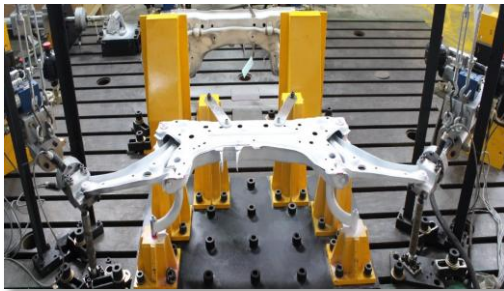


Structural Testing

Strength and Durability testing of structural components is vital during various stages of product development. Our 16+ actuators assist in performing mechanical testing on parallel setups. Our close loop servo-controlled actuators will enable multi-axes testing at variable loading conditions.

- ❖ Durability/Strength testing on Front Cross Member
- ❖ Durability/Strength testing on Rear Twist Beam
- ❖ Vertical Seat Fatigue
- ❖ Handlebar Fatigue
- ❖ Longitudinal Fatigue
- ❖ Durability Testing on Lower Control Arm
- ❖ Durability Testing on Belt/Chains

And many more.....

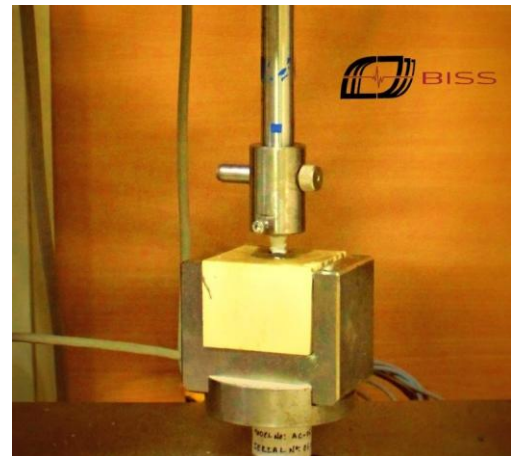
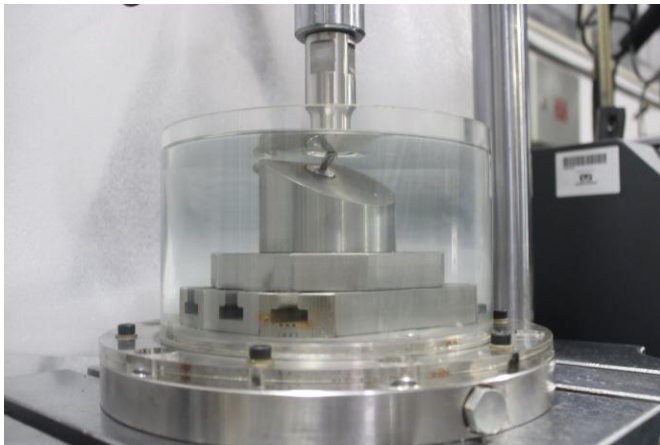


Low Force / Medical Device Testing

Mechanical testing on medical devices requires extensive testing to improve patient outcomes by developing new and better products.

BISS Labs low force testing capabilities includes:

- ❖ Wearable Device Testing
- ❖ Drug Delivery Device Testing
- ❖ Biomaterials Testing
- ❖ Orthopedic Implants Testing
- ❖ Dental Device Testing
- ❖ Surgical Sutures



Facts & Figures

Employees



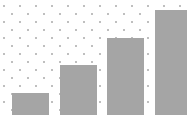
15+

Number of machines



50+

Range of machines



20N to 2MN

Average testing
hours per year



50000+

Number of coupons
tested per year



20000+

24/7
uninterrupted services



For enquires

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