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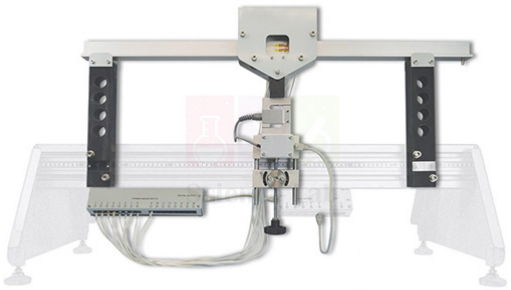
Product Name :

Bending Stress In a Beam

Product Code :

SLE/EG/16



Description :

Bending Stress In a Beam (Product Code: SLE/EG/16) is a structures experiment thatmeasures the strains a beam develops under load, so students can convert them into bendingstresses and test the results against beam theory. Its strain gauges feed a strain gauge amplifier,which reports together with the load cell to the Structures Platform for on-screen display. Theapparatus is manufactured by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, Ambala, forengineering colleges and polytechnics teaching strength of materials.

Key Details

Parameter	Detail
Type	Beam bending stress experiment based on strain measurement
Strain measurement	Strain gauges record the strains produced by the applied load
Load measurement	Load cell
Signal path	Strain gauges connect to a strain gauge amplifier, which connects (with the load cell) to the USB interface hub of the Structures Platform for computer display and data acquisition
Included tool	Vernier caliper for accurate measurement of the beam cross-section
Theory covered	Predicting stresses and bending moments for a given load withtextbook beam equations, then comparing with measured results

Typical Use

After measuring the beam's width and depth with the included Vernier caliper, students apply a load and read the strains. Multiplying strain by the elastic modulus of the beam material gives a measured stress, which they compare with the value from the bending equation, using the bending moment worked out from the load and support positions. The closeness of the two figures confirms how far simple bending theory can be trusted.

Repeating the test at several loads shows whether stress rises in proportion to load, as elastic theory expects. Because the amplifier and load cell log through the Structures Platform, strain and load are captured side by side, making the experiment a practical introduction to strain gauge instrumentation. Colleges assembling engineering lab equipment in India often place it straight after a bending moment experiment so students see moment and stress as two views of the same loading.

Manufacturer

This beam apparatus is produced by Jain Scientific Equipments Private Limited — known to customers as ScienceLab — from its base in Ambala, Haryana. Our company profile gives an overview of the business.

Related Laboratory Equipment

Items

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