

BIOMATERIALS AND TISSUE ENGINEERING

Instron® - A Total Solution Provider



Ease-of-use



Repeatability

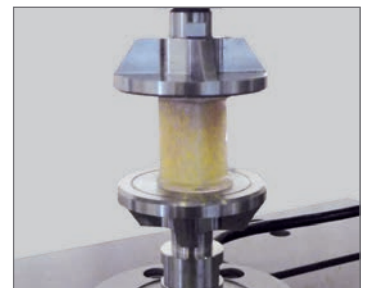
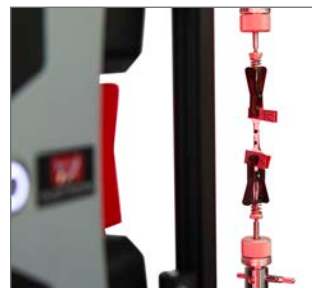


Reliability



Small-Footprint

The study of novel biomaterials and tissue-engineered products remains at the forefront of research around the world. Hard tissues such as bone, dentin, and enamel; soft tissues such as tendons, ligaments, skin, muscles, and arteries; and scaffolds such as hydrogels are all examples of tissue engineered materials or biomaterials. These materials require mechanical testing, often in an environment to mimic physiological conditions to understand and characterize force and displacement properties. Mechanical testing of biomaterials typically entails a multitude of tests that include: monotonic tension, compression, or flexure tests, simple cyclic tests, creep, stress-relaxation, and dynamic fatigue tests.



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Ease-of-use

Intuitive software workflows in Bluehill Universal mean less operator training is required. This is ideal for research laboratories and universities with constantly changing test requirements and many Instron users. Laboratories will save time as the testing system is simple to use.



Repeatability

Consistent and accurate test results provide scientists and engineers with the confidence needed to characterize the mechanical properties of novel biomaterials and engineered tissue products.



Reliability

For over 75 years, Instron has designed and manufactured dependable materials testing systems. Instron's professional services team offers calibration and preventive maintenance to keep Instron systems running for years. Despite test system robustness, Instron systems maintain the precision to measure micron-size displacements and gram-level forces.



Small-Footprint

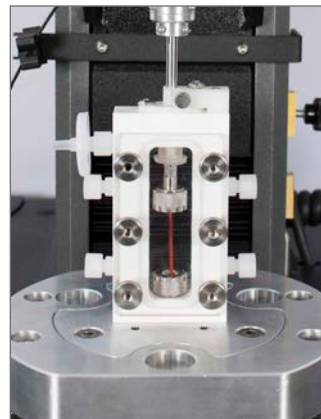
The small physical footprint of Instron's tabletop systems enable laboratories to save space, stay organized, and keep the laboratory clean. The small machine footprint includes both the test system and necessary software control, ideal for optimizing benchtop space in clean rooms and academic laboratories.



Gripping of tendons, ligaments, and muscles can be aided through using different techniques such as roughened or line contact faces



Compression and indentation of bone and teeth specimens to evaluate modulus



Tissue wedge grips provide reliable gripping during testing for delicate or non-load bearing tissues, such as esophagus, arteries, vessels, or skin



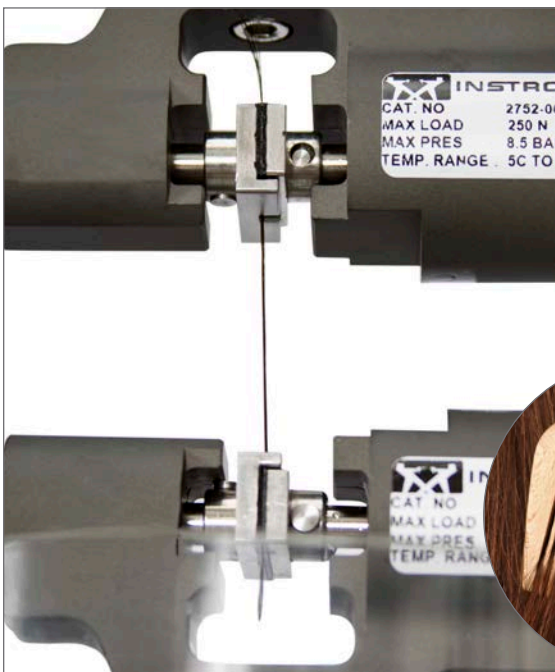
Indentation testing can determine hardness and modulus of bone structure



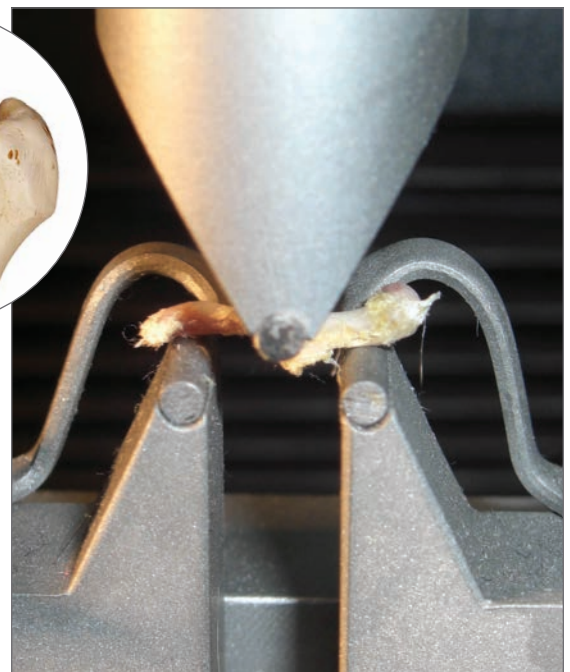
Adjustable centering for bone and tooth potted specimens



Tensile testing of insect wings help researchers understand exoskeleton properties that enable insects to fly



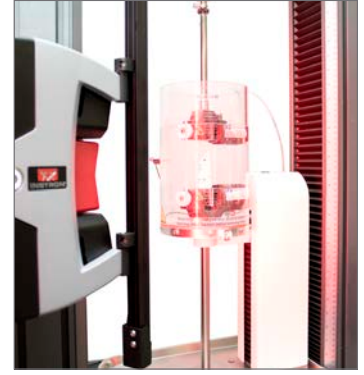
Manufacturers of hair dyes and other hair care products evaluate tensile properties of hair, typically yak hair, before and after treatment with product



Flexural tests on rat or mouse bones aid research into strength and structural integrity of bone



Testing tissue adhesives is often done by a T-peel test in a saline bath. When testing with a bath, the BioCoat provides a waterproof barrier protecting the system's electronics from water damage.



The Advanced Video Extensometer (AVE) can measure strain of tissues whilst submerged in a fluid bath.

Instron's instruments and technologies are used for various types of tests across many diverse medical sectors. The flexibility of Instron systems to adapt to numerous applications make our systems truly universal.

Designed from the ground up for touch, Instron's static testing software, Bluehill® Universal, is easy-to-use, increases testing efficiency, and contains modular features that enable users to run the most complex tests.

With ISO 9001 accreditation, our goal is to provide the best ownership experience by delivering the highest quality products, expert support, and world-class service. Instron Connect provides users with a powerful communication platform via a secure connection between the Instron system at your facility and Instron's global technical support engineers. With Instron Connect, users receive faster remote technical support, reduce risk with schedule verification and preventive maintenance reminders, and are effortlessly able to keep up to date with the latest software features.



Medical Sectors

Visit our website to learn more about the different medical sectors we support: go.instron.com/bio



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TISSUE ENGINEERING



ORTHOPAEDICS



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DENTAL MATERIALS



IMPLANTABLE
DEVICES



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HOSPITAL &
SURGICAL SUPPLIES

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