Ministry of Jihad for Agriculture, Agricultural Research, Education and Extension Organization, Research Institute of Forests and Rangelands Department of Wood Science and Products Research

Image of a Wood Mechanics Laboratory

The wood mechanics and wood products research laboratory is engaged in studying the mechanical properties and applications of wood and wood and paper products.

Laboratory Equipment:

The mechanical testing machine is an Instron Model 1186. It features a metal frame capable of withstanding a load of 200 kilonewtons, equivalent to 20 tons. By interchanging the load cells, we can adjust the machine's precision. For heavy loads, we use a 200 kilonewton load cell, while for more precise tests, we employ 100 or 1 kilonewton load cells.

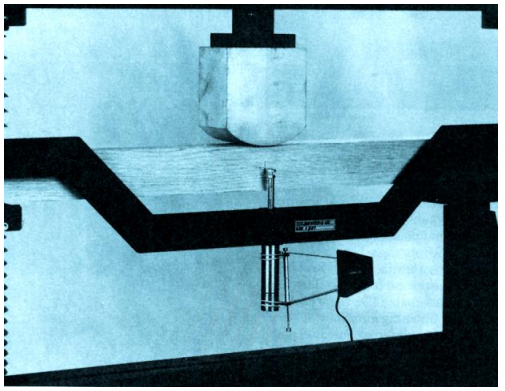
The second machine in this laboratory is an Instron Model PW5 impact tester. Operating on an Izod system, it provides measurements in joules and degrees of impact angle.

This machine is equipped with 11 and 22 joule hammers, enabling it to conduct impact resistance tests on various wood samples and wood-based products, such as wood-plastic composites.

22 joule hammers

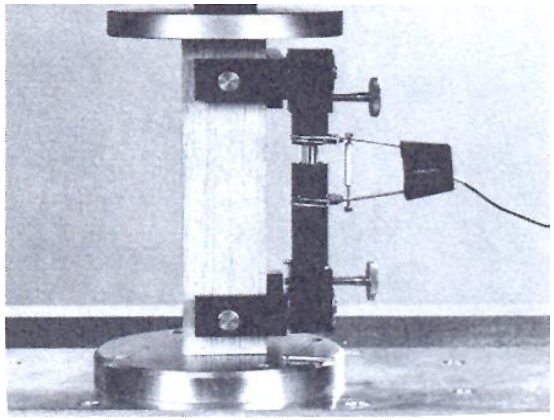
INSTRON Mechanical Strength Tester

This device has various supports and fixtures for conducting different tests on wood and wood products, including:

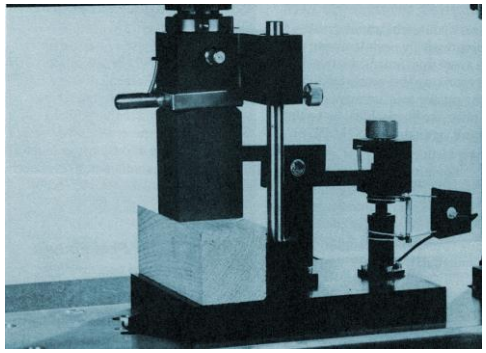


Static bending test

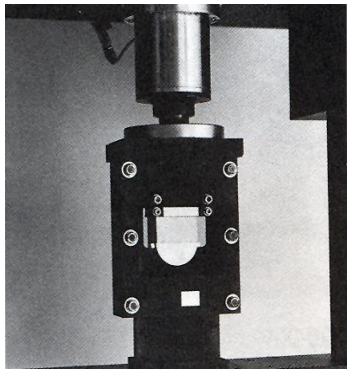
Parallel-to-grain compression test



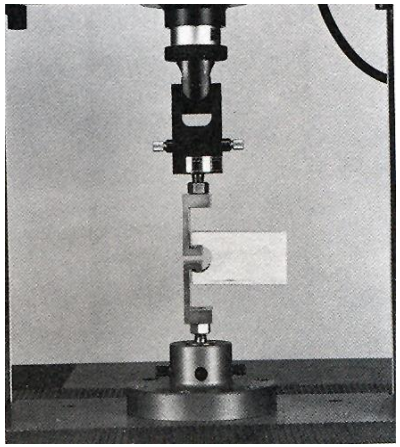
Perpendicular-to-grain compression test



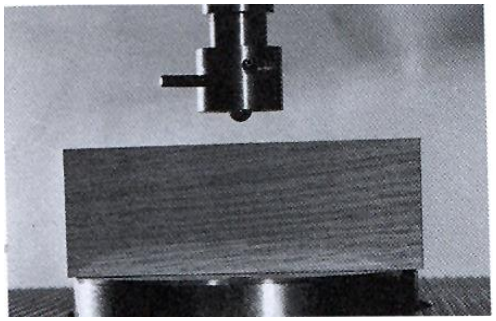
Parallel-to-grain shear test



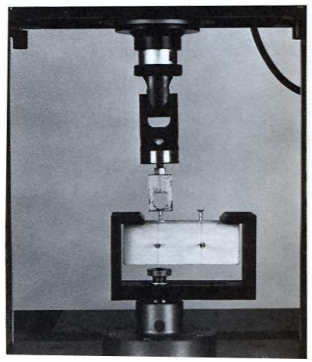
Splitting tensile test



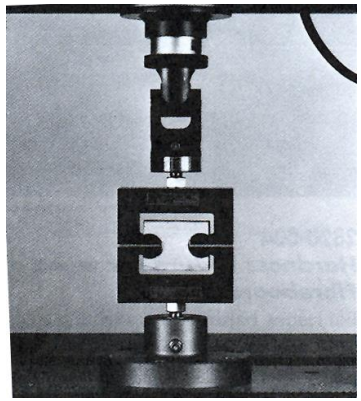
Hardness test



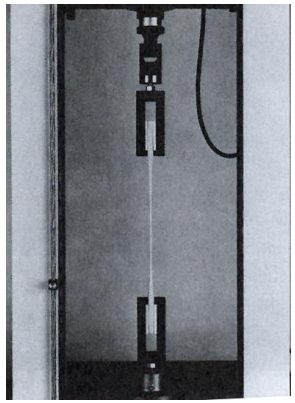
Nail withdrawal resistance test



Perpendicular-to-grain tensile strength



Parallel-to-grain tensile strength



Internal bond strength