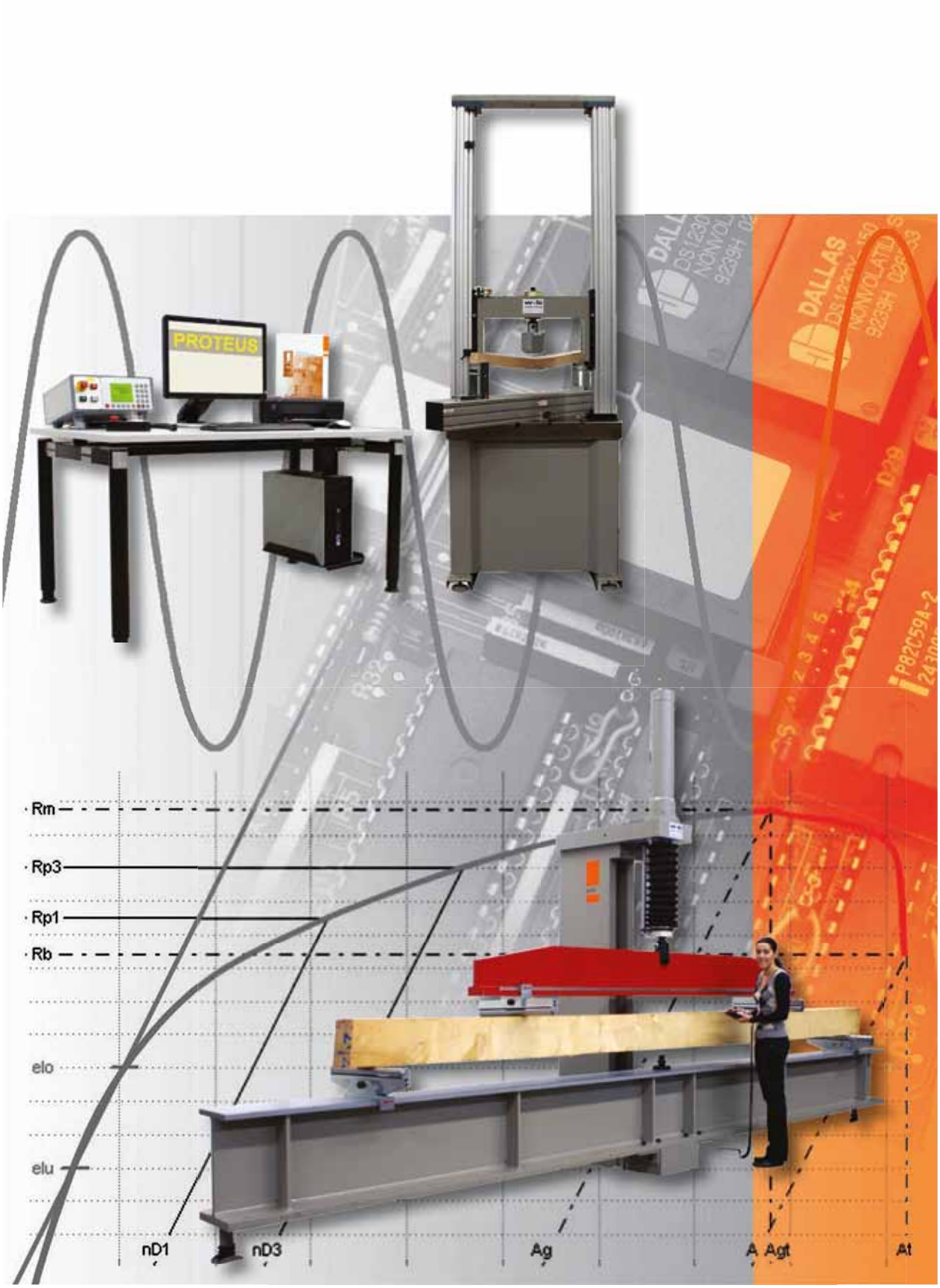
Wood and Timber
Testing Systems



Wood and Timber Testing
in accordance with Relevant International Standards

w+b offers a wide range of testing machines for different tests on wood and timber. Each system can be individually configured according to your testing needs for an optimal solution.

Timber is wood that is used in any of its stages from felling through readiness for use as structural material for construction.
In this section you find different testing devices to fix into universal material testing machines as well as different testing machines for tests on wood and timber.
Additionally we offer structural testing installations for testing of construction elements made from wood.

Relevant International Standards

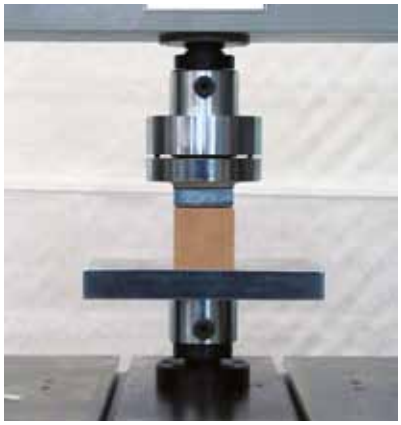
Standard	Title
EN 310	Wood-Based Panels - Determination of Modulus of Elasticity and of Bending Strength
EN 311	Wood-Based Panels - Surface Soundness
EN 319	Particleboard and Fiberboard - Determination of Tensile Strength Perpendicular to the Plane Board
EN 320	Fiberboard - Determination of Resistance to Axial Withdrawal of Screws
EN 408	Structural Timber and Glued Laminated Timber - Determination of Physical and Mechanical Properties





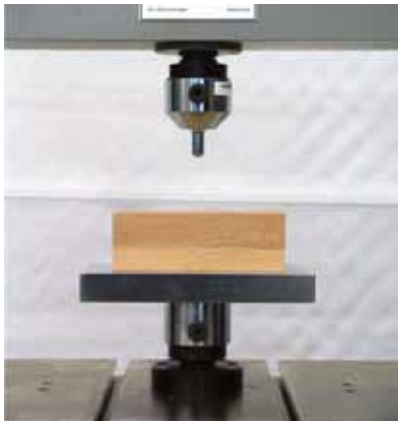

CONTENT SECTION G

Testing Fixtures
for Wood and Timber



Compression Platens Series WC

Technical Data	WC 100
Standards	EN 311, BS 373, ASTM D143
Max. Load Capacity	100 kN
Max. Specimen Size	200 x 100 mm
Loading Surface	Ground Hardened Steel
Spigot Bore	30, 40, 60 mm
Pin Diameter Ø	12, 16 or 24 mm
Overall Dimensions	200 x 100 x 225mm
Weight per Grip	3.9 kg
Timber Direction to Grain	parallel and perpendicular



Indentation Hardness Fixture Series WH

Technical Data	WH 100
Standards	EN 311, BS 373, ASTM D143
Max. Load Capacity	100 kN
Max. Specimen Size	Limited by bottom plate
Probe Surface	Hardened Steel
Spigot Bore	30, 40 or 60 mm
Pin Diameter Ø	12, 16 or 24 mm
Overall Dimensions	80 x 80 x 225 mm
Weight per Grip	3.6 kg

Shear Test Fixture Series WS

Technical Data	WS 100
Standards	EN 311, BS 373, ASTM D 173, 909, 1759
Max. Load Capacity	100 kN
Max. Specimen Size	50 x 50 x 50 mm
Loading Surface	Hardened Steel
Spigot Bore	30, 40 or 60 mm
Pin Diameter Ø	12,16 or 24 mm
Overall Dimensions	130 x 100 300 mm
Weight per Grip	9.6 kg
Timber Direction to Grain	parallel

Screw Pull Out Fixture Series WPO

Technical Data	WPO 5
Standards	EN 320, ASTM D1037 and D 1761
Max. Load Capacity	5 kN
Max. Specimen Size	75 x 75 x 50 mm
Spigot Bore	20, 30, 40 or 60 mm
Pin Diameter Ø	8, 12,16 or 24 mm
Overall Dimensions	125 x 80 x 475 mm
Weight per Grip	2.8 kg

Tensile Adhesion Fixture Series WTA

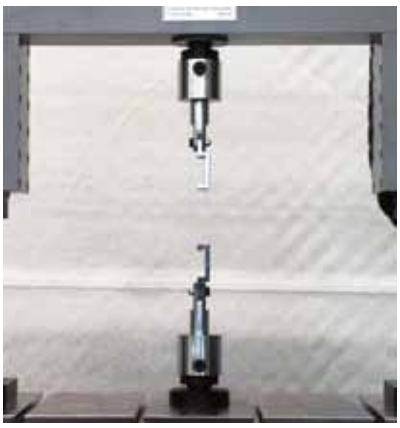
Technical Data	WH 100
Standards	EN 319, ASTM D897, D1037 and EN 319
Max. Load Capacity	10 kN
Max. Specimen Size	50 x 50 mm
Gripping Surface:	Hardened Steel
Spigot Bore	20, 30, 40 or 60 mm
Pin Diameter Ø	8, 12,16 or 24 mm
Overall Dimensions	75 x 80 x 350 mm
Weight per Grip	3.1 kg

3-Point Bending Fixture Series WB

Technical Data	WTA 50
Standards	EN 310, ASTM D143, BS 373
Max. Load Capacity	50 kN
Min. / max. Span	200 / 900 mm
Loading Nose Rad	75 mm
Spigot Bore	30, 40 or 60 mm
Pin Diameter Ø	12,16 or 24 mm
Overall Dimensions	125 x 1100 x 350 mm
Weight of Top Fixture	4.8 kg

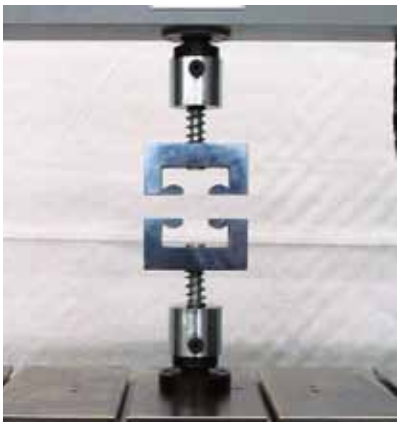
Single Cleavage Fixture Series WC1

Technical Data	WC1 50
Standards	EN 319, BS 373, ASTM D 143
Max. Load Capacity	50 kN
Gripping Surface	Hardened Steel
Spigot Bore	30, 40 or 60 mm
Pin Diameter Ø	12,16 or 24 mm
Overall Dimensions	50 x 50 x 100 mm
Weight per Grip	1.6 kg



Double Cleavage Fixture Series WC2

Technical Data	WC2 100
Standards	EN 319, BS 373, ASTM D 143
Max. Load Capacity	100 kN
Gripping Surface	Hardened Steel
Spigot Bore	30, 40 or 60 mm
Pin Diameter Ø:	12,16 or 24 mm
Overall Dimensions	100 x 50 x 100 mm
Weight per Grip	3 kg



Tensile Fixture Series WTP

Technical Data	WTP 25
Standards	EN 319, ASTM D143, BS 373
Max. Load Capacity	25 kN
Max- Specimen Size	Hardened Steel
Gripping Surface	30, 40 or 60 mm
Spigot Bore diameter Ø	20 mm
Pin Diameter Ø	12,16 or 24 mm
Overall Dimensions	90 x 80 x 374 mm
Weight of Top Fixture	4 kg
Timber Direction to Grain	perpendicular

Tensile Fixture Series WTP2

Technical Data	WTP2 25
Standards	EN 319, ASTM D143, BS 373
Max. Load Capacity	25 kN
Max. Specimen Size	25 x 13 mm
Spigot Bore	30, 40 or 60 mm
Pin Diameter Ø	12,16 or 24 mm
Overall Dimensions	80 x 80 x 200 mm
Weight per Grip	3.5 kg
Weight of Top Fixture	4 kg
Timber Direction to Grain	parallel

Universal Materials Testing Machines
for Wood and Timber Testing

We offer a large range of different universal testing machines, which can be configured with testing fixtures for wood and timber testing, electromechanical or servohydraulic driven.

Series B - S 50 - 200 kN

Series BP 50 - 300 kN

Series ZPM 5 - 20 kN

Series UPM 20 - 100 kN

Series LFM 20 - 125 kN

Electromechanical Panel Bending Testing Machines

Series EMBP 5500 Nm

This testing machine is used to determine the flexural properties of structural panels tested both parallel and perpendicular to the long dimension of the panel.

Structural panels in use include plywood, wafer board, oriented strand board (OSB) and composites of veneer and wood based layers. This method is ideally suited for evaluating effects of knots, knot-holes, areas of sloping grain, and patches for their effect on standard full-size panels. It is equally well suited for testing uniform or clear material whenever specimen size is adequate. Measured deformation and elastic constants are free of shear deformation effects; and panels can be bent to large deflections without incurring errors from horizontal force components occurring in other methods. Specimen size and span above certain minimums are quite flexible. It is preferred when equipment is available. Available as stand alone machine with free adjustable rate of loading facility or with high resolution digital closed loop controller and application software for free programmable, rapid and productive testing with automatic calculations, graphs (as load/deflection) and report generator with details of all test parameters, conditions and references plus calculated results along with statistical analysis.

Standards and Tests

- **Flexural Tests**
  ASTM D3043
  Method C: Pure Moment Test

Samples

- Structural Panels 4 x 8 ft

Frame

- Rigid machine construction
- High responsive AC brush-less servo-motor with high start up torque for best control and highest accuracy at a extremely low noise level
- High accurate torque load cell
- Electronic deflection transducer
- Compact system on rollers
- Clean and maintenance free operation as no oil is needed compared with hydraulic machines
- Free adjustable rate of loading
- Protection device

Control

- Automatic test procedure in closed loop mode in connection with digital controller **PCS 8000** and testing software **DION 7**

Accessories / Options

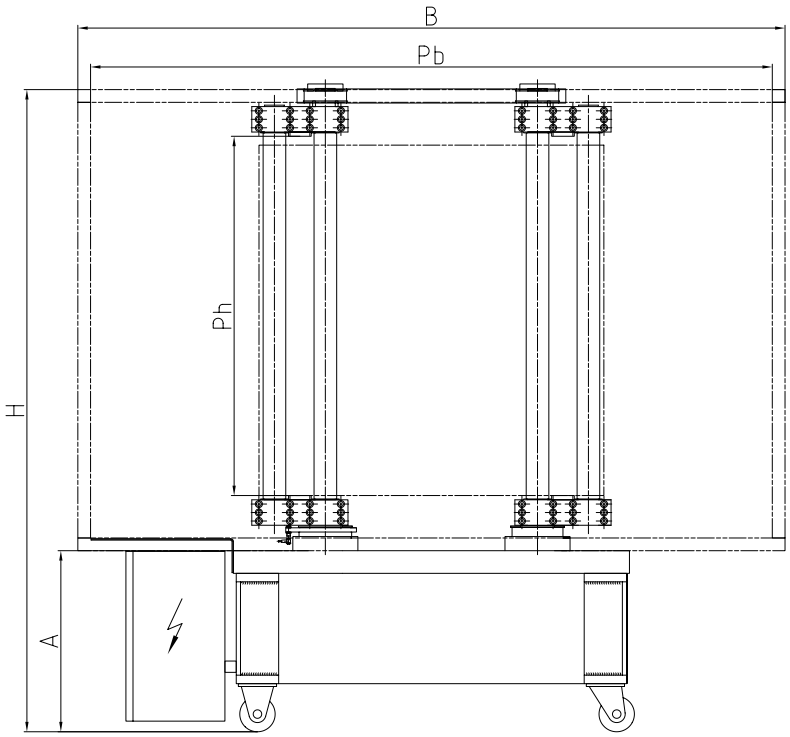
- Displacement transducer
- Extensometers

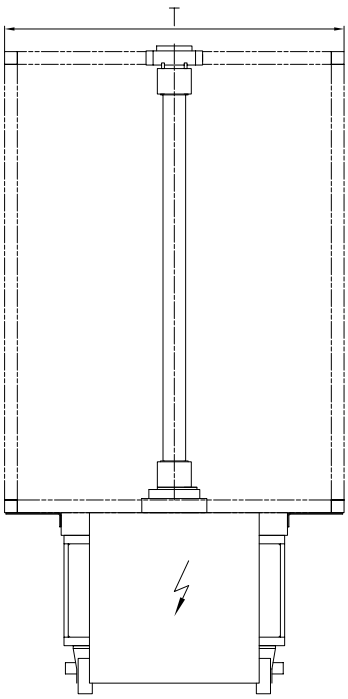
The EMBP is also available for other specimens dimensions and max. bending torques!

Specifications

Force Capacities	Flexural: 5500 Nm
Accuracy	In accordance with ISO 7500-1, Grade 1.
Colour	Stone Grey RAL 7030. Others upon request.
Power Requirements	3 x 400 V, 50 Hz. Others upon request.

Technical Data		EMBP 5500
Torque Capacity	Nm	5500
Accuracy Range	Nm	55 - 5500
Torque Angle	°	max. 300
Torque Speed	°/sec.	0 - 4.5
Test Chamber Height (Ph)	mm	max. 1300
Test Chamber Width (Pb)	mm	max. 2300
Distance betw. Columns	mm	100
Frame Width (B)	mm	2500
Frame Depth (T)	mm	1200
Frame Height (H)	mm	2300
Working Height (A)	mm	640
Weight	kg	-





Custom Manufactured Testing Rigs with Servohydraulic Actuators

for Structural Wood and Timber Testing

For static and fatigue testing of timber beams, supporting elements, components a.s.o. Through our ability in engineering w+b can offer complete custom manufactured installations to suit your specific testing needs.

For further Details please refer to Section I - Structural Testing.

Pull - Off Test System

Series AZ 50 kN

This test system is specially designed to test the pull-off force of different types of anchors, nails, pins, screws or other fixing components. It is comes as laboratory version with 19" control console or with small portable device for on-site use.

Features

- The pull-off tester is equipped with precision load cell and displacement transducer for measuring accuracy class 0.5.
- Available for forces up to 50 kN. Others upon request.
- On the handle of the pull of device are buttons integrated to start and stop the test.

Control

- Servo-controlled test procedure in closed loop mode in connection with servovalve and digital controller **DIGICON 2000**
- Optional in connection with building material testing software **PROTEUS**

Use in Laboratory with 19" Control Console

- Hydraulic power pack is integrated in the base of the console.
- In the middle part are integrated the electrical control and the digital controller **DIGICON 2000**.
- The upper part contains the PC running testing software **PROTEUS**.
- On top of the cabinet a swivelling aluminium-profile lever for the suspension of the pull-off device / cylinder with connecting hosed and cables.

Use on Site with Portable Control Housing-Unit

- Integrated hydraulic power pack in the base of the unit.
- Digital controller **DIGICON 2000** is installed in the top of the housing for force-displacement closed loop control.

Specifications

Technical Data		Type AZ 50
Tensile Force	kN	50
Accuracy Class according EN ISO 7500-1		1
Accuracy Range	kN	0.5 - 50
Piston Stroke	mm	60
Dimensions 19" Control Console W x D x H	mm	600 x 800 x 2050
Dimensions Portable Housing W x D x H	mm	300 x 400 x 400
Dimensions Pull-Off Device Ø x H	mm	Ø 150 x 500
Weight Pull-Off Device	kg	10