

Universal Testing Machines

Electromechanical testing machines
EUROTEST Series

▶ Capacity: 50 - 2000 kN



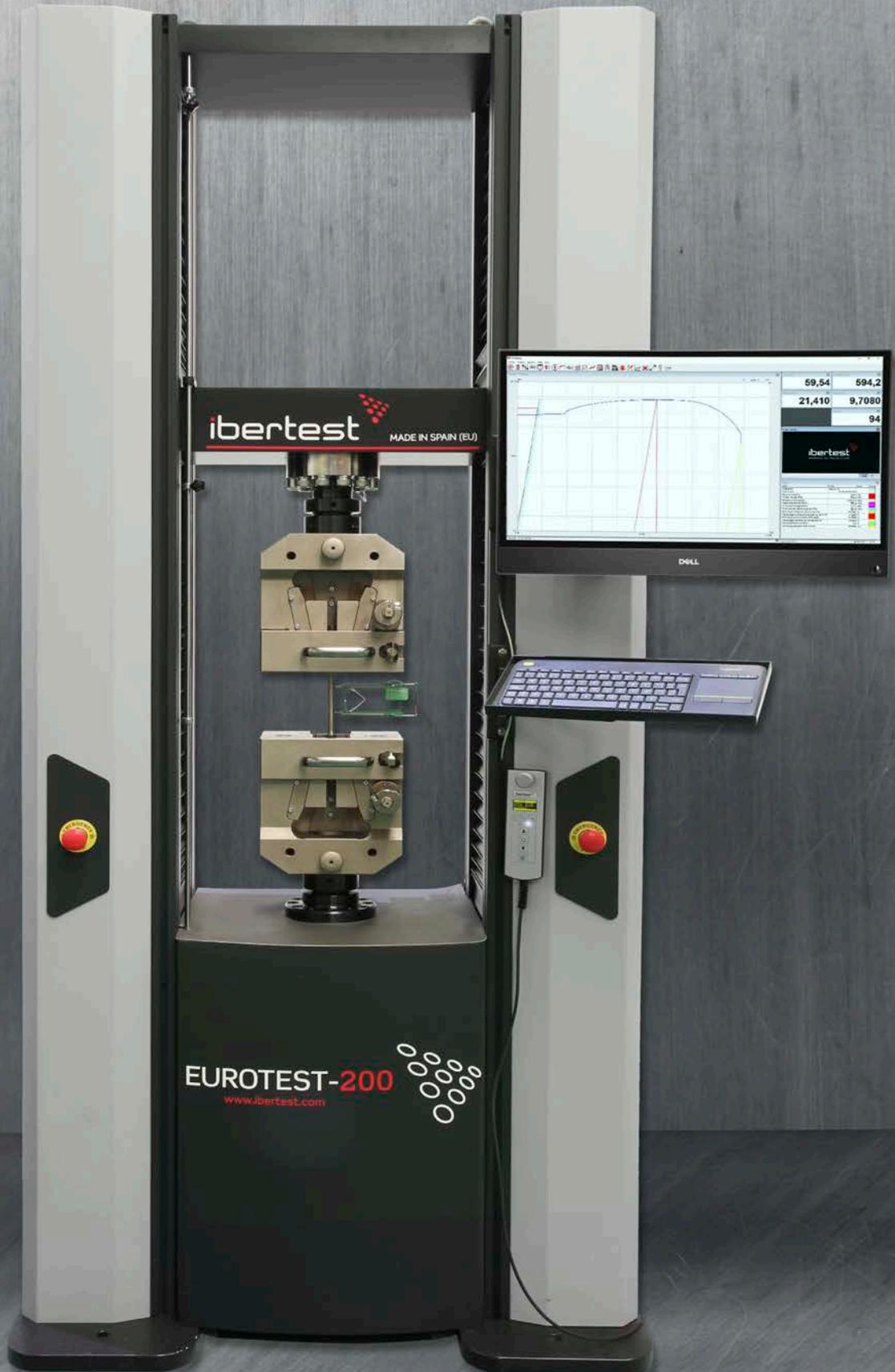
Since 1970
Made in Spain (EU)

www.ibertest.com



NEW DESIGN

of the EUROTEST series



INTRODUCTION

The EUROTEST series brings together more than 50 years of experience in the manufacturing of testing machines for a wide range of applications and materials.

The EUROTEST series combines advanced control electronics with a mechanical design of maximum robustness, reliability and versatility.



The EUROTEST series fully complies with the current requirements imposed by **international standards** (EN, ASTM, BS, GOST...), as well as by the Quality Control, Materials Strength and Research Departments of the users: Quality Assurance laboratories, Reference Centres for Materials Testing, Certified testing laboratories, Universities, Technological and/or Applied Research Centres...

This is possible thanks to our high level of compromise and the resources employed in the design and in the quality of the components with special attention to the performance (large testing space, versatility, interchangeability of accessories and testing devices, easy operation...).

Optionally, it is possible to install **additional load cells** with self recognition system, for tests at lower loads, as well as enabling a secondary test area.

Advantages

- › Dimensions of the **test area adaptable** to each user specific requirements: customisable height, width and depth.
- › **Specific** load cells, testing devices and transducers for each type of test.
- › One or two **test zones**.
- › **Robust** design (testing frame with high structural stiffness).
- › High **accuracy** and excellent **control**.
- › **Silent** operation.
- › The great **versatility** of the EUROTEST series allows to adapt their technical features to a wide variety of applications and sectors.
- › Includes a **levelling** system at the bottom that does not require the preparation of a foundation.



Interface

User interface in an All-In-One computer with integrated touch screen, more modern, user-friendly and with improved performance.

The All-In-One computer is attached directly to the test frame by means of an orientable support, which allows to save a considerable amount of space in the laboratory and offers the user an ideal ergonomic position for operating both the WinTest software and the testing devices.

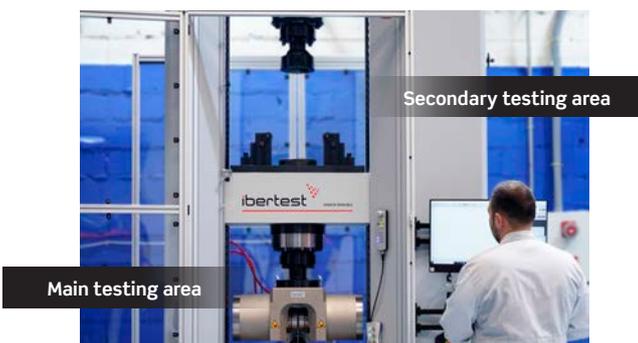


Testing frame

Thanks to the large test space available, it allows the use of large gripping heads, bending devices and temperature-controlled test chambers.

- › Frame with very **high structural stiffness**, with large and comfortable testing space.
- › Manufactured according to **standards** UNE-7-474-92, DIN-51221, 51223, 51227, 51228, BS-1610 and EN-10002-2.
- › **Upper crosshead** driven by spindles with scrappers and guided by two or four columns (*depending on the model*). The load cell for measuring the applied force is mounted under the crosshead.
- › The **lower crosshead** has a clamping flange for mounting the lower tensile gripping head or other testing devices.
- › Test frame adapted for calibration and correction of the machine axiality, through the **advanced alignment system AlignTest** (optional), which allows compliance with the most demanding standards of the automotive, aerospace and defence industries such as NADCAP. *Contact us for more information.*
- › Testing frame covered with **metallic panels** to protect the internal components. High quality panels, with high corrosion resistant epoxy paint.
- › The lower frame includes the **servomotor**, regulator and the mechanical transmission system for the spindles.
- › Base with **levelling system**. Allows direct installation of the machine on the laboratory floor, just a horizontal and resistant surface is required.

Optionally, the machine can be equipped with a secondary testing area on the crosshead.



Displacement measurement

By means of the high resolution **digital transducer**:

- › Position control resolution: better than **0,003 μm** (depends on model).
- › Speeds: 0.001 up to 500 mm/min. Other speeds on demand.

The displacement data are used for two applications: test results and for closing the control loop (MDi control system).

Load measurement

Universal full-bridge load cell with high linearity and repeatability, with temperature compensation. Dual function: measure the forces applied on the specimen (kN) and send the return for closed-loop control (MDi control system).

- › **Robust design** to withstand possible overloads.
- › **High quality and high accuracy** of the load cell to guarantee Class 0.5 according to ISO 7500-1 from 1% up to 100% of nominal capacity (optionally from lower loads).
- › **Additional load cells** can be installed to extend the measuring range and/or accuracy in special applications.
- › **Automatic load cell recognition system**. The system detects the installed load cell and auto-configures itself according to the capacity and calibration of the load cell. This saves user time and improves safety against human configuration errors (avoiding possible overloads).



Typical configuration of universal testing machine Model EUROTEST-200

- Testing frame with a capacity of 200 kN.
- All-In-One computer with touch screen.
- WinTest software.
- Mechanical tensile grips IB109.
- Clip-on axial extensometer for determining the elastic limit.
- Remote control unit UCRD-6i.

Transmission system

Two **high-precision ball screws** and two or four guiding columns (depending on the capacity of the machine) with rust-proof hard chrome plating. Both elements ensure an optimum load distribution in the test frame and a **completely linear displacement** of the mobile crosshead. Additionally, it is also equipped with scrapers to prevent the accumulation of particles or dirt on the ball screws.

The column and ball screw assembly is covered by metal housings with protective bellows.

Models with a capacity greater than 200 kN are equipped with two reduction gears, directly mounted on the ball screws, to increase the mechanical gain and ensure the necessary torque.

Closed-loop control

The signals received from the different transducers connected to the machine (load cell, displacement transducer, extensometer...) are compared with the setpoint defined according to the test requirements.

The frequency of this control is defined by the electronic control unit installed in the EUROTEST machine (by default, the MD2i model).

The data is sent to the computer and the WinTest software performs the data acquisition in real time for graphical representation, calculation of results...

Safety

Our machines have been designed to comply with the requirements demanded by the European standards on machinery safety.

Foundation

These machines do not require a special foundation. They have a levelling system. It only requires a strong, horizontal floor that is capable of supporting the weight of the machine and absorbing the energy released when the specimens break.



Detail of the ball screws and guiding columns on an EUROTEST-100.



High temperature tests on an EUROTEST-600 equipped with furnace.



EUROTEST-300 with hydraulic side-closing grips and long travel extensometer.

Electromechanical testing machines - EUROTEST Series

Technical specifications

MODEL	EUROTEST-50	EUROTEST-100	EUROTEST-200	EUROTEST-300
Capacity	50 kN	100 kN	200 kN	300 kN
Force measurement	Universal load cell (tension - compression), extensometric bands Additional load cells can be mounted			
Precision according to ISO 7500-1	Class 0.5	Class 0.5	Class 0.5	Class 0.5
Calibrated measuring range	1% to 100% of nominal capacity (<i>optionally from lower loads</i>)			
	500 to 50 000 N	1 000 to 100 000 N	2 000 to 200 000 N	3 000 to 300 000 N
Force resolution	24 bits	24 bits	24 bits	24 bits
Mobile crosshead	Driven by the ball screws and guided by the columns Automatic return to initial test position, defined by software			
Motor drive	Synchronous servomotor (brushless) with integrated reductor gears. Enables closed-loop control (servocontrol) in load (kN/s) and displacement (mm/min)			
Transmission	Via reductor gears and HTD precision teeth belt. Adjustable belt-tightening system		Via double reductor gears and HTD precision teeth belt. Adjustable belt-tightening system	
Crosshead position measurement	High resolution digital transducer			
Position control resolution	0.0024 µm	0.0024 µm	0.0024 µm	0.0021 µm
Displacement speed range	0.001 to 500.00 mm/min ⁽²⁾			
Maximum speed at full load	250.00 mm/min ⁽²⁾			
Load speed range	Programmable between 1/1000 y 1/10 of capacity, in kN/s ⁽²⁾			
	0.0005 to 0.5 kN/s ⁽²⁾	0.001 to 1 kN/s ⁽²⁾	0.002 to 2 kN/s ⁽²⁾	0.003 to 3 kN/s ⁽²⁾
Columns	2 chrome-plated and grounded steel columns			
Ball screws	2 high-precision ball screws, with scrappers			
Test zones	One (single space) ⁽³⁾	One (single space) ⁽³⁾	One (single space) ⁽³⁾	One (single space) ⁽³⁾
Horizontal free distance	500 mm ⁽¹⁾	500 mm ⁽¹⁾	500 mm ⁽¹⁾	650 mm ⁽¹⁾
Vertical free distance with load cell (without testing devices)	0 - 1350 mm ⁽¹⁾	0 - 1350 mm ⁽¹⁾	0 - 1350 mm ⁽¹⁾	0 - 1350 mm ⁽¹⁾
Stiffness of the test frame	> 100 kN/mm	> 100 kN/mm	> 200 kN/mm	> 300 kN/mm
Dimensions (height x width x depth)	2450 x 1020 x 700 mm	2450 x 1020 x 700 mm	2450 x 1020 x 800 mm	2525 x 1220 x 700 mm
Power supply	Three phase 380V with neutral and ground, 50/60 Hz (to be specified)			
Total power	0.8 kW	1.5 kW	3 kW	3 kW
Weight without testing devices	875 kg	875 kg	1150 kg	1460 kg
Safety	2 emergency stop button on the front of the test frame, adjustable end of stroke, overvoltage protection, EMC filters... Complies with European safety standards, such as European Directive 2006/42/EC			

⁽¹⁾ Other dimensions on demand.

⁽²⁾ Other speeds on demand.

⁽³⁾ Double test space on demand.

IBERTEST reserves the right to change the specifications without prior notice

Technical specifications

MODEL	EUROTEST-400	EUROTEST-500 EUROTEST-600	EUROTEST-1200	EUROTEST-2000
Capacity	400 kN	500 kN 600 kN	1200 kN	2000 kN
Force measurement	Universal load cell (tension - compression), extensometric bands Additional load cells can be mounted			
Precision according to ISO 7500-1	Class 0.5	Class 0.5	Class 0.5	Class 0.5
Calibrated measuring range	1% to 100% of nominal capacity (<i>optionally from lower loads</i>)			
	4 000 to 400 000 N	5 000 to 500 000 N 6 000 to 600 000 N	12 000 to 1 200 000 N	20 000 to 2 000 000 N
Force resolution	24 bits	24 bits	24 bits	24 bits
Mobile crosshead	Driven by the ball screws and guided by the columns Automatic return to initial test position, defined by software			
Motor drive	Synchronous servomotor (brushless) with integrated reductor gears. Enables closed-loop control (servocontrol) in load (kN/s) and displacement (mm/min)			
Transmission	Via double reductor gears and HTD precision teeth belt. Adjustable belt-tightening system			
Crosshead position measurement	High resolution digital transducer			
Position control resolution	0.0021 µm	0.0027 µm	0.0027 µm	0.0027 µm
Displacement speed range	0.001 to 500.00 mm/min ⁽²⁾		0.001 to 400.00 mm/min ⁽²⁾	
Maximum speed at full load	250.00 mm/min ⁽²⁾		200.00 mm/min ⁽²⁾	
Load speed range	Programmable between 1/1000 y 1/10 of capacity, in kN/s ⁽²⁾			
	0.004 to 4 kN/s ⁽²⁾	0.005 to 5 kN/s ⁽²⁾ 0.006 to 6 kN/s ⁽²⁾	0.012 to 12 kN/s ⁽²⁾	0.02 to 20 kN/s ⁽²⁾
Columns	2 chrome-plated and grounded steel columns		4 chrome-plated and grounded steel columns	
Ball screws	2 high-precision ball screws, with scrappers			
Test zones	One (single space) ⁽³⁾	One (single space) ⁽³⁾	One (single space) ⁽³⁾	One (single space) ⁽³⁾
Horizontal free distance	650 mm ⁽¹⁾	720 mm ⁽¹⁾	850 mm ⁽¹⁾	1200 mm ⁽¹⁾
Vertical free distance with load cell (without testing devices)	0 - 1350 mm ⁽¹⁾	0 - 1400 mm ⁽¹⁾	0 - 1700 mm ⁽¹⁾	0 - 1750 mm ⁽¹⁾
Stiffness of the test frame	> 400 kN/mm	> 600 kN/mm	> 1200 kN/mm	> 2000 kN/mm
Dimensions (height x width x depth)	2575 x 1220 x 700 mm	2650 x 1550 x 700 mm	3400 x 1590 x 1360 mm	3975 x 1950 x 1300 mm
Power supply	Three phase 380V with neutral and ground, 50/60 Hz (to be specified)			
Total power	3 kW	4,5 kW	16 kW	18 kW
Weight without testing devices	1460 kg	3200 kg	7000 kg	9800 kg
Safety	2 emergency stop button on the front of the test frame, adjustable end of stroke, overvoltage protection, EMC filters... Complies with European safety standards, such as European Directive 2006/42/EC			

⁽¹⁾ Other dimensions on demand.

⁽²⁾ Other speeds on demand.

⁽³⁾ Double test space on demand.

IBERTEST reserves the right to change the specifications without prior notice

Electromechanical testing machines - EUROTEST Series

Examples of special versions of EUROTEST machines

The machines of the **EUROTEST** series are a versatile testing solution. The testing frame (width, height, stiffness...) as well as the other features of the machine can be adapted to the customer's needs.



EUROTEST-30E, with increased width and a bending fixture of 3 m in length



EUROTEST-300 with pneumatic tensile grips, long travel extensometer and front and rear protections



EUROTEST-500 with double testing space, hydraulic tensile grips and front and rear protections



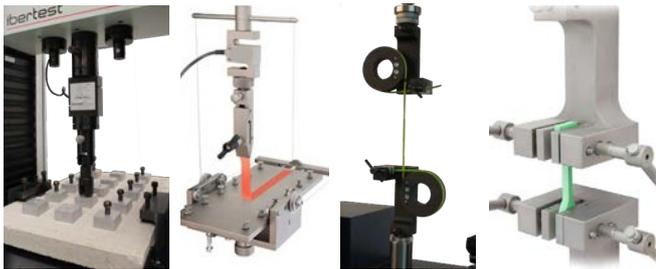
EUROTEST-600 with mechanical tensile grips, high-temperature furnace and furnace control module with built-in PLC

Examples of test possibilities with the EUROTEST series

The EUROTEST series machines, by means of the appropriate testing device, allows to perform any type of test on a wide range of materials with F_{max} up to 2000 kN. Such as:

Polymers and adhesives

Standards: ASTM-D395, ASTM-D412, ASTM D429, ASTM-B571, ASTM-D1894, ASTM-D2861, ASTM-D2979, ASTM-D3330, ASTM-D4776, ASTM-D6252, ASTM-D6862, ISO813, ISO4074, ISO5893, ISO8295, ISO19671, DIN EN1939, GOST411, BS3704, EN28510, ISO 8510-1, etc.



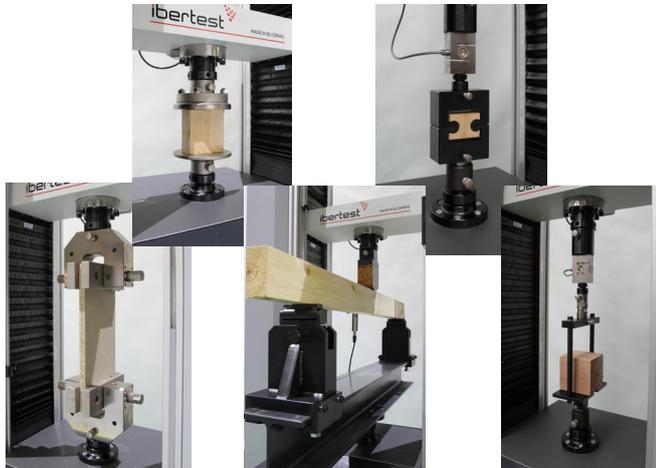
Textiles and geotextiles

Standards: EN ISO13936-1, ISO13936-2, EN14704, ISO 17697, ISO20932-2, ASTM-D1037, ASTM-D1683, ASTM-D6364, ASTM-D5034, ASTM D6241-B, GOST56335, DIN EN ISO12236, DIN EN ISO9836-1, etc.



Woods and conglomerates

Standards: ASTM-D143, ASTM C297, ASTM-D905, ASTM D1037, ASTM D1623B, DIN 52187, DIN 52365, DIN 52367 EN 319, EN 1607, EN 12004, EN 392, ISO 6238, DIN EN 311, etc.



Composites

Standards: ASTM D695, ASTM-B571, ASTM-D2344, ASTM-D2861, ASTM-D3330, ASTM D3410, ASTM D3846, ASTM-D5379, ASTM-D5528, ASTM-D6252, ASTM-D6484, ASTM D6641, ASTM-D6862, ASTM-D4255, ASTM-D7078, ISO 8510-1, DIN EN1939, GOST26246.0-89, EN ISO14125, EN ISO14126, EN28510, ISO8515, etc.



Metals

Standards: ASTM-E8, ASTM-A185, ASTM-A262, ASTM-A370, ASTM-A497, ASTM-C749, ASTM-A974, ASTM-C1452, ISO3651-2, EN ISO 898, DIN488-5, DIN EN ISO15630-2, EN10080, GOST 10922, etc.



Construction and ceramic materials

Standards: ASTM C109, ASTM-B406, ASTM-C1452, ASTM-C1230, ASTM-C1550, ASTM-C1609, ASTM-C1812, EN 196-1, DIN488-5, DIN EN ISO15630-2, DIN EN10080, ISO3327, etc.



WOODEN STRUCTURE TESTING

*EUROTEST machine with testing
device for trusses*



ELECTRONIC DIGITAL MODULES

CONTROL SYSTEMS

MDi control module

External (independent from computer) digital control module for closed-loop control of load application rate depending on force, position and/or strain.

MDi modules are powerful, high quality systems. These electronics are designed for the **industrial** environment: **accurate, reliable** and **robust**. It has high quality, dustproof electric safety enclosure that keeps the internal components in perfect condition.

MDi modules send the data received from the measurement transducers via the USB (or Ethernet) port to the PC supplied with the testing machine, which, by means of the WinTest software, performs real-time data acquisition to compose and display graphs and test results.

Thanks to the modular external configuration, the computer supplied as standard with the machine can be quickly and easily replaced by another compatible PC or laptop in the event of a malfunction or upgrade.

Static tests	Dynamic tests
Standard configuration: MD2i Alternative for basic tests (without possibility of extensometry): MD1i	Standard configuration: MD5i Alternative with higher expansion possibilities: MD7i



MD2i module, in its safety enclosure, to be integrated in the frame or the electrical panel of the testing machine



Data acquisition card for connection to the expansion slots of the MDi modules

MD2i and MD5i modules for static, quasi-static and dynamic tests

The MD2i control module is designed for static testing machines, while the MD5i is specific for dynamic testing.

These modules include the following input channels:

- **Force channel.** For the connection of a load cell or a pressure transducer. This channel has a resolution of 24 bits.
- **Incremental position channel.** For the connection of an encoder (digital pulse sensor), resolver (encoder emulator), or linear transducers (wire, SSI type...).
- **3 expansion slots.** For data acquisition cards, allowing the connection of other transducers, e.g. strain gauges, LVDTs, linear transducers...

The MD2i and MD5i modules have a ± 10 V analog output channel for the control signal of a servomotor (electromechanical machines) or a servovalve (servohydraulic machines).

Depending on the machine model considered, the module can be integrated into the frame itself or in the electrical panel of the machine.



S-type load cell, universal (tensile/compression) of 500 N capacity and its connector with built-in EEPROM memory

The transducers have connectors with a built-in EEPROM memory chip. The transducer calibration data (unit of measurement, range, zero position, linearisation...) is stored in the memory.

The electronics recognises the installed transducer automatically and configures the input channel when connected to the MDi.

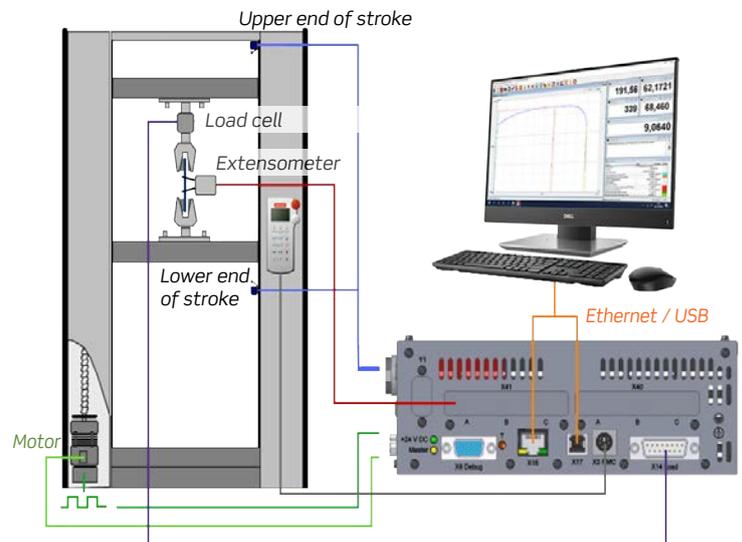
PID control

The MDi control module uses a PID (proportional-integral-derivative) system for closed-loop control of the force application during the test.

The PID system calculates an error value as the difference between the measured variable (force-stroke-strain) and the desired setpoint.

The three signals from PID control are combined to generate a command signal to the servomotor to eliminate the deviation in a stable manner and in the shortest possible time.

The time it takes for the system to detect, evaluate and send the control signal is called the control loop closing time. The shorter the closing time, the faster the control.



Control scheme for electromechanical testing machines

3 types of control

The MDi electronics allows control of the test speed by closing the control loop in relation to the **applied load** (kN/s)⁽¹⁾, the **stroke** (mm/min)⁽¹⁾ or the **specimen strain** (mm/min)⁽¹⁾:

1. Load control

The MDi module receives the signal from the machine load transducer and compares this return with the defined setpoint. This type of control is common when testing concrete, cement, ceramics, rocks, adhesives...

2. Stroke or position control

The MDi module receives the signal from the position transducer installed in the machine (encoder, resolver, LVDT...) and compares the speed of movement of the crosshead or hydraulic actuator with the programmed speed. The stroke control is often used in tests on soft plastics, elastomers, rubbers...

3. Strain control (optional)

This type of control is only possible when the electronics is equipped with an extensometry channel and the test is carried out using an extensometer. In this case, the MDi module receives the signal from a strain transducer (extensometer) which measures the strain of the specimen under test.



Built-in control module in a TESTCOM machine frame

Automatic control change

The WinTest software allows to define criteria for automatic control change (variation in the slope of the test curve, specific value of force and stroke...). This function is very useful in several applications such as in metal testing, to change from force control to stroke control when passing from the elastic to the plastic zone.



Remote control units available

⁽¹⁾ Other units of measurement included in the WinTest software

Technical specifications - MD1i / MD2i, for static tests

VERSION	MD1i	MD2i
Side view		
Rear view		
Application	Static and quasi-static tests	
Maximum frequency of system and control loop	1 kHz (1000 readings per second, per channel)	2.5 kHz (2500 readings per second, per channel)
Control loop closing time	1 ms	0.4 ms
CPU frequency	800 MHz	800 MHz
Maximum test frequency	2 Hz	5 Hz
Resolution	24 bits	24 bits
Channel synchronization	All channels are synchronous and simultaneous.	
Types of control	In load and stroke	Default: In load and stroke Optional strain control by means of extensometry channels in the empty extension slots
Expansion slots	0	3
Inputs and outputs	Universal interface for 8 digital inputs and 8 digital outputs (at 24 V)	
Loop closure	Analog ± 10 V control output or various digital interfaces	
Remote control option	Yes. Compatible with emergency stop on remote control	
Communication with PC	Ethernet 100/100 MBit	USB 2.0, Ethernet 100/100 MBit
Expansion possibilities	Synchronisation of multiple MDi for applications with multiple load axes	
Connector for USB memory stick	Yes	Yes
Dimensions (width x height x depth)	190 x 42 x 200 mm	190 x 67 x 200 mm

IBERTEST reserves the right to change the specifications without prior notice

REMOTE CONTROL UNITS UCRD-6i and UCRV

UCRD-6i: Remote control

1. Operation via function keys and digital control potentiometer *DigiPoti*.
2. OLED graphics display, 128 x 64 pixels.
3. Dimensions (width x height x depth): 65 x 220 x 30 mm.
4. UP/DOWN/STOP keys and programmable keys (machine control) for a total of 15 function keys to control the piston or the crosshead. More precise movements are possible with the *DigiPoti* potentiometric control.
5. Magnetic base, which allows the control to be placed on the machine or other metal support.



UCRD-6i remote control



UCRV: Remote control with virtual version

Wired remote control for crosshead movements. Independent opening and closing of hydraulic gripping heads^(*) and piston movement.

(*) For machines with this feature.

Its ergonomic shape allows for a comfortable and safe grip, making it easier to use IBERTEST machines in a more precise and user-friendly way.

In addition to the wired remote control, the UCRV includes a **virtual version** that can be installed on a mobile phone or tablet (Android or iOS) for wireless operation via the built-in WiFi network (terminal not included).



The virtual version, in addition to the basic functions of the wired version, includes the following functions:

- > **Real-time display** of load and stroke data.
- > **Start and stop** the test.



Examples of menu screens of the virtual version of the UCRV

WinTest

SOFTWARE FOR MATERIALS TESTING

Introduction

WinTest (for Windows®) is the software developed by IBERTEST to operate our universal testing machines.

Thanks to its great flexibility and power, WinTest can be efficiently adapted to every testing need.

The software allows the user to configure the tests according to the main international standards used in materials engineering (UNE, EN, ASTM, ISO...). Nevertheless, for a small supplement, IBERTEST can adapt WinTest software to the particular or special needs of your laboratory.

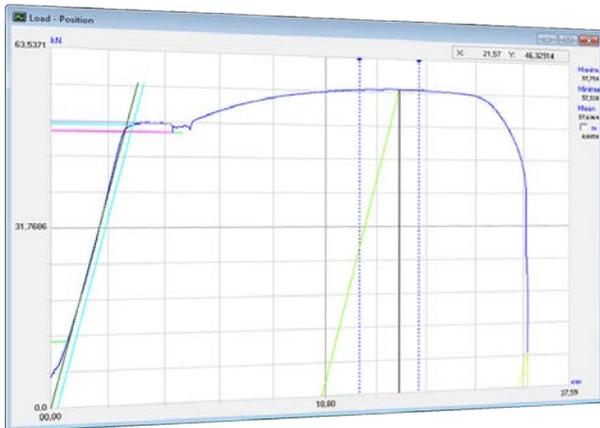
During the design phase of WinTest, IBERTEST has paid special attention to its ease of use, so that it can be used even by inexperienced users.

The main screen of WinTest includes a simple selection menu and an intuitive icon bar, so that it is possible to use the software without consulting the user manual.

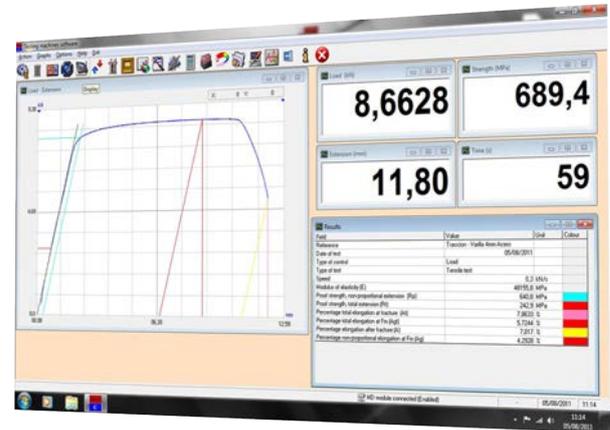


WinTest shows the user the options available at any time (as well as the setting and configuration possibilities), guiding the user step by step, interactively, until the test configuration is completed.

In this way, WinTest allows to get the maximum performance from the IBERTEST testing machine, both in the execution of the tests and in the analysis of results.



Graphical visualisation of results



Complete information during the test



Using WinTest on an All-In-One touch screen computer

WinTest SOFTWARE PROVIDES COMPLETE CONTROL BEFORE, DURING AND AFTER THE EXECUTION OF THE TEST

1. PRE-TEST CONFIGURATION

To configure tests at your convenience, the software offers many options, such as:

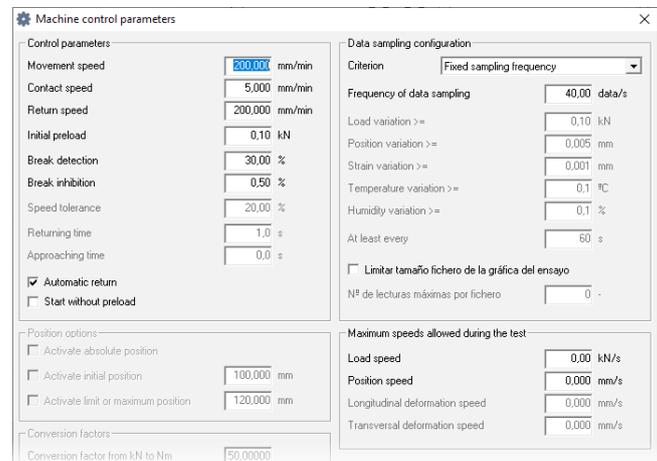
- › **Control of the testing machine:** safety limits, speed, preload, automatic return...
- › **User management,** with custom options for each user. Provides security to the system and prevents unauthorized use.
- › **Type of test:** tensile, compression, bending, cycles... The configuration changes automatically according to the chosen type of test.
- › **Working method:** pre-configured by IBERTEST (according to a test standard) or free configuration according to the own criteria of the user (always within the physical and mechanical limitations of the machine, testing devices and sensors).
- › **Individual or serial testing.** Serial tests are very suitable for repetitive tests on machines intended, for example, for production Quality Control.
- › **Control mode selection:** in load, stroke or strain (with appropriate optional transducers).
- › **Activation of additional sensors** located on the machine or on the specimen, such as: extensometers, temperature probes...⁽¹⁾
- › **Selection of the type of diagram** (load-time, load-stroke, load-stroke...) for the graphical representation of the test.

- › **Results to be presented on screen** (in real time) or in the report.
- › **Automatic execution of calculations** derived from the test results (strength, elastic modules...) by means of a programmable calculator integrated in the software.

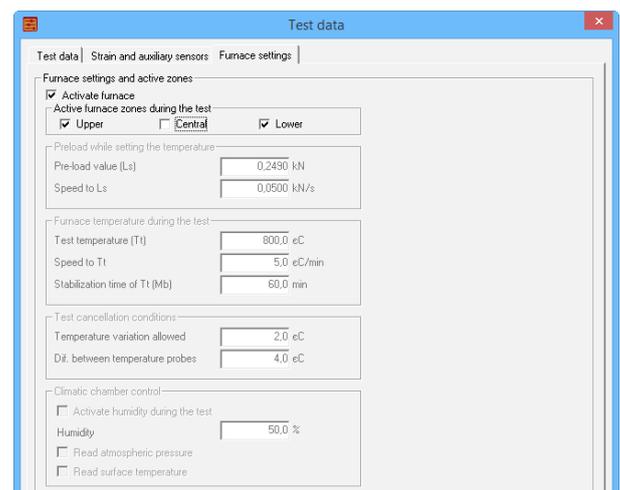
- › **Design of test reports.** The reports are fully customisable and are essential for documentation of results in laboratories under GLP (Good Laboratory Practices) or Quality Assurance systems (as per ISO EN 17025).

And many more options.

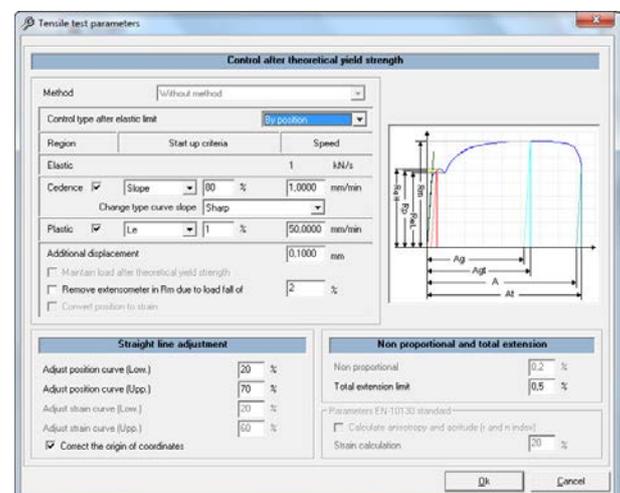
⁽¹⁾ For sensors previously registered in the system



Testing machine setting-up



Configuration of Tests



Auxiliary window "traction parameters" Available when selecting a tensile test.

2. IDENTIFICATION FOF SPECIMENS

Using the window: "Specimen Parameters", the user has multiple options to identify each test.

- › Physical parameters: geometry, dimensions, mass, density, curing age...
- › Identification: name of the test/probe/sample, material, origin, customer, number, date...

In addition, there are "free text fields" where any other information not reflected above can be entered.

3. TEST DEVELOPMENT

The software performs the test according to the method and parameters entered in the pre-configuration. To allow you to follow the development of the test, the following elements are displayed on the screen (in real time):

- › Graphical representation: load-stroke, load-strain, stroke-strain...
- › Numerical values coming from the sensors connected to the system (force, stroke, strain...).
- › Results of calculations previously programmed with the formula calculator.

If desired, the user can stop the test at any time during its execution.

4. ANALYSIS AND MANAGEMENT OF RESULTS

At the end of the test, the final results and the complete graphical representation are displayed on the screen.

Before validating the test, it is possible to do the following actions:

- › Enlarge areas of the graph (zoom).
- › Change the type of diagram.
- › Search and locate significant points.

If the user discards the test, the results will not be stored.

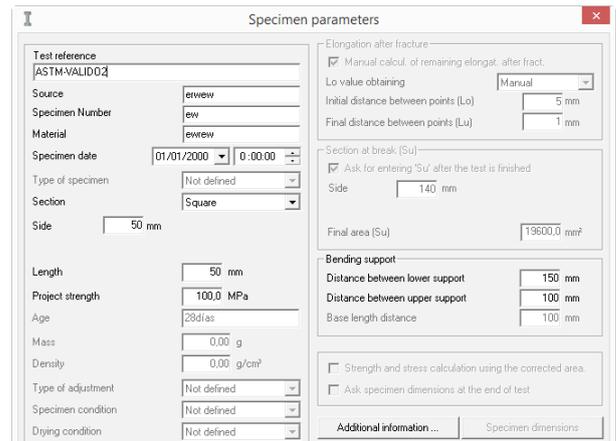
The included statistical program allows to compare several consecutive tests, superimpose curves, create 2D and 3D bar and line diagrams, generate BMP images...

Los archivos de resultados pueden ser convertidos a formatos XML, ASCII o CSV para exportación a otros sistemas tales como Excel, LIMS, etc.

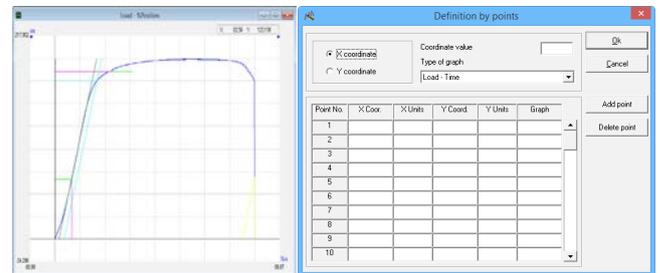
TEST SIMULATION MODULE

Additional module that allows to extract data from the machine (real tests) and analyse them in other equipment. The test can be simulated again as if it were carried out in real time, without the need to connect to the machine. Main features:

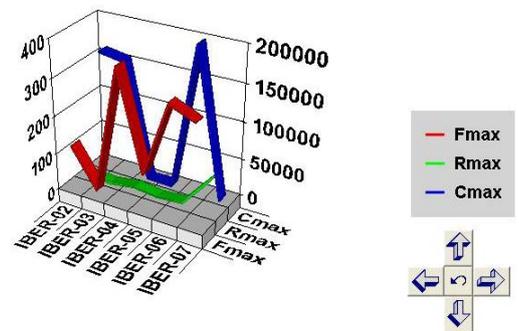
- › Local or network test retrieval.
- › Real test simulation
- › Real-time graph visualization
- › Calculation
- › Report generation



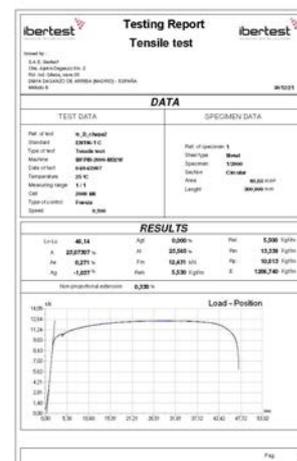
Setting parameters for the test specimen



Location of significant points on the graph of the test



Test comparison - 3D representation



Example of test report

Main Features

Operating system	WinTest works with all Microsoft™ Windows® (32 and 64 bits) operating systems and shares common features with other Windows® programs (system of menus, toolbars, file management, sizing of windows, colors, etc..)
Help functions (usability).	<p>The icon toolbar can be displayed as reduced version, including only the more common features and larger icons.</p> <p>The program is compatible with touch screen computers.</p> <p>The F1 key activates the help window. Help support includes a complete user manual for each application.</p>
Type of tests	Tensile, compression, flexure (one or two load points), bending, extrusion, penetration, shear, etc., on metallic and nonmetallic materials.
Test models	<p>WinTest comprises test models according to most commonly used standards (EN, ASTM, ISO, etc.). The user can configurate similar test models.</p> <p>Under request, we can make modifications to configure your WinTest software to your special needs (consult additional cost)</p>
Cyclical testing	<p>WinTest allows to create cyclic tests, with rising, keeping or falling of the load applied to the specimen. The change of slope or ramp can be done in response to load, stroke or both figures inclusive.</p> <p>When necessary, the slope changes may be accompanied by the control mode (load or stroke) changes.</p>
Serial testing	<p>Possibility of grouping several tests together, in series and subseries.</p> <p>It is possible to obtain statistical information of the grouped tests parameters.</p>
Multi-frame control	Management of up to six testing zones, in alternately way, using the same PC and the same software. The software shows the available test zones for selecting.
Measurement channels	<p>Simultaneous representation of several measurement channels at once.</p> <p>WinTest can manage up to 16 channels (both deformation or auxiliars). The channels can be configured by the user. To use all features offered by WinTest, you may need additional hardware.</p>
Calculator programming	<p>The system integrates a programmable formula calculator.</p> <p>In this way, you can combine parameters of the specimen with results or values obtained during the test, in order to obtain derivatives results (modules, strength, unit conversion, etc.) in real time.</p>
File management	Test results are automatically recorded on a hard disk, and the configuration of the machine at the time of their execution. These tests can be recovered for further analysis.
Data exportation	The output files can be exported in XML, ASCII or CSV and Excel format (csv or xls), allowing these files to be imported for most of the programs, word processors and spreadsheets on the market.
Statistics	<p>Incorporates the possibility of performing statistical analysis on tests previously recorded on hard disk.</p> <p>The statistics can be displayed as graphs, histograms, level with Gaussian distribution, charts, dimensional comparison (both tapes and volumes), test curves comparison by superimposing them on a diagram of coordinates, etc.</p>

"TECHNICAL SUPPORT HAS NEVER BEEN EASIER"

TELEDIAGNOSIS is a remote Technical Assistance and Maintenance service, available for all IBERTEST machines and testing equipment equipped with a computer data acquisition system.

The immediate support of TELEDIAGNOSIS service for customers located worldwide, minimises downtime and avoids delays in the work of laboratory, while reducing or eliminating the IBERTEST technician's travel expenses.

To run TELEDIAGNOSIS, a link program is used which establishes a fast and secure, ensuring our service even at facilities located at great distances (minimum connection speed required: 5 MB/s).

In this way, an easy and effective intervention from our Technical Service is possible regardless of the location of the machine, as long as there is an access to the INTERNET.

Even on those occasions when the Technical Service must act on-site, TELEDIAGNOSIS is helpful in detecting problems in advance and solving them during the first visit.

During a TELEDIAGNOSIS session, the following actions can be carried out:

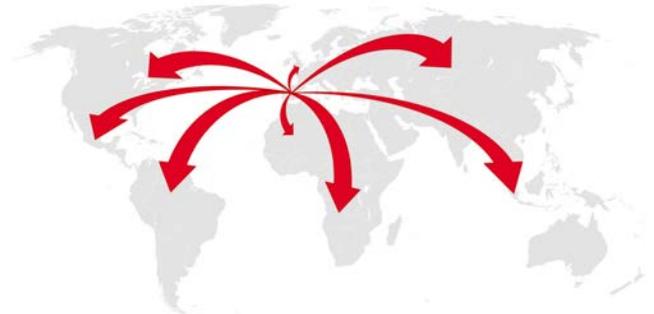
- > **Software revision and correction.** IBERTEST technicians can inspect the software file system, looking for wrong configurations, lost files and directories, corrupted files, viruses or others. Once the errors are detected, only the appropriate libraries and changes are transferred, without reinstalling complete programs.
- > **Remote handling.** IBERTEST technicians can operate the remote machine in real time to perform maneuvers, tests of mechanical movement, installation of testing transducers and accessories, verification of electrical and electronic systems, on/off alarm and security systems, etc.
- > **Videoconference.** Through webcam a videoconference between client and our technicians can be maintained, thus we can get visual-information about the correct operation of the machine's mechanical and hydraulic systems. Also, by written or voice messages, it is possible to exchange views and comments, and give appropriate instructions to the user, when necessary, to perform some physical action in the machine.
- > **Updates.** The software can be easily updated to its latest version, which allows enjoying the advantages resulting from the continuing work of review and program development.
- > **Factory reset.** All machines have a backup, stored in our servers in Madrid, which allows you to restore the original configurations when necessary.

TELEDIAGNOSIS

REMOTE DIAGNOSTIC SERVICE



IBERTEST Spain - Madrid Technical Services



Real time TELEDIAGNOSIS link



End-user laboratory (anywhere in the world)

Remote diagnostic service by TELEDIAGNOSIS is free during the first year and during the warranty period.

After the guarantee period, many of our customers require the Annual Telediagnosis Pass, which covers interventions for preset periods of time (number of connection hours).

V-25-0.1-EN

ibertest



C/ Ramón y Cajal, 18-20
28814 Daganzo de Arriba
Madrid - Spain

Tel. +34 918 845 385
Fax. +34 918 845 002
E-mail: info@ibertest.es

www.ibertest.com

IBERTEST reserves the right to make technical or aesthetic changes to the characteristics included in this document without prior notice.