CONTROLS

CONSTRUCTION
MATERIALS
TESTING

Electromechanical Multipurpose Testers

Complete product range, covering all tests
with load and/or displacement control



www.controls-group.com

Compact, versatile and high performing

Fully electromechanical multipurpose testers for small spaces



Our new Electromechanical Multipurpose 50 kN Load Frames are compact and versatile testers meticulously designed for laboratories wanting to perform high precision – or automatic, depending on the model – displacement and/or load controlled tests in a small space. Our testers benefit from the environmentally-friendly Electromechanical technology that limits on-going maintenance, minimizes noise output – without any compromise on performance.

Environmentally Friendly and Quiet
EmS technology does not need any dead weights, large and noisy air compressors or hydraulic pumps, drastically reducing noise levels and general maintenance.

Multipurpose and Versatile
The 50kN and 100kN capacity are sufficient to perform a wide range of common tests on asphalt mix, soil, cement and other materials, with a high load accuracy.

Fully Automatic (variable speed models only)
All our testers automatically perform displacement controlled or stress-controlled tests and record all test data. All without any interventions from the operator.

High Performing
The rapid approach and return functions shortens test performance and streamlines the testing process.

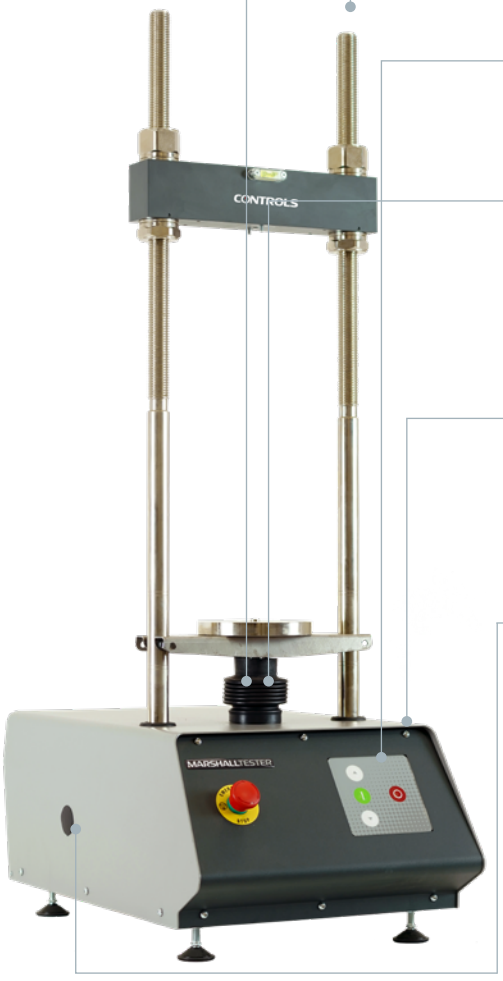
MARSHALL TESTER

50 kN Marshall Compression Tester

76-B3002, 76-B3003, 76-B3004

Marshall tester is a bench mounted compression frame with motor and worm gear housed within the base unit. The machine is designed to perform Marshall tests and all other compressive tests requiring a fixed compression speed of 50.8 mm/min, with a capacity up to 50 kN. The machine is compatible for use with handle for calibration purposes, and a limit switch is provided for the bottom limit of travel.
The machine is supplied without accessories, and it can be equipped both in analogical mode (with load ring and dial gauge) and in digital mode, by using Digimax Pro readout unit (P60R12 - not included) and relevant accessories.

Main Features



- Updated compact design (435 mm width) built with premium materials
- Fixed platen speed of 50.8 mm/min
- Simple 4-button user interface with frontal emergency button
- 50 kN maximum capacity, suitable for testing 4" and 6" dia. specimens
- Compatible for use with both analogical and digital configuration via Digimax Pro (not included)
- Compatible for use with handle for calibration

Detail of the frontal panel:



Compact and easy to use machine, also thanks to its intuitive front panel.

Note: Load cell, displacement transducer and specific accessories are not included.

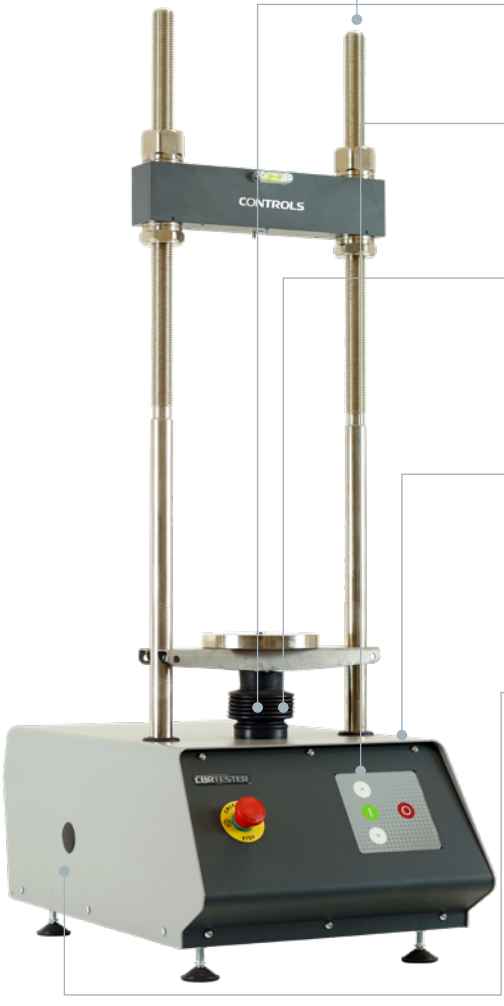
CBR TESTER

50 kN California Bearing Ratio (CBR) Tester

34-T1062, 34-T1063, 34-T1064

CBR tester is a bench mounted motorized compression frame with compact base unit. The machine is designed to perform California Bearing Ratio (CBR) test and all other compressive tests compatible with a fixed compression speed of 1.27 mm/min, with a capacity up to 50 kN.
The machine is compatible for use with handle for calibration purposes, and a limit switch is provided for the bottom limit of travel. The machine is supplied without accessories, and it can be equipped both in analogical mode (with load ring and dial gauge) and in digital mode, by using Digimax Pro readout unit (P60R12 - not included) and relevant accessories.

Main Features



- Updated compact design (435 mm width) built with premium materials
- Fixed platen speed of 1.27 mm/min
- Simple 4-button user interface with frontal emergency button
- 50 kN maximum capacity, suitable for testing 4" and 6 " dia. Specimens
- Compatible for use with both analogical and digital configuration via Digimax Pro (not included)
- Compatible for use with handle for calibration

Note: Load cell, displacement transducer and specific accessories are not included.

Detail of the frontal panel:



Compact and easy to use machine, also thanks to its intuitive front panel.

SPEEDLOADER EmS

Automatic Electromechanical Variable Speed 50kN Tester

34-V1082, 34-V1084

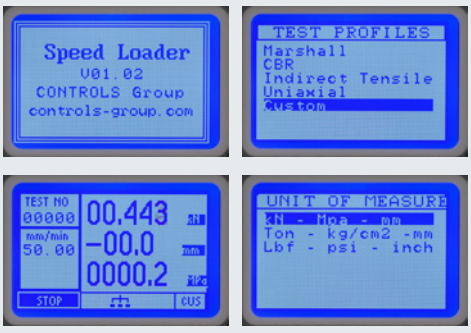
SpeedLoader is the entry level automatic and compact Electromechanical Multipurpose Load Frame ideal for laboratories who need to perform fully automatic displacement controlled tests. The 50 kN compression capacity and the variable test speed coupled with a Closed-loop displacement control make it easier to perform a wide range of test such as CBR, Marshall, Indirect Tensile and Uniaxial Compression tests.

Main Features



- Updated compact design (435 mm width) built with premium materials
- Easy set-up of variable testing speed from 0.2 to 51 mm/min
- Intuitive Graphical User Interface (128 x 80 pixel) with waterproof and fast responsive membrane keyboard
- Dedicated internal memory able to store up to 300 tests
- Three 16-bit channels for data acquisition (one for crosshead, one for load cell, one for displacement)
- RS 232 serial port for fast runtime data download to PC

Focus on display:



Intuitive Graphical User Interface (128 x 80 pixel) for a clear and fast selection of a wide range of test both with preset parameters according to standards or with custom parameters.

The user can easily follow the test while it is being performed and view all the main output data that comes in various units of measure.

Note: Load cell, displacement transducer and specific accessories are not included.

MULTILOADER EmS

Automatic Electromechanical Variable Speed 50kN Tester

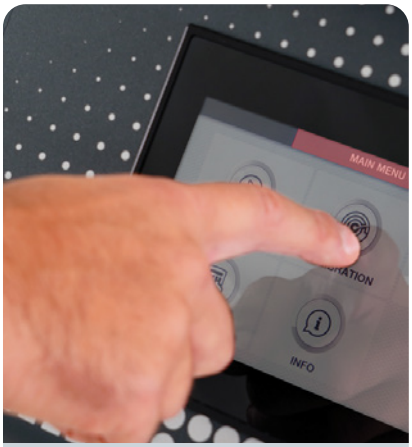
34-V1182, 34-V1184

MultiLoader is a versatile Electromechanical Multipurpose Load Frame for laboratories needing fully automatic performance and elaboration of displacement-controlled tests. Coupled to the compact dimensions, the seven channels for data acquisition, stand-alone automatic digital load frame and fully variable testing speed enable the operator to carry out a wide range of tests including the most common CBR, Marshall and Indirect tensile.
This variable speed teste includes 18 standard-compliant pre-set testing profiles and a 7" display for real time graph and test data viewing improving its usability.

Main Features



- Updated compact design (435 mm width) built with premium materials
- Infinitely accurate variable speed from 0.05 to 51 mm/min
- Seven channels for data acquisition (four for external displacement, two for load cells, one for crosshead travel)
- The 19-bit effective resolution channel ensures an optimum load measurement accuracy
- User friendly 7" touchscreen capacitive color display for viewing real-time graph and test data



Compact design with 7" display coupled with a large storing capacity thanks to 16 GB internal memory. Stored data can be exported to PC by using USB key or downloaded in real time via the RS 232 serial port.

Optional Remote Control - Our newly released PC software now is available for remote control allowing easy and convenient data management and effortless printing/saving of customized test reports in Excel format.

Note: Load cell(s), displacement transducer(s) and specific accessories are not included.

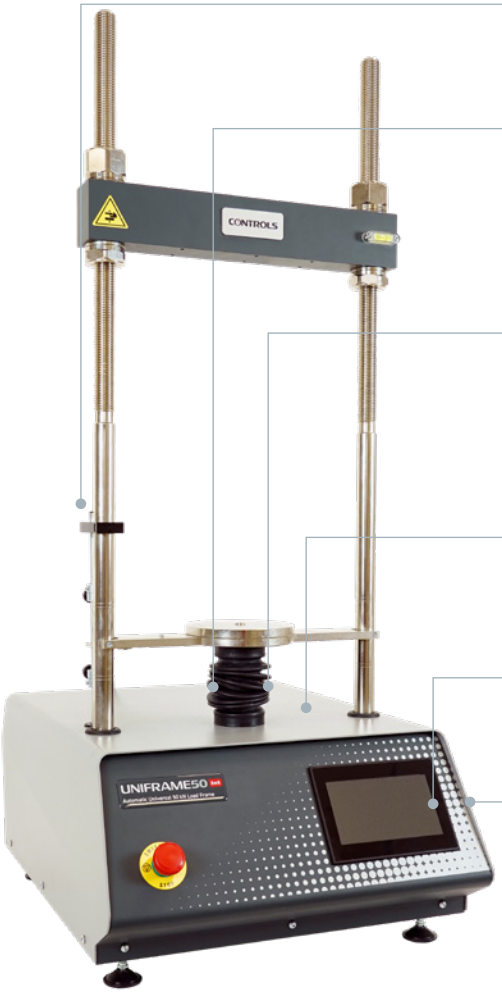
UNIFRAME 50 EmS UNIFRAME 50-T EmS

Automatic Electromechanical Universal 50kN Tester

70-T1282, 70-T1284, 70-T1282/T, 70-T1284/T

Uniframe 50 is the most flexible version in our range of Electromechanical Multipurpose Load Frames. Not only it can perform displacement and load-controlled tests, the addition of a large frame makes the Uniframe 50 suitable for general-purpose testing such as CBR, Marshall, Triaxial, Flexural tests on concrete beams and tiles, Unconfined Compression, Punching tests, and many more thanks to the wide variety of accessories and software at your disposal. Uniframe50-T version also adds the possibility to perform tensile tests up to 25kN capacity.

Main Features



- Adjustable mechanical limit switch for full test safety
- Special version (Uniframe 50-T) to perform tensile tests up to 25 kN capacity
- Large storing capacity thanks to 16 GB internal memory. Stored data can be exported to your PC by using USB key or downloaded in real time via the RS 232 serial port
- Performs displacement-controlled tests up to 51 mm/min and load-controlled tests up to 10000 N/s
- 18 pre-set testing profiles according to Standards
- Seven channels for data acquisition (four for external displacement, two for load cells, one for crosshead travel)



Uniframe 50 equipped with indirect tensile accessory (not included).

Optional Remote Control - Our newly released PC software now is available for remote control allowing easy and convenient data management and effortless printing/saving of customized test reports in Excel format.

Note: Load cell(s), displacement transducer(s) and specific accessories are not included.

UNIFRAME 100 EmS

Automatic Electromechanical Universal 100kN tester

T1292, T1294

The UNIFRAME 100 EmS enhances the Electromechanical Multipurpose Load Frame range with a 100kN capacity and larger dimensions, supporting a wider range of tests such as CBR, Marshall, Triaxial, Flexural, Unconfined Compression, and Punching. It offers precision and reliability for both displacement and load-controlled tests. Featuring the same advanced firmware and software as the UNIFRAME 50, it integrates them seamlessly with accessories for complex testing. Its robust design, high-capacity, and flexibility make it ideal for high-performance laboratory needs.

Main Features



- Adjustable mechanical limit switch for full test safety
- Increased frame dimensions with a vertical clearance of 1040mm and a horizontal span of 465mm, enabling the testing of larger and more diverse sample sizes
- Offers 16 GB internal memory with data export via USB or real-time transfer through the RS232 serial port
- Performs displacement-controlled tests up to 65 mm/min and load-controlled tests up to 9999 N/s
- 18 pre-set testing profiles according to Standards
- 7 channels for onboard data acquisition
- Manual load jack granting precise loading for calibration purposes





Clear and intuitive menu offering fully customizable profiles with automatic test procedures.

New Advanced Firmware - High-end Electromechanical Load Frame, like MultiLoader and Uniframe50, feature a capacitive 7" touchscreen display with advanced firmware, enabling customizable test profiles, parameter selection, and real-time graphs for load, displacement, speed, and time.

Note: Load cell(s), displacement transducer(s) and specific accessories are not included.

BALANCEDLOADER EmS

Automatic Electromechanical Universal 50kN Tester

76-PV1282, 76-PV1284

BalancedLoader is the Advanced Electromechanical Multipurpose Load Frame fully dedicated to asphalt mix testing**.** The large touchscreen controller includes pre-set routines with automatic test result measurement for most of asphalt testing procedures, including the new Balanced Mix Design tests, such as IDEAL-CT, IDEAL-RT and Semi-Circular Bend (SCB).

Main Features



- Adjustable mechanical limit switch for full test safety
- Equipped with high-performance brushless motor, delivering the most accurate test speed control and the widest speed range
- 7″ touchscreen capacitive color display for viewing real-time graph and test data
- Seven channels for data acquisition (four for external displacement, two for load cells, one for crosshead travel)
- Large storing capacity thanks to 16GB internal memory. Stored data can be exported to PC by using USB key or downloaded in real time via the RS 232 serial port



BalancedLoader equipped with IDEAL-CT accessory (not included).

Optional Remote Control - Our newly released PC software now is available for remote control allowing easy and convenient data management and effortless printing/saving of customized test reports in Excel format.

Note: Load cell(s), displacement transducer(s) and specific accessories are not included.

Technical Specifications

	 CONTROLS MARSHALL TESTER	 CONTROLS CBR TESTER	 CONTROLS SPEEDLOADER EmS
	B3002-B3003-B3004	T1062-T1063-T1064	V1082 - V1084
Max. Load cap [kN]	50	50	50
Max tensile load cap [kN]	no	no	no
Sampling frequency [Hz]	N/A	N/A	from 1 to 20
Power [W]	750	750	750
Horizontal span [mm]	270	270	270
Vertical span [mm]	630	630	765
Speed range [mm/min]	50.8	1.27	0.2 to 51
Digital speed control	No	No	Yes
Load rate control	No	No	No
Load rate range (N/sec)	N/A	N/A	N/A
Adjustable travel limit	No	No	Yes
Type of control	Displacement	Displacement	Displacement
Display	N/A	N/A	128 x 80 pixel with membrane keyboard
Memory	N/A	N/A	up to 300 tests stored
Data download	N/A	N/A	RS232
Single-phase line voltage/Frequency	B3002: 230V / 50Hz B3003: 220V / 60Hz B3006: 110V / 60Hz	T1062: 230V / 50Hz T1063: 220V / 60Hz T1064: 110V / 60Hz	V1082: 220-240 V / 50-60 Hz V1084: 110V / 60 Hz

Technical Specifications

				
	CONTROLS	CONTROLS	CONTROLS	IPC global
	MULTILOADER EmS	UNIFRAME 50 EmS UNIFRAME 50-T EmS	UNIFRAME 100 EmS	BALANCEDLOADER EmS
	V1182-V1184	T1282 - T1284 T1282/T - T1284/T	T1292 - T1294	PV1282 – PV1284
Max. Load cap [kN]	50	50	100	50
Max tensile load cap [kN]	no	25*	No	no
Sampling frequency [Hz]	Up to 100	Up to 100	Up to 100	Up to 100
Power [W]	750	800	800	400
Horizontal span [mm]	270	380	456	380
Vertical span [mm]	765	765	1040	800
Speed range [mm/min]	0.05 to 51	0.05 to 51	0.01 to 65	0.01 to 65
Digital speed control	Yes	Yes	Yes	Yes
Load rate control	No	Yes	Yes	Yes
Load rate range (N/sec)	N/A	1 to 10000	1 to 10000	1 to 10000
Adjustable travel limit	Yes	Yes	Yes	Yes
Type of control	Displacement	Load / Displacement	Load / Displacement	Load / Displacement
Display	High resolution 7" color graphic touchscreen display	High resolution 7" color graphic touchscreen display	High resolution 7" color graphic touchscreen display	High resolution 7" color graphic touchscreen display
Memory	16 GB	16 GB	16 GB	16 GB
Data download	RS232 and USB	RS232 and USB	RS232 and USB	RS232 and USB
Single-phase line voltage/Frequency	V1182: 220-240 V / 50-60 Hz V1184: 110V / 60 Hz	T1282**: 220-240 V / 50-60 Hz; T1284**: 110V / 60 Hz	T1292: 220-240 V / 50-60 Hz; T1294: 110V / 60 Hz	PV1282: 220-240 V / 50-60 Hz V1284: 110V / 60 Hz

Note: *only for T1282/T and T1284/T models

**for both standard and tensile models (/T)

Standards

			 CONTROLS MARSHALL TESTER B3002-B3003-B3004	 CONTROLS CBR TESTER T1062-T1063-T1064	 CONTROLS SPEEDLOADER V1082 - V1084
Soil tests	**CBR**	**EN 13286-47, ASTM D1883, AASHTO T193, BS 1377:2, NF P94-078, UNI CNR 10009**	No	Yes*	Yes
	Unconfined Compression	**ASTM D2166, AASHTO T208, BS 1377:7 EN 17892:7**	No	No	Yes
Triaxial Tests	**Quick Triaxial (UU)**	**ASTM D2850, BS 1377:7 EN 17892:8**	No	No	Yes
Asphalt Tests	**Marshall**	**EN 12697-34, ASTM D1559, ASTM D5581, ASTM 6927, AASHTO T245, BS 598-107, NF P98-251-2, DIN 1996, CNR 30**	Yes*	No	Yes
	Indirect Tensile with 4 transducers	**CNR 134**	Yes*	No	No
	Splitting Tensile TSR Indirect Tensile Strength	**EN 12697-12, EN 12697-23, ASTM D6931, AASHTO T283**	Yes*	No	Yes
	Semi-Circular Bend SCB – IFIT	**EN 12697-44, ASTM D8044, AASHTO T393/ TP124**	Yes**	No	No
	IDEAL-CT	**ASTM D8225**	Yes**	No	No
	IDEAL RT	**ASTM D8360**	Yes*	No	No
	ISS	**AASHTO T407/TP114**	No	No	No
	Interlayer bonding/ Shear Bond Test (Leutner)	**EN 12697-48**	Yes*	No	No
	Hveem	**ASTM D1560, AASHTO T246**	No	No	No

NOTE

*Digital version may be required by standard

**Partial conformity to speed specifications

Standards

						
			CONTROLS MULTILOADER	CONTROLS UNIFRAME 50 UNIFRAME 50-T	CONTROLS UNIFRAME 100	IPC global BALANCEDLOADER
			V1182-V1184	T1282 -T1284 T1282/T -T1284/T	T1292 - T1294	PV1282 – PV1284
Soil tests	**CBR**	**EN 13286-47, ASTM D1883, AASHTO T193, BS 1377:2, NF P94-078, UNI CNR 10009**	Yes	Yes	Yes	Yes
	Unconfined Compression	**ASTM D2166, AASHTO T208, BS 1377:7 EN 17892:7**	Yes	Yes	Yes	Yes
Triaxial Tests	**Quick Triaxial (UU)**	**ASTM D2850, BS 1377:7 EN 17892:8**	Yes	Yes	Yes	Yes
Asphalt Tests	**Marshall**	**EN 12697-34, ASTM D1559, ASTM D5581, ASTM 6927, AASHTO T245, BS 598-107, NF P98-251-2, DIN 1996, CNR 30**	Yes	Yes	Yes	Yes
	Indirect Tensile with 4 transducers	**CNR 134**	Yes	Yes	Yes	Yes
	Splitting Tensile TSR Indirect Tensile Strength	**EN 12697-12, EN 12697-23, ASTM D6931, AASHTO T283**	Yes	Yes	Yes	Yes
	Semi-Circular Bend SCB – IFIT	**EN 12697-44, ASTM D8044, AASHTO T393/TP124**	No	No	No	Yes
	IDEAL-CT	**ASTM D8225**	No	No	No	Yes
	IDEAL RT	**ASTM D8360**	No	No	No	Yes
	ISS	**AASHTO T407/TP114**	No	No	No	Yes
	Interlayer bonding/Shear Bond Test (Leutner)	**EN 12697-48**	Yes	Yes	Yes	Yes
	Hveem	**ASTM D1560, AASHTO T246**	Yes	No	No	Yes

Standards

							
			CONTROLS SPEEDLOADER EmS	CONTROLS MULTILOADER EmS	CONTROLS UNIFRAME 50 EmS UNIFRAME 50-T EmS	CONTROLS UNIFRAME 100 EmS	IPC global BALANCEDLOADER EmS
			V1082 - V1084	V1182-V1184	T1282 - T1284 T1282/T - T1284/T	T1292 - T1294	PV1282 – PV1284
Other materials	**Soil cement Flexural Strength**	**ASTM D1635**	No	No	Yes	Yes	Yes
	Rock Indirect Tensile	**ASTM C880, ASTM C99, ASTM C120, EN 12372**	No	No	Yes	Yes	Yes
	Natural Building Stones Modulus of Rupture	**ASTM C880, ASTM C99, ASTM C120, EN 12372**	No	No	Yes	Yes	Yes
	Concrete Beams and Tiles Flexural Strength	**EN 12390-5, EN 491, EN 538, ASTM C78, ASTM C293, BS 1881:118, NF P18-407, UNE 83-305, UNI 6133**	No	No	Yes	Yes	Yes
	Clays & Concrete Blocks for Flooring Punching and Bending Test	**UNI 9730-3, EN 15037-2, EN 15037-3**	No	No	Yes	Yes	Yes
	Mortar Flexural Strength of Prisms	**EN 196-1, ASTM C348**	No	No	Yes	Yes	Yes
	Mortar Compression low strenght	**EN 196-1, ASTM C109**	No	No	Yes	Yes	Yes
	Mortar Briquettes Tensile	**ASTM C307, AASHTO T132**	No	No	Yes*	No	No
	Mortar and Cement Elastic Modulus	**EN 13412**	No	No	Yes	Yes	Yes
	Glass-Fibre Reinforced Cement Bending strength	**EN 1170-5**	No	No	Yes*	No	No
	Fiber Reinforced Concrete Tests	**ASTM C1609, EN 14651**	No	No	Yes	Yes	Yes
	Fiber Reinforced Polymer Tensile Tests	**-**	No	No	Yes*	No	No
	Soil-Cement Uniaxial Compression Test	**ASTM D1633**	Yes	Yes	Yes	Yes	Yes
	Custom Procedure	**Displacement**	Displacement	Displacement	Displacement & Load	Displacement & Load	Displacement & Load
Steel Rebars	**Tensile**	**EN 6892-1**	No	No	Yes*	No	No

Note: *only for T1282/T and T1284/T models

Accessories

Our automatic multipurpose testers are suitable for a wide range of tests on many kinds of materials. Each test requires different accessories depending on the type of test and the reference Standard. A selection of tests and their relevant accessories are listed below.

Road base and Soil Mechanics


CBR


Unconfined compression


Uniaxial compression

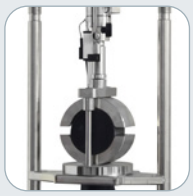

Quick triaxial


Flexural test on soil – cement specimens

Steel Wires


Tensile test on steel wires

Asphalt Mix


Marshall


Indirect tensile strength/IDEAL-CT


Interlayer bonding / Shear bond Test (Leutner)


SCB - Semi-Circular Bend

Rocks


Modulus of rupture of natural building stones



Splitting tensile test of intact core specimens

Cement, Concrete and Masonry Building Units


Flexural test on mortar prisms 40 x 40 x 160 mm


Compression on low strength mortar mixes


Flexural tests on concrete beams, concrete and clay tiles


Punching and bending test on clay and concrete blocks for flooring


CMOD


Elastic Modulus on mortar and Cement

Note: Load cell(s), displacement transducer(s) and specific accessories are not included

GOLDEN JUBILEE

1976 - 2026

Fifty Years of Precision

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