

# UNIFRAME

## Electromechanical Universal Testers, 50 and 100 kN capacity suitable for any kind of test that requires load and/or displacement control.

They are proposed in different versions, all suitable for compression and flexural tests, plus some individual feature as specified:

**70-T1082**  
Standard series, 50 kN cap.

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### COMMON FEATURES

- » Stand-alone automatic digital load frame
- » Automatic failure detection
- » Universal machine suitable for a wide range of tests. See page 320
- » Closed-loop displacement/load control
- » Four onboard channels for data acquisition
- » CBR and Marshall test automatic execution
- » Infinitely variable speed from 0.5 to 51 mm/min
- » Large touchscreen display for displaying real-time graph and test data
- » Rapid approach and return functions ensure time saving

These models feature a robust and compact two-column frame which is fitted with an upper crossbeam that can be set at various heights depending on the accessories to be used. The jack is driven by a DC motor controlled by the microprocessor.

The load jack, DC motor and controls are housed in the ergonomic base cabinet, the front panel of which is fitted with an emergency button for prompt stopping of the machine, conforming to CE requirements

Closed-loop control ensures reliable test execution both with displacement and load applications. No external transducer is required for displacement measurement. Sample failure is detected automatically and stops the test. Alternatively, this feature can be disabled and a travel, load or time limits can be set instead.

The user-interface is a large graphic touch-screen display allowing the setting of test speed, test data, real time display of test graph and saving of pre-set test procedures (up to 10 profiles can be saved in the internal memory of the machine). The firmware allows performance of up to four transducer calibrations (two load cells and two potentiometric linear transducers), saving data onboard.

Test data can be stored on a USB pen drive or downloaded through a LAN communication port in Controls, txt or ASCII format.

All accessories have to be ordered separately (see page 320).



70-T1082 with CBR accessories

### Technical specifications

Models 70-	T1082	T1182	T1182/T	T1192
Testing speed range:	0.5 to 51 mm/min			
Load rate:	1 to 1000 N/s			
Type of control:	Displacement and load			
Max speed approach	40 mm/min			
Max ram travel:	100 mm			
Max vertical span, mm	730	800	800	1040
Horizontal span, mm	270	380	380	456
Overall dimensions (w x d x h), mm	392x 495x 1213	500x 570x 1300	500x 570x 1300	600x 520x 1830
Weight approx., kg	65	110	130	165

### LOAD CELLS

UNIFRAME testers can be fitted with the following load cells, depending on the test to be performed. See page 412

**82-P0370**  
Load cell 2.5 kN capacity

**82-P0374**  
Load cell 25 kN capacity

**82-P0373**  
Load cell 10 kN capacity

**82-P0375**  
Load cell 50 kN capacity

**82-P0376**  
Load cell 100 kN capacity

**70-T1182**

Large series, 50 kN cap.  
Suitable for tests requiring up to 380 mm distance between columns



*70-T1182 with accessories to perform the Marshall test*

**Ordering information**

**70-T1082**  
UNIFRAME bench stand-alone automatic compression tester, 50 kN capacity, 4 channel built-in data acquisition for load/displacement-controlled testing. 230 V, 50-60 Hz, 1 ph

**70-T1084**  
as above but 110 V, 60 Hz, 1 ph

**70-T1182**  
UNIFRAME stand-alone automatic compression tester, 50 kN capacity, 4 channel built-in data acquisition for load/displacement-controlled testing. 230 V, 50-60 Hz, 1 ph

**70-T1184**  
As above but 110 V, 60 Hz, 1 ph

**70-T1182/T**

25 kN cap. in tension and 50 kN cap. in compression/flexural tests



*70-T1182 with accessories for flexural test on cement prism*

**70-T1182/T**  
UNIFRAME stand-alone automatic tension/compression tester, 25/50 kN capacity, 4 channel built-in data acquisition for load/displacement-controlled testing. 230 V, 50-60 Hz, 1 ph

**70-T1184/T**  
As above but 110 V, 60 Hz, 1 ph

**70-T1192**  
UNIFRAME stand-alone automatic compression tester, 100 kN capacity, 4 channel built-in data acquisition for load/displacement-controlled testing. 230 V, 50-60 Hz, 1 ph

**70-T1194**  
Same as above but 110 V, 60 Hz, 1 ph

**70-T1192**

Standard series, 100 kN cap.



*70-T1192 with accessories to perform flexure test on glass-fibre reinforced cement to EN 1170-5*

**PC Software**

**70-SW/CMU**  
Software for Marshall, CBR, Indirect Tensile, Compression, flexure tests

**Accessories**

See page 320

The UNIFRAME series also include:  
**70-T2502 UNIFRAME 250**, 250 kN capacity, suitable for tension, compression and flexural tests (see page 322)

**70-T0108/MINI UNIFRAME-MINI**, 250 N capacity, particularly suitable for transverse deformation testing. See page 284

## UNIFRAME accessories

UNIFRAME testers are suitable for a wide range of tests on different 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.

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### ROAD BASE AND SOIL MECHANICS

All tests are performed under displacement control.

#### CBR

##### STANDARD

- ▶ EN 13286-47 ▶ ASTM D1883
- ▶ AASHTO T193 ▶ BS 1377:4
- ▶ NF P94-078 ▶ UNI CNR 10009



#### 34-V0107/CBR

Test set for performing CBR tests in digital mode, comprising:

- 82-P0375** Load cell, 50kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 82-P0322** Displacement transducer, 25mm travel
- 34-T0104/81** Adjustable transducer holder
- 34-T0103/1** Adjustable CBR penetration piston

### Unconfined compression

##### STANDARD

- ▶ ASTM D2166 ▶ AASHTO T208
- ▶ BS 1377:7



#### Accessories

- 82-P0370** Load cell, 2.5kN capacity
- 82-P0373** Load cell, 10 kN capacity (as alternative)
- 82-P0375/C** Adapter to fit load cell
- 82-P0322** Displacement transducer, 25mm travel
- 34-T0104/81** Adjustable transducer holder
- 70-T0108/5** Load cell extension
- 34-T0104/4** Platens for unconfined compression

### Uniaxial compression

##### STANDARD

- ▶ ASTM D1633



#### Accessories

- 82-P0370** Load cell, 2.5 kN capacity
- 82-P0373** Load cell, 10 kN capacity (as alternative)
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 70-T0108/5** Load cell extension
- 34-T0104/3** Compression platens with spherical seat

### Quick triaxial

##### STANDARD

- ▶ ASTM D2850 ▶ BS 1377:7



#### Accessories

- 28-WF0370/T** Load cell, 3.5 kN capacity
- 28-WF0373/T** Load cell, 10 kN capacity (as alternative)
- 28-WF6208** Displacement transducer, 25 mm travel

For triaxial cells and related accessories see page 71 and 79

### Flexural test on Soil-cement specimens

##### STANDARD

- ▶ ASTM D1635



#### Accessories

- 82-P0370** Load cell, 2.5 kN capacity
- 82-P0373** Load cell, 10 kN capacity (as alternative)
- 70-T0108/5** Load cell extension
- 70-T0108/7** Flexure testing device for soil-cement specimens

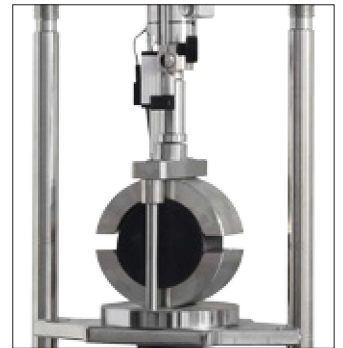
### ASPHALT

All tests are performed under displacement control.

#### Marshall

##### STANDARD

- ▶ EN 12697-34 ▶ ASTM D1559
- ▶ ASTM D5581 ▶ ASTM 6927-06
- ▶ AASHTO T245 ▶ BS 598-107
- ▶ NF P98-0251-2 ▶ DIN 1996
- ▶ CNR 30



#### 34-V0107/MAR

Test set for performing Marshall tests in digital mode, comprising:

- 82-P0375** Load cell, 50kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 82-P0322** Displacement transducer, 25mm travel
- 34-T0104/81** Adjustable transducer holder
- 34-T0104/13** Compression device extension
- 34-T0104/10** Compression device
- 76-B0033/4** Stability mould for dia. 4" (100 mm) specimens<sup>(1)</sup>

#### CBR and Marshall

(To avoid duplications when both tests must be performed)

#### 34-V0107/CM

Test set for performing CBR and Marshall tests in digital mode, comprising:

- 82-P0375** Load cell, 50kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 82-P0322** Displacement transducer, 25mm travel
- 34-T0104/81** Adjustable transducer holder
- 34-T0103/1** Adjustable CBR penetration piston
- 34-T0104/13** Compression device extension
- 34-T0104/10** Compression device
- 76-B0033/4** Stability mould for dia. 4" (100 mm) specimens<sup>(1)</sup>

<sup>(1)</sup> For 6" (150 mm) sample ask for the 76-B0033/6

**Indirect tensile on bituminous mixtures**

**STANDARD**

- ▶ EN 12697-12 ▶ EN 12697-23
- ▶ ASTM D6931 ▶ AASHTO T283
- ▶ ASTM D8225



**Accessories**

- 82-P0375** Load cell, 50kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 82-P0322** Displacement transducer 25mm travel
- 34-T0104/81** Adjustable transducer holder
- 34-T0104/13** Compression device extension
- 34-T0104/10** Compression device
- 76-B0078/F** Frame for tensile splitting device
- 76-B0078/F1** Pair of loading strips for 100 mm dia. sample
- 76-B0078/F2** Pair of loading strips for 150 mm dia. sample
- 76-B0078/F3** Pair of loading strips for 160 mm dia. sample

**Interlayer bonding / Shear bond test (Leutner test)**

**STANDARD**

- ▶ EN 12697-48



- 82-P0375** Load cell 50 kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 82-P0322** Displacement transducer, 25mm travel
- 34-T0104/81** Adjustable transducer holder
- 34-T0104/13** Compression device extension
- 34-T0104/10** Compression device
- 76-B0033/E** Shear bond test apparatus, 150mm
- 76-B0033/E1** Adapter to test 100mm dia. samples with shear bond test apparatus 76-B0033/E

**ROCKS**

All tests are performed under load rate control

**Modulus of rupture of natural building stones**

**STANDARD**

- ▶ ASTM C880 ▶ ASTM C99
- ▶ ASTM C120 ▶ EN 12372



**Accessories**

- 82-P0375** Load cell, 50kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 70-T1180/3** Flexure testing device. Consisting of a lower beam with two adjustable (from 50 mm to 400 mm) bearing rollers and a ball seating upper beam with two adjustable (from 50 mm to 150 mm) loading rollers, one of each can be removed and placed in the middle for centre point testing. Rollers: dia. 26 x 160 mm, rocker type (except one which is fixed).

*Note: load cells with small capacities may be more suitable for low strength materials. 82-P0370, 2.5 kN model is available and can be used instead of 82-P0375.*

**Splitting tensile test of intact core specimens**

**STANDARD**

- ▶ ASTM D3967 ▶ ISRM



**Accessories**

- 82-P0375** Load cell, 50kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 34-T0104/10** Loading rod
- 50-D9032/H** Compression/splitting Device
- Or, alternatively:
- 45-D9032/NX** Compression device for indirect tensile test on rock specimens NX type (dia. 54.74 mm). Conforming to ISRM specifications.

**CEMENT, CONCRETE AND MASONRY BUILDING UNITS**

All tests are performed under load rate control

**Flexural test on mortar prisms 40x40x160 mm**

**STANDARD**

- ▶ EN 196-1 ▶ ASTM C348



**Accessories**

- 82-P0375** Load cell, 50kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 34-T0104/10** Loading rod
- 65-L0019/B** EN flexure testing device for mortar prisms
- Or, alternatively:
- 65-L0019/C** ASTM Flexure testing device for mortar prisms

**Compression on low strength mortar mixes**

**STANDARD**

- ▶ EN 196-1 ▶ ASTM C109



**Accessories**

- 82-P0375** Load cell, 50kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 34-T0104/10** Loading rod
- 50-C9030** EN Compression device to test portions of 40x40x160 mm mortar prism broken in flexure.
- Or, alternatively:
- 50-C9032** ASTM Compression device for mortar cubes

**Tensile test of cement briquettes**

**Accessories**

- 82-P0375** Load cell, 50kN capacity
- 82-P0375/C** Adapter to fit load cell (two pieces)
- 65-L0015/6** Tensile testing attachment for cement briquette specimens.

**Flexural tests on concrete beams, concrete and clay tiles**

**STANDARD**

- ▶ EN 12390-5 ▶ EN 491 ▶ EN 538
- ▶ ASTM C78 ▶ ASTM C293
- ▶ BS 1881:118 ▶ NF P18-407
- ▶ UNE 83-305 ▶ UNI 6133



**Accessories**

- 82-P0375** - Load cell, 50kN capacity
- 82-P0375/C** - Adapter to fit load cell (two pieces)
- 70-T1180/1** - Flexure testing device. Consisting of a lower beam with two adjustable (from 60 mm to 400 mm) bearing rollers and an upper loading roller for centre point testing. Rollers: dia.40 x 210 mm, rocker type (except one which is fixed).

*Note: for concrete and clay tiles testing wooden bearers, conforming to the shape of tiles, shall be provided by the users. Bearers with increased length available on request*

**Punching and bending test on clay and concrete blocks for flooring**

**STANDARD**

- ▶ UNI 9730-3 ▶ EN 15037-2
- ▶ EN 15037-3



**Accessories**

- 82-P0375** - Load cell, 50kN capacity
- 82-P0375/C** - Adapter to fit load cell (two pieces)
- 70-T1180/6** - Punching and bending test device. Consisting of two adjustable bearing rollers (from 150 mm to 500 mm), an upper wooden puncher 50 x 50 mm and a central loading device having 20 mm width x 310 mm length. Rollers: dia. 20 x 310 mm, rocker type (except one which is fixed). Not suitable for model 70-T1082.