

## SWELL TEST APPARATUS

### ■ 34-T0092

Perforated plate with adjustable stem (swell plate)

### ■ 34-T0092/F

Same as above conforming to NF standards

Placed on top of the soil sample to enable monitoring of swelling. Manufactured from plated steel except disc of 34-T0092/F in plastic with 3 mm dia. holes.

**ⓐ Diameter:** 34-T0092: 149.2 mm (5 7/8 in.); 34-T0092/F: 150 mm

**Ⓚ Weight approx.:** 34-T0092: 1 kg; 34-T0092/F: 0.3 kg



34-T0093 with 82-D1255, 34-T0092

### ■ 34-T0093

Dial gauge tripod

Used to support the dial gauge for monitoring the swelling of CBR samples. Made from a special non-corrodable alloy.

**Ⓚ Weight approx.:** 0.3 kg

## Accessories

➤ **82-D1256** Dial gauge 25 mm range, 0.01 mm subdiv. or

➤ **82-D1253** Dial gauge 1 in. range, 0.001 in. subdiv. or

➤ **82-D1255** Dial gauge 10 mm range, 0.01 mm subdiv.

### ■ 34-T0100/B

Large soaking tank

In this plastic water tank the CBR moulds are immersed during the swelling test. Supplied complete with supporting base, which allows free water circulation. Capacity: 6 CBR moulds

**ⓐ Dimensions:**

- ex. 800x600x550 mm
- in. 680x490x540 mm

**Ⓚ Weight approx.:** 9.1 kg



34-T0100/B with CBR moulds

## CBR LOADING FRAMES AND PRESSES

**📄 STANDARD**

**pr EN 12286-47**

ASTM D1883

AASHTO T193

NF P94-078

NLT 111

CNR-UNI 10009

BS 1377-4

## Introduction

The CBR penetration test can be performed with different testing machines:

- Specific model 34-T0106 Series, single speed
- Multispeed testing machine also used to perform other tests (e.g. Marshall test), 34-T0107 Series (see page 120)
- Universal "Uniframe" tester working either in speed or load control 70-T0108/E Series (see page 317)
- Universal high capacity "Multiensayo" tester 70-S16 and 70-S17 Series (see page 300)

All the above have to be completed by the suitable accessories, which may change conforming to the standard in use and the level of sophistication preferred.

For instance, the specific model Series 34-T0106 can be equipped either with a standard load ring and dial gauge or with an electronic load cell, displacement transducer, digital data acquisition and software for PC connection.

The specific testing machine Series 34-T0106 is also proposed in the BS version 34-T0106/BS with a testing speed of 1 mm/min instead of 1.27 mm/min. Finally, to simplify your selection we also propose the above models complete with CBR accessories in the analogic version (see 34-T0106/A and 34-T0106/B models). Hand operated models for field use are also available (see page 124).



34-T0106

#### CBR LOADING PRESS

##### Versions

Two versions available: 34-T0106-T0106/A with testing speed of 1.27 mm/min. and



34-T0106/A with accessories and CBR mould

34-T0106/BS-T0106/B with testing speed of 1 mm/min. The relevant standards are indicated in the next page.

##### Frame only

(to be completed with CBR accessories)

##### ■ 34-T0106

**CBR mechanical loading frame, 50 kN cap., testing speed 1.27 mm/min. Frame only.** 230 V, 50 Hz, 1 ph.<sup>(1)</sup>

##### ■ 34-T0106/BS

**CBR mechanical loading frame, 50 kN cap., testing speed 1 mm/min. Frame only.** 230 V, 50 Hz, 1 ph.

##### Frame and CBR accessories

(analogic version – see next page)

##### ■ 34-T0106/A

**CBR mechanical loading press, 50 kN cap., testing speed 1.27 mm/min. Complete with CBR accessories.** 230 V, 50 Hz, 1 ph.<sup>(1)</sup> Same as the 34-T0106 model plus the 82-T1009 Load ring and the 34-T0103/3 Penetration piston and gauge

##### ■ 34-T0106/B

**CBR mechanical loading press, 50 kN cap., testing speed 1 mm/min. Complete with BS accessories.** 230 V, 50 Hz, 1 ph.

Same as the 34-T0106/BS model plus the 34-T0103/10 Guide, 82-T1009 Load ring and the 34-T0103/2 Penetration piston with gauge.

##### General description

The machine features a rigid two-column frame with upper crossbeam, which can be adjusted in height and locked in position with locknuts. The drive force is provided by a mechanical jack housed in the base cabinet, which also accommodates the motor and the electric panel.

##### Specifications

**Maximum load:** 50 kN

**Test speed:** 1 mm/min (BS model), 1.27 mm/min (ASTM/EN model)

**Max. ram travel:** 120 mm

**Horizontal span:** 270 mm

**Power rating:** 300 W

**Dimensions (dxwxh):** 392x495x1194 mm

**Weight approx.:** 78 kg

(1) For 220 V, 60 Hz models add the suffix /Y after the code number (e.g. 34-T0106/Y); for 110 V, 60 Hz models add the suffix /Z after the code number (e.g. 34-T0106/Z).



34-T0106/B with accessories and mould

34-T0106 with accessories listed next page (digital mode) and CBR mould

34-T0103/1  
Detail of  
adjustable  
piston

## CBR CONFIGURATIONS / ACCESSORIES

Machine code	Conforming to standards	CBR accessories	
		Analogic mode	Digital mode
34-T0106 Frame only	pr EN 13286-47 ASTM D1883 AASHTO T193 NF P94-078 NLT 111 CNR-UNI 10009	82-T1009 50 kN load ring 34-T0103/3 CBR penetration assembly including 34-T0103/1 Adjustable penetration piston, 34-T0104/7 Dial gauge holder, and 82-D1257 Dial gauge	Common to the 34-T0106 and 34-T0106/BS models: 34-T0103/10 Guide bracket and ball seating 82-P0375/C Adapter to fit load cell 82-P0375 Load cell 50 kN cap. 34-T0108/2 Connector load cell/accessory 34-T0103/1 Adjustable CBR penetration piston 34-T0104/8 Adjustable transducer holder 82-P0332 25 mm displacement transducer 76-Q0802/C <sup>(1)</sup> Digimax Plus data acquisition and processing system 76-S0110/C CBR test, PC software (optional)
34-T0106/BS	BS 1377-4	34-T0103/10 Guide bracket and ball seating 82-T1009 50 kN load ring 34-T0103/3 CBR penetration assembly including 34-T0103/1 Adjustable penetration piston, 34-T0104/7 Dial gauge holder, and 82-D1257 Dial gauge	

(1) For more information on the 76-Q0802/C Digimax Plus data acquisition and processing see page 122.

### CBR ACCESSORIES

#### Description and specifications

##### ■ 34-T0103/3

**CBR penetration assembly including 34-T0103/1 Adjustable penetration piston, 34-T0104/7 Dial gauge holder, and 82-D1257 Dial gauge**

The piston, 49.6 mm dia. with hardened surface is fitted with a locking collar and a threaded extension for the connection to the load ring. The dial gauge holder can be easily laterally adjusted to fit any type of moulds or reference anvil.

 Weight approx.: 2.8 kg



34-T0103/3 including:  
34-T0103/1, T0104/7 and 82-D1257  
(all assembly)



##### ■ 34-T0103/10

**Guide bracket and ball seating**

Cast aluminium with ball seating arrangement. Required by the BS 1377-4 standards but also suitable for the digital versions.

 Weight approx.: 1.5 kg



82-P0375/C, 82-P0375, and 34-T0108/2

### ■ 82-P0375/C

#### Adapter to fit load cell

To connect the load cell with the ball seating arrangement of the 34-T0103/10 guide bracket.

Weight approx.: 0.2 kg

### ■ 82-P0375

#### Load cell 50 kN cap.

Dimensions 82 mm dia. x 110 mm length. M30x2 thread.

Weight approx.: 4.45 kg

### ■ 34-T0108/2

#### Connector load cell/accessory

Weight approx.: 1.3 kg

### ■ 34-T0103/1

#### Adjustable CBR penetration piston

49.6 mm dia. with hardened surface. Comprising a locking collar and a threaded extension for the connection to the load ring or to the load cell connector.

Weight approx.: 2.2 kg

### ■ 34-T0104/7

#### Adjustable dial gauge holder

To fit the 34-T0103/1 Adjustable CBR penetration piston or compression device and to hold the dial gauge, which can be adjusted conforming to the mould or to the reference anvil.

Weight approx.: 0.5 kg

### ■ 34-T0104/8

#### Adjustable transducer holder

To fit the 34-T0103/1 Adjustable CBR penetration piston or compression device and to hold the displacement transducer, which can be adjusted conforming to the mould or to the reference anvil.

Weight approx.: 0.5 kg

### ■ 82-P0332

#### 25 mm displacement transducer

Linear potentiometric transducer, 25 mm travel, infinite resolution, accuracy  $\pm 0.5\%$ .

Weight approx.: 0.15 kg



82-T1009

### ■ 82-T1009

#### 50 kN load ring

Fitted with high resolution dial gauge 0.001 mm, accuracy  $\pm 1\%$ , supplied complete with calibration certificate.

Weight approx.: 3.9 kg

### ■ 82-D1257

#### Dial gauge 30x0.01 mm

58 mm dia., complete with rear mount.

Weight approx.: 0.1 kg



34-T0103/1, 34-T0104/8, and 82-P0332