

# Bitumen

## Digital Penetrometer

Apparatus for determination of the needle penetration according to EN 1426 - ASTM D 5 - AASHTO T49 - GOST 11501-78.

At this the path a standard needle penetrates in the sample under standardized conditions (load, time, temperature) is measured.

The penetration depth of the needle is determined with an electronic measuring system, which is separated from the plunger during the test. This and the free guidance of the plunger the influence to load and friction is virtually eliminated.

Before each start of the test the measuring system automatically referenced, then the penetration needle moved up to the sample with an electric drive, which is moved by finely adjustable joystick (a magnifying glass and an ultra-bright LED lamp available). Then the plunger is approved by an automatic device and blocked again after the testing period. The test result is displayed on the digital display.

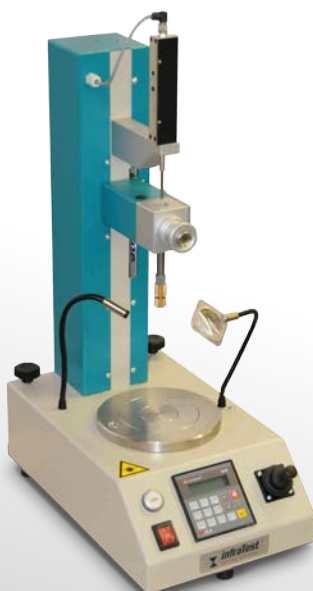
The plunger can easily be removed to calibrate its weight.

### Technical Data:

- Measuring range: 0-300 penetration units (equivalent to 0-30 mm)
- Resolution: 0.01 mm
- Test load: 100 g (plunger 97.5 g + 2.5 g penetration needle)
- Test time: 5 sec (adjustable from 0.1 to 3000 seconds)
- Dimensions (WxDxH): 270 x 480 x 750 mm
- Weight: 24 kg
- Power supply: 100/240 V, 50/60 Hz

Accessories (penetration needle 20-20711, preheating bath ...) are also required to carry out the test.

20-20660



## Automatic Digital Penetrometer

for determination of the needle penetration according to EN 1426 - ASTM D 5 - AASHTO T49.

At this the path a standard needle penetrates in the sample under standardized conditions (load, time, temperature) is measured.

The penetration depth of the needle is determined with an electronic measuring system, which is separated from the plunger during the test. This and the free guidance of the plunger the influence to load and friction is virtually eliminated.

Before each start of the test the measuring system automatically referenced.

Run-up and touch down of the needle are carried out automatically via measurement system.

Manual joystick mode also possible.

Then the plunger is enabled by an automatic device and blocked again after the testing period. The test result is displayed on the graphical touch display.

The plunger can easily be removed to calibrate its weight.

### Technical Data:

- Measuring range: 0-300 penetration units (equivalent to 0-30mm)
- Resolution: 0.01 mm
- Test load: 100g (plunger 97.5 g + 2.5 g penetration needle)
- Test time free adjustable from 0.01 second)
- Dimensions (W xDxH): 280 x 490 x 760 mm
- Weight: 24 kg
- Power supply: 100/240 V, 50/60 Hz

Accessories (penetration needle 20-20711, preheating bath ...) are also required to carry out the test.

20-20670



## Other Penetrometers

20-2050 Manual Penetrometer

20-2060 Penetrometer with controlling unit

## Accessories

### Penetration Needle 2,5 g / 3,2 mm

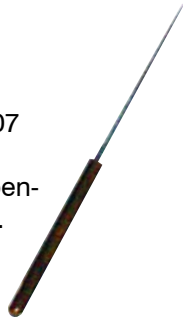
for 20-2050 + 20-2060

20-20710

### Penetration Needle 2,5 g / 3,2 mm magnetic

EN 1426, ASTM D5, AASHTO T49-07 with magnetic head and engraved identification number. Suitable for penetrometers 20-20660 and 20-20670.

20-20711



### Plunger Head

20-2080E20 47,5 g for 20-2050

20-20660E40 47,5 g for 20-20660

20-20670E40 47,5 g for 20-20670

### Penetration ball

EN 13880-3 with shaft 27,5 +/- 0,1 g, 3,2 mm dia. for the use with plunger head 47,5 g.

20-20810

### Penetration Cone

EN 13880-2, ASTM D217, ASTM D937 27,5 +/- 0,1 g, 3,2 mm dia.

20-20811

### Penetration Water Bath 160 mm dia.

Stainless steel with integrated coil and two tube connection pieces for tempering with water.

20-2076



### Perforated Base Plate

used in the penetration water bath to place the test container.

20-2078



### Stainless Steel Penetration Container



20-2084 Ø 55 mm, h. 35 mm

20-2086 Ø 55 mm, h. 45 mm

20-2088 Ø 70 mm, h. 45 mm

20-2089 Ø 70 mm, h. 60 mm

### Penetration Preheating Bath

Stainless steel with cover and immersion heater 25 .. 100 x 0.1° C for preheating of penetration test samples. Equipped with water circulation pump and attachment to connect to 20-2076. 230 V, 50/60 Hz.

20-2090



### Reducing Ring

to reduce sample quantity in penetration containers.

20-2092 20 mm

20-2093 30 mm

