AUTOMATIC RING AND BALL SOFTENING POINT APPARATUS

STANDARDS: EN 1427, ASTM D36, AASHTO T 53

Automatic Ring and Ball Apparatus is used for determining softening point of bituminous materials by ring and ball method.

The device is Microprocessor controlled and has Colored, Large Touch screen display. Two bitumen samples casted in shouldered brass rings while being held in horizontal position, temperature is increased under controlled rate according to the standards.

The softening point is the average of the temperature values read from the thermometer when each ball embedded in the disc shaped bitumen samples drops below 25.0 ± 0.4 mm. The softening point is detected by the photoelectric sensors and the temperature is measured with the PT100 sensor.

With the help of a magnetic stirrer with an adjustable speed control system, a homogeneous temperature distribution is achieved in the vessel and temperature control in accordance with the relevant standards during the experiment is provided by the 0-10 V, VDC Analog SSR.

Due to its custom software; selection of test method and test parameters, automatic start of the test, data acquisition, data recording and printing and calibration of the device can be performed. The device can save a total of 9 tests. Thanks to the USB port available on the device, the data can be transferred to the computer and opened in excel.

Single test option is available as 30 °C to 80 °C for water.

The cooling system is integrated to the device. The cooling system ensures that the temperature of the test liquid is reduced rapidly and the stable temperature rise rates specified in the standard are achieved and reduces the time between two tests.

HR-AS2260

Automatic Ring and Ball Apparatus consist of 2 steel balls, Frame (thermometer and ring holder, ball centering guide and bottom plate), 2 brass rings and 800 ml glass beaker.

Thermometer should be ordered separately.

Main Features

- Heating system,
- Cooling system,
- Electrical beaker lifting system,
- Speed controlled magnetic stirrer,
- Digital Barrier type photoelectric sensor (for the determination of the actual value of the bitumen softening point),
- Microprocessor controlled (automatically programmable for water),
- Colored, Large Touch Screen,
- PT100 temperature probe,
- 0-10 V, VDC Analog SSR,
- USB port for computer or printer connection,
- PID controlled heating system,
- Custom Software.

Software

- Date/Time,
- Test parameter suitable for test type: 80°C
- Preheat temperature selection and thermocouple calibration (for heater temperature measurement)
- Magnetic stirrer speed adjustment (between 10 and 150 rpm)

Safety Features

- The heater turns off automatically at the end of the test cycle.
- The experiment is stopped automatically when the sensor fails or fails to position.

Technical Specifications:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-AS2260	Automatic Ring and Ball Test Set	52x43x73	27	220 V, 50 -60 Hz, 1 ph

Spare Parts & Accessories:

Product Code	Product Name	Dimensions (cm)	Weight (kg)
HR-AS2260/5	Cooling System	---	---
HR-AS2250/1	Steel ball, 2 pieces	---	---
HR-AS2260/2	Frame	---	---
HR-AS2250/3	Brass ring, 2 pieces	---	---
HR-G0008	Glass Beaker, 800 ml	10x10x13,5	0,5
HR-G0391	Glass Thermometer; max 110 °C	3x3x30	0,1
HR-G0392	Glass Thermometer; max 360 °C	3x3x30	0,1
HR-G1395	ASTM 15C Thermometer. -2 - (+80) °C.	3x3x30	0,1
HR-G1397	ASTM 16C Thermometer. 30-200 °C.	3x3x30	0,1

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Used for determining softening point of bituminous materials by ring and ball method.

The softness of bitumen depends, amongst other factors, on the temperature of the substance, where, as the temperature is raised, the softness of the bitumen increases.

Analog Ring and Ball Test Set is supplied complete with an Analog hotplate with magnetic stirrer, 2 steel balls, Frame (thermometer and ring holder, ball centering guide and bottom plate), 2 brass rings (ASTM or EN (It must be specified at the time of order.)), 600 ml glass beaker and max. 110 °C thermometer.

Dijital Ring and Ball Test Set is supplied complete with a Digital hotplate with digital magnetic stirrer (with Immersion type temperature sensor with it's holder and a stirring bar), 2 steel balls, Frame (thermometer and ring holder, ball centering guide and bottom plate), 2 brass rings (ASTM or EN (It must be specified at the time of order.)), 800 ml glass griffin beaker and max. 110 °C thermometer.

Glass or ASTM Thermometers and Pouring Plate should be ordered separately.

HR-AS2250/2

HR-AS2250/1 with HR-AS2250/3

HR-AS2250

Technical Specifications:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-AS2250	Analog Ring and Ball Test Set	21x31x40	4,5	220 V, 50 -60 Hz, 1 ph
HR-AS2250/D	Digital Ring and Ball Test Set	21x31x40	4,5	220 V, 50 -60 Hz, 1 ph

Spare Parts & Accessories:

Product Code	Product Name	Dimensions (cm)	Weight (kg)	Power Supply
HR-G1025/A	Analog Magnetic Stirrer Heater	21x31x10	2,8	230 V, 50-60 Hz, 1 ph
HR-G1025/D	Digital Magnetic Stirrer Heater	19x31x13	4	230 V, 50-60 Hz, 1 ph
HR-AS2250/1	Steel ball, 2 pieces	---	---	---
HR-AS2250/2	Frame	---	---	---
HR-AS2250/3	Brass ring, 2 pieces, EN	---	---	---
HR-AS2250/3A	Brass ring, 2 pieces, ASTM	---	---	---
HR-AS2250/4	Pouring Plate, EN, Metal	---	---	---
HR-AS2250/4A	Pouring Plate, ASTM, Brass	---	---	---
HR-G0007	Glass Beaker, 600 ml	9x9x12,5	0,25	---
HR-G0008/G	Glass Griffin Beaker, 800 ml	10x10x13,5	0,5	---
HR-G0391	Glass Thermometer; max 110 °C	3x3x30	0,1	---
HR-G0392	Glass Thermometer; max 360 °C	3x3x30	0,1	---
HR-G1395	ASTM 15C Thermometer. -2 - (+80) °C.	3x3x30	0,1	---
HR-G1397	ASTM 16C Thermometer. 30-200 °C.	3x3x30	0,1	---