



EIE INSTRUMENTS PVT. LTD.
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AUTOMATIC FRAASS BREAKING POINT TESTER



For Determination of Low Temperature Brittleness of Bituminous Materials, As per EN 12593, IP 80, JIS K 2207

Product Overview

The **Automatic Fraass Breaking Point Tester** is a sophisticated laboratory instrument designed for determining the **Fraass Breaking Point** of bituminous materials in accordance with **EN 12593, IP 80, JIS K 2207**

The Fraass Breaking Point represents the temperature at which a bituminous material tends to **crack or break rather than deform or flow** under specified cooling and bending conditions. This critical parameter is widely used for evaluating the **low-temperature flexibility and brittleness characteristics** of bitumen and bituminous binders, particularly for pavement and roofing applications subjected to cold climatic conditions.

The system employs **microprocessor-based automatic control** to regulate cooling and sample bending operations, ensuring accurate, repeatable, and operator-independent test results.

Designed with integrated temperature control, automated timing, and digital display, the instrument enhances testing efficiency while minimizing manual intervention.

Principle of Test

The Fraass Breaking Point test determines the temperature at which a thin film of bitumen coated on a standardized steel plaque fractures when subjected to repeated bending during controlled cooling. The specimen is cooled at a specified rate while being periodically flexed until cracking occurs. The corresponding temperature is reported as the **Fraass**

Breaking Point.

This test is an important indicator of:

- Low-temperature cracking resistance
- Flexibility characteristics of bitumen
- Suitability of binder for cold climate applications
- Thermal stress behaviour of bituminous materials

Key Features & Advantages

Fully Automatic Test Operation : The instrument incorporates **microcomputer-controlled automation** for precise management of cooling and bending cycles, reducing operator influence and ensuring high repeatability.

Simultaneous Multi-Sample Testing : The system is capable of performing **three tests simultaneously** under identical environmental conditions and automatically calculates the **average test value**, improving productivity and testing reliability.

Automatic Cooling Rate Control : The cooling cycle is automatically regulated through a **computer-controlled low-temperature circulation bath**, maintaining the prescribed cooling rate required by the standard.

Automatic Sample Bending & Timing : The tester includes automatic timing and specimen bending functions, ensuring uniform application of stress during testing and accurate determination of breaking temperature.

Digital Monitoring & Display : The test process and measured parameters are displayed on a **colour LCD screen**, enabling real-time monitoring and simplified operation.

Built-in Test Report Printing : The integrated printer provides convenient documentation and immediate output of test results for laboratory records and quality control purposes.

Customizable Temperature Range : The system can be supplied with an **extended low-temperature measuring capability** for specialized testing requirements.

Technical Specifications

Parameter	Specification
Applicable Standards	EN 12593, IP 80, JIS K 2207
Power Supply	230 V AC, Single Phase, 50 Hz
Refrigeration System	Low Temperature Circulation Bath
Cooling Rate	1 ± 0.5 °C/min
Temperature Control Range	–30°C to +25°C
Optional Extended Range	–40°C to +25°C
Temperature Control Accuracy	±0.5°C
Sample Size	Steel Plaque 41 × 20 × 0.15 mm
Display	Colour LCD
Control System	Microcomputer Based
Test Capacity	Three Samples Simultaneously
Printing Facility	Built-in Printer
Power Requirement	2000 W

Standard Supply

The equipment is supplied complete with:

- Automatic Fraass Breaking Point Tester
- Low Temperature Cyclic Thermostatic Bath
- Stainless Steel Sample Pieces – 6 Nos.
- Necessary Rubber Tubing and Accessories

Additional accessories and laboratory equipment such as **hot plate, furnace, weighing balance, and solvents** supplied separately.

Why This Instrument?

The Automatic Fraass Breaking Point Tester combines **precision temperature control, automated operation, and multi-sample testing capability** to deliver reliable and repeatable evaluation of low-temperature behaviour of bituminous materials.

Its advanced automation, integrated reporting, and compliance with international standards make it an ideal solution for laboratories seeking **high accuracy, improved efficiency, and dependable performance** in bitumen testing.

Technical Specification

•Power Supply	: 230 V AC Single Phase 50 Hz
•Refrigeration	: By Low Temp.circulation bath
•Cooling Rate	: (1±0.5)°C/min
•Temperature Control Range	: -30°C- +25°C
•Control Accuracy	: ±0.5°C
•Sample Size	: steel slice of 41mm×20mm×0.15mm
•Power Requirements	: 2000 W
•Note	: We can customize the breaking point tester with measuring range:-40°C - +25°C

Corporate Office:

A-1301, BVR Ek, Opp. Hotel Inder Residency,
Near Gujarat College, Ellisbridge,
Ahmedabad-380 006.
Phone : (079) 6621 1234
Website : www.eieinstruments.com

Calibration Laboratory:

Survey No. 1098, Nr. Mahakali Temple,
Opp. Primary School, Village Kubadthal,
Tal-Daskroi, Ahmedabad-382 433.
Phone: (079)-3520 8300
E-mail : info@eieinstruments.com

GST TIN No. : 24AABCE4018L1ZU
I.T. PAN No. : AABCE 4018L
IEC No. : 0813026598 Dt. 04/03/2014
CIN No. : U29199GJ2004PTC045078
TAN No. : AHME00572F