



APPARATUS FOR VISCOSITY OF ASPHALTS

Apparatus for Viscosity of Asphalts TT-2171

Apparatus for Viscosity of Asphalts TT-2171 adheres to the ASTM D2171 Standard Test Method for Viscosity of Asphalts by Vacuum Capillary Viscometer.

The viscosity at 60°C characterizes flow behavior and may be utilized for specification requirements for cutbacks and asphalt binders. This measurement involves determining the time taken for a fixed volume of the liquid to be drawn up through a capillary tube via vacuum, under closely controlled conditions of vacuum and temperature. The viscosity in Pascal-seconds is calculated by multiplying the flow time in seconds by the viscometer calibration factor.

APPLICATIONS

The primary application of the Apparatus for Viscosity of Asphalts TT-2171 is to determine the viscosity of asphalts (bitumens) and cutbacks using a vacuum capillary viscometer, in compliance with the ASTM D2171 standard. The test is typically performed at 60°C and is used to characterize the material's flow behavior. This measurement is fundamental for grading asphalt binders and ensuring they meet the specific viscosity requirements for paving and construction applications.

Key Industries

- **Asphalt Production & Petroleum Refining:** This is a core quality control instrument for asphalt producers. They must perform this test to certify that their binders meet the required performance grade (PG) or absolute viscosity grade specifications before sale.
- **Road Construction & Paving:** Paving contractors and the operators of hot-mix asphalt (HMA) plants use this test to verify the quality of the asphalt binder they purchase. Correct viscosity is essential for proper coating of aggregates, pumpability, and achieving the desired workability during paving.
- **Civil Engineering & Materials Testing Laboratories:** These labs, including government agencies like the Department of Transportation (DOT) and independent commercial testers, use this apparatus for quality assurance,

compliance checks, and certification of materials used in public infrastructure projects.

FEATURES

- Storage and time measuring functions.
- Automatic regulation of temperature and vacuum degree.
- Automatic timing function.
- LCD screen with an easy-to-use interface.
- High-precision pressure sensor for measuring vacuum degree.
- Capability to control the parameters of three groups of capillary viscometers and calculate the viscosity value of each section. The tester then selects valid data according to standard requirements and calculates the average value.
- Equipped with a printer for printing test results and historical data.

TECHNICAL SPECIFICATIONS

1. Rated voltage: AC220V $\pm$ 10%, 50Hz. (110V also available)
2. Ambient temperature requirement: 0~50°C.
3. Ambient humidity: $\leq$ 85%.
4. Temperature control range: 0.00~100.00°C, with an accuracy of $\pm$ 0.1°C.
5. Pressure range: 300 $\pm$ 0.5mmHg.
6. Timing accuracy: $\leq$ 0.5%.
7. Measuring range: 4.2~580,000 Pa.s.



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