TORONTECH

THIN FILM OVEN

Thin Film Oven TT-1754

Thin Film Oven TT-1754 is engineered to meet the specifications outlined in the ASTM D1754 Standard Test Method for Effects of Heat and Air on Asphaltic Materials (Thin-Film Oven Test).

This oven serves to approximate the changes in properties of asphalt during conventional hot-mixing at approximately 150℃, as indicated by viscosity, penetration, or ductility measurements. It produces a residue that closely resembles the asphalt's condition when integrated into pavement. Significant deviations in mixing temperature from the 150℃ level may lead to varying effects on properties.

APPLICATIONS

The primary application of the Thin Film Oven (TFO) TT-1754 is to simulate the short-term aging of asphalt binder that occurs during the hot-mixing and paving process, in compliance with the ASTM D1754 standard. The oven exposes a static thin film of asphalt to heat and air to produce an aged residue. This residue is then tested for its physical properties (such as penetration, viscosity, or ductility) to evaluate how the binder will perform after it has been mixed into pavement.

Key Industries

- **Asphalt Production & Petroleum Refining:** This is a fundamental quality control test for asphalt producers. It allows them to assess the aging characteristics of their binders and ensure the material meets required specifications before sale.
- **Road Construction & Paving:** Paving contractors and hot-mix asphalt (HMA) plant operators rely on the results from this test to predict the binder's performance and ensure the final pavement will be durable and resistant to premature aging-related distresses like cracking.
- **Civil Engineering & Materials Testing Laboratories:** These labs, including those for government agencies like the Department of Transportation (DOT), use the TFO as a standard procedure for quality assurance, compliance testing,

and research on asphaltic materials used in public infrastructure.

FEATURES

- Incorporates a thermal insulation layer and duct between the studio and box shell.
- Ensures stable and accurate temperature control.
- Insulated with aluminum silicate cotton for enhanced insulation.
- Equipped with a dedicated air machine to supply the required airflow during the test.
- Utilizes an advanced ASIC chip and manufacturing technology for the temperature sensor of the heating device, ensuring perfect performance.

TECHNICAL SPECIFICATIONS

1. Heating power: 2KW
2. Working temperature: 163℃
3. Temperature accuracy: ±1℃
4. Thermometer range: 155~170℃, resolution: 0.5℃
5. Wheel speed: 5.5±1rpm
6. Studio size: 420*450*350
7. External dimensions: 820*540*600
8. Rated voltage: 220V±5%, 50Hz (110V also available)

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