

RTFO (Rapid Thin Film Oven)



Year of Purchase: 2012

Cost: 0.95 Lac

Description:

Rolling Thin Film Oven (RTFO) Test measures the effect of heat and air on a moving film of hot mix asphalt binder, simulating short-term aging that occurs during production and paving operations. This is important for investigating and predicting early age HMA pavement behavior and distress.

RTFO Test Procedure

1. A sample of asphalt binder is heated and dispensed into special glass specimen bottles
2. The bottles are mounted horizontally in a carousel in the oven
3. Bottles are rotated at 15rpm for 85 minutes as a jet of 325°F heated air is directed into them
4. At the completion of the RTFO test, the mass change, viscosity, and other rheological properties are measured
5. Measurements are then compared to values from unheated samples

For a complete description of the procedure, reference AASHTO T 240 and ASTM D 2872: Effect of Heat and Air on a Moving Film of Asphalt.

The Benefits:

RTFO's offer several benefits that traditional thin-film ovens do not provide.

- The carousel continuously exposes heat and airflow with a consistent rolling action
- Keeps asphalt binder modifiers dispersed
- Eliminate surface skin, which can inhibit the aging of asphalt binder
- Expedite test times, taking just 85 minutes on average
- Improve test accuracy and repeatability
- Offer simple operation with minimal training required