

## REVOLVING SHELF OVEN

The **B4305** and **B4306** oven is a rotating shelf-gravity convection unit that is used to perform the "Thin Film" test on asphaltic materials. The oven has a rotating tray in which a sample is placed and the effect of air and heat on the sample is measured. The oven has a temperature range of 40° to 260° C (500° F). The oven also has a viewing window and an inside dimension of 19" wide x 18" deep x 15" high. Available in 110V/60Hz and 220V/50Hz. Also available are thin film test pans which are used in testing the effect of heat and air on semisolid asphaltic materials. The pans meet ASTM D-1754 and AASHTO T-179 standards and are available in aluminum or stainless steel.



MODELS	DESCRIPTION	STANDARDS
<b>B4305</b>	REVOLVING SHELF OVEN, 110V / 60 Hz	ASTM D-6, D-1754 / AASHTO T-179, T-47
<b>B4306</b>	REVOLVING SHELF OVEN, 220V / 50 Hz	

ACCESSORIES	DESCRIPTION
<b>B6301</b>	THIN FILM, ALUMINUM, 5-1/2" X 3/8"
<b>B6302</b>	THIN FILM, STAINLESS STEEL, 5-1/2" X 3/8"

## ROLLING THIN FILM OVEN

The Rolling Thin Film Oven meets the requirements for thin film and loss on heating tests and is the preferred oven of SHRP for simulation of short-term aging of asphalt binders. It measures the effect of heat and air on a moving film of semisolid asphaltic material. The oven is designed with a flow meter that is able to measure up to 10 liters per minute, moisture indicator and mounted air pressure gauge with regulator, complete for single point connection to air compressor. The test rack in the oven rotates at 15 RPM and holds up to 8 glass containers (included). The oven has a digital temperature controller with a relay heater control that is able to hold within ±1°F at 350°F.



MODELS	DESCRIPTION	STANDARDS
<b>B4307</b>	ROLLING THIN FILM OVEN, 110V / 60 Hz	ASTM D-2872 / AASHTO T-240 / CA 346
<b>B4308</b>	ROLLING THIN FILM OVEN, 220V / 50 Hz	

ACCESSORIES	DESCRIPTION
<b>B4309</b>	EXTRA GLASS CONTAINER
<b>B7551</b>	EXTRA 13 C ASTM THERMOMETER
<b>G8133</b>	AIR COMPRESSOR

## LABORATORY PENETROMETER

The **B4401** penetrometer is the standard instrument for penetration measurements. This direct reading penetrometer accurately determines the consistency of bituminous materials, cement, petroleum, and waxes. The unit is ruggedly constructed and provides sensitive and accurate measurements. The plunger is calibrated to 50 grams when used with standard ASTM needle. The unit is furnished with standard ASTM needle and two additional weights (50gm and 100gm). The **B4405** ASTM needle is constructed from stainless steel with brass ferrule and is 3.2 mm diameter (weight 2.5 g).



MODELS	DESCRIPTION	STANDARDS
<b>B4401</b>	LABORATORY PENETROMETER	ASTM D-5, D-217, D-937, D-1168, D-1191, D-1321, D-1403, D-1831, D-1855 / AASHTO T-49, T-187 / FED SPECS. SS-R-406

ACCESSORIES	DESCRIPTION
<b>B4405</b>	NEEDLE, ASTM TYPE, W/ SHANK
<b>B4406</b>	NEEDLE, CERTIFIED, W/ SHANK
<b>B4408</b>	TRANSFER DISH
<b>B4411</b>	CONE BRASS, STAINLESS STEEL
<b>B4412</b>	CONE, STAINLESS STEEL

## LABORATORY PENETROMETER W/ TIMER

This unit is an automated version of the **B4401** penetrometer. The electric penetrometer comes equipped with a digital timer and release mechanism. The timer can be set from 0.1 of a second to 9.9 seconds in increments of 0.1 seconds. The plunger is released by pushing a button and is automatically stopped after the preset time interval is achieved. The unit is available in both 110V/60Hz and 220V/50Hz models (please specify model needed).



MODELS	DESCRIPTION	STANDARDS
<b>B4402</b>	LABORATORY PENETROMETER W/ TIMER, 110V / 60 Hz	ASTM D-5, D-217, D-937, D-1168, D-1191, D-1321, D-1403, D-1831, D-1855 / AASHTO T-49, T-187 / FED SPECS. SS-R-406
<b>B4402</b>	LABORATORY PENETROMETER W/ TIMER, 220V / 50 Hz	

ACCESSORIES	DESCRIPTION
<b>B4405</b>	NEEDLE, ASTM TYPE, W/ SHANK
<b>B4406</b>	NEEDLE, CERTIFIED, W/ SHANK
<b>B4408</b>	TRANSFER DISH
<b>B4411</b>	CONE BRASS, STAINLESS STEEL
<b>B4412</b>	CONE, STAINLESS STEEL

## FIELD PENETROMETER

This unit is a lightweight portable field version of the lab penetrometer. The micrometer adjusts for both accurate and coarse readings. The instrument is easily disassembled. The unit is furnished with one additional 50 gram weight and standard ASTM needle.



MODELS	DESCRIPTION	STANDARDS
<b>B4421</b>	FIELD PENETROMETER	ASTM D-5, D-217, D-937, D-1168, D-1191, D-1321, D-1403, D-1831, D-1855 / AASHTO T-49, T-187 / FED SPECS. SS-R-406

ACCESSORIES	DESCRIPTION
<b>B4405</b>	NEEDLE, ASTM TYPE, W/ SHANK
<b>B4406</b>	NEEDLE, CERTIFIED, W/ SHANK
<b>B4408</b>	TRANSFER DISH
<b>B4411</b>	CONE BRASS, STAINLESS STEEL
<b>B4412</b>	CONE, STAINLESS STEEL

## RING AND BALL SET (GAS TYPE)



For determining the softening point of asphalt (bitumen) and tar. Set includes burner, beaker, support stand with one ring, wire gauze with asbestos center, thermometer clamp, shouldered ring and stem and hardened steel ball. Softening point thermometer (**B7617** or **B7618**) not furnished with set.

MODELS	DESCRIPTION	STANDARDS
<b>B5021</b>	RING AND BALL SET (GAS TYPE)	ASTM D-36, D-2398 / AASHTO T-53