

Asphalt Binder Analyser



carbolite asphalt binder analyser



The Carbolite asphalt binder analyser is fully compliant with the latest standards, these include:

- BS EN 12697-39:2004
- ASTM D 6307-98
- AASHTO T 308-99

All of these standards specify the equipment and procedures needed to determine the asphalt binder content of hot mix asphalt / bituminous mixtures by the loss on ignition method.

This method replaces the traditional solvent procedure and thereby not only avoids the health and environmental concerns associated with chlorinated solvents, but also the related expense of such chemicals.

The asphalt binder analyser combines a sophisticated furnace and weighing system to continuously measure the weight loss of a bituminous mixture during combustion, and automatically calculates its binder content at the end of the test.

the test

- Once the test has commenced, the door is automatically locked for the entire period of the test and the extraction fan is automatically started. Average test times range from 20 minutes for 6mm samples, to 45 minutes for a 40mm sample. During the test, the integral dot matrix display shows the asphalt sample weight to a display accuracy of 0.1g, the present weight loss (both in grams and as a %), the rate of change of sample weight and also the duration of the test. This unique display gives an immediate indication of the progress of the test. The binder content, percentage weight loss and calibration factor are measured to 0.01%.
- At the end of the test, which is signalled by an audible alarm, the display changes to clearly show the binder content of the sample, the door is unlocked and the results are printed. A choice of printouts is available; either as a final end of test analysis or as a continuous print-out showing results every minute including a final end of test analysis. Additional print outs can be requested at the end of the test for permanent records of test documentation.
- The final printed test results include the furnace set temperature, sample weight, final weight, weight loss in grams and percentage weight loss, calibration factor, test run time, the time and date.

TEST DATA			
Run Time	Sample Weight	Weight Loss	% Loss
1	1500.0	0.0	0.00
2	1500.0	0.0	0.00
3	1499.9	0.1	0.01

27	1414.0	86.0	5.73
28	1413.4	86.6	5.77
29	1413.2	86.8	5.79
30	1413.0	87.0	5.80

ASPHALT BINDER TEST RESULTS	
LIBRARY TEST NAME	
Furnace Set Temp. :	540°C
Sample Weight :	1500.0g
Final Weight :	1413.0g
Weight Loss :	87.0g
% Loss :	5.80%
Asphalt C. F. :	0.60%
Test Run Time :	30min
Time :	10:51
Date :	12/05/06
<hr/>	
ASPHALT BINDER CONTENT	5.20%
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Mix ID :
Sample :
Binder Spec :
Operator :

Initial sample weight measured externally & entered manually or automatically

Sample weight loss during test as grams

Total sample weight loss during test as %

Asphalt calibration factor: predetermined CF for current sample

Final calibrated asphalt binder content

Print format for an asphalt calibration factor showing running test data



ABA 7/35 with optional floor stand

benefits

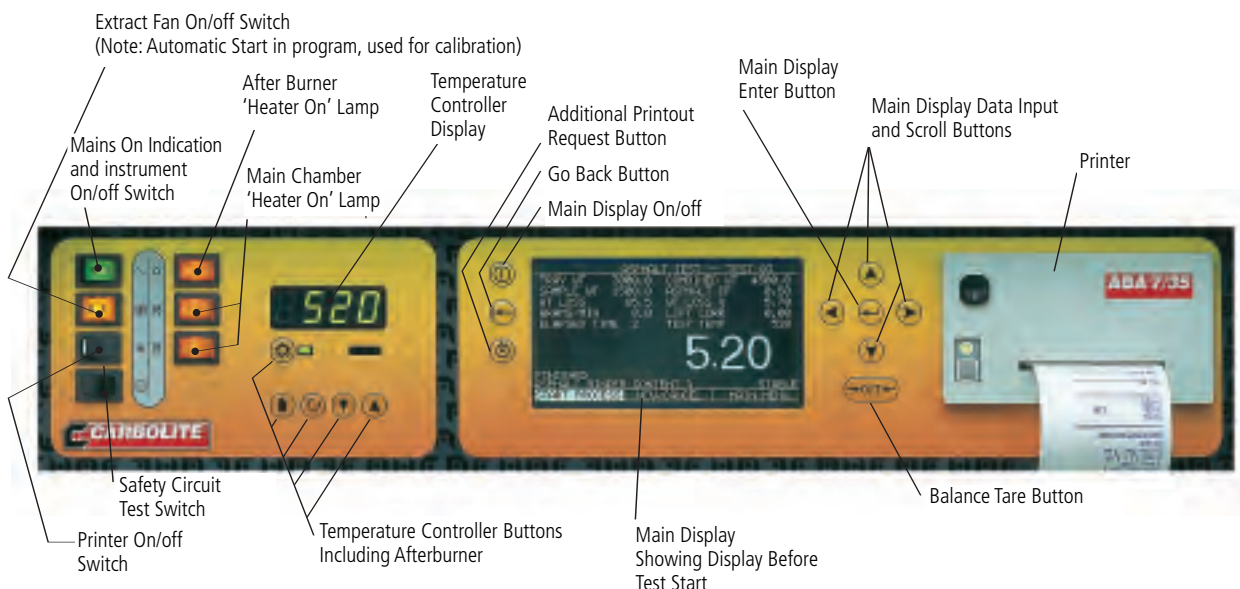
- The ability to automatically calculate and use calibration factors based on both asphalt mixes and dry aggregates.
- Unique automatic input of sample start weight via an optional second external Ohaus balance, which eliminates operator error.
- Rapid heat up rates permit the unit to be switched off between tests, resulting in reduced power consumption and eliminating the need for a 24-hour timer.
- Customisation of test parameters and ability to save named test setups in a library.
- Choice of print format: either continuously throughout the test showing the results at minute intervals or a final end of test analysis.
- Permits large sample sizes (up to 4.5kg) to be tested.
- Precise measurement - weights measured to 0.1g.
- User friendly design.
- Cost savings due to reduction in testing time and elimination of costly chemicals.

safety features

- Automatic door locking during testing which cannot be disabled by interruption of the power supply once the test has commenced.
- Door safety switch isolates power to the elements when the door is opened.
- Independently controlled afterburner significantly reduces furnace emissions, as specified by the test standards.
- Eliminates health and environmental concerns related to the use of chlorinated solvents.

- The control panel incorporates the temperature controls for the main chamber and the afterburner, an easy to read dot matrix display where helpful step by step

instructions, test set-up parameters and all test results are displayed, a printer that provides a permanent record of tests, and on/off power controls.



technical data & ordering information

construction

- The use of double skin construction ensures a safe and cooler outer case temperature.
- A door safety switch cuts power to the elements when the door is opened and a 180° side opening door allows complete access to the chamber.
- Low thermal mass insulation ensures that the furnace, rated at 750°C, is ready for use after only 30 minutes heat up time; this rapid heat up time allows the unit to be switched off in between tests and eliminates the need for a 24 hour timer.
- Exposed element coils are recessed from the chamber opening and have the advantage of increased life due to lower element loading and the reduced risk of contamination build up on the element surface.
- The balance pan extension in the furnace chamber ensures that the sample tray is guided into position and is positively located within the chamber, ensuring ease of loading/unloading and preventing contact with the elements.
- The balance can be simply calibrated using standard weights whilst in position. A lift compensation factor allows for the lift created by the volatile extraction fan and reduced air density.
- Input of the sample start weight, which must always be weighed externally, can be entered either manually or uniquely and automatically via an optional second external Ohaus balance connected to the unit via RS232 digital communications, this eliminates the possibility of operator error.
- Both 'asphalt mix' and 'dry aggregate' calibration factors can be determined automatically by the ABA unit. The unit has the unique advantage of being able to calculate the binder contents using calibration factors based on asphalt mixes and dry aggregate samples, without the need for a conversion between the two. Test set up parameters can be saved with unique (customer specified) file names into libraries and easily recalled at a later date.
- The digital temperature controller (Carbolite model 301, which is designed exclusively by Eurotherm) indicates the furnace chamber temperature and furnace chamber temperature as well as the afterburner temperature. The push buttons are housed behind an integral wipe-clean membrane.

Model	ABA 7/35
Maximum operating temperature (°C)	750
Internal chamber dimensions	
Height (mm)	220
Width (mm)	350
Depth (mm)	450
TC type	K
Maximum power (KW)*	8.0
External dimensions:	
Height (mm)	980
Width (mm)	600
Depth (mm)	750
Weight (kg)	120

* The furnace is rated at 8KW for operation on 208 / 240 volts, 50 / 60 Hz, three or single phase. The furnace holding power is approximately 3KW.

ABA accessories

The analyser is supplied with two sets of sample trays*, loading handle, cooling cage and printer paper (all shown in image 1)

Other optional extras include, relevant PPE (image 2), furnace floor stand, extraction kit, cooling stand (image 3) and extra baskets.

* - a set of sample baskets includes 2 x nesting sample baskets, 1 x sample lid, 1 x small basket clip for using one basket, 1 x large basket clip for using with two baskets and 1 x sample basket catch tray.





Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.