

Clay Bricks - Water Absorption

Lab Test Reference 337
British Standard Reference
BS 3921 : 1985

Principal Apparatus

Water Bath Inventory No. xxx
Drying Oven Inventory No. (BS2648) xxx
Laboratory Balance Inventory No. Xxx

1. Preliminaries
 - 1.1 The test shall be carried out in the Bituminous Laboratory. A clear area of bench shall be set up and the water bath filled to the marks shown on the inside of the bath. A check shall be made to ensure the elements are functioning correctly. Warm or Hot water shall be used.
 - 1.2 Check the sample number and Test Schedule correspond.
 - 1.3 Obtain a test worksheet from the Cabinet in the Concrete Laboratory.
 - 1.4 Check that the Drying Oven and Laboratory Balance Calibration Certificates are valid.
2. Standard Test Method
 - 2.1 The sample of 10 bricks is first dried in the oven at a temperature of 110-115°C for a least 48 hours. These are then allowed to cool in the oven with the oven switched off until they reach ambient room temperature and then each weighed on the electronic balance to an accuracy of 0.1%. Ensure there is space between the bricks.

(NB Do not put bricks in a cold oven)
 - 2.2 Each specimen in turn is then placed in the water bath allowing water freely to circulate on all sides, with at least 10mm space between the brick and the side of the bath.
 - 2.3 The bath is then switched on and when the water is seen to boil, a further period 5 hours should pass until the bath is switched off.
 - 2.4 After switching off, the bricks, still immersed in the water, are allowed to cool to room temperature, for not less than 16H or more than 19H removed from the bath, dried to saturated surface dried condition, and weighed on the balance.
 - 2.5 Weighing should be completed within 2 minutes from their removal from the bath.
 - 2.6 The water absorption is calculated using the formula.

$$A = 100 \frac{(\text{wet mass} - \text{dry mass})}{\text{dry mass}}$$

and the average of the ten specimens also calculated and reported to the nearest 0.1%.