STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
METHODS OF TESTING PORTLAND AND BLENDED CEMENTS

AS 2350.5
CONSTANCY OF VOLUME OF PORTLAND AND BLENDED CEMENTS

1 SCOPE. This standard sets out the method for the determination of the constancy of volume of portland and blended cements.

2 APPARATUS. The following apparatus shall be used:

(a) *Test apparatus.* The apparatus for conducting the Le Chatelier test shall be as shown in Fig. 1.

(b) *Le Chatelier moulds.* The Le Chatelier moulds shall conform to Fig. 1 and the tolerances shown thereon.

(c) *Laboratory.* The air within the laboratory in which the specimens are made and tested shall be maintained at a temperature of 23 ± 2°C.

3 PRINCIPLE. A test for the constancy of the volume of the bulk sample and each individual sample shall be made by the Le Chatelier method. In this method an increase in volume of the cement is indicated by an increase in the distance separating the indicator points of the apparatus.

4 PREPARATION OF MOULDS. The moulds shall be kept in good condition, having the split not more than 1.0 mm apart at any point.

5 AERATION OF SAMPLES. If the samples are to be aerated for 7 days before test (see AS 1315 or AS 1317, as appropriate), the aeration shall consist of storing the sample in an open container in a bed not deeper than 50 mm at a room temperature of 23 ± 2°C.

6 PROCEDURE. The constancy of volume of the cement shall be determined using the following procedure:

(a) Place the mould on a glass plate and fill with cement paste of approximately normal consistency, care being taken to keep the split of the mould gently together whilst this operation is being performed.

(b) Cover the mould with another glass plate, upon which a small weight shall be placed, and then immediately submerge the whole in water at a temperature of 23 ± 2°C and leave for 24 h.

(c) Measure the distance separating the indicator points, again submerging the mould in cold water which shall be brought to boiling point in 25 min to 30 min, and kept boiling for 6 h and then allowed to cool to normal room temperature.

(d) Again remove the mould from the water and measure the distance between the points.

7 INTERPRETATION OF RESULTS. The expansion of the sample shall be taken as the difference between measurements to the nearest 1 mm made before and after boiling.

8 REPORT. The results shall be recorded in the appropriate Cement Test Certificate in accordance with AS 2350.1.