

3. DETERMINATION OF SOUNDNESS OF CEMENT
BY THE LE CHATELIER METHOD.
(IS : 4031 – part – 3)

Object:

Determination of the Soundness of cement by the Le Chatelier method.

Apparatus:

The apparatus for conducting the test consists of small split cylinder of spring brass or other suitable metal of 0.5 mm thickness, forming a mould 30 mm internal diameter and 30 mm high. On either side of the split mould are attached two indicators with pointed ends, the distance from these ends to the center of the cylinder being 165 mm. The mould shall be kept in good condition with the Jaws not more than 0.50 mm apart.

Procedure:

Place the mould on a glass sheet and fill it with cement paste formed by gauging cement with 0.78 times the water required to give a paste of standard consistency. The paste shall be gauged in the manner and under the conditions prescribed in determination of consistency of standard cement paste, taking care to keep the edges of the mould gently together while this operation is being performed. Cover the mould with another piece of glass sheet, place a small weight on this covering glass sheet and immediately submerge the whole assembly in water at a temperature of $27^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and keep there for 24 hours.

Measure the distance separating the indicator points. Submerge the moulds again in water at the temperature prescribed above. Bring the water to boiling, with the mould kept submerged, in 25 to 30 minutes, and keep it boiling for three hours. Remove the mould from the water, allow it to cool and measure the distance between the indicator points. The difference between these two measurements represents the expansion of the cement.

Limits:

Expansion should not be more than 10 mm.