

भारतीय मानक

‘ली-शेटेलियर’ परीक्षण में प्रयुक्त उपकरण — विशिष्ट

(पहला पुनरीक्षण)

Indian Standard

APPARATUS USED IN ‘LE-CHATELIER’
TEST — SPECIFICATION

(*First Revision*)

ICS 91.100.10

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Cement and Concrete Sectional Committee had been approved by the Civil Engineering Division Council.

The Bureau of Indian Standards has formulated a series of standards on different types of cement and methods of chemical and physical test. As it has been recognized that reliable and reproducible test results could be obtained only with standard types of testing equipments which are capable of giving the desired level of accuracy, a series of specifications covering the requirements of testing equipments have been brought out to encourage the development and manufacture of standard testing equipments for cement testing in the country.

This standard was first brought out in 1969. The present revision has been taken up with a view to aligning this standard with EN 196-3 : 1987 'Methods of testing cement : Determination of setting time and soundness'. Major modifications include addition of resilience test for the Le-Chatelier apparatus with a corresponding figure showing the details of this test, arrangement of loops for facility of demoulding of specimen.

The composition of the Committee responsible for the formulation of this standard is given at Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

APPARATUS USED IN 'LE-CHATELIER' TEST — SPECIFICATION

(First Revision)

1 SCOPE

This standard covers the requirements of the apparatus used in determining the soundness of cement by 'Le-Chatelier' test.

2 CONSTRUCTION

2.1 The apparatus shall consist of a small split cylinder of spring brass or other suitable non-corrodible metal of 0.5 mm thickness forming a mould 30 mm internal diameter and 30 mm high. On either side of the split, two indicators shall be brazed suitably with pointed ends made of 2 mm diameter brass wire *AA* as shown in Fig. 1, such that the distance of these ends from the centre of the cylinder is 165 mm. The resilience of the mould shall be such that the action of a mass of 300 g applied as shown in Fig. 2 shall increase the distance between the indicator ends of the needle by $17.5 \text{ mm} \pm 2.5 \text{ mm}$ without permanent deformation. The split cylinder shall be kept between two glass plates as shown in Fig. 1. A pair of plane glass base and cover plates shall be provided for each mould. Each plate shall be larger than the mould, preferably of size 35 mm \times 35 mm. The cover plate shall weigh at least 75 g; an additional small mass may be placed on a thin plate to satisfy this requirement. Two loops of suitable material and strength soldered to the upper half of the mould on each side of the central split (see Fig. 1B) shall be provided

to facilitate demoulding of the hardened paste specimen after test.

2.2 For boiling, water-bath with means of heating, capable of containing immersed Le-Chatelier specimens and of raising the temperature of the water to boiling in $30 \text{ min} \pm 5 \text{ min}$ shall be used.

3 DIMENSIONS

Dimensions of the split cylinder and the pointers shall be as detailed in Fig. 1, and shall have the tolerances indicated in Table 1.

4 MARKING

The following information shall be clearly and indelibly marked on the apparatus in such a manner that it does not interfere with the performance of the apparatus:

- a) Indication of the source of manufacture, and
- b) Date of manufacture.

5 BIS CERTIFICATION MARKING

5.1 The use of Standard Mark is governed by the provisions of *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Table 1 Dimensions of the Split Cylinder and the Pointers
(Clause 3)

Sl No.	Description	Dimensions	
		Nominal mm	Tolerance mm
(1)	(2)	(3)	(4)
i)	Outer side of the mould to the end of the indicator	150	± 0.3
ii)	Internal diameter of the mould	30	± 0.15
iii)	Wall thickness of the mould	0.5	± 0.05
iv)	Height of mould	30	± 0.15
v)	Split	0.5 Max	—

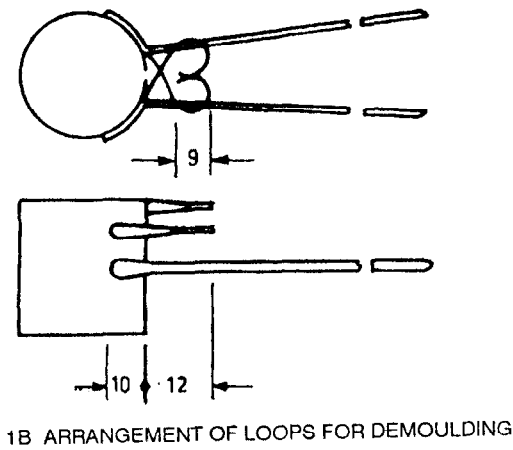
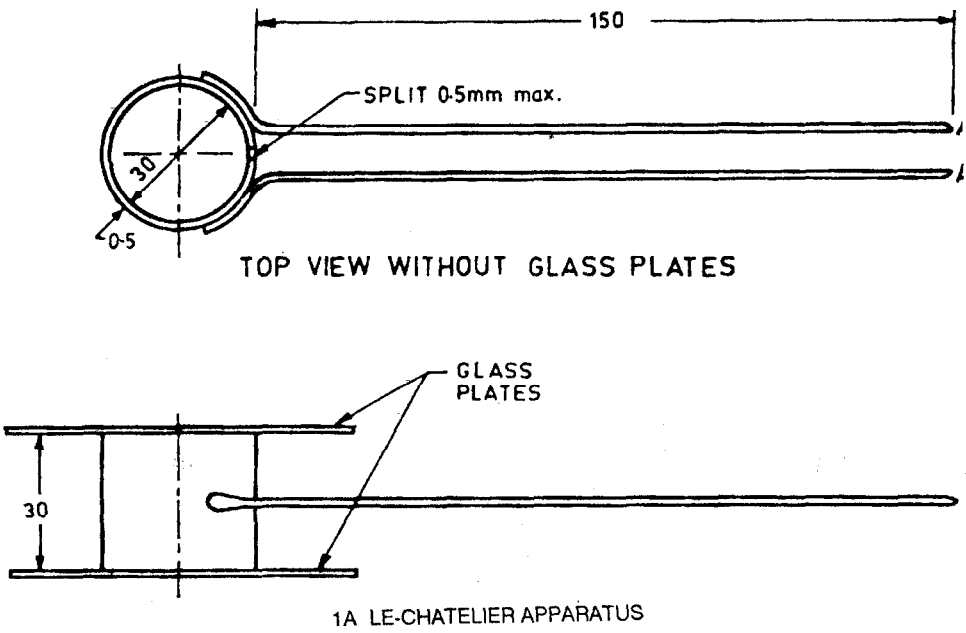
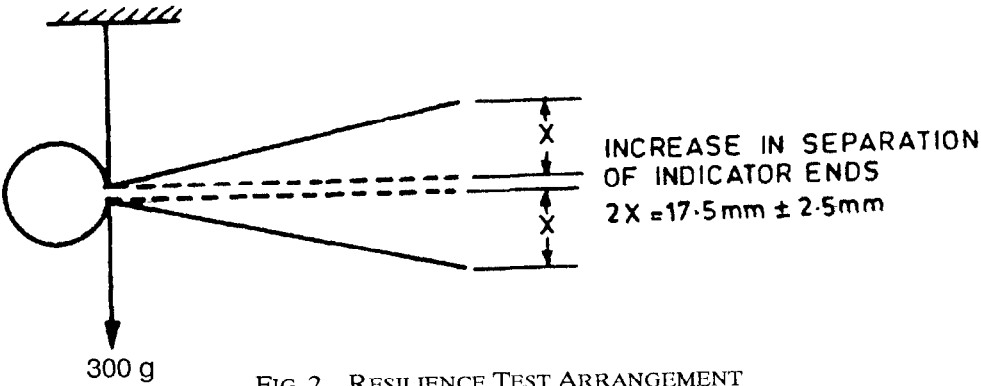


FIG. 1 APPARATUS USED IN 'LE-CHATelier' TEST



ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Cement and Concrete Sectional Committee, CED 2

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Amendments Issued Since Publication

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