Indian Standard (Reaffirmed 1995)

METHODS OF TESTS FOR BUILDING LIMES

PART X DETERMINATION OF POPPING AND PITTING OF HYDRATED LIME

(Third Reprint MARCH 1993)

UDC 691·51 : 620·191·36/·37

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

Gr 1 *February* 1974

Indian Standard

METHODS OF TESTS FOR BUILDING LIMES

PART X DETERMINATION OF POPPING AND PITTING OF HYDRATED LIME

0. FOREWORD

0.1 This Indian Standard (Part X) was adopted by the Indian Standards Institution on 22 March 1973, after the draft finalized by the Building Limes Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Hitherto, methods of tests for assessing qualitative requirements of building limes were included in IS : 712-1964. For facilitating the use of these tests it has been decided to print these tests as different parts of a separate Indian Standard. This part covers determination of popping and pitting of building limes.

0.3 In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS : 2-1960*.

1. SCOPE

1.1 This standard (Part X) covers the method of test for determination of popping and pitting of hydrated lime.

2. GENERAL

2.1 Preparation of the Sample — The sample shall be prepared in accordance with **7.2** of IS : 712-1973†.

*Rules for rounding off numerical values (*revised*).

†Specification for building limes (*second revision*).

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

2.2 The distilled water (*see* IS : 1070-1960*) shall be used where use of water as a reagent is intended.

3.3 TEST FOR POPPING AND PITTING

3.1 Gauging Plaster — The gauging plaster used for popping and pitting test when gauged with 50 percent of its own mass of distilled water and tested by the Vicat needle in accordance with IS : 4031-1968† shall have an initial setting time of not less than 15 minutes. The gauging plaster shall be free from pops and pits. Fresh, fine, white and good quality plaster of Paris which shows no pops or pits when tested without lime may be used.

3.2 Procedure

3.2.1 Four test specimens shall be separately prepared in the manner described under **3.2.1.1** to **3.2.1.8**.

3.2.1.1 Mix thoroughly 70 g of the hydrated lime under test with 70 ml of clean water at a temperature 27 ± 3 °C and allow to soak for 2 hours.

3.2.1.2 At the expiration of 2 hours, the lime putty thus obtained shall be thoroughly mixed and ' knocked up ' with a trowel, if necessary, with a small additional amount of clean water, so as to obtain a plastic mass; it shall then be spread out on a non-porous surface, 10 g of approved grade plaster of Paris shall then be added, the plaster being scattered evenly over the putty, and the whole shall be mixed with the trowel rapidly and thoroughly for 2 minutes.

3.2.1.3 A flat pat shall then be formed by pressing the gauged material into a ring mould 10·0 cm in diameter and 0·5 cm deep, greased inside and resting on a well-greased non-porous plate. One gram of petroleum jelly per pat is suitable for greasing when renewed each time.

3.2.1.4 The gauged putty shall be pressed in small quantities at a time, with the aid of a broad palette knife or spatula, in such a manner as to avoid air bubbles. It shall then be smoothed off in level with the top edge of the ring with not more than 12 strokes of the knife, any excess material being removed in this process. The total time shall not exceed 5 minutes from the time of adding the plaster of Paris to the last stroke of the knife for any one pat.

3.2.1.5 The 4 pats thus formed shall be left to set for half an hour. They shall then be transferred on their base-plates with or without their ring mould to a well ventilated drying-oven maintained at a temperature between 35 and 45°C to be well dried. A period or periods amounting to a total of 16 hours should be ample for this purpose but a minimum of 4 hours suffices in many cases.

*Specification for water, distilled quality (*revised*). (Since revised).

†Methods of physical tests for hydraulic cement.

3.2.1.6 The pats may be left in the oven either before drying or between the periods of drying.

3.2.1.7 Any test pats which show shrinkage cracks before steaming shall be rejected and replaced by fresh pats.

3.2.1.8 The 4 pats, still on their base-plates, shall be placed horizontally in a suitable steam boiler in which the water is already boiling, and subjected to the action of saturated steam at atmospheric pressure for a period of 3 hours. The steaming vessel shall be so arranged that condensed water cannot drip back on to the face of the pats.

3.2.2 The pats shall then be examined in a good light for disintegration, popping or pitting.

BUREAU OF INDIAN STANDARDS

Headquarters:
Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002
Telephones : 331 01 31, 331 13 75 Telegrams : Manaksanstha
(Common to all offices)

Regional Offices:		*Telephones*
Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI-110002	331 01 31 331 13 75
*Eastern	: 1/14 C.I.T. Scheme VII M, V. I. P. Road, Maniktola, CALCUTTA 700054	36 24 99
Northern	: SCO 445-446, Sector 35-C, CHANDIGARH 160036	2 18 43 3 16 41
Southern	: C. I. T. Campus, MADRAS 600113	41 24 42 41 25 19 41 29 16
†Western	: Manakalaya, E9 MIDC, Marol, Andheri (East), BOMBAY 400093	6 32 92 95

Branch Offices:

'Pushpak' Nurmohamed Shaikh Marg, Khanpur, AHMEDABAD 380001	2 63 48 2 63 49
‡Peenya Industrial Area, 1st Stage, Bangalore Tumkur Road BANGALORE 560058	38 49 55 38 49 56
Gangotri Complex, 5th Floor, Bhadbhada Road, T. T. Nagar, BHOPAL 462003	6 67 16
Plot No. 82/83, Lewis Road, BHUBANESHWAR 751002	5 36 27
53/5, Ward No. 29, R. G. Barua Road, 5th Byelane, GUWAHATI 781003	3 31 77
5-8-56C L. N. Gupta Marg (Nampally Station Road), HYDERABAD 500001	23 10 83
R14 Yudhister Marg, C Scheme, JAIPUR 302005	6 34 71 6 98 32
117/418 B Sarvodaya Nagar, KANPUR 208005	21 68 76 21 82 92
Patliputra Industrial Estate, PATNA 800013	6 23 05
T.C. No. 14/1421, University P.O., Palayam TRIVANDRUM 695035	6 21 04 6 21 17

Inspection Office (With Sale Point) :

Pushpanjali, 1st Floor, 205-A West High Court Road, Shankar Nagar Square, NAGPUR 440010	2 51 71
Institution of Engineers (India) Building, 1332 Shivaji Nagar, PUNE 411005	5 24 35

*Sales Office in Calcutta is at 5 Chowringhee Approach, P.O. Princep Street, Calcutta 700072 — 27 68 00

†Sales Office in Bombay is at Novelty Chambers, Grant Road, Bombay 400007 — 89 65 28

‡Sales Office in Bangalore is at Unity Building, Narasimharaja Square Bangalore 560002 — 22 36 71

Printed at Simco Printing Press, Delhi, India