IS 1760-1 (1991): Methods of chemical analysis of limestone, dolomite and allied materials, Part 1: Determination of loss on ignition [MTD 13: Ores and Raw Materials]

BLANK PAGE

IS 1760 (Part 1) : 1991
(Reaffirmed 2001)

भारतीय मानक

चूना पत्थर, डोलोमाइट एवं सम्बद्ध सामग्री का रासायनिक विश्लेषण

भाग 1 दहन पर क्षति ज्ञात करना

(पहला पुनरीक्षण)

Indian Standard

CHEMICAL ANALYSIS OF LIMESTONE, DOLOMITE AND ALLIED MATERIALS

PART 1 DETERMINATION OF LOSS ON IGNITION

(First Revision)

UDC 553·551 : 543·83

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

September 1991

Price Group 1

FOREWORD

This Indian Standard (Part 1) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Methods of Chemical Analysis of Ores, Minerals and Allied Materials for Metallurgical Industry Sectional Committee had been approved by the Metallurgical Engineering Division Council.

IS 1760 was first published in 1962. It covers the determination of different elements in various grades of minerals like limestone, dolomite, calcite and magnesite. It also covers the methods for magnesite refractories. The committee decided to revise this standard into different parts covering determination of each element in a separate part, which on publication would supersede the determination of that element given in IS 1760 : 1962. This Part covers determination of loss on ignition and has been updated on the basis of experience gained during the past. Other parts in the series are as follows:

Part 2 Determination of silica
Part 3 Determination of iron oxide, alumina, calcium oxide and magnesia
Part 4 Determination of carbon dioxide
Part 5 Determination of chlorides

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

Indian Standard

CHEMICAL ANALYSIS OF LIMESTONE, DOLOMITE AND ALLIED MATERIALS

PART 1 DETERMINATION OF LOSS ON IGNITION

(First Revision)

1 SCOPE

This standard (Part 1) describes the method for determination of loss on ignition in the range from 40 to 50 percent in limestone, dolomite and allied materials.

2 REFERENCE

The IS 2109 : 1982 'Methods of sampling of dolomite, limestone and other allied materials' is necessary adjunct to this standard.

3 SAMPLING

3.1 The sample shall be drawn and prepared in accordance with IS 2109 : 1982.

3.2 Grind 5 to 10 g of the prepared sample drawn under **3.1** so that it passes through IS sieve 15 (100 mesh). Dry to constant mass at 105 ± 2°C and use it for the purpose of chemical analysis.

4 DETERMINATION OF LOSS ON IGNITION

4.1 Outline of the Method

The sample is ignited at 1 000°C in a muffle furnace and the loss in weight is determined.

4.2 Procedure

4.2.1 Weigh 1·000 g of the test sample into a previously weighed platinum crucible. Heat gently at first, and then at a gradually increasing temperature. Finally ignite at 900 to 950°C for half an hour and raise the temperature to 1 000°C. Keep for about 10 minutes, cool and weigh. Repeat heating, cooling and weighing till constant mass is obtained. Difference in mass represents loss on ignition.

4.3 Calculation

$$\text{Loss on ignition, percent by mass} = \frac{m_1 - m_2}{M} \times 100$$

where

m_1 = mass in g, of the crucible with sample,

m_2 = mass in g, of the crucible with the residue after ignition, and

M = mass in g, of the sample taken.

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Revision of Indian Standards

Indian Standards are reviewed periodically and revised, when necessary and amendments, if any, are issued from time to time. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition. Comments on this Indian Standard may be sent to BIS giving the following reference :

Doc : No. MTD 29 (3592)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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 :	Telephone
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	37 86 62
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	53 38 43
Southern : C.I.T. Campus, IV Cross Road, MADRAS 600113	2350216
Western : Manakalaya, E9 MIDC, Marol, Andheri (East) BOMBAY 400093	6 32 92 95

Branches : AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. PATNA. THIRUVANANTHAPURAM.

Printed at Swatantra Bharat Press, Delhi, India