भारतीय मानक **IS 1760 (Part 1) : 2024**

Indian Standard

चूना पत्थर, डोलोमाइट और सम्बद्ध सामग्री का रासायनिक विश्लेषण

भग 1 दहन पर क्षति का निर्धारण

(दूसरा पुनरीक्षण)

Chemical Analysis of Limestone, Dolomite and Allied Materials

Part 1 Determination of Loss on Ignition

(Second Revision)

ICS 77.040.30

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

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Methods of Chemical Analysis of Metals Sectional Committee, MTD 34

FOREWORD

This Indian Standard (Part 1) (Second Revision) was adopted by the Bureau of Indian Standards after the finalized by the Methods of Chemical Analysis of Metals Sectional Committee had been approved of the Metallurgical Engineering Division Council.

This standard was first published in 1962 and subsequently revised in 1991. This revision has been brought out to bring the standard in the latest style and format of the Indian Standards. 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.

This part covers determination of loss on ignition, other parts 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

The composition of the Committee responsible for the formulation of this standard is given in 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, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be same as that of the specified value in this standard.

Indian Standard

CHEMICAL ANALYSIS OF LIMESTONE, DOLOMITE AND ALLIED MATERIALS

PART 1 DETERMINATION OF LOSS ON IGNITION

(Second Revision)

1 SCOPE

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

2 REFERENCES

The standard given below contains provisions which through reference in this text, constitutes provisions of this standard. At the time of publication the edition indicated was valid. All standards are subject to revision and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standard:

IS No.	*Title*
IS 2109 : 1982	Methods of sampling dolomite, limestone and other allied materials (*first revision*)

3 SAMPLING

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

3.2 Grind 5 g 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 °C ± 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

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 °C to 950 °C for half an hour and raise the temperature to 1 000 °C. Keep for about 10 min, cool and weigh. Repeat heating, cooling and weighing till constant mass is obtained. Difference in mass represents loss on ignition.

4.3 Calculation

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.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Methods of Chemical Analysis of Metals Sectional Committee, MTD 34

Organization	*Representative(s)*
CSIR - National Metallurgical Laboratory, Jamshedpur	DR SANCHITA CHAKRAVARTY **(*Chairperson*)**
Arcelor Mittal Nippon Steel, Mumbai	SHRI MANOJ GUPTA SHRI KIRIT TAILOR (*Alternate*)
Bhabha Atomic Research Centre, Mumbai	MS SANJUKTA A. KUMAR SHRI M. V. RANA (*Alternate*)
CSIR - National Metallurgical Laboratory, Jamshedpur	DR ASHOK K. MOHANTY (*Alternate*)
Defence Metallurgical Research Laboratory, Ministry of Defence, Hyderabad	SHRI S. S. KALYAN KAMAL
Directorate General of Quality Assurance, Ministry of Defence, New Delhi	SHRI KESAVAMOORTHY M. SHRI E. SUMAN KUMAR (*Alternate*)
Geological Survey of India, New Delhi	SHRI NITIN PURUSHOTTAM SHRIMATI SANJUKTA DEY PAL (*Alternate*)
Hindalco Industries Limited, Mumbai	SHRI KRISHANU MAHAPATRA SHRI ASHUTOSH ACHARYA (*Alternate*)
Indian Metals and Ferro Alloys Limited, Bhubaneswar	SHRI DINESH KUMAR MOHANTY
Jawaharlal Nehru Aluminium Research Development and Design Centre, Nagpur	DR UPENDRA SINGH
JSW Steel Limited, Mumbai	SHRI KOTRABASAVARAJU SHRI MARULASIDDESHA U. M. (*Alternate*)
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Shriram Institute for Industrial Research, Delhi	DR LAXMI RAWAT SHRI PUNEET KAPOOR (*Alternate*)
Steel Authority of India Limited - Salem Steel Plant, Salem	SHRI L. SIVAKUMAR SHRI VIVEKANANDHAN G. (*Alternate*)
Tata Steel Limited, Kolkata	DR JATIN MOHAPATRA DR RAVIKRISHNA CHATTI (*Alternate*)
TRL Krosaki Refractories Limited, Belpahar	SHRI S. K. SUBUDHI

Organization	*Representative(s)*
BIS Directorate General	SHRI SANJIV MAINI, SCIENTIST 'F'/SENIOR DIRECTOR AND HEAD (METALLURGICAL ENGINEERING) [REPRESENTING DIRECTOR GENERAL (*Ex-officio*)]

Member Secretary
SHRI ASHISH PRABHAKAR WAKLE
SCIENTIST 'D'/JOINT DIRECTOR
(METALLURGICAL ENGINEERING), BIS

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BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.gov.in

Regional Offices:		*Telephones*
Central	: 601/A, Konnectus Tower -1, 6th Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	2323 7617
Eastern	: 8th Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	2367 0012 2320 9474
Northern	: Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	265 9930
Southern	: C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113	2254 1442 2254 1216
Western	: 5th Floor/MTNL CETTM, Technology Street, Hiranandani Gardens, Powai Mumbai 400076	25700030 25702715

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