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

***Indian Standard***

**चूना पत्थर, डोलोमाइट एवं सम्बद्ध सामग्री का**

**रासायनिक विश्लेषण**

**भाग 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

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भारतीय मानक ब्यूरो



BUREAU OF INDIAN STANDARDS

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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 the 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 1000 °C in a muffle furnace and the loss in weight is determined.

**4.2 Procedure**

**4.2.1** Weigh 1000 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 1000 °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**

Loss on ignition, percent by mass =

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 |
|  | Smt. 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 |
| JSW Steel Limited, Mumbai |  | Shri Kotrabasavaraju |
|  | Shri Marulasiddesha U. M. (*Alternate*) |
| Jawaharlal Nehru Aluminium Research Development and Design Centre, Nagpur |  |
|  | Dr Upendra Singh |
| National Aluminium Company Limited, Bhubaneswar |  | Smt Sukla Nandi |
|  | Shri Debananda Bhattacharyya (*Alternate*) |
| National Mineral Development Corporation, Hyderabad |  | Dr Saroj Kumar Sahu |
|  | Shri Ashish Shrivastava (*Alternate*) |
| National Test House, Kolkata |  | Dr Rajeev Kumar Upadhyay |
|  | Shri Akbar H. (*Alternate*) |
| Shriram Institute for Industrial Research, Delhi |  | Shri Dr Laxmi Rawat |
|  | Shri Puneet Kapoor (*Alternate*) |
| Research Designs and Standards Organization (RDSO), Lucknow |  | Shri Sandeep |
|  | Smt Sunia (*Alternate*) |
| Steel Authority of India Limited - Salem Steel Plant, Salem |  | Shri L. Sivakumar |
|  | Shri Vivekanandhan G. (*Alternate*) |
| TRL Krosaki Refractories Limited, Belpahar |  | Shri S. K. Subudhi |
| Tata Steel Limited, Kolkata |  | Shri Dr Jatin Mohapatra |
|  | Dr Ravikrishna Chatti (*Alternate*) |
| 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