

**BUREAU OF INDIAN STANDARDS**  
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*Draft Indian Standards*  
**COAL FOR CEMENT MANUFACTURE — SPECIFICATION**  
*(First Revision of IS 12770)*  
(ICS 75.160.10)

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Solid Mineral Fuels and Solid Biofuels  
Sectional Committee, PCD 7

Last date for comments:  
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**FOREWORD**

*(Formal clauses to be added later)*

Coal being the main source of energy and one of the basic ingredients, its quality is very important for cement manufacture.

Cement plants all over the country receive slack coal, as per the linkage, from heterogeneous sources with varying ash content ranging from 28 to 30 percent to as high as 42 to 50 percent. The use of inconsistent quality of coal results in numerous operational problems such as reduced coal mill output rates and increased grinding energy, improper and inefficient combustion, increased fuel consumption and need for better quality, limestones, deterioration in clinker quality and inconsistent production, etc.

Separate standards have been evolved for coal preparation, methods of sampling and tests etc, which are necessary to evaluate the quality of coal in a given consignment either at coal mines or at user's end, as agreed to between the supplier and the buyer.

The quality requirement of coal for cement industry have been judiciously evolved in this specification keeping in view the mining bottlenecks at the coal reserves in the country and the optimum requirement of cement industry. Requirements have also been stipulated with the technical consideration that coal is used in rotary kilns by cement plants.

The present standard is expected to serve as a basis to aim for and achieve desired quality of coal in the interest of development of cement industry.

The standard was originally published in 1989. In view of revision of other referred standards, this (*first*) revision is taken up, and accordingly reference of clauses in column 4 of Table 1 has been modified.

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 the same as that of the specified value in this standard.

## 1 SCOPE

This standard prescribes the requirements and methods of sampling and test for coal for cement manufacture in rotary kiln.

## 2 REFERENCES

The standards listed below, contain provisions which through reference in this text, constitute the provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standard listed below.

| <i>IS No.</i>                | <i>Title</i>   |
|------------------------------|--|
| IS 437 : 2020                | Size analysis of coal and coke for marketing ( <i>fourth revision</i> )  |
| IS 436 (Part 1/Sec 1) : 1964 | Methods for sampling of Coal and Coke: Part 1 Sampling of Coal, Section 1 Manual Sampling ( <i>first revision</i> ) [Under Revision]                             |
| Doc. No.: PCD 07 (24223) WC  | Methods of test for coal and coke : Part 1 Proximate analysis [ <i>third revision</i> of IS 1350 (Part 1)]   |
| IS 1350 (Part 3) : 2022      | Methods of test for coal and coke : Part 3 Determination of total sulphur eschka method ( <i>second revision</i> )   |
| IS 1350 (Part 5) : 2017      | Methods of test for coal and coke : Part 5 Determination of special impurities (carbon present as carbonate, chlorine and phosphorus) ( <i>second revision</i> ) |

## 3 REQUIREMENTS

**3.1** Coal shall comply with the requirements given in Table 1, when tested according to the methods referred in col (4) of Table 1. The samples shall be tested at 60 percent RH (relative humidity) and 40 °C for determination of moisture, volatile matter, ash, sulphur and chlorides.

## 4 SAMPLE

### 4.1 Methods of Sampling

Methods of sampling shall be as prescribed in IS 436 (Part 1/Sec 1).

**Table 1 Requirements for Coal for Cement Industry**  
(*Clause 3.1*)

| SI No. | Characteristic | Requirement | Method of Test, Ref to Clause in Indian Standard |
|--------|----------------|-------------|--|
|--------|----------------|-------------|--|

| (1)  | (2)  | (3)  | (4)                            |
|------|--|------|--------------------------------|
| i)   | Total moisture content (at 60 percent RH and 40 °C), percent by mass, <i>Max</i> | 8    | <b>7.2.3</b> of PCD 07 (24223) |
| ii)  | Volatile matter (air dry basis), percent by mass, <i>Min</i>                     | 24   | <b>8</b> of IS PCD 07 (24223)  |
| iii) | Ash, percent by mass, <i>Max</i>   |      |                                |
|      | a) dry process   | 27   | } <b>9</b> of PCD 07 (24223)   |
|      | b) wet process   | 24   |                                |
| d)   | Sulphur, percent by mass, <i>Max</i>   | 0.8  | IS 1350 (Part 3)               |
| di)  | Chloride, percent by mass, <i>Max</i>  | 0.01 | 7 of IS 1350 (Part 5)          |
| dii) | Size, mm, <i>Max</i>   | 250  | IS 437                         |