

Indian Standard

**COAL FOR CEMENT MANUFACTURE —
SPECIFICATION**

भारतीय मानक
सीमेंट उत्पादन के लिए कोयला — विशिष्ट

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FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 13 September 1989, after the draft finalized by the Solid Mineral Fuels Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

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.

It is envisaged that as far as possible, the coal suppliers as well as cement industry would endeavour to adhere, as close as possible, to the optimum requirements of coal stipulated in the standard. However, it is obvious that conformity of a vital raw material like coal to this specification does not imply that the quality of cement would be necessarily in accordance with the relevant specification for cement. Similarly, any shortfall/deviation also from this specification may not be construed as a compromise on quality of cement. It is stressed that efforts are needed for beneficiation of coal to make the best use of available resources. 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.

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 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

COAL FOR CEMENT MANUFACTURE — SPECIFICATION

1 SCOPE

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

IS No.

Title

IS 1350 (Part 3) : 1969

Methods of test for coal and coke.- Part 3 Determination of sulphur

2 REFERENCES

IS 1350 (Part 5) : 1979

Methods of test for coal and coke: Part 5 Special impurities

IS No.

Title

IS 436 (Part 1/Sec 1) : 1964 Methods of sampling of coal and coke: Part 1 Sampling of coal, Section 1 Manual sampling (*revised*)

IS 437 : 1979

Size analysis of coal and coke for marketing (*third revision*)

IS 1350 (Part 1) : 1984

Methods of test for coal and coke: Part 1 Proximate analysis (*second revision*)

3 REQUIREMENTS

3.1 Coal shall comply with the requirements given in Table 1 when tested according to the methods prescribed in the relevant Indian Standards. Reference to the relevant standards is given in col 4 of Table 1. The samples shall be tested at 60 percent RH and 40°C for determination of moisture, volatile matter, ash, sulphur and chlorides.

4 SAMPLING

4.1 Methods of Sampling

Methods of sampling shall be as prescribed in IS 436 (Part 1/Sec 1) : 1964.

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	6.7 of IS 1350 (Part 1) : 1984
ii)	Volatile matter (air dry basis), percent by mass, <i>Min</i>	24	7 of IS 1350 (Part 1) : 1984
iii)	Ash, percent by mass, <i>Max</i>		
	a) dry process	27 }	8 of IS 1350 (Part 1) : 1984
	b) wet process	24 }	
iv)	Sulphur, percent by mass, <i>Max</i>	0.8	5.1 of IS 1350 (Part 3) : 1969
v)	Chloride, percent by mass, <i>Max</i>	0.01	6.1 of IS 1350 (Part 5) : 1979
vi)	Size, mm, <i>Max</i>	250	5 of IS : 437 - 1979

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