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भारतीय मानक  
चामोटे के लिए विशिष्टता  
(पहला पुनरीक्षण)

*Indian Standard*  
**SPECIFICATION FOR CHAMOTTE**  
(*First Revision*)

ICS No. 77.180

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**Foundry and Steel Castings Sectional  
Committee, MTD 14**

**Last date for receipt of comment is  
18 March 2023**

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**FOREWORD**

*(Formal clauses to be added later)*

This standard was first published in 1974. This revision has been brought out to bring the standard in the latest style and format of the Indian Standards.

In addition, the following changes have been made:

- a) Reference clause is added;
- b) In clause 6, ISO Cone No. 174 (1740°C) is referred in place of ASTM Cone No. 324-33 (1730°C).
- c) Marking clause is updated.

Chamotte consists of highly calcined flint clay which, when mixed either with clay or with sand and clay, is used as a moulding material for steel castings.

Besides the requirement of chamotte specified in this standard, individual foundries may have to evolve specific floor test requirements to suit their jobs.

For the purpose of deciding whether 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.

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## 1 SCOPE

This standard covers the requirements for chamotte for use in foundries.

## 2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute 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 indicated below:

<i>IS</i>	<i>Title</i>
IS 460	Specification for test sieve
(Part 1) : 2020	Wire cloth test sieve ( <i>fourth revision</i> )
(Part 2) : 2020	Perforated plate test sieve ( <i>fourth revision</i> )
(Part 3) : 2020	Methods of Examination of Apertures of Test Sieves ( <i>fourth Revision</i> )
IS 1387 : 1993	General requirements for the supply of metallurgical materials ( <i>second revision</i> )
IS 1528 (Part 1) : 2010	Methods of sampling and physical tests for refractory materials: Part 1 determination of pyrometric cone equivalent (Pce) or softening point ( <i>third revision</i> )
IS 1811 : 1984	Methods of sampling foundry sand ( <i>first revision</i> )
IS 1918 : 1966	Methods of physical tests for foundry sands

## 3 SUPPLY OF MATERIAL

General requirements relating to the supply of chamotte to this specification shall be as laid down in IS 1387.

## 4 MOISTURE CONTENT

Moisture content of chamotte when tested in accordance with the method given in IS 1918, shall not exceed 1.0 percent.

## 5 CHEMICAL COMPOSITION

Chamotte shall have the following composition on dry weight basis:

<i>Sl No.</i>	<i>Constituents</i>	<i>Requirement in Percentage</i>
(1)	(2)	(3)
i)	Al <sub>2</sub> O <sub>3</sub>	40 Min
ii)	SiO <sub>2</sub>	30 Min

iii) $\text{Fe}_2\text{O}_3$	4 Max
iv) Loss of Ignition	0.5 Max

To measure the chemical composition of the material, any established experimental or instrumental method can be used.

## 6 FUSION POINT

When tested in accordance with IS 1528 (Part 1) the pyrometric cone equivalent (PCE) value of chamotte shall be not below ISO Cone No. 172 (1720°C).

## 7 GRAIN FINENESS

The fineness of the two grades of chamotte shall conform to the following requirements:

Sl No.	IS Sieve	Coarse Grade Percent Retained	Fine Grade Percent Retained
(1)	(2)	(3)	(4)
i)	3.35mm	—	—
ii)	1.70mm	50 - 55	—
iii)	212 micron	35 - 40	60 - 70
iv)	150 micron	—	10 - 12
v)	106 micron	5 - 7	10 - 15
vi)	75 micron	5 - 7	15 - 20
vii)	Grain Fineness No.	23 - 25	55 - 60

NOTE — If required, other size ranges as agreed between supplier and Customer.

**7.2** The undersize and oversize values shall be valid at the point of delivery to the purchase. In the determination of ore size distribution, sieves of suitable sizes specified in IS 460 (Part 1) shall be used, wherever possible. The standard test sieve will, after period of time, become less accurate. The sieve shall, therefore, be periodically checked according to IS 460 (Part 3) and the correction factor shall be determined and applied to the result.

NOTE — Where IS sieves are not available, other equivalent standard sieves may be used. For the purpose of comparison, the corresponding BS and ASTM test sieve numbers are given in Annex A.

## 8 CLAY CONTENT

The clay content when determined in accordance with IS 1918 shall not exceed 1 percent.

## 9 PACKING

Unless specified otherwise, chamotte shall be supplied in polythene lined gunny bags each containing 50 kg.

## 10 MARKING

**10.1** The bags shall be clearly marked with the following:

- a) Manufacturer's name;
- b) Grade of material;
- c) Quantity; and
- d) Trade-mark.

**10.2 BIS Certification Marking**

The products(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provision of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the product may be marked with the standard mark.

**Annex - A**  
(Clause 7.2)

**COMPARATIVE SIEVE DESIGNATIONS OF IS, BS AND ASTM TEST SIEVES**

Sl No.	IS Sieve	BS Test Sieve	ASTM Test Sieve
(1)	(2)	(3)	(4)
i)	3.55 mm	5	6
ii)	1.70 mm	10	12
iii)	212-micron	72	70
iv)	150-micron	100	100
v)	106-micron	150	140
vi)	75-micron	200	200