



CORPORATE PURCHASING SPECIFICATION

AA53627

Rev No. 03

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CHROMITE SAND FOR USE IN FOUNDRIES

1.0 GENERAL

This specification covers the requirements of Chromite sand for use in foundries.

2.0 APPLICATION

The Chromite sand shall be used for facing of pattern and core boxes in mould and core making.

3.0 COMPLIANCE WITH NATIONAL STANDARDS

This specification is based on IS 6788-1973

4.0 Physical and Chemical Characteristics

4.1 Chromite sand grains shall be crystalline, mostly sub-angular in shape (Shape determined as per IS 1918 or equivalent international standard procedures).

4.2 The material shall have shining black appearance and shall be free from foreign material, e.g. low melting point minerals, carbonates.

4.3 CHEMICAL COMPOSITION

Chromite sand shall have typical analysis as under when measured using XRF or method as described in IS 12667

Cr ₂ O ₃	46% min.
FeO	27% max.
MgO	12% max.
Al ₂ O ₃	16.5% max.
SiO ₂	1.1% max.
CaO	0.5% max.

4.4 Clay (as per IS 1918 or equivalent international standard procedure) – 0.5% max.

4.5 Moisture (as per IS 1918 or equivalent international standard procedure) – 0.2% max.

4.6 pH value of sand (measured as per IS 6788 or any other equivalent international standard procedure) shall be in between 6.5 to 8.0

4.7 Acid Demand Value, when measured in accordance with IS 6788 or AFS Foundry Sand Handbook shall conform to the requirement as given below

pH	3	4	5
ADV (max.)	10 ml	8 ml	6 ml

Revisions:
Clause 28.2 of MOM of MRC-FN

APPROVED:
INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(FN)

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- 4.8 Turbidity – 210 ppm max.
- 4.9 When tested in accordance with IS 1918 or any other equivalent international standard procedure, the fusion temperature of chromite sand shall not be less than 1800°C.

5.0 Grain size and distribution

- 5.1 The Grain Fineness No. (GFN) of chromite sand shall be AFS 45 to 55. GFN determination should be carried out by procedure described either in AFS Foundry Sand Handbook or as per IS 1918

Grain distribution:

Total retention on ASTM Sieve Nos. 40, 50, 70, 100 and 140 shall be 90% min.
(Sizes corresponding Sieve Nos. 40, 50, 70, 100 and 140 are 425, 300, 212, 150 and 105 microns)

- 5.2 Fines i.e. grains having size less than 75 microns (i.e., retained on ASTM No.270 and pan) shall be 1.0% max.

6.0 SAMPLING

Samples shall be drawn in accordance with IS 1811 for testing purposes. When sampling and testing is carried out outside India, other sampling procedures like that described in Chromite Sand Specification of Steel Foundry Society of America or AFS Foundry Sand handbook is acceptable.

7.0 INSPECTION, DEVIATION AND REPLACEMENT

- 7.1 BHEL reserves the right to inspect material at site before despatch. The supplier shall intimate in advance about readiness of material enclosing a copy of test certificate of the material offered for inspection. However inspection at BHEL shall be final. The supplier shall offer BHEL representative all reasonable facilities without charge to satisfy the later that the material being furnished is in accordance with this specification. The supplier shall prepare and provide necessary test specimens for testing to be carried out at his premises. If facilities are not available at his works, the supplier shall make necessary arrangements for carrying out the prescribed tests elsewhere.
- 7.2 Acceptance of the material shall be on the basis of Test Certificate provided by Original Manufacturer or Inspection carried out by BHEL Representative/Third Party Inspecting Agency. However, BHEL reserves the right to carry out testing of any of the parameters mentioned in Clause 4 and 5 after receipt of material.
- 7.3 If the material received at BHEL is not found in accordance with the requirements, it shall be rejected and the supplier will have to replace it free of cost at the earliest.
- 7.4 For any deviation from the specification sought by the supplier, prior approval of BHEL must be obtained in writing.

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8.0 TEST CERTIFICATES

8.1 Unless otherwise specified, one original and three copies of test certificate from the original manufacturer shall be supplied with each consignment bearing the following information. In order to facilitate quick clearance of material, the supplier shall ensure to send a copy of test certificates along with despatch document.

- a) BHEL P.O No. with Date
- b) AA53627 Rev-03: CHROMITE SAND FOR USE IN FOUNDRIES
- c) Supplier Reference/ Trade mark
- d) Identification No. / Batch No.
- e) Properties as per Clause 4 & 5
- f) Any other specific information which the supplier would like to convey.

8.2 Suppliers other than the original manufacturer shall ensure providing original manufacturer's test certificates with linkage to supplier's invoice stating the batch No., lot No., etc. of the supply.

9.0 PACKING AND MARKING

9.1 Chromite sand shall be packed in 1/1.5 MT jumbo bags. However the purchaser may specify his own requirement in the purchase order. Adequate protection from moisture pickup/ contamination during transportation and storage shall be provided.

9.2 The packing shall be of the original manufacturer's. The bags containing chromite sand shall be clearly marked with the following:

AA53627: CHROMITE SAND FOR USE IN FOUNDRIES

BHEL P.O No. with Date

Manufacturer/ Supplier's name/ Trade mark, if any

Batch/Lot No.

Net weight

10.0 REFERRED STANDARDS (Latest Publications including Amendments)

- 1) IS 1811
- 2) IS 1918