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उत्पाद मैनुअल
सिलिकोमैंगनीज –विशिष्टि
IS 1470: 2025 के अनुसार

Product Manual for
Silicomanganese-Specification
According to IS 1470: 2025

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1.	भारतीय मानक संख्या IS No.	:	IS 1470:2025
	शीर्षक Title	:	Silicomanganese
	संशोधनों की संख्या No. of amendments	:	0
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific requirement Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Sample of each grade is to be tested for considering GoL/CSoL. The samples drawn, as mentioned above against the grades should consist of all the Size classes intended

		to be covered in licence scope.
c)	नमूने का परिमाण Sample Quantity	5Kg (for lab sample, Compliance to Cl 6.1.3 of IS 1472 to be ensured) Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	Grade Designation, Size Designation Note: Apart from the above, any other requirements/parameters may also be declared as per the standard, as applicable.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	Please refer to Annex- A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	Please refer to Annex- B
5.	एक दिन में संभावित परीक्षण Possible tests in a day	
	All tests. Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.	
6.	लाइसेंस का दायरा /Scope of the Licence:	
	IS 1470: 2025 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेंस निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है □Licence is granted to use Standard Mark as per IS 1470: 2025 with the following scope:	
7.	उत्पाद का नाम Name of the product	Silicomanganese
	Grade Designation	Si16Mn73,.....
	Size Designation	I, II,.....

ANNEX – A

LIST OF TEST EQUIPMENTS
(INDICATIVE LIST, FOR GUIDANCE ONLY)

Major test equipment required to test as per requirements of Indian Standard.

Sl. No.	Test Equipment/Chemicals and Identification Numbers (Where applicable)	Tests Used in with Clause Reference
1	Spectrometer, Analytical Balance (0-200gm, LC-0.1mg), Hot Plate, Hot Air Oven, Thermometer, Filter Paper	Chemical Composition (7.2)
2	Sieves of appropriate sizes	Particle Size (8)
3	Apparatus: 50ml iron crucible, Iron or Nickle Rod, Porcelain Dish, Filter Paper No. 40, Platinum Crucible, Muffle Furnace, Dessicator, Hot plate Reagents- Sodium Carbonate anhydrous, Sodium Peroxide solid, Sodium Hydroxide – solid, Dilute Hydrochloric Acid, Concentrated Hydrochloric Acid, Dilute Sdphuric Acid,Hydrofluoric Acid - 40 percent.	Silicon (7.2)
4	Apparatus: Gooch Crucible, Dark Coloured Glass, Stoppered Bottles, Glasswares like pipette, burettes, flasks etc, Facility for cold water. Reagents for Bismuthate Method: Nitric Acid, Sulphuric Acid, Sulphurous Acid (Facility to prepare sulphurous acid by dissolving sulphur dioxide in water), Sodium Bismuthate, Ferrous Ammonium Sulphate, Phosphoric Acid, Potassium Permanganate, Analar Sodium Oxalate. Reagents for Volhard Method: Sulphuric Acid, Sodium Carbonate, Zinc Oxide, Nitric Acid, Potassium Permanganate	Manganese (7.2)
5	Apparatus: Strohlein Apparatus with all attachments Barometer with chart, Porcelain Boats, Oxygen – 99.5% minimum purity, ether or acetone, Standard Reference Material (NML) with certificate reagents for Carbon. Reagents: Tin Granules, Methyl Red, Caustic Potash, Potassium Hydroxide, Phenolphthalein, Sulphuric Acid, magnesite brick powder	Carbon (7.2)
6	Dilute Sulphuric Acid, Concentrated Sulphuric Acid , Chromic Sulphuric Acid, Manganese sulphate, Ammonium Hydroxide, Ammonium Persulphate, soda Asbestos, Anhydrone(Magnesium	Carbon (7.2) Gravimetric Method

	Perchlorate), Magnesite Brick Powder, Lead Foil, Buchner funnel, mortar grinder, IS Sieves 140 to 50, IS Sieves 85 to 70, combustion boat, low carbon standard steel of known carbon content Recommended Apparatus: Apparatus for determination of carbon by gravimetric method comprising oxygen cylinder & purifier, furnace with combustion tube, train for purifying & absorbing CO ₂ (apparatus as per fig.1 of IS 1559)	
7	Apparatus: Platinum dish, Heating Apparatus. Reagents: Nitric Acid, Hydrochloric Acid, Hydrofluoric Acid, Ammonium Bromide, Potassium Permanganate, Potassium Nitrite, Ammonium Hydroxide, Ammonium Molybdate, Ammonium Phosphate, Dil Sulphuric acid, Sulphur dioxide, perchloric acid, hydrobromic acid, Con. Sulphuric acid, Potassium nitrate, sodium hydroxide, Phenolphthalein Indicator Solution	Phosphorus (7.2)
8	Apparatus: IS Sieve 15, Platinum Dish (300ml), Porcelain Vessel, Close Texture Filter Paper, Filter Paper No. 42, Steam Bath, Platinum or porcelain crucible, Muffle Furnace. Reagents: Nitric Acid, Hydrofluoric Acid, Potassium Nitrate, Boric Acid, Hydrochloric Acid, Zinc (Sulphur free, 20-30 mesh powder), Barium Chloride	Sulphur (7.2)

Note: The above is an indicative list for the purpose of guidance only

ANNEX- C
SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that during operation of BIS licence, manufacturers will implement a Quality Assurance Plan (QAP) i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or subcontracting/sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: For the purpose of this scheme, material of one cast/ melt representing one furnace heat/ one tap of continuous furnace/ladle or holding furnace shall constitute one control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in Table 1. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan.

2. ENSURING COMPLIANCE THROUGH TESTING- manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred:

- i) Shared testing resources like common facility,
- ii) Cluster based testing facility,
- iii) Sub-contracting to outside laboratories which may either be:
 - a) BIS recognised/empanel

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the license and Licence Number (i.e. CM/L...) shall be suitably incorporated on the material and on the test certificate issued along with each consignment, provided always that the product thus marked and packed conforms to all the requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: Additionally, the following shall also be marked on each Package of the material:

- a) “For BIS certification details please visit www.bis.gov.in”
- b) Any other requirement not specified in the Indian Standard

4. TEST CERTIFICATE – For each consignment of BIS Certified material conforming to IS 1470:2025 there shall be a test certificate which shall contain the Standard Mark, the cast/Control Unit number and the corresponding test results (as given in Annexure-I enclosed).

5. REJECTION - The production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act,2016.

TABLE 1
(Recommended Levels of Control by BIS- For Guidance Only)

Annexure-I
(Para 4 of the Scheme of Inspection and Testing)
XYZ COMPANY
(Registered office Address and works address)

ISI Mark
With IS No.
and CM/L
no.

Test Certificate for Silicomanganese
According to IS 1470:2025
TEST CERTIFICATE NO. _____

To M/s _____

Dated _____

We certified that the material described below fully conforms to IS 1470:2025 Chemical and Physical properties of the product as tested in accordance with the Scheme of Inspection and Testing contained in the BIS Certification Marks Licence No. CM/L _____ are as indicated below against each order No.

(PLEASE REFER TO IS 1470:2025 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order No. & Date	Grade Designation	Cast No./ Lot No.	Grade	Qty (in tonnes)	Chemical Composition (%)						Size Designation	Constitution of consignment	Remarks
					Si	Mn	C	P	S	Non-specified elements [#]			

if required by purchaser and as agreed between manufacturer and purchaser.

Remarks
Wagon No.
Truck