



उत्पाद मानुयल
फेरोसिलिकोमैग्नेशियम
IS 13164:1991 के अनुसार

PRODUCT MANUAL FOR
Ferrosilicomagnesium
as per IS 13164:1991

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन (विनियम की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरणके प्रचलन में रीति और पारदर्शिता के सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence 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 licence/certificate.

1.	उत्पाद Product	:	IS 13164:1991
	शीर्षक Title	:	Ferrosilicomagnesium
	संशोधन संख्या No. of amendments	:	NIL
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines		Sampling of Ferro Silico Magnesium shall be carried out as specified in IS 1472 :1977 Methods for sampling of ferro alloys for determination of chemical composition
a)	कच्चा माल Raw material	:	No specific raw material requirement
b)	समूहिकरण दिशा निर्देश Grouping Guidelines	:	Please see Annex-A

c)	नमूने का परिमाण Sample Size	:	Approx. 500 gms
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex – B
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	Please refer Annex - C
5.	एक दिन में संभावित परीक्षण Possible tests in a day	:	All tests are possible to be carried out in a day
6.	लाइसेन्स का कार्यक्षेत्र /Scope of the Licence :		
	IS 13164:1991 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्रके लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per IS 13164:1991 with the following scope:		
	Name of the product	Ferro silico magnesium	
	Grade	FeSi48Mg05 FeSi48Mg08 FeSi50Mg12 FeSi50Mg15 FeSi52Mg15 FeSi52Mg20	
	Size Range	xx....mm to up to and includingxx....mm	

BUREAU OF INDIAN STANDARDS
Manak Bhawan, 9, Bahadur Shah Zafar
Marg, New Delhi – 110002

ANNEXURE A
TO PRODUCT MANUAL FOR
Ferrosilicomagnesium
According to IS 13164:1991

1) IS 13164:1991 covers the requirements of ferrosilicomagnesium used in the ferrous and non-ferrous industry. Six Grades of ferrosilicomagnesium have been specified at Table 1 of IS 13164:1991. These grades have been classified based upon their Si-Mg content and thus it is felt appropriate to group these grades based upon the Si-Mg content itself.

2) For the purpose of GoL/CSoL, the following Grouping Guidelines may be considered:-

Group	Grades	Grouping
1	FeSi48Mg05 FeSi48Mg08 FeSi50Mg12 FeSi50Mg15 FeSi52Mg15 FeSi52Mg20	Two samples of grades of Fe-Si-Mg having the highest magnesium content and the lowest silicon content among the grades intended to be covered in the scope of the licence shall be drawn and tested to cover all grades in the licence. For example:- Samples of grades Fe Si48Mg05 and FeSi52Mg20 can be drawn and tested to cover all grades.

3) However, it shall be ensured that the firm is having all the necessary manufacturing and testing facilities for manufacturing/testing of all the grades covered in the scope of the licence.

4) During the operation of the licence, BOs shall ensure that all grades covered in the scope of the licence are drawn for independent testing in rotation over a period of time.

ANNEXURE B
TO PRODUCT MANUAL FOR
Ferrosilicomagnesium
According to IS 13164:1991

LIST OF TEST EQUIPMENTS

Major test equipment essentially 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.	X-Ray Fluorescence Spectrometer calibrated through standard samples of each element manufactured in-house through Inductively Coupled Plasma-Optical Emission Spectrometer(ICP-OES) General Laboratory Glasswares and Accessories, Analytical Balance, Heating Source or Hot Plate, Oven or Muffle Furnace, Ceramic Crucibles, Chemicals and Reagents (as required)	Si, Mg, Al, Ca Chemical Composition (cl.7.2)
2.	IS Sieves 10 mm, 15 mm	Size Range, cl.8.

Note 1: The above is an indicative list for the purpose of guidance only and may not be treated as exhaustive

ANNEXURE C
TO PRODUCT MANUAL FOR
Ferrosilicomagnesium
According to IS 13164:1991

SCHEME OF INSPECTION AND TESTING

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare and implement a calibration plan for the test equipments.

2. TEST RECORDS - The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING, MARKING, PACKING - The Standard Mark as given in schedule of the licence and Licence Number (i.e. CM/L.....) shall be incorporated, and the marking and packing shall be done as per the provisions of the Indian Standard, provided always that the product thus marked conform to all the requirements of the specification.

4. CONTROL UNIT – For the purpose of this scheme each Cast (Melt) of Ferrosilicomagnesium shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. TEST CERTIFICATE - For each consignment of BIS Certified material conforming to IS 13164:1991 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)

7. REJECTIONS - 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. Any rejected material which is potentially re-salable be sheared or cut or deformed in such a manner that it cannot be used for any other purpose except re-melting. A separate record shall be maintained giving information on quantity and cast number/control unit number, as applicable, relating to all such rejections/defective/sub-standard material of the production not conforming to the requirements of the Specification and the method of its disposal. Such material shall in no case be stored together with that conforming to the Specification. The Standard Mark (if already applied) on rejected material should be defaced.

123314/2022/CMD-II

TABLE 1: LEVELS OF CONTROL

(1)				(2)	(3)		(4)
TEST DETAILS					LEVELS OF CONTROL		REMARKS
Clause	Requirements	Test Method		Test equipment requirement R: required (or) S: Sub-contracting permitted	No. of Samples	Frequency	
		Clause	Reference				
3.2	Constitution of Consignment	3.2,7.1	IS 13164	R	Adequate inspection to ensure that each consignment complies with the requirements specified		
7.2	Chemical Composition	cl.7.2.1, cl.7.2.2, cl.7.2.3, cl.7.2.4 Table 1 Chemical Composition of the material shall be determined by any established instrumental/chemical method					
	i) Silicon	Table 1	IS 13164	R	One	Each Cast /Melt	----
	ii) Magnesium		IS 13164	R	One	----do----	----
	iii) Aluminum		IS 13164	R	One	----do----	----
	iv) Calcium		IS 13164	R	One	----do----	----

123314/2022/CMD-II

8	Size Range	8.1, 8.2	IS 13164	R	Adequate Inspection to ensure that each packed bag or container conforms to the requirements of the specification		
9	Extraneous Contamination	9	IS 13164	R	One	Each Control Unit	-----

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: The control unit and levels of control as decided by the Bureau are obligatory to which the licensee shall comply with.

123314/2022/CMD-II

ANNEXURE I

Page 4 of 4

(Para 6 of the Scheme of Inspection and Testing)

XYZ IRON AND STEEL COMPANY

(Registered office Address and works address)

TEST CERTIFICATE FOR **Ferrosilicomagnesium**

TEST CERTIFICATE No.

BIS
STANDA
RD
MARK

To M/s _____

DATE _____

We certified that the material described below fully conforms to **13164:1991** Chemical composition and Mechanical properties of the product, as tested in accordance with the Scheme of Testing and Inspection contained in the BIS Certification Marks LicenceNo.CM/L _____ are as indicated below against each order No.

(PLEASE REFER TO IS **13164:1991** FOR DETAILS OF SPECIFICATION REQUIREMENTS)**TEST RESULTS**

Order No. & Date	Size	Control Unit No.	Grade	Quantity in tonnes	CHEMICAL COMPOSITION				Extraneous Contamination	Size Range	Remarks
					% Si	% Al	%Mg	% Ca			

REMARKS

WAGON NO.

TRUCK NO.

(It is suggested that size A4 paper be used for this test certificate)

FOR XYZ IRON AND STEEL COMPANY