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उत्पाद मैनुअल
गढ़ाइयों के लिए इस्पात के इंगट, बिल्लेट, ब्लूम, सिलिलियाँ एवं छड़ें- विशिष्टि
IS 1875: 2025 के अनुसार

**Product Manual for
Steel Ingots, Billets, Blooms, Slabs and Bars for Forging-Specification
According to IS 1875: 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 1875:2025
	शीर्षक Title	:	Steel Ingots, Billets, Blooms, Slabs and Bars for Forging
	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	:	Please refer Annex-A
c)	नमूने का परिमाण Sample Quantity	:	Mechanical: 1m or prepared pieces (above 25 mm thickness/dia) Chemical: 5 pcs of 5cm x 5cm or 50 gm drillings

		Subjective requirements e.g. Freedom from defects (Cl 6), Dimensional Tolerances (Cl 8) shall be tested in the factory (during Factory Testing) on the full width/length of the material from which samples are drawn for Independent Testing. 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	Designation, Surface Condition, Condition of delivery, Size, Optional Requirements 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- B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	Please refer to Annex- C
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 1875: 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 1875: 2025 with the following scope:	
7.	उत्पाद का नाम Name of the product	Steel Ingots, Billets, Blooms, Slabs and Bars for Forging
	Designation	8C4, 14C6.....(As per Table 1)
	Surface Condition	As rolled or forged, normalized or annealed;
	Conditions of delivery	Maximum Hardness, Hardenability (Jominy)....(As per Clause 9.1)
	Variety (Size)	Bars: dia ..mm upto and including ..mm, .. Billets:..mmx...mm, Blooms: ...mmx...mm, Slabs: :..mmx...mm,

	Optional Requirements	With or without optional requirement e.g. Hot Upset test, Inclusion Rating etc. as per Clause 13.
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BUREAU OF INDIAN STANDARDS
Manak Bhawan, 9, Bahadur Shah Zafar Marg,
New Delhi – 110002

ANNEX-A
TO PRODUCT MANUAL FOR
Steel Ingots, Billets, Blooms, Slabs and Bars for Forging
According to IS 1875:2025

GROUPING GUIDELINES

1. IS 1875 :2025 standard covers the requirements for unalloyed, low alloyed and medium alloyed steel ingots, rolled or forged or continuously cast billets, blooms, slabs, bars and stocks for forgings for general engineering purposes.

2. This standard covers the following groups of steels (as per Table 1):

- (i) Unalloyed Steel
- (ii) Resulphurized Steel
- (iii) Silicon Alloyed Steel
- (iv) Nickel Steel
- (v) Chromium Steel
- (vi) Silicon Manganese Steel
- (vii) Manganese Chromium Steel
- (viii) Silicon Chromium Steel
- (ix) Nickel Molybdenum Steel
- (x) Manganese Molybdenum Steel
- (xi) Nickel Chromium Steel
- (xii) Chromium Molybdenum Steel
- (xiii) Chromium Vanadium Steel
- (xiv) Nickel Chromium Molybdenum Steel
- (xv) Chromium Molybdenum Vanadium Steel
- (xvi) Chromium Molybdenum Aluminium Steel
- (xvii) Steels with Boron

3. In order to follow a uniform policy in the drawl of samples for independent testing for the purpose of grant of license/ inclusion of additional varieties in the existing license, the procedure as mentioned below is to be followed:

4. Manufacturer shall declare the Grade Designations of the Steel Ingots, Billets, Blooms, Slabs and Bars for Forging intended to be covered in the scope of licence.

5. One sample of any Steel Grades/Designation, Surface Condition, Heat treatment condition, Form and Size may be tested from each of the above groups to cover all Steel Grades /Designation, Surface Condition, Heat treatment condition, Form and Size within the group.

6. It shall, however, be ensured that firm has necessary manufacturing and testing facilities for the entire range of designations/delivery conditions proposed to be covered under the scope of license.

7. During the operation of license, BO shall ensure that all sizes / conditions/ designations covered in the license are drawn for independent testing on rotation over a period of time.

ANNEX – B

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	Visual Inspection System	Freedom from Defects (6)
2	Steel Scale, Vernier Calipers, measuring tape	Dimensional Tolerances (8)
3	Micrometer	Diameter (11.2)
4	Tensile Testing Machine	Tensile Test (10.1)
5	Rough Polishing Machine, Cutting Machine, Fine Polishing Machine, Grinder Machine	Chemical composition (7) Preparation of specimen
6	Instrumental methods Spectrometer: atomic-absorption spectrometry, inductively coupled plasma atomic emission, inductively coupled plasma mass spectrometry techniques, spark source optical emission spectrometry. Spectrophotometer	7.1,7.2,7.3 & 7.4 for C,S,P,Mn,Si,Ni,Cu,Cr,Mo,V,Al Mn,S,P,Si
7	Strohlein or Leco apparatus with all attachments Barometer with chart, Hot plate, Muffle furnace, Complete range of glass wares, measuring cylinders, Desiccator, porcelain boats or ceramic crucibles, Thermometer, Electronic Balance, Distilled Water, Hot air oven, Oxygen - 99.5 percent minimum purity, ether or acetone, Standard Reference Material (NML) with certificate Reagents for C: tin granules or pure iron fillings, acidulated water/brine water, methyl red, caustic potash Reagents for S: Ceramic boats/crucibles – desiccators, Fluxes -Low sulphur copper, tin or iron, Dilute hydrochloric acid, Starch Iodide solution, Potassium iodate	7.1, 7.2 for C & S (chemical method, alternative to instrumental method)
8	Weighing balance, Heater/ Heating element along with energy regulator, Ice water bath, Vol Flask Cap – 1 litre, (Whatman) filter paper No. 040, Suction Filtration Facility, Filter paper pulp pad, Standard Reference Material (NML) with certificate	7.1,7.2 Phosphorus content (chemical method, alternative to instrumental method)

	Potassium Permanganate (KMnO ₄), Sodium Nitrite (NaNO ₂), Ammonium Molybdate [(NH ₄) ₂ MoO ₇], Ammonium Phosphate [(NH ₄) ₃ PO ₄], Potassium Nitrate (KNO ₃), Phenolphthalein Solution, Rectified spirit or methyl alcohol, Sodium Hydroxide (NaOH), Hydrofluoric Acid (HF), Perchloric Acid (HClO ₄), Sulphurous Acid, Hydrobromic Acid (HBr), other chemicals and reagent as applicable	
9	Hot plate, Conical flask Reagents: silver nitrate, ammonium persulphate sodium arsenite solution, Dilute Nitric Acid, Phosphoric Acid, Dilute Sulphuric Acid, Concentrated Nitric Acid, NaCl Solution, Permanganic acid	7.1, 7.2 Manganese content (chemical method, alternative to instrumental method)
10	Medium textured filter paper, Porcelain casserole, platinum crucible, filter paper pulp, hot plate, hot air oven, muffle furnace Reagents: Silver nitrate solution, concentrated nitric acid, concentrated sulphuric acid, Dilute Hydrochloric Acid, Dilute Sulphuric Acid, Perchloric Acid, Tartaric acid and hydrofluoric acid	7.1, 7.2 Silicon content (chemical method, alternative to instrumental method)
11	Plate, Muffle Furnace, porcelain or silica crucible, Reagents: Hot Wash Solution (dilute sulphuric acid solution 1 : 99 v/v with hydrogen sulphide), dilute sulphuric acid, hydrogen sulphide, Dilute Nitric Acid, Sodium Fluoride, solid, Dilute Ammonium Hydroxide, Acetic Acid, Potassium Iodide, Starch Solution, Sodium Thiosulphate Solution, Ammonium Bifluoride Solution	7.2 Cu content (chemical method, alternative to instrumental method)
12	ashless paper pulp, paper pulp pad, hot plate, dessicator, Reagents: ammonium nitrate, methyl red, dilute ammonium hydroxide, Concentrated hydrochloric acid Concentrated nitric acid, Perchloric acid, Hydrofluoric Acid	7.2 Ni content (chemical method, alternative to instrumental method)
13	Hot plate, stop watch Reagents: dilute sulphuric acid and phosphoric acid mixture, concentrated nitric acid, ammonium persulphate, silver nitrate, dilute hydrochloric acid, ferrous ammonium sulphate, standard potassium permanganate solution.	7.2 Cr content (chemical method, alternative to instrumental method)
14	Bending device with two supports and formers of suitable sizes, capable of the bringing legs of the test piece parallel to each other at a specified distance apart by direct pressure.	Bend Test (13.4)
15	Laboratory Furnace, Metallographic Sample Preparation	Grain Size (10.4)

	Equipment, Etching Reagent(either natal or picral), Metallurgical Microscope	
16	Equipment for specimen by sawing or machining or abrasive wheel cutting or gas cutting. Machine grinding rotating discs with abrasive paper (No. „00“ or No. „000“) for polishing, etch tank, etchant (table-1 of IS 11371), stiff fibre brush, solvent for cleaning from grease, oil, Lathe/shaper	Macrostructure (6.6)
17	Unit having Quenching fixtures, arrangement for keeping specimen in place wait water jet emerging from cone at the bottom to touch the lower end of the sample. Muffle furnace, safety equipment, Rockwell hardness tester	Hardenability Test (10.3)
18	Alternating current (a.c.)/ single phase half-wave rectified alternating current (HW) / three phase full- wave rectified direct current (FWDC) induced magnetization, Magnetic powder suspended in an aqueous or a well refined, light petroleum distillate.	Magnetic Particle Inspection Test (13.5)
19	Equipment for specimen preparation by machining, magnifying glass(15X), Surface Roughness Tester (in-house Calibration using roughness block)	Blue-Fracture test (13.5) Macrostroke flaw test (13.5)
20	Equipment for specimen preparation by machining Magnifying glass (maximum magnification 10 X)	Step machined test (13.5)

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 stock representing the same cast, designation and manufactured to same dimensions under uniform conditions of production shall constitute a 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/empanelled laboratories, or
 - b) Any accredited laboratory as per ISO/IEC 17025

2.1 TEST RECORDS- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the license 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 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 1875:2025 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)

(1)				(3)		(4)
TEST DETAILS				LEVELS OF CONTROL		REMARKS
Clause	Requirements	Test Method		No. of Samples	Frequency	
		Clause	Reference			
7	Chemical Composition					
	Ladle Analysis	7.1, 7.2, 7.3, & Table 1	IS 1875: 2025 IS 228 (various parts) or any other established instrumental /chemical method	One	Each Cast	Applicable for manufacturers with steel making facilities.
	Check Analysis	7.4, 11.1 & Table 2		Nil 1	Nil Each Cast	i) Applicable for manufacturers with steel making facilities ii) Applicable for manufacturers without steel making facilities. No testing for check analysis is required if material fed to rolling/forging is ISI marked and received with test certificate.
6	Freedom from defects	6.1 to 6.8	IS 1875:2025 IS 12037 IS 11371	One	Each Piece	—
8	Dimensional Tolerances	8.1 to 8.9	IS 1875: 2025 IS 1852 IS 3739 IS 9684 Table 3	Adequate Inspection to ensure the product to be within the limits of the specification.		

10	Mechanical Test					
	Tensile Test	10.1, & Table-4	IS 1875: 2025 IS 1608 (Part 1)	One	Each Control Unit	—
	Hardness Test	10.2	IS 1875: 2025 IS 1500 (Part 1)	As agreed to between the manufacturer and the purchaser		
	Hardenability Test	10.3	Table 5	As agreed to between the manufacturer and the purchaser		
	Grain Size	10.4	IS 1875:2025 IS 4748	As agreed to between the manufacturer and the purchaser		
13	Optional Requirements					
	Hot Upset Test	13.1 13.1.1 13.1.2	IS 1875:2025	As agreed to between the manufacturer and the purchaser Also see Note- 1		
	Inclusion Rating	13.2 13.2.1	IS 1875:2025 IS 4163	-do-		
	Decarburization Depth	13.3	IS 1875:2025 IS 6396	-do-		
	Bend Test	13.4 13.4.1 13.4.2 13.4.3	IS 1875:2025 IS 1599	-do-		
	Grain Size	12.3	IS 1875:2025 IS 4748	-do-		
	Magnetic Particle Test	13.5	IS 1875:2025 IS 10138	-do-		
	Blue Fracture Test	13.5	IS 1875:2025 IS 10138	-do-		
	Step machined test	13.5	IS 1875:1992 IS 10138	-do-		
	Macrostroke flaw test	13.5	IS 1875:2025 IS 4075	-do-		
	Ultrasonic Test	13.6	IS 1875:2025	-do-		

	Blank hardening test for core strength guarantee	13.6	IS 1875:2025	-do-
	Microstructure for machinability including banding	13.6	IS 1875:2025	-do-

Note-1: These requirements shall apply only when specified by the purchaser in the inquiry, contract and order. Details of these requirements shall be as agreed to between the manufacturer and purchaser. Records of agreed upon values shall be maintained.

PM/1875/4
January 2026

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

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

**Test Certificate for Steel Ingots, Billets, Blooms, Slabs and Bars for Forging
According to IS 1875:2025**

TEST CERTIFICATE NO. _____

To M/s _____

Dated _____

We certified that the material described below fully conforms to IS 1875:2025 Chemical, Physical and Mechanical 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 1875:2025 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order No. & Date	Section (nom Size)	Control Unit No.	Class & Designation	Qty in tonnes	Chemical Composition (%)											Mechanical Properties			Hardness	Optional requirements*	Remarks
					C	S	P	Mn	Al	Si	Ni	Cr	Mo	V	Cu	B	TS	YS	Elongation		

* If required by purchaser

Remarks
Wagon No.
Truck No.

FOR XYZ IRON AND STEEL COMPANY

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