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उत्पाद मैनुअल

Specification for Steel Wire for Needles

IS 9962:1981 के अनुसार

PRODUCT MANUAL

FOR Specification for Steel Wire for Needles

ACCORDING TO IS 9962 : 1981

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.	मानक संख्या IS No.	:	IS 9962:1981
	शीर्षक Title	:	Specification for Steel Wire for Needles
	संशोधनों की संख्या No. of amendments	:	02
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	:	For mechanical test: 10 metres For chemical test: 5 metres 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)
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex-B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer Annex-C
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	All mechanical and chemical 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:		
	“Licence is granted to use Standard Mark as per IS 9962 : 1981 with the following scope:		
	Name of the product	Steel Wire for Needles	
	Size	[from 0.125 to 4.50 mm as per 6.1 or other sizes as agreed]	
	Grade	Grades I/II/III	
	Finish	Bright drawn (Uncoated)/copper coated/brass coated/bronze coated	

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
NEW DELHI-110002

ANNEX-A

GROUPING GUIDELINES

- 1) IS 9962:1981 classifies steel wire for needles according to the following categories
 - i) Chemical Composition: Grades I/II/III
 - ii) Size of wire: 0.125 to 4.50 mm as per 6.1 or other sizes as agreed
 - iii) Finish: Bright Drawn, Copper Coated, Brass coated, Bronze Coated
- 2) For the purpose of grant of licence and/or change in scope of licence, the following grouping guidelines shall apply:
 - i) Samples of each grade of chemical composition i.e. Grades I/II/III intended to be covered in the scope, shall be tested
 - ii) For covering a given range of sizes in the scope of the licence, samples of the wire of highest size and lowest size from the range of sizes intended to be covered, shall be tested.
 - iii) For covering coated finishes (copper coated, brass coated, bronze coated) sample of each type of coated finish shall be tested. However, if coated finish product has been tested, uncoated finish i.e. bright drawn finish may be added to the scope on that basis.
- 3) Scope of licence shall be restricted based on the manufacturing and testing facilities available.
- 4) During operation of licence, samples of each variety covered in the scope of licence, shall be tested in rotation, to the extent possible

ANNEX – B

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

Sr. No	Tests Used in with Clause Reference	Test Equipment/Chemicals
1	Cl 6 (Diameter & Tolerances)	Micrometer
2	Cl 7.1 (Tensile Strength)	Tensile Testing Machine
3	Cl 7.2 Degree of spheroidization Cl 7.3 Depth of decarburization	Metallographic Microscope along with equipment and reagents for preparation of samples (see IS 11959 and IS 6396)
4	Cl 10 (Mass of Coating)	Weighing balance, Clean soft cotton cloth, Vernier Caliper, Micrometer
5	Cl 5 (Chemical Composition) Mn,S,P,Si	Instrumental methods Spectrometer: atomic-absorption spectrometry, inductively coupled plasma atomic emission, inductively coupled plasma mass spectrometry techniques, spark source optical emission spectrometry. Spectrophotometer
6	Cl 5 for C & S (chemical method, alternative to instrumental method)	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	Cl 5 Phosphorus content (chemical method, alternative to instrumental method)	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 Potassium Permanganate (KMnO ₄), Sodium Nitrite (Na ₂ NO ₃), Ammonium Molybdate [(NH ₄) ₂ Mo ₂ O ₇], Ammonium Phosphate [(NH ₄) ₃ PO ₄], Potassium Nitrate (K ₂ NO 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
8	Cl 5 Manganese content (chemical method, alternative to instrumental method)	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
9	Cl 5 Silicon content (chemical method, alternative to instrumental method)	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 SulphuricAcid, PerchloricAcid, Tartaric acid and hydroflouric acid
10	Cl 9 (freedom from defects)	Vision-based inspection system

ANNEX C

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan 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 defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

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, entire quantity of wires of the same grade, size and finish and made from the same cast of wire rod on the same line in one go shall be taken as 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**.

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. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each coil or sticker/label/metal tag attached to each Coil, and/or on the accompanying test certificate, provided always that the material so marked conforms to each requirement of the specification.

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

4. TEST CERTIFICATE: - For each consignment of BIS Certified material conforming to IS 9962:1981 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 - All 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
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or)S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods Clause Reference			No. ofSample	Frequency	Remarks
5	Chemical composition a) Ladle Analysis	5.1	IS 9962	R	One	Each cast	Applicable for manufacturers having steel making facilities
	b) Product Analysis	5.2	IS 9962	R	1) NIL 2) One	1) NIL 2) Each cast	1) Applicable for manufacturers having steel making facilities. 2) Applicable for manufacturers not having steel making facilities. No further testing is required in case the raw material/input material received is ISI marked and is received with test certificate
6	Nominal Size of Wire Dimensions and tolerances	6.1 to 6.3	-do-	R	One	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity	
7.1	Physical Properties Tensile test	---	IS 1608 (Pt 1)	R	One	Each control unit	---
7.2	Degree of Spheroidization for grade I and II	7.2	IS 9962:1981	R	One	-do-	Applicable for Wires of Grade I and II

7.3	Decarburization	7.3	IS 6396	R	One	-do-	
8	Finish	8	IS 9962	R	Adequate inspection to ensure that the wire has one of the finishes, as specified by the purchaser.		
9	Freedom from defects	9	IS 9962	R	Manufacturer shall exercise adequate in-process controls to ensure that the material remains free from harmful defects.		
10	Coating test	10	IS 9962 IS 1772 IS 1773 IS 3203	S	The amount of copper, brass or bronze coating on steel wire and its method of testing shall be subject to agreement between the purchaser and the manufacturer		

PM/9962/2

Oct 2024

Annexure-I
XYZ IRON AND STEEL COMPANY
(Registered office Address and works address)
TEST CERTIFICATE FOR Specification for Steel Wire for Needles

BIS
STANDARD
MARK

TESTCERTIFICATE No. _____

DATE _____

To M/s _____

We certified that the material described below fully conforms to 9962:1981 Chemical composition 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 9962:1981 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order No. & Date	(Nom Dia)	Grade	Control Unit No/Lot No	Finish	Qty	CHEMICAL COMPOSITION					Tensile Strength	Depth of Decarburization	Coating mass*
						C %	S %	P %	Si %	Mn %			

*if required by

purchaser

REMARKS

WAGON NO.

TRUCK NO.
COMPANY

FOR XYZ IRON AND STEEL

(For BIS certification details please visit www.bis.gov.in)