



उत्पाद मैनुअल
पैकेजिंग के लिए इस्पात पट्टी
IS 5872: 2025 के अनुसार

Product Manual for
Steel Strapping for Packaging
According to IS 5872: 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 5872:2025
	शीर्षक Title	:	Steel Strapping for Packaging
	संशोधनों की संख्या No. of amendments	:	0
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	No specific raw material 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 physical tests: 2.5m length For Chemical Test: 5 test pieces of 50 mm x 50 mm size or 50 g drilling.

		Subjective requirements e.g. Freedom from Defects (Cl 9) and Surface Finish (Cl 11) shall be tested in the factory (during Factory Testing) on the full width strip 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	Nominal dimensions, Grade, addition of micro alloying elements, surface finish. : 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 Physical & Chemical tests excluding Corrosion Resistance 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: 5872:2025 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 5872:2025 with the following scope:	
7.	उत्पाद का नाम Name of the product	Steel Strapping for Packaging
	Shape (Dimensions)	Width from ...mm upto and including ...mm, Thickness from ...mm upto and including ...mm
	Grade	1, 2,
	With or Without	Micro-alloying elements
	Surface Finish	Painted with stoving quality, ..

ANNEX-A
TO PRODUCT MANUAL FOR
Steel Strapping for Packaging
According to IS 5872:2025

GROUPING GUIDELINES

Grouping of different steel grades has been done on the basis of chemical composition and surface finish. Guidelines for drawing of samples from each group are as under:

Group	Grade	Remarks
1	1	One each from the group of a given finish and of any size may be tested to cover steel strappings of all sizes and of particular finish within the group.
2	2	One each from the group of a given finish and of any size may be tested to cover steel strappings of all sizes and of particular finish within the group.
3	3	One each from the group of a given finish and of any size may be tested to cover steel strappings of all sizes and of particular finish within the group.
4	4	One each from the group of a given finish and of any size may be tested to cover steel strappings of all sizes and of particular finish within the group.

1. However, it shall be ensured that the firm is having all the necessary manufacturing and testing facilities for the manufacture and testing of the sizes/grade /surface finishes of Steel strappings to be included in the licence.

2. During the operation of licence, BO shall ensure that all the sizes/grades/finishes 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.	Tests Used in with Clause Reference	Test Equipment/Chemicals and Identification Numbers (Where applicable)
1	Preparation of specimen	Rough Polishing Machine, Cutting Machine, Fine Polishing Machine, Grinder Machine
2	Cl 5 (Chemical Composition)	Analytical balance (0-200g, LC:0.1mg)
3	Cl 6 (Tensile Test)	UTM (0-600 kN) class 1 accuracy or better
4	Cl 7 (Reverse Bend Test)	Testing Machine with cylindrical support and bending arm (Refer fig. 1 of IS 5872:2025)
5	Cl 10 (Dimensions, Shape & Tolerances)	Vernier Calipers, Micrometer, Steel tape, Steel Scale, Straight Edge, Flat surface or Flat Bench, Twisting Machine
6	Cl 6.1, 6.2 (C, S, P, Mn, B, Microalloying elements content)	Instrumental methods Spectrometer: atomic-absorption spectrometry, inductively coupled plasma atomic emission, inductively coupled plasma mass spectrometry techniques, spark source optical emission spectrometry.
	Mn, S, P	Spectrophotometer
7	Cl 6.1, 6.2 (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

8	Cl 6.1, 6.2 (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 (KMnO₄), Sodium Nitrite (Na₂NO₃), Sulphurous Acid, Ammonium Molybdate [(NH₄)₂ Mo₂O₇], Ammonium Phosphate [(NH₄)₃ PO₄], Potassium Nitrate (K₂NO₃), Phenolphthalein Solution, Rectified spirit or methyl alcohol, Sodium Hydroxide (NaOH), Hydrofluoric Acid (HF), Perchloric Acid (HClO₄), Hydrobromic Acid (HBr), other chemicals and reagent as applicable.
9	Cl 6.1, 6.2 (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
10	Cl 12 (Corrosion Resistance)	Salt Spray Cabinet- with a volume not less than 0.2m³, sufficient big enough to accommodate all samples giving enough exposure, with sample stand to be there having an angle as close as possible to 20°, provision to have angle of exposure within 15° to 30°, with atomizer not placed in direct line with sample, ensuring that test spray which has been sprayed should not be reused, Temperature Controller, Humidity Controller, Equipped with Continuous supply of power NaCl solution of required concentration, pH meter Arrangement for cleaning of samples

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 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: All steel strappings representing the same cast, rolled to same dimensions, surface finish and manufactured under uniform conditions of production in a day on the same line in one go shall be considered 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/empanelled 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 license and Licence Number (i.e. CM/L...) shall be suitably incorporated on each Package of Powder 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:** The material shall also be marked with the following additional requirement on each Package of Powder:

- 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 5872:2025 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 - 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)		(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				
5	Chemical Composition						
	Ladle Analysis	5.1, Table 1	IS 5872 & IS 228 (Various Parts) Or any established Chemical/Instrumental method	R	One	Each Heat	Applicable for manufacturers with steel making facilities
	Product Analysis	5.2, Table 1	-do-	i) R ii) S	Nil One	Nil 40 tonnes or part thereof of each cast	Applicable for manufacturers with steel making facilities Applicable for manufacturers without steel making facilities. (Note: No testing for product analysis is required if starting material being subjected to processing is ISI marked and received with test certificate)

6	Tensile Test	6.1, 6.2 & Table-3 Annex C & Table 8	IS 5872 & IS 1608-Part 1)	R	One	25 tonnes or part thereof from each Control Unit	—
7	Reverse Bend Test	7.1 & Table 4	IS 5872 IS 1403 (Part-1)	R	One	10 tonnes or part thereof from each Control Unit	—
9	Freedom from Defects	9.1 & 9.2	IS 5872	R	Adequate inspection to ensure each item to be within the limits of the specification		
10	Dimensions & Tolerances	10.1 to 10.5 & Table 5, 6 & 7, Annex C & Table 9, 10 & 11	IS 5872	R	Adequate inspection to ensure each item to be within the limits of the specification. Records of dimensions mutually agreed to shall be maintained.		
11	Surface Finish	11	IS 5872	R	As agreed to between manufacturer and purchaser. Test equipments to be possessed by the manufacturer only for the finishes in which they intend to supply the material.		
12	Corrosion Resistance	12	IS 5872 IS 5528	S	One	Once in a month	Records of Specimen size mutually agreed to between the interested parties shall be maintained

PM/5872/2
June 2025

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

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

Test Certificate for Steel Strapping for Packaging
TEST CERTIFICATE NO. _____

To M/s _____

Dated _____

We certified that the material described below fully conforms to 5872:2025 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 5872:2025 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order No. & Date	Dimensions (Nom Size)	Control unit No.	Grade	Quantity (in tonnes)	Chemical Composition (in %)					Mechanical Properties			Corrosion resistance	Surface finish	Remarks
					C	S	P	Mn	#Micro alloying elements	Tensile Strength/ Breaking Load	Elongation	Reverse Bend test			

#Micro-alloying element(s) present should be indicated

Remarks

Wagon No.

Truck No.

FOR XYZ IRON AND STEEL COMPANY

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