



उत्पाद मैनुअल
आई एस 13730 (Pt 27): 2018 के अनुसार
विशेष प्रकार के वाइंडिंग तारों के लिए विनिर्देश
भाग 27 पेपर टेप से ढका आयताकार तांबे का तार
दस्तावेज संख्या – पीएम/आईएस 13730 (Part 27)/1/ अप्रैल 2023

भारतीय मानक ब्यूरो की स्कीम-I (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/ प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज का उपयोग किया जा सकता है।

PRODUCT MANUAL FOR
SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES
PART 27 PAPER TAPE COVERED RECTANGULAR COPPER WIRE
ACCORDING TO IS 13730 (Pt 27): 2018

Document No - PM/IS 13730 (Part 27)/1/ April 2023

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.

**PRODUCT MANUAL FOR
SPECIFICATIONS FOR PARTICULAR TYPES OF WINDING WIRES
PART 27 PAPER TAPE COVERED RECTANGULAR COPPER WIRE
ACCORDING TO IS 13730 (Part 27): 2018**

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.	Product	IS 13730 (Part 27): 2018		
	Title	Specifications For Particular Types Of Winding Wires Part 27 Paper Tape Covered Rectangular Copper Wire		
	No. of Amendments	0		
2.	Sampling Guidelines:			
a)	Raw material	Enamelled Rectangular Copper Wire	IS 13730 – 0-2: 2018 / IEC 60317-0-2:2013	10 m
		Paper Tapes	IS 9553 (Part 3/Sec 1): 1984 / IEC 60554- 1	Sheets (250x250) mm - 40 Nos (or) Paper Roll - 10 m
b)	Sample Size	Paper tape covered Rectangular Copper Wire – 10 m		
3.	Grouping guidelines	Please refer Annex – A		
5.	List of Test Equipment	Please refer Annex – B		
6.	Scheme of Inspection and Testing	Please refer Annex – C		
7.	Possible tests in a day:	All		
8.	Scope of the Licence:	Please refer Annex – D		

ANNEX A

Grouping Guidelines

1. For the purpose of certification, the following shall be followed for GoL/CSoL:
 - Paper Tape Covered Rectangular Copper Wire of lowest dimensions (width x thickness) and highest dimensions (width x thickness) shall be tested to cover conductors of all sizes in that group.
2. The Firm shall declare the varieties to be covered in the Licence for which the firm is having complete manufacturing and testing facilities. The Scope of Licence may be restricted based on the Manufacturing and testing capabilities of the Manufacturer.
3. During operation of the licence, BO shall ensure that all the types covered in the licence are tested in rotation to the extent possible.

Note: Firm shall declare the following parameters and conformity to be ensured:

- The firm shall declare the increase in dimensions due to paper tape covering (Cl. 4.4).
- The firm shall declare the **R_{px}** (% proof stress) (Annex – A).

ANNEX B**List of Test Equipment***Major test equipment required to test as per the Indian Standard*

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Dimensions as per Cl. 4	Digital Micrometer Vernier Caliper Caliper Gauge (as specified in Cl. 4.5)
2	Electrical Conductor Resistance as per Cl. 5	Double Kelvin Bridge with Galvanometer Thermometer
3	Elongation Test as per Clause 6	Tensile Testing Machine
4	Springness as per Cl. 7	Fixtures as specified in Cl. 4 of IS 13778 – 3
5	Flexibility and adherence	Fixtures as specified in Cl. 5 of IS 13778 – 3 Mandrels
6	Conductor Conditioning as per IS 13730 – 0-2: 2018 (or) IEC 60317-0-2:2013	Thermometer Hygrometer Air-conditioner Humidifier

The above list is indicative only and may not be treated as exhaustive.

ANNEX C

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 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 AND MARKING** – The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each label securely attached to the reel.

3.1 Marking on the labels shall be as per the requirement of IS 13730 (Part 27): 2018.

3.2 In addition, the licence no. CM/L-_____ and details of BIS website shall be marked at an appropriate place as follows: “For details of BIS certification please visit www.bis.gov.in

4. **CONTROL UNIT** – Paper Tape Covered Rectangular Copper Wire of same variety manufactured in a day under similar process condition from the same consignment of raw materials 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.

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

6. **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.

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
3.2.1	Material (Enamelled Rectangular Copper Wire)	3.2.1	IS 13730 – 0-2: 2018 / IEC 60317-0-2:2013	S	One	Each Consignment	No further testing is required if accompanied Test Certificate
1	Material (Paper tapes)		IS 9335 (Part 1): 1979 / IEC 60554-1	S	One	Each Consignment	No further testing is required if accompanied Test Certificate
3.3	Appearance	Cl. 3.3	IS 13730 (part 27): 2018	R	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		
4	Dimensions						
4.1	Conductor Dimensions	Cl. 4.1	IEC 60317-0-2:2013	R	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		
4.2	Tolerance on Conductor Dimensions	Cl. 4.2	IEC 60317-0-2:2013	R			
4.3	Rounding of Corners	Cl. 4.3	IEC 60317-0-2:2013	R			
4.4	Increase in dimensions due to paper tape covering	Cl. 4.4 & Table 1	IS 13730 (Part 27): 2018	R			
4.5	Maximum Overall Dimensions	Cl. 4.2 & Cl. 4.4	IS 13730 (Part 27): 2018	R			
5	Electrical Resistance	Cl.5	IEC 60317-0-2: 2013	R	One	Each Control Unit	--

6	Elongation	Cl. 6	IEC 60317-0-2: 2013	R	One	Each Control Unit	--
7	Springness	Cl. 4	IS 13778 (Part 3):2012	R	One	Each Control Unit	--
8	Flexibility and adherence	Cl. 5	IS 13778 (Part 3):2012	R	One	Each Control Unit	--

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

Annex – D
Scope of the Licence

Licence is granted to use Standard Mark as per IS 13730 (Part 27): 2018 with the following scope

Name of the product	Paper Tape Covered Rectangular Copper Wire
Nominal Conductor Dimensions	 (width) x(thickness) mm to upto and including (width) x(thickness) mm
No. of layers of Paper	
Any Other Declarations	(a) Increase in dimensions due to paper tape covering (b) R_{px} (% proof stress)