



PRODUCT MANUAL FOR STEEL WIRE ROPE NET PANELS AND ROLLS ACCORDING TO IS/ISO 17746: 2016

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 license/certificate.

1.	Product	:	IS/ISO 17746: 2016
	Title	:	Steel Wire Rope Net Panels and Rolls
	No. of Amendments	:	One
2.	Sampling Guidelines:		
a)	Raw material	:	Wires ropes- as per ISO 2408 Wire for Knot- as per Cl. 6 of IS/ISO 17746
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	1 Sq. Mtr of Panel/Roll
3.	List of Test Equipment	:	Please refer ANNEX – B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX –C
5.	Possible tests in a day :		Maximum Breaking load of Knot (Cl. 8.2), Maximum load of tear break of knot (Cl. 8.3), Rope Net Tests (Cl. 8.4) Note: Tests for Rope Net Tests as per Cl. 8.4 shall be compulsorily done in factory during surveillance visit, till the time complete test facility do not exist in independent lab
6.	Scope of the Licence :		Please refer ANNEX –D

ANNEX--A

GROUPING GUIDELINES

1. IS/ISO 17746: 2016 covers Steel Wire Rope Net Panels and Rolls, which are classified into different varieties based on the following:
 - a) **Type of Knot-** Double Knot/ Clips or Staple Knot/ Without connection clips (as per Cl. 5)
 - b) **Type of coating (Ageing and Corrosion resistance)-** Zn Class B/ Zn Class A/ Zn95Al5 Class B/ Zn95Al5 Class A/ Advanced Metallic coatings Class B/ Advanced Metallic coatings Class A/ Additional Organic coating, as per Cl. 8.1
 - c) **Nominal Net Size-** as per Table 1
In addition to the size ranges given in Table 1 of IS/ISO 17746, other sizes may also be manufactured as agreed between manufacturer and purchaser as per IS/ISO 17746
2. Considering the above, the following grouping guidelines shall be followed for GoL/CSoL:
 - i) Sample of highest size (nominal Net Size) from the offered size range shall be drawn to cover all sizes below the tested size.
 - ii) Sample of Net Panel/Roll of each Knot type shall be drawn and tested for all the requirements.
 - iii) Separate samples of Net Panel/Roll of each type of coating shall be tested for all the requirements
3. The Firm shall declare the Varieties of various Steel Wire Rope Net Panels and Rolls they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
4. During the operation of license, it shall be ensured that all varieties covered in the license are tested in rotation, to the extent possible.

ANNEX--B**List of Test Equipment***Indicative list of major test equipment required to test as per the Indian Standard*

Sr No	Tests used in with clause reference	Test equipment
1	Maximum Breaking load of knot, Cl. 8.2	Tensile testing machine / Breaking Load Testing Machine
2	Maximum load of tear break of knot, Cl. 8.3	
3	Rope Net Tests, Cl. 8.4	Apparatus and test frame as per Annex- B and C of IS/ISO 17746
4	Tests for coating, Cl. 8.1	Salt spray chamber as per ISO 9927

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

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. Batch 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 below.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.2 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 sub-contracted 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. LABELLING AND MARKING – As per the requirement of IS/ISO 17746: 2016. The Standard Mark, as given in the Schedule of the licence, shall be marked on a metal tag attached to each Panel/Roll on which ropes are coiled, provided always that the product thus marked conforms to all the requirement of the specification. In addition, the licence no. CM/L-_____ and details of BIS website shall be marked at an appropriate place on product or package as follows: “For details of BIS certification please visit www.bis.gov.in”.

4. REJECTION - All the production which conforms to the Indian Standard and covered under scope of the licence shall be marked with 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

(1)				(2)	(3)		
Test Details					Levels of Control		
Clause	Requirement	Test Methods		Test equipment requirement Required (R) or Sub-contracting permitted (S)	No. of Sample	Frequency	Remarks
		Clause	Reference				
3.2, Table 1	Wire rope	3.2, Table 1	IS/ISO 17746 ISO 2408	S	One	Each Consignment	No testing is required if the material is ISI Marked or accompanied with a test certificate.
5	Knot	5.2 to 5.4	IS/ISO 17746	R	Manufacturer shall exercise adequate levels of control to ensure that entire production should conform to the Standard. Appropriate records of testing indicating conformity shall be maintained		
6	Properties of wire used in knots	6.1, 6.2	IS/ISO 17746	S	One	Each Consignment	No testing is required if the material is ISI Marked or accompanied with a test certificate.
8	Rope Net Properties						
8.1	Ageing and Corrosion Resistance	8.1	IS/ISO 17746 ISO 9927	S	One	Once in a year	Testing shall be done to cover each type of coating produced/used in the year
8.2	Maximum Breaking load of Knot	8.2	IS/ISO 17746	S	One	Once in 3 months	Testing shall be done to cover each Net size produced in 3 months

8.3	Maximum load of tear break of Knot	8.3	IS/ISO 17746	S	One	Once in 3 months	Testing shall be done to cover each Net size produced in 3 months
8.4	Rope Net tests	8.4	IS/ISO 17746	S	One	Once in 6 months	Testing shall be done to cover each Net size produced in 6 months

ANNEX D

Scope of Licence

“Licence is granted to use Standard Mark as per IS/ISO 17746: 2016 with the following scope:

Name of the product	Steel Wire Rope Net Panels and Rolls
Nominal Net Size	
Type of Knot	
Type of coating	