



**PRODUCT MANUAL FOR
LOCKED COIL WINDING ROPES
ACCORDING TO IS 3626:2001**

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 3626:2001
	Title	:	Locked Coil Winding Ropes
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	As per Cl. 5 of IS 3626: 2001
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	Mechanical Tests: 4 meter Chemical Tests: 5 pieces of 5cm x 5cm
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	:	i) Dimension (Cl. 4) ii) Lubrication (Cl. 8) iii) Tests on wire prior to rope manufacture (Cl. 9) iv) Tests on wire from completed rope (Cl. 10.2)
6.	Scope of the Licence:		Please refer ANNEX –D

ANNEX--A

GROUPING GUIDELINES

1. IS 3626: 2001 covers Locked Coil Wire Ropes used for winding purposes in mines, with Rope Grade (R0) 1470 N/mm².
2. The following parameters shall be considered for grouping of Locked Coil Wire Ropes:
 - a) Size (Nominal Diameter) - as per Cl. 4.1
 - b) Galvanized/ Ungalvanized
3. Considering the above, the following grouping guidelines shall be followed for GoL/CSoL:
 - i) Sample of largest and smallest size (Nominal Diameter), of any construction shall be tested for all the requirements to cover ropes of all sizes in the size range tested.
 - ii) If galvanized variety is tested, ungalvanized variety may also be covered.
4. The Firm shall declare the Varieties of various Winding Ropes they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer.
5. 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***Major test equipment required to test as per the Indian Standard*

Sr No	Tests used in with clause reference	Test equipment
1	Dimensions, Cl. 4, Table 1	Vernier caliper, Micrometer, Measuring tape / Length Counter meter
2	Minimum breaking force - Cl. 6, Table 1 Tensile test on wires- Cl. 9.1.1, Cl. 10.2.1	Tensile testing machine / Breaking Load Testing Machine
3	Torsion test on wires - Cl. 9.1.2, 10.2.2, Table 2 IS 1717	Torsion testing machine
4	Measurement of mass, Cl. 6 - Table 1	Weighing balance
5	Reverse Bend Test, Cl. 9.1.3, Cl. 10.2.3, Table 3 and Table 4 IS 1716	Bend testing machine
6	Shape and dimensions	Snap gauge / Profile projector
7	Tests for Galvanizing, Cl. 5.5	Weighing balance, Chemicals,

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 equipment.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING – As per the requirements of IS 3626:2001.

4. 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.

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

4.2 As steel wire ropes is a product involving safety, extreme care should be exercised in the selection of raw materials and during the process of manufacture. The requirements of the Director General of Mines Safety in this regard, wherever applicable, may also be satisfied.

5. 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 Required (R) or Sub- contracting permitted (S)	Levels of Control		
Clause	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
5	Material	5.1 to 5.3	IS 3626	S	One	Each heat	No further testing is required if the material is ISI Marked or accompanied with a test certificate
4	Dimensions						
	Size	4.1, Table 1	IS 3626	R	Each Rope	--	
	Length	4.2	IS 3626	R	Each length		
5.5	Galvanizing test	5.5	IS 3626	R	One	Each fifth coil of galvanized wire	
6	Mass	Table 1	IS 3626	R	Each length	-	-
7	Manufacture	7.1, 7.2	IS 3626	R	Each rope	-	-
8	Lubrication	9	IS 6594	R	Each rope	-	-

9	Tests on wire before Rope Making						
	Tensile test	9.1.1	IS 3626 IS 1608	R	One		
-	Torsion test	9.1.2	IS 3626 IS 1717	R	One		
-	Reverse bend test	9.1.3	IS 3626 IS 1616	R	One		
10	Tests on completed wire rope*						
	Tensile strength#	10.2.1	IS 3626	R	As per Cl. 10.2 of IS 3626 (as applicable)	Each coil from which a construction and size is made	In case of failure, procedure as per Cl. 10.2.4 shall be adopted.
	Torsion test #	10.2.2	IS 3626 IS 1835	R			
	Reverse bend test #	10.2.3	IS 6594 IS 1835	R			
	Breaking force test	6, 10.3 Annex B	IS 3626 IS 6594	R	Two	Each continuous length of finished rope	One from each end.

* To be done only when specified by purchaser.

Test on wires from completed rope

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 Licence

Licence is granted to use Standard Mark as per IS 3626:2001 with the following scope:

Name of the product	Locked Coil Winding Ropes
Size	
Whether Galvanized or Ungalvanized	