



**PRODUCT MANUAL FOR
HOT DIP GALVANIZED STAY STRAND
ACCORDING TO IS 2141:2000**

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 2141:2000
	Title	:	Hot Dip Galvanized Stay Strand
	No. of Amendments	:	One
2.	Sampling Guidelines:		
a)	Raw material	:	As per Cl. 4 of IS 2141: 2000
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	Mechanical Tests: 5 meter of strand and 5 meter of wire before stranding; 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:		All tests
6.	Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 2141:2000 with the following scope:		
	Name of the product	Hot Dip Galvanized Stay Strand	
	Construction		
	Nominal strand diameter		
	Wire tensile grade		

ANNEX-A

Grouping Guidelines

1. IS 2141: 2000 covers Hot Dipped Galvanized Stay Strand which are classified into different varieties based on the following:
 - a) Construction - As per Clause 6.3 and Table 1 of IS 2141: 2000.
 - b) Nominal strand diameter- As per Table 1 of IS 2141: 2000
 - c) Wire Tensile Grades – Grade 1/ Grade 2/ Grade 3/ Grade 4/ Grade 5
2. Considering the above, the guidelines given below shall be followed for GoL/CSoL:
 - i) Sample of highest nominal strand wire diameter from each construction as per Table 1 of IS 2141: 2000, shall be tested for all requirements to cover strands of nominal strand wire diameter upto and including the size tested for that particular construction.
 - ii) For any construction, if strand of higher tensile grade is tested, then strand of lower tensile grades may also be covered.
3. The Firm shall declare the Varieties 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 licence, 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 and tolerance, Cl. 8.2	Micrometer
2.	D C resistance test, Cl. 8.3	Contact clamps, Kelvin Bridge or any suitable instrument for measurement of resistance
3.	Ductility test, Cl. 8.1	Wire/ Mandrels of suitable size
4.	Tests for Galvanizing, Cl..7, Cl. 9.2	Weighing balance, Chemicals, arrangements for adhesion test as per IS 4826

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 requirements of IS 2141: 2000.

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.

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					Levels of Control		
Clause	Requirement	Test Methods		Test equipment requirement Required (R) or Sub-contracting permitted (S)	No. of Sample	Frequency	Remarks
		Clause	Reference				
4	Material	4	IS 2141	S	One	Each consignment	No further testing is required if accompanied with test certificate or ISI Marked.
6.1	Lay	6.1.1, 6.1.2	IS 2141	R	Two	Each continuous length of galvanized stay strand of one grade and size manufactured in a day	---
6.2	Minimum breaking force of wire	6.2, Table 1 Annex B	IS 2141	R	Two		---
6.3	Construction	6.3.1 to 6.3.6	IS 2141	R	Each wire and strand		
7	Freedom from defects	7	IS 2141	R	Each wire and strand		---
8	TESTS						
	Tests on individual wires before stranding						
8	Ductility test	8.1	IS 2141	R	One	Every 5 th coil	---
	Wire diameter	8.2	IS 2141	R	Two	Every 5 th coil	---

9	Tests on completed strand						
	Elongation	9.1.1	IS 2141	R	Two	Every 5 th coil	---
	Minimum breaking force	9.1.3, Annex B	IS 2141	R	Two	Every 5 th coil	---
	Mass of coating	4.1	IS 4826	R	One	Every 5 th coil	---
	Uniformity of coating	4.2	IS 4826	R	One	Every 5 th coil	---
	Freedom from defect	4.3	IS 4826	R	One	Every 5 th coil	---
	Adhesion	5	IS 4826	R	One	Every 5 th coil	---

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.