



PRODUCT MANUAL FOR TUBULAR STEEL POLES FOR OVERHEAD POWER LINES ACCORDING TO IS 2713 (PART I TO III): 1980

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 2713 (PART I TO III) : 1980
	Title	:	TUBULAR STEEL POLES FOR OVERHEAD POWER LINES
	No. of Amendments	:	2
2.	Sampling Guidelines:		
a)	Raw material	:	Steel tubes – As per clause 5
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	Complete testing of the product in the factory as the licence is operated on Factory Testing basis.
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 :		As the licence is operated on Factory Testing basis, complete testing shall be done in factory.
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 2713 (Part I and III) : 1980 with the following scope:		
	Name of the product		TUBULAR STEEL POLES FOR OVERHEAD POWER LINES
	Designation		410 TP / 410 SP (followed by serial number)

ANNEX A**Grouping Guidelines**

1. Tubular Steel Poles for Overhead Power Lines as per IS 2713 (Part I to III): 1980 are classified as follows:

- a) Based on Minimum Tensile Strength of Steel and Type of Poles: 410 TP and 410 SP
- b) Serial number as per Table 1 and Table 2: 410 TP 1 to 410 TP 80 and
410 SP 1 to 410 SP 80

2. For considering GoL/CSoL, Tubular Steel Poles are categorized into the following groups based on serial number:

Group	Serial Number	No of Samples to be tested	Remarks
1	Up to Sl. No. 6	Any one	It will ensure continuity in group for usage of MS Tube up to size 100 mm NB
2	Up to Sl. No. 21	Two numbers, covering minimum and maximum of the Group	It will ensure continuity in group for usage of MS Tube up to Size 125 mm NB
3	Up to Sl. No. 45	Two numbers, covering minimum and maximum of the Group	It will ensure continuity in group for usage of MS Tube up to size 150 mm NB
4	Up to Sl. No. 80	Three Numbers, covering minimum, maximum and another sample to be selected to ensure that a different subset of MS Tube is used for manufacturing the product	It will ensure continuity in group for usage of MS Tube up to size 200 mm NB

3. Samples shall be tested as specified above from each variety i.e 410 TP and 410 SP.

4. The Firm shall declare the varieties of Tubular Steel Poles intended to be covered 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 the Licence, BO shall ensure that all the types and sizes covered in the Licence 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*

S. No.	Tests used in with Clause Reference	Test Equipment
1.	Tolerances – Outside diameter, Thickness, Length, Straightness (Clause 8 of Part 1)	a) Vernier calliper b) Micrometre c) Outside micrometre d) Steel tape
2.	Mean weight of bulk supplies (Clause 8.4 of Part 1)	Weighing machine
3.	Deflection test (Clause 10.1.3 of Part 1) Permanent set test (Clause 10.1.4 of Part 1)	Deflection testing arrangement with loads
4.	Drop test (Clause 10.1.5 of Part 1)	Testing arrangement for drop test

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 2713 (Part I to III): 1980.

4. CONTROL UNIT - Poles of one designation manufactured by the same process under similar condition of production 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 Standard 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	Recommended Levels of Control		
Clause	Requirement	Test Methods Clause Reference			No. of Sample	Frequency	Remarks
5	Manufacture	5.1	IS 2713 (Part I)	S	As per clause 5.1.1 and 5.1.2 of IS 2713 (Part I)	Each consignment received	No further testing is required, if accompanied with the test certificate or ISI Marked.
		3	IS 2713 (Part II)				
		5.2 to 5.4	IS 2713 (Part I)	R	Each pole	-	-
6	Chemical composition	6.1	IS 2713 (Part I)	S	One	Each consignment received	No further testing is required, if accompanied with the test certificate or ISI Marked.
7	Freedom from defects	7.1	IS 2713 (Part I)	R	Each Pole	-	-
8	Tolerances	8.1 to 8.5	IS 2713 (Part I)	R	Each Pole	-	-
10	Tests for poles	10.1	IS 2713 (Part I)				#
	a) Deflection test	10.1.2	IS 2713 (Part I)	R	One	Each control unit	
	b) Permanent set test	10.1.3	IS 2713 (Part I)	R			
	c) Drop test	10.1.4	IS 2713 (Part I)	R			
12	Workmanship	12.1 & 12.2	IS 2713 (Part I)	R	Each Pole	-	-

13	Protection against corrosion	13.1 & 13.2	IS 2713 (Part I)	R	Each Pole	-	-
14	Earthing arrangement	14.1	IS 2713 (Part I)	R	Each Pole	-	The arrangement may be made as per purchaser requirement.
4	Physical requirement of finished pole	4.1	IS 2713 (Part II)	R	One	Each Control Unit	#
5	Dimensions and Structural properties	5.1 & 5.2	IS 2713 (Part II)	R	Each Pole	-	-

In case of failure of pole in any of the requirement, two more poles from same control unit shall be tested for that requirement and control unit shall be rejected if there is any failure.

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.