



उत्पाद मैनुअल
आई एस 1332 : 1986 के अनुसार पूर्वनिर्मित प्रबलित कंक्रीट स्ट्रीट लाइटिंग पोल
के लिए

दस्तावेज़ संख्या – पीएम/आईएस 1332/1/दिसंबर 2022

भारतीय मानक ब्यूरो की स्कीम-1 (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 दस्तावेज़ का उपयोग किया जा सकता है।

PRODUCT MANUAL FOR
PRECAST REINFORCED CONCRETE STREET
LIGHTING POLES ACCORDING TO IS 1332 : 1986

Document No.- PM/ IS 1332/1/Dec 20222

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.

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1.	Product	:	IS 1332 : 1986
	Title	:	Precast Reinforced Concrete Street Lighting Poles
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	Please refer ANNEX – A
b)	Grouping guidelines	:	Please refer ANNEX – B
c)	Sample Size	:	Complete testing of the product in the factory as the licence is operated on Factory Testing basis. In addition, concrete cube is to be tested during factory surveillance (if due for 28 th day compression test on the day of visit).
3.	List of Test Equipment	:	Please refer ANNEX – C
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – D
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 1332 : 1986 with the following scope:		
	Name of the product		Precast Reinforced Concrete Street Lighting Poles
	Mounting Height		
	Process of Manufacture		
	Maximum Working Load		

ANNEX A
RAW MATERIAL

- 1) All types and sizes of steel used for reinforcement shall be ISI marked conforming to the relevant Indian Standards as mentioned in clause 4.3 of IS 1332.
- 2) All types and sizes of coarse and fine aggregate – clause 4.2 of IS 1332 and IS 383.
Fly ash conforming to IS 3812 may be used as part replacement of fine aggregates.
- 3) Cement used for the manufacture of concrete poles shall be ISI marked conforming to the relevant Indian Standard as mentioned in IS 1332.
- 4) Concrete used in manufacturing of poles shall conform to clause 4.4 of IS 458.
Strength of concrete shall be ensured by testing concrete cubes as per IS 456.
- 5) Admixtures (If used) – IS 9103.

Note: If different type and/or sizes of steel for reinforcement are used, it shall be treated as additional raw material. Similarly, if source and/or size and types of coarse and fine aggregate has changed, it shall be treated as additional raw material.

ANNEX B

Grouping Guidelines

1. Precast Reinforced Concrete Street Lighting Poles as per IS 1332:1986 are categorized as given below:
 - i) Mounting Height: 4 to 9m
 - ii) Process of Manufacture: Vibration/ Shocking/ Spinning/ Any other mechanical compacting method.
2. Considering the above, the following grouping guidelines for GoL/CSoL have been developed:
 - Pole with highest mounting height from each process of manufacture shall be tested to include poles of all mounting heights upto the height tested for that particular process of manufacture in the licence scope.
3. Manufacturer has to declare the maximum working load for each size of pole and process of manufacture.
4. The Firm shall declare the varieties of Precast Reinforced Concrete Street Lighting 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 mounting heights covered in the Licence are tested in rotation, to the extent possible.

ANNEX C**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 – overall length, cross sectional dimensions, uprightness, manufacture & design requirements (Clause 3, 5 & 7 of IS 1332)	a) Vernier calliper b) Micrometre c) Measuring tape
2.	Compression Test on Concrete cubes	a) Compressive Strength Test Machine fitted with Load Gauge b) Cube Moulds c) Tamping rod/ vibrator for compaction d) Humidity chamber e) Hygrometer f) Curing tank inside lab g) Air Conditioner
3.	Transverse Strength Test for Poles	a) Testing arrangement as per fig 1 of IS 2905:1989
4.	Strength Test for Brackets	a) Arrangement to apply load and measure deflection as per clause 8.2 of IS 1332

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

ANNEX D

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 1332:1986.

4. CONTROL UNIT – Concrete poles of the same mounting height, same dimensions and belonging to the same batch of material, manufactured by the same process under similar condition of production in a day 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
4.1	Cement	4.1	IS 1332#	S	-	Each consignment	Shall be ISI marked and received with test certificate
4.2	Aggregates	4.2, 4.2.1 & 4.2.2	IS 1332 IS 383#	S	One	Each consignment	Shall be ISI marked and received with test certificate
4.2.3	Fly ash (used as part of replacement of fine aggregates)	4.2.3	IS 1332 IS 3812#	S			
4.3	Reinforcement	4.3	IS 1332	S	-	Each consignment	Reinforcement material received shall be ISI marked and accompanied with test certificate.
4.4	Compression Test on Concrete cubes	4.4	IS 1332 IS 456#	R	One consisting of 3 cubes from each consignment of cement	Supply of cement executed against order spread over up to three months shall be taken as one consignment for this test only. *	
4.5	Admixtures	4.5	IS 1332#	S	One	Each consignment	No further testing is required if accompanied with test certificate or ISI marked.
5	Design	5	IS 1332	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		
6	Fittings	6	IS 1332	R			
7	Manufacture	7	IS 1332	R			

8.1	Transverse Strength Test for Poles	8.1	IS 1332	R	One	Each control unit	In case of failure of pole/ brackets in any of the requirement, two more poles/ brackets from same control unit shall be tested for that requirement and control unit shall be rejected if there is any failure.
8.2	Strength Test for Brackets	8.2	IS 1332	R	One	Each control unit	

As per the latest version.

*During manufacture, daily tests on concrete cubes shall be carried out till the concrete achieves the required strength. Thereafter the tests on concrete shall be carried out as detailed in IS 456.

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.