

## केन्द्रीय मुहर विभाग – III

हमारा संदर्भ- केन्द्रीय मुहर विभाग-III/16: IS 784

28 March 2019

**विषय: अनुपालन हेतु एस आई टी**

सभी शाखा कार्यालय से आग्रह है कि एस आई टी का अनुपालन तत्काल प्रभाव से सुनिश्चित करें।

(एस डी राणे)  
वैज्ञानिक 'ई' (सी एम डी-III)

**प्रमुख (सी एम डी-III)**

सभी क्षेत्रीय/शाखा कार्यालय

आई टी एस विभाग — बीआईएस इंटरनेट पर अपलोड करने हेतू

## CENTRAL MARKS DEPARTMENT-III

Our Ref: CMD-III/16: IS 784

28 March 2019

**Subject: SIT for IS 784 : 2019 'Prestressed Concrete Pipes (Including Specials)**

This has reference to the subject mentioned above.

BOs may kindly ensure implementation of the SIT with immediate effect.

(S D Rane)  
Sc-E (CMD III)

**Head (CMD - III)**

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**SCHEME OF INSPECTION AND TESTING  
FOR CERTIFICATION OF PRESTRESSED CONCRETE PIPES  
(INCLUDING SPECIALS)  
ACCORDING TO IS 784 : 2019**

**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 equipments.

**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 784 : 2019.

**4. CONTROL UNIT** – Every 50 pipes/specials or part thereof, of same class and size, manufactured continuously on consecutive days (from same consignment of cement, same mix design for concrete/mortar and similar curing condition) shall constitute a control unit.

**5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control submitted by the manufacturer 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 2.0 above.

**5.1** All the production which conforms to the Indian Standards 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	<b>Material</b>						
4.1	Cement	4.1	IS 784	S	-	-	Cement received shall be ISI marked and accompanied with test certificate.
4.2	Aggregates	4.2	IS 784 IS 383	S	One	Once in year for each size.	Additional sample shall be tested wherever there is change in source of raw material.
4.3	Water	4.3	IS 784 IS 456	S	1	Once in a year or whenever there is a change in source of water, whichever is earlier	
4.4	Admixtures (if used)	4.4	IS 784 IS 9103	S	1	Each consignment	No further testing is required if accompanied with test certificate or ISI marked.
4.5	<b>Steel for reinforcement</b>						
4.5.1	Prestressing steel	4.5.1	IS 784 IS 1785 (Part 1) IS 1785 (Part 2) IS 6006 IS 6003	S	-	-	Reinforcement material received shall be ISI marked and accompanied with test certificate.
4.5.2	Untensioned reinforcement	4.5.2	IS 784 IS 432 (Part 1) IS 432 (Part 2) IS 1786 IS 1566 IS 1785 (Part 1) IS 1785 (Part 2)	S	-	-	Reinforcement material received shall be ISI marked and accompanied with test certificate.

4.6	Steel for cylinder, joint rings and specials	4.6	IS 784 IS 2062	S	-	-	Reinforcement material received shall be ISI marked and accompanied with test certificate.
4.7	Rubber sealing rings	4.7	IS 784 IS 5382	S	1	Each size and source	No further testing is required, if received with test certificate or ISI marked.
4.8	Bitumen or other protective coating	4.8	IS 784	S	-	-	As per agreement with supplier.
5 13.5	Dimensions and Tolerances	5.1, 5.2, 5.3, 13.5 15.1.1& 15.1.2	IS 784	R	Each pipe	-	By gauging each pipe. Actual dimensions may also be ensured with random checking.
6 9.1 11 13.5	Joints Dimensions	6, 9.1.1 11, 13.5 15.1.3	IS 784	R	Each pipe	-	Joint dimensions and tolerances for spigot and socket diameters shall be provided by manufacturer.
7	Design	7.1 to 7.8	IS 784	-	Each pipe	-	-
5.5 8.1.2 8.5.4 10.1.1	Compressive strength of concrete cubes and mortar cubes	5.5.1, 5.5.3 8.1.2 8.5.4 10.1.1	IS 784	R	One sample 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. One sample may be tested in a month in case same mix is used for different size/class of pipes.
8.3 & 8.3.3	Longitudinal prestressing wire	8.3, 8.3.3	IS 784	R	Each Pipe	-	-
8.4.5 & 8.4.6	Circumferential prestressing wire	8.4.5 & 8.4.6	IS 784	R	Each pipe	-	-
8.5	Cover coating	8.5	IS 784	R	Each pipe	-	-
9	Steel cylinders	9.1	IS 784	R	Each cylinder	-	-

10	Specials	10.1, 10.2 10.3, 10.4	IS 784	R	Each special	-	-
12	<b>Workmanship and finish</b>						
12.1	Deviation from straightness	12.1, 15.1.4	IS 784	R	Each pipe	-	-
12.2	Finish	12.2	IS 784	R	Each Pipe	-	-
13.1	Design proving and manufacturing process approval test in factory	13.1	IS 784	R	Two or Three pipes	One set of sample of same diameter and highest pressure rating, shall be tested as design proving and manufacturing process approval test. The additional test shall be carried out whenever there is change in design parameter or once in three years, whichever is earlier.	
13.2	Hydrostatic factory test	13.2.1 13.2.2	IS 784 IS 3597	R	Each Pipe	-	-
13.3	Permeability test on coating	13.3	IS 784 IS 3597	R	Two	Every 10 <sup>th</sup> control unit	Sample shall be selected in such a manner that all sizes shall be covered over a period.
13.4	Three edge bearing test (for pipes for drainage, sewerage and culverts)	13.4	IS 784 IS 3597	R	Two	Each control unit	Maximum safe load shall be applied and result (Pass/fail) shall be recorded.
13.7	Boling absorption test on coating mortar	13.7	IS 784 IS 3597	R	Three	Every 10 <sup>th</sup> control unit	Sample shall be selected in such a manner that all sizes shall be covered over a period.
13.8	Pressure permeability test on coating	13.8	IS 784 IS 3597	R	One	Every 10 <sup>th</sup> control unit	If sample fails after 480 h, two additional samples from same control unit shall be tested and control unit shall be accepted only if both samples pass.

**Note 1** - Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

**Note 2** - The control unit and levels of control as decided by the Bureau are obligatory to which the licensee shall comply with.