PRODUCT MANUAL FOR
TOWER BOLTS -FERROUS METALS
ACCORDING TO IS 204 (PART 1): 1991

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 204 (PART 1): 1991
	Title	:	TOWER BOLTS -FERROUS METALS
	No. of Amendments	:	3
2.	**Sampling Guidelines:**		
a)	**Raw material**	:	As per Cl.4 and Table 5 of IS 204 (Part 1): 1991
b)	**Grouping guidelines**	:	Please refer ANNEX –A
c)	**Sample Size**	:	5 pieces
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**	**:**	Manufacture (Cl. 5), Dimensions (Cl. 6), Finish- Coating thickness, as applicable (Cl. 7)
6.	**Scope of the Licence:**		
	"Licence is granted to use Standard Mark as per IS 204 (Part 1): 1991 with the following scope:		
	Name of the product	Tower Bolts -Ferrous Metals	
	Description and Type		
	Size		

ANNEX A

Grouping Guidelines

1. Tower Bolts (Ferrous Metals) as per IS 204 (Part 1) are classified based on the following:

Description	Type	Size
Barrel tower bolt	Type 1A Type 1B	75 mm, 100 mm, 125 mm, 150 mm, 175 mm, 200 mm, 225 mm, 250 mm, 300mm
Semi-Barrel tower bolt	Type 2A Type 2B Type 3A Type 3B	75 mm, 100 mm, 125 mm, 150 mm, 175 mm, 200 mm, 225 mm, 250 mm, 300 mm, 375 mm, 450 mm
Riveted or Spot welded	Type 4A Type 4B	100 mm, 125 mm, 150 mm, 175 mm, 200 mm, 225 mm, 250 mm, 300mm, 375 mm, 450 mm, 600 mm, 750 mm, 900 mm
Skelton Tower Bolt	Type 5	375 mm, 450 mm, 600 mm, 750 mm, 900 mm

Further, as per Cl. 6.5 the tower bolts may be supplied in sizes and dimensions and shapes other than those specified in the Standard as agreed between the manufacturer and the purchaser.

2. Considering the above, one sample each of the smallest and highest size from each type of tower bolt shall be tested to cover all sizes in that size-range for that particular type of tower bolt.

3. The Firm shall declare the varieties of Tower Bolts 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 operation of the licence, BO shall ensure that all the varieties 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

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Manufacture (Clause 5)	a) Micrometer b) Countersunk head of Wood Screws as per IS 6760
2.	Dimensions and Tolerances (Clause 6, Table 1,2, 3 and 4)	a) Vernier Calliper b) Micrometer c) Countersunk head of Wood Screws as per IS 6760
3.	Finish (Clause 7)	Test equipment, chemicals as per IS 1068 Or Test equipment, chemicals as per IS 1573 Or Test equipment, chemicals as per IS 1378

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.

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 requirement of IS 204 (Part 1):1991.

3.1 PACKING – Packing of tower bolts shall be done as per clause 9 of IS 204 (Part 1): 1991.

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				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
4	Material	4.1, 10.5 Table 1	IS 204 (Part 1)	S	One	Each consignment	MS Sheets and MS Bars used shall be ISI Marked. For other materials, no further testing is required if accompanied with test certificate or ISI marked.
5	Manufacture	5.1, 5.2	IS 204 (Part 1)	-	Each tower bolt		-
6	Dimension	6, Table 1, 2, 3 and 4	IS 204 (Part 1)	R	5	Each type and size from every hour production	In case of failure of any sample, entire production during the hour shall be checked for dimensions and only those tower bolts which are passing shall be marked.
7	**Finish**						
	Bright finished/Bright stain finished	7.1	IS 204 (Part 1)	-	Each tower bolt		
	Test for Ni-Cr plating	9	IS 1068	R	3	From parts/ products coated together in a shift.	
	Test for Copper oxidizing	4	IS 1378	R	3	From parts/ products finished together in a shift.	
	Test for Zinc plating	4, 8, 9	IS 1573	R	3	From parts/ products coated together in a shift.	

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.