



## PRODUCT MANUAL FOR BICYCLE RIMS ACCORDING TO IS 624:2003

*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.	<b>Product</b>	:	IS 624:2003
	<b>Title</b>	:	BICYCLE RIMS
	<b>No. of Amendments</b>	:	Nil
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	As per clause 4 of IS 624: 2003
b)	<b>Grouping guidelines</b>	:	Please refer ANNEX- <a href="#">A</a>
c)	<b>Sample Size</b>	:	Two pair of Rims (Both front and rear)
3.	<b>List of Test Equipment</b>	:	Please refer ANNEX – <a href="#">B</a>
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer ANNEX – <a href="#">C</a>
5.	<b>Possible tests in a day:</b>		a) Shape and dimensions (Cl. 3) b) Manufacture (Cl. 6) c) Finish (Cl. 7) d) Compression test (Cl. 9)
6.	<b>Scope of the Licence:</b>		
	“Licence is granted to use Standard Mark as per IS 624:2003 with the following scope:		
	Name of the product	Bicycle Rims	
	Profile		
	Material		
	Nominal diameter code		
	Nominal width code		

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ANNEX A

GROUPING GUIDELINES

- 1) Bicycle Rims covered under IS 624: 2003 can be classified on the basis of the following:
  - a) **Profile:** Beaded Edge (BE)/ Straight Side (SS)/ Hooked Bead (HB)/ Crotchet (C)
  - b) **Nominal Diameter Code & Nominal Width Code**
  - c) **Material:** Steel/ Aluminium alloy
- 2) Sample of highest nominal diameter of any nominal width, for each profile type and material shall be tested to cover Rims of all nominal width for that particular type and material for nominal diameter up to and including the diameter of tested Rim.
- 3) The Firm shall declare the Varieties of Rims 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 license, 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*

<b>Sl. No.</b>	<b>Tests used in with Clause Reference</b>	<b>Test Equipment</b>
1.	Shape & Dimensions (Cl. 3.1, 3.2, 3.2.1 Table 1 to 6, Fig 1 to 4 & 6.1 to 6.4)	1. Micro meter 2. Vernier caliper 3. Valve hole gauges 4. Circumference tapes 5. Spoke hole gauges 6. Feeler gauge 7. Radius gauges 8. Measuring tape 9. Angle gauge
2.	Finish (Cl. 7)	1. Thickness tester 2. Salt spray test setup, 3. Hygrometer 4. Air Pressure gauge 5. Bench Vice & File,  <b>Chemicals</b> 1. Copper sulphate 2. Ferric chloride 3. Hydrochloric acid 4. Antimony trioxide 5. Sodium chloride
3.	Compression test (Cl. 9)	Compression test setup as per Fig. 7

*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 requirement of IS 624:2003.

**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			S			
4.1	Steel						
4.1.1 3.2.2	i. Ultimate tensile strength ii. Yield stress iii. Elongation iv. Flatness v. Thickness		IS 1608 IS 1599 IS 513		One	Every 10 coils of strip steel or part thereof from each batch of supply.	No further testing is required if the material is ISI Marked or accompanied with a test certificate.
4.2	Aluminum Alloy						
	i. Tensile strength ii. Yield strength iii. Elongation iv. Hardness v. Specific gravity vi. Joining pin				One	Each consignment	

3	<b>Shapes and Dimensions</b>						
3	Shape and dimensions	3.1, 3.2, 3.2.1, 3.2.2 Table 1 to 6, Fig.1 to 4	IS 624	R	One	Every 50 rims or part thereof produced	Measurements may be made with the help of gauges and tapes.
6	Manufacture	6.1 to 6.4	IS 624	R	One	Every 50 rims or part thereof produced	
7	<b>Finish</b>						
	Appearance	7.1	IS 1068	R	All finished rims		
	Thickness of coating	9.1	IS 1068	R	One	All the rims electroplated together in every shift	In case of failure of the sample, one rim from every batch electroplated in that shift may be tested and only those batches found conforming may be marked.
	Adhesion of coating	9.2	IS 1068	R	One	All the rims electroplated together in every shift	
	Corrosion resistance	9.3	IS 1068 IS 6009 IS 6910	R	One	Every 7 <sup>th</sup> batch of electroplating	
9.	Compression test	9.2	IS 624	R	One	One day production for each type and material	

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.