



**PRODUCT MANUAL FOR
AUTOMOTIVE VEHICLES - WHEEL RIMS FOR TWO AND THREE
WHEELED VEHICLES - LIGHT ALLOY WHEEL RIMS –
METHOD OF TESTS AND REQUIREMENTS
ACCORDING TO IS 16192 (Part 1): 2014**

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 16192 (Part 1) :2014
	Title	:	Automotive Vehicles - Wheel Rims for two and three wheeled vehicles - Light alloy wheel rims - Method of tests and requirements
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	---
b)	Grouping guidelines	:	Please refer ANNEX – <u>A</u>
c)	Sample Size	:	As per Cl. 5.1.2 of IS 16192 (Part 1)
3.	List of Test Equipment	:	Please refer ANNEX – <u>B</u>
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – <u>C</u>
5.	Possible tests in a day:		
	1. General Requirements (Cl. 4.1) 2. Radial Impact Resistance Test (Cl. 4.4) 3. Air Leak Test (Cl. 4.6)		
6.	Scope of the Licence	:	Please refer ANNEX – <u>D</u>

ANNEX A

Grouping Guidelines

1. The parameters given below shall be considered for grouping of Wheel Rims for Two and Three Wheeled Vehicles as per IS 16192 (Part 1): 2014 for GoL/CSoL:

Type	<ol style="list-style-type: none"> a. Unit Construction Light Alloy Wheel b. Composite Construction Light Alloy Wheel
Application (Use of Tube)	<ol style="list-style-type: none"> a. Tube type tyre application b. Tubeless tyre application

2. Wheel Rim having Highest Design Load for each Type and Application shall be tested to cover the entire varieties of Wheel Rims for that particular Type and Application, for Design Loads up to and including the Design Load tested.
3. The Firm shall declare the varieties of Wheel Rims intended to be covered 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 the Licence, BO shall ensure that all the varieties covered in the Licence are tested in rotation, to the extent possible.
5. Only one Factory Sample and one Market Sample shall be drawn during an operative period of one year.

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	Rotation Bending Fatigue Test (Cl. 4.2)	Equipment as per Annex A of IS 16192 (Part 1): 2014
2	Radial Load Durability Test (Cl. 4.3)	Equipment as per Annex B of IS 16192 (Part 1): 2014
3	Radial Impact Resistance Test (Cl. 4.4)	Equipment as per Annex C of IS 16192 (Part 1): 2014
4	Torsion Moment Test (Cl. 4.5)	Equipment as per Annex D of IS 16192 (Part 1): 2014
5	Air Leak Test (Cl. 4.6)	Air leak testing equipment as per Annex E of IS 16192 (Part 1): 2014

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 16192 (Part 1).

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				
4.1	General Requirements	4.1	IS 16192 (Part 1): 2014	-	Each rim	Each rim	-
4.2	Rotation Bending Fatigue Test (Dynamic Cornering Fatigue Test)	Annex A		S	One sample of each type and application.	Once in a year or whenever there is any change as given in Cl. 5.3.1 (b) to (e) of IS 16192 (Part 1). For changes as per Cl. 5.3.1 (a), the provisions of change in scope of Licence as given in Annex A of this Product Manual shall apply.	
4.3	Radial Load Durability Test	Annex B					
4.4	Radial Impact Resistance Test	Annex C					
4.5	Torsion Moment Test	Annex D					
4.6	Air Leak Test	Annex E					R

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 obligatory, to which the licensee shall comply with.

ANNEX D**Scope of the Licence**

Licence is granted to use Standard Mark as per IS 16192 (Part 1):2014 with the following scope:	
Name of the Product	Wheel Rims for Two and Three Wheeled Vehicles - Light Alloy Wheel Rims.
Type	1. Unit Construction Light Alloy Wheel 2. Composite Construction Light Alloy Wheel
Application (Use of Tube)	1. Tube type tyre application 2. Tubeless tyre application
Design Load of the wheel rim (N)	Up to and including