Draft for comments only

Draft *Indian Standard*

AUTOMOTIVE VEHICLES WHEEL RIMS FOR TWO AND THREE WHEELED VEHICLES PART 3 SPOKE WHEEL RIMS – METHOD OF TESTS AND REQUIREMENTS

Not to be reproduced or used as a standard without the permission of BIS	Last date for comments: 29 February 2012

FOREWORD
(Formal clauses will be added later)

1 SCOPE

1.1 This Standard prescribes the general and performance requirements of spoke wheel rims intended for use on two and three wheeled motor vehicles with or without sidecar.

2 REFERENCE

2.1 The following Indian Standards are necessary adjuncts to this standard. At the time of proposal, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
10694 (Part 1) : 1993	Automotive Vehicles - Rims –General Requirements: Part 1 - Nomenclature, Designation, Marking and Measurement

3 DEFINITION AND NOMENCLATURE

3.1 Definition and nomenclature of wheel rim shall be in accordance with IS 10694 (Part-1).

4 REQUIREMENTS RELATING TO WHEEL RIMS

4.1 General Requirements

4.1.1 The wheel rims shall have smooth contour, free from sharp edges on the tyre side.

4.1.2 The holes for wire spokes shall be free from burrs and sharp edges. These holes shall have uniform pitch. The spoke holes shall be equally spaced and shall be alternately on either side of the center of the rim.

4.1.3 The valve hole shall be accurately punched or drilled centrally on the nose of the rim approximately opposite to joint of the rim and shall be at the center of the two diverging spoke holes. This hole shall be clean and free from burrs.

4.1.4 The finished surface of the rim shall be free from flaws, crack, crazing and other similar structural defects.

4.1.5 The surface to be fitted with tyre of the rim and the perimeter of valve hole shall not be of a form or a surface condition which is likely to injure the performance of the tyre, tube and valve.

4.2 Strength Requirements

When the deflection of wheel rims (without spokes) has attained a value given in Table 1 by applying a load by the method given in Figure1 to the rim, the load shall not be smaller than the value given in Table 2 and in addition, the rim shall be free from cracks.

Furthermore, the applying method of load shall be as follows. Place the rim vertically on the base having a plane of not smaller than a horizontal rim width and add the load gradually toward the direction of vertical centre of rim from the most outside circumference part of rim.

Table 1 Amount of Deflection

(*Clause* 4.2)

Nominal Rim Width Code T	**Nominal Rim Diameter Code**		
	15 max.	16,17, 18	19 min.
1. 10 to 2.75 and MT 1.85 to MT 5.50	10 mm	15 mm	20 mm

a b l

e 2 Load

(*Clause* 4.2)

Nominal Rim Width		**Load** Kn (Kgf)
1.10	-	0.98 (100)
1.20	-	1.47 (150)
1.40	-	1.96 (200)
1.50	-	2.45 (250)
1.60	-	3.43 (350)
1.85	MT 1.85	4.41 (450)
2.15	MT 2.15	4.90 (500)
2.50	MT 2.50	6.37 (650)
2.75	MT 2.75	6.37 (650)
-	MT 3.00	6.37 (650)
-	MT 3.50	6.37 (650)

-	MT 4.00	6.37 (650)
-	MT 4.50	6.37 (650)
-	MT 5.00	6.37 (650)
-	MT 5.50	6.37 (650)

:

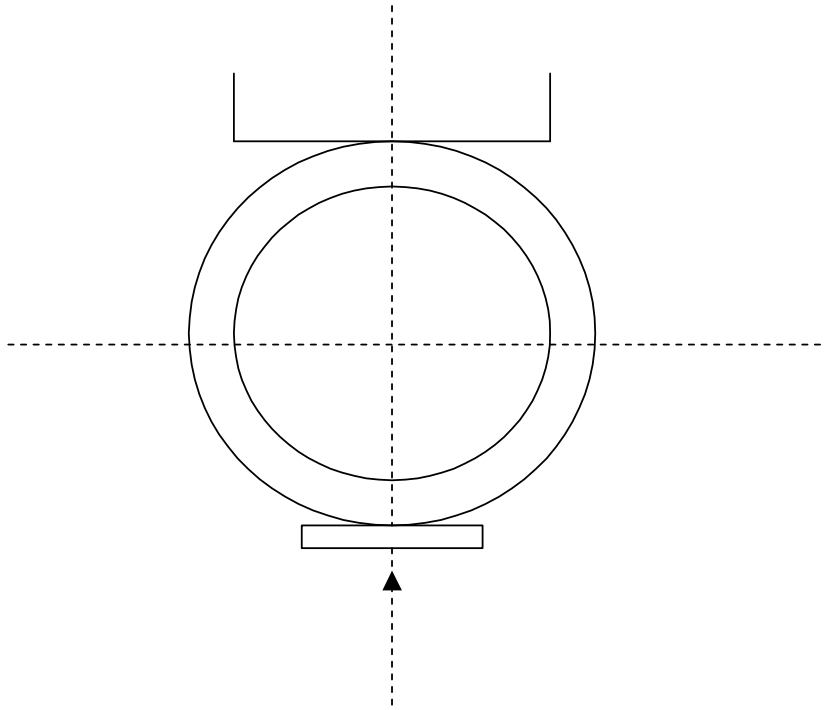

Fig. 1 Load Applying Method

5 IF COMPLIANCE IS TO BE ESTABLISHED FOR STATUTORY PURPOSE

5.1 Type Approval

5.1.1 The manufacturer shall submit the details as specified in ANNEX A.

5.1.2 Number of rims to be provided shall be minimum one number or at the discretion of testing agency.

5.1.3 The type of the wheel rim submitted for approval in pursuance of this standard, if meets the requirements of this standard, approval for that type of wheel rim shall be granted.

5.2 Modification and Extention of Approval of Wheel Rim Type

5.2.1 Every modification of the type of wheel rim shall be notified to testing agency, which has approved the type of wheel rim. The test agency may then either

5.2.1.1 Consider that the modification made are unlikely to have an appreciable adverse effect and that in any case, the wheel rim still complies with the requirement; or

5.2.1.2 Require a further test report from the testing agency responsible for conducting the test.

For considering whether any further verification is required or not, guidelines given in **5.3** (criteria for extension of type approval) may be followed.

5.2.1.3 In case of **5.2.1.2,** check for those parameters which are affected by modifications, only need to be carried out.

5.2.2 In the event of **5.2.1.1** or in case of **5.2.1.2** after successful compliance to the requirements, a certificate of compliance shall be validated for the modified version.

5.3 Criteria for Extension of Type Approval

5.3.1 In case of following changes, testing shall be carried out for establishing compliance of the changed parameters to the requirements specified in this standard.

5.3.1.1 *Increase in the load carrying capacity*

5.3.1.2 *Any change in the design of the wheel rim*

5.3.1.3 *Any change in the material of the wheel rim*

5.3.1.4 *Any change in the thickness of the wheel rim*

5.4 Transitional Provisions For Statutory Use

5.4.1 At the request of the applicant, type approvals for compliance to this standard shall be granted by test agencies from the date decided by AISC. Such type approvals shall be deemed to be compliance to current statutory provisions in CMVR.

5.4.2 At the request of the applicant, type approval for the compliance to current statutory provisions in CMVR shall be granted up to the notified date of implementation of this standard.

5.4.3 Type approvals issued for compliance to current statutory provisions in CMVR shall be extended to approval of this standard.

NOTE - Additional verification for the above need not be carried out, if compliance to the above requirements has already been established during the type approval as per current statutory provision.

5.4.4 Extension of Approvals for Engineering & administrative changes.

5.4.4.1 In the case of **5.4.1**, extensions shall be granted subject to the conditions of this standard. Such extensions shall be deemed to be compliance to current statutory provision in CMVR.

5.4.4.2 In the case of **5.4.2**, extensions shall be granted subject to conditions of current statutory provision in CMVR, till the notified date of implementation of this standard.

ANNEX A
(*Clause* **5.1.1**)

TECHNICAL INFORMATION TO BE SUBMITTED BY SUPPLIER

1. Name of supplier
2. Address of supplier
3. Telephone No.
4. Fax No.
5. E mail address
6. Contact person
7. Wheel rim manufacturer name (In case different for supplier)
8. Address of wheel rim manufacturer (In case different for supplier)
9. The trade/brand name or mark
10. Wheel Rim size designation
11. Type of wheel rim (To be specified)
12. Location Rear/front/both
13. Maximum Design Load of wheel Rim
14. Engineering Drawing of Wheel rims giving details of profile, relevant dimensions, Inset/outset, markings etc., in triplicate