

AUTOMOTIVE INDUSTRY STANDARD

**Automotive Vehicles – Approval of
Rear View Mirrors Intended for use on
L Category Vehicles without Bodywork
Partly or Wholly Encloses the Driver –
Installation Requirements**

(Revision 1)

PRINTED BY
THE AUTOMOTIVE RESEARCH ASSOCIATION OF INDIA
P.B. NO. 832, PUNE 411 004

ON BEHALF OF
AUTOMOTIVE INDUSTRY STANDARDS COMMITTEE

UNDER
CENTRAL MOTOR VEHICLE RULES – TECHNICAL STANDING COMMITTEE

SET-UP BY
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
(DEPARTMENT OF ROAD TRANSPORT & HIGHWAYS)
GOVERNMENT OF INDIA

May 2011

INTRODUCTION

- 0.0 The Government of India felt the need for a permanent agency to expedite the publication of standards and development of test facilities in parallel when the work on the preparation of the standards is going on, as the development of improved safety critical parts can be undertaken only after the publication of the standard and commissioning of test facilities. To this end, the erstwhile Ministry of Surface Transport (MOST) has constituted a permanent Automotive Industry Standards Committee (AISC) vide order No.RT-11028/11/97-MVL dated September 15, 1997. The standards prepared by AISC will be approved by the permanent CMVR Technical Standing Committee (CTSC). After approval, the Automotive Research Association of India, (ARAI), Pune, being the Secretariat of the AIS Committee, has published this standard. For better dissemination of this information ARAI may publish this document on their web site.
- 0.1 Accordingly AIS-002 covering mandatory requirements regarding installation of rear view mirrors been published in 2001 and has been implemented thereafter in 2003.
- 0.2 With technological developments in the rear view mirrors, AIS-002 was taken up for revision and now is prepared in two parts.

This part covers the requirements for installation of rear view mirrors intended for use on L category vehicles without bodywork partly or wholly encloses the driver.

- 0.3 This part is based on the following ECE Regulation:

ECE R 81, Amd. 2 Suppl. 2 to the 00 series of amendment (Date of entry into force June 18, 2007).	Uniform Provisions Concerning the Approval of Seats of Rear-view Mirrors of two-wheeled Power-driven Vehicles with or without Side Car, with regard to the Mounting of Rear-view Mirrors on Handlebars
---	--

- 0.4 While preparing this standard attempts have been made to align with the above ECE regulation. However, certain changes were necessary in the Indian context.
- 0.5 The following standards contain provisions, which through reference in this text constitute provisions of the standard.

AIS-001 (Part 2) (Rev.1):2011	Automotive Vehicles –Approvals of Rear View Mirrors intended for use on L category Vehicles without bodywork Partly or Wholly encloses the Driver – Specification.
AIS-002 (Part 1) (Rev.1):2011	Automotive Vehicles - Approval of Devices for Indirect Vision intended for use on L category with bodywork vehicles, M and N category -Installation requirements

AIS-007 (Rev. 3)	Information on Technical Specifications to be Submitted by the Vehicle Manufacturer
AIS-053	Automotive Vehicles – Types – Terminology

- 0.6 The composition of AIS panel and AIS Committee responsible for preparation of this standard is given in Annex J and Annex K respectively.

**Automotive Vehicles – Approval of Rear View Mirrors Intended for
use on L Category Vehicles without Bodywork Partly or Wholly
Encloses the Driver – Installation Requirements**

Para. No.	Contents	Page No.
1	Scope	1/11
2 to 12	Reserved	1/11
13.	Definitions	1/11
14.	Application for approval	1/11
15.	Approval	2/11
16.	Requirements	2/11
17.	Conformity of production	2/11
18.	Reserved	3/11
19.	Extension of type approval	3/11
20.	Reserved	3/11
21.	Reserved	3/11
22.	Transitional provisions	3/11
23.	Amendments to ECE regulations after the level described in 0.3 of introduction	4/11
List of Annexes		
Annex A	Reserved	5/11
Annex B	Information to be submitted at the time of type approval	6/11
Annex C	Reserved	7/11
Annex D	Reserved	7/11
Annex E	Reserved	7/11
Annex F	Reserved	7/11
Annex G	Reserved	7/11
Annex H	Criteria for extension of approval	8/11

Automotive Vehicles -Approval of Rear View Mirrors Intended for use on L Category Vehicles without Bodywork Partly or Wholly Encloses the Driver – Installation Requirements

1. SCOPE

This standard applies

1.1 Reserved

1.2 To the installation of rear view mirrors on vehicles of category L as defined in AIS-053 without bodywork partly or wholly enclosing the driver and also with or without side car.

2 to 12 Reserved

13. DEFINITIONS

For the purpose of this standard:

13.1. **"The maximum design speed"** as declared by vehicle manufacturer in Annex B.

Note: Verification of the maximum design speed of vehicle may be needed only if approval is sought for fitment of rear view mirrors as per 16.2.1.

13.2. **"Type of vehicle as regards rear-view mirrors"** means vehicles which are identical in respect of the following basic features:

13.2.1. The geometrical features of the vehicle, liable to influence the installation of rear-view mirrors.

13.2.2. The positions and types of rear-view mirror specified.

14. APPLICATION FOR APPROVAL

14.1. Information to be submitted at the time of applying for type approval of the rear view mirror shall be as given in Annex B

14.2. Reserved

14.2.1. Reserved

14.2.2. Reserved

14.2.3. Reserved

14.3. A vehicle representative of the vehicle type to be approved shall be submitted to the testing agency responsible for conducting the approval tests.

14.4. Reserved

15. APPROVAL

15.1. If the vehicle type submitted for approval in accordance with paragraph 14 above meets the requirements of paragraph 16 of this standard, approval shall be granted.

15.2. to 15.8 Reserved

16. REQUIREMENTS

16.1. The vehicle shall meet the following requirements:

16.1.1. The rear-view mirrors installed on the vehicle shall be of “Class L” as per AIS-001 (Part 2) (Rev. 1).

16.1.2. Rear-view mirrors shall be fixed in such a way that they remain steady under normal conditions of use.

16.2. Number

16.2.1. All L category vehicles without body work partly or wholly encloses the driver, with a maximum design speed not exceeding 50 km/h shall be fitted with at least one rear-view mirror. This rear-view mirror shall be on the right side of the vehicle.

16.2.2. All L category vehicles without body work partly or wholly encloses the driver, with a maximum design speed exceeding 50 km/h shall be fitted with two rear-view mirrors, one on the left and one on the right of the vehicle.

16.3. Site

16.3.1. Rear-view mirrors shall be mounted or adjusted in such a way that the distance of the centre of the reflective surface, as measured in a horizontal plane, is at least 280 mm outward from the longitudinal vertical plane passing through the centre of the steering head of the vehicle. Before the measurement, the handlebar shall be placed in the straight ahead position and the mirror(s) shall be adjusted to its (their) normal position.

16.4. Adjustment

16.4.1. Rear-view mirror(s) shall be such that the driver is able to adjust it (them) in the normal driving position.

17. CONFORMITY OF PRODUCTION

Every vehicle approved under this standard shall be so manufactured as to conform to the type approved by meeting the requirements set out in 16 above.

Note: Verification of conformity of production will be applicable when the Whole Vehicle COP procedure is implemented.

18. Reserved

19. EXTENSION OF TYPE APPROVAL

19.1 Every functional modification in technical specifications pertaining to installation of rear view mirror declared in accordance with 14.1 shall be intimated to the testing agency. Testing agency may then consider, whether,

19.1.1 Vehicle with modifications complies with specified requirements, or,

19.1.2 any testing is required.

19.2 For considering whether testing is required or not, guidelines given in Annex H shall be followed.

19.3 In case of 19.1.2., checks for those parameters which are affected by the modifications only need to be carried out.

19.4 In the event of 19.1.1. or in the case of 19.1.2 after successful compliance to requirements, the certificate of compliance shall be validated for the modified version.

20. Reserved

21. Reserved

22. TRANSITIONAL PROVISIONS

22.1 At the request of the applicant, type approvals for compliance to AIS-002 (Part 2) (Rev.1):2011 shall be granted by test agencies from 22nd February 2011 (date of adoption in CMVR-TSC). Such type approvals shall be deemed to be compliance to AIS-002: 2001.

22.2 At the request of applicant, type approval to the compliance to AIS-002:2001 shall be granted up to the notified date of implementation of AIS-002 (Part 2) (Rev.1):2011.

22.3 Type approvals issued for compliance to AIS-002 : 2001, for vehicles fitted with convex mirrors shall be extended to approval of AIS-002 (Part 2) (Rev.1):2011 subject to satisfactory compliance of the following:

22.3.1 For the following L2 category vehicles, verification as per 16.

22.3.1.1 Vehicles having engine capacity not exceeding 70cc and having maximum design speed more than 50 km/h.

Note 1: As per AIS-001 (Part 2) (Rev. 1), flat mirrors are not permitted.

Note 2: 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 AIS-002:2001.

- 22.4 Extension of Approvals for engineering and administrative changes:
- 22.4.1 In the case of 22.1, extensions shall be granted subject to the conditions of AIS-002 (Part 2) (Rev.1):2011. Such extensions shall be deemed to be compliance to AIS-002:2001.
- 22.4.2 In the case of 22.2, extensions shall be granted subject to conditions of AIS-002:2001 till the notified date of implementation of AIS-002 (Part 2) (Rev.1):2011.

23. AMENDMENTS TO ECE REGULATIONS AFTER THE LEVEL DESCRIBED IN 0.3 OF INTRODUCTION

23.1 Supplements

In case of changes in ECE regulation, which are issued as supplements (Supplements do not affect the earlier type approvals) at the request of applicant, approval of compliance to this standard shall be issued taking into account the changes arising out of such supplement(s) to ECE regulation with approval from Chairman AISC.

This shall be incorporated in the test report.

Note : Such changes will be considered for inclusion in this standard at the time of its next amendment /revision.

23.2 Series of amendments

Changes in ECE regulation, which are issued as series of amendments (series of amendments may affect the earlier type approvals) will not be considered for issuing approval to this standard.

However, Chairman, AISC may, on a case to case basis, permit to accept latest series of amendments.

This shall be incorporated in the test report.

Note : Such changes will be considered for inclusion in this standard at the time of its next revision.

ANNEX A
(Reserved)

ANNEX B

(See 14.1.)

**INFORMATION TO BE SUBMITTED AT THE TIME OF
TYPE APPROVAL**

- B-1** The specification submitted by manufacturer (applicant) at the time of applying for the type approval of the vehicle to this standard shall contain at least the information set out in the following entries of Table 1 of AIS-007, Revision 4. 0.2, 0.2.1, 0.5, 0.5.1, 4.6 and 10.0 to 10.4

- B-2** If the above information is submitted as per AIS-007 for approval of the complete vehicle it is not necessary to submit information in the above format. In addition, the information required in sketch form may be combined with information needed for other standards.

ANNEX C
(Reserved)

ANNEX D
(Reserved)

ANNEX E
(Reserved)

ANNEX F
(Reserved)

ANNEX G
(Reserved)

ANNEX H

(See 19.2.)

CRITERIA FOR EXTENSION OF APPROVAL

H-1 The table lists verifications to be carried out in case of changes in the parameters declared at the time of submitting for the earlier type approval

These parameters are to be used for selecting a vehicle to represent a range of vehicles.

H-2 Changes other than those listed in the table are considered to have no adverse effect on the indirect vision

1.	Name of the vehicle manufacturer	In case of different vehicle manufacturer, complete type approval to be carried out. In case of changes in the name of manufacturer or trademark for commercial reasons, type approval shall be extended without any testing.
2.	Address of the vehicle manufacturer	No additional tests or verification needed
3.	Address of plant(s) where vehicle is manufactured	No additional tests or verification needed
4.	Vehicle Type and general commercial description(s):	No additional verification needed
5.	Max Design speed of vehicle	
5.1	Change in maximum design speed, calls for applicability of clause 16.2.2 instead of 16.2.1	Compliance to 16.2.2 and 16.2.1 to be verified
5.2	Any other change	No additional verification is required
6.	Name of manufacturer of rear view mirrors used	If the location of mirror is not changed, no verification required. Otherwise requirements of 16.2.1 and 16.2.2 should be verified.

ANNEX J
(See introduction)
**COMPOSITION OF AISC PANEL ON
REAR VIEW MIRRORS***

Convener	
Mr. T. M. Balaraman	Hero Honda Motors Ltd., (SIAM)
Members	Representing
Mr. A. S. Bhale	The Automotive Research Association of India (ARAI)
Mr. B. V. Shamsundara	The Automotive Research Association of India (ARAI)
Mr. D. P. Saste	Central Institute of Road Transport (CIRT)
Mr. V. D. Chavan	Central Institute of Road Transport (CIRT)
Dr. Madhusudan Joshi	International Centre for Automotive Technology (ICAT)
Mr. G.R.M. Rao	Vehicle Research & Dev. Estt. (VRDE)
Dr. N. Karuppaiah	National Automotive Testing and R&D Infrastructure Project (NATRIP)
Mr. K. K. Gandhi	Society of Indian Automobile Manufacturers (SIAM)
Mr. G. K. Binani	Society of Indian Automobile Manufacturers (SIAM) (Tata Motors Ltd)
Mr. P. K. Banerjee	Society of Indian Automobile Manufacturers (SIAM) (Tata Motors Ltd)
Mr. R. M. Kanitkar	Society of Indian Automobile Manufacturers (SIAM) (Force Motors Ltd.)
Mr. Z. A. Mujawar	Society of Indian Automobile Manufacturers (SIAM) (Mahindra and Mahindra Ltd)
Mr. Nagendra H. V.	Society of Indian Automobile Manufacturers (SIAM) (Toyota Kirloskar Motor Pvt. Ltd)
Mr. Prakash Vemali	Society of Indian Automobile Manufacturers (SIAM) (Mercedes Benz India Ltd.)
Mr. Jitendra Malhotra	Society of Indian Automobile Manufacturers (SIAM) (Maruti Suzuki India Ltd)
Mr. Sumit Sharma	Society of Indian Automobile Manufacturers (SIAM) (Volkswagen India Private Ltd.)
Mr. Harjeet Singh	Society of Indian Automobile Manufacturers (SIAM) (Hero Honda Motors Ltd)

AIS-002 (Part 2) (Rev. 1):2011

Mr. Harsh Agrawal	Society of Indian Automobile Manufacturers (SIAM) (Hero Honda Motors Ltd)
Mr. S Ramiah	Society of Indian Automobile Manufacturers (SIAM) (TVS Motor Company Limited)
Mr. T.C. Gopalan,	Tractor Manufacturers Association (TMA)
Mr. K. N. D. Nambudiripad	Automotive Component Manufacturers Association (ACMA)
Mr. G. V. George	FIEM Industries Ltd. (ACMA)
Mr. Rajagopalan	FIEM Industries Ltd. (ACMA)
Mr. Virendra Sachdev	Lumax Industries Ltd. (ACMA)
Mr. Sagar Kulkarni	Rinder India Pvt. Ltd. (ACMA)
Mr. T. V. Singh	Bureau of Indian Standards (BIS)
Mr. Rajiv Agarwal	All India Auto & Miniature Bulbs & Component Mfrs. Association
Mr. C. K. Choudhari	All India Auto & Miniature Bulbs & Component Mfrs. Association

* At the time of approval of this Automotive Industry Standard (AIS)

ANNEX K
(See introduction)

COMMITTEE COMPOSITION *
Automotive Industry Standards Committee

Chairman	
Shri Shrikant R. Marathe	Director The Automotive Research Association of India, Pune
Members	Representing
Representative from	Ministry of Road Transport & Highways (Dept. of Road Transport & Highways), New Delhi
Representative from	Ministry of Heavy Industries & Public Enterprises (Department of Heavy Industry), New Delhi
Shri S. M. Ahuja	Office of the Development Commissioner, MSME, Ministry of Micro, Small & Medium Enterprises, New Delhi
Shri T. V. Singh	Bureau of Indian Standards, New Delhi
Director Shri D. P. Saste (Alternate)	Central Institute of Road Transport, Pune
Dr. M. O. Garg	Indian Institute of Petroleum, Dehra Dun
Shri C. P. Ramnarayanan	Vehicles Research & Development Establishment, Ahmednagar
Representatives from	Society of Indian Automobile Manufacturers
Shri T.C. Gopalan	Tractor Manufacturers Association, New Delhi
Shri K.N.D. Nambudiripad	Automotive Components Manufacturers Association of India, New Delhi

Member Secretary
Mrs. Rashmi Urdhwareshe
Sr. Deputy Director
The Automotive Research Association of India, Pune

* At the time of approval of this Automotive Industry Standard (AIS)