

AUTOMOTIVE INDUSTRY STANDARD

**Type Approval Procedure for Electric and
Hybrid Electric Vehicles introduced in
market for Pilot / Demonstration Projects
intended for Government Scheme**

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 AND HIGHWAYS
(DEPARTMENT OF ROAD TRANSPORT AND HIGHWAYS)
GOVERNMENT OF INDIA

January 2015

INTRODUCTION

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 standard on their web site.

Globally, automotive industry is passing through a paradigm shift. The past century has been the era of internal combustion engine (ICE) primarily on account of the ease of use, availability and low-cost of fossil fuels.

The shift to electric mobility has become necessary on account of fast depletion of fossil fuels, rapid increase in energy costs, impact of transportation on the environment and concerns over climatic change.

To encourage reliable, affordable and efficient xEVs (Electric and Hybrid Electric Vehicles) that meet consumer performance and the price expectations, Government wishes to introduce schemes for promotion and development of manufacturing capabilities, required infrastructure, consumer awareness and technology in this area. xEV technology being new technology will be introduced in pilot / demonstration route till it gets matured and production / sales volumes reach respectable levels. A need was felt to formulate limited safety and performance requirements for provisional approval of xEV models intended for introduction on pilot / demonstration basis.

Considering the importance of the subject AISC was entrusted the task to formulate a standard for meeting the above objective.

The AISC panel and the Automotive Industry Standards Committee responsible for preparation of this standard is given in Annexure-1 and Annexure-2 respectively.

**Type Approval Procedure for
Electric and Hybrid Electric Vehicles introduced in market for
Pilot / Demonstration Projects intended for Government Scheme**

1.0 APPLICABILITY OF THIS TYPE APPROVAL PROCEDURE

This Type Approval Procedure shall be applicable to Electric and Hybrid Electric Vehicles models (including their variants and versions) of motor vehicles of categories L, M and N, introduced in market for Pilot/ Demonstration projects intended for Government Scheme.

Depending on the scope and objective of the pilot project the nodal agency in charge may announce the number of vehicles that may be covered under this procedure. In the absence of any such specification, the following shall apply :

Vehicle Category	Annual Domestic Production or imported volumes (for each model including its variants and versions)
M1, N1	up to 100 Units
M2, M3, N2, N3	up to 50 Units
2 Wheelers, 3 Wheelers	up to 200 Units

“**Nodal Agency**” means an agency appointed or designated by the Government of India to carry out coordination and administration of the provisions of this document.

Note: The approval granted to imported vehicles or to vehicles of a particular category under this procedure shall be used for a Pilot / Demonstration Project only if the nodal agency administering a Pilot / Demonstration Project permits introduction of imported vehicles or vehicles of that particular category under that Pilot / Demonstration Project.

This procedure shall be applicable only to vehicle manufacturer, who has its own manufacturing facility in India and service network of its own or through tie up in India and who has type approved at least one model as per Rule 126 of CMVR.

The models (including their variants and versions) which are already approved for all applicable requirements laid down in Central Motor Vehicle Rules shall be deemed to be approved under this procedure as well.

In order to become eligible for any subsidy under the applicable scheme, conditions of clause no. 4 shall be complied with.

Operation of vehicles approved under this procedure shall be governed by the terms and conditions stipulated by the nodal agency administering the Pilot / Demonstration Projects.

1.1 Validity of Type Approval Certificate

The Type Approval Certificate issued to the Vehicles produced or imported under this procedure shall have a validity of 24 months.

- 1.1.1 At the end of this validity period or optionally before that OEM shall obtain:
- a) Re approval as per this standard; or
 - b) Full type approval under CMVR new type; or
 - c) Discontinue the series with the intimation to test agencies (with a copy to the nodal agency administering the pilot / Demonstration Project)

2.0 TYPE APPROVAL PROCEDURE

2.1 In the case of vehicles qualifying under criteria specified in Clause 1.0, the following procedure shall be followed :

2.1.1 For the purpose of establishing the compliance as per this procedure, following shall be applicable.

2.1.1.1 In the case of provisions related to subjects listed in Table 1, the test reports issued by Testing agency notified under Rule 126 of CMVR shall be required to establish compliance.

2.1.1.2 The provisions related to subjects listed in Table 2 shall be deemed to be complied with, based on test reports issued either by the Vehicle Manufacturer / Component Supplier or by a Third party test agency.

2.1.1.3 The provisions related to subjects listed in Table 3 shall be exempted.

2.1.1.4 The provisions of CMVR and the regulations notified under CMVR other than the ones listed in Table 1, Table 2 and Table 3 shall be deemed to be complied with, based on declaration from the vehicle manufacturer.

2.1.1.5 Markings required under various provisions of CMVR except those required under Rule 122 shall be exempted for vehicles approved under this procedure.

2.1.2 The applicant shall submit to test agency:

- (a) The information of the vehicle model (including their variants and versions) as per relevant tables of AIS-007. The applicant shall clearly specify the exemptions against the relevant clauses of AIS-007 corresponding to Table 3 of this document.
- (b) Test reports for items covered under clause 2.1.1.1.
- (c) Vehicle Manufacturer / Component Supplier / Third Party test agency test reports for items covered under clause 2.1.1.2.
- (d) A declaration from the manufacturer as per clause 2.1.1.4.
- (e) Any additional relevant technical information.

2.1.3 The test agency shall verify the submitted documents and shall issue a type approval certificate. The test agency shall also send a copy of type approval certificate to the nodal agency administering the Pilot / Demonstration Project.

- Notes (1) Applicability of the standard shall be as per applicability notified in CMVR.
- (2) If for any of the items listed in Table 1 and 2, specific provisions / exemptions are mentioned in CMVR, AIS-049 for BOVs and AIS-102 (Part 1 & 2) for HEVs, the same shall be applicable for establishing compliance for such items.

3.0 MECHANISM FOR COMPLIANCE TO PRODUCTION VOLUME LIMITS SPECIFIED IN CLAUSE 1.0

- 3.1 For the models approved under this procedure, the certificate holder shall half yearly submit to the test agency (with a copy to the nodal agency administering the pilot / Demonstration Project), a list of the engine number/motor number and chassis number of the vehicles produced. This report shall be required :
- 3.1.1 Till the time, the limit specified under clause 1.0 is over; or
- 3.1.2 When the certificate holder submits a declaration to test agency (with a copy to the nodal agency administering the pilot / Demonstration Project) that it does not intend to produce any more vehicles as per the certificate issued for a model (including its variants and versions).
- 3.2 In case, the certificate holder intends to resume production of a particular model (including its variants and versions), for which a declaration as per clause 3.1.2 had been submitted, he shall provide information to this effect to the same test agency which initially issued the certificate and shall start submitting the half yearly reports as per clause 3.1. No re-certification shall be required in such cases.

4.0 SUBSIDIES / INCENTIVES

- 4.1 If there are subsidies / incentives applicable for the kind of vehicles to be approved under this scheme, the following shall be followed :
- 4.1.1 If the qualification criteria for the subsidy / incentive require a certificate of compliance to CMVR, the certificate issued under this procedure shall be deemed to be valid for the subsidy / incentive scheme.
- 4.1.2 If the qualification criteria for the subsidy / incentive require fitment of a feature or compliance to certain performance characteristics, then irrespective of provisions under clause 2.1.1.2 to 2.1.1.4, these features / performance characteristics shall be verified and certified by a test agency notified under Rule 126 of CMVR, unless otherwise stated in the qualification criteria document for the subsidy / incentive.

Table 1
Provisions for which test reports from test agency are required

S.No.	Subject	CMVR	Standard (as applicable and as notified from time to time)
1.	Braking	96	IS:11852 (Part 1-9)/ IS:14664
2.	Mass Emissions and Fuel Efficiency	115	TAP 115/116 / AIS-102 (Part 1 / Part 2)
3.	EMI / EMC	124	AIS-004
4.	Requirements for Construction and Functional Safety	124	AIS-038
5.	Measurement of Electrical Energy Consumption	124	AIS-039
6.	Method of Measuring the Range	124	AIS-040
7.	Tell-Tales and Indicators	124	AIS-071
8.	Vehicle Weighment	---	IS:11825
9.	Gradeability of 7 Deg.	124	AIS-003

Table 2
Provisions for which test reports from Vehicle Manufacturer / Component Supplier / Third Party test agency are required

S.No.	Subject	CMVR	Standard (as applicable and as notified from time to time)
1.	Performance requirements of Tyres	96	IS:15627 / IS:15633 / IS:15636
2.	Steering effort	98	IS:11948
3.	Speedometer Calibration	117	IS:11827
4.	Horns Performance and Installation	119	IS: 1884 & AIS-014
5.	Pass-by Noise	120	IS:3028
6.	Installation of lighting and light signaling devices	124	AIS-009 / AIS-008
7.	Performance requirements for Lighting & Signalling devices	124	AIS-010 / AIS-012
8.	Flammability requirement	124	IS: 15061
9.	Door latches and hinges	124	IS:14225
10.	Interior fittings	124	AIS-047 / IS:15223
11.	Safety Requirements for Traction Batteries	124	AIS-048
12.	Indirect vision devices – Installation prescriptions	125	AIS-002

S.No.	Subject	CMVR	Standard (as applicable and as notified from time to time)
13.	Seats and their anchorages (excluding luggage retention)	125	IS : 15546 / AIS 023
14.	Seat Belt Anchorages	125	IS : 15139
15.	Motor Power Test	124	AIS-041
16.	Fuel Tanks (if fitted)	124	IS:12056 / IS:15547 / IS:14681

Notes:

For the items listed in Table 2, if due to any specific reason it is not possible to furnish the test report(s) as per any of the above Indian regulations, the test reports for compliance to ECE Regulations / EU Directive / FMVSS / ADR / JIS, etc, corresponding to the applicable Indian Regulation may be accepted at the discretion of test agency.

Table 3
Provisions that are exempted

S.No.	Subject	CMVR	Standard (as applicable and as notified from time to time)
1.	OBD Requirements	115	TAP 115/116
2.	Side Door Impact	124	IS : 12009
3.	Steering Impact	124	IS : 11939
4.	TA and COP of components	124	AIS-037
5.	The strength of superstructure of passenger vehicles	124	AIS-031
6.	Survival Space Requirement	124	AIS-029
7.	Spare Tyre (if puncture repair kit is provided)	138	---

ANNEXURE 1 (See Introduction)	
COMPOSITION OF AISC PANEL *	
Convener	
Mrs. Rashmi Urdhwareshe	The Automotive Research Association of India (ARAI)
Members	Representing
Mr. A. A. Deshpande	The Automotive Research Association of India (ARAI)
Mr. A.S. Bhale	
Mr. M. Sreenivasulu	
Ms. Vijyanta Ahuja	International Centre for Automotive Technology (ICAT)
Representative	Central Institute of Road Transport (CIRT)
Representative	Vehicles Research and Development Establishment (VRDE)
Representative	Indian Institute of Petroleum (IIP)
Mr. K. K. Gandhi	Society of Indian Automobile Manufacturers (SIAM)
Mr. S Ravishankar	Ashok Leyland Ltd. (SIAM)
Mr. Arun S.	Ashok Leyland Ltd. (SIAM)
Mr. Venu Suresh C	Bajaj Auto Ltd.(SIAM)
Mr. Rajendra Khile	General Motors India Ltd. (SIAM)
Mr. Sudhir Deshpande	Jaguar Land Rover India Pvt. Ltd. (SIAM)
Mr. Kedar Kshirsagar	Fiat Chrysler Automobiles (SIAM)
Mr. V. M. Manel	Mahindra Two Wheelers Ltd. (SIAM)
Mr. Kiran Mulki	Mahindra & Mahindra Ltd. (SIAM)
Mr. V. G. Kulkarni	Mahindra Truck and Bus Division (SIAM)
Mr. Piyush Chaudhry	Mahindra Reva Electric Veh. Pvt. Ltd. (SIAM)
Mr. Sumit Sharma	Maruti Suzuki India Ltd (SIAM)
Mr. P. S. Gowrishankar	Tata Motors Ltd.(SIAM)
Mr. S. Ramiah	TVS Motor Company Ltd.(SIAM)
Mr. Suchindran M	Toyota Kirloskar Motor Pvt. Ltd. (SIAM)
Mr. Makarand M. Brahme	Volkswagen India Pvt. Ltd. (SIAM)
Mr. Uday Harite	Automotive Components Manufacturers Association of India (ACMA)

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

ANNEXURE 2
(See Introduction)
COMMITTEE COMPOSITION *
Automotive Industry Standards Committee

Chairperson	
Mrs. Rashmi Urdhwareshe	Director The Automotive Research Association of India, Pune
Members	Representing
Representative from	Ministry of Road Transport and Highways (Dept. of Road Transport and Highways), New Delhi
Representative from	Ministry of Heavy Industries and Public Enterprises (Department of Heavy Industry), New Delhi
Shri S. M. Ahuja	Office of the Development Commissioner, MSME, Ministry of Micro, Small and Medium Enterprises, New Delhi
Shri Shrikant R. Marathe	Former Chairman, AISC
Shri N. K. Sharma	Bureau of Indian Standards, New Delhi
Director/ Shri D. P. Saste (Alternate)	Central Institute of Road Transport, Pune
Director	Indian Institute of Petroleum, Dehra Dun
Director	Vehicles Research and Development Establishment, Ahmednagar
Representatives from	Society of Indian Automobile Manufacturers
Shri T. C. Gopalan	Tractor Manufacturers Association, New Delhi
Shri Uday Harite	Automotive Components Manufacturers Association of India, New Delhi

Member Secretary
Mr. A. S. Bhale
General Manager
The Automotive Research Association of India, Pune

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