

**AUTOMOTIVE INDUSTRY STANDARD**

**Constructional And Functional  
Requirements For Special Purpose  
Vehicle-Two Wheeled First  
Responder- Fire**

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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

September 2020

## 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 (CMVR-TSC). After approval, the Automotive Research Association of India, (ARAI), Pune, being the Secretariat of the AIS Committee, will publish this standard. For better dissemination of this information ARAI may publish this document on their Web site.

Based on the discussion in the 55th CMVR-TSC held on 6th February, 2019 Committee agreed in principle to allow approval of Two-wheelers retro-fitted with Fire Fighting System as such vehicles can be useful in fire fighting in congested areas. CMVR-TSC panel asked ICAT to submit its proposal for approval of such vehicles. A formal meeting was called under Convenorship of Shri D P Saste and Shri K C Sharma, which included various OEM's, Fire fighting kit retrofitters and test agencies, for finalization of recommendations for approval of Two-wheelers retro-fitted with Fire Fighting Equipment.

Based on discussion held during the meeting recommendations were formulated and it was decided to name such vehicles as "Two wheeled First responder- Fire ". Test requirements laid down in this standard are based on the recommendations finalized during the meeting held on 6th February, 2019.

This standard lays down only the performance parameters for road worthiness of the fire fighting vehicle. Requirements for the fire fighting system installed on the vehicle are not covered under this standard.

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## **Constructional and Functional Requirements for Special Purpose Vehicle- Two wheeled First responder- Fire**

### **1.0 SCOPE**

This standard specifies the additional constructional and functional requirements for the Special Purpose Vehicles (SPVs) of Two wheeled First responder- Fire.

### **2.0 REFERENCE STANDARDS**

- 2.1 IS 14272: 2011 – Automotive Vehicles – Types – Terminology
- 2.2 AIS-017: 2000 – Procedure for Type Approval and Certification of Vehicles for Compliance to Central Motor Vehicles Rules
- 2.3 AIS 065 - Statutory Plates and Inscriptions for Motor Vehicles, their Location and Method of attachment Vehicle Identification Numbering System

### **3.0 DEFINITIONS**

For the purpose of this standard, the following definitions shall apply:

- 3.1 **“Firefighting system”** means set of equipment fitted on two wheeled motor vehicles as approved by competent authority, for purpose of firefighting.
- 3.2 **“Two wheeled First responder- Fire”** means a “Special Purpose Vehicle (SPV)” of category L1 & L2 vehicles installed with firefighting system to be used as first responder for firefighting.
- 3.3 **“Special purpose body”** means the part / components or group of parts or components or its assembly in a vehicle which is altered to perform a special function and requires special arrangements as notified by Government of India or Approving Authority.

### **4.0 APPLICATION FOR TYPE APPROVAL**

- 4.1 Application for Type Approval shall be submitted to the test agency as specified in this standard.
  - 4.1.1 Vehicle manufacturer will submit Information in AIS-007 (Rev. 5) as amended from time to time.
  - 4.1.2 Application for approval of Two wheeled First responder- Fire shall be submitted by the retrofitter or by his duly accredited representative along with detailed description of all the modifications applied to the original vehicle including a copy of the following manuals / documents :
    - a. Installation,
    - b. Service station and
    - c. End-user including warranty parameters covered.

## **5.0 GENERAL REQUIREMENTS**

- 5.1 Retro-fitment / body building for the purpose of two wheeled first responder is permitted in a vehicle to install the fire-fighting system, provided it shall so alter the vehicle that no particulars contained in the type approval certificate of the vehicle obtained by the original vehicle manufacturer are at variance unless permitted by the central govt. or competent authority.
- 5.2 Any alteration or modification in already a type approved vehicle to build two wheeled first responder -fire shall be carried out in accordance with sound engineering practices and in compliance with Central Motor Vehicles Amendment Act 2019 and Central Motor Vehicles Rule, 1989, as amended from time to time.
- 5.3 The gross vehicle weight (GVW) of the Two wheeled First responder shall be within the declared GVW limits by the original vehicle manufacturer.

## **6.0 SPECIFIC REQUIREMENTS**

### **6.1 Seating capacity**

- 6.1.1 Seating capacity of the Two wheeled First responder shall be within the declared seating capacity by the original vehicle manufacturer during Type approval.
- 6.1.2 The installation and fitment of fire-fighting system shall be done in such a way that it shall be ergonomically feasible and does not cause any discomfort to rider and pillion.

### **6.2 External projection**

- 6.2.1 Any lateral projection is permitted only if the following conditions are met:
- i. The diameter of the tube used for the projection shall not be less than 20 mm.
  - ii. The end of the projection shall be closed and the corners shall be rounded off to radius not less than 2 mm or; the ends shall be covered by soft material (such as rubber or plastic).
  - iii. If a cap is used for the purpose of para (ii) its outer dimension shall not exceed 50 mm.
- 6.2.2 Compliance shall be established in accordance with AIS 147, as amended from time to time on and after implementation in CMVR, 1989.

### 6.3 **Speed**

- 6.3.1 Vehicle loaded to the permissible gross vehicle weight shall be able to attain a maximum speed of at least 50 km/h, when tested in accordance with IS: 10278:2018.

### 6.4 **Stands**

- 6.4.1 Vehicle shall be fitted with both side stand and the centre stand and comply with AIS 146 requirements
- 6.4.2 Each stand fitted to the vehicle shall enable the vehicle to meet the performance requirements in 5.2 and 5.3 of AIS 146 as amended from time to time, without being held or supported by a person or any other external means.
- 6.4.3 Compliance shall be established in accordance with AIS 146, as amended from time to time on and after implementation in CMVR, 1989.

### 6.5 **Fitment of fire extinguisher**

- 6.5.1 Vehicle shall be equipped with at least one fire extinguisher of 1kg in addition to the firefighting system installed on the vehicle.

### 6.6 **Electrical Wiring**

- 6.6.1 All electrical wiring shall be in properly installed, taped, clipped or contained in a loom along its length.
- 6.6.2 Electrical wiring shall conform to IS: 2465-1984 as amended from time to time.

### 6.7 **Warning / Emergency lights**

- 6.7.1 Vehicle shall be equipped with single blue colour flasher (commonly known as beacon) suitably fixed, preferably center aligned and visible to road user.

### 6.8 **Sirens**

- 6.8.1 Orientation: siren loudspeakers shall be mounted towards the front. The main sound direction must be in driving direction

Other requirements: Permitted are wail and yelp signals that cycle between 10-18 respectively 150-250 per minute at sound pressure level of 110 dB(A) to 120 dB(A). The sound pressure level of sirens should be tested in accordance with IS 1884. The frequency range must be at least one octave and should be between 500 Hz and 2000 Hz. An additional electronic air horn can be used. Further there should be a public address system that can be worked at all times ergonomically from the driver's seat. The siren switch can only be used if the warning lights are on.

## 6.9 **Compliance plate**

6.9.1 Each vehicle shall be fitted permanently with Manufacturers' Information plate.

This Plate shall be firmly attached by riveting, hammer drive screws or welding in a conspicuous and readily accessible position on a part which is normally not likely to be replaced during use.

6.9.2 Compliance plate shall include the following information, fixed at easily accessible location:

- Vehicle manufacturer/ retrofitters /firefighting system installer name
- Vehicle Registration (for retrofitter)
- DDMMYY of Firefighting system Installation
- CMVR type-approval number
- Max GVW permitted
- Extinguish agent tank capacity

## 6.10 **Responsibility of Retrofitter**

6.10.1 Retrofitter will be responsible for warranty for :-

1. All the retrofitted parts / systems / subsystems
2. Any modifications made on vehicle engine / frame or electrical components for the fitment of retro fitment system and related failure.

Any alteration to the vehicle which is directly or indirectly linked with OE components and likely to have any adverse effect.

## ANNEXURE A

**INFORMATION TO BE SUBMITTED BY RETROFITTER AT THE TIME  
OF APPROVAL**

Sr.no	General	Details
1.0	<b>Retrofitter details</b>	
1.1	Name and address of the customer	
1.2	Name of variants, if any:	
1.3	Plant/(s)of manufacture/Retrofitment :	
2.0	<b>Description of submitted vehicle</b>	
2.1	Category	
2.2	Model	
2.3	Vehicle manufacturer	
2.4	Engine no	
2.5	Chassis no	
2.6	Engine displacement (cc)	
2.7	CMVR certificate no	
2.8	Fuel type	
2.9	Dimensions (mm)	
2.9.1	Length	
2.9.2	Width	
2.9.2	Height	
2.9.3	Ground clearance	
2.10	Wheel base	
2.11	Weight (kg)	
2.11.1	Unladen weight	



2.11.2	Gross vehicle weight	
2.12	Seating capacity	
3.0	<b>Firefighting System</b>	
3.1	Make	
3.2	Weight	
4.0	Schematic representation indicating the arrangement and position	
5.0	Details of the alterations done on original vehicle (Separate Annexure can be enclosed)	
6.0	Photograph of vehicle with firefighting system	

**ANNEXURE B**

(See Introduction)

**COMPOSITION OF AISC PANEL ON CONSTRUCTIONAL AND FUNCTIONAL REQUIREMENTS FOR SPECIAL PURPOSE VEHICLE- TWO WHEELED FIRST RESPONDER- FIRE\***

<b>Convener</b>	
Shri D P Saste	Consultant, Ministry of Road Transport & Highways
<b>MEMBERS</b>	<b>REPRESENTING</b>
Ms. Vijayanta Ahuja	ICAT
Mr. Gurkaran Cheema	ICAT
Mr. Mayank Sharma	ICAT
Mr. Vikram Tandon	ARAI
Mr. Kamalesh Patil	ARAI
Mr. Arvind Kumbhar	Bajaj Auto Ltd.
Mr. Prashant B. Jadhav	Bajaj Auto Ltd.
Mr. Feroz Ali Khan	Hero Moto. Corp. Ltd
Mr. Piyush Chowdhry	Hero MotoCorp Ltd
Mr. Danish Gazali	Hero MotoCorp Ltd
Mr. Dipak Shaw	Hero MotoCorp Ltd
Ms. Buvaneswari	Maruti Suzuki India Ltd
Mr. Ajay Kumar	Suzuki Motorcycle India Private Limited (SMIPL)
Mr. B. S. Tongar	RMS Fire & Safety ltd.
Mr. Navdeep garg	Aska Equipment's Ltd.
Mr. Samruddhi Gaundalkar	ISPL Automation Pvt. Ltd

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

**ANNEXURE C**  
(See Introduction)

**COMMITTEE COMPOSITION \***  
**Automotive Industry Standards Committee**

<b>Chairperson</b>	
Dr. Reji Mathai	Director, The Automotive Research Association of India, Pune
<b>Members</b>	<b>Representing</b>
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 R.R. Singh	Bureau of Indian Standards, New Delhi
Director	Central Institute of Road Transport, Pune
Director	Global Automotive Research Centre
Director	International Centre for Automotive Technology, Manesar
Director	Indian Institute of Petroleum, Dehra Dun
Director	Vehicles Research and Development Establishment, Ahmednagar
Director	Indian Rubber Manufacturers Research Association
Representatives from	Society of Indian Automobile Manufacturers
Shri R. P. Vasudevan	Tractor Manufacturers Association, New Delhi
Shri Uday Harite	Automotive Components Manufacturers Association of India, New Delhi
Shri K. V. Krishnamurthy	Indian Construction Equipment Manufacturers' Association (ICEMA), New Delhi
<b>Member Secretary</b>	
Shri Vikram Tandon	The Automotive Research Association of India, Pune