

**AUTOMOTIVE INDUSTRY STANDARD**

**Procedure for Type Approval and  
Certification of Motor Caravans for  
compliance to Central Motor Vehicles Rules**

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

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## 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, would publish this standard. For better dissemination of this information ARAI may publish this standard on their Web site.

The concept of Caravan Tourism has gained immense popularity across the globe owing to the freedom and flexibility it provides, while holidaying vis-à-vis itineraries and accommodation. This would include vehicles viz. Recreational Vehicle (RV), Camper Vans, Motor Homes etc. Motor Caravans are a unique tourism product, which promotes family oriented tours even in circuits / destinations, which are not having adequate hotel accommodation. The specially built vehicles being used for the purpose of travel, leisure and accommodation would be termed as 'Caravan'.

There is at present a growing demand for eco, adventure, wildlife and pilgrimage tourism. This involves visiting and staying in remote areas, forests, deserts and riversides. There is already shortage of accommodation at tourist destinations, especially in remote areas and in certain cases at places where a permanent construction may neither be permissible nor feasible. In such a scenario, Caravan Tourism can effectively meet the growing demand, while ensuring adherence to quality, standards and safety norms. Caravan Tourism would attract a wide range of market segments including young people, families, senior citizens and international tourists. The Caravan tourism policy is aimed to promote and facilitate and incentivize development of the sector

This standard covers CMVR requirements for type approval of Special Purpose Vehicle (SPV) - Motor Caravan. CMVR requirements for type approval of trailer caravans would be formulated separately.

The AISC panel and the Automotive Industry Standards Committee (AISC) responsible for preparation of this standard are given in Annex-E and Annex-F respectively.

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## **Procedure for Type Approval and Certification of Motor Caravans for compliance to Central Motor Vehicles Rules**

### **0.0 SCOPE**

This standard lays down the type approval requirements applicable to motor caravans of category M.

This standard is applicable to:

- a) Motor caravan manufactured by vehicle manufacturer.
- b) Motor caravan which are built by motor caravan body builder on registered vehicle which is not older than 3 years.

This standard does not cover type approval requirements for trailer caravans.

- 0.1 Any alteration or modification in already type approved vehicle to build motor caravan shall be carried out in accordance with sound engineering practices and in compliance with Central Motor Vehicles Act 1988 and Central Motor Vehicles Rule, 1989, as amended from time to time.

Alterations or modifications shall not be done to the already type approved vehicle, vehicle systems and components e.g. chassis, suspensions, brakes, fuel system, engine etc. while building motor caravan.

### **1.0 REFERENCES**

The standards given in Annex - A contain provisions which through reference in this text, constitute provisions of this standard.

### **2.0 DEFINITIONS**

For the purpose of this standard following definitions shall apply:

- 2.1 **Special purpose vehicle (SPV)** means a vehicle of category M, N or T having specific technical features in order to perform a function which requires special arrangements and / or equipment.
- 2.2 **Motor caravan** means a “Special Purpose Vehicle (SPV)” of category M with living accommodation space which contains the following equipment as a minimum:
- (a) Seats and table;
  - (b) Sleeping accommodation which may be converted from the seats;
  - (c) Cooking facilities;
  - (d) Storage facilities.

This equipment shall be rigidly fixed to the living compartment. However, the table may be designed to be easily removable.

- 2.3 **Trailer caravan** means a vehicle of category T, which is designed for road use and provides living accommodation.
- 2.4 **Motor vehicle or vehicle** as defined in clause 3.1 of AIS-053:2005, as amended from time to time.

- 2.5 **Base vehicle** means any vehicle which is used at the initial stage of a subsequent type-approval process
- 2.6 **Complete vehicle** means any vehicle which need not be completed in order to meet the relevant technical requirements of this standard.
- 2.7 **Incomplete vehicle** means any vehicle which undergoes at least one further stage of completion in order to meet the relevant technical requirements of this standard.
- 2.8 **Completed vehicle'** means a vehicle, resulting from the process of successive type-approval, which meets the relevant technical requirements of this standard.
- 2.9 **Motor caravan body builder** means a firm engaged in manufacturing of motor caravan body.
- 2.11 **Motor caravan body** means the portion of a vehicle with living accommodation space which contains the following equipment as a minimum:
- (a) Seats and table;
  - (b) Sleeping accommodation which may be converted from the seats;
  - (c) Cooking facilities;
  - (d) Storage facilities.
- This equipment shall be rigidly fixed to the living compartment. However, the table may be designed to be easily removable.
- 2.12 **Designated seat** means the seat provided in the vehicle for normal use, when the vehicle is travelling on the road.
- 2.13 **Window** means an aperture in the sides of the motor caravan to let in light and air. The window need not necessarily be glazed.
- 2.14 **Emergency window** means a window, intended for use as an exit by passengers in an emergency only.
- 2.15 **Door** means a sub system of a caravan body that permits boarding and alighting of passengers. Door may or may not be with panel (hinged /sliding) for closing it.
- 2.16 **Service door** means a door intended for use by passengers in the normal circumstances.
- 2.17 **Emergency door** means a door intended for use as an exit by passengers in an emergency only.

### 3.0 REQUIREMENTS

- 3.1 Motor caravans shall comply with the provisions as specified in 3.0 and 4.0.

#### 3.2 CMVR REQUIREMENTS FOR MOTOR CARAVANS

- 3.2.1 Motor caravan shall comply with the requirements of CMVR, as amended from time to time, for type approval as given in Table 1.
- 3.2.2 Motor caravan which is built on already type approved vehicle shall comply the requirements of CMVR, as amended from time to time, for type approval as given in Table 1 below, after taking into consideration the provisions in Table 2.

**Table 1**  
**CMVR requirements for Type Approval of Motor Caravans**

<b>Sr. No</b>	<b>Subject</b>	<b>CMV Rule</b>	<b>Applicable standard, as amended from time to time.</b>
1	Axle loading	--	The permissible load on axle of Motor Caravan shall comply provisions laid down in Central Motor Vehicle Rules, 1989
2	Registration marks	50	---
3	Overall dimension	93	---
4	Size and ply rating of tyres	95	IS: 15633-2005 or IS: 15636-2005
5	Brakes	96	IS:11852 (Part 1 to 9 ): 2001
6	Steering gears:	98	IS: 12222-1987
	Turning circle diameter		
	Steering efforts		IS: 11948-1999
7	Forward and backward motion	99	---
8	Safety glass	100	IS: 2553-Part 2-1992.
9	Windscreen wiper	101	AIS-019:2001 or AIS-011:2001
10	Signalling devices, direction indicators and stop lamps	102	----
11	Position of the direction indicator	103	----
12	Retro-reflectors	104	AIS-057:2005
	Retro-reflective Markings (tapes)		AIS-090:2005
13	Lamps	105	---
14	Deflection of light	106	---
15	Use of red, white or blue light	108	---
16	Parking amp	109	---
17	Prohibition of spot lights, etc	111	---
18	Exhaust gases	112	---

<b>Sr. No</b>	<b>Subject</b>	<b>CMV Rule</b>	<b>Applicable standard, as amended from time to time.</b>
19	Location of exhaust pipes	113	---
20	Emission	115	---
	Engine power		
	Diesel smoke		
21	Speedometer	117	IS: 11827-1995
22	Horn	119	IS 1884:1993 and AIS-014:2001
23	Silencers (Noise emitted by moving vehicles)	120	IS 3028:1998
24	Painting of motor vehicles	121	---
25	Vehicle Identification Number	122	AIS-065:2005
26	Automotive lamps	124 (1) (1)	AIS-034:2004
27	Hydraulic brake hose	124 (1) (2)	IS 7090:1995
28	Hydraulic brake fluid	124 (1) (3)	IS 8654:1986
29	Steering impact	124 (1) (5)	IS 11939:1996
30	Side door impact	124(1) (6)	IS 12009:1995
31	Fuel Tanks : Non plastic fuel tanks	124 (1) (7)	IS:12056-1987 or
	Plastic fuel tank		IS 15547:2005
32	Wheel rim	124 (1) (8)	IS 9436:1980 and IS 9438:1980
33	Exterior projection	124 (1) (11)	IS 13942:1994
34	Bus window retention	124 (1) (12)	IS 13944:1994
35	Wheel guards	124 (1) (13)	IS 13943:1994
36	Wheel nuts , wheel discs & hub caps	124 (1) (14)	IS 13941:1994
37	Accelerator control system	124 (1) (15)	IS 14283:1995
38	Door locks and retention components	124 (1) (16)	IS 14225:1995
39	Hood latch system	124 (1) (17)	IS 14226:1995

Sr. No	Subject	CMV Rule	Applicable standard, as amended from time to time.
40	Identification of controls, indicators and tell-tales	124 (1) (19)	AIS-071 (Part 1 & 2)-2009
41	Installation and performance of lighting and light signaling devices	124 (1) (20)	AIS-008 (Rev.1):2010 and AIS-012:2004
42	Electromagnetic radiation	124 (1) (21)	AIS-004 (Part 1):1999 and AIS-004 Part 3 -2009
43	Gradeability	124 (1) (23)	AIS-003:1999
44	Test for fuel consumption	124 (1) (31)	Measurement on the basis of driving cycle used for emission testing as per carbon balance method or IS 11921:1993
45	Field of vision	124 (1) (34)	AIS-021:2004
46	The strength of superstructure of passenger vehicles	124(1) (36)	AIS-031:2004
47	Flammability	124 (1) (37)	IS:15061: 2002
48	Interior fittings	Rule 124 (1) (38)	IS 15223:2002 or AIS-047:2009
49	Interior noise	Rule 124 (1) (40)	AIS-020.
50	Bumper	124 (1) (41)	AIS-006:2005
51	Handholds	124 (1) (42)	AIS-046:2005
52	The arrangement and mode of operation of foot controls	124 (1) (45)	AIS-035:2006
53	Defrost and/or demist system	124 (1) (46)	AIS-084 (Part1):2008 and /or AIS-084(Part2):2008
54	Rear under run Protective	124(1-A)	IS 14812:2000
	Lateral protection (side guards)		IS 14682:1999
55	Type Approval and Conformity of Production	124 (4)	AIS-037:2004.
56	Safety-belts assembly	125(1A)	IS 15139-2002



<b>Sr. No</b>	<b>Subject</b>	<b>CMV Rule</b>	<b>Applicable standard, as amended from time to time.</b>
57	Safety-belt anchorages	125(1A)	IS 15140:2003
58	Rear view mirror specification and installation	125 (2)	AIS-001:2001 and AIS-002:2001
59	Seats, seat anchorages and Head restraints (For M1)	125(5)	IS 15546-2005
60	Seats, seat anchorages and Head restraints (For other than M1)	125(6)	AIS-023:2005
61	Warning Triangles And Spare Wheel	138 (4) (C)	AIS-022:2001

**Table 2**  
**Provisions for consideration for CMVR approval of motor caravan built on already type approved vehicle (see clause 3.2.2)**

Item	Subject	M1 ≤ 2500 kg	M1 >2500 kg	M2	M3	Guidelines for Test Applicability ***
1	Registration marks	T	T	T	T	NA
2	Overall dimensions	T	T	T	T	As per CMVR. Change in dimension
3	Size and Ply rating of Tyres.	G	G	G	G	Change in tyre size, speed rating, load index.
4	Brakes	G	G	G	G	Change in GVW, F/R ratio, tyre size, gear ratio and final drive ratio, wheel base.
5	Turning circle diameter/Steering gear	G+N	G+N	G+N	G+N	Change in overall length, width, front overhang, track width, steering geometry.
6	Steering effort/ Steering gear	G	G	G	G	Change in tyre size, front axle weight, GVW, track width, steering geometry.
7	Forward and backward motion	G	G	G	G	NA
8	Safety glass	G+ N	G+N	G+N	G+N	Change in safety glass at component and installation level, front windshield, side glass and rear glass at component level, wind shield installation angle.
9	Windscreen wiper	G + N	G+N	G+N	G+N	Change in windscreen wiper at component and installation level, wiper blade dimension, H point, wiper blade installation.

Item	Subject	M1 ≤ 2500 kg	M1 >2500 kg	M2	M3	Guidelines for Test Applicability ***
10	Signalling devices, direction indicators and stop lights	T	T	T	T	Test is only physical verification in case of change in signalling device at component and installation level.
11	Position of the direction indicator	T	T	T	T	Test is only physical verification in case of change in position of direction indicator at component and installation level.
12	Retro-reflectors and tape	T	T	T	T	Test is only physical verification. in case of change in retro-reflector and tape respect to size and location
13	Lamps	T	T	T	T	Test is only physical verification.
14	Deflection of light	T	T	T	T	
15	Use of red, white or blue light	T	T	T	T	
16	Parking lamps	T	T	T	T	
17	Prohibition of spot light etc	T	T	T	T	
18	Exhaust gases	T	T	T	T	
19	Location of exhaust pipes	T	T	T	T	
20	Emissions	Q	G+Q	G+Q	G+Q	Change in fuel injection equipment, change in overall gear ratio. Change in intake and exhaust system.

Item	Subject	M1 ≤ 2500 kg	M1 >2500 kg	M2	M3	Guidelines for Test applicability ***
21	Engine power	G	G	G	G	Change in fuel injection equipment, intake and exhaust system.
22	Diesel smoke	H	H	H	H	Change in fuel injection equipment, intake and exhaust system.
23	Speedometer	G+N	G + N	G+N	G +N	Change in tyre size, speedo ratio, speedometer installation.
24	Horns	G+N	G+N	G+N	G+N	Change in horn at component and installation level.
25	Silencer	H	G+H	G+H	G+H	Test is only physical verification in case of change in exhaust system routing
26	Painting of Motor Vehicle	T	T	T	T	Test is only physical verification
27	Vehicle Identification Number	N/A	N/A	N/A	N/A	NA
28	Automotive lamps (Bulbs)	N	G+N	G+N	G+N	Change in lamp (bulb)at component and installation level
29	Hydraulic brake hose	N	G+N	G+N	G+N	Change in brake hose.
30	Hydraulic brake fluid	N	G+N	G+N	G+N	change in brake fluid
31	Steering impact	T	G+N	N/A	N/A	GVW is less than 1500 kg, change in steering wheel

Item	Subject	M1 ≤ 2500 kg	M1 >2500 kg	M2	M3	Guidelines for Test applicability ***
32	Side door impact	N/A	N/A	N/A	N/A	
33	Fuel tanks (Component)	F	F	F	F	Change in fuel tank (including fuel tank cap) at component and installation level.
34	Wheel rims	G+N	G+N	G+N	G+N	Change in size, material and designation.
35	Exterior projections	T + A	T+ A	T + A	T+ A	Change and addition in external protruding parts
36	Bus window retention	N/A	N/A	G+N	G+N	NA
37	Wheel guards	T	G	N/A	N/A	Change in wheel guard, tyre sizes
38	Wheel nuts, wheel discs and hub caps	G+N	G+N	G+N	G+N	Change in wheel nut, disc and hub cap
39	Accelerator control system	G+N	G+N	G+N	G+N	Change in control pedals, H point.
40	Door lock and retention components	G+N	G+N	G+N	G+N	Change in door lock and its child parts
41	Hood latch	G	G	N/A	N/A	Change in hood latch, locking arrangements.
42	Identification of controls, tell- tales and indicators	N	G+N	G+N	G+N	Change or addition in control.
43	Installation requirements of lighting and light- signalling devices	T	T	T	T	Change in geometric visibility and installation.

Item	Subject	M1 ≤ 2500 kg	M1 >2500 kg	M2	M3	Guidelines for Test applicability ***
44	Performance requirements of lighting and light- signalling devices	N	N	N	N	Change at component level
45	Electromagnetic radiation	T	T	T	T	Change or addition of active electronics parts which may create confusion to driver or pedestrian.
46	Gradeability	G+N	G+N	G+N	G+N	Change in overall gear ratio, change in tyre size and wheel base.
47	fuel consumption	N/A	N/A	N/A	N/A	NA
48	Field of vision	G+N	G+N	O	O	Change in H point, addition of device in driver forward vision.
49	The strength of superstructure of passenger vehicles.	N/A	N/A	N/A	G+N	Change in related to vehicle structure
50	Flammability	T	T	T	T	NA
51	Interior fittings	B	B	G+N+B	G+N+B	Change in interior, H point.
52	Interior noise	N/A	N/A	G+N	G+N	NA
53	Bumper	G+N	G+N	N/A	N/A	Change in bumper at component level and its mounting points.
54	Handholds	N/A	N/A	G+N	G+N	NA For all designated seats in living accommodation two points lap belt shall be provided.

Items	Subject	M1 ≤ 2500 kg	M1 >2500 kg	M2	M3	Guidelines for Test applicability ***
55	The arrangement and mode of operation of foot control	G	G	N/A	N/A	NA
56	Defrost/demist	T	T	N/A	N/A	Change in defrost and demist devices, change in volume, addition of seating capacity.
57	Rear protective devices	N/A	N/A	G+N	G+N	Change in RUPD at component level and its mounting points
58	Lateral protection (side guards)	N/A	N/A	N/A	N/A	Change in LUPD at component level and its mounting points.
59	Type approval and Conformity of Production for safety critical components	T	T	T	T	NA
60	Safety-belts assembly	D+M	G+D+M	G+D+M	G+D+M	Change in seat belt
61	Safety belt anchorages	D	G+D+L	G+D+L	G+D+L	Change in seat belt anchorage points.
62	Rear view mirror specification and	T	T	T	T	Change in mirror at component level and its mounting points.
63	Seat, seat strength, seat anchorages	G+D	G+D	G+D	G+D	Change in seat at component level and mounting location.
64	Head restraints	G+D	G+D	G+D	G+D	Change in head restraint at component level, head restraint adjustment points.
65	Warning Triangles	G+N	G+N	G+N	G+N	Change in warning triangle at component level.

\*\*\* These guidelines are general in nature. However individual IS, AIS and TAP document shall be referred to evaluate the test applicability, extension parameters & worst case criteria.

**Meaning of letters:**

- N/A: This requirement is not applicable to this vehicle.
- A: Exemption permitted where special purposes make it impossible to fully comply with the desired requirements/ performance. The manufacturer shall demonstrate this to the satisfaction of the testing agency that the vehicle cannot meet the requirements.
- C: Test is applicable for limited part of designated seating area which comes in head impact zone when vehicle is travelling on the road
- D: Application limited to seat designated for normal use when the vehicle is travelling on the road. Seats which are not designated for use when the vehicle is travelling on the road shall be clearly identified to the users either by means of pictogram or a sign with an appropriate text.
- F: Modification to the routing and length of the refueling duct and re positioning of the *approved* tank inboard is permissible.
- G: Requirements for the corresponding category of the base vehicle, based on the maximum mass,(complete/incomplete vehicle of either M or N according to the respective category of base vehicle
- H: Modification of exhaust system length after last silencer not exceeding 2 m is permissible without any further test.
- L: Application limited to the seats designated for normal use when the vehicle is travelling on the road. At least anchorages for lap belts are required in the all rear seating position of caravan area. Seats which are designated for use when the vehicle is travelling on the road shall clearly identify to the users either by means of pictogram or a sign with an appropriate text.
- M: Application limited to seats designated for normal use when the vehicle is travelling on the road. At least lap belts are required in all rear seating positions. Seats which are not designated for the use when vehicle is travelling on the road shall be clearly identified to users either by means of pictogram or a sign with an appropriate text.
- N: During successive stage of vehicle completion, test shall be applicable in case of change (addition or deletion) from earlier approved test specific technical parameters and safety critical components.
- Q: Modification of exhaust system length after last silencer not exceeding 2m is permissible without any further test. CMVR approval issued to the most representative base vehicle remains valid irrespective of change in the reference weight.
- T: No exemption except those specified in the CMVR and /or applicable standard



**3.4 Fire extinguishers**

- 3.4.1 The motor caravan shall be equipped with two fire extinguishers, one being near to the driver’s seat.
- 3.4.2 Type and the minimum number of extinguishers to be provided shall be as follows:

<b>Motor Caravan</b>			
<b>M1≤2500 kg</b>	<b>M1&gt;2500 kg</b>	<b>M2</b>	<b>M3</b>
Minimum two fire extinguishers of 2 kg each, totaling to 4kg	Minimum two fire extinguishers of 2 kg each, totaling to 4kg	Minimum two fire extinguisher of 2 kg each, totaling to 4kg	Minimum two fire extinguisher of 2 kg each, totaling to 4kg

**Note:** Fire extinguishers shall comply with IS: 13849 or IS: 2171 as amended from time to time, as may be applicable.

- 3.4.3 Halogenated hydrocarbon type of extinguisher shall not be used as extinguishant.
- 3.4.4 The Fire extinguishers shall be secured against tampering and shall be kept in lockers or behind breakable glass. The location shall be marked clearly.

**3.5 Electrical wiring**

- 3.5.1 All electrical wiring in motor caravan shall be properly installed, taped, clipped or contained in a loom along its length
- 3.5.2 Electrical wiring shall conform to IS: 2465-1984 as amended from time to time
- 3.5.3 Living accommodation shall not be occupied during travel mode of motor caravan except in designated seating position.

**4.0 GUIDELINES FOR REQUIREMENTS IN LIVING ACCOMMODATION**

Requirements for the equipment are in the living accommodation space which is provided as per clause 2.2.

**4.1 Seats and Table**

- a) Are required to be an integral part of the living accommodation area, and mounted independently of other items.
- b) The table shall be capable of being mounted directly to the vehicle floor and/or side wall.

- c) The table mounting arrangement shall be secured as a permanent feature, (bolted, riveted, screwed or welded), although the table may be detachable or folding type.
- d) Permanently secured seating shall be available for use at the table.
- e) The seats shall be secured directly to the vehicle floor and/or side wall.
- f) The seats shall be secured as a permanent feature (bolted, riveted, screwed or welded).

#### 4.2 **Sleeping Accommodation**

- a) Shall be an integral part of the living accommodation area.
- b) Either beds or a bed converted from seats (to form a mattress base)
- c) Secured as a permanent feature, with base structures bolted, riveted, screwed or welded to the vehicle floor and/or side wall, (unless the sleeping accommodation is provided as a provision over the driver's cab compartment).
- d) Sleeping arrangement provided over the drivers seating area or on upper level can be fixed or sliding or removable in nature (bunk beds).

#### 4.3 **Cooking Facilities**

- a) Cooking area can be inside or outside the vehicle as per design and layout of living area.
- b) Cooking facility provided inside the vehicle should be secured to the vehicle floor and/or side wall as a permanent feature (bolted, riveted, screwed, or welded).

#### 4.4 **Storage Facilities**

- a) Storage facilities may be provided by a cupboard or locker or by drawer systems.
- b) The facility shall be an integral part of the vehicle living accommodation
- c) The storage facility shall be a permanent feature (bolted, riveted, screwed or welded).
- d) Storage area for cooking vessels and food items to be done separately.

#### 4.5 **Some or all of the following facilities may be provided in motor caravan:**

##### 4.5.1 **Wash area**

- a) Toilet fitting: Toilets may be of permanently fixed or portable type.
- b) Bath fitting / shower: Fixtures may be of permanent or portable type.
- c) Wash basin may be provided inside or outside the vehicle, depending on layout design.

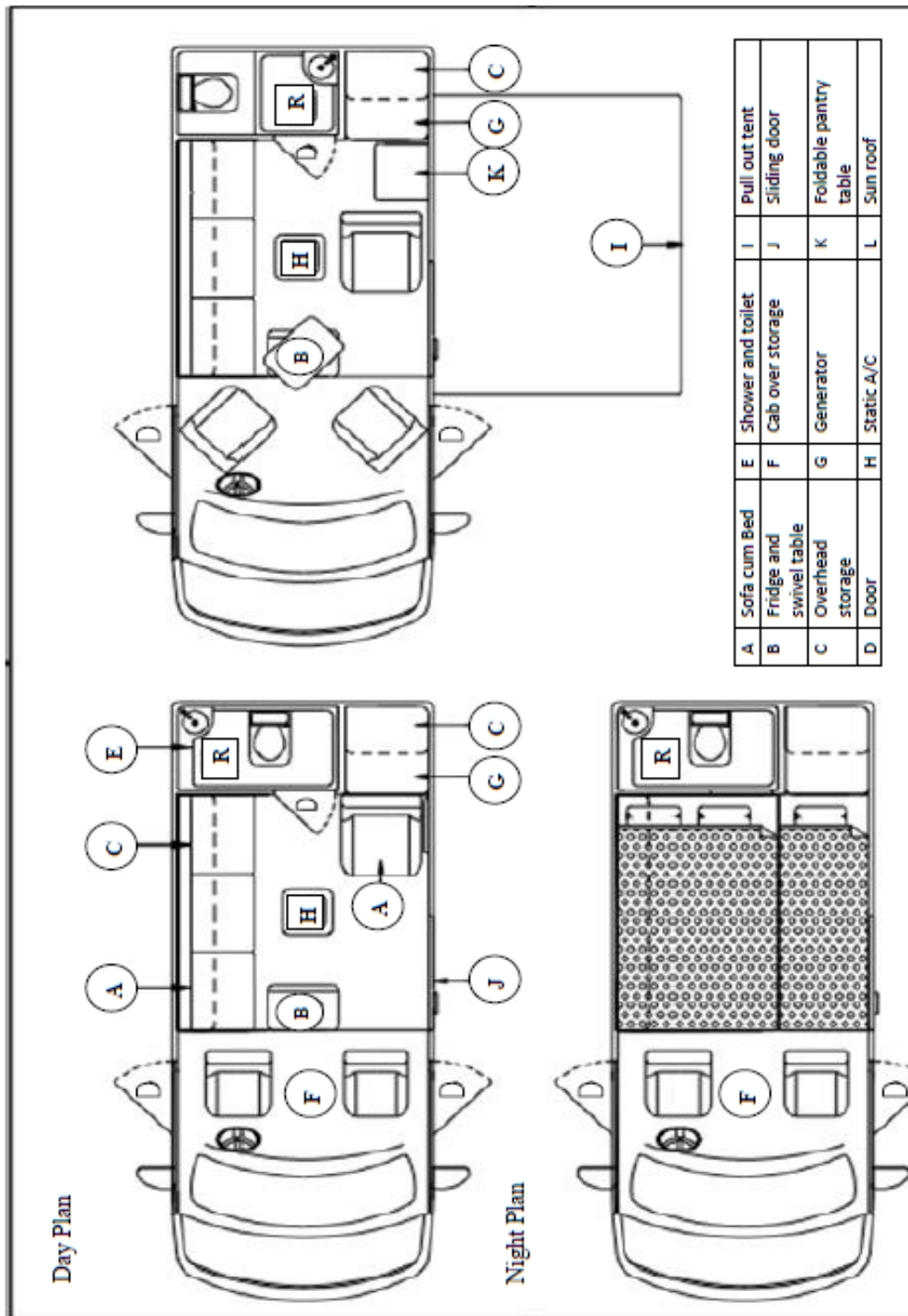
**4.5.2 Water storage facilities**

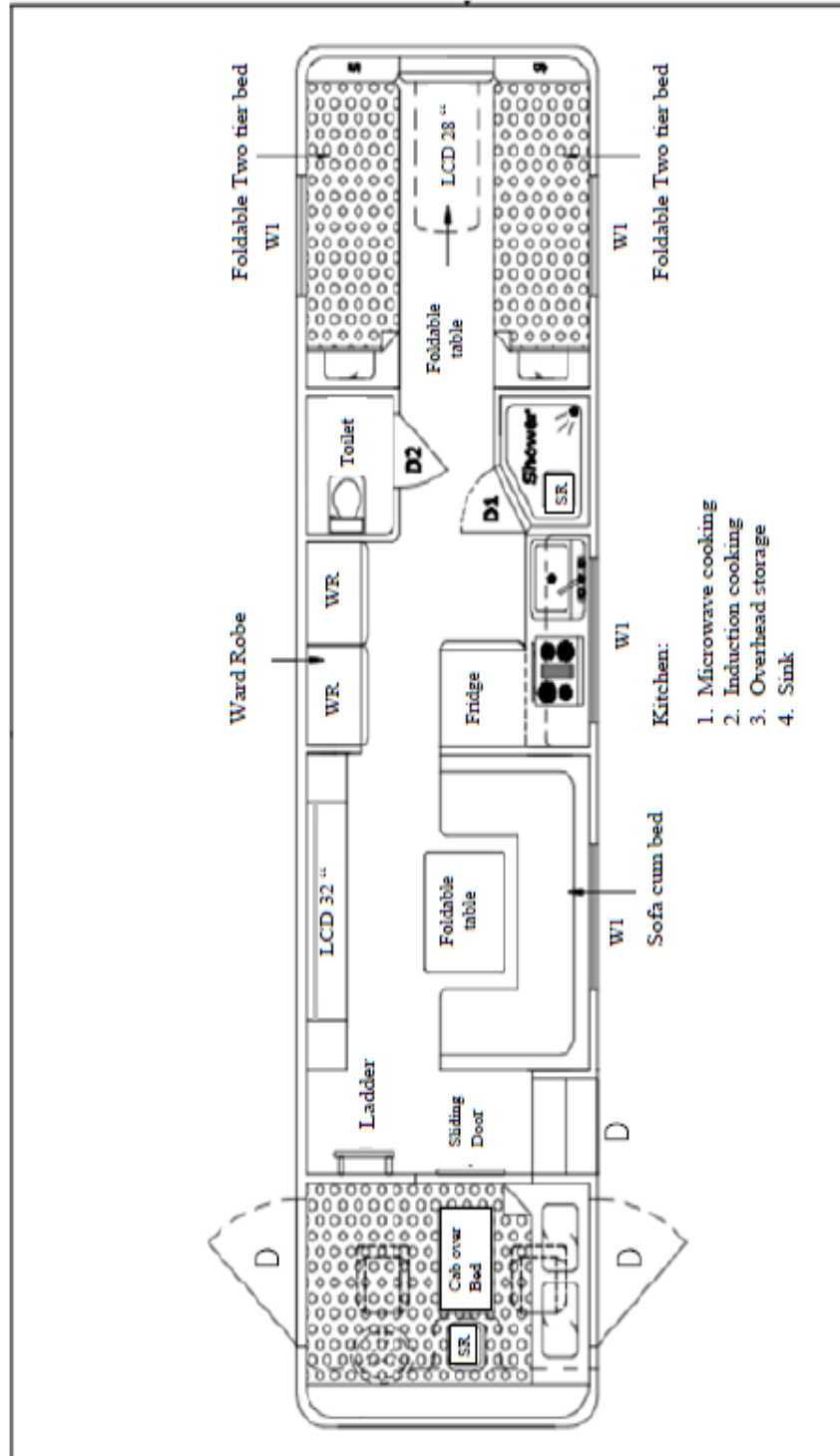
- a) Fresh water tank can be provided inside or outside the vehicle in a place/location for easy maintenance.
- b) Separate gray water tank storage to be provided. (Used water from shower/ wash basin).
- c) Separate black water storage to be provided in case of fixed toilets and flexible drainage pipe to be attached while draining them in the prescribed area.
- d) Water pump may be provided for fresh water near cooking area.

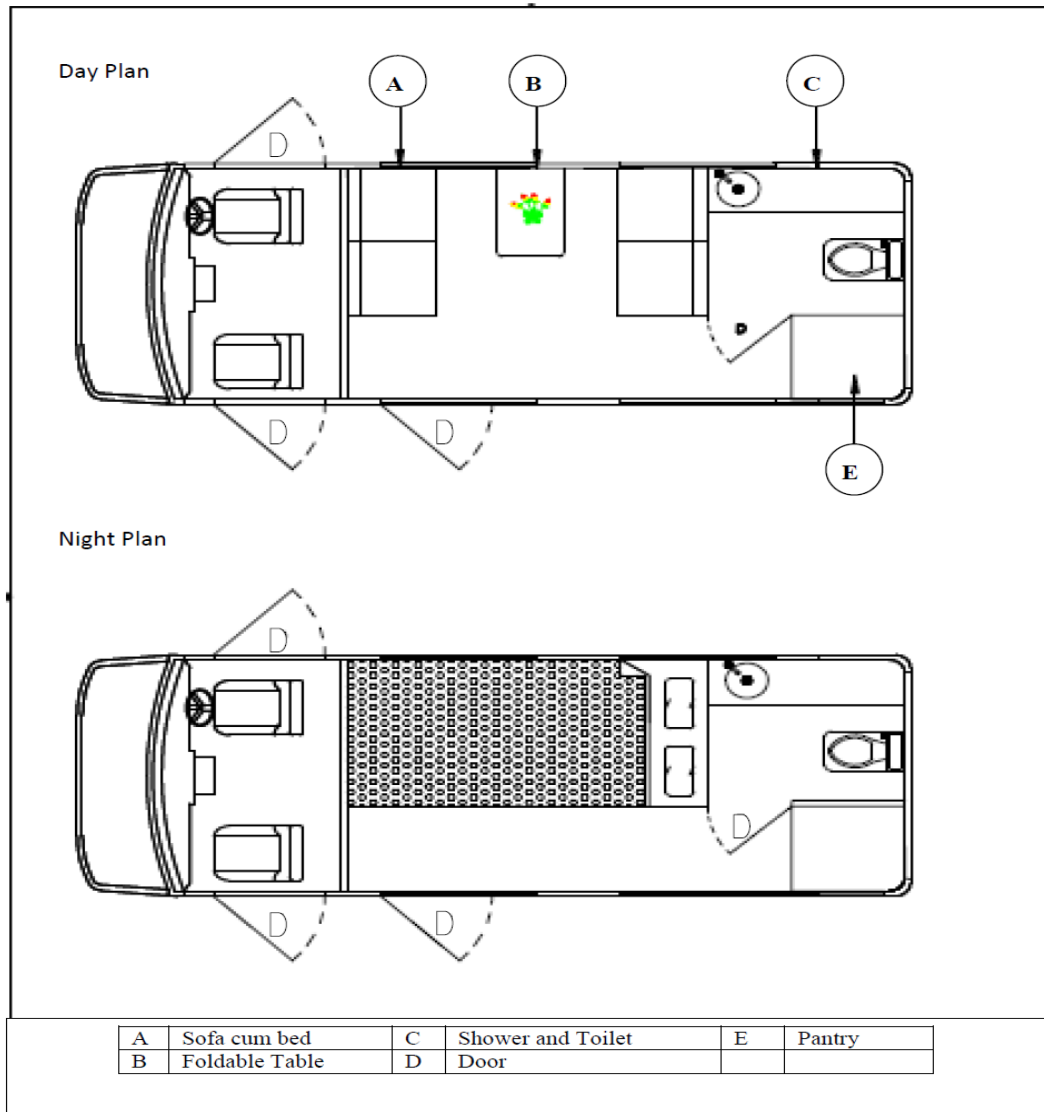
**4.5.3 Electricals**

- a) The living area electrical requirements have to be fulfilled by using a generator or battery back-up of minimum 24 hrs.
- b) All electrical appliances to have a safety fuse systems in place.
- c) There shall be a provision made for direct 230V input system in the vehicle connecting to the battery backup system powering the living areas electrical system/appliances.

4.6 MOTOR CARAVAN FLOOR PLANS WITH INTERNAL ARRANGEMENT  
(AN ILLUSTRATIVE EXAMPLE)







## **5.0 TECHNICAL INFORMATION TO BE SUBMITTED BY MOTOR CARAVAN MANUFACTURER**

- 5.1 The motor caravan manufacturer shall submit the necessary technical details to the test agencies as per Annex - B of this standard.
- 5.1.1 Motor caravan body builder who builds motor caravan on earlier type approved vehicle, shall submit details of technical changes carried on the earlier type approved vehicle as per Table 8, 9, 10, 12 and 12 A of AIS-007 (Revision 4), as amended from time to time.
- 5.2 The motor caravan manufacturer shall submit the details of motor caravan identification number as per Annex-C. It shall be punched at the readily accessible position on a part which is normally not likely to be replaced during use.
- 5.3 Motor caravan body builder shall submit vehicle certificate number along with date of already type approved vehicle on which motor caravan is built to the testing agency.
- 5.4 Motor caravan body builder who builds motor caravan on earlier type approved vehicle, may submit photocopies of type approval certificate and brief technical specifications of the said vehicle.

## **6.0 EXTENSION OF TYPE APPROVAL**

- 6.1 Every modification pertaining to the information declared in accordance with para 5.0 shall be intimated by the motor caravan manufacturer to the Testing Agency.
- 6.2 If the changes are in parameters not related to the provisions, no further action need be taken.

If the changes are in parameters related to the provisions, the Testing Agency shall then consider, whether,

- a) The model with the changed specifications still complies with provisions or
- b) Any further verification is required to establish compliance.

For considering whether any further verification is required or not, guidelines given in respective standard shall be used.

- 6.3 In case of 6.2 (b), verification for only those parameters which are affected by the modifications needs to be carried out.
- 6.4 In case of fulfillment of criterion of para 6.2 (a) or after results of further verification as per para of 6.2 (b) are successful, the approval of compliance shall be extended for the changes carried out.

**7.0 CONFORMITY OF PRODUCTION (CoP)**

- 7.1 Whole Vehicle CoP procedures, as and when formulated and notified shall be applicable.
- 7.2 Motor caravan approved under this standard shall be so manufactured as to conform to the type approved specifications.

**8.0 GUIDELINES FOR REGISTRATION OF MOTOR CARAVANS**

- 8.1 Motor caravan built on earlier type approved vehicle (Incomplete vehicle).

For registration purpose of such motor caravan procedure as per CMVR Rule 47 sub clause “g” shall be followed.

- 8.2 Motor caravan built on already registered vehicle (Completely built vehicle).

For registration purpose of motor caravan which is built on already registered vehicle, the vehicle owner shall apply to the concerned registering authority within 14 days of undertaking the alteration as required under Section 52 of Motor Vehicle Act 1988, for endorsement of particular alteration in registration certificate mentioning place and date of alteration and alteration certificate number. This shall also be ensured by the motor caravan body builder.

- 8.3 Guidelines for type approval and registration of motor caravan are given in Annex- D.



## ANNEX-A

(See 2.0)

## REFERENCES

## LIST OF AIS/IS REFERRED IN THIS STANDARD

Sr. No	Applicable standard, as amended from time to time	Title of AIS/IS
1.	AIS-053	Automotive Vehicles – Types – Terminology
2.	IS: 15633-2005	Automotive vehicles —Pneumatic tyres for passenger car vehicles — Diagonal and radial ply — specification
3.	IS: 15636-2005	Automotive vehicles — Pneumatic tyres for commercial vehicles — Diagonal and radial ply — Specification
4.	IS:11852 (Part 1): 2001	Automotive vehicles - Brakes and braking systems - Part 1 : Terminology
5.	IS:11852 (Part 2) : 2001	Automotive vehicles - Brakes and braking systems - Part 2 : General functions and features
6.	IS:11852 (Part 3) : 2001	Automotive vehicles - Brakes and braking systems - Part 3 : Performance requirements and evaluation
7.	IS:11852 (Part 4) : 2001	Automotive vehicles - Brakes and braking systems -Part 4 : Compressed air and air assisted brakes - Special requirements
8.	IS:11852 (Part 5) : 2001	Automotive vehicles - Brakes and braking systems - Part 5 : Compressed air and air assisted brakes - Pressure test connections
9.	IS:11852 (Part 6) : 2001	Automotive vehicles - Brakes and braking systems - Part 6 : Vacuum braking systems - Special requirements
10.	IS:11852 (Part 7) : 2001	Automotive vehicles - Brakes and braking systems - Part 7 : Inertia dynamometer test method for brake lining
11.	IS:11852 (Part 8) : 2001	Automotive Vehicles - Brakes and braking systems - Part 8 : Test procedures
12.	IS:11852 (Part 9) : 2003	Automotive vehicles - Brakes and braking systems - Part 9 : Requirements for vehicles equipped with anti-lock braking systems
13.	IS: 12222-1987	Method of measurement of turning circle of automotive vehicle
14.	IS: 11948-1999	Automotive vehicles - Steering effort - Method of evaluation
15.	IS: 2553-Part 2-1992.	Safety Glass - Specification - Part 2 : For road transport

Sr. No	Applicable standard, as amended from time to time	Title of AIS/IS
16.	AIS-011:2001	Automotive Vehicles - Testing procedure for windscreen wiping system for 4 wheelers other than M1 category of vehicles
17.	AIS-019:2001	Automotive vehicles –Windscreen wiping and washing system for M1 category of vehicles
18.	AIS-057:2005	Performance requirements for retro-reflecting devices for power-driven vehicles and their trailers
19.	AIS-090:2005	Approval of Retro-Reflective Markings for Heavy and Long Vehicles, their Trailers and Semi-Trailers
20.	IS: 11827-1995	Automotive Vehicle - Calibration of speedometer - Method of evaluation
21.	AIS-018:2001	Automotive vehicles - Speed limitation devices - Specifications
22.	IS 1884:1993	Automotive vehicles - Electric horns - Specification
23.	AIS-014:2001	Automotive vehicles - Horn installation requirement
24.	IS 3028:1998	Automotive vehicles - Noise emitted by moving vehicles - Method of measurement
25.	AIS-065:2005	Statutory plates and inscriptions for motor vehicles, their location and method of attachment – Vehicle identification numbering system
26.	AIS-034:2004	Automobile lamps
27.	IS 7079:1995	Automotive vehicles -Hydraulic brake hose - Specification
28.	IS 8654:1986	Automotive hydraulic brake fluid, heavy duty - specification
29.	IS 11939:1996	Automotive vehicles - Steering control systems - Impact protection requirements and methods of measurement
30.	IS 12009:1995	Automotive vehicle - Safety requirements for side door of passenger cars - Recommendations
31.	IS:12056-1987	Recommendations for safety requirements for fuel tank assembly of automotive vehicles
32.	IS 15547:2005	Automotive vehicles - Plastic fuel tank for four wheelers
33.	IS 9436:1980	Performance requirements and methods of tests for wheels for passenger cars
32.	IS 9438:1980	Performance requirements and methods of tests for wheels/rims for trucks
33.	IS 13942:1994	Automotive vehicles - External projections - Performance requirements
34.	IS 13944:1994	Automotive vehicles - Window retention and release systems for buses - Safety requirements
35.	IS 13943:1994	Automotive vehicles - Wheel guards for passenger cars - Performance requirements

Sr. No	Applicable standard, as amended from time to time	Title of AIS/IS
36.	IS 13941:1994	Automotive vehicles - Wheel fasteners and hub caps - General requirements
37.	IS 14283:1995	Automotive vehicles - Accelerator control systems - General requirements
38.	IS 14225:1995	Automotive vehicles - Locking systems and door retention components - General requirements
39.	IS 14226:1995	Automotive vehicles - Hood latch system - Method of test
40.	Safety Standard No.12.1	Tell Tale Systems and Controls for all Motor Vehicles other than 3 Wheeled Vehicles up to Engine Capacity 500cc, 2 Wheeled Vehicles and Tractor
41.	AIS-008 (Rev.1):2010	Installation Requirements of Lighting and Light-Signaling Devices for Motor Vehicle having more than Three Wheels, Trailer and Semi-Trailer excluding Agricultural Tractor and Special Purpose Vehicle
42.	AIS-012:2004	Performance Requirements of Lighting and Light-Signaling Devices for Motor Vehicle having more than Three Wheels, Trailer and Semi-Trailer
43	AIS-004 (Part 1):1999	Electromagnetic radiation from automotive vehicle - Permissible levels & methods of tests
44	AIS-003:1999	Automotive vehicles - Starting gradeability -Method of measurement and requirements $\mu$
45	AIS-021:2004	Field of vision of motor vehicle drivers for M1 category
46	AIS-031:2004	Automotive vehicles - The strength of superstructure of large passenger vehicles
47	IS:15061: 2002	Automotive vehicles - Flammability requirements
48	IS 15223:2002	Automotive vehicles - Interior fittings - Specification
49	AIS-047:2009	Automotive vehicles - Interior fittings - Specifications for other than M1 category vehicles
50	AIS-020	Automotive vehicles - Interior noise - Method of measurement and requirements
51	AIS-006:2005	Automotive vehicle: bumper fitment on M1 vehicles - test methods.
52	AIS-046:2005	Automotive Vehicles - Hand-Holds for three, four and more than four wheeled motor vehicles-specification
53	AIS-035:2006	Automotive Vehicles - The Arrangement of Foot Controls of Vehicles

<b>Sr. No</b>	<b>Applicable standard, as amended from time to time</b>	<b>Title of AIS/IS</b>
54	AIS-084 (Part1):2008	Automotive Vehicles - Performance requirements of Demisting Systems of Glazed Surfaces (Wind Screen) of Motor Vehicles
55	AIS-084(Part2):2008	Automotive Vehicles - Performance requirements of Defrosting Systems of Glazed Surfaces (Wind Screen) of Motor Vehicles
56	IS 14812:2000	Automotive vehicles - Rear under run protective device - General requirements (First Revision)
57	IS 14682:1999	Automotive vehicles -Lateral protection (side guards) -Technical requirements (First revision)
58	AIS-037:2004	Procedure for Type Approval and Establishing Conformity of Production for Safety Critical Components
59	IS 15139-2002	Automotive vehicles - Safety belt anchorages - Specification
60	IS 15140:2003	Automotive vehicles - Safety belt assembly -Specification
61	AIS-001:2001	Automotive vehicles – Rear – View mirrors - Specification
62	AIS-002:2001	Automotive vehicles - Rear - View mirrors - Installation requirements
63	IS 15546-2005	Automotive vehicles -Seats, their anchorages and head restraints for category M1 -Specification
64	AIS-022:2001	Automotive vehicles - Advance-Warning triangles and conspicuity marking tape - Specifications

**ANNEX - B**  
(See clause 5.1)

**TECHNICAL INFORMATION TO BE SUBMITTED BY MOTOR  
CARAVANS MANUFACTURER / BODY BUILDER**

<b>1.0</b>	<b>Details of Motor Caravan manufacturer</b>	
1.1	Name & Address :	
1.2	Telephone No :	
1.3	Fax. No. :	
1.4	E mail address :	
1.5	Contact person :	
1.6	<b>Name of model :</b>	
1.7	<b>Name of variants, if any:</b>	
1.8	Type and General commercial description (s) :	
1.8	Plant/(s)of manufacture :	
1.8.1	Name and address of engine manufacturing plant In case of imported vehicles, above details shall be supplied for importer also.	
1.9	Importer's Name and address	
1.9.1	Telephone No.	
1.9.2	Fax. No.	
1.9.3	E mail address	
1.9.4	Contact person	
1.10	Details of the base CMVR Compliance Certificate issued to the Chassis (Certificate Number and date )	
1.11	Vehicle type:	
1.12	Type of vehicle (Rigid / others)	
1.13	Drive (4x2 or 4x4 or 6x2 or 6x4 or others)	
1.14	Vehicle Performance:	
1.15	Max. recommended gradeability (Stand- start) – in degrees	
1.16	Max. design speed (km/h)	
<b>2.0</b>	<b>Vehicle Chassis Characteristics</b>	
2.1	Chassis types approved for Body installation	
2.2	Type of Control (normal control/Full forward control etc.):	
2.3	Number of Axles and wheels :	
2.4	Chassis (overall drawing) :	

2.5	<b>Frame Type :</b>	
2.6	Cross sectional view :	
2.7	Position and arrangement of engine:	
2.8	<b>Dimension (in mm) (Specify drawing reference) :</b>	
2.8.1	Length mm :	
2.8.2	Width mm :	
2.8.3	Height (Unladen) mm :	
2.8.4	Wheel base mm :	
2.8.5	Wheel track mm :	
	Front :	
	Rear :	
2.8.6	Body overhang mm :	
	Front end :	
	Rear end :	
2.9	Category of vehicle as per AIS-053:	
2.9.1	Base vehicle	
2.9.2	Completed vehicle	
<b>3.0</b>	<b>Body :</b>	
3.1	<b>Type of Body :</b>	
3.2	Dimension drawing and photograph of the vehicle with representative body :	
3.3	Passenger capacity :	
3.3.1	Maximum (Including driver) :	
3.3.2	Number of designated seats	
3.3.3	Number of non designated seats	
3.3.4	Seat layout	
3.4	Number of Service doors :	
3.5	Number of emergency exits :	
<b>4.0</b>	<b>Clearance</b>	
4.1	Minimum road clearance :	
4.2	Approach angle :	
4.3	Departure Angle :	
4.4	Ramp-over Angle :	
<b>5.0</b>	<b>Weights</b>	
5.1	Vehicle kerb weight kg :	
	Front axle :	
	Rear axle :	
	Total :	
5.2	Gross vehicle weight kg :	

5.3	Maximum permissible axle weights kg	
	Front axle:	
	Rear axle:	
5.4	Reference mass kg :	
<b>6.0</b>	<b>Tyres</b>	
6.1	No. and arrangement of wheels :	
6.1.1	Front :	
6.1.2	Rear :	
6.1.3	Other :	
6.2	Tyre type (Radial/cross ply) (with Tube / Tube less), size designation including ply rating, speed rating, Load rating or Load index. Use symbols as per IS 15633 / IS 15636 as may be applicable.	
6.2.1	Front wheel	
6.2.2	Rear wheel	
6.2.3	Spare wheel	
6.3	Dynamic rolling radius, mm	
6.4	<b>Inflation pressure – Unladen :</b>	
6.4.1	<b>Front :</b>	
6.4.2	Rear :	
6.4.3	Other	
6.5	<b>Inflation pressure –Laden :</b>	
6.5.1	<b>Front :</b>	
6.5.2	Rear :	
6.5.3	Other :	
<b>7.0</b>	<b>Body Panels</b>	
7.1	<b>Outer Panels :</b>	
7.1.1	Material :	
7.1.2	Thickness :	
7.2	Inner Panels :	
7.2.1	Material :	
7.2.2	Thickness :	
7.3	Roof Panels :	
7.3.1	Material :	
7.3.2	Thickness :	
7.4	Floor Panels :	
7.4.1	Material :	

7.4.2	Thickness :		
7.4.3	Type of anti-slip coating :		
<b>8.0</b>	<b>Service Doors</b>		
8.1	No. of Service Doors :		
8.2	Position of Service Doors :		
8.3	<b>Dimension of Service Door :</b>		
	- Front	Height : Width :	
	-Rear	Height : Width :	
	-Middle	Height : Width :	
<b>9.0</b>	<b>Emergency Exit</b>		
9.1	No. of Emergency Doors :		
9.2	Position of Emergency Doors :		
9.3	<b>Dimension of Emergency Door :</b>		
	- Ist	Height : Width :	
	- IInd	Height : Width :	
<b>10.0</b>	<b>Window</b>		
10.1	<b>Window (other than Emergency exit)</b>		
10.1.1	Dimension of Window aperture along with the detailed drawing showing the dimensions		
10.1.2	Height of upper edge of window aperture from gangway floor (mm)		
10.1.3	Type of window		
10.2	<b>Emergency Windows</b>		
10.2.1	No. of Emergency Windows :		
10.2.2	Position of Emergency Windows :		
10.2.3	Area (HxW in sq. m) :		
<b>11.0</b>	<b>Steps</b>		
11.1	Height of Ist Step :		
11.2	Height of Other Steps :		
11.3	Depth of steps :		
<b>12.0</b>	<b>Floor :</b>		
12.1	Floor Height from the ground (unladen):		
12.2	Slope of floor :		



<b>13.0</b>	<b>Seats</b>	
13.1	Driver/Co-driver or Front Passenger	
	Seat	
13.1.1	Make	
13.1.2	Type	
13.1.3	Identification Number	
13.1.4	Seat Drawing no.	
13.2	<b>Passenger Seats :</b>	
13.2.1	Make	
13.2.2	Type	
13.2.3	Identification Number (S)	
13.2.4	Seat Drawing no.	
13.2.5	<b>Seat Layout(S) :</b>	
	Enclose the Layout Drawings	
13.2.6	Seat width :	
13.2.7	Width of available space for one seating position :	
13.2.8	Height of backrest :	
13.2.9	Width of Armrest :	
13.2.10	Depth of Seat cushion (base) :	
13.2.11	Seat Pitch :	
13.2.12	Seat base height :	
13.2.13	Torso angle :	
13.2.14	Seat base thickness :	
13.2.15	Seat back thickness :	
13.2.16	Clearance space for seated passengers facing partition :	
13.2.17	Free Height over seating position :	
13.2.18	Seat anchorage layout drawing (with anchorage cross section and hardware used details)	
<b>14.0</b>	<b>Door locks and hinges</b>	
14.1	<b>Door lock :</b>	
14.1.1	Name of Manufacturer :	
14.1.2	Identification mark :	
<b>15.2</b>	<b>Door hinge :</b>	
15.2.1	Name of Manufacturer :	
15.2.2	Identification mark :	
<b>16.0</b>	<b>Safety glass</b>	
16.1	Front wind shield (laminated) :	
16.1.1	Make	

16.1.2	Identification :	
16.1.3	Type (flat/curved, clear/tinted) :	
16.1.4	Thickness mm :	
16.1.5	No. of pieces :	
16.1.6	Radius of curvature (If curved) :	
16.2	<b>Side Windows:</b>	
16.2.1	Make	
16.2.2	Identification	
16.2.3	Type (flat/curved, clear/tinted, toughened) :	
16.2.4	Thickness mm :	
16.2.5	Radius of curvature (If curved) :	
16.3	<b>Rear Window:</b>	
16.3.1	Make	
16.3.2	Identification	
16.3.3	Type (flat/curved, clear/tinted, toughened) :	
16.3.4	Thickness mm :	
16.3.5	Radius of curvature (If curved) :	
<b>17.0</b>	<b>Rear view mirror</b>	
17.1	Left :	
17.1.1	Name of Manufacturer :	
17.1.2	Type :	
17.1.3	Dimension & radius of curvature :	
17.1.4	Identification Mark:	
17.2	Right :	
17.2.1	Name of Manufacturer :	
17.2.2	Type :	
17.2.3	Dimension & radius of curvature :	
17.2.4	Identification Mark:	
17.3	Inside :	
17.3.1	Name of Manufacturer :	
17.3.2	Type :	
17.3.3	Dimension & radius of curvature :	
17.3.4	Identification Mark:	
17.4	Sketch showing mounting arrangement of mirrors	
<b>18.0</b>	<b>Wiping system</b>	
18.1	Type :	
18.2	No. of wipers :	
18.3	Wiper motor :	
18.3.1	Name of Manufacturer :	

18.3.2	Type and identification :	
18.3.3	Rated voltage :	
18.3.4	Frequency of wiping :	
18.4	<b>Wiper arm :</b>	
18.4.1	Length :	
18.4.2	Name of Manufacturer :	
18.4.3	Identification Mark:	
18.5	<b>Wiper blade :</b>	
18.5.1	Length :	
18.5.2	Name of Manufacturer :	
18.5.3	Identification Mark:	
18.6	<b>Rubber material :</b>	
18.6.1	Type of fixing (As per IS:7827) :	
18.6.2	Drawing indicating the seat back angle, seat travel, H point, Rake angle ,F dimension And steering wheel position as per AIS-011	
<b>19.0</b>	<b>Wind Screen Washer</b>	
19.1	Name of Manufacture: :	
19.2	Type :	
19.3	Number of nozzles :	
19.4	Spray Area :	
19.5	Identification Number:	
<b>20.0</b>	<b>Equipment for occupant's safety</b>	
20.1	Driver Seat belt :	
20.1.1	Name of Manufacture: :	
20.1.2	Type :	
20.1.3	Number :	
20.1.4	Identification Number:	
20.2	<b>Driver Seat belt anchorage :</b>	
20.2.1	Name of Manufacturer :	
20.2.2	Type :	
20.2.3	Number :	
20.3	<b>Head restraint :</b>	
20.3.1	Name of Manufacturer :	
20.3.2	Type :	
20.4	<b>Passenger Seat :</b>	
20.4.1	Name of Manufacturer :	
20.4.2	Type :	
20.4.3	Frame structure Material :	

20.4.4	Section size:	
<b>21.0</b>	<b>Fire Extinguisher</b>	
21.1	Number :	
21.2	Type :	
21.3	Capacity :	
21.4	Name of Manufacture: :	
<b>22.0</b>	<b>First Aid Equipment</b>	
22.1	Number :	
22.2	Contents :	
<b>23.0</b>	<b>Automotive bulbs :</b>	
23.1	<b>Head lamp bulb (main and dip)</b>	
23.1.1	Make and Country of origin (if imported)	
23.1.2	Designation as per AIS-034	
23.2	<b>Parking Lamp bulb – Front</b>	
23.2.1	Make and Country of origin (if imported)	
23.2.2	Designation as per AIS-034	
23.3	<b>Parking Lamp bulb - Rear</b>	
23.3.1	Make and Country of origin (if imported)	
23.3.2	Designation as per AIS-034	
23.4	<b>Direction indicator lamp bulb - front</b>	
23.4.1	Make and Country of origin (if imported)	
23.4.2	Designation as per AIS-034	
23.5	<b>Direction indicator lamp bulb – rear</b>	
23.5.1	Make and Country of origin (if imported)	
23.5.2	Designation as per AIS-034	
23.6	<b>Direction indicator lamp bulb – side</b>	
23.6.1	Make and Country of origin (if imported)	
23.6.2	Designation as per AIS-034	
23.7	<b>Front Position Lamp bulb</b>	
23.7.1	Make and Country of origin ( if imported )	
23.7.2	Designation as per AIS-034	
23.8	<b>Rear Position Lamp ( tail lamp )Bulb</b>	
23.8.1	Make and Country of origin (if imported)	
23.8.2	Designation as per AIS-034	
23.9	<b>Stop lamp bulb</b>	
23.9.1	Make and Country of origin (if imported)	
23.9.2	Designation as per AIS-034	
23.10	<b>Number plate lamp bulb</b>	
23.10.1	Make and Country of origin (if imported)	

23.10.2	Designation as per AIS-034	
23.11	<b>End out Marker bulb</b>	
23.11.1	Make and Country of origin (if imported)	
23.11.2	Designation as per AIS-034	
23.12	<b>Reversing lamp bulb</b>	
23.12.1	Make and Country of origin (if imported)	
23.12.2	Designation as per AIS-034	
23.13	<b>Stop Lamp Bulb (S3)</b>	
23.13.1	Make and Country of origin (if imported)	
23.13.2	Designation as per AIS-034	
23.14	<b>Front Fog Lamp Bulb</b>	
23.14.1	Make and Country of origin(if imported)	
23.14.2	Designation as per AIS-034	
23.15	<b>Rear Fog Lamp Bulb</b>	
23.15.1	Make and Country of origin (if imported)	
23.15.2	Designation as per AIS-034	
23.16	<b>Side Marker Lamp Bulb</b>	
23.16.1	Make and Country of origin (if imported)	
23.16.2	Designation as per AIS-034	
<b>24.0</b>	<b>Head Lamp</b>	
24.1	Name of Manufacturer :	
24.2	Type and Identification :	
24.3	Number and colour :	
<b>25.0</b>	<b>Tail lamp</b>	
25.1	Name of Manufacturer :	
25.2	Type and Identification :	
25.3	Number and colour :	
<b>26.0</b>	<b>Parking lamp</b>	
26.1	<b>Front :</b>	
26.1.1	Name of Manufacturer :	
26.1.2	Type and Identification :	
26.1.3	Number and color :	
26.2	<b>Rear :</b>	
26.2.1	Name of Manufacturer :	
26.2.2	Type and Identification :	
26.2.3	Number and colour	
<b>27.0</b>	<b>Stop lamp</b>	
27.1	Name of Manufacturer :	
27.2	Type and Identification :	
27.3	Number and colour :	

<b>28.0</b>	<b>Reversing lamp</b>	
28.1	Name of Manufacturer :	
28.2	Type and Identification :	
28.3	Number and colour :	
<b>29.0</b>	<b>Direction indicator lamp</b>	
29.1	<b>Front :</b>	
29.1.1	Name of Manufacturer :	
29.1.2	Type and Identification :	
29.1.3	Number and colour :	
29.2	<b>Rear :</b>	
29.2.1	Name of Manufacturer :	
29.2.2	Type and Identification :	
29.2.3	Number and colour :	
29.3	<b>Side :</b>	
29.3.1	Name of Manufacturer :	
29.3.2	Type and Identification :	
29.3.3	Number and colour :	
29.4	<b>Type of flasher :</b>	
<b>30.0</b>	<b>Number Plate Lamp</b>	
30.1	Name of Manufacturer :	
30.2	Type and Identification :	
30.3	Number and colour :	
<b>31.0</b>	<b>Emergency signaling equipment</b>	
31.1	<b>Front :</b>	
31.1.1	Name of Manufacturer :	
31.1.2	Type and Identification :	
31.1.3	Number and colour :	
31.2	<b>Rear :</b>	
31.2.1	Name of Manufacturer :	
31.2.2	Type and Identification :	
31.2.3	Number and colour :	
31.3	<b>Side :</b>	
31.3.1	Name of Manufacturer :	
31.3.2	Type and Identification :	
31.3.3	Number and colour	
<b>32.0</b>	<b>Reflector</b>	
32.1	<b>Rear :</b>	
32.1.1	Name of Manufacturer :	
32.1.2	Type and Identification :	
32.1.3	Number and colour :	

32.1.4	Area :	
32.2	<b>Side :</b>	
32.2.1	Name of Manufacturer :	
32.2.2	Type and Identification :	
32.2.3	Number and colour :	
32.2.4	Area :	
<b>33.0</b>	<b>Top light</b>	
33.1	Name of Manufacturer: :	
33.2	Type and Identification :	
33.3	Number and colour :	
<b>34.0</b>	<b>Internal Lighting &amp; Illumination</b>	
34.1	<b>Driver Cab lighting :</b>	
34.1.1	Type :	
34.1.2	Name of Manufacturer :	
34.1.3	Number :	
34.1.4	illumination intensity :	
34 .2	<b>Passenger Compartment Lighting</b>	
34.2.1	Type :	
34.2.2	Name of Manufacturer :	
34.2.3	Number :	
34.2.4	Illumination intensity :	
34.3	<b>Other Area Lighting</b>	
34.3.1	Type :	
34.3.2	Name of Manufacturer :	
34.3.3	Number :	
34.3.4	Illumination intensity :	
<b>35.0</b>	<b>Electrical Circuit</b>	
35.1	Circuit Diagram (attach details):	
<b>36.0</b>	<b>Electrical Cables</b>	
36.1	Name of Manufacturer :	
36.2	Conductor Cross section :	
36.3	Insulation Class :	
<b>37.0</b>	<b>Fuse</b>	
37.1	Type & Make :	
37.2	Name of Manufacturer :	
<b>38.0</b>	<b>Master switch for electrical :</b>	
38.1	Type & Make :	
38.2	Name of Manufacturer :	
<b>39.0</b>	<b>Seat</b>	
39.1	<b>Seat and its accessories</b>	

39.1.1	Name of Manufacturer :	
39.1.2	Material Grade	
39.1.3	Material Type	
39.1.4	Component Part No. and Batch No.	
39.1.5	Identification Code	
39.1.6	Drawing No.	
39.2	<b>Interior lining of the roof</b>	
39.2.1	Name of Manufacturer :	
39.2.2	Material Grade	
39.2.3	Material Type	
39.2.4	Component Part No. and Batch No.	
39.2.5	Identification Code	
39.2.6	Drawing No.	
39.3	<b>Interior lining of side walls</b>	
39.3.1	Name of Manufacturer :	
39.3.2	Material Grade	
39.3.3	Material Type	
39.3.4	Component Part No. and Batch No.	
39.3.5	Identification Code	
39.3.6	Drawing No.	
39.4	<b>Interior lining of rear walls</b>	
39.4.1	Name of Manufacturer :	
39.4.2	Material Grade	
39.4.3	Material Type	
39.4.4	Component Part No. and Batch No.	
39.4.5	Identification Code	
39.4.6	Drawing No.	
39.5	<b>Separation walls</b>	
39.5.1	Name of Manufacturer :	
39.5.2	Material Grade	
39.5.3	Material Type	
39.5.4	Component Part No. and Batch No.	
39.5.5	Identification Code	
39.5.6	Drawing No.	
39.6	<b>Floor</b>	
39.6.1	Name of Manufacturer :	
39.6.2	Material Grade	
39.6.3	Material Type	
39.6.4	Component Part No. and Batch No.	
39.6.5	Identification Code	



39.6.6	Drawing No.	
39.7	<b>Luggage racks</b>	
39.7.1	Name of Manufacturer :	
39.7.2	Material Grade	
39.7.3	Material Type	
39.7.4	Component Part No. and Batch No.	
39.7.5	Identification Code	
39.7.6	Drawing No.	
39.8	<b>Heating and ventilation pipe</b>	
39.8.1	Name of Manufacturer :	
39.8.2	Material Grade	
39.8.3	Material Type	
39.8.4	Component Part No. and Batch No.	
39.8.5	Identification Code	
39.8.6	Drawing No.	
39.9	<b>Luminaries.</b>	
39.9.1	Name of Manufacturer :	
39.9.2	Material Grade	
39.9.3	Material Type	
39.9.4	Component Part No. and Batch No.	
39.9.5	Identification Code	
39.9.6	Drawing No.	
<b>40.0</b>	<b>Interior Fittings as per AIS-047, as applicable</b>	
40.1	Instrument Panel (Dash Board)	
40.2	Make	
40.3	Identification No. / Part No.	
40.4	Material	
40.5	Drawing showing the mounting details, over all size and all control switches with dimensions	
40.6	Additional details for interior fitting tests to be given (if test is already conducted, this information need not be submitted).	
40.6.1	Instrument Panel Variants with photographs (With / without Airbag, Music system, AC )	
40.6.2	Material used for instrument Panel	
40.6.3	Drawings	
40.6.3.1	Instrument Panel mounting (With hardware details)	

40.6.3.2	'H' point co-ordinates for each seating position	
40.6.3.3	Cross sectional drawings for each projection more than 3.2	
40.6.3.4	Cross sectional Drawing of Gear shift lever	
40.6.3.5	Drawing of Grab handle with cross section	
40.6.3.6	Drawing of Sunvisor with details of metal wire used	
40.6.3.7	Drawing of lamp assembly mounted at roof	
40.6.4	<b>Name of manufacturer of the Interior fitting components</b>	
40.6.4.1	Instrument Panel	
40.6.4.2	Sun Visor	
40.6.4.3	Roof Light	
40.6.4.4	Grab Handle	
40.6.4.5	Gear Lever	
40.6.4.6	Hand Brake Lever	
40.6.4.7	Seats (Need not be specified if done already)	
40.6.4.8	Seat Belts (Need not be specified if done already)	
40.6.4.9	Music System (if provided)	
40.6.4.10	Cigarette lighter (if provided)	
<b>41.0</b>	<b>Battery</b>	
41.1	Type & number	
41.2	Voltage & Capacity (Ah)	
<b>42.0</b>	<b>Any other additional information the Motor Caravan manufacturer / body builder would like to declare</b>	

**ANNEX-C**  
(See 5.2)

**DETAILS OF LOCATION OF MOTOR CARAVAN IDENTIFICATION  
NUMBER AND CODE FOR MONTH AND YEAR OF MANUFACTURE**

Name of the Motor Caravan Manufacturer & Address :	
Name of the basic model :	
Name of variants, if any :	
Place of embossing or etching the motor caravan identification number (Supporting details by drawing or pictures may be provided if necessary )	
Position of the code for month of production in the motor caravan identification number	
Position of the code for year of production in the motor caravan identification number	
Height of the motor caravan identification number - Min. 7 mm	
Illustrative example	

<b>Code for month and year of production</b>			
<b>Code for month of production:</b>		<b>Code for year of production:</b>	
<b>Month</b>	<b>Code</b>	<b>Year</b>	<b>Code</b>
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

Example:

Subject	Manufacture digit			Year		Month	Serial no of vehicle		
example	1	2	3	4	5	6	7	8	9
Remark	Can be WMI letter if available			As per declaration above table		As per declaration above table	As per manufacture production vehicle per year		

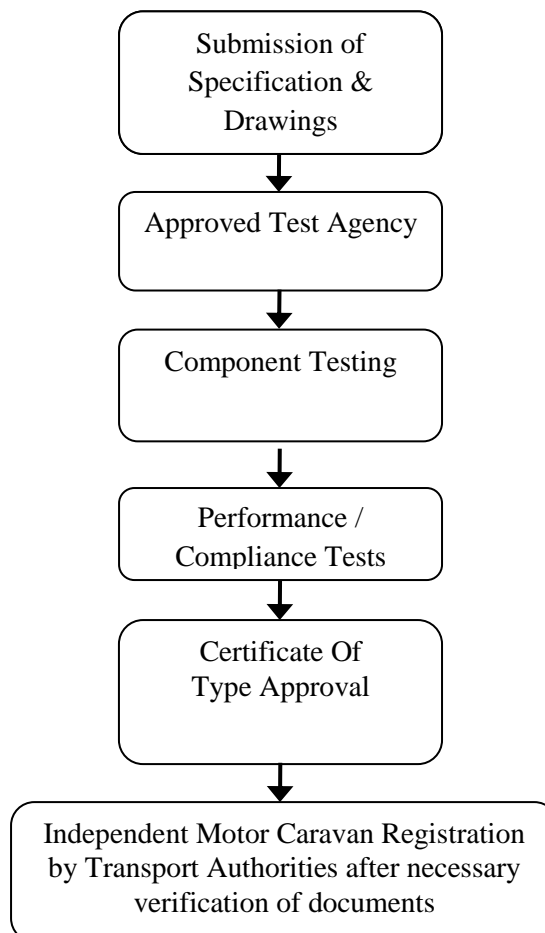
**Note:**

1. Wherever possible number shall be marked on a single line. The use of the letters I, O and Q and dashes, asterisks and other special signs, is not permitted.
2. The minimum height of the letters and numerals shall 7 mm for characters marked.
3. It is advised caravan manufacturer may take reference of AIS-065 while deciding motor caravan identification number.

**ANNEX- D**  
(See 8.3)

**Guidelines for Type Approval and Registration of Motor Caravan**

Type approval and Registration for Motor Caravans



**ANNEX- E**  
(See Introduction)

**COMPOSITION OF AISC PANEL ON MOTOR CARAVAN \***

Name	Organization
<b>Convener</b>	
Mr. P. K. Banerjee	Tata Motors Ltd. (SIAM)
<b>Members</b>	<b>Representing</b>
Mr. A. S. Bhale	The Automotive Research Association of India (ARAI)
Mr. D. P. Saste	Central Institute of Road Transport (CIRT)
Mr. U.K. Bhat	International Centre for Automotive Technology (ICAT)
Representative from	Indian Institute of Petroleum (IIP)
Mr. K. Kamraj	Vehicles Research and Development Establishment (VRDE)
Mr. K. K. Gandhi	Society of Indian Automobile Manufacturers (SIAM)
Mr. Sanjay Tank	Mahindra & Mahindra Ltd. (SIAM)
Mr. Sanjeev Mandpe	Mercedes-Benz India Pvt. Ltd. (SIAM)
Mr. Sumit Sharma	Maruti Suzuki India Ltd (SIAM)
Mr. S. Arun	Ashok Leyland Ltd. (SIAM)
Mr. Mansingh Jagdale	Tata Motors Ltd. (SIAM)
Mr. T. C. Gopalan	Tractor Manufacturers Association (TMA)
Mr. Uday S. Harite	ACMA Centre for Technology (ACMA)
<b>Caravan Manufacturers</b>	
Mr. A. K. Roy	JCBL limited (SIAM)
Mr. Daulat Deshmukh	Overlanders Specialty Vehicles Pvt. Ltd
Mr. Raju Babbar	Babbaraju Mobile
Mr. J. Venkataramana	Caravan Voyagers (p) Ltd.
Mr. Mallikarjun Machnoor	M. M. Associate
Mr. Senthil Kumar	SPACE-TECH

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

**ANNEX- F**  
**(See Introduction)**  
**COMMITTEE COMPOSITION\***  
Automotive Industry Standards Committee

<b>Chairman</b>	
Shri Shrikant R. Marathe	Director, The Automotive Research Association of India, Pune
<b>Members</b>	<b>Representing</b>
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 P. C. Joshi	Bureau of Indian Standards, New Delhi
Director/ Shri D. P. Saste (Alternate)	Director , Central Institute of Road Transport, Pune
Director	Indian Institute of Petroleum, Dehra Dun
Director	International Centre for Automotive Technology
Director	Vehicles Research & Development Establishment, Ahmednagar
Representatives from	Society of Indian Automobile Manufacturers (SIAM)
Shri T. C. Gopalan	Tractor Manufacturers Association, New Delhi
Mr. Uday S. Harite	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)