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**Note: Text with Red font is added based on decision taken place in last meeting of AIS-093 panel on 17<sup>th</sup> July 2018 at ARAI.**

**Proposed revised draft AMENDMENT No. 3 (XX/YYYY)**

**To**

**AIS-093 (Revision 1):2015**

**Code of Practice for Construction and Approval of Truck Cabs & Truck Bodies**

## **Section 1- Scope and Definitions**

### **1. Page 2/140,**

**Add following new clauses 1.1.4, 1.1.5 and 1.1.6 after 1.1.3.**

1.1.4 Further special purpose vehicles shall be exempted from those requirements of this standard which are incompatible with the use & special function of the said vehicle.

1.1.5 All types of Drive away chassis without cabins built by OEMs are exempted from scope this code at drive away chassis manufacturing stage till 1<sup>st</sup> October 2019. However body builders building truck cabins on this chassis shall ensure that such cabins comply with the requirements of this standard.

1.1.6 This standard shall not be mandatory to vehicles manufactured for Armed Forces, para-military forces and police forces. However, these agencies may opt for procuring vehicles complying to this standard if so desired by them.

## **Section 2- Truck Cab Requirements**

### **2. Page 11/140, Clause 2.1.7**

Substitute following text for existing text:

2.1.7 Driver seat / Co-occupant Seat: Driver / Co-driver seat shall comply with the requirements specified in AIS-023:"Automotive Vehicles - Seats, their Anchorages and Head Restraints for Passenger Vehicles of Categories M2, M3 and Goods Vehicles of Category N - Specifications", as amended from time to time.

In case of vehicles with 1+1 configuration (i.e., 1 Driver + 1 Co-driver) and fitted with adjustable co-driver seat, It may be permitted to adjust the Co-driver seat and or back rest to meet the sleeper berth width requirements as mentioned in clause 2.1.9.3. In such case the requirement of 280 mm between co-driver seat to dashboard as mentioned in AIS 023 clause no. 4.2.2.2 need not be met.

### **3. Page 12/140, Clause 2.1.12**

Substitute following text for existing text:

2.1.12 Steering wheel: The chassis manufacturer shall specify the position of the steering wheel with reference to the heel point. The minimum thigh

clearance (i.e. the vertical distance measured between the top of seat cushion and bottom of the steering wheel – Refer ‘W’ in Figure - 2) shall be 170mm. The minimum distance of lower end of steering wheel from driver seat back shall be 265 mm. (Refer ‘N’ in Figure - 2)

**4. Page 16/140, Clause No 2.2.10**

Substitute following note below clause 2.2.10:

Note: Truck Body Manufacturer may provide relevant internal reports or a declaration for compliance for clause 2.2.10

**5. Page 16/140, Clause No 2.2.13**

Substitute following note below clause 2.2.13:

Note: Truck Body Manufacturer may provide relevant internal reports or a declaration for compliance for clause 2.2.13

**6. Page 19/140, Table below Figure 2, Sr. No.23, in fourth column**

Substitute following text for existing text:

170(min)(considering adjustment range)

**7. Page 19/140, Table below Figure 2, Sr. No.25**

Delete Sr. No. 25 and renumber subsequent Sr.Nos.

**8. Page 21/140, Table below Figure 3, Sr. No.7**

Delete Sr. No. 7 and renumber subsequent Sr.Nos.

**Section 3- Truck Load Body Requirements**

**9. Page 24/140, Clause No. 3.1, Categorization of truck load bodies**

Substitute following text for existing text:

**3.1 Categorization of truck load bodies**

The trucks are categorized on the basis of design namely rigid axle vehicles and tractor trailer combination. Trucks are further sub-categorized on the basis of truck body construction like the following.

HSD – High Side Deck body

LSD – Low Side Deck Body

FSD – Fixed Side Deck or Half body

DSD – Drop Side Deck body

FB – Flat Bed or Fully open body

CLB – Closed Body

ALC – Aluminium Container

STC – Steel container

SPB – Special Purpose Body including tippers & dump trucks ,Reefer Van – Closed Container with Refrigerant unit, Tanker – Closed Tanker for any

non-hazardous goods like, Water, Molasses etc., Bulker – Closed Tanker for cement carrier, Fire Attender, Sky Lift, concrete mixers, **Garbage Compactor, Hook carrier, Tree Transplanter, Troop carrier.**

**10. Page 26/140, Clause No. 3.3.3.8, Sub clause b**

Substitute following text for existing text:

b) Crash guard or head board or cab rear wall: 20% of rated pay load carried, the maximum however being 5000 kgf. This force shall be applied by means of a rigid barrier covering the whole of the headboard area inside the load body with the direction of the application of force maintained parallel to longitudinal axis of vehicle.

**11. Page 27/140, Clause No. 3.4.1.2**

Substitute following text for existing text:

3.4.1.2 The occupants of such a vehicle shall be protected by a screen or cab rear wall or headboard capable of withstanding without breaking, a uniformly distributed static force of 200 kgf per ton of the vehicle's permissible useful load, the maximum however being 5000 kgf. This load shall be applied by means of a rigid barrier perpendicular to the longitudinal median axis of the vehicle, covering at least the whole of the cab rear wall situated above the chassis frame, and moving parallel to that axis. This shall be in accordance with the requirements specified in AIS-029.

**12. Page 28/140, Clause No. 3.4.1.3.6 and 3.4.1.3.7**

Substitute following text for existing text:

3.4.1.3.6 Where a power-driven vehicle or a semi-trailer is designed to carry beams, pipes, girders, sheet metal or similar loads, the protective screen or cab rear wall or headboard shall be capable of withstanding without breaking, a uniformly distributed static force of 200 kgf per ton or of the vehicle's permissible useful load, the maximum however being 5000 kgf. This shall be in accordance with the requirements specified in AIS-029.

3.4.1.3.7 Where a vehicle is equipped with a trestle or bolster behind the cab for the purpose of supporting long loads, such as steel girders or telegraphic poles, the cab rear wall or trestle or bolster must be capable of withstanding without breaking, a uniformly distributed static force of 200 kgf per ton of the vehicle's permissible useful load, the maximum however being 5000 kgf. This shall be in accordance with the requirements specified in AIS-029.

**13. Page 29/140, Clause No.3.4.9 and 3.4.10**

**Substitute following note below clause 3.4.9 and 3.4.10:**

**Note: Truck Body Manufacturer may provide relevant internal reports or a declaration for compliance for clause 3.4.9.**

**14. Page 35/140, Text below figure 6-Mounting of Sub frame**

Substitute following text for existing text:

## Mounting

The attachments and the attachment plates are fixed to chassis using suitable bolts as recommended by vehicle manufacturer. The attachments and the attachment plates are bolted or welded to sub frame

## Section 4- Requirements Of Lighting, Illumination, Electrical Equipment and Wiring

### 15. Page 45/140, Clause No. 4.3.3.2

Substitute following text for existing text:

Suitable connectors shall be used for external areas which are directly exposed to atmosphere to avoid water / moisture ingress during use.

## Section 5- Additional Requirements for Vehicles Carrying Dangerous and Hazardous goods with regard to their specific constructional features.

### 12. Page 61/140, Clause No. 5.3.1.8.1.1

Substitute following text for existing text:

5.3.1.8.1.1 The seat or berth material shall comply with flammability requirements as per IS:15061-2002 or ISO Standard 3795:1989 as amended from time to time in line with stipulations given for Sl. No. 13 of Table II of GSR 1034(E) dated 2nd Nov'16.

## Section 7-Working Stability of Vehicles Meant for Carriage of Hazardous Goods

### 13. Page 111/140, Clause G 1.1

Substitute following formula for  $C_{DRi}$ :

$$C_{DRi} = \frac{(F_{RVi} * T_{Ni}^2)}{2}$$

### 12. Page 111/140, Clause G 1.2

Substitute following formula for  $T_i$ :

$$T_i = \sqrt{(T_{Ni}^2 + M_A^2)}$$

### 13. Page 111/140, Clause G 1.2

Substitute following formula for  $C_{DRESi}$ :

$$C_{DRESi} = \frac{C_{DGMi} * C_{DRi}}{C_{DGMi} + C_{DRi}}$$

### 14. Page 111/140, Clause G 1.2

Add following new formula to calculate “vehicle pseudo roll angle at wheel lift” :

$$\theta_i = \frac{A_i * T_{Ni}}{2 * C_{DRESi}}$$

### 14. Page 135/140, Add following new Annexure IA after Annexure I

**ANNEXURE IA**

<b>CMVR Certificate Reference</b>			
<b>AIS – 093 Clause No.</b>	<b>Clause Description</b>	<b>Test Standards</b>	<b>Compliance Verified (Yes/No) Report Number in case of “Yes”</b>
2.1.5	Hand Holds	AIS:046/2005	
2.1.7	Driver and Co- driver seat	AIS: 023/2005	
2.1.8	Safety Belt	AIS: 015/2005	
2.1.10 (cab) & 3.2.4 (load body)	Mudguards & Spray Suppression devices	AIS:013/2004	
2.1.17	Heating, Cooling & Ventilation for driver	AIS:056 (Rev. 1)/2017	
2.2.1	Survival Space	AIS:029/2004	
2.2.2	Front Under Run Protective Devices (FUPD)	AIS: 069/2006	
2.2.5	Lighting and signaling devices	AIS:008(rev.1)/20 10	
2.2.6	Rear view mirrors	AIS:001/2001 & AIS:002/2001	
2.2.7	Interior Fitting	AIS:047/2009	
2.2.8	Door lock & Door hinges	IS:14225-1995	
2.2.9.2 & 2.2.11	Window glass & laminated glass	IS:2553(Part-2)- 1992	
2.2.11	Wind screen and wind screen wiping system	IS:15802-2008	
3.4.5	Retro reflective marking	AIS:089/2005 & AIS:090/2005	
3.4.6	Vehicle Lateral Protection Side (VLPS)	IS:14682-2004	
3.4.7	Rear Under Run Protection Device (RUPD)	IS:14812-2005	
4.3.1	Electrical cables	ISO 6722-2006	
4.3.2	Fuse	AIS:026 (Cl. No. 12(c)) & AIS:028 (Cl. No. 4.3.3)	
3.4.3 (phase II)	External Projection	IS:13942-1994	