

ANNEX 4	
SPECIFIC REQUIREMENTS FOR TRUCK CHASSIS MOUNTED ROAD SWEEPERS	
1.0	SCOPE
1.1	This annexure specifies constructional and functional requirements for Truck chassis mounted road sweepers necessary for roadworthiness of N category vehicles as defined in IS 14272 amended from time to time.
1.2	Road sweepers as defined in this standard shall necessarily meet the requirements specified in Part 1 of AIS 163 amended from time to time. Additionally, the vehicles shall meet the requirements specified in this Annexure for those special purpose duty application for which the vehicle is intended to perform.
1.3	Manufacturer may have the option to refer ISO 24147 as recommendatory guidelines for commercial specifications for road sweepers.
	Note: Latest version of standards (AIS, IS, ISO etc.,) referred in this Annexure shall be checked for compliance.
1.4	Any alteration or modification in already type approved vehicle to build road sweepers 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. Any components mounted on the chassis may be relocated, provided safety and performance requirements shall be verified / tested by the test agency.
2.0	REFERENCE
2.1	ISO 24147:2023 - Road operation machinery and associated equipment — Sweepers — Commercial specifications
3.0	DEFINITION
3.1	In addition to the definitions available in Part 1 of this standard, following definition shall apply to Truck chassis mounted road sweepers.
3.2	“Approval of a Vehicle” - The approval of Truck chassis mounted road sweepers with regard to its special function as defined in Clause No. 3.3 of this Annexure.
3.3	“Truck chassis-mounted road sweeper” is a special purpose vehicle that combines a truck chassis with a road sweeping system. This type of sweeper is designed for efficiently cleaning roads and streets by sweeping up debris and dust using brushes and a vacuum system, all mounted on a standard truck chassis. This also includes mechanical conveyORIZED road sweeper with features of Side Brushes on either side of the truck, one Main Brush on the Rear Side with Conveyor and Squeezes used for moving the debris to Hopper with either single engine or 2 engines.
4.0	APPLICATION FOR TYPE APPROVAL

	The application for type approval of a vehicle type shall be submitted by the vehicle / appliance manufacturer along with at least the details given in Appendix 1 to this annexure		
5.0	SPECIFIC REQUIREMENTS		
5.1	Truck chassis-mounted road sweeper shall be Special Purpose Vehicle with following specifications:		
5.1.1	Maximum rear overhang shall be 80% of wheelbase. Rear overhang of chassis may be altered provided safety and performance requirements shall be verified / tested by the test agency.		
5.1.2	Operating maximum speed shall be 15 kmph.		
5.1.3	For chassis mounted sweeper, the power requirement to operate the sweeping machine hydraulics may be drawn from the vehicle engine		
5.1.4	Another important parameter to be considered for road sweeper is stability ratio. It should never be more than one. The usual recommended stability ratio is 0.7 to 0.9. The stability ratio can be calculated as below:		
	Stability ratio	=	$2h \times \tan 23^\circ / b$
	moment W.R.T. ground	=	$2h \times \tan 23^\circ$
	h	=	CG ht. Under laden condition
	b	=	Rear outer tyres center distance in m
	Stability of road sweepers shall be validated by physical method or simulation method or by calculation as agreed by test agencies.		
5.1.5	Working lamp shall be provided		
5.1.6	Warning lights shall be provided at the four top end corners of the vehicles and the shall be operated while cleaning operation in progress.		
5.1.7	Vehicle shall be fitted with reverse parking alert system as per the requirements defined in AIS 145 amended from time to time.		
5.1.8	Risk of slipping - The surface of means of access, e.g. steps, working platform, shall be slip resistant		
5.1.9	The vehicle shall be loaded to its technically permissible maximum mass distributed between the axles as declared by the vehicle manufacturer. Where provision is made for several arrangements of the mass on the axles, the distribution of the maximum mass between the axles shall be such that the mass on each axle shall not exceed maximum permissible mass for each axle.		
5.1.10	TCD / TCCD requirements shall be compliant with IS 12222: 2011 as amended from time to time		

5.2	Provisions for consideration for CMVR requirements exemption –
	Testing Agency may only grant exemption(s) if the manufacturer demonstrates that the vehicle cannot meet the below requirements due to its special body construction.
	a) External Projection as per IS 13942 provided there shall not be any projection at the rear beyond RUPD or front beyond FUPD or sides beyond SUPD / LUPD in vehicle actual running condition on road
	b) Installation of lighting and light-signalling devices as per AIS-008 (Rev 1)
	c) Spray Suppression System as per AIS-013 (Rev.1)
	d) Rear Under Run Protection Device as per IS 14812
	e) Vehicle Lateral Protection Side SUPD as per IS 14682
	f) Approval of Retro-Reflecting Devices as per AIS-057 (Rev.1)
	g) Constant Speed Fuel consumption test as per IS 11921
	h) Retro-Reflective marking installation as per AIS 090.
6.0	STATUTORY PLATE
	Each appliance shall be clearly and permanently marked with the following information:
	Manufacturer's name, or trade-mark, if any;
	Sweeper model, Sweeping kit serial no
	Year of manufacture.

APPENDIX 1 TO ANNEX 4

**INFORMATION TO BE SUBMITTED AT THE TIME OF APPROVAL OF TRUCK
CHASSIS MOUNTED ROAD SWEEPERS**

Sl. No.	General	Details
1.0	Manufacturer details	
1.1	Name and address of the manufacturer	
1.2	Name of variants, if any:	
1.3	Plant/(s) of manufacturer:	
2.0	Description of vehicle under test	
2.1	Vehicle category	
2.2	Vehicle type	
2.3	Vehicle manufacturer	
2.4	CMVR certificate no	
2.5	Chassis no	
2.6	Engine no	
2.7	Engine displacement	
2.8	Fuel type	
2.9	Engine Power	
2.10	Dimensions (mm)	
2.10.1	Length	
2.10.2	Width	
2.10.3	Height	
2.10.4	Ground clearance	
2.10.5	Wheelbase	
2.11	Gross vehicle weight	
3.0	Truck chassis mounted road sweepers	
3.1	Sweeper kit serial no	
3.2	Drive system	
3.3	Engine displacement	
3.4	Engine Power	
3.5	Fuel type	
3.6	Blower / Vacuum / Mechanical system	
3.7	Transmission device for sweeping gear	
3.8	Hydraulic Oil capacity	

3.9	Hydraulic system working pressure	
3.10	Debris hopper capacity	
3.11	Hopper Dumping height	
3.12	Hopper discharge angle	
3.13	Dust suppression system	
3.14	Water tank capacity	
3.15	No of Spray Nozzles or Filter area	