Average Vehicle Dimensions for Use in Designing Docking Facilities for Motor Vehicles—SAE J699a

SAE Recommended Practice
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PREPRINT

AVERAGE VEHICLE DIMENSIONS FOR USE IN DESIGNING DOCKING FACILITIES FOR MOTOR VEHICLES—SAE J699a

SAE Recommended Practice

Report of Transportation and Maintenance Technical Committee approved January 1954 and last revised by Transportation and Maintenance Technical Committee and Truck and Bus Technical Committee June 1971. Editorial change November 1977.

1. Scope—This SAE Recommended Practice establishes limits for empty vehicle floor heights and provides limits of vehicle dimensions for use in designing docking facilities for motor vehicles.

2. Empty Vehicle Floor Heights—The following are recommended floor heights of van-type vehicles without wheel housings, including both straight trucks and tractor semitrailers. These heights were taken from representative fleets. Special purpose equipment may vary considerably.

3. Overall Heights of Vehicles

3.1 Van-Type City Delivery Vehicles—May vary up to 13 ft 6 in.

3.2 Over-the-Road Vehicles—May vary up to 14 ft. At present, 13 ft 6 in. is maximum in all but five states while the District of Columbia limit is 12 ft 6 in.; four states allow 14 ft and one state (Nevada) has no restriction. It is recommended that all doorways, marquees, and the like, be so designed to clear vehicles of 14 ft height under all conditions of ice, snow, and uneven approaches.

NOTE: Where the approach to a building is not level, additional clearance must be allowed over that necessary for a level approach. Special consideration must be given to curbside, overhead, alley, and other obstructions.

4. Vehicle Widths—Vehicle widths may vary up to 108 in. At present, 96 in. is maximum in most states.

NOTE: Due to body sway, while passing over uneven road surfaces, or slopes, the top of a body may require greater side clearance than that necessary at the tire level.

5. Maximum Gradient—For most efficient operation, the maximum gradient at docks should not exceed 6%.

Type	Representative Tire Sizes		Maximum Overall Tire Diameter, in	Empty Vehicle Floor Heights, in
	Tube	Tubeless		
City vehicles	7.50 x 20	8.00 x 22.5	39	44 ± 2
	8.25 x 20	9.00 x 22.5	41	46 ± 2
	9.00 x 20	10.00 x 22.5	43	48 ± 2
Over-the-road vehicles	10.00 x 20	11.00 x 22.5	44	52 ± 2
	10.00 x 22	11.00 x 24.5	46	54 ± 2
	11.00 x 20	12.00 x 22.5	46	54 ± 2
	11.00 x 22	12.00 x 24.5	48	56 ± 2

NOTE: It is preferable that the dock be slightly lower than the truck floor to permit opening of the doors.

6. Turning Radius—Since turning radii vary extremely with make, type, and combinations of vehicles, manufacturers' data books and other sources must be consulted and the physical aspects of the property must be considered. ϕ (See SAE J695a.)

7. Sources of Information

1. Data received from representative fleets.
2. "State Motor Vehicle Size and Weight Laws." Highway Users Federation for Safety and Mobility, Washington, D. C., January 1971.
3. 1970 Year Book, Tire and Rim Association, Inc., Akron, Ohio.

The ϕ symbol is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. If the symbol is next to the report title, it indicates a complete revision of the report.