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JAPANESE INDUSTRIAL STANDARD

Test Methods of Ventilation for Automobiles

JIS D 1622—1988

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by

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Test Methods of Ventilation for Automobiles

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1. Scope

This Japanese Industrial Standard specifies the test methods to assess the ventilation performances of the ventilating equipment to be used for the ventilation in the compartments of an automobile.

Remark: In this Standard, units and numerical values given in { } are in accordance with the conventional units, and are appended for informative reference.

2. Definitions

For the purposes of this Standard, the following definitions apply:

- (1) ventilating equipment An equipment which ventilates inside of compartments being equipped at the inflow or exhaust opening of air, composed of an intake door, fan, duct, etc. There is also that of combined use of a heating equipment and a cooling equipment.
- (2) intake door A door, attached to the inlet opening of air, which regulates the ratio of the outside air to be sucked by the fan to the inside air.
- (3) compartments A drivers' compartment, passenger's compartment and baggage compartment which is connected to these.
- (4) inflow quantity of air A quantity of air which enters into the compartments through the ventilating equipment.
- (5) equivalent area of opening An area to be computed by calculation, substituting an opening through which the same quantity of air flows under the same pressure difference for the passage of air of unknown ventilating resistance having a complicated shape.
- (6) inflow opening The inlet part through which the air flows into the compartments through the ventilating equipment.
- (7) exhaust opening The outlet part through which the air flows out outside the compartments through the ventilating equipment.
- (8) body clearances The air leaking parts of body through which the inside of compartments communicates with the outside of compartments, other than the inflow and exhaust openings of the ventilating equipment.
- (9) atmospheric pressure difference between inside and outside of compartments

Applicable Standards and Reference Standards: See page 10.

3. Measuring Items

The measuring items related to the ventilating performances shall be as follows. However, in the case of a bus, the equivalent area of opening of the exhaust opening may not be measured.

(1) Inflow Quantity of Air

(2) Equivalent Area of Opening of Exhaust Opening

4. Measuring Tests of Inflow Quantity of Air

4.1 Execution of Test The measurement of the inflow quantity of air shall be carried out according to either the method by the atmospheric pressure difference between the inside and outside of the compartments of 4.2 or the method by the CO₂ concentration of 4.3.

Remark: The method by the atmospheric pressure difference between the outside and inside of the compartments is mainly used for other than the bus, and the method by the CO₂ concentration is mainly used for the bus.

4.2 Method by Atmospheric Pressure Difference Between Inside and Outside of Compartments

4.2.1 Test Conditions The test conditions shall be as follows:

- (1) The test shall be carried out in the indoor free from the influence of wind, and the vehicle shall be under stopped state.
- (2) The terminal voltage of the fan motor of the ventilating equipment shall be as given in Table 1.

Table 1

Unit: V

Rated voltage	Terminal voltage
12	13.5
24	27

- (3) The opening and closing parts of body such as doors, window glass, etc. shall be closed, the intake door shall be set at the outside air position, and for a car provided with a blow-out-opening changing device, it shall be the blow-out-opening designated by the car manufacturer.

Further, for a car without fan and it takes air by utilizing running wind, its inflow opening shall be closed.

4.2.2 Equipment and Instruments The equipment and instruments shall be as follows:

- (1) The equipment used shall be as shown in Fig. 1.