

الهيئة السعودية للمواصفات والمقاييس والجودة

Saudi Standards, Metrology and Quality Org. (SASO)



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Road vehicles – Windshield defrosting and defogging systems

ICS: 43.040.65

This document is a draft Saudi Standard circulated for comments. It is, therefore, subject to alteration and modification and may not be referred to as a Saudi Standard until approved by SASO.

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Road vehicles – Windshield defrosting and defogging systems

1- Scope and field of application

This standard specifies the technical requirements for windshield defrosting and defogging systems.

This standard applies to passenger cars, multipurpose passenger vehicles, trucks, and buses.

2- Terms and definitions

For the purposes of this standard, the following terms and definitions are applied:

2.1 Passenger car

A motor vehicle with motive power, designed for carrying 10 persons or less including the driver and their luggage, except a low-speed vehicle, multipurpose passenger vehicle, or trailer.

2.2 Multipurpose passenger vehicle

A motor vehicle with motive power, designed to carry 10 persons or less or goods equivalent by weight which is constructed either on a truck chassis or with special features for occasional off-road operation. Except a low-speed vehicle or trailer

2.3 Truck

A motor vehicle with motive power, designed primarily for the transportation of property, special purpose equipment, or towing a trailer except a trailer.

2.4 Bus

A motor vehicle with motive power, designed for carrying more than 10 persons, except a trailer.

2.5 Defrosting

Elimination of frost and/or ice covering the outer glazed surface of the windshield by the operation of the windshield defrosting and/or windshield wiping and washing systems.

2.6 Defrosted area

Area of the outer glazed surface of the windshield having a dry surface or covered with melted or partially melted (wet) frost, excluding any area of the windshield covered with dry frost.

2.7 Windscreen defrosting system

Device, or combination of devices, intended by the vehicle manufacturer to eliminate frost or ice from the glazed surfaces of the windshield and thus restore visibility, together with the necessary accessories and controls.

2.8 Road load

The power output required to move a given motor vehicle at curb weight plus 180 kilograms on level, clean, dry, smooth portland cement concrete pavement (or other surface with equivalent coefficient of surface friction) at a specified speed through still air at 20 degrees Celsius, and standard barometric pressure (101.3 kilopascals) and includes driveline friction, rolling friction, and air resistance.

3- Technical requirements**3.1 Passenger cars**

3.1.1 Each passenger car shall be provided with a windshield defrosting and defogging system.

3.1.2 Each windshield defrosting and defogging system for passenger cars, light trucks, and multipurpose vehicles with GVW of 4500 kg or less shall meet the performance requirements in accordance with the test procedures specified in Standard⁽¹⁾ when tested in accordance with 3.1.3.

Except that “the critical area” specified in Standard⁽¹⁾ shall be that established as Area C in accordance with Saudi Standard SASO 0000 “Road vehicles - Windshield wiping and washing systems“ and the entire windshield” specified in Standard⁽¹⁾ shall be that established as Area A in accordance with Saudi Standard SASO 0000 “Road vehicles - Windshield wiping and washing systems“.

3.1.3 Demonstration procedure

When testing the windshield defrosting system for passenger cars in accordance with Standard⁽¹⁾, the following shall be excluded:

3.1.3.1 During the first 5 minutes of the test:

a) For a passenger car equipped with a heating system other than a heat exchanger type that uses the engine's coolant as a means to supply the heat to the heat exchanger, the warm-up procedure is that specified by the vehicle's manufacturer for cold weather starting, except that connection to a power or heat source external to the vehicle is not permitted.

b) For all other passenger cars, the warm-up procedure may be that recommended by the vehicle's manufacturer for cold weather starting.

3.1.3.2 During the last 35 minutes of the test period (or the entire test period if the 5-minute warm-up procedure specified in item 3.1.3.1 of this section is not used);

a) For a passenger car equipped with a heating system other than a heat exchanger type that uses the engine's coolant as a means to supply the heat to the heat exchanger, the procedure shall be that specified by the vehicle's manufacturer for cold weather starting, except that connection to a power or heat source external to the vehicle is not permitted.

b) For all other passenger cars, either:

1- The engine speed shall not exceed 1,500 p.m. in neutral gear; or

2- The engine speed and load shall not exceed the speed and load at 40 kilometers per hour in the manufacturer's recommended gear with road load.

3.1.3.3 A room air change of 90 times per hour is not required;

3.1.3.4 The windshield wipers may be used during the test if they are operated without manual assist;

3.1.3.5 One or two windows may be open a total of 25 millimeters;

3.1.3.6 The defroster blower may be turned on at any time;

3.1.3.7 The wind velocity is at any level from 0 to 3 kilometers per hour; and

⁽¹⁾ Follow the standard SAE J903 until the adoption of the Saudi standard.

3.1.3.8 The test chamber temperature and the wind velocity shall be measured, after the engine has been started, at the forwardmost point of the vehicle or a point 914 millimeters from the base of the windshield, whichever is farther forward, at a level halfway between the top and bottom of the windshield on the vehicle centerline.

3.2 Multipurpose vehicles, trucks, and buses

3.2.1 Each multipurpose passenger vehicle, truck, and bus shall be provided with a windshield defrosting and defogging system.

3.2.2 Each windshield defrosting system for multipurpose passenger vehicles, trucks, and buses shall meet the performance requirements in accordance with the test procedures specified in Standard⁽²⁾.

⁽²⁾ Follow the standard SAE J903 until the adoption of the Saudi standard.

Bibliography

- The main reference:

[1] 49 Subtitle B-Chapter V-Part 571-Subpart B Section 103

(FMVSS 571.103) “Windshield defrosting and defogging systems”.

- Other References:

[1] ISO 3468:2014 “Passenger cars -- Windscreen defrosting and demisting systems -- Test method”.