AMENDMENT NO. 1 NOVEMBER 2024

TO

IS 14618 : 2022 AUTOMOTIVE VEHICLES — AIR CONDITIONING AND HEATING SYSTEMS THERMAL PERFORMANCE — METHOD OF MEASUREMENT

(Second Revision)

(*First cover, title*) — Substitute the following for the existing:

'**ऑटोमोटिव वाहन — एयर कंडीशनिंग और हीटिंग सिस्टम तापीय कार्यकारिता — विशिष्टि**

(दूसरा पुनरीक्षण)

Automotive Vehicles — Air Conditioning and Heating Systems Thermal Performance — Specification

(Second Revision)'.

(*Page* 1, *title*) — Substitute the following for the existing:

'AUTOMOTIVE VEHICLES — AIR CONDITIONING AND HEATING SYSTEMS THERMAL PERFORMANCE — SPECIFICATION

(Second Revision)'.

(*Page* 1, *clause* **1.1**) — Substitute following for the existing:

'**1.1** This standard specifies performance requirements and method of testing of an automotive air conditioning and heating system.

1.2 This standard is applicable to vehicles of M1, M2, N1, N2, and N3 category as per IS 14272 provided with air conditioning and/or heating systems based on vapor compression refrigeration cycle drawing power from the vehicle engine.

1.3 This standard is not applicable to the following:

a) Automotive vehicles which are provided with a completely independent prime mover for the air conditioning system; and

b) Pure Electric vehicles.

NOTE — The performance and method of testing of an automotive air conditioning and heating system for pure electric vehicles is under consideration.'

(*Page* 2, *clause* **5.1**) — Insert the following new para at the end:

'The acceptance criteria of the vehicle shall be as follows:

a) For N2 and N3 category — The average of all nose level temperatures in the cabin at the end of dynamic test (that is, at the end of 40th minute) conducted as specified in Annex A of this standard shall not exceed 27 °C.

b) For M1, M2 and N1 category — The average of all nose level temperatures in the cabin at the end of dynamic test (that is, at the end of 40th min) conducted as specified in Annex A of this standard, shall be as declared by the vehicle manufacturer.

Price Group 2

In the case of drive away chassis vehicles, a representative or mock up cabin with recommended design shall be tested for establishing compliance to the specified performance requirements.

NOTE — Recommended design which includes cabin dimension and insulations; shall be specified by the drive away chassis vehicle manufacturer. The body building instructions as well as the owner's manual shall contain the recommended design specifications.'

(*Page* 2, *clause* **5.1.1**) — Substitute the following for the existing:

'**5.1.1** *Vehicle Preparation*

Sensors such as thermocouples for recording temperatures at nose levels of all occupant seating positions shall be fitted with recording instruments having an accuracy of ± 2 °C.'

[*Page* 2, *clause* **5.1.4(e)**] — Substitute the following for the existing:

'(e) After above step, all doors and windows of vehicle shall be closed and solar load lamps to be started as per mentioned environment conditions.'

(*Page* 3, *clause* **5.1.6.5**) — Delete.

(*Page* 3, *clause* **5.2**) — Insert the following new para at the end:

'The acceptance criteria of the vehicle shall be as follows — The average of all nose level temperatures in the cabin at the end of dynamic test (that is, at the end of 40^{th} min) conducted as specified in Annex B of this standard, shall be as declared by the vehicle manufacturer.

In the case of drive away chassis vehicles, a representative or mock up cabin with recommended design shall be tested for establishing compliance to the specified performance requirements.

NOTE — Recommended design which includes cabin dimension and insulations; shall be specified by the drive away chassis vehicle manufacturer. The body building instructions as well as the owner's manual shall contain the recommended design specifications.'

(*Page* 4, *clause* **5.2.6.5**) — Delete.

(*Page* 4, *clause* **6.2**) — Insert the following new clause at the end:

'**7 WORST CASE CRITERIA FOR COOL DOWN TEST VEHICLE SELECTION**

To select the worst-case vehicle for the cool-down test, the following criteria shall be considered:

a) Lowest corresponding engine RPM shall be selected for testing as per test conditions mentioned in Annex A; and

b) Highest volume of cabin shall be selected for testing.

8 CRITERIA FOR TYPE APPROVAL

In case of the following changes in technical specifications by the manufacturer, the cool down test shall be done:

a) Decrease in engine RPM by more than 8 percent;

b) Decrease in air conditioner compressor cooling capacity by more than 8 percent;

c) Increase in cabin volume by more than 8 percent;

d) Decrease in blower capacity by more than 8 percent;

e) Decrease in evaporator capacity by more than 8 percent;

f) Decrease in condenser capacity by more than 8 percent; and

g) Change in cabin model/insulation material.

In case of changes other than those listed above, cool down test may not be repeated for establishing type approval or extension of type approval.'

(*Page* 5, *Annex* A, *Table* 1) — Substitute the following for the existing:

Table 1 Test Conditions

(*Clause* 5.1.4)

Sl No.	**Requirement**	**Road/Climatic Chamber**		
(1)	(2)	(3)		
i)	Ambient temperature in °C	≥ 40		
ii)	Relative humidity in percent	≥ 30		
iii)	Solar load in W/m^2	≥ 800		
iv)	Soaking duration	Time to reach at least 15 °C more than ambient (that is, 55 °C average nose temperature at 40 °C ambient) or 90 min whichever is earlier.		
v)	Vehicle running condition during test	*Vehicle and Wind Speed* kmph	*Gear Position*	*Duration* min
		Table 2 requirement a	As specified by the manufacturer	20
		Table 2 requirement b		20
		0	Neutral	20

(*Page* 5, *Annex* A, *Table* 2) — Substitute the following table for the existing:

Table 2 Vehicle Speed

(*Table* 1)

Sl No.	**Vehicle Category**	**a** **Road/Climatic Chamber** kmph	**b** **Road/Climatic Chamber** kmph
(1)	(2)	(3)	(4)
i)	M1, M2	50 ± 5	80 ± 5
ii)	N1, N2 and N3	40 ± 5	60 ± 5

NOTES

1 Vehicle speed selection as per the table or lower depending on the speed limit restrictions.

2 Alternatively, the test may be conducted in a climatic chamber by selecting corresponding engine RPM at above mentioned vehicle speeds by keeping vehicle in stationary condition, so as to simulate the running of vehicle on chassis dynamometer.'

(MED 03)

Publication, BIS, New Delhi