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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18948-2025

**Rubber hoses and tubing for cooling systems for automobiles -
Specification
(English Translation)**

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Table of Contents

Foreword...	3
1 Scope...	5
2 Normative References...	5
3 Terms and Definitions...	7
4 Classification...	7
5 Dimensions and Tolerances...	7
6 Performance Requirements for Rubber Hoses and Tubing...	8
7 Inspection Frequency...	12
8 Marking...	12
Appendix A (normative) Expansion Test...	13
Appendix B (normative) Resistance to Surface Contamination by Lubricating Oil...	14
Appendix C (normative) Pressure, Vibration and Temperature Tests...	15

Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives

for Standardization - Part 1.Rules for the Structure and Drafting of Standardizing Documents.

This document serves as a replacement for GB/T 18948-2017 Rubber Hoses and Tubing for

Cooling Systems for Internal-combustion Engines - Specification. In comparison with GB/T 18948-2017, the main technical changes are as follows.

---The Scope of the Standard is modified to include rubber hoses and tubing for cooling systems in electric vehicles (see Chapter 1; Chapter 1 of Version 2017);

---The Classification is modified (see Chapter 4; Chapter 4 of Version 2017);

---The requirements for volume resistivity are added [see m) of Chapter 6];

---The requirements for flame retardancy are added [see n) of Chapter 6].

This document modifies and adopts ISO 4081.2016 Rubber Hoses and Tubing for Cooling Systems for Internal-combustion Engines - Specification.

The Chapter "Terms and Definitions" is added to this document.

The technical differences between this document and ISO 4081.2016 and the causes for these

differences are as follows.

---The Scope of the Standard is expanded to include rubber hoses and tubing for cooling systems in electric vehicles (see Chapter 1), which is suitable for the development demands of the domestic electric vehicle industry;

---The test requirement for volume resistivity is added [see m) of Chapter 6]. To ensure the safety of personnel and vehicles, the electrical insulation of the cooling systems is crucial, hence the requirement is added;

---The requirement for flame retardancy is added [see n) of Chapter 6]. To reduce the risk of fire accidents involving electric vehicles and ensure that the spread of fire is slowed after ignition, provide more valuable time for escape and external rescue, and minimize personal injury and property damage, this technical requirement is added.

This document makes the following editorial modifications.

---The title of the standardized document is modified into Rubber Hoses and Tubing for Cooling Systems for Automotives - Specification to coordinate with the existing standardized documents.

Please be noted that certain content of this document may involve patents. The issuing institution of this document does not undertake the responsibility of identifying these patents.

Rubber Hoses and Tubing for Cooling Systems for
Automotives - Specification

WARNING. users of this document shall be familiar with regular laboratory operating procedures. This document is not intended to address all safety issues that may arise from its use. It is the users' responsibility to establish corresponding safety and health protocols and ensure compliance with national regulations.

1 Scope

This document specifies the requirements for straight or pre-formed hoses or tubing used in pressurized or depressurized cold circulation systems of internal combustion engines or electric

vehicles with a curb weight of 3.5 t or less, using 1,2-ethylene glycol (CAS No.. 107-21-1) as

the coolant. This document serves as a classification method to allow original equipment manufacturers (OEMs) to provide detailed specifications for specific tests not included in the

specified main types (see Appendix D for an example). In this case, the hoses or tubing do not

bear any markings indicating the serial No. of this document, but rather identification markings

detailed in the OEMs' component drawings.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only

versions with a specified date are applicable to this document. In terms of references without a

specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 5565.1-2017 Rubber and Plastics Hoses and Tubing - Measurement of Flexibility and Stiffness - Part 1.Bending Tests at Ambient Temperatures (ISO 10619-1.2011, IDT)

GB/T 5565.2-2017 Rubber and Plastics Hoses and Tubing - Measurement of Flexibility and Stiffness - Part 2.Bending Tests at Sub-ambient Temperatures (ISO 10619-2.2011, IDT)

GB 8410-2006 Flammability of Automotive Interior Materials

GB/T 40719-2021 Rubber, Vulcanized or Thermoplastic - Determination of Volume and/or Surface Resistivity (ISO 14309.2019, IDT)

ISO 188 Rubber, Vulcanized or Thermoplastic - Accelerated Ageing and Heat Resistance

Tests

NOTE: GB/T 3512-2014 Rubber, Vulcanized or Thermoplastic - Accelerated Ageing and Heat Resistance Tests - Air-oven Method (ISO 188.2011, IDT)

ISO 1307 Rubber and Plastics Hoses - Hose Sizes, Minimum and Maximum Inside Diameters,

SAE J20.2006 Coolant System Hoses

SAE J1638 Compression Set of Hoses or Solid Discs

SAE J1684.2005 Test Method for Evaluating the Electrochemical Resistance of Coolant System Hoses and Materials

3 Terms and Definitions

This document does not have terms or definitions that need to be defined.

4 Classification

Rubber hoses and tubing consist of a rubber layer and a reinforcing layer, or only a rubber layer.

They may be pre-formed before final vulcanization or not. Rubber hoses and tubing may be equipped with manifolds; in this case, the connection method to the manifolds shall ensure that

the hoses maintain their integrity when tested in accordance with this document. This document

does not include installation requirements for assembly to connectors.

Hoses and tubing are classified into four types in accordance with their operating temperature,

with Type 1 and Type 2 further divided into two classes based on application.

Type 1.ambient temperature range for operation. -40 °C ~ +100 °C.

---Class A, for internal combustion engine vehicles;

---Class B, for electric vehicles.

Type 2.ambient temperature range for operation. -40 °C ~ +125 °C.

---Class A, for internal combustion engine vehicles;

---Class B, for electric vehicles.