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

GB/T 20462.1-2025

**Thermoplastic tubing and hoses for automotive use - Part 1:
Non-fuel applications
(English Translation)**

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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 is Part 1 of GB/T 20462 Thermoplastic Tubing and Hoses for Automotive Use.

GB/T 20462 has issued the following parts.

---Part 1.Non-fuel Applications;

---Part 2.Petroleum-based-fuel Applications.

This document serves as a replacement for GB/T 20462.1-2006 Thermoplastic Tubing and Hoses for Automotive Use - Part 1.Non-fuel Applications. In comparison with GB/T 20462.1-2006, apart from structural adjustments and editorial modifications, the main technical changes

are as follows.

---The descriptions of nominal inner diameter and type in Scope are deleted (see Chapter

1 of Version 2006);

- Terms and definitions are added (see Chapter 3);
- Hoses of eleven nominal inner diameter specifications are added (see Chapter 5);
- The list of test items for various types of thermoplastic tubing and hoses is deleted (see Table 2 of Version 2006);
- The requirements for verification pressure are added, with a holding time of 60 seconds [see b) of Chapter 6];
- A new test fuel for resistance to surface fuel contamination is added, and one test fuel is deleted [see f) of Chapter 6; e) of Version 2006];
- The test method for internal cleanliness is modified [see Appendix C, m) of Chapter 5 in Version 2006];
- The requirements for inspection frequency are added (see Chapter 7, Appendix D and Appendix E).

This document modifies and adopts ISO 13775-1:2021 Thermoplastic Tubing and Hoses for Automotive Use - Part 1. Non-fuel Applications.

The technical differences between this document and ISO 13775-1:2021 and the causes for

these differences are as follows.

- Hoses of eleven nominal inner diameter specifications are added (see Chapter 5), along with their requirements. The hoses of eleven nominal inner diameter specifications are Thermoplastic Tubing and Hoses for Automotive Use - Part

1 Non-fuel Applications

WARNING---personnel using this document shall have practical experience working in a formal laboratory. This document does not address all potential safety issues. Users are responsible for taking appropriate health and safety precautions and ensuring compliance with relevant national laws and regulations.

1 Scope

This document specifies the requirements for extruded thermoplastic tubing and hoses used for

automotive vehicles, excluding air braking systems (see ISO 7628), fuel pipelines (see ISO 13775-2), and high-pressure hydraulic systems, and describes the corresponding test methods.

This document is mainly applicable to original equipment manufacturers (OEMs).

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.

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 1402 Rubber and Plastics Hoses and Hose Assemblies - Hydrostatic Testing

NOTE: GB/T 5563-2025 Rubber and Plastics Hoses and Hose Assemblies - Hydrostatic Testing (ISO 1402.2021, IDT)

ISO 1817.2024 Rubber, Vulcanized or Thermoplastic - Determination of the Effect of Liquids

NOTE: GB/T 1690-2010 Rubber, Vulcanized or Thermoplastic - Determination of the Effect of Liquids (ISO 1817.2005, MOD)

ISO 3795 Road Vehicles, and Tractors and Machinery for Agriculture and Forestry - Determination of Burning Behavior of Interior Materials

NOTE: GB/T 20953-2007 Tractors and Machinery for Agriculture and Forestry - Determination of Burning Behavior of Cab Interior Materials (ISO 3795.1989, MOD)

3 Terms and Definitions

The terms and definitions defined in ISO 8330 are applicable to this document.

4 Classification and Materials

Thermoplastic tubing and hoses shall be constructed of extruded thermoplastic material with or

without an integral reinforcing layer. They may also have an inner liner to improve liquid resistance and/or heat resistance, and an extruded outer coating to improve environmental and/or flame retardancy. The outer coating does not necessarily need to be bonded to the thermoplastic tubing or hoses. In accordance with the application, thermoplastic tubing and hoses can be classified into the following four types.

---Type 1.vacuum and electrically controlled thermoplastic tubing or hoses;

----Type 2.thermoplastic tubing or hoses of cooling systems;

----Type 3.thermoplastic tubing or hoses of windshield/headlight cleaning systems;

---Type 4.thermoplastic tubing or hoses of exhaust gas circulation systems.

5 Dimensions

The nominal inner diameter, inner diameter and tolerances, and minimum wall thickness of thermoplastic tubing or hoses shall conform to the specifications in Table 1.

The wall thickness shall be the sum of the individual wall thicknesses of each component constituting the structure of the thermoplastic tubing or hoses. The wall thickness of each component shall enable each component to perform its own function and the function of the thermoplastic tubing or hoses as a whole.

6 Requirements

The following tests shall be selected for each application of thermoplastic tubing or hoses, based

on the performance requirements of the finished products. All tests shall be conducted without

an adhesive protective layer.