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

GB/T 37997-2019

**Thermoplastic multi-layer (non-vulcanized) hoses and hose
assemblies for the transfer of hydrocarbons, solvents and
chemicals - Specification**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify the use of ISO 27126.2014 "multilayer thermoplastics for the transport of hydrocarbons, solvents and chemicals (non-

Vulcanized) Specification for Hose and Hose Assembly.

The technical differences between this standard and ISO 27126.2014 and their reasons are as follows.

--- According to the industry situation in China, four types have been added, Type 5, Type 6, Type 7, and Type 8 (see Chapters 1 and 4);

--- Schematic diagram of the structure of a multi-layer thermoplastic hose assembly instead of a multilayer thermoplastic hose, the reasons

Is more in line with the characteristics of the product (see 5.1);

--- According to the industry situation in China, the requirement of a nominal inner diameter of 245mm has been increased (see Table 2);

--- According to the industry situation in China, the resistance and air tightness requirements between the joints were modified. The resistance between the joints is "inner diameter $\leq 50\text{mm}$, resistance

$\leq 2.5\text{ohm/m}$; inner diameter $> 50\text{mm}$, resistance $\leq 1.0\text{ohm/m}$ " modified to "inside diameter $\leq 100\text{mm}$, resistance $\leq 1.5\text{ohm/m}$; inner diameter $>$

100mm , resistance $\leq 1.0\text{ohm/m}$ " airtightness is maintained by "pressure at 0.35MPa (3.5bar) for 5min , no air leakage"

Change to "no pressure rises when the pressure is 0.35MPa for 5min " (see Table 4);

--- According to the industry situation in China, the requirements for selection, storage, use and maintenance guidelines have been increased (see Chapter 11);

--- According to the industry situation in China, the requirements for tensile strength of carbon steel wire have been revised. The tensile strength of the steel wire should be

650N/mm²~

850N/mm²" is modified to "the tensile strength of the steel wire should be 650N/mm²~1250N/mm²" (see Appendix B);

---About the normative reference documents, this standard has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

- * Replace ISO 1817:2005 with GB/T 1690-2010 modified to international standards (see Appendix E and Appendix G);
- * Replace ISO 1043-1 with GB/T 1844.1 equivalent to the international standard (see 10.1);
- * Replace ISO 209 with GB/T 3190 modified to international standards (see 5.2);
- * Replace ISO 1402:2009 with GB/T 5563-2013 equivalent to international standards (see Table 3, Table 4 and Appendix H);
- * Replace ISO 10619-1 with GB/T 5565.1 equivalent to the international standard (see 6.1, Table 3 and Table 4);
- * Replace ISO 10619-2 with GB/T 5565.2 equivalent to the international standard (see Table 3);
- * Replace ISO 7233:2006 with GB/T 5567-2013 equivalent to the international standard (see Table 3);
- * Replace ISO 8330 with GB/T 7528, which is equivalent to the international standard (see Chapter 3);
- * Replace ISO 8031:2009 with GB/T 9572-2013 equivalent to the international standard (see Table 4, Appendix H and Appendix I);
- * Replace ISO 4671 with GB/T 9573, which is equivalent to the international standard (see 6.1 and 6.2);
- * Replace ISO 7326:2006 with GB/T 24134-2009 equivalent to the international standard (see Table 3);
- * Replace ISO 2411 with HG/T 3052 equivalent to the international standard (see 7.1);
- * Added reference to GB/T 4240-2009 (see 5.2);
- * Added reference to GB/T 9576-2013 (see 11.1);
- * Added reference to GB/T 3428 (see C.2);

- * Added reference to GB 19147 (see Appendix I);
- * EN590 has been removed (see Appendix I of ISO 27126.2014);
- * Removed ISO 16143-3.2005 (see ISO 27126. 5.2 of.2014);
- * EN10088-3.2005 has been deleted (see ISO 27126.2014, 5.2).

This standard has made the following editorial changes.

- Delete the "bar" unit in the text, only retain the "MPa" unit representation;
- Part of the literature in the reference has been replaced with our own documents.

This standard was proposed by the China Petroleum and Chemical Industry Federation.

This standard is under the jurisdiction of the National Rubber and Rubber Products Standardization Technical Committee (SAC/TC35).

This standard is mainly drafted by. Xiamen Zhuoli Petrochemical Equipment Co., Ltd., Shenyang Rubber Research and Design Institute Co., Ltd., China Light Union (large Even) Packaging Research Institute Co., Ltd., Guangdong New Bix Industrial Co., Ltd.

1 Scope

This standard specifies a nominal inner diameter of 25mm~300mm, a working pressure of 0.4MPa~2.5MPa and an operating temperature range of

-30°C~ 150°C Multi-layer thermoplastic (non-vulcanized) hose and hose assemblies for transporting hydrocarbons, solvents and chemicals in eight types

Requirements.

Type 1 hose is suitable for conveying gas;

Type 2 to 8 hoses are suitable for conveying liquid bodies.

Note 1. Selection of materials related to the inner layer of the chemical involved in the conveyance of the hose and/or hose assembly and the coating of the inner spiral wire

See Appendix A.

Note 2. When considering the use of hoses with polymer-coated inner wires for the transport of low-conductivity hydrocarbons and chemicals, it is best to consult the manufacturer.

This standard does not apply to hose and hose assemblies for the following purposes.

- Aircraft refueling (see GB/T 10543);
- Fuel distribution (see HG/T 3037);

- Oil burner (see GB/T 24146);
- Liquefied petroleum gas and liquefied natural gas (see ISO 27127);
- Fire protection (see GB/T 24144);
- Offshore liquefied natural gas (see EN1474-2);
- Refrigeration pipeline.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 1690-2010 Vulcanized rubber or thermoplastic rubber liquid test method (GB/T 1690-2010, ISO 1817.

2005, MOD)

GB/T 1844.1 Plastic symbols and abbreviations - Part 1. Basic polymers and their characteristic properties (GB/T 1844.1-2008,

ISO 1043-1:2001, IDT)

GB/T 3190 chemical composition of deformed aluminum and aluminum alloy (GB/T 3190-2008, ISO 209:2007, MOD)

Galvanized steel wire for GB/T 3428 overhead stranded wire (GB/T 3428-2012, IEC 60888:1987, MOD)

GB/T 4240-2009 stainless steel wire

GB/T 5563-2013 Hydrostatic test methods for rubber and plastic hoses and hose assemblies (ISO 1402:2009, IDT)

Rubber and plastics -- Determination of flexibility and stiffness -- Part 1 . Room temperature bending test