

ICS 83.140.40
CCS G 42



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

GB 10543-2014

Replacing GB 10543-2003

**Rubber hose and hose assemblies for aircraft ground fuelling
and defuelling
(English Translation)**

Issued on: December 12, 2014

Implemented on: October 1, 2015

Issued by: Standardization Administration of China

Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms and Definitions
6 Materials and Structures
6.1 Hose
6.2 Hose assemblies
7 Dimensions and Tolerances
7.2 Thickness
7.3 Concentricity
7.4 Length tolerance
7.5 Hose mass per unit length
8 Physical Properties
8.1 Mix
8.2 Hoses and hose assemblies
9 Electrical Properties
9.1 B and E (electrical connection)
9.2 C and F (antistatic, conductive layer having an outer cladding)
10 Frequency of testing
11 Logo
11.1 Hose
11.2 Hose assemblies
12 Test showed single or test report
13 Cleanliness
14 Transport and storage protection

Foreword

The standard Chapter 8 (in which fuel contaminants and fire performance), Chapter 9 is mandatory, the rest are recommended.

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

This standard replaces GB 10543-2003 "aircraft ground fueling and drain rubber hose and

hose assemblies", and GB 10543-2003 compared to the main technical changes are as follows.

- Revised classification, the abolition of A and D (see Chapter 4, 2003 version 4.1);
- Increase the combustion tube test (see Table 5);
- Modified room temperature Flexing test temperature by 23 °C to 20 °C (Table 5, Appendix E, 2003 version of Table 3);
- Modify the low temperature flexibility tests from -25 °C to -30 °C (Table 5, Appendix F, 2003 version of Table 3);
- Modify the index of fuel mass fraction soluble matter, from 3% to 4% (see table version 4, 2003 Table 2);
- Modify the fuel before and after contact with the interlayer adhesion strength (see Table 5, 2003 version of Table 3);
- Modify the pressure requirements (see Table 5, 2003 version of Table 4);
- Modified flag (see Chapter 11, Chapter 14 of the 2003 edition);
- Increased test proved/report (see Chapter 12);
- Added Appendix F, Appendix I, Appendix Appendix N and O;
- Revised Appendix A (see Appendix A, 2003 edition of Appendix A);
- Amend Appendix B in the low temperature brittleness test temperature tolerance range (see Appendix B, 2003 edition of Appendix B);
- Revised Appendix D (see Appendix D, 2003 edition Appendix D);
- Revised Appendix E Flexing test temperature (see Appendix E, 2003 edition Appendix E);
- Amend Appendix F (see Appendix G, 2003 edition Appendix F);
- Amend Appendix G (see Appendix H, 2003 edition Appendix G);
- Amend Appendix H (see Appendix J, 2003 edition Appendix H);
- Amend Appendix J (see Appendix K, 2003 edition Appendix J);
- Revised Appendix M (see Appendix M, 2003 edition Appendix M);
- Amend Appendix K (see Appendix L, 2003 edition Appendix K);
- Deleted Appendix L.

This standard uses the translation method identical with ISO 1825:2010 "Aircraft ground refueling and drain rubber hose and hose assemblies Regulation Fan. " Correspondence

between the consistency of the standards of international documents and normative references of the following documents.

- GB/T 528-2009 vulcanized rubber or thermoplastic rubber tensile stress strain properties (ISO 37:2005, IDT);
- GB/T 1690-2010 vulcanized rubber or thermoplastic rubber of resistance to liquids - Test methods (ISO 1817:2005, MOD);
- GB/T 3512-2001 vulcanized rubber or thermoplastic rubber hot air and heat accelerated aging test (equiv ISO 188:1998);
- GB/T 5563-2013 Rubber and plastic hoses and hose assemblies - Hydrostatic testing (ISO 1402:2009, IDT);
- GB/T 7528-2011 Rubber and plastic hoses and hose assemblies terminology (ISO 8330:2007, IDT);
- GB/T 8019-1987 motor gasoline and aviation fuel gum assay (Jet evaporation method) (ISO 6246:1981, MOD);
- GB/T 9572-2013 Rubber and plastic hoses and hose assemblies - Determination of resistance and conductivity (ISO 8031:2009, IDT);
- GB/T 9573-2013 Rubber and plastic hoses and hose assemblies hose size and hose assemblies length measurement method (ISO 4671:2007, IDT);
- GB/T 9881-2008 rubber terminology (ISO 1382:2008, MOD);
- GB/T 14905-2009 Rubber and plastics hoses - Determination of adhesion between layers (ISO 8033:2006, IDT);
- GB/T 20739-2006 Rubber Products Storage Directory (ISO 2230:2002, IDT);
- GB/T 24134-2009 Rubber and plastics hoses under static conditions Assessment of ozone resistance (ISO 7326:2006, IDT);
- YB/T 5357-2009 steel plating of zinc or zinc - 5% aluminum alloy (ISO 7989-2:2007, MOD).

This standard made the following editorial changes.

- Remove the body "bar" unit, said retaining only "MPa" units.

The standard proposed by China Petroleum and Chemical Industry Association.

This standard by the National Rubber and rubber products hose Standardization Technical Committee Technical Committee (SAC/TC35/SC1) centralized.

This standard was drafted. Hose Co., Ltd., Guangzhou, Shenyang new Feiyu Rubber Products Co., Ltd., Shenyang Rubber Research and Design Institute.

1 Scope

This standard specifies the aircraft ground fueling and drain with the size, structure and requirements of the four kinds of typed hose and hose assembly.

This standard applies to.

- a) the volume fraction of aromatics content of not more than 30% of the petroleum-based fuel;
- b) working environment temperature $-30\text{ }^{\circ}\text{C} \sim 65\text{ }^{\circ}\text{C}$, and without damaging static storage at $-40\text{ }^{\circ}\text{C} \sim 70\text{ }^{\circ}\text{C}$ weather conditions;
- c) the maximum working pressure of 2.0MPa, including when using the hose to withstand the impact pressure.

Note 1: C type hose suitable for aircraft refueling facility under all normal working pressure. Also applies to non-vacuum applications over refueling facilities/fuel oil railcar and drain.

Note 2: F type hose for C hoses NA high flow refueling aircraft and drain facilities.

Note 3: E-type and F type hose is also suitable for oil tanker truck and railcar filling and drain, refueling tankers to the oil, and does not allow a large twist lift Lifting platform.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 5564-2006 Rubber and plastic hoses low flexing test (ISO 4672:1997, IDT) GB/T 9867-2008 Rubber, vulcanized or thermoplastic - Determination of abrasion resistance (abrasion rotating cylindrical drum machine method) (ISO 4649.

2002, IDT)

ISO 37 Rubber, vulcanized or thermoplastic - Determination of tensile stress-strain properties (Rubber, vulcanized or thermoplastic-Determination of tensile stress-strain properties) ISO 188 vulcanized rubber or thermoplastic rubber Accelerated aging and heat resistance test (Rubber, vulcanized or thermoplastic-Accelerated ageing and heat resistance tests) ISO 1382 term rubber (Rubber-Vocabulary) ISO 1402 Rubber and plastics hoses and hose assemblies - Hydrostatic testing (Rubber and plastic hoses and hose assemblies-Hydrostatic testing) ISO 1817:2005 Test methods for liquid-resistant vulcanized rubber (Rubber, vulcanized-Determination of the effect of liquids) ISO 2230 Rubber products stored Guide (Rubber products-Guidelines for storage) ISO 4671 Rubber and plastics hoses and hose assemblies hose sizes and methods of measurement (Rubber and length of hose