

ICS 43.140
CCS T 80



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

GB 15744-2019

Replacing GB 15744-2008

**Limits and measurement methods of fuel consumption for
motorcycles and mopeds**

摩托车和轻便摩托车燃油消耗量限值及测量方法

Issued on: July 29, 2019

Implemented on: July 1, 2020

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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Foreword

All the technical content of this Standard is mandatory. This Standard was drafted in accordance with the rules in GB/T 1.1-2009. This Standard serves as a replacement of GB 15744-2008 The Limits and Measurement Methods of Fuel Consumption for Motorcycles and GB 16486-2008 The Limits and Measurement Methods of Fuel Consumption for Mopeds. In comparison with GB 15744-2008, other than editorial modifications, the main technical changes are as follows:

---The Scope is modified. "inapplicable to vehicles that merely use gaseous fuels or alcohol fuels" is added; "except racing cars and off-road vehicles" is deleted (see Chapter 1; Chapter 1 of Version 2008);

---Normative References is modified (see Chapter 2; Chapter 2 of Version 2008);

- The terms and definitions of "Type-I Test" and "Type-II Test" are added (see 3.1; 3.3);
- The definition of "Reference Speed" is modified (see 3.2; 3.1 of Version 2008);
- The calculation method for fuel consumption of two-wheeled motorcycles and motorcycles with a sidecar is modified (see 4.1.1; 8.1 of Version 2008);
- The fuel consumption limits for motorcycles and corresponding engine displacement sections are modified (see Table 1 and Table 3; Table 3 and Table 4 of Version 2008);
- A table of fuel consumption limits of two-wheeled motorcycles (with automatic transmission) equipped with spark ignition engines is added (see Table 2);
- The fuel consumption limits of regular three-wheeled motorcycles equipped with compression ignition engines are added (see 4.2.2);
- The test types of two-wheeled motorcycles and motorcycles with a sidecar are modified (see 5.1.1; 4.1 of Version 2008);
- The requirements for the state of test vehicles and vehicle classification during the test on chassis dynamometer are modified (see 5.2.1.2; 5.1.2, 5.1.3,

1 Scope

GB 15744 fixes the maximum fuel consumption a motorcycle or moped may have to be sold in China, and the chassis dynamometer procedure by which it is measured. It sets the limits by engine capacity and vehicle class, the measurement method and its calculation, the rules for extending an approval to a variant, and the implementation timetable. It merges and replaces GB 15744-2008 and GB 16486-2008, and is itself replaced by GB 15744-2026 from 1 July 2028. Issued on 29 July 2019, in force since 1 July 2020. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the edition it replaces are taken from there. The clause text, the tables and the numeric limits are not reproduced on this page - they are in the document itself, which is delivered in full in English translation.

This Standard specifies the limits and measurement methods of fuel consumption for motorcycles and mopeds. This Standard is applicable to motorcycles and mopeds powered by spark ignition engines, as well as regular three-wheeled motorcycles powered by compression ignition engines. This Standard is inapplicable to vehicles that merely use gaseous fuels or alcohol fuels.

2 Normative References

The following documents are indispensable to the application of this document. 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 5378 Methods of Road Test for Motorcycles and Mopeds

GB 14622-2016 Limits and Measurement Methods for Motorcycle Pollutant Discharge (China stage IV)

GB 18176-2016 Limits and Measurement Methods for Emissions of Pollutants from Mopeds (China stage IV)

3 Terms and Definitions

What is defined in GB 14622-2016 and GB 18176-2016, and the following terms and definitions are applicable to this document.

3.1 Type I Test Type I test refers to the measurement of average fuel consumption of motorcycles and mopeds under specified operating cycle conditions.

3.3 Type II Test Type II test refers to the measurement of average fuel consumption of regular three- wheeled motorcycles and mopeds under specified reference speed conditions.

4.1 Calculation Method

4.1.1 Calculation method for fuel consumption of two-wheeled motorcycles and motorcycles with a sidecar The fuel consumption FC of two-wheeled motorcycles and motorcycles with a sidecar shall be calculated in accordance with Formula (1).

4.1.2 Calculation method for fuel consumption of regular three-wheeled motorcycles and mopeds

5.1 Type of Test

5.1.1 Two-wheeled motorcycles and motorcycles with a sidecar shall receive Type I test.

5.1.2 Two-wheeled mopeds, regular three-wheeled mopeds and regular three-wheeled motorcycles shall receive Type I test and Type II test.

5.2.3 Fuels and lubricants

5.2.3.1 Motorcycles shall use the fuels specified in Appendix H of GB 14622-2016. Mopeds shall use the fuels specified in Appendix H of GB 18176-2016.

5.2.3.2 The lubricants of engines shall be configured in accordance with the grade and quantity requested in the manufacturer's technical documents.

5.3 Measurement of Fuel Consumption of Two-wheeled Motorcycles

5.3.1 Test cycle The test cycle of two-wheeled motorcycles shall be set in accordance with the stipulations of C.2.5.6.1 in GB 14622-2016; performed in accordance with the test cycle shown in Appendix CC of GB 14622-2016; the gear-shifting operation shall be set in accordance with C.2.5.7 of GB 14622-2016.

5.3.2 Test device

5.3.2.1 Chassis dynamometer The main characteristics of chassis dynamometer shall comply with the stipulations of C.2.5.2 in GB 14622-2016.

5.3.4 Test result

5.3.4.1 The calculation methods for fuel consumption by different measuring devices are shown in B.3. When the method of carbon balance is used, in accordance with the emission result obtained from the calculation method of gaseous pollutant emission in C.4.4 of GB 14622-2016, calculate the fuel consumption by Formula (4); the result shall be expressed in (L/100 km).

5.4.1 Type I test

5.4.1.1 Test cycle The test cycle of regular three-wheeled motorcycles shall be set in accordance with the stipulations of C.2.5.6.2 in GB 14622-2016; performed in accordance with the test cycle shown in Appendix CD of GB 14622-2016; the gear-shifting operation shall be set in accordance with C.2.5.7 of GB 14622-2016.

5.4.1.2 Test device

5.4.1.3 Test procedures The test process shall be conducted in accordance with the procedures specified in C.3 of GB 14622-2016.

5.4.2 Type II test

5.4.2.1 Test conditions 5.4.2.1.1 Before Type II test, the test vehicle shall go through warm-up driving, so as to reach the thermal state specified in the manufacturer's technical documents. If this is not specified, the test vehicle shall complete Type I test, or normally drive for 15 min, then, receive Type II test.

5.4.2.4 Test method 5.4.2.4.1 Determination of highest test gear and reference speed The test of constant-speed fuel consumption measurement shall be carried out at the highest gear and in accordance with the reference speed specified in Table