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

GB/T 12539-2018

Replacing GB/T 12539-1990

Motor vehicles steep hill climbing test method

汽车爬陡坡试验方法

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009. This Standard replaces GB/T 12539-1990 "Motor vehicles - Steep hill climbing - Test method". Compared with 12539-1990, in addition to editorial modifications, the main technical changes are as follows: - added Clause 3 "Terms and definitions"; - modified "Test conditions", added 4.3 "Vehicle conditions", 4.4 "Other conditions"; - modified the test methods and calculation formulas of Clause 5; - modified Annex A "Record table for steep hill climbing test". This Standard was proposed by Ministry of Industry and Information Technology of the People's Republic of China. This Standard shall be under the jurisdiction of National Technical Committee on Automobiles of Standardization Administration of China (SAC/TC 114). Main drafting organizations of this Standard. Anhui Jianghuai Automobile Group Co., Ltd., National Automobile Quality Supervision and Inspection Center (Xiangyang), Liuzhou Wuling Automobile Industry Co., Ltd., China Automotive Technology and Research Center. Main drafters of this Standard. Xu Qingkui, Zhao Shuhua, Huang Liqi, Sun Zhipeng, Yao Qiang, Xiong Gongxiang, Yang Dixin, Wang Liang, Liu Honggang, Rong Shengjun, Wu Boyong. Version of standard substituted by this Standard is. - GB/T 12539-1990. Motor vehicles steep hill climbing test method

1 Scope

GB/T 12539-2018 is the Chinese national standard on motor vehicles steep hill climbing test method, in the field of road vehicles engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 14 May 2018 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1

December 2018. Classification: ICS 43.020, CCS T04. 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 issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Standard specifies the requirements for test conditions, test methods, test results of motor vehicles steep hill climbing test. This Standard is applicable to vehicles other than electric vehicles. Combination trains shall refer to it for implementation.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 12534, Motor vehicles - General rules of road test method

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 climbing success during the process of climbing of vehicle, a state that the speed is constantly rising or tends to stabilize through the test section

3.2 maximum gradability the limit ramp that the vehicle can pass on a good road under full load, represented in percentage of vertical and horizontal distance of the ramp

4 Test conditions

4.1 Requirements for road The road is shown in Figure 1. The test section slope length is not less than 20 m. There is a gradient section before and after the test section. The straight road section before the slope is not less than 8 m. It shall be a natural ramp (asphalt or concrete pavement) with a smooth surface, solid, dry, and even

4.3.3 Vehicle preparation

4.3.3.1 The vehicle shall be clean. Ventilation in the windows and passenger compartments shall be off unless the test vehicle has special requirements.

4.3.3.2 In addition to the equipment necessary for the test and the daily operating components of the vehicle, the lighting and auxiliary devices on the vehicle shall be turned off.

4.3.3.3 Before the start of the test, the vehicle shall be brought to the normal operating temperature in an appropriate manner.

4.4 Other conditions

4.4.1 Other test conditions such as atmospheric temperature, air pressure, and wind speed shall comply with the provisions of GB/T 12534.

4.4.2 The longitudinal slope more than 40% shall be set with safety device.

5.1 Specified ramp climbing

5.1.1 The vehicle gear is at the lowest gear. If there is auxiliary transmission, it is also at the lowest gear. The automatic vehicle is at the D gear (or as required by the manufacturer). All-wheel vehicle uses all-wheel drive.

5.1.2 Park the vehicle on a straight road near the ramp area.

5.1.3 Open the throttle after starting. Collect vehicle speed and engine speed change data on the test section. If the speed of the climbing increases or stabilizes through the test section, the climbing shall be successful and the average speed shall be recorded.

5.1.4 Monitor the operation of various instruments (such as water temperature and oil pressure) during the climbing process. After climbing to the top of the slope, stop and check for any abnormalities in each part, and make detailed records.