



**AUTOMOTIVE INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

QC/T 15-1992

**General test method for automobile plastic products
(English Translation)**

Issued on: May 21, 1992

Implemented on: June 1, 1993

Issued by: China Automotive Industry Corporation

Table of Contents

1 Subject contents and application scope	3
2 Normative references	3
3 Test items	3
4 General test conditions	4
5 Test methods	5
6 Evaluation items	24
7 Test report	26
Additional explanations	26

1 Subject contents and application scope

This Standard specifies the general test methods for automobile plastic molding products (hereinafter referred as products).

This Standard is applicable to automobile plastic products but not to foaming products, seats, electroplated products and coating products.

2 Normative references

GB 209 Sodium hydroxide for industrial use GB 252 General diesel fuels GB 435 Gasoline engine oil GB 484 Vehicle used gasoline GB 534 Industrial sulfuric acid GB 2918 Plastics - Standard atmospheres for conditioning and testing GB 5671 Lithium base grease for general purpose automobile JB 3979 Test methods for automobile steering-wheel QC/T 17 General rules for automotive part weathering test SY 4005 No.4604 synthetic brake oil

3 Test items

Test items include the 11 items as follows.

4.1 Standard environment conditions

The standard environment conditions are prescribed in GB 2918.

4.2 Specimen

The product which has been assembled and available for use can be used in a test as the specimen.

4.3 Pre-treatment of specimen

The specimen, randomly selected from the products which have been placed for at least 24h since manufacturing, cannot undergo a test until being placed in the environmental conditions as stipulated in 4.1 for no less than 4h or in other conditions agreed by supplier and buyer if required.

5.1 Temperature resistance test

Temperature resistance test is to examine the actual properties of products in high temperature, low temperature, and high-low temperature alternating conditions.

5.1.2 Classification of applicable conditions

The following 10 applicable conditions which are classified according to the place of the product mounted in a vehicle and the corresponding temperature conditions are described in Table 3.

5.1.4 Test methods

One of test methods is selected by supplier and buyer upon agreement based on the heat transfer conditions that the specimen undergoes.

5.1.4.2 Extreme heat resistance test

If the specimen is found no abnormality at the temperature as stipulated in Table 4 or the surface temperature of which is that as stipulated in Table 5, continue to increase the temperature of constant temperature chamber where the specimen is placed, 10°C or 5°C for each time,

5.1.4.3 Cold resistant test

Regulate the temperature of low temperature chamber reaching that as stipulated in Table 4, and then put the specimen in the low temperature chamber for at least 4h. Take the specimen out from the constant low temperature chamber, and examine it according to the test items as stipulated in article 6.

5.2 Weathering test

Weathering test shall be carried out in accordance with QC/T 17.

5.3 Water resisting test

Water resisting test is to examine the variation of product in water absorption when directly contacting water during use.

5.5 Chemical medium resistance test

Chemical medium resistance test is to examine the variation of product if submerged or contacting the commonly used fuel, oil, lubricating oil, drugs or solvents (or chemical media referred as follows).

5.6.4.2 Vibration endurance test

Vibration endurance test shall be carried out according to 6 grades, as stipulated in Table 13, based on the category of vehicle and the actual place where the product is installed; that is, grades 2, 3, 4, 7, 9 and 11. The applicable classification shall be in accordance with Table 13 and test time in accordance with Table 14.

5.7.1 Classification of tests

The tests are classified into following three kinds based on impact methods.

5.7.3.1 Falling-weight impact tests

Tests devices, including and supporting mechanism of heavy bobs and specimens, control mechanism for controlling heavy bobs' free-fall, heavy bobs and staff-gauges. The heavy bob's head is spherical; its radius is 25 mm;

5.8.1 Classification tests

According to the surface shape and the property of abrasion of products, the tests may be classified into 3 forms.

5.10 Rigidity test

Rigidity tests are used to evaluate rigidity and assembly rigidity of products.

5.10.1 Test devices

Test devices are as shown in Figure 5, including micrometer and push-pull pressure gauge, which can obtain deflection curve line of load (as shown in Figure 6). The diameter of fixation clamps and specimen width shall be in accordance with provisions in Table 20.

6 Evaluation items

Check shall be conducted in accordance with evaluation items and test items specified in Table 22 according to separate needs after test is conducted in accordance methods specified in article 5.

7 Test report

Test report shall include following items.