

ICS 83.160.20

CCS G 41



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

GB/T 9747-2026

Replacing GB/T 9747-2008

Test methods for aircraft tyres

航空轮胎试验方法

Issued on: March 31, 2026

Implemented on: October 1, 2026

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

Table of Contents

1 Scope
4 Dynamic performance test
4.3 Test Conditions
4.4 Test Methods
4.4.4 Test Procedure
4.4.4.2 Overload Takeoff Test Except for increasing the test load to
4.5 Alternative Testing
4.5.6 Test Procedure
5 Overpressure performance test
5.4 Test Procedure
6 Static load performance test
6.2 Test Equipment
6.4 Test Conditions
6.5 Test Procedure
6.6 Calculation of Experimental Results
7 Weighing
8 Outer dimension measurement test
8.2 Test Equipment
8.3 Sample

1 Scope

GB/T 9747-2026 is the Chinese national standard covering testing an aircraft tyre - the dynamometer runs that reproduce a takeoff roll and a landing, the overload and burst tests, the endurance at speed and the checks after a rejected takeoff, the most severe duty a tyre is asked to survive. It replaces GB/T 9747-2008 and has been in force since 1 October 2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, replacing GB/T 9747-2008. The document is under the responsibility of the China Petroleum and Chemical Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes the dynamic performance, overpressure performance, static load

performance, weight measurement, outer dimension measurement, and tubeless tires of aircraft tires. Air tightness, bead sealing pressure of inner tube tires, cross-sectional analysis and measurement, X-ray inspection, holographic inspection, laser digital non-destructive testing, static... Test specimens, test equipment, test conditions, test methods, and test reports for tests of balance difference, physical properties, bead high temperature resistance, and environmental adaptability. This document applies to civil aviation tires (hereinafter referred to as "tires").

4 Dynamic performance test

4.1 Sample The test tires should meet the following requirements.

- a) Use one tire to complete the dynamic performance tests specified in this document;
- b) After vulcanization, the tires should be left to stand at ambient temperature for no less than 24 hours;
- c) The surface quality of the test tires conforms to the requirements of GB/T 13652;
- d) During the first 5 tests, the tire did not slip on the rim; slippage occurring in subsequent tests did not damage the tubeless tire. The bead seal or the inner tube valve of an inner tube tire.

4.2 Test Equipment The testing equipment should meet the requirements for tire testing, with speed and load errors not exceeding 1%.

4.3 Test Conditions

4.3.1 Test Load Unless otherwise specified, the test load of the tire shall be greater than or equal to the rated load of the tire in GB/T 9746.

4.3.2 Test inflation internal pressure The test inflation pressure should be such that the load radius of the tire on the test flywheel is the same as that of the tire under rated load and rated inflation pressure. The internal pressure during inflation when the load radii on the plate are equal. Both measurements should be performed at the same ambient temperature. The test inflation should not be adjusted. Internal pressure is used to compensate for changes in inflation internal pressure caused by temperature variations during the test.

4.3.3 Correction for test inflation pressure To compensate for the influence of the flywheel curvature of the testing machine, the tire inflation pressure should be corrected. The correction method is as follows:

- a) At the same temperature, apply the rated load to the tire, such that its static load radius on the flywheel of the testing machine is the same as its static load radius on the flat plate. Equal radii;

b) Unless otherwise specified, the tire inflation pressure shall be corrected according to the relationship diagram in Figure 1;

c) The test inflation pressure should not be adjusted to compensate for changes in inflation pressure caused by temperature variations during the test.

4.3.4 Tire cooling after the test After each test, the tires should be cooled to the specified temperature before the next test.

4.4 Test Methods

4.4.1 Number of trials The tires should complete 50 takeoffs, 8 taxiings, 2 taxiings at 1.2 times the rated load, and 1 takeoff at 1.5 times the rated load. test.

4.4.2 Test Temperature The temperature of the gas inside the tire cavity or the temperature of the hottest point of the tire body shall meet the following requirements.

a) The temperature at the start of the overload takeoff test and at least 45 of the 50 takeoff tests should not be lower than 41°C;

b) In at least 9 out of 10 taxiing tests, the temperature should not be lower than 49°C at the start of the test;

c) For the remaining test cycles, the gas temperature inside the tire cavity or the tire body temperature should not be lower than 27°C at the start of the test. This can be used in... The method of rolling a tire on a test flywheel to reach the initial temperature.

4.4.3 Test Speed Table 1 shows the dynamic performance test speeds corresponding to the maximum takeoff speed. If the takeoff speed exceeds 394 km/h, the test speed should be set according to the most stringent tire requirements. Test the load-speed-time requirements of the instrument and determine the appropriate rated speed accordingly.

4.4.4 Test Procedure

4.4.4.1 Takeoff Test Unless otherwise specified, the load, speed and distance curves of the tires during takeoff tests shall conform to the provisions of Figure 2, Figure 3 or Figure 4. in.

a) Figure 2 applies to tires with rated speeds of 193 km/h and 257 km/h;

b) Figure 3 applies to tires with a rated speed greater than 257 km/h;

c) Figure 4 applies to tires with other rated speeds. Unless otherwise specified, the test load should be selected based on the tire's most demanding takeoff conditions. Load, speed, and distance.

4.4.4.2 Overload Takeoff Test Except for increasing the test load to

1.5 times the rated load, the provisions are the same as those for the takeoff test (4.4.4.1).

4.4.4.3 Coasting Test The tires should undergo 10 skidding tests under the test conditions specified in Table 2.

4.4.5 Measurement of Tire Inflation Pressure The measurement of tire inflation pressure should meet the following requirements.

- a) Unless otherwise specified, the tire inflation pressure shall be measured after every 5 tests. After the first 5 tests, the temperature of the gas inside the tire cavity shall be measured. Measure the internal inflation pressure by cooling the tire to the temperature at which the hottest point of the tire carcass cools down to the corrected pressure. After measurement, if the tire internal pressure is found to be lower than the corrected pressure... Air pressure, replenish air.
- b) After the 10th test, measure the pressure every 10 tests. If the tire pressure is found to be lower than the specified value after measurement, inflate the tire. High tire pressure... The pressure correction is attributed to increased temperature, and this increase in internal pressure is not adjusted.
- c) After completing 61 dynamic performance tests and parking the tires for 24 hours, measure the internal inflation pressure. The rate of decrease in internal inflation pressure should not exceed the rate at which the test began. 10% of the internal pressure during inflation.

4.5 Alternative Testing

4.5.1 Test Principles For low-speed tires with a rated speed of 193 km/h or less, the variable mass flywheel program can be used instead of the dynamic test program.

4.5.2 Test Requirements The kinetic energy that the tire should absorb during the test is provided by the speed decay of a certain mass flywheel. Kinetic energy. If the calculated kinetic energy cannot be obtained using the actual number of flywheel blades, the number of flywheel blades can be appropriately increased, and the testing machine speed adjusted accordingly. To obtain the required kinetic energy.

4.5.3 Number of Tests The tires should be able to pass 200 landing tests on a testing machine, namely 100 low-speed landing tests and 100 high-speed landing tests.

4.5.4 Test Temperature In 200 landing tests, at least 180 of them had the following temperature at the start of the test. the gas temperature inside the tire cavity or the temperature of the hottest spot on the tire body was not... The initial temperature should be below 41°C; for the remaining 20 tests, the temperature should not be below 27°C at the start of the test. Rolling tires on the test flywheel is permitted. Reach the minimum starting