



Standard Test Methods for Rubber Hose for Automotive Air and Vacuum Brake System¹

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This standard has been approved for use by agencies of the Department of Defense. These test methods were prepared jointly by the Society of Automotive Engineers and the American Society for Testing and Materials.

1. Scope

1.1 These test methods are intended for use in testing the conventional types of hose employed for the operation of air brake and vacuum brake systems,² either on a single motor vehicle or as connecting or transmission lines in a combination of vehicles. The hose may be assembled with suitable metal couplings or may be as fabricated for use with detachable fittings. The term “rubber” as used in these test methods includes synthetic compounds as well as compounds of natural rubber.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 380 Test Methods for Rubber Hose³

D 413 Test Methods for Rubber Property—Adhesion to Flexible Substrate⁴

D 471 Test Method for Rubber Property—Effect of Liquids⁴

D 573 Test Method for Rubber—Deterioration in an Air Oven⁴

D 1149 Test Method for Rubber Deterioration—Surface Ozone Cracking in a Chamber⁴

D 2240 Test Method for Rubber Property—Durometer Hardness⁴

E 4 Practices for Force Verification of Testing Machines⁵

2.2 SAE Standards:

J1402 Automotive Air Brake Hose and Hose Assemblies²

J1403 Vacuum Brake Hose²

3. Significance and Use

3.1 The purpose of these test methods are to provide nationally recognized test methods for air brake and vacuum brake hose, in particular the hose specifications SAE J1402 and SAE J1403, and to provide producers, distributors, and users with a basis for evaluating the characteristics of these hose products.

4. General Methods

4.1 The special tests described in these test methods shall be applied as required in order to comply with the detailed specifications for these types of hose. Otherwise, the general methods in Test Methods D 380 shall be used and are hereby made a part of these test methods.

4.2 In case of a conflict between the provisions of these general test methods and those of detailed specifications or test methods for a particular hose, the latter shall take precedence.

5. Sampling

5.1 One representative sample of each lot to be tested shall be taken. The total length of hose required for all tests is as follows:

Air brake hose	approximately 3 m (9 ft)
Vacuum brake hose	approximately 5 m (15 ft)

5.2 Each test specimen shall be prepared from the original sample without having been subjected to any previous test.

5.3 In the interest of safety, any hose remaining intact after these tests shall be destroyed.

6. Test Conditions

6.1 The temperature of the testing room shall be maintained at $23 \pm 5^\circ\text{C}$ ($73 \pm 9^\circ\text{F}$). The temperature of the test samples shall be stabilized at the testing room temperature prior to testing.

¹ These test methods are under the jurisdiction of ASTM Committee D11 on Rubber and are the direct responsibility of Subcommittee D11.31 on Rubber Hose and Belting.

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² For specifications covering hose of these types, reference should be made to the Air Brake Hose (SAE J1402) and for Vacuum Brake Hose (SAE J1403) of the Society of Automotive Engineers, SAE Handbook.

³ Annual Book of ASTM Standards, Vol 09.02.

⁴ Annual Book of ASTM Standards, Vol 09.01.

⁵ Annual Book of ASTM Standards, Vol 03.01.