



HOSE, HYDRAULIC BRAKE

WSS-M96D4-B

1. SCOPE

This specification defines a low volumetric expansion brake hose with an inside diameter classified as 1/8 inch and fabricated from textile braid and synthetic rubber and assembled with steel or brass end fittings.

2. APPLICATION

This specification was released originally for flexible hydraulic hose used on automotive brake equipment.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

Brake hose must conform to all the requirements of the Federal Motor Vehicle Safety Standard MVSS 106, Brake Hoses in addition to the following requirements.

3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 HOSE CONSTRUCTION

This specification was originally written for hoses constructed with an EPDM rubber inner tube, two reinforcing braids of polyvinyl alcohol (PVA) yarn, and an EPDM cover. The hose can be assembled with steel or brass end fittings.

3.3 INITIAL QUALIFICATION

The requirements listed in this specification are for initial qualification and are to be conducted by suppliers prior to source approval. Sample sizes required to fulfill each requirement are listed in SAE J1401 unless otherwise noted. In some cases, more samples may be required.

After initial qualification, in process testing for production hose assemblies should be conducted according to the test frequencies and appropriate sample sizes as defined by the engineering specification defined on the print.

3.4 CONSTRICTION

(SAE J1401 or FMVSS 106)

not less than 64%
of the inside diameter.

Date	Action	Revisions
2006 08 08	Activated	



Documents

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**3.5 VOLUMETRIC EXPANSION, max**
(SAE J1401)

Hoses must have a volumetric expansion below the listed maximum for each pressure.

0.590 cc/m at 6.9 MPa
0.787 cc/m at 10.3 MPa
1.575 cc/m at 20.0 MPa

3.6 BURST STRENGTH, min
(SAE J1401)

62 MPa (9000psi)

Test hose assemblies at the minimum and maximum of the compression range for hose crimp diameter.

Test burst strength per SAE J1401, except the hose assemblies must withstand a maintained pressure of 41.4 +/- 0.7 MPa (6000 +/-101 psi) for 2 min. The pressure shall then be increased at the rate of 172.5 +/- 69 MPa /min (25,000 +/-10,000 psi) until burst occurs. No leakage or braid wicking is permitted during the 2 minute hold period.

3.7 BRAKE FLUID COMPATIBILITY
(SAE J1401)

Hose assemblies at the minimum and maximum of the compression range for hose crimp diameter must meet the requirements of this specification for Constriction and Burst Strength after exposure to the brake fluid.

3.8 WHIP RESISTANCE, min.
(SAE J1401)

70 hours
No leakage

Use hoses with a 300 mm free length

3.9 TENSILE STRENGTH, min
(SAE J1401)

Test hose assemblies at the minimum and maximum of the compression range for hose crimp diameter.

Slow Pull, 25.4 mm/min	1761 N (396 lbf)
Fast Pull, 50.8 mm/min	1975 N (444 lbf)

3.10 COLD BEND
(SAE J1401)

No cracking
or breaking

Perform the test as specified except cold soak at least two hose assemblies between -54°C to -57°C.

3.11 OZONE RESISTANCE
(SAE J1401)

Static:	No visible cracks when viewed under 7X magnification after exposure.
Dynamic:	No visible cracks after 48 hours.