

Performance Requirements for the Automotive Audio Cassette - SAE J1274 JUN80

SAE Recommended Practice
Approved June 1980

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**PERFORMANCE REQUIREMENTS FOR THE
AUTOMOTIVE AUDIO CASSETTE—
SAE J1274 JUN80**

SAE Recommended Practice

Report of the Electrical Equipment Committee, approved June 1980.

1. Scope—This performance document for the audio cassette was developed by qualified engineers from the automotive industry, the prerecorded tape industry, and the tape and cassette manufacturers. It is based upon sound engineering principles supported by laboratory tests and field experience. The values given are supported by all of these industries and considered necessary to establish customer acceptance and satisfaction.

2. Purpose—This document lists the performance values for the test procedure listed in SAE J1275, Testing Methods for Audio Cassettes.

3. Cross Reference—The performance requirements listed in Section 4 of this document are cross referenced to the appropriate paragraph numbers in Section 6 of J1275, Testing Methods for Audio Cassettes, by showing the test procedure paragraph in parentheses immediately following the test value paragraph number. For example 4.1 (6.1) means that the results listed in paragraph 4.1 are obtained from the test procedure listed in paragraph 6.1 of J1275, and so on.

4. Test Values

4.1 (6.1) Laboratory Conditions—These are given in paragraph 6.1 in J1275.

4.2 (6.2) Breakout Lugs—The deflection at 2 N force shall not exceed 0.5 mm (0.02 in). The force to break the lug shall be greater than 3 N. When the lug breaks, it shall break cleanly so as to provide the minimum hole size shown on drawing.

4.3 (6.3) Yield and/or Tensile Strength—A change in length of not more than 0.2% shall be acceptable and the tape should not break or deform.

4.4 (6.4) Hub Anchorage—The hub tape or leader shall not break or separate to be acceptable.

4.5 (6.5) Splice Strength—The increase in the gap between the tape and the leader shall not increase more than 0.13 mm (0.005 in).

4.6 (6.6) Friction Torque—The maximum torque required to move the tape and both reels shall be 2.7×10^{-3} N·m (0.38 oz-in) when measured at nearly full take up reel and with no hold back torque applied to the supply reel. This same measurement made with a hold back torque of 0.8×10^{-3} N·m (0.113 oz-in) applied to the nearly empty supply reel shall not exceed 5.5×10^{-3} N·m (0.76 oz-in).

4.7 (6.7) Pressure Pad—The pressure due to the pressure pad shall be in the range of 0.005–0.015 N/mm² (0.73–2.18 psi).

4.8 (6.8) Mechanical Noise—The difference in the noise levels shall not exceed 8 dB in the play mode and 25 dB in the fast forward or fast reverse mode.

4.9 (6.9) Magnetic Properties of Tapes

4.9.1 (6.9.1) Definitions—The definitions of the various terms are shown in J1275.

4.9.2 (6.9.2) Sensitivity Measurements—The output of the sample tape being tested shall be not more than 4 dB below Level Set Reference Cassette at both 315 Hz and 5 kHz.

4.9.3 (6.9.3) Frequency Response—The frequency response shall be within 4 dB of the Level Set Reference Cassette.

4.9.4 (6.9.4) Uniformity—The uniformity of the 315 Hz signal shall not exceed 2 dB. For the 5 kHz signal the uniformity shall not exceed 3 dB.

4.9.5 (6.9.5) Prerecorded Cassette Output Level—The output level for a prerecorded cassette shall be -13 Vu.

4.10 (6.10) Life Test Cycle—The definition of a life test cycle is defined in J1275.

4.11 (6.11) Environmental Conditions Test—After exposure to the following environmental tests listed in J1275, the cassette shall be capable of meeting all of the test requirements contained in paragraphs 4.2–4.9.5 and may be so measured. The wow and flutter must be measured per paragraph 5.4.3 after each test and shall be less than 0.4%.

<u>Paragraph</u>	<u>Test</u>
6.11.1.1	High Temperature Storage
6.11.2.1	Low Temperature Storage
6.12	Humidity
6.14.2	Non-Operating Vibration
6.16	Thermocycling

4.12 (6.11.1.2) High Temperature Operating Test—The cassette shall operate satisfactorily and wow and flutter shall be less than 0.4%.

4.13 (6.11.2.2) Low Temperature Operating Test—The cassette shall operate satisfactorily and the wow and flutter after 3 min of operation shall be less than 0.6%.

4.14 (6.14.1) Operating Vibration—The cassette shall operate satisfactorily and the wow and flutter shall not be more than 1%.

4.15 (6.15) Life Test—The life expectancy of a cassette shall be such that the mean time to failure at a 90% confidence level is the 100 cycles described in paragraph 6.10, J1275.

4.16 (6.13) Drop Test—After the four drops specified in paragraph 6.13, J1275, the cassette shall not be cracked or disassembled and shall function satisfactorily in a player.