

# CERTIFICATE

## By Authority Of THE UNITED STATES OF AMERICA Legally Binding Document

By the Authority Vested By Part 5 of the United States Code § 552(a) and Part 1 of the Code of Regulations § 51 the attached document has been duly INCORPORATED BY REFERENCE and shall be considered legally binding upon all citizens and residents of the United States of America. HEED THIS NOTICE: Criminal penalties may apply for noncompliance.



**Document Name:** SAE J575: Test for Motor Vehicle Lighting Devices and Components

**CFR Section(s):** 49 CFR 571.108 S6.1

**Standards Body:** Society of Automotive Engineers

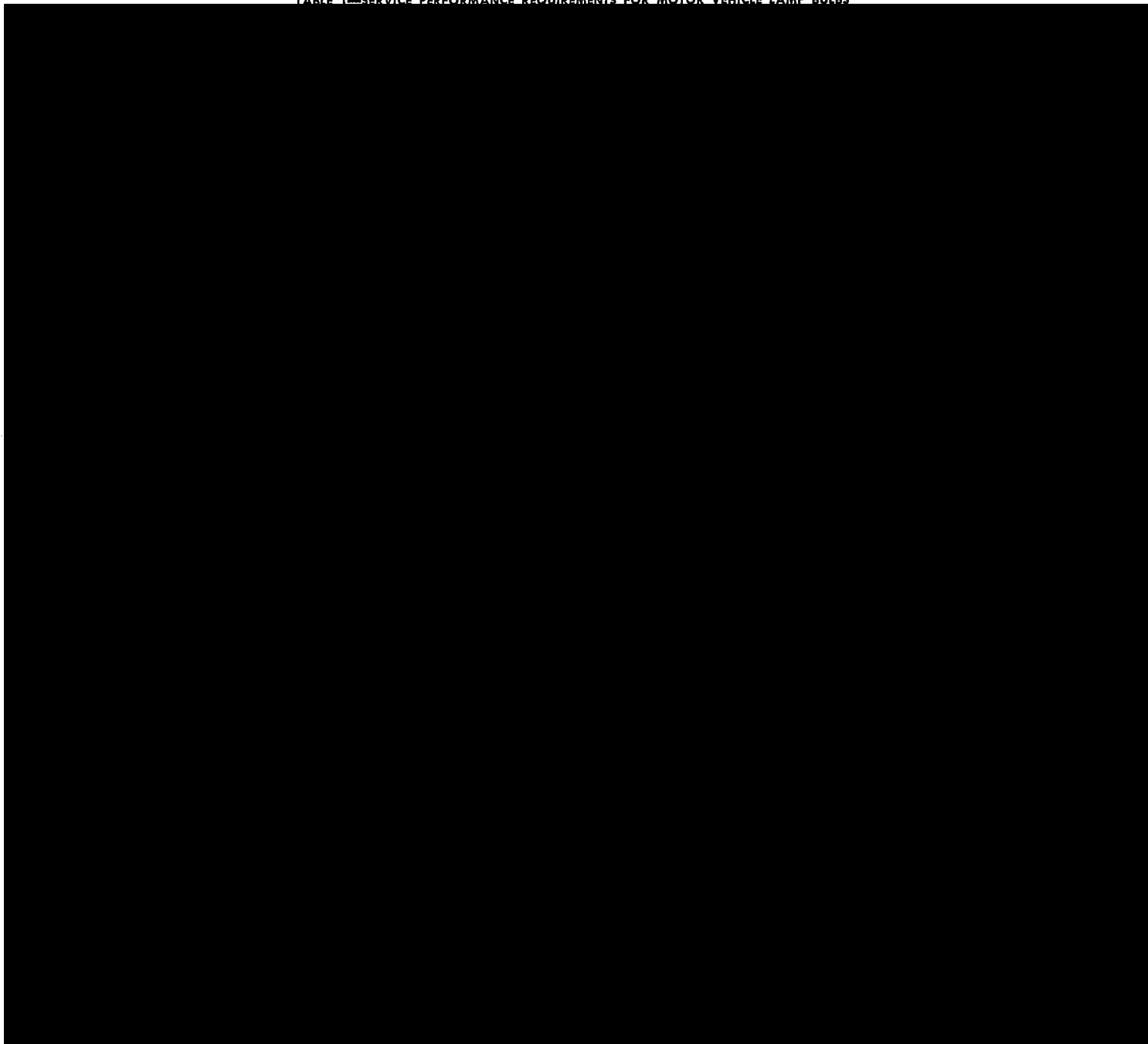


Official Incorporator:

THE EXECUTIVE DIRECTOR  
OFFICE OF THE FEDERAL REGISTER  
WASHINGTON, D.C.



TABLE 1—SERVICE PERFORMANCE REQUIREMENTS FOR MOTOR VEHICLE LAMP BULBS

**TESTS FOR MOTOR VEHICLE  
LIGHTING DEVICES AND COMPONENTS — SAE J575e****SAE Standard**

Report of Lighting Division approved May 1942 and last revised by Lighting Committee August 1970.

**A. Scope**—This standard covers standardized basic tests, test methods, and requirements applicable to many of the lighting devices and components covered by SAE Standards, Recommended Practices and Information Reports.

**B. Samples for Tests**—Samples submitted for laboratory test shall be representative of the devices as regularly manufactured and marketed.

Each sample shall include not only the device but also accessory equipment necessary to operate it in normal manner. Where necessary, a mounting bracket should be provided so that the device may be rigidly bolted in its operating position on the various test equipment. Dust and photometric tests may be made on a second set of mounted samples, if desired, to expedite completion of the tests.

**C. Bulbs**—Unless otherwise specified, bulbs used in the tests should be supplied by the laboratory and should be representative of standard bulbs in regular production. They should be selected for accuracy in accordance with specifications listed in Table 1 of SAE Standard, Lamp Bulbs and Sealed Units—SAE J573, and should be operated at their rated mean spherical candlepower, except as otherwise specified. Where special bulbs are specified, they should be submitted with the devices and the same or similar bulbs used in the tests and operated at their rated mean spherical candlepower.

**D. Laboratory Facilities**—The laboratory shall be equipped to test the sample in accordance with the requirements of the SAE Standard or Recommended Practice for the specific device.

**E. Vibration Test**—A sample unit, as mounted on the support supplied, shall be bolted to the anvil end of the table of the vibration test machine and vibrated approximately 750 cpm through a distance of  $\frac{1}{8}$  in. The table shall be spring mounted at one end and fitted with steel calks on the under side of the other end. These calks are to make contact with the steel anvil once during each cycle at the completion of the fall. The rack shall be operated under a spring tension of 60 to 70 lb. This test shall be continued for 1 hr.

The unit shall then be examined. Any unit showing evidence of material physical weakness, lens or reflector rotation, displacement or rupture of parts except bulb failures, shall be considered to have failed, provided that rotation of lens or reflector shall not be considered as a failure when tests show compliance with specifications despite such rotation. See SAE Information Report, Vibration Test Machine—SAE J577.

**F. Moisture Test**—A sample unit shall be mounted in its normal operating position with all drain holes open and subjected to a precipitation of 0.1 in. of water per minute, delivered at an angle of 45 deg from a nozzle with a solid cone spray. During the Moisture Test the lamp shall revolve about its vertical axis at a rate of 4 rpm. This test shall be continued for 12 hr. The water shall then be turned off and the unit permitted to drain for 1 hr.

The unit shall then be examined. Moisture accumulation in excess of 2 cc shall constitute a failure.

**G. Dust Test**—A sample unit with any drain hole closed shall be mounted in its normal operating position, at least 6 in. from the wall in a cubical box with inside measurements of 3 ft on each side containing 10 lb of fine powdered cement in accordance with ASTM C 150-56, Specification for Portland Cement. At intervals of 15 minutes, this dust shall be agitated by compressed air or fan blower by projecting blasts of air for a 2 sec period in a downward direction into the dust in such a way that the dust is completely and uniformly diffused throughout the entire cube. The dust is then allowed to settle. This test shall be continued for 5 hr.

After the dust test the exterior surface shall be cleaned. If the maximum candlepower is within 10% of the maximum as compared with the condition after the unit is cleaned inside and out, the unit shall be considered to have met the requirements of this test. Where sealed units are used, the dust test shall not be required.

**H. Corrosion Test**—A sample unit shall be subjected to a salt spray (fog) test in accordance with the latest ASTM B 117, Method of Salt

Spray (Fog) Testing, for a period of 50 hr, consisting of two periods of 24-hr exposure and 1-hr drying time each.

There shall be no evidence of excessive corrosion immediately after the preceding test has been completed, which would affect the proper functioning of the device.

**I. Color Test**—Refer to SAE Standard, Color Specification for Electric Lamps—SAE J578.

**J. Photometry**—The photometric measurement shall be made at a distance between the light source and the point of measurement specified for the lighting device. The device shall be mounted in its normal operating position.

When making photometric measurements at specific test points, the candlepower values between test points shall not be less than the lower specified value of the two closest adjacent test points (on a horizontal or vertical line) for minimum values.

In locating the test points, as designated in the standards and recommended practices, the following nomenclature shall apply:

The line formed by the intersection of a vertical plane through the light source of the device and normal to the test screen is designated V. The line formed by the intersection of a horizontal plane through the light source and normal to the test screen is designated H. The point of intersection of these two lines is designated H-V.

The other points on the test screen are measured in terms of degrees from these two lines. Degrees to the right (R) and to the left (L) are regarded as being to the right and left of the vertical line when the observer stands behind the lighting device and looks in the direction of the emanating light beam when the device is properly aimed for photometry with respect to the H-V point.

Similarly, the upward angles designated as U and the downward angles designated D, refer to light emanating at angles above and below the horizontal line, respectively.

EXAMPLE: 4D-3L is a point 4 deg below H and 3 deg to the left of V. 1U-V is a point 1 deg above H and on the line V.

**K. Out-of-Focus Tests on Unsealed Units**—Tests shall be made for each of four out-of-focus filament positions. Where conventional bulbs with two pin bayonet bases are used, candlepower tests shall be made with the light source 0.060 in. above, below, ahead, and behind the designed position. If prefocused bulbs are used, the limiting positions at which tests are made shall be 0.020 in. above, below, ahead, and behind the designed position. The minimum values for out-of-design position shall be 80% of minimum requirements. The lamp may be readjusted for each of the out-of-focus positions of the light source.

**L. Warpage Test Devices with Plastic Lenses**—A sample unit shall be mounted in its normal position and operated at rated voltage in an oven for 1 hr at 120 F ambient temperature. The device should be operating in the test in the same manner as it will be operated in service. The lens color shall be identical to that intended for use in the device.

After this warpage test has been completed, there shall be no evidence of warpage of lenses which would affect the proper functioning of the device.