SURFACE VEHICLE RECOMMENDED PRACTICE

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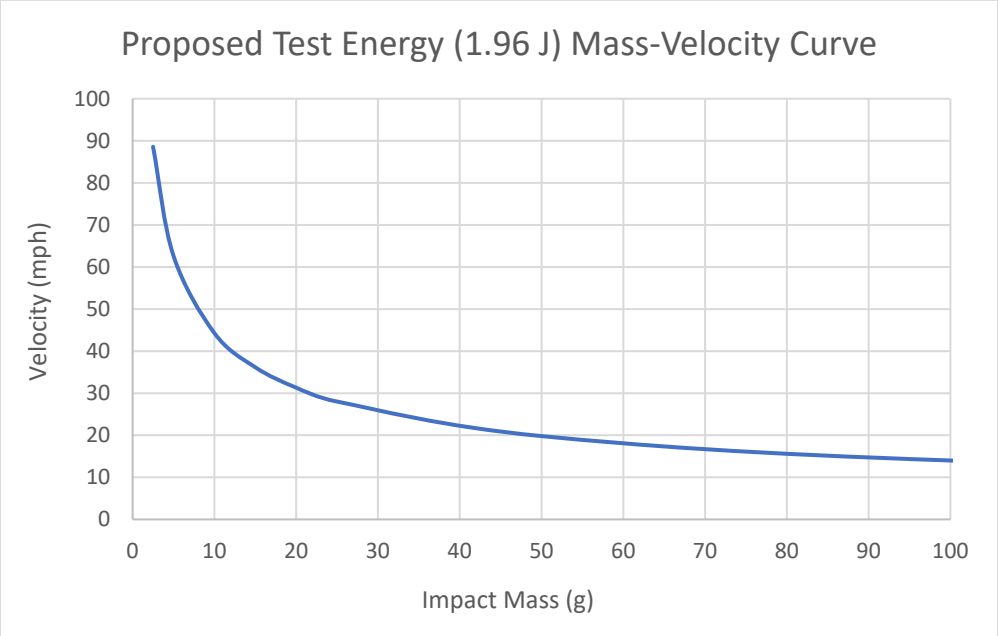
Superseding J575 AUG2018

Test Methods and Equipment for Lighting Devices for Use on Vehicles Less than 2032 mm in Overall Width

RATIONALE

A study was done regarding the releavance of the lens impact test with plastic lenses. It was shown that more than 30 times the impact force of the glass lens impact test is required to crack a polycarbonate or impact resistant PMMA headlamp lens of typical thickness. In review ot the test history, it was determined that the required force was designed around the impact strength of a glass lens. The impact test will be split into two types of material: glass lenses and plastic lenses (4.3).

For glass lenses, the historical impact force of 0.196 J is used, but for plastic lenses the impact force is increased to 10X that of a glass lens. The equivalent road velocity versus impact mass is shown in the curve below for the plastic lens test energy of 1.96 J.



Section 4.3 renumbered to include plastic headlamp lens impact test.

Section 4.11.8 numbering error corrected (4.10.7 → 4.11.7).

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1. SCOPE

This SAE Recommended Practice is intended as a guide toward standard practice and is subject to change to keep pace with experience and technical advances. This document provides standardized laboratory tests, test methods and equipment, and requirements for lighting devices covered by SAE Recommended Practices and Standards. It is intended for devices used on vehicles less than 2032 mm in width. Tests for vehicles larger than 2032 mm in overall width are covered in SAE J2139. Device specific tests and requirements can be found in applicable SAE technical reports.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J387	Terminology - Motor Vehicle Lighting
SAE J573	Miniature Lamp Bulbs
SAE J577	Vibration Test Machine and Operation Procedure
SAE J1330	Photometry Laboratory Accuracy Guidelines
SAE J1889	LED Signal and Marking Lighting Devices
SAE J2139	Test for Signal and Marking Devices Used on Vehicles 2032 mm or More in Overall Width
SAE J2560	Halogen Light Source Performance Requirements for Motor Vehicle Forward Lighting
SAE J2650	Performance Requirements for Light Emitting Diode (LED) Road Illumination Devices

2.1.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B117-03	Method of Salt Spray (Fog) Testing
ASTM C150-84	Specification for Portland Cement
ASTM D471-12a	Standard Test Method for Rubber Property - Effect of Liquids
ASTM E308-08	Standard Practice for Computing the Colors of Objects by Using the CIE System

2.1.3 Military Publications

Available from the Document Automation and Production Service (DAPS), Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Tel: 215-697-6257, https://assist.daps.dla.mil/quicksearch/.

MIL-STD-810F	Solar Radiation (Sunshine)