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SURFACE VEHICLE RECOMMENDED PRACTICE

J576™ AUG2017

Issued 1955-01
Reaffirmed 1960-01
Revised 2017-08

Superseding J576 FEB2010

(R) Plastic Material or Materials for Use in Optical Parts Such as Lenses and Reflex Reflectors of Motor Vehicle Lighting Devices

RATIONALE

This document is being updated for the 5-year document review. The changes made were to the include common wording for the scope of lighting committee documents and the last sentence of the scope has been removed. SAE J578 has been updated for the use of “Non-incandescent” sources and uses the language “The color of light emitted from the device shall fall within the following boundaries…”, therefore SAE J576 has been updated to harmonize language with SAE J578 allowing for light sources that emit light in a narrow spectrum and are not fully reliant on the color of the lens to filter a broad-spectrum light source. Use of the CIE 1931 standard colorimetric observer (2° observer) in optical measurements is now clearly specified and the haze for forward road illumination devices, excluding cornering lamps, shall not be greater than 7% after outdoor exposure.

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 establishes additional performance requirements and provides test methods and requirements to evaluate the suitability of plastic material or materials intended for optical applications in motor vehicles. The tests are intended to determine physical and optical characteristics of the material or materials only. Performance expectations of finished assemblies, including plastic components, are to be based on tests for lighting devices, as specified in SAE Standards and Recommended Practices for motor vehicle lighting equipment.

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 J578 Color Specification

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2.1.2 Federal Publications

49 CFR 571.108 Lamps, Reflective Devices and Associated Equipment (FMVSS 108)

2.1.3 CIE Publication

Available from CIE Central Bureau, Babenbergerstrasse 9/9A, 1010 Vienna, Austria, Tel: +43 1 714 31 87, www.cie.co.at.

CIE 1931 Standard – Colorimetry

2.2 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 D1003-00 Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics

ASTM D4364-05 Standard Practice for Performing Outdoor Accelerated Weathering Tests of Plastics Using Concentrated Sunlight

ASTM E308-01 Standard Practice for Computing the Colors of Objects by Using the CIE System

2.3 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.3.1 IES Publication

Available from Illuminating Engineering Society, 120 Wall Street, Floor 17, New York, NY 10005-4001, Tel: 212-248-5000, www.ies.org.

IES TM-27-24 IES Standard Format for the Electronic Transfer of Spectral Data.

3. DEFINITIONS

3.1 Material or Materials

The type and grade of plastics, composition, and manufacturer's designation (number) and color.

3.1.1 COATED MATERIALS

A coated material is a material as defined in 3.1 which has a coating applied to the surface of the finished sample to impart some protective properties. Coating identification includes manufacturer's name, formulation designation (number), and recommendations for application.

3.1.2 TRANSPARENT PLASTIC MATERIALS

A plastic material with an initial (unexposed) haze value of 30% or less when measured in accordance with ASTM D1003.

3.1.3 DIFFUSING PLASTIC MATERIAL

A plastic material which intentionally scatters transmitted light to specific intended levels; and for the purpose of this standard has an initial (unexposed) haze value greater than 30% measured in accordance with ASTM D1003.