



SURFACE VEHICLE RECOMMENDED PRACTICE

J2081™

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Test Procedure for Determining the Resistance of Safety-Glazing Materials,
of which One Surface is Plastic, to Simulated Weathering

RATIONALE

This Recommended Practice was reaffirmed to comply with the SAE's Five-Year Review policy.

SAE J2081 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Recommended Practice determines whether plastic and glass-plastic safety glazing materials will successfully withstand exposure to simulated weathering conditions.

2. REFERENCES

2.1 Applicable Documents

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

2.1.1 ANSI Publications

Copies of these documents are available online at <http://webstore.ansi.org/>.

ANSI Z26.1-1996 Glazing Materials for Glazing Motor Vehicles and Motor Vehicle Equipment Operating on Land Highways, Safety Standard

2.1.2 ISO Publications

Copies of these documents are available online at <http://webstore.ansi.org/>.

ISO 3537-93 Road Vehicles - Safety Glazing Materials - Test Methods for Mechanical Properties

ISO 3538-78 Road Vehicles - Safety Glazing Materials - Test Methods for Optical Properties

ISO 3917-92 Road Vehicles - Safety Glazing Materials - Test Methods for Resistance to Radiation, High Temperature, Humidity, Fire, and Simulated Weathering

ISO 4892 Plastics - Methods of Exposure to Laboratory Light Sources - Part 1: General Guidance

ISO 4892-2 Plastics - Methods of Exposure to Laboratory Light Sources - Part 2: Xenon-Arc Sources

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Documents

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2.1.3 CIE Publications

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

CIE No. 15.2 (1986) Colorimetry

3. EXPOSURE APPARATUS

The light source included in this document is the long-arc xenon lamp.

3.1 Long-Arc Xenon Lamp

The exposure apparatus¹ shall utilize a long-arc xenon lamp as the source of irradiation, which shall comply with ISO 4892, Part 2.2, Section 4 (Artificial Weathering).

The long-arc xenon lamp is advantageous in that it can, when correctly filtered and maintained, yield a spectrum most closely approximating that of natural sunlight. To this end, the quartz xenon burner tube shall be fitted with suitable borosilicate glass optical filter(s)². The xenon lamps employed shall be operated from a suitable 50 or 60 Hz power supply through suitable reactance transformers and electrical equipment.

The UV radiation distribution shall be as specified in ISO 4892-2.2, Section 4.1.2, Table 1, Relative Spectral Irradiance for Artificial Weathering (Method A).

The exposure apparatus shall include equipment necessary for measuring and/or controlling the following:

- a. Irradiance
- b. Black panel temperature
- c. Water spray
- d. Operating schedule or cycle

The exposure apparatus shall be made from inert materials which do not contaminate the water employed in the test.

Irradiance shall be measured at the test specimen surface and shall be controlled according to the recommendations of the manufacturer.

Total ultraviolet³ radiant exposure (joules per square meter) shall be measured or computed and shall be considered the primary measure of test specimen exposure.

4. TEST SPECIMENS

The dimensions of the test specimen shall normally be those specified in the appropriate test method for the property or properties to be measured after exposure.

The number of test specimens for each test condition or exposure stage shall be determined, in addition to those required for visual evaluations as referenced in Section 6 of this document, by the number required by the test methods.

It is recommended that visual evaluations be conducted on the largest test specimens tested.

¹ Such as Atlas Ci, Xenotest® Series, or equivalent.

² Such as Corning 7740, Atlas Type S, Atlas Suprax, or equivalent.

³ Total ultraviolet is considered to be all radiation of wavelength less than 400 nm.