SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE RECOMMENDED PRACTICE

Submitted for recognition as an American National Standard

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(R) SAFETY GLAZING MATERIALS - MOTOR VEHICLES

FOREWORD

With the development of what is commonly termed "safety glass," the diversity in claims for its manufacture and use and its requirement for Federal and State motor vehicle laws or regulations led to the organization of a Sectional Committee in June, 1934, under the American Standards Association procedure to formulate a standard safety code for all safety glass. The first code developed under this procedure related to land motor vehicles only, and a Safety Glass Advisory Committee of the Society was appointed under the Passenger Car Division which cooperated with the Sectional Committee in developing the original American Tentative Standard, ASA Z-26.1-1935. This was subsequently revised, ASA Z-26.1-1938, with reference to trade marking of the glass, and again later to include test requirements for other safety glazing materials, ASA Z-26.1-1950. The standard was modified in 1966 to the extent necessary to include synthetic plastic materials along with glass under the general term of "safety glazing materials," ANSI/SAE Z-26.1-1966. The standard was further revised in 1977, and again in 1983 to include glass-plastic materials under the general term of "safety glazing materials." The standard was revised again in 1990, which is the latest complete version, ANSI/SAE Z-26.1-1990. This SAE Recommended Practice is intended primarily as a guide to the proper selection of safety glazing materials for use in land motor vehicles.

1. SCOPE:

All glazing materials used in motor vehicles operating on land highways should comply with the requirements of the American National Standard, ANSI/SAE Z-26.1. The American National Standard for Safety Glazing Materials for Glazing Motor Vehicle Equipment Operating on Land Highways - Safety Code, ANSI/SAE Z-26.1-1990 is the most recent complete updated version and is referred to hereafter as "the safety code." This SAE Recommended Practice is not intended to preclude references to any governmental law, ordinance, or regulation which might apply to the glazing of motor vehicles operating on land highways.

2. REFERENCES:

2.1 Applicable Documents:

2.1.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J673 Automotive Safety Glazing

2.1.2 ANSI Publications: Available from American National Standards Institute, 1430 Broadway, New York, NY 10018.

ANSI/SAE Z-26.1-1990 American National Standard for Safety Glazing Materials for Glazing Motor Vehicle Equipment Operating on Land Highways - Safety Code

2.2 Definitions:

2.2.1 SAFETY GLAZING MATERIALS: means a product consisting of organic and/or inorganic materials so constructed, or treated to reduce, in comparison with annealed glass, the likelihood of injury to persons as a result of contact with these safety glazing materials when used in a vehicle, whether they may be broken or unbroken, and for which special requirements regarding visibility, strength, and abrasion have been established.

2.2.2 SAFETY GLASS: means safety glazing materials predominantly ceramic in character that meet the appropriate requirements of the safety code including (but not limited to) laminated glass, tempered glass, and wired glass.

2.2.2.1 LAMINATED GLASS: means two or more pieces of sheet, plate, or float glass bonded together by an intervening layer or layers of plastic material. It will crack or break under sufficient impact, but the pieces of glass tend to adhere to the plastic. If a hole is produced, the edges are likely to be less jagged than would be the case with ordinary annealed glass.

2.2.2.2 TEMPERED GLASS: (other terms such as "heat treated glass," "heat toughened glass," "case hardened glass," and "chemically tempered glass" are also used) means a single piece of specially treated sheet, plate, or float glass possessing mechanical strength substantially higher than annealed glass. When broken at any point, the entire piece breaks into small pieces that have relatively dull edges as compared to those of broken pieces of ordinary annealed glass.

2.2.2.3 WIRED GLASS: means a single piece of glass with a layer of meshed wire completely imbedded in the glass but not necessarily in the center of the glass.

2.2.3 SAFETY GLAZING PLASTICS: includes any safety glazing material, predominantly synthetic organic in character, that meets the appropriate requirements of the safety code, including single-ply and laminated products whether rigid or flexible.

2.2.4 GLASS-PLASTIC GLAZING MATERIAL: means a laminate of one or more layers of glass and one or more layers of plastic in which a plastic surface of the glazing faces inward when the glazing is installed in a vehicle.

3. USE OF DESCRIPTIVE TERMS:

As the definition indicates, safety glazing materials, in comparison with ordinary sheet glass, plate glass, or float glass, are intended to reduce the likelihood of injury or the severity of injury in the event of their breakage. Therefore, terms such as "nonbreakable," "nonshatterable," "nonscatterable," "nonsplinterable," and "nonlacerative" should not be interpreted by the driving public as meaning that absolute protection is afforded to the occupants of the vehicle by the safety glazing materials so described, as the descriptive terms might seem to warrant. No such terms are used in the Safety Code.

4. DEGREE OF SAFETY:

One safety glazing material may be superior for protection against one type of hazard while another may be superior against another type. Since accident conditions are not standardized, no one type of safety glazing material can be shown to possess the maximum degree of safety under all conditions against all conceivable hazards.

NOTE: See SAE J673.

The (R) is for the convenience of the user in locating where technical revisions have been made to the previous issue of the report. If the symbol is next to the report title, it indicates a complete revision of the report.

RATIONALE:

Not applicable.

RELATIONSHIP OF SAE STANDARD TO ISO STANDARD:

Not applicable.

APPLICATION:

All glazing materials used in motor vehicles operating on land highways should comply with the requirements of the American National Standard, ANSI/SAE Z-26.1. The American National Standard for Glazing Materials for Glazing Motor Vehicle Equipment Operating on Land Highways - Safety Code, ANSI/SAE Z-26.1-1990 is the most recent complete updated version and is referred to hereafter as "the safety code." This SAE Recommended Practice is not intended to preclude references to any governmental law, ordinance, or regulation which might apply to the glazing of motor vehicles operating on land highways.

REFERENCE SECTION:

SAE J673	Automotive Safety Glazing
ANSI/SAE Z-26.1-1990	American National Standard for Safety Glazing Materials for Glazing Motor Vehicle Equipment Operating on Land Highways - Safety Code

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