



**VEHICLE EQUIPMENT
SAFETY COMMISSION**

Regulation VESC-20

**PERFORMANCE REQUIREMENTS FOR MOTOR
VEHICLE SUN SCREENING DEVICES**

Approved July 1980

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**PERFORMANCE REQUIREMENTS FOR MOTOR VEHICLE
SUN SCREENING DEVICES**

1. PURPOSE

1.1 To establish requirements for:

(A) Approved vehicle glazing materials designed to reduce the effects of the sun.

(B) Products and materials which are designed to be used in conjunction with vehicle glazing materials for the purpose of reducing the effects of the sun.

1.2 To establish requirements for these products and materials for purposes of safety and to furnish state administrators with a guide in uniformly regulating these products and materials.

2. SCOPE — This regulation is applicable to passenger cars, multi-purpose passenger vehicles, trucks, and buses with a gross vehicle weight rating of 10,000 pounds or less. Additionally, this regulation encompasses all exterior locations of glazing materials within the applicable vehicles, except roof mount locations.

3. DEFINITIONS

3.1 **SUN SCREENING DEVICES** — Products or materials designed to be used in conjunction with approved vehicle safety glazing materials for the purpose of reducing the effects of the sun.

3.2 **LUMINOUS REFLECTANCE AND LIGHT TRANSMITTANCE** — Reflectance and transmittance referred to in this regulation are in the visible light range.

3.3 **REFLECTANCE** — The ratio of the amount of total light, expressed in percentages, which is reflected outward by the product or material to the amount of total light falling on the product or material.

3.4 **TRANSMITTANCE** — The ratio of the amount of total light, expressed in percentages, which is allowed to pass through the product or material including the glazing to the amount of total light falling on the product or material and the glazing.

3.5 **MANUFACTURER** — (A) Any person engaged in the manufacturing or assembling of sun screening products and/or

materials designed to be used in conjunction with vehicle glazing materials (person means every natural person, firm, co-partnership, association or corporation), or (B) One who fabricates, laminates or tempers the glazing material incorporating the capacity to reflect or to reduce the transmittance of light during the manufacturing process.

- 3.5 **COMMISSIONER** — The appropriate state official or state agency responsible for promulgating rules and regulations governing vehicle equipment approval and/or use of motor vehicles over the highways of the state.

4. GLAZING LOCATION APPLICABILITY

- 4.1 **WINDSHIELDS FRONT SIDE WINDOWS, AND SIDE WINGS** — No person shall operate any motor vehicle on any public highway, road, or street with the front windshield, the side windows to the immediate right and left of the driver, and/or side wings forward of and to the left and right of the driver that do not meet the requirements of FMVSS 205 in effect at the time of its manufacture or are either covered by or treated with any product or material which would alter the glazing color, increase its reflectivity, or reduce its light transmittance.
- 4.1.1 Nothing in this regulation shall prohibit the use of any products or materials along the top edge of the windshield so long as such products or materials are transparent and do not encroach upon the AS-1 portion of the windshield as provided by FMVSS 205 and FMVSS 128.
- 4.2 **ALL WINDOWS BEHIND THE DRIVER** — No person shall operate any motor vehicle on any public highway, road, or street with any windows behind the driver which do not meet the requirements of FMVSS 205 at the time of manufacture or are either covered by, treated with, or composed of any product or material except as specified below:
- 4.2.1 Film materials, when tested in conjunction with glazing materials, shall have a total reflectance of $35 \pm 3\%$ or less and transmittance of at least $8 \pm 3\%$ or more.
- 4.2.2 Perforated sun screening materials, when tested in conjunction with glazing materials, shall have a total reflectance of $35 \pm 3\%$ or less and transmittance of no less than $30 \pm 3\%$. For those products or materials having

different levels of reflectance, the highest reflectance from the product or material will be measured by dividing the area into 16 equal sections and averaging the overall reflectance. The measured reflectance of any of those sections shall not exceed 50%.

4.2.3 Louvered materials, when installed as designed, shall not reduce the area of driver visibility below 50% as measured on a horizontal plane. When such materials are used in conjunction with the rear window, the measurement shall be made based upon the driver's view from the inside rear view mirror.

4.2.4 Glazing, where the capability to either reflect or reduce the transmittance of light is incorporated within the glazing during the manufacturing process (A) shall have, when tested as a completed unit, a total reflectance of $35 \pm 3\%$ or less and transmittance of at least $8 \pm 3\%$ or more and (B) is not required to meet the 70% luminous transmittance requirement as specified in Test No. 2 of ANSI Z.26 as referenced in FMVSS 205.

4.2.5 Privacy drapes, curtains, and/or blinds installed on the interior of motor homes.

(Motor homes, for purposes of this section, are defined as a vehicular unit designed to provide temporary living quarters built into and an integral part of or permanently attached to a self-propelled motor vehicle chassis. The vehicle must contain permanently installed independent life support systems which meet the ANSI/ANFP 501C Standard and provide at least four of the following systems:

- Cooking
- Refrigeration and/or ice box
- Self-contained toilet
- Heating and/or air conditioning
- Potable water supply system, including faucet and sink
- Separate 110-125 volt electrical supply and/or LP gas supply)

4.3 Right and left outside rear view mirrors shall be required with the use of any sun screening device or material except when used only on the top edge of the windshield as permitted in 4.1.1.

5. CERTIFICATION AND TESTING

- 5.1 Each manufacturer shall demonstrate compliance with the applicable requirements of this regulation. Test specimens of the products or materials shall be tested in conjunction with the glazing material of intended use. The necessary tests shall be conducted by or supervised by an approved, certified laboratory or a testing organization.
- 5.1.1 Testing of the products or materials referred to in 4.2.1 shall be conducted in accordance with the applicable provisions of the following standards:
- (A) Transmittance — American National Standards Institute (ANSI) Z26.1-1977
 - (B) Reflectance — ANSI/ASTM E308-73, "Spectrophotometry and Description of Color in CIE System," and ANSI/ASTM E179-73, "Selection of Geometric Conditions for Measurement of Reflectance and Transmittance."
- 5.1.2 Testing of the products or materials referred to in 4.2.2 shall be conducted in accordance with the applicable provisions of the following standards:
- (A) Transmittance—ANSI Z26.1-1977. The light source beam shall be at least ½ in. in diameter or larger.
 - (B) Reflectance — ANSI/ASTM E308-73, "Spectrophotometry and Description of Color in CIE System," and ANSI/ASTM C523 - 68, "Standard Test Method for Light Reflectance of Acoustical Materials by the Integrating Sphere Reflectometer." The luminous reflectance shall be measured under CIE light source C with the lamp source beam being at least ½ in. in diameter or larger.
- 5.2 Each manufacturer shall certify to the Commissioner, the Equipment Approval Program, or other agency designated by the Commissioner that the product or material is in compliance with the reflectivity and transmittance requirements of this regulation.

6. LABELING OR MARKING

6.1 Each manufacturer, except as specified in 6.1.1, shall provide a label with a means for permanent and legible installation between the material and each glazing surface to which it is applied that contains the following information:

(A) Manufacturer (name or registration number)*

(B) Statement, "Complies with VESC-20" (VESC number)

6.1.1 A manufacturer of a glazing material which meets the requirements of 4.2.4 above shall permanently and legibly mark the glazing material with a code or symbol denoting that it meets the reflectance and luminous transmittance requirements of this regulation.

6.2 Each manufacturer shall provide on the container or package of the product or material the information specified in 6.1, and a statement that the material is permitted for automotive use where state or local laws do not prohibit such use. Such information shall be permanently and legibly affixed to the container or package.

6.3 Each manufacturer shall include instructions with the product or material for proper installation, including the affixing of the label specified in 6.1. The labeling or marking shall be placed in the left lower corner of each glazing surface when facing the vehicle from the outside.

6.4 No person shall offer for sale or for use any sun screening product or material for motor vehicle use not in compliance with this regulation.

6.5 No person shall install any sun screening product or material on vehicles intended for use on public roads without permanently affixing the label specified in 6.1.

7. EXCEPTIONS — Nothing in this regulation shall permit or prohibit the use and placement of federal, state, or local certificates on any window as may be required or prohibited by applicable laws.

*Manufacturer's code and/or registration numbers may be assigned through the Safety Equipment Services Division of the American Association of Motor Vehicle Administrators, Suite 910, 1201 Connecticut Avenue, N.W., Washington, D.C. 20036 (202) 296-1955.

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