

4501-27-01 **License plate specifications.**

- (A) This rule contains the specifications for the manufacture of license plates for the state of Ohio.
- (B) In accordance with section 4503.22 of the Revised Code, the director of public safety shall designate all of the following:
- (1) The substrate material for the license plate which shall be galvanized steel as specified in paragraph (D) of this rule or aluminum as specified in paragraph (E) of this rule;
 - (2) The colors and design of the retroreflective multi-year sheeting which shall constitute the background colors and design of the license plate; and,
 - (3) The colors and design of the characters that form the distinctive numbers and letters for the license plate.
- (C) The finished license plate shall contain any logo, inscription, or design feature prescribed by law and may contain any logo, inscription, or other design feature as designated by the director.
- (D) If the director designates galvanized steel as the substrate, it shall have satisfactory strength while retaining flatness after embossing. It shall not crack or break when embossed with standard embossing dies used to manufacture license plates. The galvanized steel shall conform to ASTM A653, "Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process," approved November 1, 2010 (ASTM A653/A653M-10); or approved June 1, 2007 (ASTM A653/A653M-07); or approved May 1, 2004 (ASTM A653/A653M-04a); or approved December 10, 1998 (ASTM A653/A653M-98a), and shall have a G-90 coating designation to retard corrosion and requiring no phosphate coating. The thickness of the galvanized steel shall be nineteen one-thousandths inch plus or minus three one-thousandths inch continuous galvanized, zinc chromated. The supplier of the steel shall warrant the substrate of the license plate for a minimum of four years. At the director's discretion, the director may obtain a certification from an independent testing facility stating whether or not the galvanized steel supplied by the manufacturer meets the standards as specified in this rule. ASTM standards are available from the "American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, (610) 832-9500, web site: <http://www.astm.org>. ASTM standards incorporated by reference in this rule may be viewed at the "Ohio Department of Public Safety, Office of Legal Services, 1970 West Broad Street, Columbus, Ohio 43223."

- (E) If the director designates aluminum as the substrate, it shall have satisfactory strength while retaining flatness after embossing. It shall not crack or break when embossed with standard embossing dies used to manufacture license plates. The aluminum shall conform to ASTM B209, "Standard Specification for Aluminum and Aluminum Alloy Sheet Plate," approved November 1, 2010 and ASTM B449, "Standard Specification for Chromates on Aluminum," approved June 1, 2010, and free of any powdery residue, oil, or other foreign material which may affect adhesion of reflective sheeting. The substrate aluminum shall have a chrome-free, environmentally friendly conversion coating. The thickness of the aluminum shall be between twenty-two one-thousandths inch and thirty-two one-thousandths inch plus or minus one one-thousandths. The supplier of the aluminum shall warrant the substrate of the license plate for a minimum of four years. At the director's discretion, the director may obtain a certification from an independent testing facility stating whether or not the aluminum supplied by the manufacturer meets the standards as specified in this rule. ASTM standards are available from the "American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, (610) 832-9500, web site: <http://www.astm.org>. ASTM standards incorporated by reference in this rule may be viewed at the "Ohio Department of Public Safety, Office of Legal Services, 1970 West Broad Street, Columbus, Ohio 43223."
- (F) The retroreflective sheeting shall have sufficient adherence to the substrate to remain firmly attached during the license plate manufacturing process and for a minimum service life of four years. The supplier of the sheeting shall warrant the sheeting for a minimum of four years. At the director's discretion, the director may require the manufacturer to provide a certification from an independent testing facility stating that the sheeting meets the standards as specified in this rule.
- (G) The photometric retroreflective performance values of the white sheeting, when new, shall be no less than fifty as described below:

| Observation angle | Incidence angle | |
|-------------------|-----------------|--------------|
| 0.2 | -4 | 30 |
| | 50 (minimum) | 20 (minimum) |

(Photometric retroreflective performance values are expressed as minimum candlepower/foot-candle/square foot of retroreflective license plate sheeting.)

Measurements shall be computed in accordance with standard photometric procedure as set forth in federal specification LS 300 C, "Sheeting and Tape, Reflective: Non-Exposed Lens," dated July 12, 1974, and as incorporated in ASTM D4956, "Standard Specification for Retroreflective sheeting for Traffic Control,"

approved September 10, 1995, and shall be expressed as candlepower/foot-candle/square foot. ASTM standards are available from the "American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, (610) 832-9500, web site: <http://www.astm.org>. ASTM standards incorporated by reference in this rule may be viewed at the "Ohio Department of Public Safety, Office of Legal Services, 1970 West Broad Street, Columbus, Ohio 43223."The retroreflective sheeting shall retain a minimum photometric retroreflective performance value of at least twenty-five candlepower/foot-candle/square foot rating at the end of four years under normal use and conditions on a passenger vehicle. In no case shall the minimum test using clean rear license plates be less than twenty-five candlepower/foot-candle/square foot.

- (H) Except as otherwise provided in this rule, the dimensions of the license plate shall be twelve inches in width and six inches in height. The plate shall have bolt holes blanked with center-to-center spacing of seven inches, centered horizontally, and four and three-quarters inches, centered vertically.
- (I) The dimensions of license plates for motorcycles, motorized bicycles, and any all-purpose vehicles required by statute to display a license plate shall be seven inches in width and four inches in height. The plate shall have bolt holes blanked with center-to-center spacing of five and three-fourths inches, centered horizontally, and two and three-fourths inches, centered vertically.
- (J) If it is technologically practical to do so, the license plate may contain graphic symbols showing the date of expiration and the county of registration name or number in lieu of a validation sticker or county identification sticker.

Effective: 06/23/2016

Five Year Review (FYR) Dates: 04/08/2016 and 04/08/2021

CERTIFIED ELECTRONICALLY

Certification

06/13/2016

Date

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