

**CHAPTER 7440**  
**DEPARTMENT OF PUBLIC SAFETY**  
**STATE PATROL DIVISION**  
**SLOW MOVING VEHICLE EMBLEMS**

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**7440.0100 DEFINITIONS.**

Subpart 1. **Scope.** For the purposes of this chapter the following terms shall have the meanings given them.

Subp. 2. **ASAE.** "ASAE" is an abbreviation for American Society of Agricultural Engineers.

Subp. 3. **ASTM.** "ASTM" is an abbreviation for American Society for Testing and Materials.

Subp. 4. **Portable emblem.** "Portable emblem" means the slow moving vehicle emblem when attached to the backing material specified in part 7440.0400, subpart 4.

Subp. 5. **SAE.** "SAE" is an abbreviation for Society of Automotive Engineers.

Subp. 6. **Slow moving vehicle.** "Slow moving vehicle" means all animal-drawn vehicles, implements of husbandry, and other machinery, including all road construction machinery, except when used in actual construction and maintenance work as qualified by Minnesota Statutes, section 169.522, which are designed for operation at a speed of 25 miles per hour or less. These vehicles are those that normally travel at rates of speed slower than regular vehicular traffic (vehicles that have a maximum travel speed of less than 25 miles per hour).

Subp. 7. **Slow moving vehicle emblem.** "Slow moving vehicle emblem" means the triangular multicolored device used to identify slow moving vehicles.

Subp. 8. **SMV.** "SMV" is an abbreviation for slow moving vehicle.

**Statutory Authority:** *MS s 169.522 subd 1*

**7440.0200 PURPOSE AND SCOPE.**

Subpart 1. **Purpose.** The purpose of this chapter is to carry out the mandate of the legislature and to effectuate that mandate as set forth in Minnesota Statutes, section 169.522, with reference to standards and specifications for the design and position of mounting of slow moving vehicle emblems.

Subp. 2. **Scope.** The scope of this chapter is confined within the framework of and intended to be consistent with Minnesota Statutes, section 169.522.

**Statutory Authority:** *MS s 169.522 subd 1*

**7440.0300 DESCRIPTION OF SLOW MOVING VEHICLE EMBLEM.**

The SMV emblem consists of a fluorescent yellow-orange triangle with a dark red reflective border. The yellow-orange fluorescent triangle provides a brightly visible daylight identification. The reflective red border defines the shape of the fluorescent triangle in daylight and appears as a hollow red triangle when illuminated by motor vehicle headlights at night.

**Statutory Authority:** *MS s 169.522 subd 1*

**7440.0400 DESIGN STANDARDS AND SPECIFICATIONS.**

Subpart 1. **Dimensional requirements.** The size shall be as shown in part 7440.9920. Size of backing material for portable SMV emblems shall have the same geometric shape as the emblem and may be slightly larger in order to provide a margin of not more than one-fourth inch.

Subp. 2. **Color and reflectivity.** The design standards and specifications for color and reflectivity are:

A. The spectrophotometric color values of the yellow-orange fluorescent material shall have a dominant wave length of 590-610 millimicrons and a purity of 98 percent before exposure test, specified in subpart 3. The dominant wave length of the fluorescent material after exposure test shall not change more than ten percent.

B. The dark red reflective material shall have minimum intensity values at each of the angles listed in part 7440.9910, with all measurements conducted in accordance with photometric testing procedures for reflex-reflectors as specified in SAE Standard, J594, Reflex Reflectors, and using 50 plus or minus five square inches of reflective material. The maximum dimension of the test surface shall not be greater than 1-1/2 times the minimum dimension.

C. After exposure test, specified in subpart 3, the minimum reflective intensity values for the reflective material shall not change more than 20 percent from the values specified in part 7440.9910.

Subp. 3. **Exposure.** The fluorescent and reflective material shall show no appreciable discoloration, cracking, crazing, blistering, loss of durable bond, or dimensional change after exposure to the sun at an angle of 45 degrees to horizontal and facing south per ASTM Standard D1014, Method of Conducting Exterior Exposure Tests of Paints on Steel, for appropriate test period as shown in part 7440.9915.

Subp. 4. **Backing material.** The backing material for portable SMV emblems shall be 0.040 inch minimum thickness aluminum sheet, 22 gauge (0.030 inch) minimum thickness mill-galvanized or coated sheet steel, or other material of equal strength, with the application surface clean and free of oil, grease, etc., so as to be receptive to a durable bond of the fluorescent and reflective materials. The backing material shall be free of burrs and corners shall be slightly rounded.

Subp. 5. **Reports.** The manufacturer of SMV emblems shall supply certified test reports showing compliance with the design standards and specifications upon request by the commissioner of public safety.

**Statutory Authority:** *MS s 169.522 subd 1*

**7440.0500 STANDARDS AND SPECIFICATIONS FOR MOUNTING.**

Subpart 1. **Location.** The SMV emblem shall be mounted point up, as shown in part 7440.9920 in a plane perpendicular to the direction of travel. It shall be placed centrally at the rear of the vehicle, unobscured, and two to six feet above the ground measured to the lower edge of the emblem.

Subp. 2. **Attachment.** The SMV emblem may be permanently attached to the vehicle or equipment when practical. Unless the SMV emblem is attached directly and permanently to the vehicle, it shall be mounted by using devices designed to hold the emblem in the position and location specified in item A.

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## SLOW MOVING VEHICLE EMBLEMS 7440.9915

The SMV emblem mounting device referred to in Minnesota Statutes, section 169.522 shall be the socket specified in the ASAE Standard S277 current at the time of manufacture or assembly of the SMV.

Subp. 3. **Limitations.** The emblem shall not replace any other lamps, lights, reflectors, or warning devices required by law or rule and is not to be used as a clearance marker for wide equipment.

**Statutory Authority:** *MS s 169.522 subd 1*

### TABLES, FORMS, AND EXHIBITS

#### 7440.9910 MINIMUM REFLECTIVE INTENSITY VALUES.

Divergence (Observation) Angle, Deg.	Incidence (Entrance) Angle, Deg.	Reflective Intensity, R*
0.2	0	10
0.2	15	7
0.2	30	5
0.5	0	5
0.5	15	4
0.5	30	2

\*The reflective intensity (R) is computed from the equation:

$$R = \frac{(L_r)(d^2)}{(L_s)(A)}$$

where:

R = reflective intensity, candlepower per incident foot-candle per square foot

L<sub>r</sub> = illumination incident upon receiver at observation point, foot-candles

L<sub>s</sub> = illumination incident upon a plane perpendicular to the incident ray at the test specimen position, foot-candles

d = distance from test specimen to source of illumination (100 ft. as specified in SAE Standard J594), feet

A = area of test surface, square feet

**Statutory Authority:** *MS s 169.522 subd 1*

#### 7440.9915 MINIMUM EXPOSURE TEST PERIODS.

Minimum Test Period, Months

Location	Fluorescent	Reflective
Outside in Midwest or	12	24
Outside in Miami, Florida	6	12

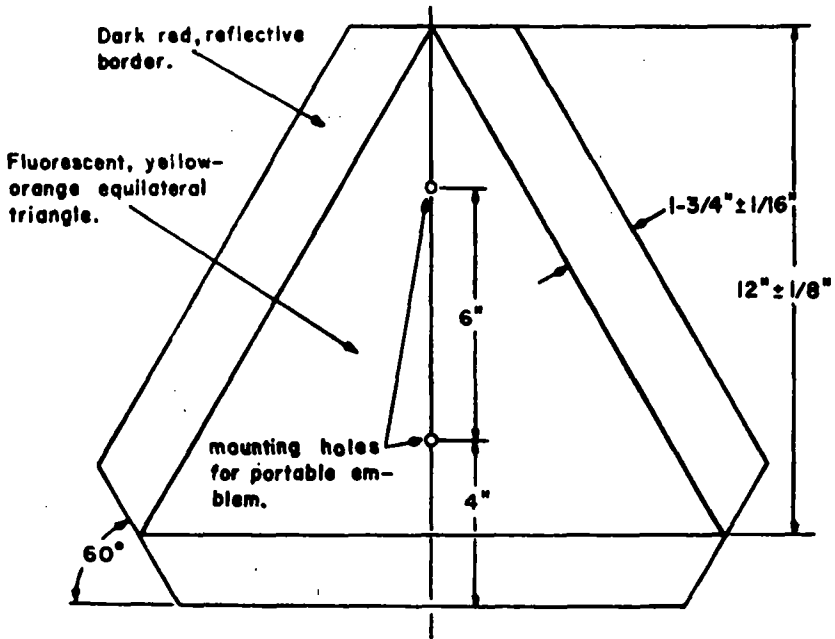
**Statutory Authority:** *MS s 169.522 subd 1*

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## 7440.9920 SLOW MOVING VEHICLE EMBLEMS

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### 7440.9920 SMV EMBLEM.



Statutory Authority: *MS s 169.522 subd 1*