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Lighting and Marking of Industrial Equipment on Highways

Foreword—This Document has not changed other than to put it into the new SAE Technical Standards Board Format.

1. **Scope**—To provide specifications for lighting and marking of industrial wheeled equipment whenever such equipment is operated or traveling on a highway.

2. **References**

2.1 **Applicable Publications**—The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J94—Combination Tail and Floodlamp for Industrial Equipment

SAE J95—Headlamps for Industrial Equipment

SAE J585—Tail Lamps (Rear Position Lamps)

SAE J594—Reflex Reflectors

SAEJ725—Mounting Brackets and Socket for Warning Lamp and Slow-Moving Vehicle (SMV) Identification Emblem

SAE J943—Slow-Moving Vehicle Identification Emblem

3. **Definitions**

3.1 **Industrial Wheeled Equipment**—is defined as that class of tractors and associated equipment used in operations such as landscaping, construction services, loading, digging, grounds keeping, and highway maintenance.

3.2 **Propelling Machines**—Tractors or self-propelled units.

3.3 **Towed, Semimounted, and Mounted Equipment**—Equipment used in conjunction with propelling machines defined in paragraphs 3.1 and 3.2.

3.4 **Highway**—The entire width between the boundary lines of every way publicly maintained, when any part thereof is open to the use of the public for purposes of vehicular travel (Uniform Vehicle Code).

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3.5 Reflectors—In this standard, reflectors are defined as reflex reflectors (SAE J594) or reflective material that shall be visible at night from all distances within 600 to 100 ft (182.9 to 30.5 m), when directly in front of lawful lower beams of headlamps. Reflective material shall meet the durability requirements for such material as specified in SAE J943.

4. Lighting And Marking Requirements

4.1 Lighting and marking for equipment defined in paragraph 3.3 shall include the following:

- 4.1.1 At least two headlamps conforming to SAE J95 and mounted at the same level and as widely spaced laterally as practicable. Lamps projecting a trapezoidal light pattern and mounted at a height of 7 ft (2.1 m) or less shall be aimed so that the top of the beam is at least 1 deg below lamp center level but not more than 4deg below lamp center level, and centered laterally. Such lamps mounted above 7 ft (2.1 m) high shall be aimed so that the top of the beam is at least 6 deg below lamp center level and centered laterally. Lamps projecting a general flood pattern of light shall be aimed downward to provide illumination close to the machine.
- 4.1.2 At least one red tail lamp, conforming to SAE J94 or the test specification section of SAE J585, mounted to the rear of the machine as far to the left as practicable.
- 4.1.3 At least two amber flashing warning lamps, conforming to SAE J96, as widely spaced laterally as practicable, visible from both front and rear and mounted at the same level, and at least 42 in (1067 mm) high as measured to the lamp axis. Lamps shall flash in unison.
- 4.1.4 The flashing warning lamps may be used as turn indicators. When a turn is to be signaled, the flashing light opposite the direction of the turn shall become steady burning until such time that the turn signal is cancelled.
- 4.1.5 At least two red reflectors visible to the rear and mounted to indicate as nearly as practicable, the extreme left and extreme right projections. Reflectors may be incorporated as part of lensing in tail lamps described in paragraph 4.1.2.
- 4.1.6 One SMV (slow moving machine) emblem as described in SAE J943 or means for mounting the SMV emblem, such as a mounting socket as described in SAE J725. The SMV emblem or mounting facility shall be affixed as near to the rear and center of the machine as practicable.

4.2 Marking for equipment defined in paragraphs 3.1 and 3.2, and extending more than 4 ft (1.2 m) to the left of the center of the propelling machine, shall be as follows:

- 4.2.1 At least one amber reflector visible to the front and positioned to indicate, as nearly as practicable, the extreme left projection of the equipment.

4.3 Marking for equipment defined in paragraph 3.3, and (1) extending more than 4 ft (1.2 m) to the rear of the hitch point of the propelling machine, or (2) more than 4 ft (1.2 m) to the right or left of the centerline of the propelling machine, or (3) obscuring any rear lights on the propelling machine, shall be as follows:

- 4.3.1 At least two red reflectors visible to the rear and mounted to indicate, as nearly as practicable, the extreme left and extreme right projections.

4.4 Marking for equipment defined in paragraph 3.3, of such size as to obscure the SMV emblem on the propelling machine shall be as follows:

- 4.4.1 One SMV (slow moving machine) emblem as described in SAE J943 or means for mounting the SMV emblem, such as a mounting socket as described in SAE J725. The SMV emblem or mounting facility shall be affixed as near to the rear and center of the machine as practicable.

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