

Issued 1970-07
Reaffirmed 2002-08

Superseding J167 APR1992

**Overhead Protection for Agricultural Tractors—
Test Procedures and Performance Requirements**

Foreword—This Document has also changed to comply with the new SAE Technical Standards Board Format. Definitions has changed to Section 3. All other section numbers have changed accordingly.

1. **Scope**—This SAE Standard applies to an overhead cover installed on a protective frame or enclosure conforming to SAE J2194 or alternately SAE J1194 and the following additional requirement of a drop test to verify the effectiveness of the overhead cover in protecting the operator from falling objects.

The test procedures and performance requirements outlined in this document are based on currently available engineering data.

- 1.1 **Purpose**—This document establishes test and performance requirements for overhead protection to minimize the frequency and severity of operator injury due to falling objects encountered in normal operation of a wheeled agricultural tractor.

2. **References**

- 2.1 **Applicable Publications**—The following publications form a part of this specification to the extent specified herein.

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

SAE J1150 JUN88—Terminology for Agricultural Equipment

SAE J2194 DEC87—Roll-Over Protective Structures (ROPS) for Wheeled Agricultural Tractors

- 2.1.2 ISO PUBLICATIONS—Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002.

ISO 3462—Tractors and machinery for agriculture and forestry—Seat reference point—Method of determination

ISO 3463—Agricultural and forestry wheeled tractors—Protective structures—Dynamic test methods and acceptance conditions

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2.2 Related Publications—The following publications are provided for information purposes only and are not a required part of this document.

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

SAE J231 JAN81—Minimum Performance Criteria for Falling Object Protective Structure (FOPS)

SAE J1043 SEP87—Performance Criteria for Falling Object Protective Structure (FOPS) for Industrial Machines

SAE J1194 MAY89—Roll-Over Protective Structures (ROPS) for Wheeled Agricultural Tractors

2.2.2 ISO PUBLICATIONS—Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002.

ISO 5700—Agricultural and forestry wheeled tractors—Protective structures—Static test method and acceptance conditions

3. Definitions

3.1 An Agricultural Tractor—is defined in 3.1.1 of SAE J1150.

3.2 Seat Reference Point (SRP)—is defined in accordance with ISO 3462 and referenced in paragraph 3.5 of SAE J2194.

4. Description—This document applies to an overhead cover extending above and over the operator's seat as mounted on a protective frame conforming generally to Figure 1.

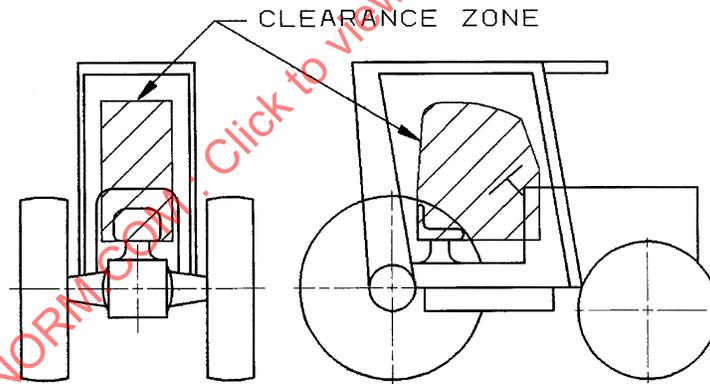


FIGURE 1—TRACTOR WITH TYPICAL OVERHEAD FRAME AND OVERHEAD COVER

5. Specifications for Overhead Cover—The overhead cover may be constructed of a solid material. If grid or mesh is used, the largest permissible opening shall be such that a 38 mm diameter circle is the maximum circle that can be inscribed between the elements of grid or mesh.

6. Test Procedures

6.1 Drop Test Procedure

- 6.1.1 The overhead cover shall be subjected to a drop test using a solid steel sphere or material of equivalent properties and spherical dimension with a mass of 45.4 kg dropped once from a height of 3050 mm above the overhead cover.
- 6.1.2 The point of impact shall be on the overhead cover at a point above the clearance zone which is furthest removed from major structural members. (See Figure 2.)

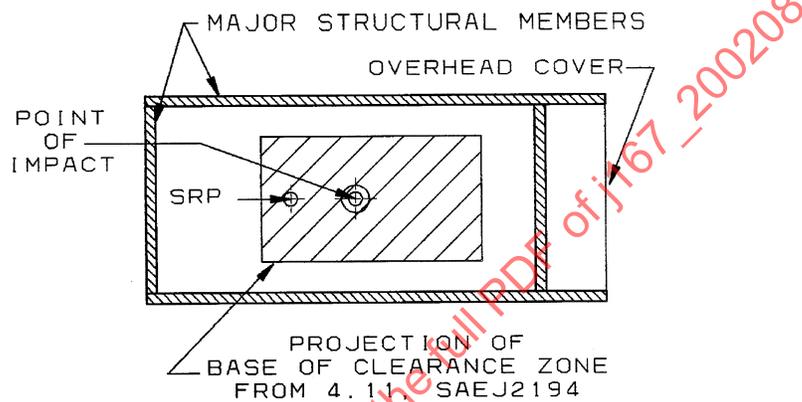


FIGURE 2—DROP TEST POINT OF IMPACT

7. Performance Requirements

7.1 General Requirements

- 7.1.1 Performance requirements specified in Sections 6.7, 6.9, and 11.1.1 of SAE J2194 shall apply.

7.2 Drop Test Performance Requirements

- 7.2.1 Instantaneous deflection due to impact of the sphere shall not enter the clearance zone as illustrated in Figure 11 of SAE J2194.

PREPARED BY THE SAE AGRICULTURAL TRACTOR STANDARDS COMMITTEE