



SURFACE VEHICLE STANDARD	J2265™	NOV2015
	Issued 1995-06 Cancelled 2015-11	
	Superseded by ISO 12156-1 and -2	
Diesel Engines - Diesel Fuel – Performance Requirement and Test Method for Assessing Fuel Lubricity		

RATIONALE

SAE J2265 has been cancelled because the content of this standard is fully covered by ISO 12156-1 and -2. Therefore, to eliminate such redundancy and confusion in coordinating the standards between ISO and SAE, this document is declared cancelled and superseded by ISO 12156-1 and -2.

CANCELLATION NOTICE

This Technical Report has been declared "CANCELLED" as of September 2015 and has been superseded by ISO 12156-1 and -2. By the action, this document will remain listed in the respective index, if applicable. Cancelled Technical Reports are available from SAE.

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This SAE document is similar to ISO CD12156/1 and CD12156/2.

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

All diesel fuel injection equipment has some reliance on diesel fuel as a lubricant. Wear due to excessive friction resulting in shortened life of engine components, such as diesel fuel injection pumps and injectors, has sometimes been ascribed to lack of lubricity in the fuel.

The relationship of test results to diesel injection system component distress due to wear has been demonstrated for some fuel/hardware combinations where boundary lubrication is a factor in the operation of the component.

Test results from fuels tested to this procedure have been found to correlate to some fuel/hardware combinations and provide an adequate predication of the lubricating quality of the fuel.

This SAE document is similar to ISO CD12156/1 and CD12156/2.

1. **Scope**—This SAE Standard specifies: a test method for assessing the lubricating property of diesel fuels including those which may contain a lubricity enhancing additive, and the performance criteria necessary to ensure reliable operation of diesel fuel injection equipment with respect to fuel lubrication of such equipment.

It applies to fuel used in diesel engines.

2. References

- 2.1 **Applicable Publications**—The following publications contain provisions which, through reference in this text, constitute provisions of this document. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this document are encouraged to investigate the possibility of applying the most recent editions of the standards indicated.

2.1.1 ASTM PUBLICATIONS—Available from ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

ASTM D 329—Specification for Acetone

ASTM D 362—Specification for Industrial Grade Toluene

ASTM D 4306—Practice for Sampling Aviation Fuel for Tests Affected by Trace Contamination

ASTM E 18—Standard Test Method for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials

ASTM E 98—Standard Test Method for Vickers Hardness of Metallic Materials

2.1.2 AISI PUBLICATION—Available from AISI, 1000 16th Street, NW, Washington, DC 20036.

AISI E-52100—Chromium Alloy Steel

2.1.3 ANSI PUBLICATION—Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002.

ANSI B3.12—Metal Balls

2.1.4 ISO PUBLICATION—Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002.

ISO 4259—Petroleum products—Determination and application of precision data in relation to methods of test

3. Definitions

3.1 Lubricity—A property of the fluid, measured by the wear scar, in millimeters, produced on an oscillating ball from contact with a stationary plate immersed in the fluid operating under closely controlled conditions.

4. Performance Requirement

4.1 The performance requirement for diesel fuel in compliance with this document shall be a Wear Scar Diameter (WSD) not greater than 0.45 mm at a test temperature of 60 °C. (In the event fuels with a flash point below 60 °C are to be tested, an alternative test temperature of 25 °C may be used. The maximum WSD under this condition is 0.38 mm.)

4.2 There may be additive/fuel combinations with a greater WSD than specified previously which may give acceptable performance as agreed between fuel supplier and purchaser.

5. Summary of Test Method

5.1 The fluid under test is placed in a test reservoir in which the fluid temperature is maintained to the specified option. A fixed steel ball is held in a vertically mounted chuck and forced against a horizontally mounted stationary steel plate with an applied load. The test ball is oscillated at a fixed frequency and stroke length while contact with the plate is fully immersed in the fluid reservoir. The metallurgies of the ball and plate, temperature, load, frequency, and stroke length are specified. The wear scar generated on the test ball is a measure of the fluid lubricating properties.

6. Apparatus

6.1 Test Apparatus¹—Capable of engaging a steel ball loaded against a stationary steel plate with an applied load and oscillating at a fixed frequency and stroke length while the contact interface is fully immersed in a fluid reservoir according to the test conditions as follows:

- a. Fluid Volume—2 mL $\pm$ 0.20 mL
- b. Stroke Length—1 mm $\pm$ 0.02 mm
- c. Frequency—50 Hz $\pm$ 1 Hz
- d. Fluid Temperature—25 °C $\pm$ 2 °C or 60 °C $\pm$ 2 °C

1. HFRR units, HFR2, made by PCS Instruments, The Technology Transfer Centre, Sherfield Building, Imperial College London, SW7 2AZ have been found satisfactory.