This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: D2625 – 20

Standard Test Method for Endurance (Wear) Life and Load-Carrying Capacity of Solid Film Lubricants (Falex Pin and Vee Method)[1]

This standard is issued under the fixed designation D2625; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This test method (see Note 1) covers the determination of the endurance (wear) life and load-carrying capacity of dry solid film lubricants in sliding steel-on-steel applications.

NOTE 1—Reference may be made to Coordinating Research Council, Inc. (CRC) Report No. 419, "Development of Research Technique for Measuring Wear Life of Bonded Solid Lubricant Coatings for Airframes, Using the Falex Tester." See also SAE Aerospace Standard AS5272.

1.2 The values stated in SI units are to be regarded as the standard except where equipment is supplied using inch-pound units and would then be regarded as standard. The metric equivalents of inch-pound units given in such cases in the body of the standard may be approximate.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

B16/B16M Specification for Free-Cutting Brass Rod, Bar and Shapes for Use in Screw Machines

F22 Test Method for Hydrophobic Surface Films by the Water-Break Test

2.2 *U.S. Military Specifications:*[3]

MIL-DTL-16232 Phosphate Coatings, Heavy, Manganese or Zinc Base

2.3 *Other Standards:*

42USC7671a Clean Air Act Amendments of 1990[4]

SAE AS5272 Lubricant, Solid Film, Heat Cured, Corrosion Inhibiting, Procurement Specification[5]

3. Terminology

3.1 *Definitions:*

3.1.1 *dry solid film lubricants, n*—dry coatings consisting of lubricating powders in a solid matrix bonded to one or both surfaces to be lubricated.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *direct load, n*—the load that is applied linearly, bisecting the angle of the vee block corrected to either the 800 lbf (3550 N) gauge reference or the 3000 lbf (13 300 N) gauge reference.

3.2.1.1 *Discussion*—This load is equivalent to the true load times the cos 42°.

3.2.2 *endurance (wear) life, n*—the length of test time before failure under a constant loaded condition, in minutes, in which the applied test lubricant performs its function.

3.2.3 *gauge load, n*—the value obtained from the gauge while running the test after being corrected to the standard curve using the calibration procedure for the 4500 lbf (20 000 N) reference gauge.

3.2.3.1 *Discussion*—The gauge reading is irrespective of the particular gauge used, and corrections are made by comparison to the Brinell ball impression diameters on a standard reference

[1] This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.L0.05 on Solid Lubricants.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from https://quicksearch.dla.mil/qsSearch.aspx.

[4] Available from U.S. Environmental Protection Agency, http://epa.gov.

[5] Available from SAE International (SAE), 400 Commonwealth Dr., Warrendale, PA 15096, http://www.sae.org.

***A Summary of Changes section appears at the end of this standard**

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