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An American National Standard

Standard Guide for Reporting Friction and Wear Test Results of Manufactured Carbon and Graphite Bearing and Seal Materials[1]

This standard is issued under the fixed designation C808; 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.

ε^1 NOTE—Updated titles of the tables editorially in May 2010.

1. Scope

1.1 This guide covers the following areas for reporting friction and wear test results of manufactured carbon and graphite bearing and seal materials:

1.1.1 Description of test device and techniques (Table 1 and Table 2.)

1.1.2 Description of carbon and graphite material test specimen (Table 3).

1.1.3 Description of mating member test specimen (Table 4).

1.1.4 Report of friction and wear test results (Table 5).

1.2 Many types of equipment and techniques will yield consistent data characterizing the friction and wear of carbon and graphite materials. However, the ranking of the materials by the various test methods used is not necessarily the same. This guide is an initial effort to promote more complete description of the test methods, whatever they may be. It is the eventual intent to identify one or more specific standard test methods when sufficient information becomes available.

2. Significance and Use

2.1 The purpose of this guide is twofold. First, it is a research tool that will aid in the analysis and correlation of test results obtained on various test devices by different investigators. Second, it serves to identify important considerations that must be made in testing to make the results easily understood and comparable with the results of other investigators.

3. Keywords

3.1 carbon; friction; graphite; reporting; wear

[1] This guide is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.F0 on Manufactured Carbon and Graphite Products.

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TABLE 1 Description of Test Device and Techniques

DATE _____

1. DESCRIPTION OF TEST DEVICE

1.1 *Preferred Designation, Manufacturer, and Modifications* _____

1.2 *Orientation of Carbon Specimen Test Surface:*
1.2.1 Horizontal ☐
1.2.2 Vertical ☐
1.2.3 Other (describe) _____

1.3 *Description of Sliding:*
1.3.1 Linear ☐
1.3.2 Rotational ☐
1.3.3 Discontinuous motion ☐ Describe _____
1.3.4 Continuous motion ☐ Describe _____
1.3.5 Discontinuous contact ☐ Describe _____
1.3.6 Continuous contact ☐ Describe _____
1.3.7 Approximate duration of test _____ minutes, _____ hours, _____ days

1.4 *Description of Loading System:*
1.4.1 Maximum capacity _____ N (_____ lbf)
1.4.2 Type of measuring element _____
1.4.3 Type of recording device _____
1.4.4 Estimate of error _____
1.4.5 Calibration procedure and frequency _____

1.5 *Description of Speed-Measuring System:*
1.5.1 Maximum capacity _____ m/s (_____ ft/s), _____ rev/min, other _____
1.5.2 Type of measuring element _____
1.5.3 Type of recording device _____
1.5.4 Estimate of error _____
1.5.5 Calibration procedure and frequency _____

1.6 *Description of Temperature-Measuring System:*
1.6.1 Location (describe):
1.6.1.1 Carbon test specimen _____
1.6.1.2 Mating member test specimen _____
1.6.1.3 Fluid (for example, upstream and downstream of test specimens and test cavity) _____

1.6.2 Maximum value:
1.6.2.1 Carbon test specimen _____ K (_____°F)
1.6.2.2 Mating member test specimen _____ K (_____°F)
1.6.2.3 Fluid _____K (_____°F)
1.6.3 Type of measuring element:
1.6.3.1 Carbon test specimen _____
1.6.3.2 Mating member test specimen _____
1.6.3.3 Fluid _____
1.6.4 Type of recording device:
1.6.4.1 Carbon test specimen _____
1.6.4.2 Mating member test specimen _____
1.6.4.3 Fluid _____
1.6.5 Estimate of error:
1.6.5.1 Carbon test specimen _____
1.6.5.2 Mating member test specimen _____
1.6.5.3 Fluid _____
1.6.6 Calibration procedure and frequency:
1.6.6.1 Carbon test specimen _____
1.6.6.2 Mating member test specimen _____
1.6.6.3 Fluid _____

1.7 *Description of Pressure-Measuring System Across Test Specimens:*
1.7.1 Maximum value:
1.7.1.1 Upstream _____ Pa absolute (_____ psia)
1.7.1.2 Downstream _____ Pa absolute (_____ psia)
1.7.1.3 Differential _____ Pa differential (_____ psid)
1.7.2 Type of measuring element:
1.7.2.1 Upstream _____
1.7.2.2 Downstream _____
1.7.2.3 Differential _____
1.7.3 Type of recording device:
1.7.3.1 Upstream _____
1.7.3.2 Downstream _____
1.7.3.3 Differential _____
1.7.4 Estimate of error:
1.7.4.1 Upstream _____
1.7.4.2 Downstream _____
1.7.4.3 Differential _____
1.7.5 Calibration procedure and frequency: _____
1.7.5.1 Upstream _____

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