

Designation: C 808 - 75 (Reapproved 2000)

An American National Standard

Standard Guideline for Reporting Friction and Wear Test Results of Manufactured Carbon and Graphite Bearing and Seal Materials¹

This standard is issued under the fixed designation C 808; 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.

1. Scope

- 1.1 This guideline 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 guideline 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 guideline is two-fold. 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.

¹ This guideline is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.F on Manufactured Carbon and Graphite Products

3. Keywords

3.1 carbon; friction; graphite; reporting; wear

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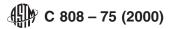


TABLE 1 Description of Test Device and Techniques

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 1.3.4 Continuous motion 1.3.5 Discontinuous contact 1.3.6 Continuous contact 1.3.6 Continuous contact 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) 1.6.3.1 Carbon test specimen K (°F) 1.6.3.2 Mating member test specimen K (°F)	
1.6.4 Type of recording device: 1.a1/catalog/standards/sist/1a107d44-06f9-4a5d-8388-bf59ce2b0158/astm-c808-	752000
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	
1.7 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	
1.7.2.1 Opstream	
1.7.2.3 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	

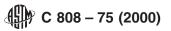


TABLE 2 Description of Test Device and Techniques Continued

1.7.5.2 Downstream
1.7.5.3 Differential
1.8 Description of Fluid Flow Rate Measuring Systems: 1.8.1 Maximum value:
1.8.1.1 Across test specimens
1.8.1.2 Through test cavity
1.8.2 Type of measuring element:
1.8.2.1 Across test specimens
1.8.3 Type of recording device:
1.8.3.1 Across test specimens
1.8.3.2 Through test cavity
1.8.4 Estimate of error: 1.8.4.1 Across test specimens
1.8.4.2 Through test cavity
1.8.5 Calibration procedure and frequency:
1.8.5.1 Across test specimens 1.8.5.2 Through test cavity
1.9 Description of Friction-Measuring System: 1.9.1 Maximum capacity
1.9.2 Type of measuring element
1.9.3 Type of recording device
1.9.4 Estimate of error
2. METHOD OF FIXTURING CARBON TEST SPECIMEN
2.1 Rigid 2.2 Pivot (1-D rotational freedom)
2.3 Swivel, Universal (2-D rotational freedom)
2.4 Hydraulic
2.5 Pneumatic
2.5 Pneumatic 2.6 Misalignment radians, other 2.7 Installed Eccentricity (TIR) m (in.)
2.8 Axial Runout (TIR) m (in,)
2.9 Radial Runout (TIR) m (
3. METHOD OF FIXTURING MATING MEMBER
3.1 Rigid 3.2 Pivot (1-D rotational freedom)
3.3 Swivel, Universal (2-D rotational freedom) 3.4 Hydraulic
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3.5 Pneumatic 3.6 Misalignment radians, other
3.7 Installed Eccentricity (TIR) m (in.) 3.8 Axial Runout (TIR) m (in.) ds six/1a107d44-06f9-4a5d-8388-bf59ce2b0158/astm-c808-752000
3.9 Radial Runout (TIR) m (in.)
4. ENVIRONMENTAL CONDITIONS
4.1 Carbon Test Specimen Conditioning Environment:
4.1.1 Fluid medium: air 🗆 (specify moisture content), distilled water 🗆, deionized water 🗖, other (specify composition quantitatively)
4.1.2 Temperature K (°F) 4.1.3 Pressure: ambient □, other
4.1.4 Time at these conditions minutes, hours, days
4.2 Mating Member Test Specimen Conditioning Environment:
4.2.1 Fluid medium: air □ (specify moisture content), distilled water □, deionized water □, other (specify composition quantitatively)
4.2.2 Temperature K (°F) 4.2.3 Pressure: ambient □, other
4.2.4 Time at these conditions minutes, hours, days
4.3 Test Environment:
4.3.1 Fluid medium:
4.3.1.1 Before test condition: air □ (specify moisture content), distilled water □, deionized water □, other (specify composition quantitatively)
4.3.1.3 After test condition (describe quantitatively, if possible, the change in composition or quality)
4.3.2 Substance other than fluid medium initially applied at test specimens interface (for example, lubricating oil)
4.3.3 Fluid temperature:
4.3.3.1 Upstream K (°F) 4.3.3.2 Downstream K (°F)
4.3.4 Fluid pressure:
4.3.4.1 Upstream Pa absolute (psia)
4.3.4.2 Downstream Pa absolute (psia)
4.3.4.3 Differential Pa differential (psid) 4.3.5 Fluid flow through test cavity
4.3.6 Time to reach test conditions minutes, hours
4.3.7 Time at test conditions prior to test minutes, hours