



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

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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

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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	<input type="checkbox"/>
1.2.2 Vertical	<input type="checkbox"/>
1.2.3 Other (describe)	_____
1.3 Description of Sliding:	
1.3.1 Linear	<input type="checkbox"/>
1.3.2 Rotational	<input type="checkbox"/>
1.3.3 Discontinuous motion	<input type="checkbox"/> Describe _____
1.3.4 Continuous motion	<input type="checkbox"/> Describe _____
1.3.5 Discontinuous contact	<input type="checkbox"/> Describe _____
1.3.6 Continuous contact	<input type="checkbox"/> 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	_____