



Standard Practice for Calibration of the James Static Coefficient of Friction Machine¹

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1. Scope

1.1 This practice covers the testing of the James Machine for repeatability of static coefficient of friction, relative to a standard reference interface consisting of the working surfaces of Borco² board and standard leather shoe sole material, or a control polish film and standard leather shoe material. The practice provides basis data on the stability of the James Machine to ensure accurate static coefficient of friction determinations over time and repeated use and for determining if the James Machine is mechanically calibrated and properly aligned.

1.2 This practice is written specifically for James Machines with manual or motorized test table transport. Variations of this practice for the calibration of versions of James Machines which are semi-automated are obvious. Calibration practices suggested by the manufacturer of semi-automatic James Machines should be followed in preference to this practice.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:³

D2047 Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine

¹ This practice is under the jurisdiction of ASTM Committee D21 on Polishes and is the direct responsibility of Subcommittee D21.06 on Slip Resistance.

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² Borco is a registered trademark for a Danish product imported into the United States by Sierra Group, a division of Wallace Leisure Products, Inc. Available from Papyro-Tex A/S, DK-2730, Herlev, Denmark; distributed in North America through drafting and office supply stores under the trade names “Borco,” “Vyco,” and “Altex” board covers.

³ 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.

D2825 Terminology Relating to Polishes and Related Materials

D4103 Practice for Preparation of Substrate Surfaces for Coefficient of Friction Testing

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E178 Practice for Dealing With Outlying Observations

2.2 Federal Specification:

KK-L-165C Leather, Cattlehide, Vegetable Tanned and Chrome Tanned, Impregnated, and Soles⁴

3. Terminology

3.1 *Definitions:* For general definitions, see Test Method **D2047** and Terminology **D2825**.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *Borco, n*—special 5-ply vinyl drawing board cover.

3.2.2 *Borco/standard leather reference interface, n*—working interface consisting of the white side of the Borco material, mounted as described in this practice, and the standard leather shoe sole material, mounted on a precision shoe pad as described in Section 7 of Test Method **D2047**.

3.2.3 *control polish, n*—a reference polish of known or well established Static Coefficient of Friction, as determined by repeated determinations using Test Method **D2047** over a long period of time and preferably by determinations on multiple James Machines.

3.2.4 *control polish/standard leather reference interface, n*—working interface consisting of a dried film of control polish, applied according to the procedures of Practice **D4103** on standard vinyl composition tile, and the standard leather sole material, mounted on a precision shoe pad as described in Section 7 of Test Method **D2047**.

3.2.5 *standard test sequence, n*—series of not less than eight consecutive Static Coefficient of Friction (SCOF) determinations made on the Borco/standard leather interface or control polish/standard leather interface in accordance with this practice. The arithmetic average and standard deviation of one

⁴ Available from Standardization Documents Order Desk, Bldg 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.