ANSI/ESD STM7.1-2013
Revision and Re-designation of ANSI/ESD S7.1-2005

For the Protection of Electrostatic Discharge Susceptible Items
Floor Materials
Characterization of Materials

Electrostatic Discharge Association
7900 Turin Road, Bldg. 3
Rome, NY 13440

An American National Standard
Approved May 13, 2014
ESD Association Standard Test Method for the Protection of Electrostatic Discharge Susceptible Items -

Floor Materials – Characterization of Materials

Approved July 15, 2013
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FOREWORD

This standard test method is intended to provide test methods for evaluating floor materials used to control electrostatic charge. This standard test method covers all floor materials including floor mats, floor coverings, coatings, paints, and floor finishes.

This standard test method is limited to defining procedures for measuring electrical resistance. Electrical resistance is one property that can be used to evaluate the electrostatic performance of floor materials. However, resistance does not fully characterize these materials. An additional property to be considered in the selection and use of floor materials includes triboelectric charge generation; however, this is beyond the scope of this document.

A common source of electrostatic charge in a work environment is the separation of foot or caster from the floor, resulting in the generation of electrostatic charge that can accumulate on personnel and equipment. The effect of this generation and accumulation of electrostatic charge can be minimized with appropriate selection or treatment of the floor material.

To effectively control electrostatic charge, floor materials should be used in conjunction with ESD controlled footwear, wheels, or casters.

This standard test method was originally designated ESD S7.1-1994 and was approved on February 27, 1994. ANSI/ESD STM7.1-2001 was a reaffirmation, re-designation of ESD S7.1-1994 and was approved on May 20, 2001. ANSI/ESD STM7.1-2005 was a revision, re-designation of ANSI/ESD S7.1-2001 and was approved on February 15, 2005. ANSI/ESD STM7.1-2013 is a revision and re-designation of ANSI/ESD S7.1-2005 and was approved on July 15, 2013.

At the time ANSI/ESD STM7.1-2013 was prepared, the 7.0 Flooring Subcommittee had the following members:

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Flexco Corporation

Bruno Guidotti
Forbo Flooring

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ESD Association Standard Test Method (STM): A definitive procedure for the identification, measurement and evaluation of one or more qualities, characteristics, or properties of a material, product, system, or process that yields reproducible test results.
At the time ANSI/ESD S7.1-2005 was prepared, the 7.0 Flooring Subcommittee had the following members:

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TABLE OF CONTENTS

1.0 PURPOSE, SCOPE, AND APPLICATION ................................................................. 1
   1.1 PURPOSE ................................................................. 1
   1.2 SCOPE ................................................................. 1
   1.3 APPLICATION .................................................... 1

2.0 REFERENCED PUBLICATIONS ............................................................................. 1

3.0 DEFINITIONS ......................................................................................................... 2

4.0 PERSONNEL SAFETY .......................................................................................... 2

5.0 EQUIPMENT AND MATERIALS ......................................................................... 2
   5.1 EQUIPMENT REQUIREMENTS ........................................ 2
      5.1.1 Resistance Measurement Apparatus ....................... 2
      5.1.2 Resistance Measurement Electrode(s) .................... 2

6.0 TEST PROCEDURES .......................................................................................... 3
   6.1 PRODUCT QUALIFICATION ........................................................................... 3
      6.1.1 Environment ...................................................... 3
      6.1.2 Materials .......................................................... 3
      6.1.3 Specimen Preparation .......................................... 3
      6.1.4 Pre-conditioning ............................................... 4
      6.1.5 Humidity Conditioning ......................................... 4
      6.1.6 Resistance to Groundable Point .......................... 4
      6.1.7 Resistance Point-to-Point .................................... 5
   6.2 PRODUCT ACCEPTANCE OF INSTALLED OR APPLIED MATERIAL .......... 6
      6.2.1 Resistance to Ground .......................................... 7
      6.2.2 Resistance Point-to-Point .................................... 7
   6.3 REPORTING OF TEST RESULTS .................................................. 8
   6.4 UNUSUAL INSTALLATION SITUATIONS .............................................. 8

7.0 SAMPLE FLOORING RESISTANCE TEST RECORD ........................................... 9

8.0 BIBLIOGRAPHY ................................................................................................. 10

FIGURES
Figure 1: Resistance to Groundable Point Measurement – Product Qualification ........... 5
Figure 2: Resistance Point-to-Point Measurement – Product Qualification .................... 6

ANNEXES
Annex A (Informative): Additional Considerations ....................................................... 11

1.0 PURPOSE, SCOPE, AND APPLICATION

1.1 Purpose
This standard test method provides procedures for measuring the electrical resistance of floor materials used for the control of electrostatic charge and discharge. It also provides test methods for the qualification of floor materials prior to their installation or application, as well as test methods for acceptance and monitoring of floor materials after installation or application.

1.2 Scope
This standard test method establishes procedures for measuring the electrical resistance of floor materials where protection of ESD susceptible items is required. The resistances measured here are from the top surface of the flooring material to its groundable point (or the ground reference) and from top surface to top surface locations. This test method tests conductive and dissipative flooring materials.

1.3 Application
Resistance to groundable point measurements on small laboratory samples may be different from resistance to ground measurements performed on large installed areas, especially when evaluating materials such as floor finishes.
This standard test method relies on resistance measurements utilizing standard instruments to provide a means of evaluating floor materials.
Use of this document or the procedures defined herein DOES NOT APPLY to facilities where ordnance, flammables, or explosives are stored or handled. For these concerns, refer to ASTM F150.

2.0 REFERENCED PUBLICATIONS
Unless otherwise specified, the following documents of the latest issue, revision or amendment form a part of this standard test method to the extent specified herein:
ESD ADV1.0, ESD Association’s Glossary of Terms
ANSI/ESD S6.1, Grounding
ASTM D2240, Standard Test Method for Rubber Property—Durometer Hardness
ASTM D257, Standard Test Methods for DC Resistance or Conductance of Insulating Materials
ANSI/IICRC S100, Standard and Reference Guide for Professional Carpet Cleaning
AATCC 171, Carpets: Cleaning of; Hot Water Extraction Method

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3 American Society for Testing and Materials (ASTM), 100 Bar Harbour Dr., West Conshohocken, PA 19428.
4 International Institute of Carpet and Upholstery Certification 2715 E. Mill Blvd., Vancouver, WA 98661, 206-693-5675
5 AATCC, P.O. Box 12215, Research Triangle Park, N.C. 27709-2215, 919-549-8141