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ESD Association Standard Test Method

***For the Protection of Electrostatic
Discharge Susceptible Items***

***Footwear/Flooring System – Voltage
Measurement in
Combination with a Person***



*Electrostatic Discharge Association
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***ESD Association Standard Test Method for
the Protection of Electrostatic Discharge
Susceptible Items -***

***Footwear/Flooring System –
Voltage Measurement in
Combination with a Person***

Approved March 18, 2016
EOS/ESD Association, Inc.



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FOREWORD

This standard test method¹ is intended to provide test methods for measuring the voltage on a person in combination with footwear and floor materials as a system. This standard test method covers all floor materials used to control Electrostatic Discharge (ESD) including floor mats, floor coverings, coatings, paints and floor finishes together with footwear.

This standard test method is limited to defining procedures for measuring the voltage accumulation on personnel in combination with footwear and floor materials. This test method provides data that is relevant in the user's specific environment, application and controlled laboratory conditions.

A common source of electrostatic voltage on a person in a work environment is when a foot separates from the floor while walking. The effect of this generation and accumulation of electrostatic charge can be minimized with appropriate selection of the footwear/floor system.

To effectively control voltage on personnel, floor materials must be used in conjunction with static control footwear. A footwear/flooring system that is conductive enough to discharge a person also may pose a safety hazard. The work performed with these systems often entails the use of tools and test instruments that operate at voltages high enough to cause electrical shock. The presence of a footwear/flooring system tested using the methods described in this document will not guarantee personnel safety.

This document was originally designated ESD STM97.2-1999 and approved on February 7, 1999. ANSI/ESD STM97.2-2006 was a reaffirmation, re-designation of ESD STM97.2-1999 and was approved on February 26, 2006. ANSI/ESD STM97.2-2016 is a revision of ANSI/ESD STM97.2-2006 and was approved on March 18, 2016.

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¹ **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 yield **reproducible test** results.

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1.0 PURPOSE, SCOPE, AND APPLICATION

1.1 Purpose

This document provides test methods for the measurement of the voltage on personnel that use a footwear-flooring system where protection of electrostatic discharge (ESD) susceptible items is required.

1.2 Scope

This document establishes test methods for the measurement of the voltage on a person in combination with floor materials and static control footwear, shoes or other devices.

1.3 Application

This document provides test methods for voltage measurements of footwear/flooring systems prior to installation or application, and test methods for evaluating and monitoring footwear/flooring systems after installation or application.

Uses in connection with electromagnetic interference (EMI), ordnance, flammables or explosives are excluded along with protection from other sources of damage.

2.0 REFERENCED DOCUMENTS

Unless otherwise specified, the following documents of the latest issue, revision or amendment form a part of this standard to the extent specified herein:

ESD ADV1.0, ESD Association's Glossary of Terms²

ESD TR20.20, ESD Handbook²

ANSI/ESD STM3.1, Ionization²

ANSI/ESD S6.1, Grounding²

ANSI/ESD S7.1, Flooring - Resistive Characterization of Materials²

ANSI/ESD STM9.1, Footwear – Resistive Characterization²

ESD SP9.2, Footwear – Resistive Characterization²

ANSI/ESD STM97.1, Floor Materials and Footwear – Resistance Measurement in Combination with a Person²

AATCC-138, Shampooing: Washing of Textile Floor Coverings³

AATCC 171, Carpets: Cleaning of Hot Water Extraction Method³

ANSI/IICRC S100, Standard and Reference Guide for Professional Carpet Cleaning⁴

² ESD Association, 7900 Turin Road, Bldg. 3, Ste. 2, Rome, NY 13440-2069, 315-339-6937

³ American Society of Textile Colorists and Chemists, P.O. Box 12215, Research Triangle Park, NC 27709-2215, 919-549-8141

⁴ The Institute of Inspection, Cleaning and Restoration Certification, 2715 E. Mill Plain Blvd, Vancouver, WA 98661, 360-693-5675