

ANSI/ESD STM12.1-2019

ESD Association Standard Test Method

ANSI/ESD STM12.1-2019
Revision of ANSI/ESD STM12.1-2013



*For the Protection of Electrostatic
Discharge Susceptible Items*

Seating – Resistance Measurements

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

*An American National Standard
Approved October 17, 2019*

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

Seating – Resistance Measurements

Approved May 29, 2019
EOS/ESD Association, Inc.



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FOREWORD

This standard test method¹ is intended to provide test methods for evaluating seating used in an ESD control program. This standard test method covers all types of seating, including chairs and stools.

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 dissipation of seating intended for use in ESD controlled areas. Resistance, however, does not fully characterize seating. An additional property to be considered in the selection and use of seating includes triboelectric charge generation.

One source of electrostatic charge generation in a work environment is the separation of personnel from chairs, stools or other types of seating along with the movement of seating across the floor. This results in the generation of electrostatic charge that can accumulate on the seating and on personnel. The effect of this generation and accumulation of electrostatic charge can be minimized with the appropriate selection of seating.

To effectively control electrostatic discharge, seating must be used in combination with an ESD controlled floor or mat. Seating is not a primary means of controlling electrostatic charge buildup on personnel in an ESD protective work area. Personal wrist straps or other means of personnel grounding should be used for this purpose.

In the current revision of ANSI/ESD STM12.1, an alternative test methodology has been introduced that allows a significant reduction of the measurements. Instead of measuring the resistance of all test points against all groundable points, if the groundable points are electrically connected, one groundable point can be selected as representative for all measurements.

This document was originally designated ESD STM12.1-1997 and approved on September 20, 1997. ANSI/ESD STM12.1-2006 was a reaffirmation of ESD STM12.1-1997 and was approved on February 26, 2006. ANSI/ESD STM12.1-2013 is a revision of ANSI/ESD STM12.1-2006 and was approved on July 15, 2013. ANSI/ESD STM12.1-2019 is a revision of ANSI/ESD STM12.1-2013 and was approved on May 29, 2019.

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¹ **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 a **reproducible test** result.

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1.0 PURPOSE, SCOPE, AND APPLICATION

1.1 Purpose

This document provides test methods for measuring the electrical resistance of seating used in an ESD control program. This standard test method provides test methods for the qualification of seating prior to installation or application.

1.2 Scope

The test methods established here are designed to measure the resistance of seating. The resistances considered here are measured from various components of the seating to a groundable point, such as a conductive caster or a drag chain. Resistivity measurements are not within the scope or purpose of this standard test method.

1.3 Application

This document relies on resistance measurements utilizing standard instruments as defined in Section 5.0, to provide a means of evaluating seating.

This document does not apply to electrically initiated explosive devices, flammable liquids, or powders.

2.0 REFERENCED DOCUMENTS

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

ANSI/ESD STM11.11, Surface Resistance Measurement of Static Dissipative Planar Materials²

ANSI/ESD S20.20, Development of an Electrostatic Discharge Control Program²

ESD TR53, Compliance Verification²

ASTM D257, Standard Test Method for D-C Resistance or Conductance of Insulating Materials³

3.0 DEFINITIONS

The terms used in the body of this document are in accordance with the definitions found in ESD ADV1.0, ESD Association's Glossary of Terms available for complimentary download at www.esda.org.

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