

*ANSI/ESD STM11.11-2015*

# *ESD Association Standard Test Method*

*ANSI/ESD STM11.11-2015*  
*Revision of ANSI/ESD STM11.11-2006*

*for the Protection of Electrostatic  
Discharge Susceptible Items –*

*Surface Resistance Measurement of  
Static Dissipative Planar Materials*



*Electrostatic Discharge Association  
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*An American National Standard  
Approved July 8, 2015*



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

*Surface Resistance Measurement of  
Static Dissipative Planar Materials*

Approved May 17, 2013  
EOS/ESD Association, Inc.



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(This foreword is not part of ESD Association standard test method ANSI/ESD STM11.11-2015)

## FOREWORD

This standard test method<sup>1</sup> was developed to fulfil a need to measure static dissipative planar materials not provided for by existing ASTM resistivity measurement methods. A static dissipative material, as defined by the ESD Association's glossary of terms, may have volume or surface resistive characteristics, or both. This procedure is a resistance measurement on the surface of the material and is applied without regard to the sample's mechanism of conduction. In cases where it is valid to convert resistance to resistivity, the resistivity values are a factor of ten higher than the resistance values obtained by this test method.

This standard test method specifies test fixture configuration, environmental conditions, a systems verification procedure and the test voltages. This test method has been proven to be repeatable within one half-order of magnitude through inter-laboratory tests.

This standard test method was originally designated EOS/ESD S11.11-1993 and approved on February 9, 1993. ANSI/ESD STM11.11-2001 was a reaffirmation of EOS/ESD S11.11-1993 and approved on May 20, 2001. ANSI/ESD STM11.11-2006 was a reaffirmation of ANSI/ESD STM11.11-2006 and approved on September 10, 2006. ANSI/ESD STM11.11-2015 is a revision of ANSI/ESD STM11.11-2006 and was approved on May 17, 2013.

At the time ANSI/ESD STM11.11-2015 was prepared, the 11.0 Packaging Subcommittee had the following members:

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<sup>1</sup> **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 a **reproducible test** results.

The following individuals made significant contributions to ANSI/ESD STM11.11-2015:

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**ESD Association Standard Test Method for Protection of Electrostatic Discharge Susceptible Items – Surface Resistance Measurement of Static Dissipative Planar Materials**

**1.0 PURPOSE AND SCOPE**

**1.1 Purpose**

This standard test method provides a measurement procedure to determine the surface resistance of planar materials in the static dissipative range.

**1.2 Scope**

This standard test method describes a direct current measurement method that is used for the static dissipative resistance range of planar materials. This test method is not intended for electrically conductive or insulative materials.

**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<sup>2</sup>

ASTM D257, Standard Test Method for D-C Resistance or Conductance of Insulating Materials<sup>3</sup>

**3.0 DEFINITION OF TERMS**

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](http://www.esda.org).

**4.0 REPEATABILITY**

This test method has been shown to have a repeatability of approximately one-half order of magnitude through inter-laboratory tests.

**5.0 PERSONNEL SAFETY**

**THE PROCEDURES AND EQUIPMENT DESCRIBED IN THIS DOCUMENT MAY EXPOSE PERSONNEL TO HAZARDOUS ELECTRICAL CONDITIONS. USERS OF THIS DOCUMENT ARE RESPONSIBLE FOR SELECTING EQUIPMENT THAT COMPLIES WITH APPLICABLE LAWS, REGULATORY CODES, AND BOTH EXTERNAL AND INTERNAL POLICY. USERS ARE CAUTIONED THAT THIS DOCUMENT CANNOT REPLACE OR SUPERSEDE ANY REQUIREMENTS FOR PERSONNEL SAFETY.**

**GROUND FAULT CIRCUIT INTERRUPTERS (GFCI) AND OTHER SAFETY PROTECTION SHOULD BE CONSIDERED WHEREVER PERSONNEL MIGHT COME INTO CONTACT WITH ELECTRICAL SOURCES.**

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<sup>2</sup> EOS/ESD Association, Inc., 7900 Turin Rd, Bldg. 3, Rome, NY 13440, 315-339-6937, [www.esda.org](http://www.esda.org)

<sup>3</sup> ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959 USA, 215-299-5400