ESD Association Standard Test Method

ANSI/ESD STM15.1-2019

ANSI/ESD STM15.1-2019
Revision and Redesignation of ANSI/ESD SP15.1-2011

For the Protection of Electrostatic Discharge Susceptible Items

Methods for the Resistance Testing of Gloves and Finger Cots

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

An American National Standard
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ESD Association Standard Test Method for the Protection of Electrostatic Discharge Susceptible Items

Methods for the Resistance Testing of Gloves and Finger Cots

Approved June 5, 2019
EOS/ESD Association, Inc.

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FOREWORD

This standard test method[1] provides test procedures for measuring the electrical resistance of gloves or finger cots and personnel together as a system. In addition, a procedure for measuring the intrinsic electrical resistance of gloves and finger cots is included. This document applies to all gloves and finger cots used in an electrostatic discharge (ESD) control program. The procedures described in this document provide data that are relevant in the user's specific environment and application.

The system test uses a constant area and force electrode (CAFE) specifically designed for resistance measurements at the thumb and finger-tips. A further advantage of the CAFE is that it can be used to test finger cots as well as gloves using an identical procedure.

This document was originally published on September 11, 2005, and was designated ANSI/ESD SP15.1-2005. ANSI/ESD SP15.1-2011 was a reaffirmation of ANSI/ESD SP15.1-2005 and was approved on February 13, 2011. ANSI/ESD STM15.1-2019 is a revision and redesignation of ANSI/ESD SP15.1-2011 and was approved on June 5, 2019.

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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 a **reproducible test** results.

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This document provides test procedures for measuring the intrinsic electrical resistance of gloves and finger cots, as well as their electrical resistance, together with personnel as a system. The system test provides data that are relevant to the user's specific environment and application.

1.2 Scope

This document applies to all gloves and finger cots with a resistance measured with personnel as a system of less than 1.0×10^{11} ohms.

This document provides test procedures for measuring the electrical resistance of gloves or finger cots. The document also provides methods for performing intrinsic resistance measurements that include surface, volume, and two-point resistance using ANSI/ESD STM11.11, STM11.12, and STM11.13, respectively. "In-use" resistance measurement of the glove/finger cot and personnel together as a system is defined using a constant area and force electrode (CAFE).

2.0 REFERENCED PUBLICATIONS

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 Terms[2]

ANSI/ESD S1.1, Wrist Straps[2]

ANSI/ESD STM11.11 Surface Resistance[2]

ANSI/ESD STM11.12 Volume Resistance[2]

ANSI/ESD STM11.13 Two-Point Resistance[2]

ASTM D257 Standard Test Methods for DC Resistance or Conductance of Insulating Materials[3]

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 http://www.esda.org.

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[3] American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103 215-299-5400; www.astm.org