

ELECTROSTATIC CONDUCTIVITY TEST FOR PLASTIC PARTS

Application

This procedure is used to determine the electrostatic surface conductivity, grounding, and grounding path of plastic parts prepared for electrostatic painting. It is used to ensure that conductive primer has been properly applied to plastic parts (uniform application, providing good grounding path) so that parts can be properly painted during the electrostatic painting process.

Apparatus Required

Electrostatic Voltmeter

A high voltage electrostatic voltmeter capable of measuring residual voltage from 0 to +/- 20,000 volts. (Trek model 341 HV or equivalent). Available from Trek Incorporated, 3932 Salt Works Road, P.O. Box 231, Medina, NY 14103-9973.

Electrostatic Hand Gun

An electrostatic handgun capable of applying an electrostatic charge and atomization pressure to a part in the range normally used for electrostatic painting (65 - 90 kilovolts). Graco Pro 4000 self-generating handgun or equivalent. Available from Graco Incorporated, 6820 Shingle Creek Parkway, Brooklyn Center, MN 55430-1484.

Conductive Grounding Fixture or equivalent

The fixture will be designed to position or attach the prepared plastic part with the same grounding path used for production plant electrostatic painting.

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Date	Action	Revisions
2001 03 20	Revised	Editorial – no technical change A. Cockman
1995 05 16		

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Procedure

1. Identify the grounding point for the part being tested either as specified by the part drawing or engineering document (e.g. SDS, etc.). (If plastic part is fastened to body, the path to ground will lead to metal interface.)
2. Place part in paint application position.
3. Make sure grounding points and/or paint skids are clean and make good contact at part interface.
4. Charge entire part surface with electrostatic handgun for one minute.
5. Measure residual charge with electrostatic voltmeter at several locations.
6. Record residual voltage.
7. Residual voltage should be less than 1000 volts.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.