



Surface Conductivity Test of Coated Plastic Parts

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. This method is used to determine if a plastic part has the potential for electrostatic paint application by measuring dry film conductivity of the part surface (conductive primer or another surface treatment).

1.2 Applicability. This method is designed to be used on plastic parts to test the conductivity of a surface coating.

1.3 Remarks. Not applicable.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

2.3 Additional References. None.

3 Resources

3.1 Facilities.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment. Ransburg 76652 Digital Sprayability/Short Circuit Current Instrument (SCI) or equivalent.

3.3 Test Vehicle/Test Piece. Not applicable.

3.4 Test Time. Timing varies based on the specific materials and test request. See 4.3 for general test timing.

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Personnel trained on the use of the Sprayability Instrument.

4 Procedure

4.1 Preparation.

4.1.1 Properly apply and cure the coating or surface treatment over the specified substrate part or panel following all manufacturer's application, film build, and bake recommendations.

4.1.2 Calibrate instrument per manufacturer's instructions.

4.2 Conditions.

4.2.1 Environmental Conditions. Not applicable.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions.

4.3.1 Maintaining an angle of 90 degrees between the instrument and the surface to be measured, touch the two (2) probes of the instrument to the surface to be measured.

4.3.2 Activate the instrument.

4.3.3 Record the indicated instrument reading to the nearest 0.1 MΩ (Megohm).

4.3.4 Take a minimum of three (3) readings.

5 Data

5.1 Calculations. Report the average of the readings.

5.2 Interpretation of Results. Compare average readings to the applicable material requirement.

5.3 Test Documentation. The test report shall report the material identification, thickness of each layer, total thickness of all layers combined, and the location of where the measurements were taken from the sample.

6 Safety

This Engineering Standard may involve safety requirements for hazardous materials, the method of operations and equipment. This standard does not propose to address all the safety issues associated with its use. It is the responsibility of the user of this standard to ensure compliance with all appropriate safety and health practices. This would include any specific training that may be required. The safety and health standards include site specific rules and procedures, company rules and procedures, and Government Standards. Contact shall be made with the appropriate site Safety and Health personnel for further direction and guidance in these matters.

7 Notes

7.1 Glossary. Not applicable.

7.2 Acronyms, Abbreviations, and Symbols.

MΩ Megohm

SCI Short Circuit Current Instrument

8 Coding System

This standard shall be referenced in other documents, drawings, etc., as follows:

Test to GMW17065

9 Release and Revisions

This standard was originated in October 2013. It was first approved by the Manufacturing Engineering - Global Primer, Topcoat, and Color Technical Team in January 2014. It was first published in January 2014.

Issue	Publication Date	Description (Organization)
1	JAN 2014	Initial publication.
2	FEB 2019	Five year refresh. (Vehicle Systems - Paint Materials and Facility)