



Pump Shear Test - Electrodeposition (ELPO)

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 procedure is intended to evaluate the pump shear stability of an Electrodeposition (ELPO) material.

1.2 Applicability. This test method is applicable for all the ELPO paint which is approved under GMW3008.

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.

GMW3008

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.

3.1.2.1 Alternative test facilities and equipment may also be used by prior agreement between the Materials Engineer and the supplier.

3.2 Equipment.

3.2.1 Use a "Little Giant Pump" or equivalent for shear assessments unless there is prior agreement to use an equivalent alternate.

3.2.2 Twenty-five micron (25 μ) (550 mesh) nylon screen.

3.2.3 Means to control constant temperature by cooling.

3.3 Test Vehicle/Test Piece. Not applicable.

3.4 Test Time. GM responsible engineer and the supplier shall work together to comprehend required test time.

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. A person familiar with the coating equipment and apparatus.

4 Procedure

4.1 Preparation.

4.1.1 Calibration 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 ELPO bath shall be first run through 25 μ (550 mesh) nylon screen, then heated to 35 °C (95 °F) unless otherwise specified.

4.3.2 Pump is primed with electrocoat bath and hoses, cooling coil and cover is secured; 3500 g of bath is standard.

4.3.3 Pump is started and circulates the bath sample at 44 L/minute (11.5 gal/minute) for 16 h. The temperature is to be maintained at 35 °C $\pm$ 1 °C (95 °F $\pm$ 2 °F) by thermostat adjustment.

4.3.4 After the test period is complete, the bath is run through pre-weighed 25 μ (550 mesh) nylon screen. Any residue on the bottom of gallon container is rinsed and poured through the mesh screen also.

4.3.5 The screen and residue are dried for 5 minutes to 10 minutes, 171 °C (340 °F), cooled and reweighed.

4.3.6 Record weight of residue.

5 Data

5.1 Calculations. Report the average of the readings.

5.2 Interpretation of Results. Not applicable.

5.3 Test Documentation. The test report shall report the material identification, and compare residue weight of control to the residue weight of the material being evaluated.

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.

ELPO Electrodeposition

8 Coding System

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

Test to GMW17200

9 Release and Revisions

This standard was originated in July 2014. It was first approved by the Paints - Pretreatment/ELPO Global Technical Team in December 2014. It was first published in December 2014.

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