



Edge Coverage Test for Cathodic 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 designed to evaluate the ability of a cathodic electrocoat to cover sharp metal edges.

1.2 Applicability. This test procedure is applicable for all the electrodeposition (ELPO) paint which is approved under GMW3008.

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

GMW3286

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 Electrocoat bath and coating apparatus.

3.2.2 Knife blades shall be 100 mm x 20 mm, 38 degree angle. See Figure 1.

3.2.3 Salt spray cabinet

3.2.4 Power magnifying scope or lens, 30x.

3.2.5 Test sample, knife blades, shall be cleaned and phosphated prior to electrocoating.

3.3 Test Vehicle/Test Piece. Not applicable.

3.4 Test Time. Not applicable.

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Not applicable.

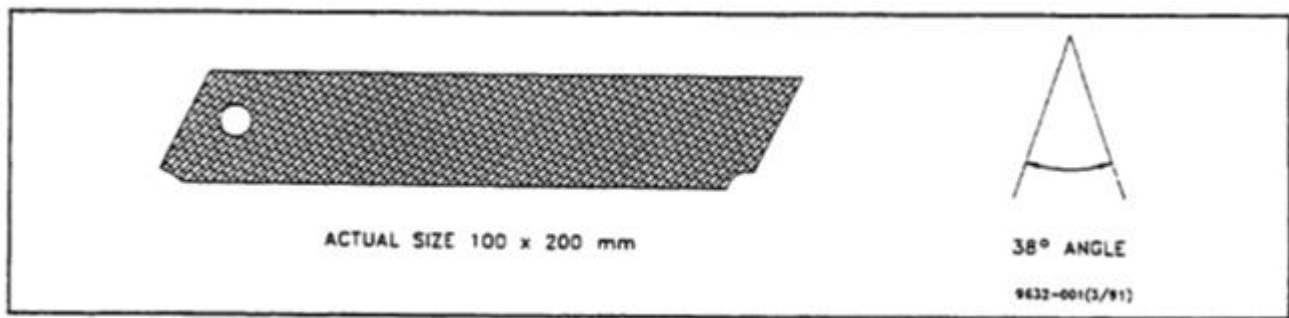


Figure 1: Knife Blade

4 Procedure

4.1 Preparation.

4.1.1 The phosphated knife blade shall be suspended by the hole with a copper wire.

4.1.2 The knife blade shall be electrocoated to the target filmbuild.

4.1.3 Bake at recommended temperature/time.

4.1.4 Knife blades shall be prepared in triplicate for each variable to be tested.

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 Place knife blades in a 5% salt spray cabinet (GMW3286) after they have cooled to room temperature. Blades must be positioned 90 degrees to the horizontal with the sharp edge up and fully exposed. The knife blades shall remain in the cabinet for 168 h.

4.3.2 After 168 h, rinse with deionized water and allow to air dry. Do not wipe the blades.

4.3.3 Rust spots shall be counted along the sharp edge using a 30x power magnifying lens. Record the average of three blades.

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 include 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 standard may involve hazardous materials, operations, and equipment. This standard does not propose to address all the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

7 Notes

7.1 **Glossary.** Not applicable.

7.2 **Acronyms, Abbreviations, and Symbols.**

ELPO Electrodeposition

mm millimeter