



Exterior Emblem and Nameplate Static Corrosion Test

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. To provide a method to simulate accelerated environmental corrosion exposure to exterior emblems that cannot be installed on durability vehicles. This procedure applies to all emblems, except undecorated chrome plated emblems and letters that are not part of an emblem assembly.

1.2 Applicability. This cyclic corrosion test is to be used for validation testing, development testing, and quality control for all exterior emblems and nameplates globally.

1.3 Remarks. The test method is comprised of exterior emblems being mounted on a board/plaque and being exposed to different corrosive sprays/temperatures.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW8738 (ID) GMW14872

(ID) = This standard is limited to internal distribution within General Motors and shall not be distributed outside this company. Contact the GM Lead Engineer for further instructions.

2.3 Additional References.

- Engineering Drawings
- Subsystem Technical Specification (SSTS)

3 Resources

3.1 Facilities. Laboratory.

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.

3.2.1 Winter Stage. The apparatus for this stage shall have the ability to maintain the following environmental conditions:

- Temperature: $-40\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$.
- Humidity: Uncontrolled.
- Duration: Twenty four (24) hours per cycle, repeated five (5) times.

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3.2.2 Spring Stage. The apparatus for this stage shall have the ability to maintain the following environmental conditions:

- Temperature: $28\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$.
- Humidity 1: $95\% \pm 5\%$.
- Humidity 2: Less than $35\% \pm 5\%$.
- Duration: Twenty four (24) hours per cycle, alternating between Humidity 1 and Humidity 2 five (5) total cycles. The spring stage is run as follows: Cycle 1 at Humidity 2, Cycle 2 at Humidity 1, Cycle 3 at Humidity 2, Cycle 4 at Humidity 1, and Cycle 5 at Humidity 2.

3.2.3 Summer Stage. The apparatus for this stage shall have the ability to maintain the following environmental conditions:

- Temperature: $38\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$
- Humidity 1: $95\% \pm 5\%$
- Humidity 2: Less than $35\% \pm 5\%$
- Duration: Twenty four (24) hours per cycle, alternating between Humidity 1 and Humidity 2 five (5) total cycles. The summer stage is run as follows: Cycle 1 at Humidity 2, Cycle 2 at Humidity 1, Cycle 3 at Humidity 2, Cycle 4 at Humidity 1, and Cycle 5 at Humidity 2.

3.2.4 Fall Stage. The apparatus for this stage shall have the ability to maintain the following environmental conditions:

- Temperature: $28\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$
- Humidity 1: $95\% \pm 5\%$
- Humidity 2: Less than $35\% \pm 5\%$
- Duration: Twenty four (24) hours per cycle, alternating between Humidity 1 and Humidity 2 five (5) total cycles. The fall stage is run as follows: Cycle 1 at Humidity 2, Cycle 2 at Humidity 1, Cycle 3 at Humidity 2, Cycle 4 at Humidity 1, and Cycle 5 at Humidity 2.

3.2.5 Hot/Humid Stage. The apparatus for this stage shall have the ability to maintain the following environmental conditions:

- Temperature: $48\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$
- Humidity: $95\% \pm 5\%$
- Duration: Approximately 66 h

3.2.6 Mechanical Convection Oven. Oven capable of maintaining the required temperature for the summer and hot/humid stages to a tolerance of $\pm 3\text{ }^{\circ}\text{C}$.

3.2.7 Humidity Chamber. Chamber capable of maintaining the required temperature for the summer, winter, and hot/humid stages to a tolerance of $\pm 5\%$.

3.2.8 Cold Room or Cold Chamber. Room or chamber capable of maintaining the required temperature for the winter stage to a tolerance of $\pm 3\text{ }^{\circ}\text{C}$.

3.2.9 Rack or Fixture. Rack or fixture constructed out of non-conductive materials such as nylon, capable of holding emblems and nameplates in approximate vehicle position. It should be designed to be easily moved to allow for transition between the various stages.

3.3 Test Vehicle/Test Piece. Not applicable.

3.4 Test Time.

Calendar time:	161 d
Test hours:	3864 h
Coordination hours:	3 h

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Not applicable.

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4 Procedure

This document is a specific test procedure that provides aggravated aging conditions and cycles that are referenced from other specifications. These cycles shall be performed as required in the specific applicable specification. When this procedure is referenced, always follow all applicable instructions for cycles and combinations of cycles, from the source document.

4.1 Preparation.

4.1.1 Label parts such that multiple parts can be easily identified for evaluation. Mount emblems/nameplates to test fixture in approximate vehicle position. Reference Figure 1 for test fixture example.

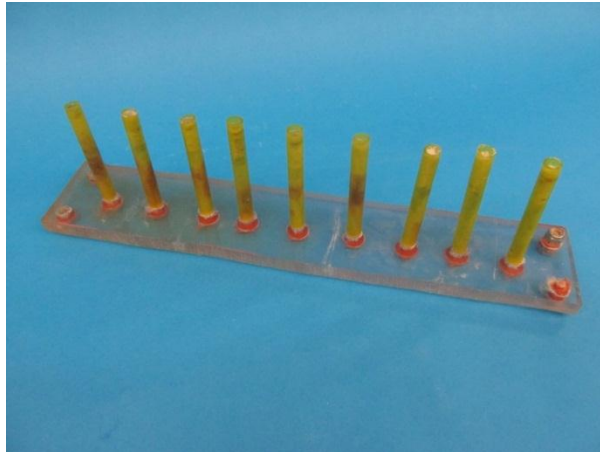


Figure 1: Test Fixture

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 When this specification appears on an engineering drawing or Subsystem Technical Specification (SSTS), actual parts shall be used for this test.

4.3.2 Install parts to test fixture so that they are in approximate vehicle position during the test and held so that parts do not contact each other during the test. Part orientation shall be such that it is not shingled or sheltered by another test part or test fixture. Reference Figure 2.

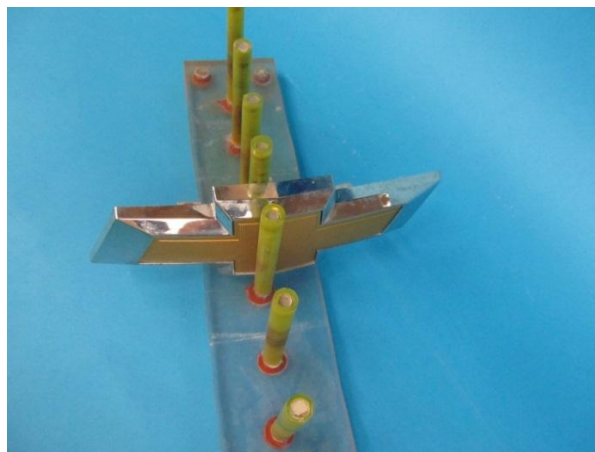


Figure 2: Example of Parts in Test Fixture

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