GM	WORLDWIDE ENGINEERING STANDARDS	General Specification	GMW15725

Performance Requirements for Engine Compartment 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 standard covers the performance requirements of decorative plastic parts used in engine compartment automotive applications as well as applications near the exhaust system. The parts may be functional within themselves or they may be a subassembly of, or attached to, metallic, decorative or functional parts.

Note: Additional requirements for coated or painted plastic parts (e.g., emblems, painted engine covers) are given in the relevant performance specifications, not by this specification.

Note: All materials used in parts or components in contact with the air of the interior compartment must additionally conform to the interior requirements as specified in GMW14444, Code E.

1.2 Applicability. This standard provides the standard material performance requirements for decorative plastic parts in the engine compartment or near the exhaust system. Typical applications of the standard are engine cover, windshield washer fluid reservoir, battery covers, sight shields, etc.

1.3 Remarks. The operating characteristics of parts covered by this standard are operating at continuous temperature of -30 °C up to a maximum continuous temperature according to Table 1. Excursion temperatures can exceed the maximum continuous temperature by +20 °C. These peaks can make up 60 h in the lifetime of the vehicle. Based on the maximum continuous temperature in installation position within the engine compartment or near the exhaust system, the parts are identified by Class 1 through Class 4 according to Table 1.

Table 1: Operating Temperatures

Class	Maximum Continuous Temperature (°C)	Excursion Temperature (°C)
1	≤ +110	+130
2	+110 to +130	+130 to +150
3	+130 to +150	+150 to +170
4	> +150	> +170

2 References

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

2.1 External Standards/Specifications.

ASTM D3012 SAE J1545

2.2 GM Standards/Specifications.

GMW3059 GMW14093 GMW14444
GMW3221 GMW14334 GMW16955

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3 Test Preparation and Evaluation

3.1 Resources.

3.1.1 Facilities.

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

3.1.1.2 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 Equipment. Not applicable.

3.1.3 Test Vehicle/Test Piece. Unless otherwise specified in the relevant test method for the property concerned, either the complete component or a section therefrom shall be used for test pieces. Unless otherwise specified in the appropriate test methods at least one test piece shall be tested.

3.1.3.1 Test pieces shall not be tested within 72 h of manufacture.

3.1.3.2 Conditioning. Unless otherwise stated in respective test procedures, all samples shall be conditioned prior to each requirement test to GMW3221, Code A.

3.1.4 Test Time. As stated in each standard, noted per test procedure in Section 4, including any deviations noted in the procedure paragraph itself.

3.1.5 Test Required Information. Conforming to the relevant test procedures.

3.1.6 Personnel/Skills. Personnel trained in accordance with the laboratory accreditation and Standard Operating Procedure requirements.

3.2 Preparation. Conforming to the relevant test procedures.

3.3 Conditions.

3.3.1 Environmental Conditions. Conforming to the relevant test procedures.

3.3.2 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.

3.4 Instructions. Execute each test per the applicable paragraph instructions for each test within Section 4.

3.5 Data. Not applicable.

3.6 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.

3.7 Documentation. Samples of components or material released to this standard shall be tested for conformity with the requirements of this standard and approved by the responsible GM Department prior to the start of delivery of production level components or materials.

Any change to the component or material, e.g., design, function, properties, manufacturing process and/or location of manufacture requires a new release of the product. It is the sole responsibility of the supplier to provide the customer, unsolicited, with documentation of any change or modification to the product/process, and to apply for a new release.

If not otherwise agreed to, the entire verification test shall be repeated and documented by the supplier prior to start of delivery of the modified or changed product. In some cases, a shorter test can be agreed to between the responsible GM department and the supplier.

3.7.1 Test Results.

3.7.1.1 Test Report. The test report shall have the same outline and numbering as this test specification.

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