GM	WORLDWIDE ENGINEERING STANDARDS	General Specification	GMW17343

Part Performance of Jounce Bumper of Polyurethane Elastomer with Cellular Structure

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/Material Description. This standard describes the performance requirements of the jounce bumper in a shock absorber consisting of materials defined in 1.3.1.

1.2 Symbols. The material abbreviation according to ISO 11469 is >PUR-E<.

1.3 Applicability.

1.3.1 Material. Types A and B describe the components and the typical materials used for those components. Types A or Type B shall be specified on the respective drawings and the approved sources shall be listed in the Materials Approved Source List, under the respective material specification(s).

1.3.1.1 Type A. Polyurethane-Elastomer of Naphthalene-Diisocyanate (NDI)-base, for additional springs and mechanical high stress bumpers.

1.3.1.2 Type B. Polyurethane-Elastomer of MDI-base (4.4 Diphenylmethane Diisocyanate), for bumpers with lower mechanic stress.

2 References

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

2.1 External Standards/Specifications.

ISO 815	ISO 1817	ISO 11469
ISO 845	ISO 3451	

2.2 GM Standards/Specifications.

GMW3059	GMW3221	GMW14357	GMW14358

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. According to the specified test methods in Table 1.

3.1.3 Test Vehicle/Test Piece. For testing the required properties according to Table 1, at least five (5) finished parts are required.

The number, the shape and dimensions of test pieces shall be as specified in the respective test methods listed in Table 1.

3.1.4 Test Time. Reference the lab test procedure(s) in Section 4 for timing details.

3.1.5 Test Required Information. Not applicable.

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3.1.6 Personnel/Skills. Per laboratory accreditation requirements.

3.2 Preparation. As specified in the respective test methods listed in Table 1.

3.3 Conditions.

3.3.1 Environmental Conditions. For initial sample approval and arbitration purposes, the minimum time between production and testing shall be 7 d; for routine quality control tests, the period shall be 72 h minimum. Unless otherwise specified, contrary to the conditioning process described in the relevant test, the test pieces shall be dried prior to the test at (+70 ± 3) °C for a minimum period of 3 h and then conditioned to GMW3221, Code A for at least 16 h.

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. As specified in the respective test methods listed in Table 1.

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. Not applicable.

4 Requirements and Procedure

4.1 General Requirements. The cellular structure of the finished parts shall be regular. It shall be free from voids, hard spots or other flaws.

4.2 Performance Requirements. See Table 1.

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