



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. This standard describes the requirements of the jounce bumper in the shock absorber consisting of materials according to paragraph 1.2.1.

1.2 Applicability.

1.2.1 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 MATSPC database.

1.2.1.1 Type A. Polyurethane-Elastomer of NDI-base (Naphthalene-Diisocyanate).

For additional springs and mechanical high stress bumpers.

1.2.1.2 Type B. Polyurethane-Elastomer of MDI-Base (4.4 Diphenylmethane Diisocyanate).

For bumpers with lower mechanic stress.

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

1.3 Remarks. Not applicable.

2 References

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

2.1 External Standards/Specifications.

ISO 815	ISO 845	ISO 1817	ISO 3451
ISO 11469			

2.2 GM Standards/Specifications.

B 040 1063	B 040 2013	GMW3059	GMW3221
GMW14357	GMW14358		

3 Test Preparation and Evaluation

3.1 Resources.

3.1.1 Facilities. According to the specified tests.

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 tests.

3.1.3 Test Vehicle/Test Piece. For testing the required properties according to paragraph 4.1, 4.2, 4.4, 4.5 and 4.6 at least five finished parts are required.

The number, the shape and dimensions of test pieces refer to the specifications of the respective test methods. The sampling of test piece according to paragraphs 4.6.1 to 4.6.3 are specified on the individual component drawings.

3.1.4 Test Time. Not applicable.

3.1.5 Test Required Information. Not applicable.

3.1.6 Personnel/Skills. Not applicable.

3.2 Preparation. According to the specified tests.

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 days; 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 $(+70 \pm 3) ^\circ\text{C}$ 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. According to the specified tests.

3.5 Data. Not applicable.

3.6 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.

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.

Unless otherwise specified, the tests apply to both versions.

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 Material Properties.

Property	Standard	Unit	Type A	Type B
Density	ISO 845	kg/m ³	according to the relevant Material Specification	
Weight of Parts			see engineering drawing / mathfile	
Ash	ISO 3451 (+600 ± 25) °C Method B	% by mass	≤ 0.5	