



Energy Absorbing Countermeasures

1 Scope

1.1 Material Description. The materials identified by this specification are metals, honeycomb or wire forms, plastic shapes, and plastic foams.

1.1.1 Categories of Energy Absorbing Countermeasures.

1.1.1.1 Type I Metal Countermeasures.

1.1.1.1.1 Type IA Tubes. Hollow wound metal foil wrapped with resonated craft paper or other fibrous material.

1.1.1.1.2 Type IB Brackets. Stamped metal.

1.1.1.2 Type II Plastic Countermeasures.

1.1.1.2.1 Type IIA Honeycomb form.

1.1.1.2.2 Type IIB Thermal-formed shapes.

1.1.1.2.3 Type IIC Injection-molded parts.

1.1.1.3 Type III Foam Countermeasures.

1.1.1.3.1 Type IIIA Polypropylenes.

1.1.1.3.2 Type IIIB Polyethers.

1.1.1.3.3 Type IIIC Polyurethanes.

1.1.1.3.4 Type IIID Extruded/Expanded Polyolefins.

1.1.1.3.5 Type IIIE Polystyrenes.

1.2 Symbols. Not applicable.

1.3 Applicability. These materials are used in headliners, pillars, knee bolsters, door panels, and any other interior area of the vehicle where FMVSS 201, FMVSS 208, and FMVSS 214 criteria need to be met.

1.4 Remarks. This specification shall encompass all head and body side impact energy absorbing countermeasures for interiors, including knee bolsters.

2 References

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

2.1 External Standards/Specifications.

ASTM D925	FMVSS 201	FMVSS 208	FMVSS 214
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2.2 GM Standards/Specifications.

GMW3059	GMW3232	GMW14270	GMW14892
GMW3221	GMW14124	GMW14444	GMW16853

3 Requirements

3.1 Requirements on Test Specimens. Reference GMW3221.

3.2 Emissions Testing of Interior Materials and Parts. For all Code E designated parts per GMW14444, reference GMW16853 for emissions testing of interior materials and parts.

3.3 All materials supplied to this standard must comply with GMW3059, Restricted and Reportable Substances, including the requirement to submit a full material composition disclosure to GM via the International Material Data System (IMDS) or via a completed GMW3059 report form.

3.4 Emissions Testing of Interior Materials and Parts. For all Code E designated parts per GMW14444, reference GMW16853 for emissions testing of interior materials and parts.

3.5 Flammability (GMW3232). All materials approved to this specification must be self-extinguishing burn (SEB) with a burn rate of < 100 mm/minute when tested to the requirements of GMW3232.

3.6 Staining (ASTM D925, Procedure A). No staining is permissible by any countermeasure when submitted to the requirements of this test.

3.7 Dimensional Stability (GMW14124, Cycle H - Interior) Types II and III Only. Samples shall be 50 mm x 50 mm supplied thickness for Type II countermeasures, and 50 mm x 50 mm x 50 mm for the Type III countermeasures. Change in length, height, or width of the test specimens shall be no greater than 3% of the original measurements after being submitted to three cycles, cycle H of GMW14124.

3.8 Identification. All parts must carry identification as to the part number, source, engineering change letter, date of manufacture, run number, and/or Julian date code. The identification must be legible and located where it is visible on an assembly and in a manner that does not interfere with the appearance of the finished product. Inks used for this identification must remain legible on the part surface until the warranty period expires and must not transfer or migrate to adjacent parts.

3.9 Bondability. When any item is adhesively bonded to a countermeasure, they must meet the adhesion requirements of GMW14892. The adhesives used shall be non-injurious to the energy absorbing material. Parts shall not exhibit excessive surface tackiness when received.

4 Manufacturing Process

Not applicable.

5 Rules and Regulations

5.1 Legal Regulations. All materials must satisfy applicable laws, rules, regulations and recommendations valid in the country of usage.

5.2 Language. In the event of conflict between the English and domestic language, the English language shall take precedence.

5.3 Inspection and Rejection. Samples of components or materials released to a GM material specification shall be tested for conformity with the requirements of this material specification and approved by the responsible Engineering department prior to commencement of delivery of bulk supplies.

A new approval must be received for any changes, e.g., properties, manufacturing process, location of manufacture, etc. If not otherwise agreed, all testing and documentation normally required for initial release must be completed.

It is the responsibility of the supplier to inform the customer in a timely manner, without solicitation, and to include documentation of all modifications of materials and/or processes and to apply for a new release.

5.4 Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS). For new product submissions, or when a change in chemical composition of an existing product has occurred, a complete copy of the Material Safety Data Sheet/Safety Data Sheet must be submitted in compliance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) requirements or other country-specific MSDS/SDS requirements.

5.5 All materials supplied to this standard must comply with the requirements of the International Material Data System (IMDS) and GMW3059, Restricted and Reportable Substances.

6 Approved Sources

Materials supplied to this specification must be approved by General Motors.

A list of approved materials can be found in GM Materials Approved Source List. This GM Material File is provided to third parties to reduce redundant testing of materials. If approved material already listed is used, the part supplier can use GM Material File reference for Production Part Approval Process (PPAP) material approval. If the decision is made to use a not yet approved material, contact Materials – Textiles & Trim Materials GSSLT for details on the approval process. The material approval process must be completed prior to PPAP start date of the part supplied to General Motors.