



Polystyrene Particle Foam for Molding

1 Scope

This specification describes the properties for grades of Polystyrene particle foam.

1.1 Material Description. The foam produced for the particle foam will be molded into parts used in the interior of the vehicle

1.2 Symbols. >EPS<.

1.3 Applicability. The EPS foam specified in this specification has the molding applicability for parts used underneath the carpet as fillers.

1.4 Remarks.

1.4.1 Recycled or Alternate Materials. Recycled polystyrene materials may be used for parts under this specification. Prior to incorporating recycled into a finished product, the supplier shall provide data showing that no decrease in performance will occur.

2 References

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

2.1 External Standards/Specifications.

ASTM C203	FMVSS 302	ISO 845	ISO 1926
ASTM C297	ISO 844	ISO 1856	

2.2 GM Standards/Specifications.

GMW3059	GMW3221	GMW14444	GMW15635
GMW3205	GMW3232	GMW15634	GMW16853

2.3 Additional References.

TMC003 Material Safety Data Sheet guidance documents (available at www.gmsupplypower.com).

3 Requirements

Unless otherwise stated, the test shall be applicable for all types.

3.1 Requirements on Test Specimens.

3.1.1 Required Property Values for Documentation. All requirements listed in Table 1 shall be fulfilled by the delivered foam and shall be documented by the supplier in a construction data sheet. Documentation of the additional properties in this construction data sheet may be required by the approving region.

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 Test Requirements.

3.3.1 Test specimens shall be obtained from molded parts or molded foam test buns. These test specimens shall be cut at a minimum of 10 mm below the molded surface of the sample.

3.3.2 Conditioning. All test pieces shall be conditioned to GMW3221, Code A.

3.3.3 All requirements listed in Table 1 shall be tested by the foam manufacturer and results submitted to GM Materials Engineering by using the Foam Certification Data Form in Appendix A.

Table 1: Requirements for Polystyrene Particle Foam

Property	Test Method	Unit	Specified Value				
			Type 1	Type 2	Type 3	Type 4	Type Z Note 1
Density	ISO 845	kg/m ³	20 ± 10%	24 ± 10%	40 ± 10%	60±15%	
Flexural Strength	ASTM C203	kPa	Report	>300	>600	Report	
Compressive Strength at 10% Deformation	ISO 844	kPa	>100	>120	>250	>450	
Tensile Strength	ASTM C297	kPa	N/A	>250	>450	N/A	
Poisson Ratio	ASTM C297	-	N/A	0.14	0.20	N/A	
Emissions Testing of Interior Materials	GMW16853	-	-				
Odor	GMW3205 Code A and B	-	6 minimum				
Fogging	GMW16853-B-Y1-T1	mg	≤2				
Emissions (µg/g) • Volatile Organic Compound (VOC) • Semi-volatile Organic Compound (SVOC)	GMW15634	-	Report				
Carbonyl	GMW15635	mg/kg	Requirements see GMW16853				
Flammability	GMW3232	-	Must comply with FMVSS 302				

Note 1: Type Z. Polystyrene particle foam which does not fit in the other types. Specific Values to be documented on the Certification Data Form.

N/A = Not applicable.

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