



PET Foam Core

1 Scope

1.1 Material Description. This specification covers the properties of a polyethylene terephthalate (PET) closed cell foam.

1.2 Symbols. The material abbreviation according to ISO 11469 is >PET<.

1.3 Applicability. Typical applications include the following: Core material for fiber reinforced plastic laminates such as the Corvette floor panels.

2 References

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

2.1 External Standards/Specifications.

ASTM C297	ISO 845	ISO 1922	ISO 11469
ISO 844			

2.2 GM Standards/Specifications.

GMW3059	GMW3221	GMW14444	GMW16853
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2.3 Additional References.

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

3 Requirements

3.1 Requirements on Test Specimens. Reference GMW3221, Code A.

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 Procedures. Tests shall be conducted using the latest issue of the test methods indicated. Suitable precautions should be taken to ensure that applicable safe limits are not exceeded when conducting test procedures, processes, and/or handling the materials required by this specification.

3.3.1 Properties shall be determined using test specimens cut from foam core slabs cut to a thickness of 20 mm $\pm$ 0.2 mm (except for compressive modulus testing where the test specimen thickness shall be 40 mm $\pm$ 0.2 mm).

3.3.2 Tests shall be conducted immediately following a conditioning period of 24 h at 22 °C $\pm$ 3 °C and 50% $\pm$ 5% relative humidity (RH) unless otherwise specified.

3.3.3 Avoid taking specimens from damaged, contaminated, or defective areas caused by improper handling or manufacturing. Specimens should not be cut within 50 mm of any edge of the sample.

3.4 Test Requirements. See Table 1.

Table 1: Test Requirements

Properties	Test Values	Test Methods
Density	127 kg/m ³ to 143 kg/m ³	ISO 845
Compressive Strength	2.0 MPa minimum	ISO 844
Compressive Modulus at 22 °C	100 MPa minimum	ISO 844
Shear Strength at Break	1.0 MPa minimum	ISO 1922
Shear Modulus	20 MPa minimum	ISO 1922
Tensile Strength	2.0 MPa minimum	ASTM C297 (flatwise)

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. In addition, product MSDS/SDS submissions must be in compliance with specific country General Motors TMC003 Material Safety Data Sheet/Safety Data Sheet guidance documents where available.

5.5 All materials supplied to this standard must comply with the requirements of GMW3059, Restricted and Reportable Substances for Parts.

6 Approved Sources

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

A list of approved materials can be found in MATSPC. 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 the Foam Global Subsystem Leadership Team 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.

7 Notes

7.1 Glossary.

MATSPC: Global repository of GM approved materials for corresponding GM Engineering Standards.