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INTERIOR MOLDED TRIM PANELS

GM2741M

1 SCOPE. This specification covers the performance requirements of interior molded trim panels not covered under GM2739M (rear seat to back window panels), GM2740M (door and quarter trim), or GM7454M (vinyl assemblies). Typical examples are: molded quarter panel, shroud panel, sill plate, carpet retainer, pillar trim. These assemblies may consist of molded plastic, retaining clips, seals, acoustical treatment, and decorative emblems or nameplates. These assemblies can be fiber coated, fabric wrapped, or carpet covered as required. Some components or moldings may be required to meet GM7451M.

NOTE: In instances where test requirements are repeated duplicate testing is not required.

2 REFERENCED STANDARDS.

GM502M	GM7454M	GM9538P
GM1000M	GM9032P	ASTM D1003
GM2739M	GM9070P	SAE J1885
GM2740M	GM9150P	SAE J2212
GM3602M	GM9200P	
GM7451M	GM9505P	

3 SPECIFICATION CONFORMANCE.

3.1 RAW MATERIAL SPECIFICATION CONFORMANCE. The components of the assembly must meet the individual material specifications shown on the engineering drawing in addition to meeting the requirements of this performance specification.

3.2 DESIGN AND MANUFACTURE FOR THE ENVIRONMENT.

3.2.1 Restricted and Reportable Chemicals (GM1000M). By 1997 start of saleable vehicles, all materials supplied to this specification must comply with the requirements listed in GM1000M, "Restricted and Reportable Chemicals."

3.2.2 Recycling Guidelines (GM502M). Materials developed to this specification shall be optimized to provide maximum end-of-life cycle value utilizing the Recyclability Checklist and GM Recycling Design Guidelines. Recycled content shall be reported to the approving and procuring Materials Engineering Departments utilizing the Recycled content Report Form. Reference the GM Recycling Design Guide, GM502M.

4 DETAILED REQUIREMENTS. The following must be met by all assemblies, unless otherwise specified. All assemblies shall be conditioned at and tests shall be performed at 23 ± 3°C and 50 ± 5% RH unless otherwise specified.

4.1 TEST PLAN. All testing shall be performed on samples from the finished assembly. When production assemblies are not available a test plan must be agreeable to the appropriate platform release, materials, and validation engineers in conjunction with the assembly supplier. The test plan shall include the following:

1. Definition of production intent composite (substrate, foam, adhesive, covering material, etc.).
2. Tooling Level. Composite to be manufactured from current production tools, old tools, or prototype tools which most closely approximate the design intent assembly.
3. Process Description. Process shall be documented and closely approximate that of the design intent assembly.
4. Define natural weathering according to GM9538P and 4.2.
5. Specify colors to be tested.

4.2 NATURAL WEATHERING EXPOSURE TESTING. The production assembly or production intent assembly (4.1) shall be tested in car position fixtured simulating production attachment. The assembly shall be exposed in accordance to GM9538P U/G-STC-085 to 30 000 Langleys unless otherwise specified on the engineering drawing as a suffix to this specification. An example is shown below:

Performance: GM2741M, GM9538P U/G-STC-093, 50 000 Langleys

NOTE: **NATURAL WEATHERING REQUIREMENT SHALL BE SPECIFIED BY A SUFFIX FOR ALL APPLICATIONS, STARTING 1996 MODEL YEAR.**

The assembly shall not show any surface deterioration, color or gloss mismatches, warpage, sag, staining, delamination, or other undesirable effects after the exposure. Objectionable color change shall be defined as a measured color change (ΔE) of greater than 3.0. Textiles shall exhibit a rating of 3 or greater using the American Association of Textile Chemists and Colorists (AATCC) Grey Scale. Visual evaluation shall override measure values in cases of disagreement. No objectionable change in appearance is defined as a rating of 6 or greater on the Degradation Rating Scale of GM9538P.

4.3 COLORFASTNESS. Samples from the finished assembly or samples representing each production intent component (4.1) shall be exposed in a Xenon arc apparatus (conditions per SAE J1885 or SAE J2212) to the requirements of the covering material specification (225.6 kJ/m^2 min). The exposed samples must not show any surface deterioration, staining, objectionable color or gloss change, or any other undesirable effect due to the method or process from which the substrate is combined with the covering material and components. The accelerated weathering samples from each of the component parts shall be combined and evaluated to determine if there is a shift in hue, zebra effect, or a mismatch in color.

NOTE: **WHEN NATURAL WEATHERING REQUIREMENT HAS BEEN SUFFIXED THE COLORFASTNESS REQUIREMENT MAY ALSO NEED TO BE REVISED ACCORDINGLY IN THIS SPECIFICATION AND OTHER APPROPRIATE SPECIFICATIONS.**

4.4 DIMENSIONAL STABILITY. When the assembly is mounted either in a car body or an appropriate test fixture, it

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must withstand 2 complete cycles of the GM9505P Cycle H without exhibiting any objectionable distortion, color or gloss change, odor, warping, sag, staining, delamination, or other undesirable effects. The maximum dimensional change must not be greater than the dimensional change allowed for on the assembly drawing. If an allowable dimensional change is not indicated on the drawing, then the dimensional changes should be within build tolerances.

4.5 IMPACT STRENGTH. The assembly is to be mounted either in a car body or an appropriate test fixture for impact testing. The test will be conducted per GM9032P. The panel assembly that has been cycled in Section 4.4should be placed back in the cold chamber at −30 ± 2°C and impacted after it has been exposed for 4 h. Assemblies mounted above the beltline must withstand a 2.0 J minimum impact and assemblies mounted below the beltline must withstand a 3.9 J minimum impact at the location(s) indicated by the engineering drawing. Part size and configuration may necessitate a different impact requirement which should be specified on the engineering drawing. If no location is indicated on the drawing then this test is not required.

4.6 ADHESION OF SURFACE MATERIAL TO SUBSTRATE. The adhesion of the surface material to the substrate of the molding assembly must meet a minimum peel strength of 525 N/m or exhibit substrate delamination following exposure to the cycle detailed in 4.4 and 4.5 of this specification. If the insert is fully recessed protecting all edges the peel strength requirement is reduced to a minimum of 350 N/m. Peel strength should be measured using a 25 x 254 mm sample that is peeled 180° by an Instron or equivalent constant rate of extension (CRE) machine with a crosshead speed of 300 mm/minute. Polypropylene parts should meet a minimum peel strength of 350 N/m unless otherwise specified.

4.6.1 Adhesion of Bonded Components. Adhesively bonded components (ie sound absorbers, trim plates, appliques, etc.) of the molding assembly must meet the requirements of GM3602M. If the insert is fully recessed protecting all edges, or if a non-flexible adherend is used, there is no peel strength requirement but there should be no lifting of the edges following exposure to the cycle detailed in 4.4 and 4.5 of this specification.

4.7 FLAMMABILITY. The trim panel assembly shall not burn or transmit a flame across its surface at a rate of more than 101.6 mm per minute when tested in accordance with GM9070P as received and after accelerated ageing (GM9200P). However, if a material stops burning before it has burned for 60 s from the start of timing and has not burned more than 50.8 mm from the point where timing was started, it shall be considered to meet this requirement.

4.8 SCUFF AND MAR RESISTANCE. The molding assembly shall exhibit satisfactory performance when tested per GM9150P.

5 FASTENING AND HANDLING PERFORMANCE. The molding assembly must meet fastening performance requirements as specified by the GM Releasing Engineer. The molding assembly must have adequate integrity in material and packaging for handling and service procedures. (ie. There should be no loose absorbers, fibers etc. during installation.)

5.1 Identification. All molding assembly parts shall be identified with the fabricator's identification and date of production. If ink is used, it must not be easily rubbed off or cause staining to any trim materials with which it may come in contact. Any changes in marking inks must be approved by the lead GM Engineer before usage or adoption.

6 INITIAL SOURCE APPROVAL. No shipment shall be made by any supplier until representative initial production samples have been approved by engineering as meeting the requirements of this specification.

6.1 Completed copies of the GM Material Safety Data Sheet and Critical Material Register (available from the engineering department or laboratory) must be submitted with any new submissions or where a composition change has occurred.

7 INSPECTION AND REJECTION. All shipments of material or parts under contract or purchase order manufactured to this specification shall be equivalent in every respect to the initial samples approved by engineering. There shall be no changes in either formulation or manufacturing processes permitted without prior notification and approval by engineering. Lack of notification by the supplier constitutes grounds for rejection of any shipment. While samples may be taken from incoming shipments and checked for conformance to this specification, the supplier shall accept the responsibility for incoming shipments meeting this specification without dependence upon purchaser's inspection.

8 APPROVED SOURCES. Engineering qualification of an approved source is required for this specification. Only sources listed in the GM Material File under this specification number have been qualified by engineering as meeting the requirements of this specification. Sources are available through the on-line MATSPC System.

9 GENERAL INFORMATION. This specification was originated by the Textiles Committee in August 1989, revised from FBMS 26-13. The latest revisions include:

Rev	Date	Description	Div
A	11/93	Revised 4 and 4.1	TX

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