



Interior Decorative Trim Technical Specification

T1 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. The primary purpose of the Interior Decorative Trim (IDT) is to provide an attractive appearance within the vehicle's interior while at the same time offering components that comply with subsystem and vehicle level requirements. This document establishes the requirements for the IDT used in General Motors (GM) vehicles. The required functions, performance, appearance, design constraints, and validation of the components are defined by this document.

1.1.1 This standard is broad in scope as it must cover many different constructions, design concepts, and trim levels to meet the needs of the full range of GM vehicles. Therefore, program specific requirements that may not be covered within this specification are identified in the Statement of Requirements (SOR) Appendix C2.

1.2 Applicability. All requirements in this standard apply to each unique decorative trim component, design and interface.

1.3 Remarks. The IDT is typically classified as an injection molded substrate that may be decorated with paint, film, chrome and/or genuine materials such as wood, aluminum or carbon fiber. This specification does not include components that are mold in color, solely painted for gloss control or wrapped in a textile or leather.

2 References

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

2.1 External Standards/Specifications.

ECE R21	FMVSS 118	FMVSS 208	Korea Article 88
ECE R94	FMVSS 201	FMVSS 214	Korea Article 102
ECE R95	FMVSS 203	FMVSS 302	SAE 920104
			U.S. NCAP

2.2 GM Standards/Specifications.

GM2210M	GMW14096	GMW14334	GMW15607
GMW3059	GMW14109	GMW14444	GMW15702
GMW3116	GMW14117	GMW14668	GMW15948
GMW3118	GMW14118	GMW14672	GMW16717
GMW3172	GMW14144	GMW14797	GMW16876
GMW14011	GMW14149	GMW15424	GMW16890
GMW14093	GMW14234	GMW15448	GMW17000
GMW14095	GMW14264	GMW15567	

2.3 Additional References.

Note: Most documents referenced are available either through Supply Power or Socrates. Socrates documents can be obtained by General Motors Program Engineering.

- Analysis, Development and Validation Plan and Report (ADVP&R)
- CG3567 Floor Console Subsystem Technical Specification

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March 2016

Page 1 of 11

- Customer Care and Aftersales Guidelines
- Global Bill of Process (BOP) Guidelines
- GM Global Legal Database
- Governmental Regulations List (see GM Global Legal Database)
- Human Vehicle Interface Guidelines
- IDT Validation Cross Reference Index (VCRI)
- Interior Lighting Best Practice (The supplier shall work with the GM responsible engineer to comprehend this requirement)
- Isolation Material Selection Guide
- Material Compatibility Matrix
- Material Specific Requirement
- Noise and Vibration Integration Resource Center Application (Squeak and Rattle Requirement)
- Occupant Impact Protection Regulations (for each country of sale)
- Reliability Test Methods
- SOR Appendix A
- SOR Appendix B2
- SOR Appendix C1
- SOR Appendix C2
- SOR Appendix D
- SOR Appendix F3
- SOR Appendix F5
- SOR Appendix F10
- SOR Appendix F11
- SOR Appendix F12
- SOR Appendix G2
- Squeak and Rattle Avoidance Plan – Assessment Worksheet
- Squeak and Rattle Checklist
- Squeak and Rattle Noise Glossary
- Subsystem Technical Specification (SSTS)
- Vehicle Technical Specification (VTS)

3 Requirements

3.1 System/Subsystem/Component/Part Definition.

3.1.1 Appearance. SOR Appendix B2 which contains SOR Appendix F5, defines the program appearance requirements such as, grain, color, gloss and finish.

3.1.2 Content.

3.1.2.1 Physical Content. Not applicable.

3.1.2.2 Functional Content. The IDT shall provide;

3.1.2.2.1 The IDT shall provide a pleasing harmonious appearance inside the occupant compartment while complying with Human Vehicle Interface Guidelines.

3.1.2.2.2 The IDT shall maintain its specified appearance, shape, color, texture, fit, and alignment over the target life of the vehicle.

3.1.2.2.3 The IDT shall comply with all applicable governmental regulations and laws for every country of sale.

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March 2016

Page 2 of 11

Documents
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3.1.2.2.4 The IDT shall provide the structural support and attachments necessary for any part of assembly component such as, switches or interior lighting.

3.1.2.2.5 The IDT shall comply with airbag performance requirements.

3.1.2.2.6 The IDT shall comply with the requirements identified within the individual Subsystem Technical Specification (SSTS) within which the decorative trim is assembled.

3.1.2.2.7 The IDT shall provide features that can be assembled and serviced according to the Global Bill of Process (BOP) Guidelines and Customer Care and Aftersales Guidelines respectively.

3.1.3 Ambient Environment. The IDT shall meet the performance requirements identified in this specification while operating within the subsystem operational temperature ranges identified in the respective SSTS. Reference the SOR Appendix C2 for any other specific program requirements.

3.1.4 Interfaces. The IDT components interface with Vehicle Part Partitioning System (VPPS) (See 3.1.4.1 thru 3.1.4.12)

3.1.4.1 Powertrain Driver Interface (Stakeholder: 15.02).

3.1.4.2 Front and Rear Heating, Ventilation and Air Conditioning (HVAC) Airflow (Stakeholder: 30.02, 30.03).

3.1.4.3 Instrument Panel (Stakeholder: 40.01.02).

3.1.4.4 Front Floor Console (Stakeholder: 40.01.03).

3.1.4.5 Steering Wheel (Stakeholder: 40.01.04).

3.1.4.6 Seats (Stakeholder: 40.02).

3.1.4.7 Door Trim (Stakeholder: 40.03.02).

3.1.4.8 Interior Lighting (Stakeholder: 40.04).

3.1.4.9 Side Closures (Stakeholder: 55.01).

3.1.4.10 Information and Controls (Stakeholder: 70).

3.1.4.11 Electrical Function (Stakeholder: 80).

3.1.4.12 Induction/Exhaust/Fuel/Controls/Driveline (Stakeholder: 90.02.02).

Note: The subsystem interfaces are numerous and vary from vehicle to vehicle. The SOR Appendix A defines the responsibility to ensure that all interfaces are identified, developed, documented, agreed to, and validated for the specific vehicle.

3.1.5 Usage Definition. Not applicable.

3.2 Product Characteristics.

3.2.1 Performance Requirements.

3.2.1.1 Governmental Regulations and Consumer Metric Crash Tests.

3.2.1.1.1 Governmental Regulations List. The IDT components individually and as installed must comply with the latest government regulations such as Federal Motor Vehicle Safety Standard (FMVSS) 208 or FMVSS 214 for each country of sale listed in the GM Global Legal Database and in SOR Appendix C2.

3.2.1.1.1.1 All components regardless of country of sale must comply with European governmental regulation Economic Commission Europe (ECE) R21, Interior Fittings unless noted otherwise in SOR Appendix C2.

3.2.1.1.1.2 The GM Global Legal Database supercedes all regulation information within SOR Appendix C2.

3.2.1.2 Consumer Metric Requirements.

3.2.1.2.1 Performance requirements to meet consumer metric crash tests (i.e., New Car Assessment Program (NCAP) and Side NCAP) are full vehicle requirements. The component design must enable the full vehicle to meet the required values for the consumer metric crash test requirements in the program specific Vehicle Technical Specification (VTS).

3.2.1.3 Occupant Impact Protection. The IDT components shall allow the subsystem to comply with all Occupant Impact Protection Regulations for each country of sale, such as ECE R94, ECE R95, Korea Article 102 or FMVSS 208.

3.2.1.3.1 Column Stroke Zone. The IDT components shall be designed to provide a column stroke zone that accommodates full travel of the steering column energy absorbing components. Any components that attach to

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March 2016

Page 3 of 11



Documents

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the Instrument Panel (IP) structure or trim shall be packaged outside of this stroke zone. The packaging space must also clear the column stroke zone for the deformation of these parts.

3.2.1.3.2 Head Impact. The IDT components, as installed within the head impact zone, shall be designed in conjunction with the interfacing subsystem to achieve a head deceleration 20% less (includes intended margin) than the requirement within the country of sale for regulations such as FMVSS 201, ECE R21 and Korea Article 88. Head decelerations that do not meet this threshold require improvement or obtain a deviation approval from the GM Validation Engineer and Design Release Engineer (DRE).

3.2.1.3.3 Part Function after Crash at Threshold Speed. Parts impacted by a belted driver or passenger at or below the frontal airbag deployment threshold speed shall function properly and show no visible damage after impact.

3.2.1.4 Human Vehicle Interface (HVI). The IDT components shall be designed so that the adult 5th percentile female through the 95th percentile male, unless otherwise noted in the VTS, can see and use the displays, controls, and features in an effective manner while in their normal seated positions. The components and interfaces shall comply with the Human Vehicle Interface Guidelines.

3.2.1.5 Visibility.

3.2.1.5.1 Veiling Glare.

3.2.1.5.1.1 Day Time Reflection. When sunlight is reflected off of the IDT back into the windshield or side window and then into the driver's eyes, it is known as Veiling Glare. The IDT components located in the Veiling Glare Zone shall be evaluated by GM using a Multi-Vector Math Based Analysis Tool for all selected finishes.

3.2.1.5.1.1.1 The Veiling Glare Zone is a function of sun angle, IP surface orientation, windshield/side window angle, color, and gloss as defined in SAE 920104. The IDT shall be designed and integrated to minimize or eliminate veiling glare to a subjective rating level equal to or greater than eight (8) according to GMW14264.

3.2.1.5.1.2 Night Time Reflection. Light from back lit IDT components (i.e., ambient lighting, switches, and displays) that reflect off of the windshield and into the driver's eye range is known as Night Time Reflection Veiling Glare. The IDT components with integrated back lit content must be evaluated using the design studies (see 3.2.1.5.2 a thru 3.2.1.5.2 e).

- a. Package lit components such that light emitted from them does not reflect in the driver's forward, side mirror, or rear mirror fields of vision.
- b. Package components, panel break-ups, and openings such that reflections are not in the driver's forward, side mirror, or rear mirror fields of vision.
- c. The IDT components shall shield primary vehicle displays from reflections and glare from external light sources.
- d. Design openings and panel breaks as small as possible to prevent light leaks.
- e. High gloss finishes on the IP top surface shall be shrouded.

3.2.1.6 Part Requirements.

3.2.1.6.1 General Requirements for All Parts.

3.2.1.6.1.1 Miscellaneous Requirements.

3.2.1.6.1.1.1 Parts near an airbag must be securely fastened and must not become projectiles during a crash event.

3.2.1.6.1.1.2 Stationary and moving parts in close proximity to wiring harnesses must not have sharp edges to prevent chafing.

3.2.1.6.1.1.3 Provide adequate access to all electrical connections for assembly and service.

3.2.1.6.1.1.4 Parts must:

3.2.1.6.1.1.4.1 Withstand assembly, actuation and abuse forces as defined by this specification.

3.2.1.6.1.1.4.2 Withstand environmental conditions and forces encountered in transportation or handling.

3.2.1.6.1.1.4.3 Remain secured throughout the vehicles operational temperature ranges.

3.2.1.6.1.1.4.4 Inhibit exposure of underlying material whether stationary or moving.

3.2.1.6.1.1.4.5 Assure that fasteners are not to be visible from any seating positions or while entering and exiting the vehicle.

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March 2016

Page 4 of 11

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