



SURFACE VEHICLE RECOMMENDED PRACTICE

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Interior Automotive Plastic Part Testing

RATIONALE

The Plastics Committee has been determined that SAE J1717 contains basic and stable technology which is not dynamic in nature. There is no need to keep this as an active document.

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Foreword—This document is intended to be used for interior automotive plastic parts in lieu of SAE J1345, Automotive Plastic Parts Specification.

The basis for creation of this SAE Recommended Practice was the existence of variation in testing requirements of finished plastic interior parts within the automotive industry. Considerable benefit to the industry could be obtained if guidelines were developed and adhered to with regards to standardizing:

- a. Minimum testing required to predict in-vehicle performance of plastic parts
- b. Test methods to evaluate plastic part performance

TABLE OF CONTENTS

1.	Scope	2
1.1	Purpose	2
2.	References	2
2.1	Applicable Publications.....	2
3.	Definitions.....	2
4.	Recommended Appearance Evaluation and Testing of Singular Unassembled Interior Plastic Molded Parts	3
5.	Evaluation and Test Equipment	3
6.	Line Call-outs	4
7.	Recommended Line Call-outs for Interior Components	6
Appendix A Appearance As Molded Or After Painting.....		8
Appendix B Dimensional Stability At Service Temperature		10
Appendix C Dimensional Stability After Hot/cold Cycling.....		11
Appendix D Cold-impact Testing, As Molded Or Following Environmental Conditioning		12
Appendix E Color And Gloss Retention		15

1. **Scope**—SAE J1717 is an advisory document suggesting minimum recommended testing, appearance evaluation, and protocol for specifying the recommendations with regard to Singular Unassembled Automotive Interior Trim Parts.

- 1.1 **Purpose**—The purpose of this SAE Recommended Practice is to:

- a. Standardize the testing and appearance evaluation requirements for interior unassembled plastic parts for the automotive industry
- b. Standardize the associated test and appearance evaluation methods
- c. Provide a method for specifying these requirements by the use of a simple line call-out designation

2. **References**

- 2.1 **Applicable Publications**—Testing shall be performed in accordance with current ISO, SAE, ASTM, or test methods detailed in this procedure. The following documents are required to perform the testing specified in SAE J1717.

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.

- 2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J1545—Instrumented Color Difference Measurement for Exterior Finishes, Textile, and Colored Trim
SAE J1885—Accelerated Exposure of Automotive Interior Trim Components Using a Controlled Radiance Water Cooled Xenon-Arc Apparatus

- 2.1.2 ASTM PUBLICATIONS—Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 523—Standard Test Method for Specular Gloss
ASTM D 3029—Impact Resistance of Rigid Plastic Parts by means of a Tup (Falling Weight)

3. **Definitions**

- 3.1 **Automotive Industry**—Includes passenger cars, vans, and trucks.
- 3.2 **User**—The individual utilizing this document to specify component performance requirements.
- 3.3 **Singular Unassembled Automotive Interior Plastic Trim Parts**—Intended to describe plastic parts, as molded, and/or after painting, used for interior components.
- 3.4 **In-Vehicle Performance**—The performance of plastic parts after final assembly into a vehicle and exposure to in-service or other specified environment.
- 3.5 **CHMSL**—Central High-Mounted Stop Light
- 3.6 **PRNDL**—Transmission Detent Indicator (Park, Reverse, Neutral, Drive, Low)
- 3.7 **IP**—Instrument Panel

3.8 HVAC—Heating Ventilation and Air Conditioning**3.9 Escutcheons**—Enclosure trim**4. *Recommended Appearance Evaluation and Testing of Singular Unassembled Interior Plastic Molded Parts***

- 4.1** The recommended appearance evaluation and testing for specific components as reference should be selected from the following:

Appendix A—Appearance as Molded

A1—Color

A2—Gloss

A3—Surface/Grain

Appendix B—Dimensional Stability at Service Temperature

Appendix C—Dimensional Stability After Hot/Cold Cycling

Appendix D—Cold Impact

D1—Pendulum Method

D2—Gardner Method (alternate method)

Appendix E—Color and Gloss Retention

5. *Evaluation and Test Equipment*

- 5.1** The following test equipment and documentation is required to perform the testing specified in this document.

A—Appearance as Molded or After Painting

A1—Color Match to Master

Color Standard

MacBeth Spectralight* (or equivalent)

Color Analyzer (adjustable to SAE J1545)

Procedure—SAE J1545-Appendix A1

A2—Gloss Match to Master

Gloss Master

Glossmeter (60 degree)

MacBeth Spectralight* (or equivalent)

Procedure—ASTM D 523—Appendix A2

A3—Surface/Grain to Master

Grain Standard

MacBeth Spectralight* (or equivalent)

Procedure—Appendix A3

B—Dimensional Stability at Service Temperature

Forced-air oven

Measurement and scribe tools

Dimensional Coordinate Machine (CCM) or equivalent measuring devices

Procedure—Appendix B

C—Dimensional Stability After Hot/Cold Cycling

Forced-air oven

Cold environmental chamber

Measurement and scribe tool

Dimensional Coordinate Machine (CCM) or equivalent measuring devices

Procedure—Appendix C

- D—Cold Impact
 - Pendulum impact tester
 - Gardner impact tester (modified)
 - Cold environmental chamber
 - Procedure—ASTM D 3029-Appendix D
- E—Color and Gloss Retention
 - Atlas CI35, CI65, CI65A Weatherometers
 - Glossmeter (60 degree)
 - MacBeth Analyzer (adjustable to SAE J1545)
 - MacBeth Spectralight* (or equivalent)
 - Procedure—SAE J1885—Appendix E

6. Line Call-outs

- 6.1 A line call-out, which is a part performance specification, shall contain:
- a. This document identification number (SAE J1717)
 - b. The requirement code options as shown in Figure 1, paragraph 5.2, used in conjunction with this component call-out in Section 6.
- 6.2 Table 1 is intended to provide guidance for creating consistent SAE J1717 line call-out codes.
- 6.3 Maximum service temperatures are selected to represent the interior temperature profile in the area of the vehicle in which the component is located.
- 6.4 Figure 1 is an example of a line call-out for SAE J1717 (A123, B85, C85, D20, E600).

This Line Call-out would, for example, indicate:	
SAE J1717	Appearance evaluation and testing of unassembled interior molded parts.
A123	Evaluate the appearance as molded or after painting for: 1 = color 2 = gloss 3 = surface/grain
B85	Dimensional stability as molded, at <u>+85 °C</u>
C85	Dimensional stability after Hot/Cold Cycling: Hot temperature: <u>+85 °C</u> Cold temperature: <u>-29 °C</u>
D20	Cold Impact, 2.0 Joules at <u>-29 °C</u>
E600	Color and gloss retention after <u>600 kJ/m</u> of xenon arc exposure.

FIGURE 1—LINE CALL-OUT EXAMPLE