



Drive Quality Procedure Manual Transmission

1 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. To measure drive quality and other parameters by recording vehicle speed, time, acceleration, accelerator pedal force and displacement (travel), and engine speed.

1.2 Applicability. This procedure applies to passenger cars and light-duty trucks equipped with manual transmissions.

1.3 Remarks. This procedure includes several measurable parameters related to vehicle drive quality. All dynamic tests are run using the Engine Control Unit Accelerator Pedal Sensor (ECU APS) as the primary signal for pedal measurement. Data is obtained that can be used to calculate several drive quality parameters for the Vehicle Technical Specification (VTS).

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

2.3 Additional References.

- CG4086, Accelerator Pedal Measurement for Part B.
- CG4653, Dynamic Vehicle Tests for Part A.
- Vehicle Technical Specification (VTS).

3 Resources

3.1 Facilities.

- Part A: See CG4653.
- Part B: See CG4086.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

3.2.1 Part A: See CG4653. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

3.2.2 Part B: See CG4086. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

3.3 Test Vehicle/Test Piece.

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3.3.1 Part A: See CG4653. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

3.3.2 Part B: See CG4086. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

3.4 Test Time. Check with the test facility for test duration and timing.

Calendar time: 1 day

Test time: 2.15 h

Coordination time: 1.5 h

3.5 Test Required Information.

3.5.1 Part A: See CG4653. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

3.5.2 Part B: See CG4086. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

3.6 Personnel/Skills. Not applicable.

4 Procedure

4.1 Preparation.

4.1.1 Part A: See CG4653. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

4.1.2 Part B: See CG4086. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

4.2 Conditions.

4.2.1 Environmental Conditions.

4.2.1.1 Part A: See CG4653. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

4.2.1.2 Part B: See CG4086. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions.

4.3.1 Part A - Dynamic Vehicle Tests. See CG4653. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

Tests consist of but are not limited to:

- Blocked Accelerator Pedal.
- Deceleration/Coastdown.
- Moving Start/Passing.
- Standing Start Acceleration Performance.
- Steady-State Speed Control.
- Vehicle Speed/Distance Check (GM applications only).

4.3.2 Part B - Accelerator Pedal Measurement. See CG4086. The supplier shall work with the GM Responsible Engineer to comprehend this requirement.

Tests consist of but are not limited to:

- Accelerator Pedal Travel/Displacement.
- Off-Idle Test (competitive vehicles only).
- Pedal Force versus Travel.

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