



## Cold Weather Exposure Test Event: Driveway

### 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 subject a vehicle to forward and reverse operation and to entrance and exit maneuvers on an inclined driveway, utilizing full steer to induce body and chassis torsional forces under cold weather conditions. This procedure is designed to be performed as part of GMW15016 Cold Weather Exposure Test, not as a stand-alone procedure.

**1.2 Applicability.** Refer to parent specification GMW15016.

### 2 References

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

#### 2.1 External Standards/Specifications.

None

#### 2.2 GM Standards/Specifications.

GMW3241

GMW15016

### 3 Resources

**3.1 Facilities.** General Motors Cold Weather Development Centers (Kapuskasing, Canada; Hei He, China; Arjeplog, Sweden).

Hard surfaced 13° driveway, as specified in GMW3241, at the appropriate facility.

**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.** Refer to parent specification GMW15016.

**3.3 Test Vehicle/Test Piece.** Refer to parent specification GMW15016.

**3.4 Test Time.** Not applicable.

**3.5 Test Required Information.** Not applicable.

**3.6 Personnel/Skills.** Refer to parent specification GMW15016.

### 4 Procedure

**4.1 Preparation.** Refer to parent specification GMW15016.

**4.2 Conditions.** Refer to parent specification GMW15016.

**4.2.1 Environmental Conditions.** Not applicable.

**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.

GM Confidential

© Copyright 2014 General Motors Company All Rights Reserved

July 2014

Page 1 of 4

**4.3 Instructions.** This driving event consists of four (4) entry/exits of the hard surfaced 13° driveway ramp (see Figure A1: Driveway Maneuvers).

Vehicle shall be parked in the specified extended cold soak parking area at the end of the previous event. No interior heaters, block heaters, battery blankets, or other supplemental heating or starting aids are to be used. These devices may be used at the request of the test coordinator, but must be documented.

All driveway entrances and exits to be performed smoothly and in a moderate manner at 5 km/h or less, if necessary, to minimize ground contact.

Avoid abrupt transmission shifts, brake applications, or vehicle accelerations while performing the driveway entry/exit maneuvers.

All driving will be done in high range or reverse with an automatic transmission. A manual transmission is to be shifted at speeds compatible with moderate driving. Always turn the steering wheel full right or full left until contacting the stop for each driveway entry/exit maneuver.

**4.3.1** Approach the driveway ramp at the right edge of the approach road. Enter the driveway by turning full right. Return the steering wheel to center position and drive up until the vehicle is completely on the level area. **Stop.**

**4.3.2 Shift to Reverse.** Back out of the driveway by turning full left. **Stop. Shift to High Range.** (Shift manual transmission to appropriate gear for moderate driving.) Drive the vehicle past the driveway entrance. **Stop.**

**4.3.3 Shift to Reverse.** Back into the driveway by turning full left. Return the steering wheel to the center position and back up until the vehicle is completely on the level area. **Stop.**

**4.3.4 Shift to High Range.** (Shift manual transmission to appropriate gear for moderate driving.) Drive out of the driveway by turning full right. Return the steering wheel to the center position and **Stop.**

**4.3.5 Shift to Reverse.** Back into the driveway by turning full right. Return the steering wheel to the center position and back up until the vehicle is completely on the level area. **Stop.**

**4.3.6 Shift to High Range.** (Shift manual transmission to appropriate gear for moderate driving.) Drive out of the driveway by turning full left. **Stop. Shift to Reverse.** Back the vehicle past the driveway entrance. **Stop.**

**4.3.7 Shift to High Range.** (Shift manual transmission to appropriate gear for moderate driving.) Drive into the driveway by turning full left. Return the steering wheel to the center position and drive up until the vehicle is completely on the level area. **Stop.**

**4.3.8 Shift to Reverse.** Back out of the driveway by turning full right. **Stop.**

#### END OF CYCLE

Continue with any events run in conjunction with this procedure.

## 5 Data

**5.1 Calculations.** Not applicable.

**5.2 Interpretation of Results.** Not applicable.

**5.3 Test Documentation.** This event is performed in conjunction with the appropriate city event, all driver comments should be recorded on the city event data sheet.

**Note:** Data sheets are specific to the proving ground where the test is being executed and are not included in this standard.

## 6 Safety

This standard may involve hazardous materials, operations, and equipment. This standard does not propose to address all the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

## 7 Notes

**7.1 Glossary.** Not applicable.

**7.2 Acronyms, Abbreviations, and Symbols.** Not applicable.

### GM Confidential

© Copyright 2014 General Motors Company All Rights Reserved

July 2014

Page 2 of 4



**Documents**

Document Sharing Hub