GM WORLDWIDE ENGINEERING STANDARDS	Test Procedure	GMW15744

Durability Event: Truck Water Holes

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 light duty trucks to traction and environmental conditions similar to that encountered by a customer crossing a stream in off-road service.

1.2 Applicability. The test instructions covered in this standard are intended for use in body on frame trucks and should be adapted at all major GM test sites that test trucks.

- Cruz Alta Proving Ground - Brazil
- Milford Proving Ground - United States of America

This global test procedure is intended to document the test facility requirements and driving instructions necessary to properly execute this durability event. Regional test procedures exist in order to implement this global procedure at the various GM proving grounds. Each regional test procedure includes the driving instructions for the specific access roads to and from the test facility, references to local signs and landmarks, and any other region-specific information necessary to implement this GMW durability event.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW15444

2.3 Additional References.

2.3.1 Cruz Alta. DR.CA.1310.

2.3.2 Milford. DR.MF.TE.

3 Resources

3.1 Facilities. Water Hole Course

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 the appropriate proving ground driving instruction document.

3.3 Test Vehicle/Test Piece. Not applicable.

3.4 Test Time. 11 minutes (proving ground dependent).

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Refer to the appropriate proving ground driving instruction document.

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4 Procedure

4.1 Preparation. Refer to the appropriate proving ground driving instruction document.

4.2 Conditions.

4.2.1 Environmental Conditions. Refer to the appropriate parent specification.

4.2.1.1 This driving module is intended to be executed during dry, wet, and/or snow-covered weather conditions. If any portions of the module, due to inclement weather conditions, are beyond the tractive capability of the vehicle or unsafe, the module should be postponed.

4.2.1.2. If cold weather conditions have caused ice to form over the water the module should be postponed.

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 For All Four High (4HI) Shifts Specified. If the vehicle is equipped with a part time Four Wheel Drive (4WD) system, **shift** the transfer case to 4HI.

If the vehicle is equipped with an All Wheel Drive (AWD) or full time 4WD system, **shift** the transfer case to 4HI Lock.

4.3.2 Conversely, for All Two High (2HI) Shifts Specified. If the vehicle is equipped with a part time 4WD system, **shift** the transfer case to 2HI.

If the vehicle is equipped with an AWD or full time 4WD system, shifts the transfer case to 4HI.

4.3.3 Facility Dimensions. Refer to Figure A1: Durability Water Hole Cross Section for the dimensions of the Durability Water Holes. Figure A2: Midsize Truck Water Hole Cross Section provides the dimensions of the Midsize Truck Water Hole. Similarly Figure A3: Full Size Truck Water Hole Cross Section provides the dimensions of the Full Size Truck Water Hole.

Note: If conditions are encountered when operating in 4HI such that the vehicle does not have adequate torque to complete specific instructions, 4LO may be used.

Note: If the manufacturer's specifications for the test vehicle require that transfer case shifts be done while stopped, the event may be revised to reflect this.

This driving event consists of two passes of the Water Hole Course. See Appendix A "Driving Instructions" for driving speeds and maneuvers relating to this standard.

5 Data

5.1 Calculations. Refer to the appropriate durability test standard.

5.2 Interpretation of Results. Refer to the appropriate durability test standard.

5.3 Test Documentation. Refer to the appropriate durability test 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.

In general, a risk assessment needs to be performed for every driving instruction prior to executing this standard. (**Note:** National law needs to be considered while performing a risk assessment.) The required rating of risk by exposure probability and possible violation will be done in a separate document. Every identified risk must be named inside the risk assessment for the relevant driving instruction in order to announce that risk to employees. Within the risk assessment, the vehicle equipment and different vehicle build stages have to be considered. After performing a risk assessment, non-acceptable risk needs to be mitigated by appropriate countermeasures. Here technical measures are preferred because these are independent from attendant circumstances. In case technical measures are not appropriate, organizational and/or personal measures will apply. This includes training, wearing of Personal Protection Equipment, or arrangement of idle time.

6.1 Safety Precautions.

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