GM WORLDWIDE ENGINEERING STANDARDS	Test Procedure	GMW15669

Durability Event: High Speed Brakes

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 test vehicle to a sequence of high speed braking maneuvers.

1.2 Applicability. The test instructions covered in this standard are intended for use in passenger car and truck testing and should be adapted at all major GM test sites:

- CheongNa Proving Ground - S. Korea
- Cruz Alta Proving Ground - Brazil
- Dudenhofen Proving Ground - Germany
- Guangde Proving Ground - China
- Lang Lang Proving Ground - Australia
- Milford Proving Ground - USA

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 GMW15445

2.3 Additional References.

2.3.1 CheongNa. DR.CN.HSC

2.3.2 Cruz Alta. DR.CA.1293

2.3.3 Dudenhofen. DR.DH.HS&BL

2.3.4 Guangde. DR.GD.IB

2.3.5 Lang Lang. DR.LL.1FB

2.3.6 Milford. DR.MF.IB

3 Resources

3.1 Facilities. Straightaway or similar facility. The specific location/facility used at each proving ground varies. Refer to the appropriate proving ground driving instruction document.

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

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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. 7 minutes (proving ground dependent).

3.5 Test Required Information. Not applicable.

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

4 Procedure

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

4.2 Conditions. Refer to the appropriate parent specification.

4.2.1 Environmental Conditions. In situations where severe weather makes driving unsafe, this module should be postponed until conditions improve. At some regions it may be required for the driver to wear a safety helmet and use the restraint system provided. Refer to the appropriate regional specification for more information.

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. This event includes two (2) hard rate brake stops and one (1) full brake stop at 140 km/h (87 mph).

See Appendix A “Driving Instructions” for driving speeds and maneuvers relating to procedure.

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.

6.1.1 Instrumentation and other test equipment must be securely mounted in accordance with proving grounds traffic safety guidelines for mounting and usage of in-vehicle instrumentation.

6.1.2 All running lights and vehicle safety features must be operational according to proving grounds rules for running lights and power windows. Exterior lights must not be obscured by styling add-ons, covers or camouflage packages. The horn may be disabled because of steer angle transducer installation.

6.1.3 A helmet is required in accordance with the regulations of the test facility. The vehicle should never be operated in a manner where the vehicle leaves the roadway or goes onto the shoulder for any reason.

6.1.4 Check for proper attachment of the steering wheel to the gear via the intermediate shaft. If it feels loose or abnormal, do not run the test until the parts are properly assembled according to the intended design.

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