Cars, Light Trucks and Vans Inspection Methods and Standards

Reference Manual

January 2018

The information contained in this document is confidential and proprietary to the Government of Newfoundland and Labrador. Unauthorized distribution or use of this document or the information contained herein is strictly prohibited.

Copyright and Disclaimer

Government of Newfoundland and Labrador reserves the right to make changes to the information contained in this publication without prior notice. Official Inspection Stations will be notified in all cases where any such changes have taken place.

© Queen's Printer

Table of Contents

Introduction

As partners in road safety, licensed Official Inspection Station appointee's and Authorized Inspection Mechanics must carefully review and apply the vehicle inspection standards contained in the Official Inspection Station Manual, prescribed in the *Official Inspection Station Regulations*, under the *Highway Traffic Act.* This Standard applies to cars, light trucks and vans requiring the issuance of an Official Inspection Station Certificate for the purposes of vehicle registration and/or transfer of ownership. The purpose of the inspection is to ensure that the vehicle meets a minimum safety standard at the time of inspection. A determination must be made as to whether the condition of the vehicle at the time of the inspection conforms to the requirements outlined in this manual.

This Standard replaces all previous versions of the Cars, Light Trucks and Vans Inspection Methods and Standards of the Official Inspection Station Manual. Those documents previously contained the inspection standards applicable to Cars, Light Trucks and Vans as updated in 1994.

All items listed in this Standard must be inspected in accordance with the specific outlined procedures. An Official Inspection Station Vehicle Inspection Certificate is a legal declaration that the vehicle was inspected in accordance with the standards prescribed in the Official Inspection Station Manual and met all of the requirements at the time of the inspection.

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Instructions for Authorized Inspection Mechanics Conducting Inspections

Inspection Methods

The inspection of vehicle components and systems conducted to determine compliance with the Official Inspection Station Manual consists mainly of visual inspection activities in Sections 1-10 and through the completion of an on-road evaluation, details of which are found in Section 11.

An inspection will also involve testing, removal and/or disassembly of components, measurements and other actions in certain cases. Whenever an item requires more than a visual inspection, additional procedures are specifically provided. These are displayed with the heading “Additional Inspection Procedure(s):” appearing before the text describing the necessary steps.

Inspection Outcome Based on Current Vehicle Condition

A pass or fail outcome of a vehicle inspection is based on the condition of the vehicle at the time of the inspection. The determination does not involve a prediction about a vehicle’s condition in the future.

Inspection Report

For each inspection, the authorized inspection mechanic must complete an inspection report. This report must be provided to the customer.

The following items are noted in the Manual as recordable items and must be included on the inspection report.

- Tell-Tales indicating a fault
- Fuel Tank Level
- Tire Tread Depth
- Disc Brakes
    - Rotor Thickness
    - Pad (Friction) Material Thickness of Inner and Outer Brake Pad
- Brake Drum System
    - Brake Shoe Lining Thickness
    - Brake Drum Diameter

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Additional details on the type of information that must be recorded can be found in the respective sections contained in the manual.

Workplace Safety

Some of the inspection procedures described in this manual require the use of tools and equipment, and may involve safety hazards. It is assumed that the individual performing inspections according to this manual is fully familiar with all relevant workplace safety requirements and protocols.

No specific safety warnings are provided within this document. All relevant and appropriate safety precautions are the responsibility of the authorized inspection mechanic and the workplace where the inspection is conducted.

Informational Notes

In many cases, additional information is provided to clarify the inspection procedure or assist in consistent interpretation of the manual. These are displayed with the heading “Note:” appearing before the text.

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Terminology

Application

Various terms and acronyms are used throughout this manual. These terms have specific and consistent meanings as they relate to conducting safety inspections and identifying defective conditions. The purpose of defining these terms is to support consistent interpretation and application of the language used. The terms that are defined below are highlighted whenever they appear in each section to remind the reader that the condition is one of those that is specifically defined. This reminder also appears in the footer of each page of this document.

Definitions

The meaning of each of the terms, for the purposes of conducting inspections according to this manual, is as follows:

"*abnormally worn*" – means unusual, excessive or exceptional wear of a vehicle component, indicative of the presence of some deterioration or defect in that component, or in a related part of a vehicle. This term is used selectively in this manual for a component or system where some wear is normal, and does not directly have any effect on vehicle safety. It is expected that the authorized inspection mechanic knows the amount of wear, and the type of wear, that is typical (normal) based on the age and operation of the vehicle and based on the standards as prescribed by the vehicle manufacturer and or industry standard.

"*broken*" – means burst, cracked, crushed or damaged.

"*CMVSS*" – means Canada Motor Vehicle Safety Standards (CMVSS) and their supporting Technical Standards Documents. These are Canadian safety standards for vehicles that were developed and are updated by Transport Canada.

"*crazed*" – a network of fine cracks in the surface

"*damaged*" – means any unintended condition, or condition caused by means other than normal use, that is likely to impair normal function.

"*industry standard*" – means installation, modification or repair methods described in *industry-accepted standards or recommended practices published* by Mitchell Repair Information Company, ALLDATA, the Society of Automotive Engineers (SAE), I-CAR, Canadian Standards Association (CSA) and other similar documents from similar organizations.

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

"*inoperative*" – means a vehicle component or system that does not operate the way it was originally intended to or the way the vehicle manufacturer intended it to operate.

"*insecure*" – means (a) a component is becoming detached due to deterioration of the means of attachment, or (b) the means of attachment is unable to withstand normal vehicle operation or is not at least equivalent to the OEM standard means of attachment.

"*loose*" – means that an item is detached, or no longer fully attached, due to improper installation, failure or deterioration of one or more means of attachment.

"*missing*" – means that an item is absent (such as "removed" or "detached") that is ordinarily present on the vehicle, was present on the vehicle when the vehicle was manufactured, or is required for normal and safe vehicle operation.

"*manufacturer*" – means the manufacturer of the vehicle, the manufacturer of a major vehicle component or system, or manufacturer of aftermarket parts that are direct replacements for OEM parts.

"*OEM*" – means" original equipment manufacturer" and refers to the "brand name" manufacturer of the vehicle.

"*OEM standard*" – means the manufacturing methods, component and assembly quality levels, and performance levels set by the manufacturer of a vehicle or vehicle component to ensure a vehicle is able to perform safely as intended. It includes component quality, performance levels, repair methods, durability, safety and the service methods outlined in the warranty and service literature provided for the use and maintenance of a vehicle. Parts supplied by OEM, and established aftermarket manufacturers of parts intended for direct replacement of OEM parts, are generally considered to meet OEM standard

"*operate as intended*" – means the manner in which a vehicle component or system ordinarily operates, operated when the vehicle was manufactured, or is required to operate for normal and safe vehicle operation

"*reject if*" – means a condition if present at the time of inspection or after repairs that results in a failed inspection.

"*tell-tale*" – means an optical signal that, when alight, indicates the activation or deactivation of a device, its correct or defective functioning or condition, or its failure to function.

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Categorization of Fluid (Liquid) Leaks

Every reference to a fluid (or liquid) leak listed as a reject condition is categorized with respect to the level of severity of the leak: level 1, level 2 or level 3. Each category is defined below. A vehicle with a leak that meets the defined level, or leaking more severely than this level, will cause the vehicle to fail inspection.

"level 1 leak" – means seepage of fluid that is not great enough to form drops.

"level 2 leak" – means seepage of fluid that is great enough to form drops, but not great enough to cause the drops to fall during inspection.

"level 3 leak" – means seepage of fluid that forms drops that fall during inspection

Illustrations and Diagrams Used in the Manual

In an effort to improve the consistency and uniformity of the inspection process, a series of diagrams and illustrations is used in this version of the Manual. When a diagram or illustration is in conflict with a legislated or regulatory requirement, the latter prevails.

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Measurements and Tolerances

Many of the inspection items and reject conditions involve measurements of mass or weight, pressure and distance. To achieve consistent application of each criterion that involves such a measurement, it is necessary to address the degree of precision associated with such measurements. In determining the appropriate level of precision or tolerance, it is also necessary to consider the measuring tools that will be commonly used to make each of these measurements.

The level of precision associated with any measurement is defined by the tolerance stipulated for it. Tolerance is expressed as a plus or minus (+/-) value. The actual window of precision is double the value of the tolerance. For example, 50 mm (+/- 1 mm), means a value of 49 to 51 mm. The measurement tolerance of 1 mm renders a measurement precision of within 2 mm.

Given the similarities in the measurements that appear most frequently in this Manual, standard tolerances are given for most of these measurements. **The standard tolerances that are listed below apply in all cases where no additional tolerance is provided. In cases where the standard tolerance does not apply, the tolerance for that criterion is provided adjacent to the measurement.** Whenever a tolerance is provided adjacent to a measurement, the tolerance stipulated with the measurement is to be used in place of the standard tolerance listed below.

Measurements of distance are the most common in this Standard, and also have a significant variance in terms of the range of distance that is used. Four different standard tolerance values are used for distance.

Pressure

Metric (SI) pressure value = *kilopascals (kPa)*,
Imperial (American) pressure value = *pounds per square inch or pounds/inch^2 (psi)*
Conversion Factors: *1 kPa = 0.145 psi, 6.9 kPa = 1 psi*
Standard tolerance for <u>all</u> pressure values: *+/- 5 kPa (0.5 psi)*

Distance

Metric (SI) distance value: *millimetre (mm)*
Imperial (American) distance value: *inch (in.)*
Conversion Factors: *1 mm = 0.039 in., 1 in. = 25.4 mm*
Standard tolerance for distance value ranges

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Tolerances for distance measurements vary based on the type and precision of the criterion as follows:

1. **Large distance measurements of greater than 25 mm:** *tolerance is +/- 5 mm (accuracy is to the nearest 10 mm)*
2. **Short distance measurements of 1 to 25 mm, where the distance value is expressed as a whole mm:** *tolerance is +/- 0.5 mm (accuracy is to the nearest 1 mm)*
3. **Precise short distance measurements of 1.0 to 25.0 mm, where the distance value is expressed as one-tenth of a mm:** *tolerance is +/- 0.05 mm (accuracy is to the nearest 0.1 mm)*
4. **Micro distance measurements of less than 1 mm:** *tolerance is +/- 0.005 mm (accuracy is to the nearest 0.01 mm)*

   For the purpose of these tolerances, the following equivalent values are used:

Comparable Measurement Tolerances

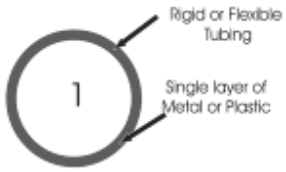
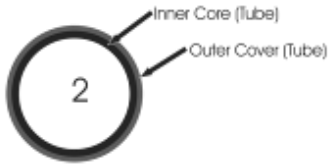
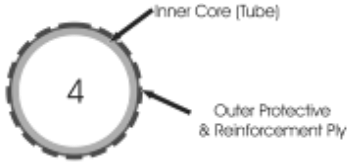
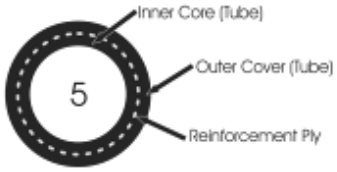
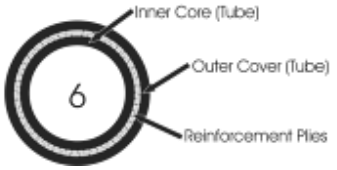
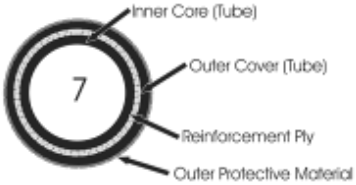
Tolerance in metric measurements	Tolerance in imperial measurements
± 5 mm	± 0.125 (1/8) in.
± 0.5 mm	± 0.02 in.
± 0.05 mm	± 0.002 in.
± 0.005 mm	± 0.0005 in.

Metric / Imperial Conversions

25.4 mm = 1.0 in.
10.0 mm = 0.394 in.
0.0254 mm = 0.001 in.

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Identification of Defective Conditions of the Types of Hose, Tubing and Lines Used on Vehicles

Diagram	Characteristics	Defective Condition
	Type 1 – Copper, steel or plastic tubing used for liquid or vapour. Made of a single layer of material.	Wear or damage is visible on the outside.
	Type 2 – Plastic (usually nylon) tubing commonly used in air-brake systems. Uses no reinforcement ply. Inner core and outer cover are usually different colour.	Inner core becomes visible from the outside, as shown by colour change.
	Type 3 - Plastic (usually nylon) tubing commonly used in air-brake systems. Uses reinforcement ply. Inner and outer core are different colour. (Note: Type 2 and 3 may appear identical externally.)	Reinforcement ply or inner core is visible from the outside, as shown by colour change.
	Type 4 – Stainless steel braided (or otherwise) outer cover with inner layer of tubing.	Wear or damage visible on the outer cover.
	Type 5 – Synthetic rubber hose with inner reinforcement ply.	Wear or damage exposing the reinforcement ply.
	Type 6 – Synthetic rubber hose with multiple reinforcement plies.	Wear or damage exposing the outer reinforcement ply.
	Type 7 – Flexible hose with one or more reinforcement plies that may be fabric or steel, and an outer protective layer.	Wear or damage through the outer protective layer and outer cover, exposing a reinforcement ply.

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 1 – Powertrain

1. Accelerator Pedal / Throttle Actuator

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): With engine running, press and release the accelerator pedal. Check engine response.	
a) pedal / actuator	a) - binding, *inoperative*, *missing*, or engine fails to respond normally
b) anti-slip feature	b) - ineffective, *loose* or *missing*
c) mount	c) - deteriorated or weakened by corrosion, or *insecure*
d) linkage / cable	d) - binding, *broken* or *insecure* - deficient part is used that is not *OEM standard* - throttle cable is binding, frayed or seized
e) springs	e) - *broken*, corroded, deteriorated, *missing*, stretched or improper type

2. Exhaust System

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Inspect with engine running. *Note:* Minor leaking and resulting soot tracks are normal at joints in exhaust systems.	

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 1 – Powertrain

Item and Method of Inspection:	Reject if:
a) manifold	a) - *broken*, cracked, leaking, *loose* or *missing*
b) muffler *Note:* The *OEM* muffler or one that meets the *OEM standard* is required on every vehicle.	b) - cracked, perforated or leaking - bypassed, disabled, *missing* or removed - deficient part is used that does not meet *OEM standard* - patched in any manner that is not consistent with *industry standard*
c) resonator, catalytic converter and particulate trap	c) - cracked, perforated or leaking - bypassed, disabled, *missing* or removed - patched in any manner that is not consistent with *industry standard*
d) exhaust pipe	d) - cracked, collapsed or pinched, *missing*, perforated or leaking - patched in any manner that is not consistent with *industry standard*
e) mounting hardware	e) - *broken*, *insecure*, *loose* or *missing* - deficient part is used that does not meet *OEM standard*
f) location / heat damage *Note:* Heat damage can sometimes be due to the absence of a heat shield originally provided by the *manufacturer*	f) - exhaust-system component is located so as to cause charring or other heat damage to any wiring, fuel line, brake line or combustible material of the vehicle - any exhaust component passes through an occupant compartment
g) turbocharger	g) - leaking exhaust gases - *level 3 leak* of oil or coolant

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
h) exhaust-pipe termination *Note:* Also applies to the exhaust system of any auxiliary equipment (for example, generators, and auxiliary heaters). Occupant compartment includes any part of the vehicle which has openings connecting it to any part of the vehicle which may be occupied.	h) - exhaust gases are expelled into occupant compartment - exhaust system shortened or modified from original equipment so as to fail to direct the exhaust beyond the underbody of the occupant compartment or luggage compartment - the distance between the outlet and periphery of the underbody, past which it directs the exhaust, exceeds 15 cm
i) diesel exhaust fluid (DEF) system *Additional Inspection Procedure(s):* Visually inspect system using *OEM* service information as a guide.	i) - storage tank is *damaged* or *insecure* - *level 2 leak* at any location in the DEF system - storage tank filler cap is *missing*

3. Drive Shaft, Axles, Differential

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Inspect using hand pressure and suitable tools	
a) U-joint / CV joint *Note:* Weather checking / cracking is permissible on boot as long as there is no crack that exposes internal joint components or lubricant to external contamination.	a) - rotational free play is present - joint is noisy (for example, clicking) during road test and (i) rotation of wheel binding or (ii) steering movement adversely affected - protective boot is *loose*, *missing*, open crack or torn - lubricant is leaking from CV joint
b) attaching hardware	b) - *loose*, *missing* or stripped - abnormally deteriorated

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
c) centre bearing and mount	c) - *damaged*, *loose*, *missing* or *abnormally worn* - *insecure* mounting
d) slip joint	d) - radial wear at joint exceeds *manufacturer* specification
e) hanger bracket and hardware, and metal guard or catch	e) - *missing*, *loose*, cracked - mounted in a manner that fails to prevent drive shaft from falling to ground
f) axles	f) - bent or welded
g) differential *Additional Inspection Procedure(s):* Test the functioning of the differential only when there is evidence of a problem. Refer to *manufacturer* service instructions, and confirm that the differential is functioning properly.	g) - there is evidence that differential is not functioning as intended (affects safe operation of the vehicle)

4. Clutch and Clutch Pedal

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Inspect clutch operation and adjustment according to *manufacturer* service instructions.	
a) operation	a) - fails to operate in the manner prescribed by the *manufacturer*
b) adjustment	b) - is not adjusted according to *manufacturer* instructions

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
c) pedal	c) - *broken*, cracked, loose, or missing - welded or repaired in a way that does not meet *industry standard* - deteriorated or weakened by corrosion, or *insecure* - anti-slip feature is ineffective, *loose* or *missing*
d) clutch pedal hydraulic system	d) - fluid reservoir is below *manufacturer*'s minimum level or *level 2 leak* of fluid at any point

5. Engine / Transmission Mount

Item and Method of Inspection:	Reject if:
a) condition / attachment	a) - bent, *loose* or *missing* - a bolt or insulator is *missing* - an insulator is *broken*, deteriorated, *level 2 leak*, or swollen abnormally - a mount or part of a mount is replaced with a product or material that is not equivalent to *OEM standard*

6. Engine Shutdown

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Test operation according to *manufacturer* service instructions.	
a) ignition switch	a) - engine fails to shut down when ignition switch is turned off
b) mechanical shutdown	b) - engine fails to shut down when device is actuated
c) remote or emergency shutdown device	c) - fails to *operate as intended*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

7. Engine Start Safety Feature

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Test operation to confirm engine start is prevented according to *manufacturer* service instructions. a) ignition interlock operation *Note*: This includes the neutral safety switch on vehicles, except buses, with an automatic transmission with a GVWR of 4536 kg or less and includes the clutch pedal safety switch for vehicles, except buses, with a GVWR of 4536 kg or less and manufactured during or after June 2005.	a) - fails to prevent engine start-up as intended

8. Gear Shifter / Selector and Position Indicator

Item and Method of Inspection:	Reject if:
a) location	a) - cannot be viewed by a person seated in driver position
b) operation	b) - gear shifter / selector movement is stiff or does not enable all gear positions to be freely engaged or selected - indicator fails to indicate selected gear on a vehicle equipped with an automatic transmission
c) automatic transmission - shift pattern illustration (label, embossment, etc.) - or selector	c) - illegible, not clearly visible to driver or *missing* - inaccurate display of shift position - engine starts other than in “P” or “N”

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

9. Engine or Accessory Drive Belt

Item and Method of Inspection:	Reject if:
Note: This section applies only to a drive belt directly connected to the engine. A drive belt that is not required for safe operation of the vehicle (for example, A/C) may be *missing* if it doesn't affect the operation of required vehicle functions.	
a) condition	a) - *broken*, frayed, oil-contaminated or *missing* - crack exceeds *OEM standard* or *industry standard*
b) adjustment / tension *Additional Inspection Procedure(s):* Check the tension of drive belt(s). *Note:* Normal belt tension should be consistent with *OEM standard* or *industry standard*	b) - belt is slipping
c) drive belt pulley	c) - bent, *broken*, cracked or out of alignment

10. Electric or Hybrid-Electric Powertrain System

Item and Method of Inspection:	Reject if:
Note: All electric drivetrain components that can be accessed without removing other components, covers or panels must be visually inspected.	
a) electrical system connections	a) - connector is *damaged* or corroded in a way that exposes any conductor - connector is *damaged* or *insecure*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	- connector is unable to properly connect or lock into place
b) wiring	b) - corroded or *damaged* in a way that exposes any conductor - insulation is chafing due to abrasive contact with any vehicle part - conduits are incomplete and not in good condition
c) drive motor / generator	c) - *damaged*, *insecure* or *loose* - indication of burning or overheating - drive component excessively worn
d) self-diagnostic indicator *Additional Inspection Procedure(s):* Visually inspect the system indicator(s) using *OEM* service information as a guide.	d) - there is any condition indicated by the system that is defined by the *OEM* as being unsafe

11. Gasoline or Diesel Fuel System

Item and Method of Inspection:	Reject if:
a) fuel system	a) - *level 1 leak* or spillage of fuel present from any part of the fuel system
b) filler cap	b) - improper type or *missing*
c) tank, filler neck / tube and vent tube *Note:* Fuel tank level must be recorded on Inspection Report	c) - cracked, perforated, *insecure* mounting or weld is *broken* - improper tank (not intended for the storage of automotive fuel) - improper vent - improper repair
d) tank mount and strap	d) - *broken*, cracked, *loose* or *missing*

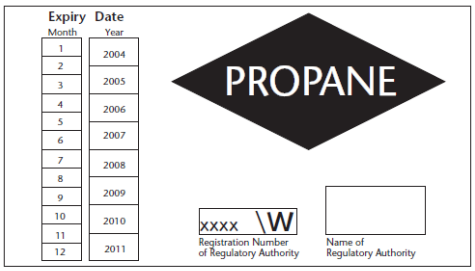
Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	- deficient part is used that does not meet *OEM standard* - fastener is *loose* or *missing*
e) line, hose, fitting and connection *Note*: Refer to correct type of hose or tube and the related defective condition(s) as defined in the chart in the definition section of this standard.	e) - chafed, cracked or *insecure* - deficient product is used that does not meet *OEM standard* not approved for use in a fuel system - any section of a line, hose or tube is worn or *damaged*
f) fuel pump	f) - *damaged* or *insecure*

12. Pressurized or Liquefied Fuel System (LPG, CNG and LNG)

Item and Method of Inspection:	Reject if:
Note: Pressurized fuel systems are inspected according to the requirements of the *Technical Standards and Safety Act*, and are administered by the TSSA (Technical Standards and Safety Authority). The inspection items below are intended as a general safety inspection of the fuel system and do not replace the inspection requirements of TSSA. If you smell propane or natural gas or see anything of concern in the LPG or CNG installation, please contact an authorized repair facility.	
a) TSSA Compliance Decals- 2 decals required for CNG- converted vehicles and 3 decals required for LPG-converted vehicles. *Note:* LPG-converted vehicles require decal that indicates the vehicle is in compliance with the B149.5 that expires	a) - decal is not displayed - an incorrect decal is affixed to vehicle - information on decal is not readable - window label is expired

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
every 5 years. Window label (LPG only):  **Window Label**	
Permanent label near door latch or the inside of the glove compartment for propane and CNG:  Permanent Label	- label *missing* or expired
Propane and NG diamond required: A propane-fuelled highway vehicle shall be identified by a weather-resistant, diamond-shaped label affixed to its exterior vertical, or near vertical, lower-right rear surface, but not to its bumper.  	
b) filler cap	b) - improper type or *missing*
c) tank and cylinder	c) - crack or other damage to tank or cylinder - improper repair
d) tank mount and retainer strap	d) - *broken*, cracked, *loose* or *missing*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	- fastener is *loose* or *missing*
e) line, hose, fitting and connection	e) - chafing, cracked or *insecure* - any section of a line, hose or tube is worn or *damaged* - fastener is *loose* or *missing*
f) fuel pump, or other fuel system component	f) - *damaged* or *insecure*
g) leakage	g) - evidence of any fuel leak

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 2 – Suspension

1. Suspension and Frame Attachments

Item and Method of Inspection:	Reject if:
Note: This section applies to all types of suspension. *Manufacturer* welding of components is a normal part of many manufacturing processes, and is distinct from welding to modify or repair a part. *Additional Inspection Procedure(s):* Raise the vehicle as necessary to access the suspension components.	- Any component of the suspension has been changed or altered so that the vehicle height has been raised or lowered and does not meet *OEM standard*
a) vehicle ride height *Additional Inspection Procedure(s):* Check ride height while vehicle is unloaded, parked on a flat level surface and with tires inflated to specified pressure. The allowable variation in ride height from left to right is based on a ground-to-vehicle measurement.	a) - one side of the vehicle is more than 25 mm, higher or lower than the other when measured at the tire centerline
b) frame bracket, mounting bracket and hanger	b) - *broken*, cracked, *damaged*, *loose*, or *missing* - perforated due to corrosion or deterioration - welded or repaired in away that does not meet *OEM standard* or *Industry Standard*
c) mounting fasteners	c) - *broken*, cracked, *loose* or *missing*
d) tire interference	d) - the condition of the suspension system allows a tire to contact any part of the vehicle frame or body

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
e) suspension travel	e) - there is no or very limited suspension travel due to a binding or seized suspension component, or due to improper stiffness or specification of suspension (which is either topped or bottomed out)

2. Axle Attaching and Tracking Components

Item and Method of Inspection:	Reject if:
Note: This section applies to all types of suspension.	
a) axle attachment, axle saddle	a) - bent, *broken*, cracked, *loose* or *missing* - axle has shifted from its normal position
b) bushing (rubber or composite material)	b) - *missing*, *loose* or shifted out of place - wear or damage permits suspension component to shift out of position
c) arm, rod, strut / shock suspension, control arm	c) - bent, *broken*, cracked, *loose*, *missing*, or worn out - perforated due to corrosion or deterioration - welded or repaired in a way that does not meet *OEM standard* - wear or damage permits axle or wheel to shift out of position or required orientation - binding strut bearings/mounts prevent free rotation of steering wheel - *Level 2 leak*
d) stabilizer / anti-sway bar, ball and socket or link	d) - bent, *broken*, *missing* - welded or repaired in a way that does not meet *OEM standard*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

3. Spring and Spring Attachment

Item and Method of Inspection:	Reject if:
a) leaf spring	a) - any spring leaf is *broken*, *missing*, worn more than 3 mm, cracked or shifted out of place - any spring leaf is worn more than 3 mm in the hanger contact area or where leaves are in contact with each other - leaf is shifted and contacting another vehicle part
b) composite spring *Note*: Some change in the appearance of a composite spring, described as "fuzzing" / frayed is normal as the spring ages.	b) - worn more than 3 mm in load bearing area - *broken*, crack of any length visible on both sides of a spring, splintered or not the same type on each side of the vehicle.
c) shackle, pin, bushing	c) - *broken*, *missing*, *loose* or pin seized - shifted out of normal position - fastener *loose* or *missing* - vertical movement of a spring or shackle against a spring pin exceeds *OEM standard* or if not available; wear exceeds limit below - for pin size up to 25 mm, wear limit is 2.0 mm - for pin size greater than 25 mm, wear limit is 3.0 mm
d) U-bolt and hardware (centre bolt, fasteners, saddles or shackles)	d) - *missing*, *loose* or shifted out of normal position - welded or repaired in a way that does not meet *OEM standard*
e) spring contact area of hanger (slipper) *Note*: Wear plates are permitted by some *manufacturers* in the spring contact (slipper) area of fabricated hangers.	e) - repaired by welding (except installation of wear plates) - spring-load bearing area is worn more than 3 mm

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
f) coil spring	f) - *broken* or shifted out of normal position - spacer is fitted between coils
g) torsion bar	g) - *broken*, cracked or *missing* - repaired by welding
h) rubber load cushion	h) - rubber block or vertical pin is *broken*, *loose*, *missing* or split

4. Air Suspension

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Check with air system at normal operating pressure	
a) ride height	a) - height is above or below *OEM* specification - vehicle leans to one side
b) air spring (air bag)	b) - improperly seated, cracked, cut, patched or reinforcing ply is exposed - audible air leak
c) air spring base, mounting plate	c) - *broken*, *missing*, or cracked - perforated by corrosion or deterioration - welded or repaired in a way that does not meet *OEM standard*
d) air system *Additional Inspection Procedure(s):* Inspect the function and operation of the air - suspension system and controls in accordance with *manufacturer* service instructions.	d) - compressor does not function as intended - pressure control, pressure regulator or gauge is *missing* or *inoperative*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
e) air line, connection and fitting *Note*: Refer to correct type of hose or tube and the related defective condition(s) as defined in the chart in the definition section of this standard.	e) - fitting, repair method, installation or modification does not meet *OEM standard* - an inner layer is exposed due to abrasion or rubbing - fitting or connection is *broken*, cracked, flattened or leaking - air flow through a line is restricted due to melting, flattening, deformation or kinking
f) height control valve	f) - *inoperative* - a system originally equipped with 2 valves has a valve *missing* or has been converted to a single valve - a system with only one valve has the valve positioned in a location other than near the center of an axle

5. Strut / Shock Absorber

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Check shock absorbers by rapidly lowering and raising the vehicle.	
a) operation	a) - vehicle oscillates more than two cycles after release
b) condition	b) - *damaged*, disconnected or *missing* - *Level 2 leak*
c) mount and hardware	c) - *broken*, *loose*, binding or *missing*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 3 – Brake Systems

Additional Inspection Procedure(s):

Inspecting Internal Brake Components

1. Disassembly of Wheels and Drums for Inspection

Internal brake components must be inspected at every inspection. Disassembly or removal of wheels, and/or brake parts, is required to facilitate full inspection of all components.

2. Required Measurement of Brake Components

Brake inspections require certain components to be measured. These measurements are required to be recorded on the inspection report. The items that must be measured for each type of brake are as follows:

2.1 Drum Brake Systems

For drum brakes, the brake-shoe lining thickness and brake-drum diameter must be measured at every inspection.

2.2 Disc Brake Systems

For disc brakes, the rotor thickness and pad friction material thickness of the inner and outer brake pad must be measured and recorded at every inspection.

Friction-material thickness can be determined by measuring the friction material itself, or by measuring the combined thickness of the friction material and pad backing plate, then deducting the thickness of the backing plate. Always record the thickness of the friction material only.

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 3 – Brake Systems

Note: The performance of the service brake system is tested as part of the Road Test (Section 11).

1. General

Item and Method of Inspection:	Reject if:
a) brake system	a) A component of the brake system is missing or has been disabled

2. Hydraulic System Components

Item and Method of Inspection:	Reject if:
a) metal line and fittings *Additional Inspection Procedure(s):* Inspect lines and fittings for leaks after brakes are applied with a heavy force on the brake pedal similar to what would be used in an emergency stop. *Note:* Surface rust and corrosion is normal on metal lines and fittings, and is not cause for rejection.	a) - heavy rust, corrosion or scaling is present on any metal line or fitting that reduces or increases the thickness or compromises the structural integrity of the material - *level 1 leak* - chafing, cracked, flattened or restricting section - *insecure* mounting causing line to shift out of its normal position - repaired by welding or soldering - repaired using material or method that does not meet *OEM standard* - Connections between brake system components are not a flared type fitting or does not meet *OEM standard* - Component does not meet *OEM standard*
b) flexible line / hose *Additional Inspection Procedure(s):* Inspect flexible hoses after brakes are applied with a heavy force on the brake pedal similar to what would be used in an emergency stop.	b) - bulged or swells under pressure, flattened, twisted, restricted section or *insecure* mounting - outer composite material is cracked or chafed exposing an inner layer as shown in hose and tube condition chart in introduction or located so as to rub against any component. - Component does not meet *OEM standard* - *level 1 leak*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
c) master cylinder *Additional Inspection Procedure(s):* Apply moderate foot force on the brake pedal for 10 seconds to check for pedal movement. Apply heavy foot force to the service brake pedal to check for total pedal travel (in the case of power boosted brakes, with the engine running)	c) - *damaged* or *insecure* mounting - fluid is contaminated - *level 1 leak* - fluid level is below indicated minimum level or, if not indicated, more than 13 mm from top - filler cap is *damaged*, *loose* or *missing*, vent holes are plugged or gasket is *missing* or swollen - pushrod incorrectly adjusted - with moderate foot force maintained on the service brake for 10 seconds the pedal moves towards the fully applied position (engine must be running for power boosted brake systems). - with heavy foot force applied to the service brake pedal and, in the case of power boosted brakes, with the engine running: ▪ the total pedal travel exceeds 80 per cent of the total available travel, and ▪ on the vehicle equipped with dual-circuit hydraulic brakes, the brake-failure warning lamp illuminates - brakes do not release, preventing the vehicle from rolling, upon removal of force from the brake pedal
d) differential pressure switch	d) - switch or electrical connection is *damaged*, *insecure* or *loose* - *level 1 leak* - *inoperative*
e) variable or proportioning system *Additional Inspection Procedure(s):* Check links for mechanical defects. Test the functioning of the proportioning valve only when there is evidence of a problem. Refer to *manufacturer* service instructions and confirm that the valve is functioning properly.	e) - link is *damaged*, *missing*, or seized - *level 1 leak* - proportioning valve *missing*, *inoperative* or bypassed

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
f) auxiliary or work brake (line-lock device) *Note*: Line-lock devices block brake fluid from returning to the master cylinder as a means of holding a vehicle stationary. Improperly installed they can interfere with normal service brake operation.	f) - any device is installed that interferes with normal service brake operation

3. Brake Pedal / Actuator

Item and Method of Inspection:	Reject if:
a) pedal	a) - *broken*, cracked, *loose*, or *missing* - welded or repaired in a way that does not meet *OEM standard*
b) mount	b) - deteriorated or weakened by corrosion or *insecure*
c) anti-slip, high-friction feature on pedal application surface (for example, rubber cover)	c) - ineffective, deteriorated, *loose* or *missing*

4. Vacuum Assist (Boost) System

Item and Method of Inspection:	Reject if:
a) line, hose and clamp	a) - *broken*, chafed, collapsed, cracked, leaking, *loose* or *missing* - *insecure* mounting, incorrect type or positioned within 40 mm of any exhaust system component
b) check valve	b) - incorrectly installed or *inoperative*, leaking or *missing*
c) tank	c) - damaged structural deterioration from corrosion, insecure or loose, leaking or missing

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
d) operation *Additional Inspection Procedure(s):* Test system operation as described below. Stage 1 – Start engine, build to full vacuum, shut engine off, make 2 full brake applications. Stage 2 – With engine off, press brake pedal several more times to eliminate remaining vacuum. Apply a light force to the brake pedal and start the engine.	d) - during stage 1 - vacuum reserve is insufficient to assist two full brake applications - during stage 2 - downward movement of brake pedal is not felt when engine is started
e) vacuum pump *Additional Inspection Procedure(s):* Confirm proper operation of the vacuum pump to *manufacturer* specifications. When no specification is available, check with engine running at 1200 rpm using vehicle gauge, or connect external gauge.	e) - vacuum pump does not operate within *manufacturer* specifications, or when no specification is available, is unable to achieve and maintain a vacuum between 4 kPa and 5 kPa

5. Hydraulic Assist (Boost) System

Item and Method of Inspection:	Reject if:
a) engine-driven pump, reservoir and belt *Additional Inspection Procedure(s):* Check with engine stopped and with engine running. Inspect drive belt according to Section 1. Power Train, Item 9. Engine or Accessory Drive Belt.	a) - *level 2 leak* - fluid level is below indicated minimum level or, if not indicated, more than 25 mm from top - filler cap is *damaged*, *loose* or *missing*
b) line and hose *Additional Inspection Procedure(s):* Check with engine stopped and with engine running.	b) - *level 2* leak - *broken*, chafed, collapsed, cracked, *loose* or *missing* - *insecure* mounting or incorrect type

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
c) operation *Additional Inspection Procedure(s):* Confirm proper operation of the hydraulic assist (boost) system according to *manufacturer* service instructions. When no *manufacturer* service instructions are available, check as described below. Test Method 1 - For a system with electrically driven back-up pump. Operate brakes with engine running and engine stopped with ignition off. Observe system operation and status of indicator lamps. Test Method 2 – For a system with gas-accumulator back-up. Stop engine and deplete pressure reserve. Then apply a light force on brake pedal and start engine.	c) - hydraulic assist (boost) is not available or system malfunctions - system does not operate as described in *manufacturer* service instructions - *tell-tale* lamp is activated, showing a system malfunction - during Test Method 1 - system does not operate as described in *manufacturer* service instructions - during Test Method 2 (on a system with gas-accumulator back-up) pedal fails to sink down and then push back up again

6. Air Assist (Boost) System

Item and Method of Inspection:	Reject if:
a) operation *Additional Inspection Procedure(s):* Confirm proper operation of the air assist (boost) system according to *manufacturer* service instructions. When no *manufacturer* service instructions are available, check as follows: Stop engine and deplete pressure reserve. Then apply a light force on brake pedal and start engine.	a) - system does not operate as described in *manufacturer* service instructions - downward movement of brake pedal is not felt when engine is started

7. Brake System Indicator Lamps

Item and Method of Inspection:	Reject if:
a) operation *Additional Inspection Procedure(s):* Confirm the location and labeling of brake indicator lamps according to	a) - *missing*, not red or amber in colour - does not *operate* according to *manufacturer* service instructions

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
manufacturer service instructions. Check operation of brake *tell-tale* according to *manufacturer* service instructions. When no *manufacturer* service instructions are available, begin with engine stopped, and then turn ignition on. Lamps must turn on when ignition is first turned on. Lamps may go out after 2 – 3 seconds or may stay on until the engine is started. *Note:* Some *tell-tales* may stay on, after a repair or system malfunction, until vehicle speed reaches 8 - 16 km/h.	- indicates a brake system malfunction or defect

8. Drum Brake System Components

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Inspection requires removal of the drum and also other components as necessary to inspect all components as detailed below.	
a) brake shoe lining condition	a) - lining material is *broken*, contaminated or cracked - signs of "rust-jacking" (friction material lifting due to rust build-up, shoe-table deformation, friction material separating from backing material) - lining protrudes outside of drum - lining *loose* or separating from shoe - shim is used between lining and shoe - shoe or lining is installed incorrectly (such as primary and secondary shoes reversed)
b) brake shoe lining thickness *Additional Inspection Procedure(s):* Lining thickness must be measured at	b) - bonded brake-shoe lining thickness is less than the minimum specified by the *manufacturer* or when no specification

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
each inspection, and the measurement must be recorded on the inspection report. *Note*: Lining thickness measurements are taken above a rivet or shoe at the most worn location.	is available 1.6 mm (2/32 in) where the lining is thinnest - riveted brake-shoe lining thickness is less than the minimum specified by the *manufacturer* or when no specification is available 1.6 mm (2/32 in) above rivet
c) brake drum condition *Note:* Heat checks and some surface cracks on the friction surface are normal. Heat checking is identified by a number of short, fine, hairline cracks on the braking surface.	c) - crack, groove or worn area is deeper than the drum wear limit - surface cracks or heat checks extend completely across the brake surface. - any external crack is present - friction surface is *abnormally worn*
d) brake drum diameter (wear) *Additional Inspection Procedure(s):* Brake drum diameter must be measured and recorded on the inspection report. See Introduction to Section 3 for details. *Note*: Drum diameter measurements must be taken using a suitable tool and with the level of accuracy defined by the measurement tolerance but never with a level of accuracy less than ± 0.05 mm	d) - measured drum diameter exceeds limit indicated on the brake drum or, if not available, *OEM standard* or *industry standard*
e) self-adjuster mechanism	e) - *broken*, incorrect thread direction, *inoperative*, *missing* or seized
f) adjusters (manual)	f) - *broken*, *inoperative*, *missing* or seized
g) anchor pin / bracket and return spring	g) - *abnormally worn*, bent, *broken*, *loose* or *missing* - spring stretched
h) backing plate	h) - bent, *damaged* or *loose* - shoe contact area is grooved or worn in a manner that restricts free movement of shoes

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
i) axle and spindle	i) - cracked or *damaged*
j) wheel cylinder	j) - *inoperative* or seized, *damaged*, *loose* or *insecure* mounting - *level 1 leak* - dust seal is cracked or split, *missing*, *damaged* or deteriorated
k) wheel seal	k) - *level 2 leak*

9. Disc Brake System Components

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): When an inspection reveals evidence of a defect or abnormal condition, brake components must be disassembled to the point necessary to verify defect. Refer to the instructions in the Introduction to Section 3 to determine what measurements are required to be taken and recorded.	
a) disc (rotor) condition *Note*: Lateral run-out and parallelism needs to be checked only where there is evidence of a problem (for example, severe brake pedal pulsation upon brake application). Heat checks and some surface cracks on the friction surface are normal. Heat checks are identified by a number of short, fine hairline cracks on the braking surface.	a) - *broken*, pitted, *damaged* or cracks on surface extending to the outer edge; *broken* or cracked cooling fins; or mechanical damage that may be attributable to abnormal wear on friction surfaces - any surface crack, groove or worn area is deeper than the wear limit - crack extends from the friction surface through to the cooling vent - contact pattern of the pad on solid rotor material (not rusted) is less than 75% of the radial width around the entire rotor, on one side

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	- lateral run-out or parallelism measurement exceeds *OEM* or *industry standard*
b) disc (rotor) thickness *Additional Inspection Procedure(s):* Rotor (disc) thickness must be measured and recorded on the inspection report. *Note:* Measurements must be taken using a suitable tool with the level of accuracy defined by the measurement tolerance, but never with a level of accuracy less than ± 0.05 mm.	b) - thickness between friction surfaces at any point on the pad-contact surfaces is less than the minimum indicated on the brake rotor, *OEM standard* or *industry standard*
c) caliper *Note:* If the dust cover is *missing* or deteriorated, it is acceptable, as long as the condition does not present a potential safety hazard.	c) - assembly seized or binding, mounted incorrectly or inferior attaching bolt is used - slide pin / slider or pad slider is seized or binding, *damaged* or *abnormally worn* - caliper guide is welded or repaired in a way that does not meet *OEM standard* - *level 1 leak* - pad retainer is bent, *damaged*, *insecure* or *missing* - boot or bellows is cracked or deteriorated, *damaged* or *missing* - piston seized or binding
d) anchor plate	d) - *loose* or bolt is *missing*
e) pad condition	e) - *damaged*, contaminated, *broken*, cracked or *abnormally worn* - friction material loose or separating on pad, or pad installed incorrectly - signs of “rust-jacking”, (friction material lifting due to rust build-up or friction material separating from backing material)

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
f) pad (friction material) thickness *Additional Inspection Procedure(s):* Pad (friction material) thickness of both inboard and outboard pad must be measured and must be recorded on the inspection report. *Note*: Pad (friction material) thickness can be determined by measuring the friction material itself or by measuring the combined thickness of the friction material and pad backing plate, then deducting the thickness of the backing plate. Record the thickness of the friction material on service brakes only.	f) - measured friction-material thickness is less than *manufacturer* specification. If limit is not available: • bonded friction-material thickness is less than 1.6 mm • riveted friction-material thickness is less than 3.2 mm (4/32 in) without pads removed • riveted friction-material thickness is less than 1.6 mm (2/32 in) above the rivet head with pads removed - difference between inboard and outboard friction-material thickness is greater than manufacturer specification. If limit is not available: difference is greater than 3.2 mm
g) clearance between pads and rotor (caliper adjustment)	g) - does not meet *manufacturer*'s specifications

10. Parking Brake

Item and Method of Inspection:	Reject if:
Note: Parking brakes that consist of drum-in-rotor type design require a performance test. Visual inspection is required, but no disassembly of the parking-brake components is required. a) operation *Additional Inspection Procedure(s):* - Fully apply the parking brakes and test according to the transmission type. - Automatic transmission – attempt to move the vehicle in low forward and reverse gear while engine is idling.	a) - with parking brake fully applied, the vehicle moves forward or backward with little or no resistance

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
- On vehicles with an interlock that releases the parking brake upon selecting a forward or reverse gear, the parking brake may be tested by overriding the interlock (by manually engaging the parking- brake control with the transmission in gear). - Manual transmission – with engine at idle, clutch is released until engine is lightly loaded in low forward and reverse gear with engine idling.	
* for vehicles in which the parking brake cannot be tested as noted previously, vehicle must be raised with parking brake engaged, transmission not in "P" and resistance to rotation checked by hand, for each wheel that is equipped with a parking brake.	* with transmission not in "P" or manual transmission not in gear, any wheel with a parking brake can be manually rotated ▪ the parking brake does not fully release when the release control is operated
b) indicator lamp	b) - parking-brake indicator lamp does not activate when control is placed in the applied position
c) control	c) - binds, *broken* or *missing* - *inoperative* or fails to lock
d) cable and/or linkage	d) - *broken*, frayed, improperly secured, *missing*, seized or equalizer is *missing*
e) adjustment	e) - any part of the system is improperly adjusted
f) friction material	f) - friction material must be in place and in good serviceable condition
g) parking-brake systems with a non-mechanical release system (for example, spring applied with hydraulic, air or electric release).	g) - the system or any component does not function as intended

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
Note: In addition, the applicable items above are to be inspected according to the *manufacturer*'s procedure.	

11. Anti-Lock Brake System (ABS)

Item and Method of Inspection:	Reject if:
Note: Vehicles that are required to be manufactured with an active ABS system in accordance with Canadian Motor Vehicle Safety Standards (*CMVSS*) must conform to this section of the inspection standard.	If ABS is not required, record active *tell-tale* status on inspection report but do not reject Regardless of whether ABS is required or not, Reject if: - ABS system malfunction adversely affects the vehicle's brakes or handling
a) ABS fault *tell-tale* *Additional Inspection Procedure(s):* Cycle the ignition off and on while monitoring the ABS fault lamp. Note: Record active *tell-tale* on inspection report	a) - vehicle that requires an ABS system as per the note: ▪ *missing* or *inoperative* (applies only to those vehicles that *require* a functioning ABS system) ▪ fails to turn on during bulb-check cycle when ignition is turned on ▪ *indicates* the presence of an active malfunction by staying on after the bulb-check cycle ▪ any visual evidence that the system has *been* tampered with or defeated
b) electronic control unit (ECU)	b) - *insecure* mounting, *missing* or connector corroded
c) wiring *Additional Inspection Procedure(s):* Visually inspect accessible portions of the wiring. Inspect all repairs and damaged areas. *Note:* Not required to disconnect.	c) - *insecure* mounting, *missing* conductor is exposed due to damage, improper repair or other condition of wire - connection or repair does not meet *OEM standard*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
d) ABS modulating valve	d) - *missing*, *insecure* mounting to ECU, *level 1 leak* or abnormal corrosion
e) wheel speed sensor	e) - *missing*, *insecure* mounting, *inoperative*, connectors corroded
f) ABS system function	f) - there exists evidence that a malfunction or deficiency in any part of the ABS system adversely affects the normal operation of the service brake system including proportioning of braking between the front and rear axles.

12. Electronic Stability Control System (ESC)

Item and Method of Inspection:	Reject if:
Note: Stability Control Systems are required for motor vehicles manufactured on or after September 1, 2011, or September 1, 2012, for multistage manufactured vehicles (for example, body mounted on cab and chassis).	If ESC is not required, record active *tell-tale* status on inspection report but do not reject Regardless of whether ESC is required or not, Reject if: - ESC system malfunction adversely affects the vehicle's brakes or handling
a) *tell-tale* / system status *Additional Inspection Procedure(s):* Check for indication of any fault or malfunction by cycling the ignition off and on while monitoring the *tell-tale*.	a) - if ESC is required: ▪ *tell-tale* fails to illuminate during bulb check or *tell-tale* remains illuminated ▪ fault or malfunction is indicated, or there exists any visual or other evidence that the system has been tampered with or defeated

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 4 – Steering

1. Steering Control and Linkage

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Check the steering components listed below using tools and methods according to *manufacturer* service instructions.	
a) steering box or rack-and-pinion unit	a) - *loose* or *insecure* mounting; mounting bolt, bushing or nut *missing* or *loose* - housing cracked, *broken*, or *level 2 leak*
b) bellow, clamp and boot	b) - *insecure*, *missing*, split or torn - clamp *missing*
c) tie rod	c) - bent, *broken*, cracked, welded or repaired in a way that does not meet *OEM standard*
d) adjusting sleeve	d) - bent, *loose* or welded or repaired in a way that does not meet *OEM standard* - tightening bolt is in a position that interferes with normal steering
e) ball-and-socket joints (tie rod, idler arm, drag link, etc.)	e) - bent, *insecure*, *loose* or wear exceeds that specified by the *OEM* or *industry standard* - threads stripped or repaired - *damaged*, welded or repaired in a way that does not meet *OEM standard* - part is used that does not meet *OEM standard*
f) pitman arm	f) - bent, *damaged*, *insecure* or *loose* on spline - repaired by welding

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
g) ball joint in upper or lower control arm	g) - *insecure* or *loose* in knuckle or control arm - wear exceeds limit shown by wear-indicator, *OEM standard* limit or *industry standard* limit, or is injected with repair material - Improper, *insecure* or *loose* retainer
h) cotter pin or similar retaining device	h) - missing, or deficient part is used that does not meet *OEM standard*
i) strut bearing	i) - binding or excessive lateral play
j) steering dampener	j) - *inoperative* or *missing* - *level 2 leak*
k) steering column	k) - *loose* or *insecure* mounting - mounting fastener *missing* or *loose*
l) telescopic / tilt steering *Additional Inspection Procedure(s):* Check the operation of locking device(s). With unit locked, grasp the steering column and attempt to move it horizontally and vertically on its mounts.	l) - movement exceeds *manufacturer* specification or, when specification is not available, is greater than 6 mm - column fails to lock into position
m) steering-shaft universal joint and yoke	m) - binding, *loose*, seized, welded or repaired in a way that does not meet *OEM standard* - clamp bolt *missing* or *loose*, or spline *loose* or stripped
n) steering-shaft slip joint	n) - rotational free play between splines excessive - lateral play excessive

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
o) remote (auxiliary) steering control *Additional Inspection Procedure(s):* Operate remote steering from lock to lock to check for proper function. Engine should be running for power-assist steering systems. p) steering mechanism *Additional Inspection Procedure(s):* Steering mechanism shall be tested for freedom of movement with the front wheels on the ground and, where a vehicle is equipped with power-boosted steering, with the engine operating. Turn steering wheel to full right lock and then full left lock.	o) - steering assembly is *insecure* or not properly mounted - steering binds - does not operate smoothly or control the steering throughout the full range of travel. - *level 2 leak* of oil or other operating fluid p) - the front wheels unable to turn from full right to full left, and back again, without interference or indication of roughness in the mechanism

2. Power Steering System (Hydraulic / Electric)

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Inspect the power steering components with the engine stopped. Then, with engine running, turn wheels fully to the left and right, and check system operation. a) fluid b) belt *Additional Inspection Procedure(s):* Inspect drive belt according to Section 1 – Powertrain, Item 9. Engine or Accessory Drive Belt. c) hoses, flexible lines, metal lines and fittings	a) - below indicated minimum level or fluid is contaminated b) - refer to Section 1 – Powertrain, 9. (a),(b),(c) for reject criteria c) - cracked, worn by or is in contact with

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	moving parts - distance to exhaust system component is less than 25 mm - *level 2 leak*
d) pump	d) - *inoperative*, *loose* or *insecure* mounting - *level 2 leak*
e) cylinder	e) - *inoperative*, *loose* or *insecure* mounting - *level 2 leak*
f) mounting bracket	f) - *broken*, cracked or *loose* - bolt *missing* or *loose*
g) assist	g) - does not *operate as intended* (power assist provided is noticeably reduced, requiring more than normal steering effort to turn the wheels left or right)

3. Steering Operation

Item and Method of Inspection:	Reject if:
Note: Check steering operation after inspecting steering control and linkage, and checking power steering as described above.	
a) steering wheel	a) - *broken*, *damaged*, *loose* on spline, or diameter not *OEM standard* or equivalent
b) rotation and travel *Additional Inspection Procedure(s):* Turn wheels fully to the left and right and check system operation.	b) - binds or jams during rotation - number of rotations from centre to full left does not equal the number of rotations from centre to full right, +/- ½ turn - number of rotations from full left to full

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	right is less than 2
c) steering lash or free play	c) - steering lash or free play exceeds *OEM* specifications, or if *OEM* specification is not available: ▪ steering free play exceeds the limits specified in Table 1, and ▪ for rack and pinion steering systems there exists excessive free play in the steering mechanism
d) tire clearance *Note:* Do not reject a vehicle based on evidence of prior contact between the tire and vehicle parts. Road test required to verify tire clearance during vehicle operation (Section 11).	d) - space between tire and frame, fender or other vehicle part is less than 25 mm at any point in the turn, while vehicle is at rest
e) steering stop	e) - improperly adjusted or *missing*

TABLE 1

Steering Wheel Diameter	**Free Play Shall Not Exceed**
Less than 350 millimetres	45 millimetres
350 millimetres and larger, but less than 400 millimeters	50 millimetres
400 millimeters and larger, but less than 450 millimeters	55 millimeters
450 millimeters and larger, but less than 500 millimeters	60 millimeters
500 millimetres and larger	70 millimeters

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

4. Kingpin

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Raise the axle to unload the kingpin. Turn the wheels through a full right and left turn.	
a) lateral movement *Additional Inspection Procedure(s):* Rock the wheel in and out, by hand or using a bar, to check for kingpin movement. Measure lateral movement at the outer edge of the tire. Use a dial gauge if necessary.	a) - not within *manufacturer* specification or when *manufacturer* specification is not available: - for wheels under 20 in., lateral movement is more than 3 mm - for wheels 20 in. or larger, lateral movement is more than 5 mm
b) vertical movement *Additional Inspection Procedure(s):* Place a bar under the tire and check for vertical movement between spindle support and axle. Use a dial gauge if necessary.	b) - not within *manufacturer* specification or when *manufacturer* specification is not available, greater than 2.5 mm
c) condition	c) - binding or jamming is detected while turning wheel

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 5 – Instruments and Auxiliary Equipment

1. Horn

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Test horn operation. *Note:* Every vehicle must have at least one operating horn. a) operation b) control	a) - *inoperative*, *missing* or not clearly audible b) - not identified as "Horn," if not *OEM* - not readily accessible to the driver, if not *OEM* - not a pressure-type switch

2. Speedometer

Item and Method of Inspection:	Reject if:
a) operation	a) - *inoperative* or *missing* - not clearly visible - not legible from every driving position

3. Odometer

Item and Method of Inspection:	Reject if:
a) operation	a) - *OEM* odometer *inoperative* or *missing*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

4. Windshield Front Wiper / Washer

Item and Method of Inspection:	Reject if:
a) operation *Additional Inspection Procedure(s):* Confirm that the windshield wipers and control operate in all modes and positions.	a) - fails to operate properly in any speed or switch position - fails to park
b) wiper blade	b) - ineffective, *missing* or torn - swept area is less than *OEM* wiper blades, unless height of windshield has been reduced - fails to contact windshield properly
c) wiper arm	c) - bent, *broken* or *missing*
d) windshield washer *Additional Inspection Procedure(s):* Test the operation of the windshield washer and control.	d) - *inoperative* or *missing* - fails to direct sufficient washer fluid at correct position on windshield

5. Rear Window Wiper / Washer (If *OEM* Equipped)

Item and Method of Inspection:	Reject if:
a) operation *Additional Inspection Procedure(s):* Confirm that the wipers and control operate in all modes and positions.	a) - fails to operate properly in any speed or switch position - fails to park
b) wiper blade	b) - ineffective, *missing* or torn - swept area is less than *OEM* wiper blades - fails to contact window properly
c) wiper arm	c) - bent, *broken* or *missing*
d) washer *Additional Inspection Procedure(s):* Test the operation of the washer and control.	d) - *inoperative* or *missing* - fails to direct sufficient washer fluid at correct position on window

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

6. Heater & Windshield Front Defroster

Item and Method of Inspection:	Reject if:
a) blower motor operation *Additional Inspection Procedure(s):* Test the operation of the heater / defroster and control in all operating modes and positions. b) heater system	a) - *inoperative* at "High" setting - low air flow or fails to deliver heated air from heater core to windshield and front side windows as applicable b) - *level 3 leak* of coolant into passenger compartment

7. Fuel-burning Auxiliary Heater

Item and Method of Inspection:	Reject if:
a) condition *Additional Inspection Procedure(s):* Inspect the exhaust system and fuel system, according to the appropriate type of fuel used, as described in Section 1.	a) - *insecure* or *loose* - *level 2 leak* of coolant - heater fault allows exhaust gas into occupant compartment

8. Auxiliary Controls and Devices

Item and Method of Inspection:	Reject if:
Note: Equipment that is primarily inside a vehicle, including controls for devices such as: PTO (power take-off), wet lines, vehicle-mounted lifting and transporting devices, snow plows and salt / sand spreaders, dump box, etc. a) condition *Additional Inspection Procedure(s):* Check security of controls and devices visually, manually and using suitable tools as necessary. No functional tests to be conducted.	a) - device is in such an unsafe condition that it is a risk to the driver or a passenger - device is *insecure* or *loose*, or in danger of shifting in a way that could impede normal operation of the vehicle - *level 2 leak* of oil or other operating fluid

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 6 – Lamps

1. Required Lamps

Item and Method of Inspection:	Reject if:
a) operation of all required lamps *Note*: See Tables I through III on pages 57-61 for details on the federal requirements for lamps, lamp location and colour. Additional inspection requirements for identification and clearance lamps apply to vehicles that are 2.05 m wide or wider. *Additional Inspection Procedure(s):* Test the operation of all required lamps, lamp switches and controls, and lamp indicators.	a) - fails to illuminate fully and correctly in response to the switch or control - except for headlamps LED lamps in which 25% or more of LEDs of any one lamp assembly are *inoperative* - fails to turn off in response to the switch or control - the operation of a lighting circuit interferes with the operation of any other circuit - lens, reflector or other parts of assembly that ensure proper light output is *missing*, *broken*, has open crack or is *inoperative* - has an *insecure* mounting - lens, reflector or mounting hardware not correctly installed - is not clearly visible or is covered in any manner - does not meet the colour, location or orientation requirements of *CMVSS* 108, as detailed in Tables I through III at the end of this section - lamp has been altered from *OEM* condition so as to reduce or significantly increase the intensity of the light, surface area of the lens, colour of light emitted, or any modification to change the function or operation of the lamp
b) headlamps *Note:* A crack is acceptable in a halogen lamp with a replaceable bulb if it illuminates as required.	b) - a non-functional diode in LED headlamp - HID bulb is installed in an incandescent headlamp housing HID assembly does not display either HG, DC, DR or DCR codes

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	- headlamp switch, or beam (high and low) selector, is *broken*, *missing*, *inoperative*, does not meet *OEM standard* - high-beam indicator lamp on instrument panel is *inoperative* - vehicle modification or installation of lamp causes headlamp to be higher or lower than permitted by Tables I or III (see pages 57 and 60) - the headlamps fail to meet any of the following requirements: ▪ 2 or 4 facing front as far apart as practical ▪ illuminate correctly when operated by headlamp control on high and low beam ▪ lenses are *crazed*, clouded, fogged or *damaged*, so as to materially impair beam pattern or produce excessive light scatter to oncoming drivers ▪ headlamp is coated or covered with a coloured material - does not provide a headlamp beam pattern as required for left hand steer vehicles (North American shape beam pattern) - headlamp shutter or retractor does not operate over full range of movement or is not secured in fully open position
c) parking lamps (front)	c) - the parking lamps fail to meet any of the following requirements: ▪ minimum of 2 lamps facing the front, located at front of vehicle and as far apart as practical, white, amber or yellow in colour

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	▪ illuminate correctly when operated by appropriate control
d) tail lamps	d) - vehicle modification or installation of lamp causes tail lamp to be higher or lower than permitted by Table I or Table III - the tail lamps fail to meet any of the following requirements: ▪ minimum of 2 lamps facing the rear, located at rear of vehicle and as far apart as practical, red in colour ▪ illuminate correctly when operated by headlamp control
e) stop (brake) lamps	e) - the stop lamps fail to meet any of the following requirements: ▪ minimum of 2 lamps facing the rear, located at rear of vehicle and as far apart as practical, red in colour ▪ illuminate correctly when service brakes are applied
f) centre high-mount stop lamp *Note:* Required on every passenger car built on or after January 1, 1987, and on every vehicle with a width under 2.05 m and GVWR of less than 4,536 kg, built on or after January 10, 1997.	f) - the centre high-mount stop lamp fails to meet any of the following requirements: ▪ facing rear of vehicle ▪ red in colour, illuminates correctly when service brakes are applied
g) turn-signal lamps	g) - control is ***broken***, ***missing*** or ***inoperative*** - control fails to hold selected position - on a vehicle less than 2.05 m wide, control fails to cancel automatically when steering returns to centre - turn-signal indicator lamp on instrument panel is ***inoperative***

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	- turn-signal lamps fail to meet any of the following requirements: ▪ minimum of 2 facing the front, as far apart as practical, amber in colour ▪ minimum of 2 facing the rear, as far apart as practical, amber or red in colour ▪ illuminate correctly when operated by turn signal control
h) hazard-warning lamps *Note:* Can operate same lamps as turn signals.	h) - control is ***broken***, ***missing*** or ***inoperative*** - hazard-warning indicator lamp on instrument panel is ***inoperative*** - the hazard-warning lamps fail to meet any of the following requirements: ▪ minimum of 2 facing the front, as far apart as practical, amber or yellow in colour ▪ minimum of 2 facing the rear, as far apart as practical, amber, yellow or red in colour ▪ illuminate correctly and flash simultaneously when operated by hazard-warning control
i) side-marker lamps *Note:* A single lamp may serve as both a side marker and a clearance lamp, provided it is clearly visible from both the side and the rear. Front and rear side-marker lamps are required on all: - manufactured vehicles with a date of manufacture of January 1, 1971, or later, or if the date of manufacture is not known the model year of the vehicle is 1971 or later	i) - side-marker lamps fail to meet any of the following requirements: ▪ minimum of 4 in total, 2 on each side of vehicle, 2 as close as practical to the rear and 2 as close as practical to the front of the vehicle, projecting sideward from the vehicle ▪ located as close to corners as practical ▪ front are amber or yellow in colour ▪ rear are red in colour ▪ illuminate correctly when operated by headlamp control

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
j) clearance lamps *Note:* Clearance lamps are required at the front and rear on all vehicles 2.05 m or more in width.	j) - clearance lamps fail to meet any of the following requirements: ▪ minimum of 4 in total, located as far apart as practical at the widest point of the vehicle ▪ 2 facing the front, as high as practical, amber or yellow in colour ▪ 2 facing the rear, red in colour ▪ illuminate correctly when operated by headlamp control
k) identification lamps *Note:* Identification lamps are required at the front and rear on all vehicles 2.05 m or more in width, except as noted below. Rear identification lamps are not required on truck-tractors.	k) - identification lamps fail to meet any of the following requirements: ▪ minimum of 6 in total ▪ 3 facing the front, amber in colour ▪ 3 facing the rear, red in colour ▪ illuminate correctly when operated by headlamp control
l) back-up lamp/s *Note:* Back-up lamp/s became a requirement on motor vehicles manufactured after January 1, 1971.	l) - *missing* - not white in colour or not located at rear - fail to illuminate with engine running and transmission in reverse gear - illuminate when transmission is in any other gear position than reverse
m) licence-plate lamp	m) - not white, fails to illuminate licence plate when operated by headlamp control - lamp not shielded from projecting light rearward.
n) daytime running lamps *Note:* Required on all vehicles manufactured after December 1, 1989.	n) - the daytime running lamps fail to meet any of the following requirements:

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
Daytime running lamps may switch off: I. while the automatic transmission control is in the park or neutral position; II. while the parking brake is applied; or after the engine is started, but before the vehicle is set in motion for the first time.	▪ located on front of vehicle ▪ white, amber or yellow in colour ▪ operate continually when engine is operating, parking brake has been released and master lighting switch is not in the "On" position, subject to other *OEM* interlocks which may affect daytime running lamp operation
o) auxiliary lamps *Note:* Includes all lamps that are intended for use while driving (for example, auxiliary low/high beam headlamps, front and rear fog lamps). Does **not** include warning and emergency lamps on authorized vehicles, and work lamps intended for use only when the vehicle is stationary. *Note:* These lamps are not required, but if functional, must be inspected. All auxiliary lamps located on front and/or rear of vehicle must comply with these requirements if the lamps are operational.	o) - auxiliary lamps fail to meet any of the following requirements: ▪ auxiliary headlamps are white in colour ▪ fog lamps are white, yellow or amber in colour ▪ red in colour on rear ▪ illuminate correctly – proper aim for the lamp type ▪ lens of auxiliary low-beam head-lamp is marked with the code "Z" ▪ lens of auxiliary high-beam head-lamp is marked with the code "Y"

2. Reflex Reflector

Item and Method of Inspection:	Reject if:
Note: A lamp's lens may also function as a reflex reflector. a) required reflectors *Note:* See (pages 57-61) for details on *CMVSS* 108 requirements for reflex-reflector location and colour	a) - any required reflex reflector, or part of a reflex reflector, is *broken*, *missing*, obscured or not clearly visible - not labelled to show compliance with *CMVSS*, DOT or SAE standards

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
b) rear reflectors c) side-marker reflectors *Note:* Amber intermediate reflectors are required on all vehicles over 9.1 m in length. *Note:* A single reflector may serve as both a side-marker reflector and a rear reflector, provided it is clearly visible from both the side and the rear.	b) - rear reflectors fail to meet any of the following requirements: ▪ minimum of 2, located as far apart as practical, red in colour c) - amber intermediate reflectors are *missing* on a vehicle over 9.1 m in length - side marker reflectors fail to meet any of the following requirements: ▪ minimum of 4 in total, located as far apart as practical ▪ 2 side facing lamps near the front, , amber in colour ▪ 2 side facing lamps near the rear, red in colour

3. Instrument- Panel Lamp

Item and Method of Inspection:	Reject if:
a) operation *Note:* Inspect according to *OEM* design of vehicle. Minor loss of illumination of some parts of the instrument panel is not cause for rejecting a vehicle. Illumination is required on the speedometer, and the vehicle operating status gauges required by this standard and originally illuminated by the *OEM*.	a) - *inoperative* or no illumination is provided on required instrument or gauge - automatic transmission gear-position display is not illuminated in at least one location

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

4. Headlamp Aim

Item and Method of Inspection:	Reject if:
a) aim *Additional Inspection Procedure(s):* Check headlamp aim using an aiming screen or using equipment specifically designed for such use, following the equipment-*manufacturer*'s instructions. *Note*: Headlamp aim must be checked when vehicle is unloaded.	a) - not within *manufacturer* specification or, when specification is not available, when positioned 7.6 m from aiming screen does not comply with the requirements below: ▪ **for low-beam lens marked as type 2:** i. left edge of beam must be within 100 mm left or right of straight ahead ii. top edge of beam must not be above, and no more than 100 mm below, the horizontal line ▪ **for high-beam lens marked as type 1 and any unmarked lens:** i. centre of beam must not be above, and no more than 100 mm below, the horizontal line ii. centre of beam must be no more than 100 mm left or right of straight ahead
b) headlamp aim adjusters	b) - *missing* or *insecure* mounting

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Table I: Required Motor-Vehicle Lighting Equipment

Multipurpose Passenger Vehicles and Trucks of 2.05 m or more (80 in. or more) Overall Width

Item		Location on multipurpose passenger vehicles and trucks	Height above road surface*
Headlamps		On the front, each headlamp providing the upper beam at the same height, 1 on each side of the vertical centerline; each headlamp providing the lower beam at the same height, 1 on each side of the vertical centerline, as far apart as practicable.	Not less than 559 mm (22 in.) or more than 1,372 mm (54 in.)
Tail lamps	2 red	On the rear, 1 on each side of the vertical centerline, at the same height, and as far apart as practicable.	Not less than 380 mm (15 in.) or more than 1,830 mm (72 in.)
Stop lamps	2 red	On the rear, 1 on each side of the vertical centerline at the same height, and as far apart as practicable.	Not less than 380 mm (15 in.) or more than 1,830 mm (72 in.)
Licence-plate lamp	1 white	At rear licence plate, to illuminate the plate from the top or sides.	No requirement
Back-up lamp	1 white	On the rear.	No requirement.
Turn-signal lamps at front	2 amber	At or near the front, 1 amber on each side of the vertical centerline at the same height, and as far apart as practicable.	Not less than 380 mm (15 in.) or more than 2,110 mm (83 in.)
Turn-signal lamps at rear	2 red or amber	On the rear, 1 red or amber on each side of the vertical centerline at the same height, and as far apart as practicable.	Not less than 380 mm (15 in.) or more than 2,110 mm (83 in.)
Identification lamps	3 amber & 3 red	On the front and rear, 3 lamps, amber in front, red in rear, as close as practicable to the top of the vehicle at the same height, and as close as practicable to the vertical centerline,	No requirement

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item		Location on multipurpose passenger vehicles and trucks	Height above road surface*
		with lamp centres spaced not less than 150 mm (6 in.) or more than 300 mm (12 in.) apart. Alternatively, the front lamps may be located as close as practicable to the top of the cab.	
Clearance lamps	2 amber & 2 red	On the front and rear, 2 amber lamps on front, 2 red lamps on rear to indicate the overall width of the vehicle, 1 on each side of the vertical centerline at the same height, and as near the top as practicable.	No requirement
Intermediate side-marker lamps	2 amber	On each side, 1 amber lamp located at or near the midpoint between the front and rear side-marker lamps.	Not less than 380 mm (15 in.)
Intermediate side reflex reflectors	2 amber	On each side, 1 amber located at or near the midpoint between the front and rear side reflex reflectors.	Not less than 380 mm (15 in.) or more than 1,530 mm (60 in.)
Reflex reflectors		On the rear, 1 red on each side of the vertical centerline, as far apart as practicable and at the same height. On each side, 1 red as far to the rear as practicable, and 1 amber as far to the front as practicable.	Not less than 380 mm (15 in.) or more than 1,530 mm (60 in.)
Side-marker lamps		On each side, 1 red as far to the rear as practicable, and 1 amber as far to the front as practicable.	Not less than 380 mm (15 in.)

- measured from centre of item on vehicle at curb weight mass

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Table II: Required Motor-Vehicle Lighting Equipment

All Passenger Cars, Multipurpose Passenger Vehicles and Trucks of Less than 2.05 m (80 in.) Overall Width

Item	Passenger cars, multipurpose passenger vehicles, trucks and buses
Headlamps	Section 7 (TSD108)
Tail lamps	2 red
Stop lamps	2 red
High-mounted stop lamp	1 red
Licence-plate lamp	1 white
Parking lamps	2 amber or white
Reflex reflectors	4 red; 2 amber
Intermediate side reflex reflectors	2 amber
Intermediate side-marker lamps	2 amber
Side-marker lamps	2 red; 2 amber
Back-up lamp	1 white
Turn-signal lamps	2 red or amber; 2 amber
Turn-signal operating unit	1
Turn-signal flasher	1
Vehicular hazard warning-signal operating unit	1
Vehicular hazard warning-signal flasher	1

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Table III: Location of Required Equipment

All Passenger Cars, Multipurpose Passenger Vehicles and Trucks of Less than 2.05 m (80 in.) Overall Width

Item	Location on Passenger cars, multipurpose passenger vehicles, trucks, trailers and buses	Height above road surface measured from centre of item on vehicle at curb weight mass
Headlamps	On the front, each headlamp providing the upper beam at the same height, 1 on each side of the vertical centerline; each headlamp providing the lower upper beam at the same height, 1 on each side of the vertical centerline, as far apart as practicable.	Not less than 559 mm (22 in.) or more than 1,372 mm (54 in.)
Tail lamps	On the rear, 1 on each side of the vertical centerline at the same height, and as far apart as practicable.	Not less than 380 mm (15 in.) or more than 1,830 mm (72 in.)
Stop lamps	On the rear, 1 on each side of the vertical centerline at the same height, and as far apart as practicable.	Not less than 380 mm (15 in.) or more than 1,830 mm (72 in.)
High-mounted stop lamp	On the rear, on the vertical centerline (Sections 5.1.1.27, 5.3.1.8, and Table III – TSD108). Note: Not required on vehicles manufactured before January 1, 1987.	Section 5.3.1.8 for passenger cars. Not less than 860 mm (34 in.) for multipurpose passenger vehicles, trucks and buses
Licence-plate lamp	At rear licence plate, to illuminate the plate from the top or sides.	No requirement
Parking lamps	On the front, 1 on each side of the vertical centerline at the same height, and as far apart as practicable.	Not less than 380 mm (15 in.) or more than 1,830 mm (72 in.)
Reflex reflectors	On the rear, 1 red on each side of the vertical centerline at the same height, and as far apart as practicable. On each side, 1 red as far to the rear as practicable, and 1 amber as far to the front as practicable.	Not less than 380 mm (15 in.) or more than 1,530 mm (60 in.)

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item	Location on Passenger cars, multipurpose passenger vehicles, trucks, trailers and buses	Height above road surface measured from centre of item on vehicle at curb weight mass
Back-up lamp	On the rear.	No requirement
Turn-signal lamps	At or near the front, 1 amber on each side of the vertical centerline at the same height, and as far apart as practicable. On the rear, 1 red or amber on each side of the vertical centerline at the same height, and as far apart as practicable.	Not less than 380 mm (15 in.) or more than 2, 110 mm (83 in.)
Side-marker lamps	On each side, 1 red as far to the rear as practicable, and 1 amber as far to the front as practicable. *Note*: Not required on vehicles manufactured before January 1, 1971.	Not less than 380 mm (15 in.)
Intermediate side-marker lamps	On each side, 1 amber located at or near the midpoint between the front and rear side-marker lamps.	Not less than 380 mm (15 in.)
Intermediate side reflex reflectors	On each side, 1 amber located at or near the midpoint between the front and rear side reflex reflectors.	Not less than 380 mm (15 in.) or more than 1,530 mm (60 in.)

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 7 – Electrical System

1. Wiring

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Inspect wiring, harnesses and connections that are accessible and visible, including trailer wiring harness. Pay particular attention to battery, starter and charging-system circuits. *Note:* Trailer wiring does not have to be functional, and is inspected only to ensure that it creates no adverse condition in the vehicle's electrical system.	
a) securement	a) - *loose* or improperly supported, and able to contact moving parts - chafed section of wiring harness has exposed wires resulting from contact with vehicle part(s)
b) insulation	b) - conductor is exposed, other than as required at a proper connector
c) condition	c) - cut, shorted or deteriorated - connection is *loose*, abnormally corroded, burnt
d) circuit loading *Note:* Circuit-protection requirements are based on *manufacturer* design and specifications. Circuit testing is not required. Inspection is visual and based on knowledge of the normal design and specifications.	d) - circuit load protection is *missing* or bypassed

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

2. Battery

Item and Method of Inspection:	Reject if:
Note: This section applies to the low-voltage battery, which provides power for basic vehicle functions. It does not include batteries for auxiliary equipment (see Section 5(7)), or hybrid propulsion batteries (see Section 1(10)).	
a) posts and connections	a) - corrosion or deterioration is present that prevents proper electrical contact, *loose* or burnt
b) mount	b) - cracked or *missing*, perforated or weakened due to corrosion
c) cover and hold down	c) - *missing*, *insecure*, does not meet *OEM standard* - battery is not secured in place
d) condition	d) - *level 2 leak* of battery fluid

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

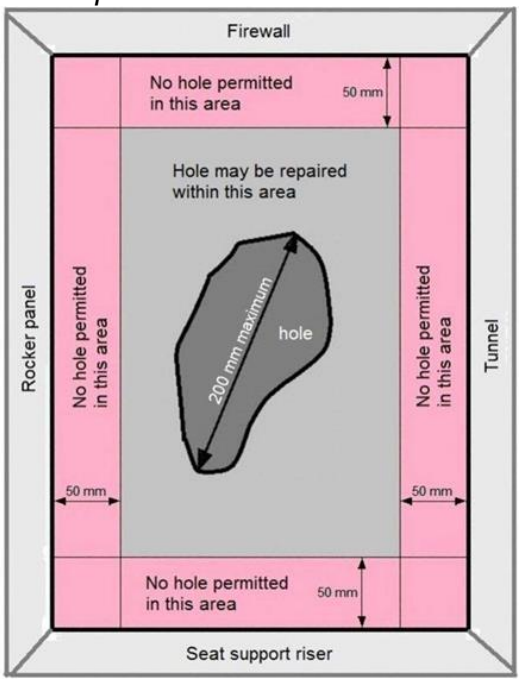
Section 8 – Body

1. Hood, Trunk Lid or Engine Enclosure

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Test the operation of the hood or engine enclosure doors, attachment, latches and safety devices.	
a) condition	a) - *insecure*, *damaged* or deteriorated in a manner that it is likely to become detached or *missing*
b) latch (primary or secondary)	b) - *broken*, *inoperative*, *insecure* mounting, *missing* or seized - effectiveness is compromised due to deteriorated condition (for example, rubber or similar type of latch) - fails to open or close normally - welded or repaired in a way that does not meet *OEM standard* or *industry standard*
c) hood-support cylinder, prop rod, safety cable	c) - *broken*, *insecure*ly attached, *inoperative* or *missing*
d) hinge, support spring	d) - hinge or hinge part is *broken*, cracked, *missing*, seized or excessively worn

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

2. Vehicle Body (Not Including Cargo Bodies)

Item and Method of Inspection:	Reject if:
Note: This item, *Vehicle Body*, covers the body of a body-on-frame-type vehicle and the body of a unitized- body-type vehicle, but does not include separately mounted cargo bodies, which are covered in item 4, *Cargo Body*. The full frame of a body-on-frame- type vehicle is covered in item 5*, Frame, Rails and Mounts.* Repair of holes in the floor of the vehicle due to corrosion perforation is permitted, provided that the hole does not extend into a structural area of the floor, such as seat-belt anchors, seat supports or rocker panels. Edges of the hole prepared for repair must not exceed 200 mm in length or extend within 50 mm of tunnel, rocker, seat-support structure or firewall / bulkhead (see Figure 1*). No "pop" rivets, arc welding or flame repair for high strength steel, TIG or MIG stitch welding is acceptable.*  Figure 1	

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 8 – Body

Item and Method of Inspection:	Reject if:
a) body	a) - any section has exposed sharp edge, is torn or protrudes out in a manner that could be hazardous to driver, passenger, pedestrian or cyclist - body-component integrity – *loose* due to *broken* welds, *missing* fasteners or failed adhesives - hole due to corrosion, puncture, *missing* hardware etc. is present in floor or panel allowing water splash or exhaust to enter the occupant compartment - any component listed in Table IV of the body / chassis is bent, *broken*, buckled, cracked, *loose*, *missing* or perforated by corrosion
b) body mount / support	b) - allows abnormal amount of movement - mount is *broken*, bulging, cracked, perforated by corrosion, incorrect for the vehicle, *loose*, *missing* or uses incorrect, *missing* or ineffective fastener
c) body molding or trim	c) - *loose*, protrudes or has exposed sharp edge, or is torn in a manner that could be hazardous to driver, passenger, pedestrian or cyclist
d) fender	d) - *missing*, section torn away, section *missing* or corroded so that road spray is not controlled - corroded or *damaged* in a manner that *OEM* type lamps cannot be properly secured - not the full width of the tire(s)

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

3. Structural Components

Table IV: Structural Component Examples	
Radiator support assembly Upper-rail assembly — left Upper-rail assembly — right Lower-rail assembly — left Lower-rail assembly — right Front strut-tower / apron assembly — left Front strut-tower / apron assembly — right Cowl top-panel assembly Engine sub-frame assembly Dash-panel assembly Windshield "A" pillar assembly — left Windshield "A" pillar assembly — right Side rocker-panel assembly — left Side rocker-panel assembly — right Centre-hinge "B" pillar assembly — left Centre-hinge "B" Pillar assembly — right	Rear "C" pillar assembly — left Rear "C" pillar assembly — right Front floor-pan assembly Rear floor-pan assembly Roof-panel (structural) assembly Rear strut-tower / inner-wheelhouse assembly — left Rear strut-tower / Inner-wheelhouse assembly — right Inner quarter-panel assembly — left Inner quarter-panel assembly — right Rear cross-member assembly Rear-end panel assembly — upper Rear-end panel assembly — lower Rear sub-frame assembly — left Rear sub-frame assembly — right Trunk floor-pan assembly Full-frame vehicle: complete full-frame assembly

4. Cargo Body

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Where any sheet metal, structural item or fastener is suspected of being *loose* or perforated by corrosion, determine the integrity of the suspect item or area. *Note*: Minor surface rust and corrosion is normal. a) sheet metal	a) - any section has exposed sharp edge, is torn or protrudes out in a manner that could be hazardous to driver, passenger, pedestrian or cyclist

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	- panel is *insecure* or *loose* - rivet is *loose*, *missing* - welded or repaired in a way that does not meet *OEM standard* or *industry standard*
b) floor and deck	b) - has any condition that allows a person or cargo to fall through - has a hole larger than 200 mm across the longest dimension - welded or repaired in a way that does not meet *OEM standard* or *industry standard*
c) frame and sub-frame	c) - bulge caused by corrosion - stress crack at side rail or rub-rail - rivet is *loose*, *missing*, dimpled by corrosion - bent, *broken*, cracked, kinked, welded or repaired in a way that does not meet *OEM standard* or *industry standard* - perforated or weakened by corrosion
d) cross member	d) - bent, *broken*, collapsed, cracked , kinked, torn or *missing* - perforated or weakened by corrosion
e) inner or outer side rail and body long sills	e) - bulge caused by corrosion - rivet is *loose*, *missing*, dimpled by corrosion - bent, *broken*, cracked or *insecure* - welded or repaired in a way that does not meet *OEM standard* or *industry standard*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
f) tailgate	f) - *broken*, *loose* or *insecure*
g) body-to-frame attachment *Note:* Includes body-to-frame attachments such as u-bolts, pivot hinge, cheek-plate mounts, flex-mount hardware, body clamps and j-bars.	g) - bent, *broken*, cracked, *loose* or *missing* - spacer or insulator is *abnormally worn*, crushed, dislodged or *missing*

5. Frame, Rails and Mounts

Item and Method of Inspection:	Reject if:
a) condition *Note*: Some rust and corrosion on the outer surface of exposed metal parts is normal. When an excessive amount of rust or corrosion is present and visibly reduces the thickness of the material, structural deterioration is possible.	a) - welded, modified or repaired in a way that does not meet *OEM standard* or *industry standard* - bent, *broken* or cracked - perforated or separated due to corrosion between mount and frame member - rusted or corroded to a depth sufficient to become weakened
b) frame fastener	b) - ineffective, *loose* or *missing*
c) cross member	c) - bent, *broken*, cracked, *loose* or *missing* - cut, notched, perforated or corroded to a depth sufficient to cause weakness - repaired using material or method that does not meet *OEM standard* or *industry standard*
d) sub-frame assembly *Note:* This only applies to a structural frame assembly that is not part of the main	d) - bent, *broken*, cracked, *loose* or *missing* - cut, notched, rusted or corroded to a depth sufficient to cause weakness - repaired using material or method, that

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
frame assembly, and carries a load or provides strength to the vehicle structure (engine cradle or suspension sub-frame).	does not meet *OEM standard* or *industry standard*

6. Doors

Item and Method of Inspection:	Reject if:
a) condition and operation *Additional Inspection Procedure(s):* Test the operation of each door. *Note*: This includes a partition door between the occupant and cargo area.	a) - binds or fails to latch securely - *insecure* mounting to hinge, *insecure* hinge or severely corroded in hinge area - panel is corroded through - welded or repaired in a way that does not meet *OEM standard* or *industry standard* - door fails to operate or latch on both primary and secondary latches - child safety lock does not *operate as intended* - gap exists that allows exhaust gases to enter occupant compartment - flexible sealing material is out of place, *missing* or *damaged*
b) door openers and handles *Note:* An external and internal handle is required on all doors	b) - *broken*, *inoperative* or *missing* - catch or latch is *broken*, *loose* or *missing*

7. Device or Equipment Attached or Mounted to the Vehicle

Item and Method of Inspection:	Reject if:
Note: This section applies primarily to external devices or equipment attached to a vehicle. The criteria in this section only apply to a device or equipment to the extent that the condition could affect the safe operation of the vehicle on the highway. The functionality of the equipment does not need to be tested or inspected.	

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
a) security and condition *Additional Inspection Procedure(s):* Check security of attached body, device or equipment visually, manually and using suitable tools as necessary. No functional tests to be conducted.	a) - equipment or device is in such an unsafe condition that it is a risk to other motorists, the driver, a passenger, pedestrian or cyclist - equipment or device is *insecure* or *loose*, or in danger of shifting in a way that could impede normal operation of the vehicle - any section has an exposed sharp edge, is torn or protrudes out in a manner that could be hazardous to the driver, a passenger, pedestrian or cyclist - *level 3 leak* of any oil, hydraulic fluid or liquid product

8. Bumper

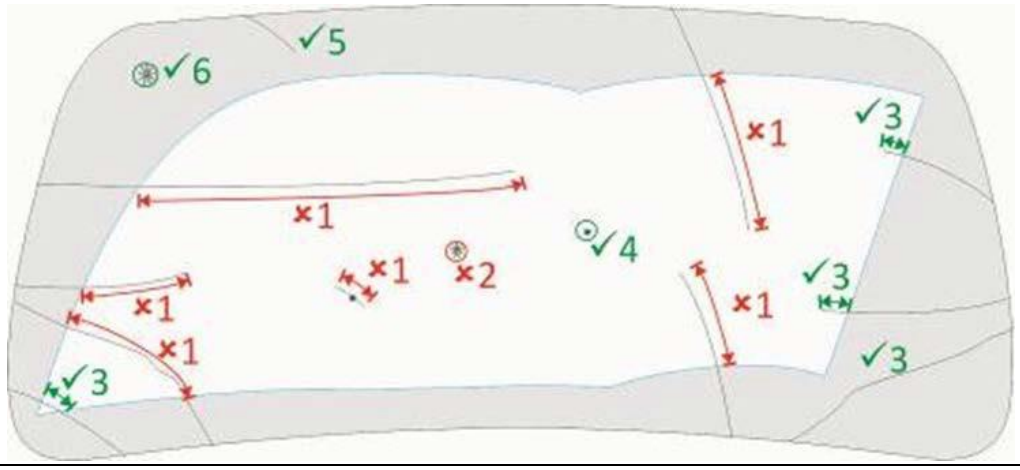
Item and Method of Inspection:	Reject if:
a) bumper	a) - *missing*, modified, inferior to original *OEM* design (width, size, structural integrity) or incorrect for the vehicle - *broken*, misaligned, *loose* or *missing* structure, supporting structure, or fasteners.
b) condition	b) - collapsed, *inoperative* - any section has exposed sharp edge, is torn or protrudes in a manner that could be hazardous to the driver, a passenger, pedestrian or cyclist - any perforation due to corrosion
c) height (for all vehicles manufactured after April 1, 1976)	c) height of bumper has been altered such that less than 6.25cm (2.46 in) of the impact surface is between a height of 35cm and 55cm (13.8in and 21.7in)

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

9. Windshield

Item and Method of Inspection:	Reject if:
a) obstruction *Note*: Forward facing camera safety devices may be mounted within the portion of the windshield swept by the wipers, no more than 50 mm from the outer edge of the area swept by *OEM* wipers.	a) - decal or device, except a camera safety device, obscures vision in the area swept by *OEM* windshield wipers
b) crack *Note*: See image below for examples of pass and fail windshield crack conditions.	b) - a crack extends through both layers of glass - a crack of any length extends more than 50 mm within the area swept by *OEM* windshield wipers

Examples of Windshield Pass and Reject Conditions:



Reject condition 1 - crack through 1 layer that extends more than 50 mm into the area swept by wipers

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Examples of Windshield Pass and Reject Conditions:

Reject condition 2 - star chip larger than 13 mm in diameter in area swept by wipers

Pass condition 3 - crack extends less than 50 mm into the area swept by wipers

Pass condition 4 - star chip smaller than 13 mm in diameter in area swept by wipers

Pass condition 5 - crack through 1 layer that is more than 50 mm long, but outside the area swept by wipers

Pass condition 6 - star chip larger than 13 mm in diameter, but outside the area swept by wipers

Item and Method of Inspection:	Reject if:
c) chip	c) - a chip larger than 13 mm in diameter within the area swept by *OEM* windshield wipers
d) discolouration	d) - more than 10% of total glass area is discoloured due to age or other deterioration
e) material type	e) - not marked as type AS-1 or AS-10
f) condition	f) - *missing* - vision is obscured or limited due to surface condition - *crazed*, clouded or fogged, so as to materially impair vision - exposed sharp edges
g) tinting *Note:* *OEM* tinting does not block more than 30% of light. This is rated and expressed as minimum 70% luminous (light) transmittance, or maximum 30% opacity	g) - Any aftermarket window tint is applied to the windshield

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

10. Side Windows

Item and Method of Inspection:	Reject if:
Note: Items b) and c) below apply to all side windows.	
a) operation *Additional Inspection Procedure(s):* Test the operation of all side windows, with the exception of vent windows (designed for ventilation only, and which typically do not open more than 100 mm).	a) - fails to open or close as intended
b) condition	b) - normal vision is restricted on side windows immediately to the left and right of the driver - any side window situated directly to the left or right of the driver is *crazed*, clouded or fogged, so as to materially impair vision - exposed sharp edges or is *broken* or *missing* in part; - banding *missing*; if originally fitted, has exposed sharp edges or is *damaged*
c) material type *Note:* Type AS-3 is permitted only on windows to the rear of the driver's seat back.	c) - glass windows not marked as type AS-1, AS-2, AS-3, AS-10 or AS-11
d) tinting *Note:* Applies to any window forward of the driver's seat back. *OEM* tinting does not block more than 30% of light. This is rated and expressed as minimum 70% luminous (light) transmittance, or maximum 30% opacity.	d) - Any aftermarket window tint is applied to any window forward of the driver's seat back

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

11. Rear Window

Item and Method of Inspection:	Reject if:
a) condition b) material type *Note:* Rigid material may be used in place of glass or rigid plastic, when the vehicle is equipped with an outside rear view mirror on each side.	a) - *broken* or exposed sharp edge b) - not marked as glass type AS-1, AS-2, AS-10 or AS-11, or rigid plastic AS-4 or AS-5

12. Interior Sun Visor

Item and Method of Inspection:	Reject if:
a) location b) attaching parts c) adjustment	a) - *missing* on driver's side b) - bent, *broken*, *loose* or *missing* c) - cannot be maintained in a set position

13. Rear View Mirrors

Item and Method of Inspection:	Reject if:
a) location *Note:* Every vehicle requires an external rear view mirror on the left side of the vehicle and an interior, centrally-mounted rear view mirror providing an unobstructed view through a rear window. When a vehicle does not have an interior rear view mirror that provides an unobstructed view through a rear window, an external mirror is also required on the right side of the vehicle.	a) - required mirror is *missing*
b) view	b) - view to the rear is obstructed on a required mirror

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
c) mount	c) - *broken*, *insecure* or *loose* - fails to hold mirror in correct position
d) mirror reflective surface condition	d) - cracked, *broken* - significant reduction in reflecting surface area, due to deterioration of the reflective silvering, damage to the glass surface (e.g., pitting, etc.) or contamination (e.g., paint, etc.) is evident
e) surface area of external mirror *Note:* *OEM* mirrors are required to meet these same area requirements as per *CMVSS* 111. When a convex mirror is installed onto a rear-view mirror, its area is included.	e) - when non-*OEM* mirror is used, or additional mirror is added, surface area of mirror is less than 125 cm^2

14. Seat

Item and Method of Inspection:	Reject if:
a) condition *Additional Inspection Procedure(s):* Test the operation of the driver seat position adjustment and locking mechanisms.	a) - *loose* or *insecure* mounting - seat cannot be adjusted fore / aft, as intended - frame *broken* - covering material torn or worn and exposing a metal component or spring which may come in contact with driver - driver-seat pedestal removed or seat assembly does not meet *OEM standard* or *industry standard* - seat-back recline mechanism fails to adjust or lock seat back in all positions

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

15. Seatbelt / Occupant Restraint

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Confirm the operation of each seatbelt latch and retractor.	
a) type and condition	a) - *missing* or not equipped at each seating position as originally required to meet *CMVSS* - webbing material is *broken*, cut, excessively frayed or torn - air ride, hydraulic or spring seat does not have lap belts attached to the seat, or is not equipped with a secondary belt from the seat to the floor
b) anchor	b) - *broken*, *insecure* mounting or *missing*
c) retractor	c) - *broken*, *insecure* mounting or *missing* - fails to allow belt to extend to its maximum length or fails to retract properly
d) belt release and buckle *Additional Inspection Procedure(s):* Buckle each seatbelt assembly and extend the belt to test the retractor.	d) - *broken*, *insecure* mounting or *missing* - any part is not properly attached to the belt material - latch fails to lock in position or release easily under pressure
e) supplemental restraint system (SRS) *Note:* Airbags equipped with on-off switch must be inspected with the switch in the “on” and “off” positions.	e) - the airbag (SRS) *tell-tale* indicates a malfunction or fails to operate according to *OEM* service instructions - airbag has been deactivated permanently without a provision to turn off and on by a key lock, - airbag does not have a *tell-tale* to indicate when it has been switched off

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
f) pre-tensioner and load limiter	f) - pre-tensioner has been activated and system not repaired or replaced to meet *OEM standard* - load limiter has been activated and system not repaired or replaced to meet *OEM standard*

16. Fender / Mudguard

Item and Method of Inspection:	Reject if:
Note: A mudguard is required surrounding every wheel, where the full width of the tire is not enclosed by a body element, such as a fender. a) condition and location	a) - fender or mudguard is *broken*, has *insecure* mounting, is *loose* or *missing* - fender or mudguard has a hole, tear or opening larger than 100 mm across the longest dimension - top of the mudguard does not reach up to the top of the tires or a body element - where the full width of a tire is not enclosed by a body element, such as a fender the mudguard does not extend down at least as far as the wheel's horizontal centre line - mudguard does not cover the full width of a tire surrounding the portion of the tire which is not enclosed by a body element or fender

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 9 – Tire and Wheel

1. Tire-Tread Depth

Item and Method of Inspection:	Reject if:
a) condition *Additional Inspection Procedure(s):* Inspect the tire tread to locate the area where the depth is at its minimum. Measure it at a major groove using a suitable tread-depth gauge. Do not measure tread depth on a wear bar. Tread-depth measurements are to be recorded on an inspection report. The recorded tread depth must have been measured at the minimum tread depth location. *Note*: A "major tread groove" is one of several of the deepest molded grooves around a tire through the full thickness of tread rubber that includes wear bars.	a) - tread depth is less than 1.6 mm at point of minimum tread depth

2. Tire Tread Condition

Item and Method of Inspection:	Reject if:
a) studded tires	a) - studded tire present between May 1 and October 31 inclusive unless extended by Minister Service NL
b) tread condition	b) - cut or crack greater than 25 mm long that extends deeper than a major tread groove - cut or crack extends into body cord, or any body cord is exposed - any piece of original tire tread is *missing*, and the longest dimension across the *missing* section is greater than 25 mm

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
c) regrooving	c) - non regroovable tire has been re-grooved

3. Tire Sidewall

Item and Method of Inspection:	Reject if:
a) matching and application *Note:* Nominal tire size is based on the size designation and marking provided by the tire *manufacturer* Tire size and load capacity requirements of the vehicle manufacturer can be located on the Tire Placard label, Federal Compliance label or other reference.	a) - nominal tire size is different between the left and right tires at the front or rear of the vehicle. - wheel / rim size does not match tire size according to tire *manufacturer*'s specifications - required tire is *missing* - radial tire is mixed with non-radial anywhere on vehicle - any tire is labelled "Not for Highway Use," or in any way that indicates the tire is not intended for on-road use - tire has a lower load rating / capacity than specified by the vehicle *manufacturer* - tire is sufficiently oversized / undersized as to contact any vehicle component which may affect the safe operation of the vehicle - tire is over or undersized outside of *manufacturer*s specifications
b) condition	b) - ply separation is evident or body cords are exposed - bulge in sidewall more than 10 mm high - casing is *broken* or distorted - presence of plug-type repair, or rubber-coated or cured-rubber plug is used in the sidewall - UV degradation damage more than 3 mm deep

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

4. Tire Inflation Pressure

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Measure tire inflation pressure using a suitable gauge. *Note:* Tire Pressure Monitoring System (TPMS) is not a requirement in Canada.	
a) inflation pressure *Note*: Recommended tire inflation pressure is based on data provided by the vehicle *manufacturer* Ensure pressure is as required by *OEM*	a) - leaking tire will not maintain a constant air pressure
b) valve stem	b) - cracked, *damaged*, leaking or inaccessible - prevents measurement of tire pressure - prevents inflation or deflation of tire
c) tire inflation system	c) - lines or other components leaking - not functioning correctly

5. Wheel Hub

Item and Method of Inspection:	Reject if:
a) condition *Note*: Bearing fit in the hub is checked only when disassembled.	a) - repaired by welding - bent, *broken*, cracked, *damaged* or distorted - bearing cup is *loose* in hub bore
b) stud hole	b) - any stud hole is enlarged or *damaged* in a way that prevents proper fitting and retention of studs

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
c) wheel seal	c) - *level 2 leak* of oil from lubricated hub - seal is allowing grease to be lost from hub - seal is out of position
d) lubricant (oil lubricated)	d) - lubricant level is below indicated minimum - lubricant is contaminated - *level 2 leak* from hub or hub cap
e) lubricant (grease lubricated)	e) - grease is leaking from hub - hub cap is cracked, *loose* or *missing*
f) hub / spindle fasteners (nuts, bolts, studs)	f) - any fastener is bent, *broken*, otherwise *damaged* or *missing* - there is evidence of a *loose* or ineffective fastener

6. Wheel Bearing

Item and Method of Inspection:	Reject if:
Additional Inspection Procedure(s): Check wheel bearing with axle raised sufficiently to rotate the wheel and hub assembly. Rotate the wheel by hand to check for bearing roughness or binding. Check wheel bearing end-play / adjustment by pushing wheel assembly or hub inward and outward parallel to axle centerline. Confirm end-play / adjustment with dial gauge if necessary.	
a) end play / adjustment	a) - does not meet *OEM standard*, *industry standard*, or when specification is not provided, is less than 0.02 mm, or more than 0.13 mm

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
b) bearing condition	b) - binding or roughness detected while rotating the bearing
c) locking device	c) - bearing adjustment locking device is *missing*, not engaged or *inoperative*

7. Wheel / Rim (General)

Item and Method of Inspection:	Reject if:
a) condition *Note:* A *Spacer* is a solid piece of material intended to offset the wheel outboard. It has holes in it through which the studs pass without engaging the spacer. An *Adapter* is a spacer that is attached to the hub with fasteners. The wheel is attached to the adapter by nuts on studs mounted in the adapter.	a) - wheel / rim is *damaged*, *broken*, bent, cracked or distorted - wheel / rim has been welded or repaired in a way that does not meet *industry standard* - there is less than 3 mm clearance between butt ends of the lock ring on a multi-piece wheel / rim - incompatible wheel or component is used on a wheel system - spacer has been used between any wheel and hub - adapter is *damaged*, has *damaged* fasteners, fasteners of inadequate length, inappropriate material or incorrect grade of stud, nut or bolt - wheel is installed incorrectly - there is evidence of damage or deterioration, foreign material, excessive or uncured paint on a hub, drum or wheel-mounting face
b) matching	b) - wheel / rim size does not match tire size
c) bead lock	c) - *loose* or *missing* fastener

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

8. Wheel Fasteners (Nuts, Bolts and Studs)

Item and Method of Inspection:	Reject if:
a) installation	a) - incorrect fastener type, thread direction or style is installed - any nut is not fully engaged with the stud or bolt - incompatible wheel or component is used on a wheel system - wheel is installed incorrectly
b) condition	b) - any fastener is bent, ***broken***, otherwise ***damaged*** or ***missing*** - there is evidence of a ***loose*** or ineffective fastener

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 10 – Coupling Devices

1. Hitch Assembly, Structure and Attaching Components

Item and Method of Inspection:	Reject if:
Note: This applies to all types of hitching systems. Some rust and corrosion on the outer surface of exposed metal parts is normal. When an excessive amount of rust or corrosion is present and has reduced the thickness of the remaining metal structural resulting in structural deterioration. Only the hardware that is installed on the vehicle requires inspection.	
a) hitch assembly, receiver, drawbar or draw beam, supporting structure and attachment to vehicle chassis	a) - part is bent, *broken* or cracked - weld is *broken* or cracked - welded or repaired in a way that does not meet *OEM standard* or *industry standard* - fastener is ineffective, *loose* or *missing* - perforated by corrosion or abnormally deteriorated anchor point for secondary attachment (safety chain / cable) is *broken*, excessively worn or otherwise deteriorated - hitch is not properly attached to chassis frame as specified by the *manufacturer*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

2. Coupling Devices

Item and Method of Inspection:	Reject if:
a) adjustment, condition and operation of latches, locks, pins and other coupling devices *Additional Inspection Procedure(s):* Test the operation of the coupler according to the *manufacturer* service instructions.	a) - fails to *operate as intended* welded or repaired in a way that does not meet *manufacturer* standard - excessively worn

3. Hitch Components

Item and Method of Inspection:	Reject if:
a) ball, neck and stem of ball-type hitch	a) - *loose*, bent or cracked - ball is worn more than 3.0 mm from original dimension 3.0 mm = 0.12 in.
b) cast or forged part of pintle hook	b) - has been repaired by welding - material is worn more than 5 mm from original dimension

4. Fifth-Wheel Hitch

Item and Method of Inspection:	Reject if:
a) coupler plate *Additional Inspection Procedure(s):* Check the condition and flatness of the coupler plate using a tool specifically intended for that purpose.	a) - cracked, *broken*, *loose*, warped or worn so that the area in contact with the lower fifth wheel is less than 75% of the surface of the coupler - bent upward or downward more than specified by *manufacturer* - lubricant is contaminated with an abrasive material - coupler's attachment or a structural member is corroded, *damaged* or in a condition that the plate or kingpin is weakened

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
	- mounting bolt or rivet is *broken*, corroded, *loose* or *missing* (also refer to Section 8, Body, item 5. Frame, Rails and Mounts) - bulge is present in attaching and mating surface due to corrosion - rivet is dimpled due to corrosion - rivet area bulged due to corrosion
b) fifth wheel couple plate	b) - *broken*, cracked, *damaged*, distorted or welded, or repaired in a way that does not meet *manufacturer* standard - surface is worn beyond *manufacturer* specified limit - lubricant is abnormally contaminated (for example, sand or gravel) - not properly lubricated (unless equipped with *manufacturer*-supplied, no-lube, top-plate coupling surface)
c) latching mechanism *Additional Inspection Procedure(s):* Test the operation of the latch and wear in the fifth-wheel assembly, using a test device specifically designed for that purpose.	c) - *broken*, cracked or *inoperative* - stiffness or seizing of the latch mechanism is felt - free play, slack or wear is beyond *manufacturer* specified limit - improperly adjusted - modified or improperly repaired - release handle is bent, modified or has anything attached to it
d) lower-coupler pivot ("fifth-wheel saddle") *Additional Inspection Procedure(s):* Check for wear according to *manufacturer* service instructions.	d) - wear exceeds *manufacturer* specification
e) slider assembly and locking mechanism	e) - *broken*, cracked, *damaged* or *inoperative* - fore / aft movement of fifth wheel in slider exceeds *manufacturer* specification - fails to lock securely - slider stop is *missing* or *insecure*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Section 11 – Road Test

Note:

- Prior to conducting a road test on a public road or highway all conditions in sections 1 through 10 must have met the standard.
- The Authorized Inspection Mechanic conducting the road test must have a valid driver's licence.
- The *Highway Traffic Act* must be followed at all times during the course of the test.
- The Authorized Inspection Mechanic must utilize utmost caution in performing this test on a public road to ensure the safety of other motorists.

The purpose of the road test is to enable the detection of safety concerns in the vehicle, which may not be found while the vehicle is stationary.

Elements of a comprehensive road test must include, as a minimum:

- Must be driven for a minimum of 2 km at a speed in **excess of 40 km/h**
- Complete **both** a left and right turn at full lock (maximum steering-wheel travel, against stop)
- From a minimum speed of 40 km/h, perform **at least one** heavy application of the service brakes, decelerating the vehicle to a **complete stop**
- Application and assessment of parking brake performance
- Drive over **at least one** bump equivalent to approximately 5cm in height

Record **all** *tell-tales,* including those that do not result in failure of the vehicle to pass the inspection

1. Odometer / Speedometer

Item and Method of Inspection:	Reject if:
a) test operation of odometer	a) - no odometer in vehicle; odometer does not work
b) test operation of speedometer	b) - *inoperative* or *missing*

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

2. *Tell-tales*

Item and Method of Inspection:	Reject if:
Inspection Procedure: Start vehicle and check cycling of all *tell-tales*. Ignition switch may have to be turned "on" and "off" several times to enable all *tell-tales* to be checked. a) electronic stability control (ESC) Note: Stability Control Systems are required for motor vehicles manufactured on or after September 1, 2011, or September 1, 2012, for multistage manufactured vehicles (for example, body mounted on cab and chassis). If ESC is required, record active *tell- tale* on inspection report. b) Supplementary Restraint System (SRS)	a) - if ESC is required: ▪ *tell-tale* fails to illuminate during bulb check or *tell-tale* remains illuminated ▪ fault or malfunction is indicated, or ▪ there exists any visual or other evidence that the system has been tampered with or defeated - if equipped: ▪ ESC system malfunction adversely affects the vehicle's brakes or handling b) - the airbag (SRS) *tell-tale* displays a malfunction or fails to operate according to *OEM* service instructions

3. Shock Absorber / Strut

Item and Method of Inspection:	Reject if:
Inspection Procedure: While driving over bumps, uneven pavement or making hard stops or sharp turns, observe how the shock absorbers perform. a) shock absorber / strut check	a) - vehicle bounces excessively - pitches (dives) excessively under hard braking conditions or - drifts on bumpy patches of road

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

4. Clutch and Clutch Pedal

Item and Method of Inspection:	Reject if:
Inspection Procedure(s): Inspect clutch operation and adjustment. a) operation	 a) - fails to operate in the manner prescribed by the *manufacturer*

5. Brakes

Item and Method of Inspection:	Reject if:
Inspection Procedure: From a speed of at least 40 km/h, apply the brakes so as to simulate an emergency stop, bringing the vehicle to a full and complete stop while monitoring brake performance and function of the ABS system. Ensure utmost caution and safety when performing this test. a) performance b) operation c) ABS system *Note:* The ABS system can adversely affect the proper functioning of the brakes whether or not a defect is indicated by the *tell-tale*	 a) - vehicle stopping distance is excessive, or vehicle deceleration rate is inadequate b) - brake pull to left or right - exhibits tendency for premature lock-up of wheel - *severe pulsation* c) - ABS response is adversely affecting the brake system performance or vehicle control

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

6. Tire clearance

Item and Method of Inspection:	Reject if:
Inspection Procedure: Drive the vehicle so as to cause suspension travel (bumps, uneven pavement) a) determine if there is contact between a tire and other vehicle components or body	a) - contact occurs between tire and any other part of the vehicle

7. Steering

Item and Method of Inspection:	Reject if:
a) steering wheel reaction *Inspection Procedure:* Drive vehicle as necessary to evaluate the response to the following conditions: -vehicle driven over bump -turning	a) - steering pulls to left or right while vehicle is driven in a straight line - steering reacts excessively to bump - steering wheel does not automatically return most of the way to centre while vehicle is exiting a turn

8. Drivetrain

Item and Method of Inspection:	Reject if:
a) differential *Inspection Procedure:* While driving at low speed through a sharp turn, monitor if the differential allows free movement between the left and right drive wheels. b) transfer case	a) - differential action is limited or non-existent, indicated by skidding of a drive tire during a sharp turn - differential fails to *operate as intended* b) - evidence that transfer case is not functioning properly (for example, wheel lock-up or shuddering experienced in vehicle while driving in a straight line)

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.

Item and Method of Inspection:	Reject if:
c) transmission	c) - transmission gear-shift indicator inaccurate or not functioning gear-shift lever binding, excessive play
d) CV joint / U-joint	d) - joint is noisy (for example, clicking) during road test, and steering movement adversely affected

Note: All inspection procedures are visual unless additional inspection procedures are indicated. Conditions shown in this manner are defined conditions. The definitions can be found in the introduction section.