



## **Trailer 4500kg or Less Inspection Methods and Standards**

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**Reference Manual**

**September 2020**

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# Introduction

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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 trailers less than 4500kg requiring the issuance of an Official Inspection Station Certificate. 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.

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.

# Instructions for Authorized Inspection Mechanics Conducting Inspections

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## 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 1-7.

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.

- 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

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.

# Terminology

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## 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.



**“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.

## **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.

## 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<sup>2</sup> (psi)*

**Conversion Factors:** 1 kPa = 0.145 psi, 6.9 kPa = 1 psi

**Standard tolerance for all 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**

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:

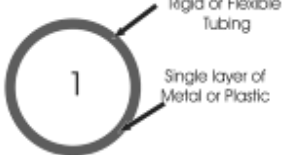




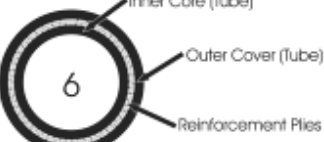

#### Comparable Measurement Tolerances

Tolerance in metric measurements	Tolerance in imperial measurements
$\pm 5 \text{ mm}$	$\pm 0.125 \text{ (1/8) in.}$
$\pm 0.5 \text{ mm}$	$\pm 0.02 \text{ in.}$
$\pm 0.05 \text{ mm}$	$\pm 0.002 \text{ in.}$
$\pm 0.005 \text{ mm}$	$\pm 0.0005 \text{ in.}$

#### Metric / Imperial Conversions

$25.4 \text{ mm} = 1.0 \text{ in.}$   
 $10.0 \text{ mm} = 0.394 \text{ in.}$   
 $0.0254 \text{ mm} = 0.001 \text{ in.}$

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

Diagram	Characteristics	Defective Condition
	<p>Type 1 – Copper, steel or plastic tubing used for liquid or vapour. Made of a single layer of material.</p>	<p>Wear or damage is visible on the outside.</p>
	<p>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.</p>	<p>Inner core becomes visible from the outside, as shown by colour change.</p>
	<p>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.)</p>	<p>Reinforcement ply or inner core is visible from the outside, as shown by colour change.</p>
	<p>Type 4 – Stainless steel braided (or otherwise) outer cover with inner layer of tubing.</p>	<p>Wear or damage visible on the outer cover.</p>
	<p>Type 5 – Synthetic rubber hose with inner reinforcement ply.</p>	<p>Wear or damage exposing the reinforcement ply.</p>
	<p>Type 6 – Synthetic rubber hose with multiple reinforcement plies.</p>	<p>Wear or damage exposing the outer reinforcement ply.</p>
	<p>Type 7 – Flexible hose with one or more reinforcement plies that may be fabric or steel, and an outer protective layer.</p>	<p>Wear or damage through the outer protective layer and outer cover, exposing a reinforcement ply.</p>

# Section 1 - Suspension

## Section 1 – Suspension

### 1. Suspension and Frame Attachments

Item and Method of Inspection:	Reject if:
<p><i>Note:</i> This section applies to all types of suspension.</p> <p><u>Manufacturer</u> welding of components is a normal part of many manufacturing processes, and is distinct from welding to modify or repair a part.</p> <p><i>Additional Inspection Procedure(s):</i> Raise the vehicle as necessary to access the suspension components.</p> <p>a) vehicle ride height</p> <p><i>Additional Inspection Procedure(s):</i> 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.</p> <p>b) frame bracket, mounting bracket and hanger</p> <p>c) mounting fasteners</p> <p>d) tire interference</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- one side of the vehicle is more than 25 mm, higher or lower than the other when measured at the tire centerline</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- <u>broken</u>, cracked, <u>damaged</u>, <u>loose</u>, or <u>missing</u></li> <li>- perforated due to corrosion or deterioration</li> <li>- welded or repaired in a way that does not meet <u>OEM standard</u> or <u>Industry Standard</u></li> </ul> <p>c)</p> <ul style="list-style-type: none"> <li>- <u>broken</u>, cracked, <u>loose</u> or <u>missing</u></li> </ul> <p>d)</p> <ul style="list-style-type: none"> <li>- the condition of the suspension system allows a tire to contact any part of the vehicle frame or body</li> </ul>

## Section 1 - Suspension

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. Axles, Axle Attaching and Tracking Components

Item and Method of Inspection:	Reject if:
<p><i>Note:</i> This section applies to all types of suspension.</p> a) axle  a) axle attachment, axle saddle  b) bushing (rubber or composite material)  c) stabilizer / anti-sway bar, ball and socket or link	  a) - bent or welded  a) - bent, <i>broken</i> , cracked, <i>loose</i> or <i>missing</i> - axle has shifted from its normal position  b) - <i>missing</i> , <i>loose</i> or shifted out of place - wear or damage permits suspension component to shift out of position  c) - bent, <i>broken</i> , <i>missing</i> - welded or repaired in a way that does not meet <i>OEM standard</i> - <i>Level 2 leak</i>

## Section 1 - Suspension

Item and Method of Inspection:	Reject if:
<p>d) arm, rod, strut / shock suspension, control arm</p>	<p>d)</p> <ul style="list-style-type: none"> <li>- bent, <u>broken</u>, cracked, <u>loose</u>, <u>missing</u>, or worn out</li> <li>- perforated due to corrosion or deterioration</li> <li>- welded or repaired in a way that does not meet <u>OEM standard</u></li> <li>- wear or damage permits axle or wheel to shift out of position or required orientation</li> <li>- binding strut bearings/mounts prevent free rotation of steering wheel</li> <li>- <u>Level 2 leak</u></li> </ul>

### 3. Spring and Spring Attachment

Item and Method of Inspection:	Reject if:
<p>a) leaf spring</p> <p>b) composite spring</p> <p><i>Note:</i> Some change in the appearance of a composite spring, described as “fuzzing” / frayed is normal as the spring ages.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- any spring leaf is <u>broken</u>, <u>missing</u>, worn more than 3 mm, cracked or shifted out of place</li> <li>- any spring leaf is worn more than 3 mm in the hanger contact area or where leaves are in contact with each other</li> <li>- leaf is shifted and contacting another vehicle part</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- worn more than 3 mm in loadbearing area</li> <li>- <u>broken</u>, crack of any length visible on both sides of a spring, splintered or not the same type on each side of the vehicle.</li> </ul>



## Section 1 - Suspension

Item and Method of Inspection:	Reject if:
c) shackle, pin, bushing	c) <ul style="list-style-type: none"> <li>- <u>broken</u>, <u>missing</u>, <u>loose</u> or pin seized</li> <li>- shifted out of normal position</li> <li>- fastener <u>loose</u> or <u>missing</u></li> <li>- vertical movement of a spring or shackle against a spring pin exceeds <u>OEM standard</u> or if not available; wear exceeds limit below</li> <li>- for pin size up to 25 mm, wear limit is 2.0 mm</li> <li>- for pin size greater than 25 mm, wear limit is 3.0 mm</li> </ul>
d) U-bolt and hardware (centre bolt, fasteners, saddles or shackles)	d) <ul style="list-style-type: none"> <li>- <u>missing</u>, <u>loose</u> or shifted out of normal position</li> <li>- welded or repaired in a way that does not meet <u>OEM standard</u></li> </ul>
e) spring contact area of hanger (slipper)  <i>Note:</i> Wear plates are permitted by some <u>manufacturers</u> in the spring contact (slipper) area of fabricated hangers.	e) <ul style="list-style-type: none"> <li>- repaired by welding (except installation of wear plates)</li> <li>- spring-load bearing area is worn more than 3 mm</li> </ul>
f) coil spring	f) <ul style="list-style-type: none"> <li>- <u>broken</u> or shifted out of normal position</li> <li>- spacer is fitted between coils</li> </ul>
g) torsion bar	g) <ul style="list-style-type: none"> <li>- <u>broken</u>, cracked or <u>missing</u></li> <li>- repaired by welding</li> </ul>
h) rubber load cushion	h) <ul style="list-style-type: none"> <li>- rubber block or vertical pin is <u>broken</u>, <u>loose</u>, <u>missing</u> or split</li> </ul>

# Section 1 - Suspension

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## 4. Strut / Shock Absorber

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

## Section 2 - Brakes

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### Section 2 – 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.

## Section 2 - Brakes

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### 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:
<p>a) metal line and fittings</p> <p><i>Additional Inspection Procedure(s):</i> 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.</p> <p><i>Note:</i> Surface rust and corrosion is normal on metal lines and fittings, and is not cause for rejection.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- <u>level 1 leak</u></li> <li>- chafing, cracked, flattened or restricting section</li> <li>- <u>insecure</u> mounting causing line to shift out of its normal position</li> <li>- repaired by welding or soldering</li> <li>- repaired using material or method that does not meet <u>OEM standard</u></li> <li>- connections between brake system components are not a flared type fitting or does not meet <u>OEM standard</u></li> <li>- component does not meet <u>OEM standard</u></li> </ul>

## Section 2 - Brakes

Item and Method of Inspection:	Reject if:
<p>b) flexible line / hose</p> <p><i>Additional Inspection Procedure(s):</i></p> <p>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.</p> <p>c) master cylinder / surge tank</p> <p>d) auxiliary or work brake (line-lock device)</p> <p><i>Note:</i></p> <p>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.</p>	<p>b)</p> <ul style="list-style-type: none"> <li>- bulged or swells under pressure, flattened, twisted, restricted section or <u><i>insecure</i></u> mounting</li> <li>- 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.</li> <li>- component does not meet <u><i>OEM standard</i></u></li> <li>- <u><i>level 1 leak</i></u></li> </ul> <p>c)</p> <ul style="list-style-type: none"> <li>- <u><i>damaged</i></u> or <u><i>insecure</i></u> mounting</li> <li>- fluid is contaminated</li> <li>- <u><i>level 1 leak</i></u></li> <li>- fluid level is below indicated minimum level or, if not indicated, more than 13 mm from top</li> <li>- filler cap is <u><i>damaged</i></u>, <u><i>loose</i></u> or <u><i>missing</i></u>, vent holes are plugged or gasket is <u><i>missing</i></u> or swollen</li> </ul> <p>d)</p> <ul style="list-style-type: none"> <li>- any device is installed that interferes with normal service brake operation</li> </ul>

## Section 2 - Brakes

### 3. Electric Brake System

Item and Method of Inspection:	Reject if:
<p><i>Additional Inspection Procedure(s):</i> Wheels and drums must be disassembled on all electric brake systems.</p> <p><i>Note:</i> Inspect the wheel-end (drum or disc) brake system components, on a trailer with electric brakes, according to the relevant requirements for drum or disc brake system as outlined in this section below.</p> <p>a) wheel magnet and actuator</p> <p><i>Additional Inspection Procedure(s):</i> When the <b><u>manufacturer</u></b> of the brake system provides a test procedure for confirming the operation of the electromagnet used to actuate the brake, the test procedure must be conducted as part of the inspection.</p> <p>b) wiring</p> <p>c) battery and controller</p> <p><i>Additional Inspection Procedure(s):</i> Test the battery and controller according to the service instructions provided by the <b><u>manufacturer</u></b>.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- any part is broken, <b><u>damaged</u></b>, <b><u>loose</u></b>, or <b><u>missing</u></b></li> <li>- magnet is <b><u>inoperative</u></b> or seized</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- shorted, insulation is cracked or peeled</li> <li>- improperly spliced or connected</li> <li>- not secured at least every 1800 mm</li> </ul> <p>c)</p> <ul style="list-style-type: none"> <li>- <b><u>damaged</u></b> or fails to <b><u>operate as intended</u></b></li> </ul>



## Section 2 - Brakes

Item and Method of Inspection:	Reject if:
<p>c) brake drum condition</p> <p><i>Note:</i> 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.</p>	<p>c)</p> <ul style="list-style-type: none"> <li>- crack, groove or worn area is deeper than the drum wear limit</li> <li>- surface cracks or heat checks extend completely across the brake surface.</li> <li>- any external crack is present</li> <li>- friction surface is <u>abnormally worn</u></li> </ul>
<p>d) brake drum diameter (wear)</p> <p><i>Additional Inspection Procedure(s):</i> Brake drum diameter must be measured and recorded on the inspection report. See Introduction to Section 3 for</p>	<p>d)</p> <ul style="list-style-type: none"> <li>- measured drum diameter exceeds limit indicated on the brake drum or, if not available, <u>OEM standard</u> or <u>industry standard</u></li> </ul>
<p>e) self-adjuster mechanism</p>	<p>e)</p> <ul style="list-style-type: none"> <li>- <u>broken</u>, incorrect thread direction, <u>inoperative</u>, <u>missing</u> or seized</li> </ul>
<p>f) adjusters (manual)</p>	<p>f)</p> <ul style="list-style-type: none"> <li>- <u>broken</u>, <u>inoperative</u>, <u>missing</u> or seized</li> </ul>
<p>g) anchor pin / bracket and return spring</p>	<p>g)</p> <ul style="list-style-type: none"> <li>- <u>abnormally worn</u>, bent, <u>broken</u>, <u>loose</u> or <u>missing</u></li> <li>- spring stretched</li> </ul>
<p>h) backing plate</p>	<p>h)</p> <ul style="list-style-type: none"> <li>- bent, <u>damaged</u> or <u>loose</u></li> <li>- shoe contact area is grooved or worn in a manner that restricts free movement of shoes</li> </ul>
<p>i) axle and spindle</p>	<p>i)</p> <ul style="list-style-type: none"> <li>- cracked or <u>damaged</u></li> </ul>



## Section 2 - Brakes

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

### 6. Disc Brake System Components

Item and Method of Inspection:	Reject if:
<p><i>Additional Inspection Procedure(s):</i> When an inspection reveals evidence of a defect or abnormal condition, brake components must be disassembled to the point necessary to verify defect.</p> <p>Refer to the instructions in the Introduction to Section 3 to determine what measurements are required to be taken and recorded.</p> <p>a) disc (rotor) condition</p> <p><i>Note:</i> 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.</p>	<p>a) - <u>broken</u>, pitted, <u>damaged</u> or cracks on surface extending to the outer edge; <u>broken</u> 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</p>

## Section 2 - Brakes

Item and Method of Inspection:	Reject if:
<p>b) disc (rotor) thickness</p> <p><i>Additional Inspection Procedure(s):</i> Rotor (disc) thickness must be measured and recorded on the inspection report.</p> <p>c) caliper</p> <p><i>Note:</i> If the dust cover is <u>missing</u> or deteriorated, it is acceptable, as long as the condition does not present a potential safety hazard.</p> <p>d) anchor plate</p> <p>e) pad condition</p>	<ul style="list-style-type: none"> <li>- lateral run-out or parallelism measurement exceeds <u>OEM</u> or <u>industry standard</u></li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- thickness between friction surfaces at any point on the pad-contact surfaces is less than the minimum indicated on the brake rotor, <u>OEM standard</u> or <u>industry standard</u></li> </ul> <p>c)</p> <ul style="list-style-type: none"> <li>- assembly seized or binding, mounted incorrectly or inferior attaching bolt is used</li> <li>- slide pin / slider or pad slider is seized or binding, <u>damaged</u> or <u>abnormally worn</u></li> <li>- caliper guide is welded or repaired in a way that does not meet <u>OEM standard</u></li> <li>- <u>level 1 leak</u></li> <li>- pad retainer is bent, <u>damaged</u>, <u>insecure</u> or <u>missing</u></li> <li>- boot or bellows is cracked or deteriorated, <u>damaged</u> or <u>missing</u></li> <li>- piston seized or binding</li> </ul> <p>d)</p> <ul style="list-style-type: none"> <li>- <u>loose</u> or bolt is <u>missing</u></li> </ul> <p>e)</p> <ul style="list-style-type: none"> <li>- <u>damaged</u>, contaminated, <u>broken</u>, cracked or <u>abnormally worn</u></li> <li>- friction material loose or separating on pad, or pad installed incorrectly</li> <li>- signs of “rust-jacking”, (friction material lifting due to rust build-up or friction material separating from backing material)</li> </ul>

## Section 2 - Brakes

Item and Method of Inspection:	Reject if:
<p>f) pad (friction material) thickness</p> <p><i>Additional Inspection Procedure(s):</i> Pad (friction material) thickness of both inboard and outboard pad must be measured and must be recorded on the inspection report.</p> <p><i>Note:</i> 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.</p> <p>g) clearance between pads and rotor (caliper adjustment)</p>	<p>f)</p> <ul style="list-style-type: none"> <li>- measured friction-material thickness is less than <u>manufacturer</u> specification. If limit is not available:               <ul style="list-style-type: none"> <li>• bonded friction-material thickness is less than 1.6 mm</li> <li>• riveted friction-material thickness is less than 3.2 mm (4/32 in) without pads removed</li> <li>• riveted friction-material thickness is less than 1.6 mm (2/32 in) above the rivet head with pads removed</li> </ul> </li> <li>- 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</li> </ul> <p>g)</p> <ul style="list-style-type: none"> <li>- does not meet <u>manufacturer's</u> specifications</li> </ul>

# Section 3 - Lamps

## Section 3 – Lamps

### 1. Required Lamps All Trailers

Item and Method of Inspection:	Reject if:
<p>a) operation of all required lamps</p> <p><i>Note:</i> See Table I on page 28 for details on the federal requirements for lamps, lamp location and colour.</p> <p><i>Additional Inspection Procedure(s):</i> Test the operation of all required lamps, lamp switches and controls, and lamp indicators.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- fails to illuminate fully and correctly in response to the switch or control</li> <li>- LED lamps in which 25% or more of LEDs of any one lamp assembly are <u><i>inoperative</i></u></li> <li>- fails to turn off in response to the switch or control</li> <li>- the operation of a lighting circuit interferes with the operation of any other circuit</li> <li>- lens, reflector or other parts of assembly that ensure proper light output is <u><i>missing, broken</i></u>, has open crack or is <u><i>inoperative</i></u></li> <li>- has an <u><i>insecure</i></u> mounting</li> <li>- lens, reflector or mounting hardware not correctly installed</li> <li>- is not clearly visible or is covered in any manner</li> <li>- does not meet the colour, location or orientation requirements of <u><i>CMVSS 108</i></u>, as detailed in Tables I at the end of this section</li> <li>- lamp has been altered from <u><i>OEM</i></u> 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</li> </ul>

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 - Lamps

Item and Method of Inspection:	Reject if:
<p>b) tail lamps</p> <p>Note:</p> <p>Trailers less than 762mm (30 inches) wide only require 1 red light mounted at or near the centre.</p>	<p>b)</p> <ul style="list-style-type: none"> <li>- vehicle modification or installation of lamp causes tail lamp to be higher or lower than permitted by Table I</li> <li>- the tail lamps fail to meet any of the following requirements:               <ul style="list-style-type: none"> <li>▪ minimum of 2 lamps facing the rear, located at rear of vehicle and as far apart as practical, red in colour</li> <li>▪ illuminate correctly when operated by headlamp control</li> </ul> </li> </ul>
<p>c) stop (brake) lamps</p> <p>Note:</p> <p>Trailers less than 762mm (30 inches) wide only require 1 red light mounted at or near the center.</p>	<p>c)</p> <ul style="list-style-type: none"> <li>- the stop lamps fail to meet any of the following requirements:               <ul style="list-style-type: none"> <li>▪ minimum of 2 lamps facing the rear, located at rear of vehicle and as far apart as practical, red in colour</li> <li>▪ illuminate correctly when service brakes are applied</li> </ul> </li> </ul>
<p>d) turn-signal lamps</p>	<p>d)</p> <ul style="list-style-type: none"> <li>- turn-signal lamps fail to meet any of the following requirements:               <ul style="list-style-type: none"> <li>• minimum of 2 facing the rear, as far apart as practical, amber or red in colour</li> <li>• illuminate correctly when operated by turn signal control</li> </ul> </li> </ul>
<p>e) licence-plate lamp</p>	<p>e)</p> <ul style="list-style-type: none"> <li>- not white, fails to illuminate licence plate when operated by headlamp control</li> <li>- lamp not shielded from projecting light rearward.</li> </ul>

## Section 3 - Lamps

Item and Method of Inspection:	Reject if:
<p>f) side marker lamps</p> <p>Note: Side marker lamps not required at the front on trailers less than 1.82 m [6 ft] in overall length including the trailer tongue</p> <p>Note: Intermediate side marker lamps required on all Trailers 9.1 m (30 Feet) or Longer</p>	<p>f)</p> <ul style="list-style-type: none"> <li>- side-marker lamps fail to meet any of the following requirements: <ul style="list-style-type: none"> <li>▪ 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</li> <li>▪ located as close to corners as practical</li> <li>▪ front are amber or yellow in colour</li> <li>▪ rear are red in colour</li> </ul> </li> <li>- illuminate correctly when operated by headlamp control</li> </ul>
<p>g) clearance lamps</p> <p>Note: Only required for trailers 2.03 m (6.67feet) or more in overall width</p>	<p>g)</p> <ul style="list-style-type: none"> <li>- clearance lamps fail to meet any of the following requirements: <ul style="list-style-type: none"> <li>▪ minimum of 4 in total, located as far apart as practical at the widest point of the vehicle</li> <li>▪ 2 facing the front, as high as practical, amber or yellow in colour</li> <li>▪ 2 facing the rear, red in colour</li> </ul> </li> <li>- illuminate correctly when operated by headlamp control</li> </ul>
<p>h) identification lamps</p> <p>Note: Identification lamps are required at the rear on all trailers 2.03 m (6.67 feet) or more in width</p>	<p>h)</p> <ul style="list-style-type: none"> <li>- identification lamps fail to meet any of the following requirements: <ul style="list-style-type: none"> <li>▪ 3 facing the rear, red in colour</li> <li>▪ illuminate correctly when operated by headlamp control</li> </ul> </li> </ul>

## Section 3 - Lamps

### 2. Reflex Reflector

Item and Method of Inspection:	Reject if:
<p>a) required reflectors</p> <p>b) rear reflectors            Note: 1 red on trailers less than 762 mm (30 inches) wide mounted in the centre</p> <p>c) side-marker reflectors            Note:            Amber intermediate reflectors are required on all trailers 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.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- any required reflex reflector, or part of a reflex reflector, is <u>broken</u>, <u>missing</u>, obscured or not clearly visible</li> <li>- not labelled to show compliance with <u>CMVSS</u>, DOT or SAE standards</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- rear reflectors fail to meet any of the following requirements:               <ul style="list-style-type: none"> <li>▪ minimum of 2, located as far apart as practical, red in colour</li> <li>▪ trailer less than 762mm (30inches) wide minimum of 1, located in the centre, red in colour</li> </ul> </li> </ul> <p>c)</p> <ul style="list-style-type: none"> <li>- amber intermediate reflectors are <u>missing</u> on a vehicle over 9.1 m in length</li> <li>- side marker reflectors fail to meet any of the following requirements:               <ul style="list-style-type: none"> <li>▪ minimum of 4 in total, located as far apart as practical</li> <li>▪ 2 side facing lamps near the front, , amber in colour</li> <li>▪ 2 side facing lamps near the rear, red in colour</li> </ul> </li> </ul>

## Section 3 - Lamps

**Table I: Required Trailer Lighting Equipment  
All Trailers**

Item	# and Colour	Location on Trailer	Height above road surface*
Turn Signal Lamps	2 Red or amber	On the rear, at the same height, symmetrically about the vertical centerline, as far apart as practicable	Not less than 380 mm (15 inches), nor more than 2108 mm (83 inches)
Taillamps	2 red or 1 red on trailers less than 762 mm (30 inches) wide	On the rear, 1 on each side of the vertical centerline, at the same height, and as far apart as practicable. When a single lamp is installed it must be mounted at or near the vertical centerline	Not less than 380 mm (15 in.) or more than 1,829 mm (72 in.)
Stop lamps	2 red or 1 red on trailers less than 762 mm (30 inches) wide	On the rear, 1 on each side of the vertical centerline at the same height, and as far apart as practicable. When a single lamp is installed it must be mounted at or near the vertical centerline	Not less than 380 mm (15 in.) or more than 1,829 mm (72 in.)
Side Marker Lamps	2 Amber None required on trailers less than 1829 mm [6 ft] in overall length including the trailer tongue	On each side as far to the front as practicable exclusive of the trailer tongue	Not less than 380 mm (15 inches)
	2 Red	On each side as far to the rear as practicable	Not less than 380 mm (15 inches). Not more than 1524 mm (60 inches) on trailers 2032 mm or more in overall width



## Section 3 - Lamps

Item	# and Colour	Location on Trailer	Height above road surface*
Reflex Reflectors (Note: Not required if conspicuity material is placed at the locations of the required reflex reflectors)	2 Amber None required on trailers less than 1829 mm [6 ft] in overall length including the trailer tongue	On each side as far to the front as practicable exclusive of the trailer tongue	Not less than 380 mm (15 inches), nor more than 1524 mm (60 inches)
	2 Red	On each side as far to the rear as practicable	
	2 Red or 1 red on trailers less than 762 mm (30 inches) wide	On the rear, at the same height, symmetrically about the vertical centerline, as far apart as practicable When a single reflector is installed it must be mounted at or near the vertical centerline.	
Licence-plate lamp	1 white	At rear licence plate, to illuminate the plate from the top or sides.	No requirement
<b>Additional Lamps and Reflective Devices Required on all Trailers 9.1 m (30 Feet) or Longer</b>			
Intermediate side marker lamps	2 Amber	On each side located at or near the midpoint between the front and rear side marker lamps	Not less than 380 mm (15 inches)

## Section 3 - Lamps

Item	# and Colour	Location on Trailer	Height above road surface*
Intermediate side reflex reflectors  (Note: Not required if conspicuity material is placed at the locations of the required reflex reflectors)	2 Amber	On each side located at or near the midpoint between the front and rear side reflex reflectors	Not less than 380 mm (15 inches), nor more than 1524 mm (60 inches)
<b>Additional Lamps Required on all Trailers 2032 MM or More in Overall Width</b>			
Clearance lamps	2 Amber	On the front to indicate the overall width of the vehicle, at the same height, symmetrically about the vertical centerline May be located at a location other than the front if necessary to indicate the overall width of the vehicle, or for protection from damage during normal operation of the vehicle	As near the top as practicable
	2 Red	On the rear to indicate the overall width of the vehicle, at the same height, symmetrically about the vertical centerline May be located at a location other than the rear if necessary to indicate the overall width of the vehicle, or for protection from damage during normal operation of the vehicle	As near the top as practicable, except where the rear identification lamps are mounted at the extreme height of the vehicle. Practicability of locating lamps on the vehicle header is presumed when the header extends at least 25 mm (1 inch) above the rear doors

## Section 3 - Lamps

Item	# and Colour	Location on Trailer	Height above road surface*
	2 Amber to front and red to rear	On a boat trailer the requirement for front and rear clearance lamps may be met by installation at or near the midpoint on each side of a dual facing lamp so as to indicate the extreme width. May be located at a location other than the front and the rear if necessary to indicate the overall width of the vehicle, or for protection from damage during normal operation of the vehicle	As near the top as practicable
Identification lamps	3 Red	On the rear, at the same height, as close as practicable to the vertical centerline, with lamp centers spaced not less than 152 mm (6 inches) or more than 305 mm (12 inches) apart	As near the top as practicable. Practicability of locating lamps on the vehicle header is presumed when the header extends at least 25 mm (1 inch) above the rear doors

# Section 4 – Electrical System

## Section 4 – Electrical System

### 1. Wiring

Item and Method of Inspection:	Reject if:
<p><i>Additional Inspection Procedure(s):</i> Inspect wiring, harnesses and connections that are accessible and visible, including trailer wiring harness.</p> <p>a) securement</p> <p>b) insulation</p> <p>c) condition</p> <p>d) circuit loading</p> <p><i>Note:</i> Circuit-protection requirements are based on <u>manufacturer</u> design and specifications. Circuit testing is not required. Inspection is visual and based on knowledge of the normal design and specifications.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- <u>loose</u> or improperly supported, and able to contact moving parts</li> <li>- chafed section of wiring harness has exposed wires resulting from contact with vehicle part(s)</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- conductor is exposed, other than as required at a proper connector</li> </ul> <p>c)</p> <ul style="list-style-type: none"> <li>- cut, shorted or deteriorated</li> <li>- connection is <u>loose</u>, abnormally corroded, burnt</li> </ul> <p>d)</p> <ul style="list-style-type: none"> <li>- circuit load protection is <u>missing</u> or bypassed</li> </ul>

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 – Electrical System

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### 2. Trailer Cord (output to towed vehicle)

Item and Method of Inspection:	Reject if:
<p>a) insulation</p> <p>b) connection</p> <p><i>Note:</i> A trailer cord must be repaired only by using <b>industry standard</b> methods.</p>	<p>a)</p> <ul style="list-style-type: none"><li>- conductor is exposed, other than as required at a proper connector</li></ul> <p>c)</p> <ul style="list-style-type: none"><li>- cracked</li><li>- ends split</li><li>- improper repair or connection</li></ul>



## Section 5 –Body

Item and Method of Inspection:	Reject if:
<p>c) frame and sub-frame</p>	<p>c)</p> <ul style="list-style-type: none"> <li>- bulge caused by corrosion</li> <li>- stress crack at side rail or rub-rail</li> <li>- rivet is <u>loose</u>, <u>missing</u>, dimpled by corrosion</li> <li>- bent, <u>broken</u>, cracked, kinked, welded or repaired in a way that does not meet <u>OEM standard</u> or <u>industry standard</u></li> <li>- perforated or weakened by corrosion</li> </ul>
<p>d) cross member</p>	<p>d)</p> <ul style="list-style-type: none"> <li>- bent, <u>broken</u>, collapsed, cracked, kinked, torn or <u>missing</u></li> <li>- perforated or weakened by corrosion</li> </ul>
<p>e) inner or outer side rail and body long sills</p>	<p>e)</p> <ul style="list-style-type: none"> <li>- bulge caused by corrosion</li> <li>- rivet is <u>loose</u>, <u>missing</u>, dimpled by corrosion</li> <li>- bent, <u>broken</u>, cracked or <u>insecure</u></li> <li>- welded or repaired in a way that does not meet <u>OEM standard</u> or <u>industry standard</u></li> </ul>
<p>f) tailgate</p>	<p>f)</p> <ul style="list-style-type: none"> <li>- <u>broken</u>, <u>loose</u> or <u>insecure</u></li> </ul>
<p>g) body-to-frame attachment</p> <p><i>Note:</i> Includes body-to-frame attachments such as u-bolts, pivot hinge, cheek-plate mounts, flex-mount hardware, body clamps and j-bars.</p>	<p>g)</p> <ul style="list-style-type: none"> <li>- bent, <u>broken</u>, cracked, <u>loose</u> or <u>missing</u></li> <li>- spacer or insulator is <u>abnormally worn</u>, crushed, dislodged or <u>missing</u></li> </ul>

## Section 5 –Body

### 2. Cargo Doors

Item and Method of Inspection:	Reject if:
<p>a) condition and operation</p> <p><i>Additional Inspection Procedure(s):</i> Test the operation of each door.</p> <p>b) door openers and handles</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- binds or fails to latch securely</li> <li>- <u>insecure</u> mounting to hinge, <u>insecure</u> hinge or severely corroded in hinge area</li> <li>- panel is corroded through</li> <li>- welded or repaired in a way that does not meet <u>OEM standard</u> or <u>industry standard</u></li> <li>- any gap exists that would allow leakage, loss or spillage of cargo</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- <u>broken</u>, <u>inoperative</u> or <u>missing</u></li> <li>- catch or latch is <u>broken</u>, <u>loose</u> or <u>missing</u></li> </ul>

### 3. Device or Equipment Attached or Mounted to the Vehicle

Item and Method of Inspection:	Reject if:
<p><i>Note:</i> 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.</p>	



## Section 5 –Body

Item and Method of Inspection:	Reject if:
<p>a) security and condition</p> <p><i>Additional Inspection Procedure(s):</i> Check security of attached body, device or equipment visually, manually and using suitable tools as necessary. No functional tests to be conducted.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- equipment or device is in such an unsafe condition that it is a risk to other motorists, the driver, a passenger, pedestrian or cyclist</li> <li>- equipment or device is <u><i>insecure</i></u> or <u><i>loose</i></u>, or in danger of shifting in a way that could impede normal operation of the vehicle</li> <li>- 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</li> <li>- <u><i>level 3 leak</i></u> of any oil, hydraulic fluid or liquid product</li> </ul>

## Section 5 –Body

### 4. Fender / Mudguard

Item and Method of Inspection:	Reject if:
<p><i>Note:</i> 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.</p> <p>a) condition and location</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- fender or mudguard is <u>broken</u>, has <u>insecure</u> mounting, is <u>loose</u> or <u>missing</u></li> <li>- fender or mudguard has a hole, tear or opening larger than 100 mm across the longest dimension</li> <li>- top of the mudguard does not reach up to the top of the tires or a body element</li> <li>- 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</li> <li>- 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</li> </ul>

## Section 6 – Tire and Wheel

### Section 6 – Tire and Wheel

#### 1. Tire-Tread Depth

Item and Method of Inspection:	Reject if:
<p>a) condition</p> <p><i>Additional Inspection Procedure(s):</i> 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.</p> <p>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.</p> <p><i>Note:</i></p> <p>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.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- tread depth is less than 1.6 mm at point of minimum tread depth</li> </ul>

#### 2. Tire Tread Condition

Item and Method of Inspection:	Reject if:
<p>a) studded tires</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- studded tire present between May 1 and October 31 inclusive unless extended by Minister Service NL</li> </ul>

## Section 6 – Tire and Wheel

Item and Method of Inspection:	Reject if:
<p>b) tread condition</p> <p>c) re-grooving</p>	<p>b)</p> <ul style="list-style-type: none"> <li>- cut or crack greater than 25 mm long that extends deeper than a major tread groove</li> <li>- cut or crack extends into body cord, or any body cord is exposed</li> <li>- any piece of original tire tread is <u>missing</u>, and the longest dimension across the <u>missing</u> section is greater than 25 mm</li> </ul> <p>c)</p> <ul style="list-style-type: none"> <li>- non regroovable tire has been re-grooved</li> </ul>

### 3. Tire Sidewall

Item and Method of Inspection:	Reject if:
<p>a) matching and application</p> <p><i>Note:</i></p> <p>Nominal tire size is based on the size designation and marking provided by the tire <u>manufacturer</u></p> <p>Tire size and load capacity requirements of the vehicle manufacturer can be located on the Tire Placard label, Federal Compliance label or other reference.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- nominal tire size is different between the left and right tires at the front or rear of the vehicle.</li> <li>- wheel / rim size does not match tire size according to tire <u>manufacturer's</u> specifications</li> <li>- required tire is <u>missing</u></li> <li>- radial tire is mixed with non-radial anywhere on vehicle</li> <li>- any tire is labelled "Not for Highway Use," or in any way that indicates the tire is not intended for on-road use</li> <li>- tire has a lower load rating / capacity than specified by the vehicle <u>manufacturer</u></li> <li>- tire is sufficiently oversized / undersized as to contact any vehicle component which may affect the safe operation of the vehicle</li> <li>- tire is over or undersized outside of <u>manufacturers</u> specifications</li> </ul>

## Section 6 – Tire and Wheel

Item and Method of Inspection:	Reject if:
b) condition	b) <ul style="list-style-type: none"> <li>- ply separation is evident or bodycords are exposed</li> <li>- bulge in sidewall more than 10 mm high</li> <li>- casing is <u>broken</u> or distorted</li> <li>- presence of plug-type repair, or rubber-coated or cured-rubber plug is used in the sidewall</li> <li>- UV degradation damage more than 3 mm deep</li> </ul>

### 4. Tire Inflation Pressure

Item and Method of Inspection:	Reject if:
<p><i>Additional Inspection Procedure(s):</i> Measure tire inflation pressure using a suitable gauge.</p> <p>a) inflation pressure</p> <p><i>Note:</i> Recommended tire inflation pressure is based on data provided by the vehicle <u>manufacturer</u>. Ensure pressure is as required by <u>OEM</u></p> <p>b) valve stem</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- leaking tire will not maintain a constant air pressure</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- cracked, <u>damaged</u>, leaking or inaccessible</li> <li>- prevents measurement of tire pressure</li> <li>- prevents inflation or deflation of tire</li> </ul>

## Section 6 – Tire and Wheel

### 5. Wheel Hub

Item and Method of Inspection:	Reject if:
<p>a) condition</p> <p><i>Note:</i> Bearing fit in the hub is checked only when disassembled.</p> <p>b) stud hole</p> <p>c) wheel seal</p> <p>d) lubricant (oil lubricated)</p> <p>e) lubricant (grease lubricated)</p> <p>f) hub / spindle fasteners (nuts, bolts, studs)</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- repaired by welding</li> <li>- bent, <u>broken</u>, cracked, <u>damaged</u> or distorted</li> <li>- bearing cup is <u>loose</u> in hub bore</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- any stud hole is enlarged or <u>damaged</u> in a way that prevents proper fitting and retention of studs</li> </ul> <p>c)</p> <ul style="list-style-type: none"> <li>- <u>level 2 leak</u> of oil from lubricated hub</li> <li>- seal is allowing grease to be lost from hub</li> <li>- seal is out of position</li> </ul> <p>d)</p> <ul style="list-style-type: none"> <li>- lubricant level is below indicated minimum</li> <li>- lubricant is contaminated</li> <li>- level 2 leak from hub or hub cap</li> </ul> <p>e)</p> <ul style="list-style-type: none"> <li>- grease is leaking from hub</li> <li>- hub cap is cracked, <u>loose</u> or <u>missing</u></li> </ul> <p>f)</p> <ul style="list-style-type: none"> <li>- any fastener is bent, <u>broken</u>, otherwise <u>damaged</u> or <u>missing</u></li> <li>- there is evidence of a <u>loose</u> or ineffective fastener</li> </ul>

## Section 6 – Tire and Wheel

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### 6. Wheel Bearing

Item and Method of Inspection:	Reject if:
<p><i>Additional Inspection Procedure(s):</i>            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.</p> <p>a) end play / adjustment</p> <p>b) bearing condition</p> <p>c) locking device</p>	<p>a)            - does not meet <u>OEM standard, industry standard</u>, or when specification is not provided, is less than 0.02 mm, or more than 0.13 mm</p> <p>b)            - binding or roughness detected while rotating the bearing</p> <p>c)            - bearing adjustment locking device is <u>missing</u>, not engaged or <u>inoperative</u></p>

## Section 6 – Tire and Wheel

### 7. Wheel / Rim General

Item and Method of Inspection:	Reject if:
<p>a) condition</p> <p><i>Note:</i></p> <p>A <i>Spacer</i> 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.</p> <p>An <i>Adapter</i> 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.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- wheel / rim is <u>damaged</u>, <u>broken</u>, bent, cracked or distorted</li> <li>- wheel / rim has been welded or repaired in a way that does not meet <u>industry standard</u></li> <li>- there is less than 3 mm clearance between butt ends of the lock ring on a multi-piece wheel / rim</li> <li>- incompatible wheel or component is used on a wheel system</li> <li>- spacer has been used between any wheel and hub</li> <li>- adapter is <u>damaged</u>, has <u>damaged</u> fasteners, fasteners of inadequate length, inappropriate material or incorrect grade of stud, nut or bolt</li> <li>- wheel is installed incorrectly</li> <li>- there is evidence of damage or deterioration, foreign material, excessive or uncured paint on a hub, drum or wheel-mounting face</li> </ul> <p>b)</p> <ul style="list-style-type: none"> <li>- wheel / rim size does not match tire size</li> </ul> <p>c)</p> <ul style="list-style-type: none"> <li>- <u>loose</u> or <u>missing</u> fastener</li> </ul>
<p>b) matching</p>	
<p>c) bead lock</p>	





# Section 7 – Coupling Devices

Section 7 – Coupling Devices

## 1. Hitch Assembly, Structure and Attaching Components

Item and Method of Inspection:	Reject if:
<p><i>Note:</i> This applies to all types of hitching systems.</p> <p>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.</p> <p>Only the hardware that is installed on the vehicle requires inspection.</p> <p>a) hitch assembly, receiver, drawbar or draw beam, supporting structure and attachment to vehicle chassis</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- part is bent, <u>broken</u> or cracked</li> <li>- weld is <u>broken</u> or cracked</li> <li>- welded or repaired in a way that does not meet <u>OEM standard</u> or <u>industry standard</u></li> <li>- fastener is ineffective, <u>loose</u> or <u>missing</u></li> <li>- perforated by corrosion or abnormally deteriorated anchor point for secondary attachment (safety chain / cable) is <u>broken</u>, excessively worn or otherwise deteriorated</li> <li>- hitch is not properly attached to chassis frame as specified by the <u>manufacturer</u></li> </ul>

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 – Coupling Devices

### 3. Fifth-Wheel Hitch

Item and Method of Inspection:	Reject if:
<p>a) coupler plate</p> <p><i>Additional Inspection Procedure(s):</i> Check the condition and flatness of the coupler plate using a tool specifically intended for that purpose.</p>	<p>a)</p> <ul style="list-style-type: none"> <li>- cracked, <u>broken</u>, <u>loose</u>, warped or worn so that the area in contact with the lower fifth wheel is less than 75% of the surface of the coupler</li> <li>- bent upward or downward more than specified by <u>manufacturer</u></li> <li>- lubricant is contaminated with an abrasive material</li> <li>- coupler's attachment or a structural member is corroded, <u>damaged</u> or in a condition that the plate or kingpin is weakened</li> <li>- mounting bolt or rivet is <u>broken</u>, corroded, <u>loose</u> or <u>missing</u> (also refer to Section 8, Body, item 5. Frame, Rails and Mounts)</li> <li>- bulge is present in attaching and mating surface due to corrosion</li> <li>- rivet is dimpled due to corrosion</li> <li>- rivet area bulged due to corrosion</li> </ul>
<p>b) fifth wheel couple plate</p>	<p>b)</p> <ul style="list-style-type: none"> <li>- <u>broken</u>, cracked, <u>damaged</u>, distorted or welded, or repaired in a way that does not meet <u>manufacturer</u> standard</li> <li>- surface is worn beyond <u>manufacturer</u> specified limit</li> <li>- lubricant is abnormally contaminated (for example, sand or gravel)</li> <li>- not properly lubricated (unless equipped with <u>manufacturer</u>-supplied, no-lube, top-plate coupling surface)</li> </ul>

## Section 7 – Coupling Devices

Item and Method of Inspection:	Reject if:
<p>c) latching mechanism</p> <p><i>Additional Inspection Procedure(s):</i> Test the operation of the latch and wear in the fifth-wheel assembly, using a test device specifically designed for that purpose.</p>	<p>c)</p> <ul style="list-style-type: none"> <li>- <u>broken</u>, cracked or <u>inoperative</u></li> <li>- stiffness or seizing of the latch mechanism is felt</li> <li>- free play, slack or wear is beyond <u>manufacturer</u> specified limit</li> <li>- improperly adjusted</li> <li>- modified or improperly repaired</li> <li>- release handle is bent, modified or has anything attached to it</li> </ul>
<p>d) lower-coupler pivot ("fifth-wheel saddle")</p> <p><i>Additional Inspection Procedure(s):</i> Check for wear according to <u>manufacturer</u> service instructions.</p>	<p>d)</p> <ul style="list-style-type: none"> <li>- wear exceeds <u>manufacturer</u> specification</li> </ul>
<p>e) slider assembly and locking mechanism</p>	<p>e)</p> <ul style="list-style-type: none"> <li>- <u>broken</u>, cracked, <u>damaged</u> or <u>inoperative</u></li> <li>- fore / aft movement of fifth wheel in slider exceeds <u>manufacturer</u> specification</li> <li>- fails to lock securely</li> <li>- slider stop is <u>missing</u> or <u>insecure</u></li> </ul>