Authorised Crane Inspection Station (ACIS) Supplementary Safety Check Rules
About this document

Purpose and audience

The purpose of this document is to provide ACIS Examiners with the supplementary Safety Check Rules that apply to the ACIS scheme.

This document is for use by accredited ACIS Examiners when conducting inspections on vehicles covered by the ACIS scheme: SP2 mobile cranes (ie over-mass on one or more axle groups) with a Gross Vehicle Mass (GVM) in excess of 12 tonnes. It contains Rules that are specific to SP2 Cranes.

Definitions

ACIS Authorised Crane Inspection Station
ADR Australian Design Rule
AIS Authorised Inspection Station
GVM Gross Vehicle Mass
HVAIS Heavy Vehicle Authorised Inspection Station
SP2 The RTA configuration code for a special purpose vehicle that is over mass on one or more axle groups
Rule 601 Brakes

This Rule must be read in conjunction with Vehicle Inspectors Bulletin No 14 (VIB.14) Test procedures for Air Brake Systems.

Truck based cranes built to comply with the Australian Design Rules (ADRs) must comply with the relevant brake system-related ADR that applied at their date of manufacture. The most current requirement, ADR.35/01 has applied since 1st July 1998.

601.1 CHECK BRAKE COMPONENTS

Reasons for rejection

601.1.1 Brake pedals do not have an anti-slip surface across the complete surface.
601.1.2 Brake pedals or handles are broken, damaged or missing.
601.1.3 Brake control mountings, pivots, cables or links are kinked, loose, broken, excessively worn or binding.
601.1.4 A locking device on a parking brake control does not hold the control in the applied position.
601.1.5 Abrasions or cuts on brake hoses penetrate further than the outer protective covering.
601.1.6 Brake pipes, hoses and connections are disconnected, cracked, broken, kinked, cramped, corroded, damaged by heat or have visible signs of leakage, swelling or bulging.
601.1.7 Brake drums or discs are not fitted, or have missing pieces, or have cracks other than short heat cracks inside the drums.
601.1.8 Drums or discs are worn beyond the manufacturer’s specifications.
601.1.9 Any calliper, wheel cylinder or master cylinder leaks.
601.1.10 Linings or pads are contaminated with oil, grease or brake fluid.
601.1.11 The thickness of linings or pads is less than the manufacturer’s recommended minimum limit or, if this is limit not known, 1.5mm for bonded material, or 0.8mm above the fastener for riveted material.
601.1.12 Brake chambers, brake chamber clamps or camshaft support brackets are loose, damaged or missing.
601.1.13 Brake shoes, springs, anchor pins, cam rollers or bushes, pull or push rods, slack adjusters, clevis pins, retainers or brake chamber mounting bolts or fasteners are missing, loose, damaged or broken.

601.2 CHECK BRAKE ADJUSTMENT

Reasons for rejection

601.2.1 If fitted, a brake adjustment indicator runs out of travel or indicates that adjustment is necessary when any brake is fully applied.
601.2.2 Brake chamber push or pull rods move more than 80% of their travel or travel over centre with the brakes fully applied.
601.2.3 The park brake and/or emergency brake is not capable of being fully applied without the brake control running out of available travel.
601.2.4 The brake adjusters are not properly adjusted, are bent, damaged or excessively worn.
601.3 CHECK BRAKING SYSTEM OPERATION

Reasons for rejection

601.3.1 Any compulsory pressure, vacuum or low level warning devices or gauges are missing, damaged or do not operate.

601.3.2 Any brake failure indicators are missing or do not operate when tested in accordance with the vehicle manufacturer’s instructions.

601.3.3 The brake controls do not cause the corresponding brake to immediately apply when they are operated (with the engine running if necessary).

601.3.4 With the braking system at full air or full vacuum, etc, any brake failure indicators actuate when either the service brake or the park/emergency brake is applied.

601.3.5 When each brake system is applied and when it is released, there are any brake fluid, air pressure or vacuum leaks.

601.4 CHECK HYDRAULIC BRAKE SYSTEM INTEGRITY

Reasons for rejection

601.4.1 When a constant force is applied to the service brake pedal, it travels to the floor.

601.4.2 When the service brakes are applied, any brake system failure indicators actuate.

601.4.3 When the service brakes are applied, less than 20% of the pedal travel remains.

601.5 CHECK AIR COMPRESSOR/VACUUM PUMP

Reasons for rejection

601.5.1 The air compressor or vacuum pump has loose mounting bolts or damaged mounting brackets, braces or adaptors, or is inoperative.

601.5.2 Drive pulleys are damaged or loose.

601.5.3 Drive belts are loose, cracked through to reinforcing plies, extensively frayed or missing drive sections.

601.5.4 Air pressure or vacuum reservoirs are missing, loose or damaged so as to reduce their capacity or increase their likelihood to leak.

601.5.5 Air or vacuum reservoir drain valves are missing, damaged or inoperative.

601.6 CHECK AIR BRAKE SYSTEM INTEGRITY

The ignition may need to be switched on for this check which also applies to air over hydraulic braking systems.

With engine stopped, operate service brakes to deplete air pressure:

Reasons for rejection

601.6.1 A visual or audible warning device fails to operate when the brake air pressure drops below manufacturer’s limit or, if this is unknown, 420 kPa, or 350kPa for vehicles built before July 1980.

601.6.2 With the engine stopped and the service brake released, the air brake pressure drops more than 15 kPa per minute.
Start the engine and build up full air by running the engine at the manufacturer’s recommended speed or, if this is not known, at or above fast idle:

**Reasons for rejection**

601.6.3 The governor cut-in pressure is less than 550 kPa unless a lower value is recommended by the manufacturer.

601.6.4 The governor cut-out pressure is more than 930 kPa unless a higher value is recommended by the manufacturer.

601.6.5 Build up time for the air pressure in the reservoir/s from the level observed in Rule 601.6.2 to the fully charged level exceeds 45 seconds, or 30 seconds for vehicles built before July 1980.

601.6.6 If the service brake is applied, the brake system failure indicator actuates.

**With the brake system fully charged, stop the engine:**

**Reasons for rejection**

601.6.7 The brake air pressure drops more than 20% below the initial reading after the service brake has been fully applied once.

601.6.8 With the service brake applied, the brake air pressure drops more than 20 kPa per minute, or 25kPa if a trailer is attached.

601.6.9 With the engine stopped, there is insufficient level of air to allow at least two assisted service brake applications.

### 601.7 CHECKING PERFORMANCE OF SERVICE BRAKES

This Rule shall be read in conjunction with the general equipment specifications for brake testers in Appendices B2, B3, B4 and also with the specific equipment manufacturer’s instructions (if available).

#### 601.7.1 USING A DECELEROMETER

With the decelerometer deployed in accordance with its manufacturer’s instructions, accelerate the vehicle to between 15 and 30 km/h depending on the brake test area available.

With the transmission in neutral, bring the vehicle to a halt as rapidly as possible in a safe manner with one sustained and smooth application of the service brakes.

**Reasons for rejection**

601.7.1.1 The application of the brakes causes the vehicle to swerve from a straight line path.

601.7.1.2 The average deceleration of the vehicle is less than 2.8 m/s², or 29 %g.

601.7.1.3 The peak deceleration of the vehicle is less than 4.4 m/s², or 45 %g.

#### 601.7.2 USING A SKID-PLATE TESTER

Use the skid-plate tester to check the deceleration rates and retardation forces on each axle in accordance with the manufacturer’s test procedure.

**Reasons for rejection**

601.7.2.1 There is more than 30% difference in the brake force between the wheels on any same axle.

601.7.2.2 The average deceleration of the vehicle is less than 2.8 m/s², or 29% g.

601.7.2.3 The peak deceleration of the vehicle is less than 4.4 m/s², or 45% g.
601.7.3 USING A ROLLER BRAKE TESTER

Use the roller brake tester to check the retardation forces on each wheel in accordance with the manufacturer's test procedure.

With the transmission in neutral and all brakes released, slowly apply the service brake until maximum force is attained, or wheel slip occurs.

**NOTE:** The minimum brake efficiency (kN/tonne) is determined by:

1. Adding together the brake forces (in kN) obtained for each axle.
2. Adding together the masses (in tonnes) obtained from the roller brake tester for each axle.
3. Divide the figure obtained in Step 1 by the figure obtained in Step 2.

**Reasons for rejection**

601.7.3.1 There is more than 30% difference in the brake force between the wheels on any same axle.
601.7.3.2 The minimum brake efficiency is less than 3.0kN/tonne.
601.7.3.3 With all brakes released, the minimum brake drag at each drive axle exceeds 1.0kN or 0.5kN at any other axle.

601.8 CHECK PERFORMANCE OF PARKING OR EMERGENCY BRAKE

Establish if the vehicle is equipped with a Parking Brake or an Emergency Brake.

The following test procedures are accepted as an alternative to demonstrating park brake performance on a 12% or 18% gradient as required under NSW legislation.

**For a Parking Brake**

Apply the parking brake and attempt to drive the vehicle forward and rearwards using a light throttle.

**Reasons for rejection**

601.8.1 The parking brake does not hold the vehicle stationary.
601.8.2 If using a decelerometer or roller brake tester, the parking brake does not give a reading, or the vehicle does not lift out of the rollers.

**For an Emergency Brake**

Using a decelerometer, accelerate the vehicle to a speed of at least 15 km/h. Put the transmission into neutral and apply the emergency brake.

**Reasons for rejection**

601.8.3 The average deceleration is less than 1.1 m/s².
601.8.4 The peak deceleration is less than 1.5 m/s².

601.9 CHECK TRAILER BRAKES AND BREAKAWAY PROTECTION

**NOTE:** The examiner should seek the assistance of another person to thoroughly check the breakaway and tractor protection systems:

A **tractor protection device** that will protect the towing vehicle's braking system from loss of air supply line air or brake control signal air pressure in the event of inadvertent trailer separation, must be fitted to each vehicle that can tow a trailer with air brakes.

**Reasons for rejection**

601.9.1 When a braking system on the towing vehicle is applied the corresponding braking system on the trailer does not automatically apply.
601.9.2 Each truck to trailer interconnecting flexible hose and coupling is not properly mated or secured or sealed.

601.9.3 A trailer with air or vacuum assisted brakes has no device fitted to provide a visible or audible warning, to the towing vehicle's driver, of a lack of air or vacuum.

601.9.4 The braking system of a motor vehicle equipped to tow a trailer fitted with air brakes does not incorporate a tractor protection device.

601.9.5 A towing vehicle's brakes are not functional both with and without a trailer connected.

If a brake supply line connecting the towing vehicle and a trailer is disconnected to simulate a breakaway situation:

601.9.6 The tractor protection device does not operate automatically.

601.9.7 The brakes on the towing vehicle apply automatically.

601.9.8 Air pressure loss in the towing vehicle’s service brake system exceeds 15 kPa per minute after stabilisation.

601.9.9 The tractor protection device does not retain sufficient towing vehicle air pressure to allow at least two service brake applications before the towing vehicle's maxi brakes / spring brakes apply.

601.9.10 The tractor protection device does not provide the driver with an audible or visual warning that it has activated.
Rule 602 Couplings

602.1 CHECK TOW COUPLINGS
Reasons for rejection

602.1.1 A tow coupling does not display the manufacturer’s name/trademark, rated vertical load and the gross mass rating.

602.1.2 Tow couplings have any missing, loose, broken, deformed or cracked fasteners including welds.

602.1.3 The area that the pin coupling or pintle hook is mounted on is loose or cracked or any locking mechanism is not fitted or is inoperative.

602.1.4 The tow coupling is damaged or cracked.

602.1.5 Tow couplings are worn beyond the manufacturer’s limits. For a pintle hook or pin coupling, the wear limit is 5% of the original diameter if the manufacturer’s wear limits are not known.

602.2 CHECK TOW BAR
Reasons for rejection

602.2.1 The towbar is not securely mounted or is cracked.

602.2.2 Any mounting bolt, fastener or weld bead has advanced corrosion.

602.2.3 The tow bar does not display the manufacturer’s name/trademark, the gross mass rating and the make and model of the vehicle/s for which it is designed.

602.2.4 The tow bar does not have two safety chain attachments, mounted one on either side of, and adjacent to the towbar.

602.2.5 If any part of the tow bar is removable, the fasteners, bolts, studs, nuts, etc attaching that part do not each have a locking device such as a U clip, split pin, spring washer or nylon lock nut.

602.3 CHECK DRAWBAR
Reasons for rejection

602.3.1 Drawbar is damaged or cracked

602.3.2 Drawbar is carrying a load unless designed to support such a load
Rule 603 Steering and Suspension

603.1 CHECK STEERING COMPONENTS INSIDE CABIN

Reasons for rejection

603.1.1 The steering wheel is not located in the centre or to the right hand side of the vehicle unless specifically authorised in writing by the RTA.
603.1.2 The steering wheel is loose on the shaft.
603.1.3 The steering wheel’s hub, rim or spokes are loose, damaged or missing.
603.1.4 The steering column is loose or damaged.

603.2 CHECK STEERING FREE PLAY

With the wheels in the straight ahead position (and the engine running if the crane has power steering), check the rotational free play at the steering wheel.

Reasons for rejection

603.2.1 The rotational free play at the steering wheel exceeds manufacturers’ specifications or, if that is not known, 75mm or 100mm if steering wheel diameter exceeds 400mm.

603.3 CHECK STEERING COMPONENTS UNDER THE VEHICLE

Reasons for rejection

603.3.1 Any steering component is missing, loose, cracked or broken.
603.3.2 Any threaded or tapered joint is loose.
603.3.3 Any freeplay due to wear in a balljoint exceeds manufacturer’s specifications or 3mm if that specification is not known or no longer appropriate.
603.3.4 Any steering component was repaired or modified by heating or welding unless it was done by the vehicle manufacturer or in accordance with its specifications.
603.3.5 Any nut, bolt or locking device is missing or insecure.
603.3.6 The pitman arm is loose on the steering output shaft.
603.3.7 The power steering pump has loose mounting bolts or cracked or broken mounting brackets, braces or adaptors, or is inoperative.
603.3.8 Power steering pump pulleys are cracked, broken or loose.
603.3.9 Power steering pump belts are loose, cracked through to reinforcing plies, extensively frayed or missing drive sections.
603.3.10 Integral power steering assemblies or power assist cylinders leak more than one drop every 30 seconds.

Note: Dampness or staining around seals is not a Reason for Rejection.

603.3.11 With the wheels off the ground, the steered road wheels do not turn freely to the left and right through their normal range of travel.
603.3.12 Steering shaft is not securely connected to the steering box or rack, or is incorrectly aligned or adjusted.
603.3.13 Steering box, rack and pinion assembly, mounting brackets, bolts or couplings are cracked or not securely fixed to the vehicle.

603.3.14 Play at the end of the idler arm exceeds the manufacturers’ specifications or 6mm if these specifications are not known.

   Note: Some ball type steering joints are spring loaded or are designed to have a certain amount of play.

603.3.15 Excluding wheel bearing play, free play in the horizontal & vertical plane at each road wheel rim exceeds manufacturer’s limits or, if these aren’t known, the limits shown in Table 603.01.

<table>
<thead>
<tr>
<th>Wheel Rim Diameter</th>
<th>Maximum Freeplay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 405 mm</td>
<td>7.0 mm</td>
</tr>
<tr>
<td>405 to 455 mm</td>
<td>10.0 mm</td>
</tr>
<tr>
<td>Exceeds 455 mm</td>
<td>13.0 mm</td>
</tr>
</tbody>
</table>

603.3.16 Any noticeable movement due to wear in any other steering component exceeds manufacturer’s specification or 3 mm if that specification is not known.

FOR HYDRAULICALLY STEERED MOTOR VEHICLES

NOTE: This does not apply to vehicles with power assisted steering systems.

Each motor vehicle equipped with hydraulic steering must:
1. display a ‘Maximum Speed’ advisory sign at the rear as per its letter of approval;
2. have a ‘Hydraulic Steering System’ label prominently affixed to its dash;
3. have either a ‘Low level’ or a ‘Pressure hydraulic steering failure’ warning device (eg a warning lamp or buzzer) to warn the driver of a hydraulic system failure.

See Vehicle Standards Information sheet No 30 (VSI.30) Hydraulically steered motor vehicles for further information on these vehicles.

603.3.17 Unless specifically approved by the RTA, the vehicle is equipped with a hydraulic steering system that does not transmit energy by mechanical means only.

603.3.18 The ‘Maximum speed’ advisory sign is missing, damaged so as to be illegible or is not clearly visible to the rear of the motor vehicle.

603.3.19 The ‘Hydraulic steering system’ warning label is missing, damaged so as to be illegible or is not clearly visible to the driver from the normal driving position.

603.3.20 The ‘Low level’ or ‘Pressure hydraulic steering failure’ warning device is missing, inoperative or is not clearly visible to the driver from the normal driving position.

603.4 CHECK SUSPENSION COMPONENTS

Reasons for rejection

603.4.1 Any suspension component is not correctly aligned or is loose, missing, cracked, damaged or broken.

603.4.2 Any fastener or U-bolt is loose or missing.

603.4.3 Any spring hanger, torque or radius rod, control arm, bush or any part used to secure them is loose, cracked, broken, missing or worn beyond manufacturer’s limits.
603.4.4 Spring leaves are loose, cracked, broken or missing.
603.4.5 Leaves in a leaf spring are displaced sideways more than 10% of their width, or so that they contact wheels, brakes or the frame.
603.4.6 Any air bag suspension components leak or any air bag sags.
603.4.7 Any hydraulic suspension, or associated components leak or sag.
603.4.8 Any “walking beam” type heavy vehicle suspension has signs of damage to beam.
603.4.9 Shock absorbers, if originally fitted, are missing, loose, inoperative or leak.
603.4.10 Unless specifically approved by RTA, the vehicle is not equipped with loadsharing suspension.
Rule 604 Wheels and tyres

There is no mandatory requirement to carry a spare wheel/tyre and no inspection criteria for them. If a spare wheel is fitted, it must be properly secured so that it will not inadvertently become detached from the vehicle (See Rule 605.1.12) and will not obscure the number plates or any mandatory lamp (See Rules 605.4.3 & 608.1.1).

604.1 CHECK WHEELS

Reasons for rejection

604.1.1 Any wheel or rim is loose, cracked, buckled, has pieces of casting missing, has elongated stud holes or has weld repairs not in accordance with its manufacturer’s specifications.

604.1.2 Any wheel on a crane contacts the body, chassis, frame or braking, steering or suspension components at any point through its full range of travel.

604.1.3 A wheel’s spider is cracked across a spoke, hub or web area.

604.1.4 A wheel is not compatible with its hub.

604.1.5 Valve protection lugs are missing.

604.2 CHECK WHEEL FASTENERS

Reasons for rejection

604.2.1 The wheel nut does not fully engage the thread of the wheel stud or the fitting of the wheel nut does not match the taper of the wheel stud hole.

604.2.2 Any fastener is not of the correct type for the wheel being used or will allow a rim to slip on its spider.

604.2.3 Any hub has missing, cracked, stripped or broken wheel mounting nuts, studs or bolts.

604.2.4 Any lock ring or side ring is incorrectly seated, sprung, mismatched, bent, broken or cracked.

604.2.5 Any wheel nut or wheel stud presents a sharp or dangerous protrusion that may injury any person.

604.3 CHECK TYRES

Reasons for rejection

604.3.1 Except at tread wear indicators, a tyre has tread less than 1.5 mm deep in a band that runs continuously across at least 75% of the tyre width that normally contacts the road.

604.3.2 The overall diameter of dual tyres on the same side of an axle is not matched within 25mm.

604.3.3 A tyre (including sidewalls) has deep cuts, chunking, bumps, bulges, exposed cords or other signs of carcass failure.

604.3.4 A tyre has been regrooved, unless indicated on the side wall that the tyre is suitable for regrooving.

604.3.5 Any retreaded or remoulded tyre has been regrooved, unless indicated on the side wall that the tyre is suitable for regrooving.

604.3.6 Except for retreaded/regrooved tyres, any tyre is not of a type constructed for unrestricted road use.

604.3.7 Any retreaded (or remoulded) tyre is not marked RETREAD (or REMOULD), and if speed limited with MAX. SPEED XX KM/H or SPEED LIMITED TO XX KM/H.

Note: XX means the tyre’s max speed rating ie 100 km/h.
604.3.8 Any tyre fitted does not have a speed rating of at least 100 km/h, or exceeding that of the crane’s maximum speed as specified by its manufacturer.

604.3.9 The size and load rating of the wheels and tyres fitted are not suitable for the vehicle.

604.3.10 Dual tyres contact each other.

604.3.11 Any tyre on a crane contacts the body, chassis, frame or braking, steering or suspension components at any point through its full range of travel.

604.3.12 A tyre on a crane has cleats or other gripping devices that could damage road surfaces.
Rule 605 Structure and body condition

Note: In this Rule “damage” refers to collision damage, excessive wear and damage due to extensive/advanced corrosion.

605.1 CHECK BODY AND FITTINGS

Reasons for rejection

605.1.1 Any door, gate, hatch, bonnet or compartment latch, latch control, or hinge is missing, loose, damaged or is inoperative in any latching position.

605.1.2 Any tilting cabin or tray does not have a positive latching device that secures it in its normal travelling position.

605.1.3 Any structural member of the cabin, sleeper cab or body is cracked or damaged to an extent that it weakens the strength of the cabin, sleeper cab or body.

605.1.4 Unless used as a driver’s aid, the images shown on a television screen or Visual Display Screen (VDU) are visible to the driver from the normal driving position or to other road users.

605.1.5 Unless the body of the vehicle acts as a mudguard, each wheel is not provided a mudguard.

605.1.6 A mudguard does not provide protection over the full width of the wheel or does not extend inboard over the full width of the tyre/s, unless the body of the vehicle acts as a mudguard.

605.1.7 The bottom edge of each mudguard and/or rear mudflap is at least 1/3 of the horizontal distance between the centre of the axle and the bottom edge of the rear of the mudguard above the ground.

605.1.8 The lower edge of each mudguard and rear mudflap is not more than 200mm above the ground, or 300mm if it is an all-terrain crane.

605.1.9 When in the straight ahead position, the wheels, tyres or fittings (e.g. wheel nuts, grease caps, etc) project beyond the extreme width of the mudguards or exceed the maximum width for the vehicle.

605.1.10 Exterior body work including mudguards on a vehicle has exposed sharp edges or damage that could injure a person who comes into contact with that part of the vehicle.

605.1.11 Any after-market fitting is attached to the exterior of the vehicle that could cause injury to a person coming into contact with that part of the vehicle.

605.1.12 Any device or system used to support or secure a spare wheel is loose, damaged or cannot be locked/fastened securely in the closed position.

605.1.13 Any crane equipment such as cabling, dunnage etc is not secured to the vehicle.

605.1.14 Rear Marker Plates are missing, loose or not affixed in accordance with the requirements as specified in VSI.13 Rear Marking Plates for Heavy Vehicles.

605.1.15 Any required OVERMASS or OVERDIMENSION sign is missing, loose, not affixed in the required position(s) or damaged so as to be illegible.

605.2 CHECK CHASSIS

Reasons for rejection

605.2.1 Any part of the chassis or subframe is missing, loose, cracked, sagging, or damaged.

605.2.2 Any fastenings between frame members, including welds, are missing, loose, distorted or cracked.

605.2.3 Frame members in load bearing areas are missing, loose or damaged to an extent that a load may not be properly supported or the members may fall out or contact moving parts.
605.3  CHECK THE JIB, SHEAVE BLOCK AND FITTINGS

Reasons for rejection

605.3.1 Any part of the jib, sheave block, hook assembly or their fittings are loose or damaged to the extent that they may fail and fall to the road.

605.3.2 Any part of the jib projecting more than 3.5m forward of the driver is not marked with a red or yellow or black on white.

605.4  CHECK NUMBER PLATES

Reasons for rejection

605.4.1 Any part of the number plate is more than 1300 mm from the ground, unless the construction of the crane makes it impracticable.

605.4.2 The number plates are not substantially parallel to the vehicle’s axles,

605.4.3 Any number plate is obscured, for example by any fitting or equipment ie sheave block, hook or tow ball.

605.4.4 Any number plate cover is tinted, reflective, rounded or bubble like.

605.4.5 Any number plate is not of RTA issue, is damaged or faded to the extent that the registration number is not legible.

605.4.6 The characters on each number plate are not legible from a distance of 20 metres.

605.4.7 The characters on each number plate are not legible at any point within a 45° arc above or to either side of the surface of the number plate.

FIGURE 605.01 NUMBER PLATE VISIBILITY
606.1 CHECK SEATS

Reasons for rejection

606.1.1 Any seat, seat frame or seat anchorage point is loose, cracked, broken or has missing fasteners.
606.1.2 Any adjustment mechanism or locking device does not hold the seat in the selected position or is inoperative.
606.1.3 Any seat has an exposed sharp edge or other parts such as broken springs, etc that protrude due to damage.

606.2 CHECK SEAT BELTS

Reasons for rejection

606.2.1 Any seating position is not fitted with a seatbelt meeting an approved standard.
   Note: Approved seatbelts standards include AS, AS/NZS, JIS, UNECE and FMVSS.
606.2.2 Any seat belt or seat belt anchorage point is loose, cracked or has missing fasteners.
606.2.3 Any retractor, buckle or adjustment device is inoperative or damaged.
606.2.4 Seat belt webbing is cut, burnt, tied in a knot, frayed, stretched, severely deteriorated or has broken/missing stitching.
Rule 607 Driving Controls

607.1 CHECK OPERATION OF THE HORN

Reasons for rejection

607.1.1 The horn is inoperative or is not fitted.
607.1.2 The horn makes a sound like a siren, exhaust whistle or compression whistle.
607.1.3 The horn makes a repeating sound.

607.2 CHECK WINDSCREEN WIPERS, DEMISTERS AND WASHERS

Reasons for rejection

607.2.1 The windscreen wipers cannot be operated from the normal driving position.
607.2.2 The windscreen wipers are inoperative on any speed selected.
607.2.3 Wiper blades rubbers are cracked, hardened, frayed, curled, torn or missing.
607.2.4 If originally fitted, the windscreen washers are inoperative or incorrectly aimed.
607.2.5 The windscreen washers cannot be operated from the normal driving position.
607.2.6 If originally fitted, the windscreen demister is inoperative or does not blow air onto the windscreen.

607.3 CHECK MIRRORS

Reasons for rejection

607.3.1 Any compulsory mirror is loose or missing.
607.3.2 Any compulsory rear view mirror does not have a reflecting surface of at least 150 cm² (ie at least 120mm X 125mm).
607.3.3 Any compulsory mirror does not provide a clear view of the road to the rear of the vehicle.
607.3.4 The reflective surface of a compulsory rear view mirror is missing, loose or damaged.
607.3.5 The compulsory driver's side external mirror cannot be adjusted from the driver's normal seating position.

607.4 CHECK ELECTRICAL EQUIPMENT

Reasons for rejection

607.4.1 Any electrical wiring or connector is corroded, damaged or hanging loose in a way that could allow it to be damaged.
607.4.2 Electrical wiring is not secured or it is located where it can be damaged by heat or by coming into contact with any moving part.
607.4.3 Any wiring insulation is missing or damaged such that it may cause a fire hazard.
607.4.4 Batteries are not securely mounted, leak or are situated in an occupant space.
Rule 608 Lights and reflectors

608.1 CHECK LIGHTS AND REFLECTORS
Reasons for rejection

608.1.1 Any compulsory reflector is missing, loose, damaged, obscured or deteriorated so as to be ineffective.
608.1.2 Any of the following lights is missing, loose, inoperative, obscured or deteriorated:
   a. headlight (high/low beam)
   b. front park or side lights
   c. tail lights
   d. brake lights
   e. turn signal indicator lights
   f. clearance/end outline marker lights
   g. number plate light or lights
   h. side marker lights
   i. compulsory tell-tale lights
608.1.3 Any rear light, other than a reversing light, is damaged to the extent that white light shows to the rear of the vehicle.
608.1.4 Any amber clearance light or turn signal is damaged so that it shows white light.
608.1.5 The surface of the rear number plate is not illuminated by the number plate light(s).
608.1.6 Any optional light or reflector interferes with the effective operation of any compulsory light or reflector.
608.1.7 Any light has film or a tinted cover over it that affects its intended operation or the light it emits.
608.1.8 There is any type of opaque or coloured cover over a headlight which cannot be readily removed.
608.1.9 Any light does not comply with the requirements as specified in VSI.12 Guide lines for lights and light signalling devices for heavy vehicles.
608.1.10 If a lamp uses a series of light sources, such as incandescent globes or LEDs, to emit light, more than one globe or LED is inoperative.
608.1.11 Any brake lamp does not illuminate immediately the service brake is applied.
608.1.12 Any brake lamp flashes or does not emit red light.

608.2 CHECK HEADLIGHTS, DRIVING LAMPS & FOG LAMPS
Reasons for rejection

608.2.1 Any headlight, driving lamp or fog lamp reflector is tarnished or peeling to the extent that its performance is impaired.
608.2.2 Any headlight, driving lamp or fog lamp lens is cracked or broken.
608.2.3 Any headlight, driving lamp or fog lamp assembly is loose or out of position.
608.2.4 Any headlight or driving lamp does not emit white light.
608.2.5 Any driving lamp operates when the vehicle’s high beam headlights are not operating.
608.2.6 Any front fog lamp does not emit white or yellow light.
608.2.7 Any rear fog lamp does not emit red light.
608.2.8 Any fog lamp is not wired through a separate switch that prevents it from illuminating automatically when the vehicle’s low beam headlights are operated.

**608.3 CHECK HEADLIGHT AIM USING A HEADLIGHT TESTER**

This Rule applies to all alternative and additional headlights and driving lights fitted to the vehicle. This Rule is also to be used to check the aim of any front fog lamps fitted to the vehicle. This section shall be read in conjunction with Appendix B5 *Headlight Aim Tester* and with the headlight tester manufacturer’s instructions (if available).

**Reasons for rejection**

608.3.1 The projected centre of any driving light or headlight’s high beam is to the right of or is above the centre of the light.

608.3.2 The projected centre of any headlight’s low beam does not dip down, or down and to the left of the correct high beam setting.

608.3.3 The beam emitted by any front fog lamp is not projected down or below the centre of the lamp.

608.3.4 The beam emitted by any driving light or fog lamp could cause undue dazzle to oncoming drivers.
Rule 609 Windscreen and Windows

609.1 CHECK THE DRIVER'S FIELD OF VIEW

If the jib projects forward of the driver, two (2) convex mirrors are to be fitted with a minimum diameter of 300 mm located no less than 1000 mm from the foremost point of the jib. The mirrors must be located so that any reflected images from either side of and behind the vehicle are clearly visible and discernible to the driver in his normal seating position.

Reasons for rejection

609.1.1 Any part of the jib, sheave block or hook assembly forward or to either side of the driver will obstruct the driver's field of view.

609.1.2 Any device, such as a PDA, GPS Sat Nav Unit or mobile phone, or any fitting or equipment affixed to the vehicle forward or to either side of the driver will obstruct the driver's field of view.

FIGURE 609.01 DRIVER'S FIELD OF VIEW REQUIREMENTS

The driver must be able to see the road surface 11 m forward of the vehicle.

The driver view to the front and sides of the vehicle through the windows must be unobstructed in the shaded areas.

Note: The driver’s eye point in these diagrams can be taken as being a point 730 mm above and 270 mm forward of the junction of the seat cushion and squab with the seat in its lowest and rearmost position.
609.2  CHECK WINDSCREEN AND WINDOWS

Reasons for rejection

609.2.1 Any glazing used is not safety glass.
609.2.2 Glazing is loose in its frame or cracked to the extent that sharp edges are exposed.
609.2.3 The windscreen has any damage that is likely to damage the wiper blades.
   
   Note: Windscreen grooves designed to specifically clean wiper blades are not regarded as damage unless they affect the driver's view. Approved grooving is usually identified by the installer.

609.2.4 The wiped area of the windscreen has damage that interferes with the driver's field of view (see Figures 609.01 & 609.02).

609.2.5 A windscreen has a crack extending more than 75mm from its edge or has a crack that is longer than 30mm, or 150mm if the windscreen is laminated.

609.2.6 For any windscreen, a bullseye fracture exceeds 16mm in diameter, or there are multiple fractures and/or cracks.
   
   Note: In this Rule, the term “bullseye fracture” is also used to describe a “star fracture”.

609.2.7 If a laminated windscreen is fitted, a crack penetrates more than one layer of glass.

609.3  TEST THE LIGHT TRANSMITTANCE LEVEL OF THE GLAZING

This Rule applies to the vehicle's windscreen and to the windows adjacent to the driver.

This section shall be read in conjunction with Appendix B1 Light Transmittance Meter and with the light meter manufacturer's instructions (if available).

Note: The light meter may have up to a 5% measuring tolerance.

The Visible Light Transmission (VLT) requirements do not apply to areas of a windscreen above the highest point that is swept by the windscreen wipers, or the upper 10% of the windscreen.

Reasons for rejection

609.3.1 The VLT of the windscreen is less than 75%.
609.3.2 The VLT of any glazing adjacent to the driver's seating position is less than 70%.
609.3.3 The VLT of any other glazing is less than 35%.
609.3.4 Any glazing is reflective.
610.1 CHECK EXHAUST SYSTEM

Reasons for rejection

610.1.1 Any component of the exhaust system is not securely mounted.
610.1.2 The exhaust system contacts any unrelated part of the vehicle.
610.1.3 Any exhaust outlet is not rearward of any seating position, door, opening window, ventilation intake or
sleeper compartment opening that will allow the ingress of exhaust gases.
610.1.4 Any exhaust outlet discharges to the left side of the vehicle.
610.1.5 For vertical exhaust systems, the exhaust outlet is less than 150 mm above the roof of the cab, or is
directed downwards at more than a 45° angle, or to the left of the vehicle.
610.1.6 For all other systems, the exhaust outlet is more than 750 mm above the ground, or is directed
upwards or to the left of the vehicle.
610.1.7 There is any leak in the exhaust system.

NOTE: leaks from manufacturers’ drain holes are not to be considered.

610.2 CHECK NOISE EMISSIONS

This section shall be read in conjunction with Appendix B6 Sound level meters and with the sound level meter
manufacturer’s instructions (if available).

Changes to the original design of the engine, fuel system, air inlet system, or exhaust system all have the
potential to affect compliances of the vehicle with noise standards. If any such modification has been carried out
a noise test may be necessary to ensure that the vehicle complies with the exhaust noise limits.

Such modifications could also affect compliance with exhaust emission requirements.

Reasons for rejection

610.2.1 Any noise reducing or absorbing equipment is missing.
610.2.2 The exhaust system has been modified and evidence is not provided to show the system does not
exceed the noise level limits shown in Table 8 below:

| TABLE 8: NOISE LIMITS FOR DIESEL POWERED HEAVY VEHICLES |
|---------------------|---------------------|---------------------|
| GVM                 | Manufactured date   | Noise level dB(A)   |
| > 3.5t but ≤ 12t    | Before July 1980    | 103                 |
|                     | After June 1980 but before July 1983 | 100                 |
|                     | After June 1983     | 97                  |
| > 12t               | Before July 1980    | 105                 |
|                     | After June 1980 but before July 1983 | 102                 |
|                     | After June 1983     | 99                  |
610.3  CHECK ENGINE AND DRIVELINE

Reasons for rejection

610.3.1  Engine and driveline mounts or components are loose, cracked, broken or are missing components or fasteners.
610.3.2  Any universal joint or securing bolt is loose or missing.
610.3.3  Engine or transmission controls are inoperative.
610.3.4  A vehicle fitted with automatic transmission is capable of being started when the transmission control is in a position to drive the vehicle.
610.3.5  A vehicle fitted with automatic transmission does not have, in the driver’s compartment, an indicator showing the transmission control position.
610.3.6  Seals on covers between the engine and the passenger compartment are missing, distorted or damaged so as to allow fumes to enter the passenger compartment.
610.3.7  Engine emits smoke for at least 10 seconds continually at or near the discharge end of the exhaust pipe or an engine breather tube.
   Note:  water vapour is not smoke.
610.3.8  The engine lets out sparks, flames, oil or fuel residue.
610.3.9  Emission control equipment is missing or inoperative.
610.3.10  A diesel engine is not fitted with a device that prevents the engine from being started accidentally or inadvertently.

610.4  CHECK OIL LEAKS

Reasons for rejection

610.4.1  Oil leaks from the engine, gearbox, differential, power steering or any joint or seal:
   a.  on to brake friction surfaces, or
   b.  on to the exhaust system; or
   c.  on to the road surface; or
   d.  at a rate of more than one drop every 30 seconds at any joint or seal.