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**World Forum for Harmonization of Vehicle Regulations**

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**1997 AGREEMENT (INSPECTIONS)**

Development of draft Rule No. 2 and of a new draft Rule on braking

Proposal for draft Rule No. 2 on uniform provisions for periodical technical inspections of  
wheeled vehicles with regard to their roadworthiness

Submitted by the representative of the Russian Federation \*/

The text reproduced below was prepared by the representatives of the Russian Federation and the International Motor Vehicle Inspection Committee (CITA) following the invitation by the World Forum for Harmonization of Vehicle Regulations (WP.29) at its 146th session (TRANS/WP.29/1070 paras. 70 and 71).

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\*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Rules for periodical technical inspections in order to enhance performance of vehicles in use. The present document is submitted in conformity with that mandate.

PROPOSAL FOR DRAFT RULE No. 2 ON UNIFORM PROVISIONS FOR  
PERIODICAL TECHNICAL INSPECTIONS OF WHEELED VEHICLES WITH  
REGARD TO THEIR ROADWORTHINESS

1. SCOPE

- 1.1. For the purpose of Article 1 of the Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of such Inspections, the items to be inspected are related to safety requirements;
- 1.2. Wheeled vehicles as defined in paragraph 2.4 used in international transport shall satisfy the requirements set out below;
- 1.3. Contracting Parties may decide to extend the requirement of paragraph 1.2 above also to vehicles used in domestic transport.

2. DEFINITIONS

For the purpose of this Rule,

- 2.1. "Agreement" means the 1997 Vienna Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles and the Reciprocal Recognition of such Inspections;
- 2.2. "International Technical Inspection Certificate" means a certificate about the first registration after manufacture and the periodical technical inspections of wheeled vehicles in compliance with the provisions of Article 1 and Appendix 2 of the Agreement (see paragraph 2.1. above);
- 2.3. "Periodical Technical Inspection" means a periodical administrative uniform procedure by which the authorized technical Inspection Centres responsible for conducting the inspection tests declare, after carrying out the required verifications, that the wheeled vehicle submitted conforms to the requirements of this Rule;
- 2.4. "Wheeled vehicle" means motor vehicles of categories M<sub>2</sub>, M<sub>3</sub>, N<sub>2</sub> and N<sub>3</sub> and trailers of categories O<sub>3</sub> and O<sub>4</sub>, as specified in Consolidated Resolution on the Construction of Vehicles (RE.3) (TRANS/WP.29/78/Rev.1, as amended), used in international transport [whose permissible maximum mass exceeds 3,500 kg, except those used for the carriage of passengers and having not more than eight seats in addition to the driver's seat];
- 2.5. "Verification" means the proof of compliance with the requirements set out in the annex to this Rule through tests and checks carried out using techniques and equipment currently available, and without the use of tools to dismantle or remove any part of the vehicle;

- 2.6. "1958 Geneva Agreement" means the Agreement concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be fitted and/or used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals granted on the basis of these Prescriptions, done at Geneva on 20 March 1958 and amended as of 16 October 1995;
- 2.7. "Regulation" means a Regulation annexed to the 1958 Geneva Agreement.
- 2.8. "Inappropriate repair or modification" means a repair or modification that adversely affects the road safety of the vehicle.

### 3. PERIODICITY OF TECHNICAL INSPECTIONS

Vehicle Categories	Maximum Inspection Intervals
Passenger-carrying motor vehicles: M <sub>2</sub> above 3,500 kg and M <sub>3</sub> Goods vehicles: N <sub>2</sub> and N <sub>3</sub> : Trailers: O <sub>3</sub> and O <sub>4</sub>	One year after the first registration (or if the vehicle is not required to be registered, date of first use) and annually thereafter

### 4. TECHNICAL INSPECTION

Vehicles to which these provisions apply must undergo a periodic technical inspection in accordance with the annex hereafter.

Following verification, the International Technical Inspection Certificate shall confirm the compliance with at least the provisions of this annex.

### 5. INSPECTION REQUIREMENTS

The inspection shall cover at least the items listed below, provided that these are related to the obligatory equipment of the vehicle being tested in the implementing State concerned.

- 5.1. Identification of the vehicle;
- 5.2. Braking equipment;
- 5.3. Steering;
- 5.4. Visibility;
- 5.5. Lighting equipment and parts of electric system;
- 5.6. Axles, wheels, tyres, suspension;
- 5.7. Chassis and chassis attachments;

5.8. Other equipment;

5.9. Additional inspections of vehicles for the commercial carriage of passengers.

## 6. METHODS OF INSPECTION

The method of inspection set out in the annex shall be the minimum requirement. Where a method of inspection is given as visual, it means that in addition to looking at the items, the inspector can also handle them, evaluate noise, etc.

## 7. MAIN REASONS FOR REJECTION AND ASSESSMENT OF DEFECTS

Recommendations for the main reasons for rejection and the assessment of defects are also given in the annex. The three criteria for assessment of defects are defined as follows.

7.1. "Minor defects" (MiD) are technical defects that have no significant effect on the safety of the vehicle and other minor non-compliances. The vehicle does not have to be re-examined as it can reasonably be expected that the detected defects will be rectified without delay.

7.2. "Major defects" (MaD) are defects that may prejudice the safety of the vehicle and/or put other road users at risk and other more significant non-compliances. Further use of the vehicle on the road without repair of the detected defects is not allowed although it still may be driven to a place for repair and afterwards to a specified location for the repair to be checked.

7.3. "Dangerous defects" (DD) are defects that constitute a direct and immediate risk to road safety such that the vehicle should not be used on the road under any circumstances.

7.4. A vehicle having defects falling into more than one defect group should be classified according to the most serious defect. A vehicle showing several defects of the same group can be classified in the next more serious group if their combined effect makes the vehicle more dangerous.

## 8. NAMES AND ADDRESSES

The Contracting Parties to the Agreement applying this Rule shall communicate to the United Nations Secretariat basic information on administrative authorities responsible for supervising the inspection tests and issuing the International Technical Inspection Certificates.

Annex

## MINIMUM INSPECTION REQUIREMENTS

The inspection shall cover at least the items listed below.

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
0. IDENTIFICATION OF THE VEHICLE					
0.1. Registration number plates (if needed by requirements. <u>1</u> /)	Visual inspection.	(a) Number plate(s) missing or so insecure/fixated that it is (they are) likely to fall off. (b) Inscription missing or illegible. (c) Not in accordance with vehicle documents or records.	X	X X X	
0.2. Vehicle identification chassis/ serial number	Visual inspection.	(a) Missing or cannot be found. (b) Incomplete, illegible. (c) Not in accordance with vehicle documents or records.		X X X	
1. BRAKING EQUIPMENT					
1.1. Mechanical condition and operation					
1.1.1. Service brake pedal/hand lever pivot	Visual inspection of the components while the braking system is operated. <i>Note:</i> Vehicles with power-assisted braking systems should be inspected with the engine switched off.	(a) Pivot too tight. (b) Excessive wear or play.		X X	
1.1.2. Pedal/hand lever condition and travel of the brake operating device	Visual inspection of the components while the braking system is operated <i>Note:</i> Vehicles with power-assisted braking systems should be inspected with the engine switched off.	(a) Excessive or insufficient reserve travel. (b) Brake control not releasing correctly. (c) Anti-slip provision on brake pedal missing, loose or worn smooth.	X X	X X	

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
1.1.3. Vacuum pump or compressor and reservoirs	Visual inspection of the components at normal working pressure. Check time required for vacuum or air pressure to reach safe working value and function of warning device, multi-circuit protection valve and pressure relief valve.	(a) Insufficient pressure/vacuum to give assistance for at least two brake applications after the warning device has operated (or gauge shows an unsafe reading). (b) Time taken to build up air pressure/vacuum to safe working value not in accordance with the requirements. <u>1/</u> (c) Multi-circuit protection valve or pressure relief valve not working. (d) Air leak causing a noticeable drop in pressure or audible air leaks. (e) External damage likely to affect the function of the braking system.		X  X X X	X   X
1.1.4. Low pressure warning gauge or indicator	Functional check.	Malfunctioning or defective gauge or indicator.	X	X	
1.1.5. Hand operated brake control valve	Visual inspection of the components while the braking system is operated.	(a) Control cracked, damaged or excessively worn. (b) Control insecure on valve or valve insecure. (c) Loose connections or leaks in system. (d) Unsatisfactory operation.		X X X X	
1.1.6. Parking brake activator, lever control, parking brake ratchet	Visual inspection of the components while the braking system is operated.	(a) Ratchet not holding correctly. (b) Excessive wear at lever pivot or in ratchet mechanism. (c) Excessive movement of lever indicating incorrect adjustment. (d) Activator missing, damaged or inoperative	X	X X X X	
1.1.7. Braking valves (foot valves, unloaders, governors)	Visual inspection of the components while the braking system is operated.	(a) Valve damaged or excessive air leak. (b) Excessive oil discharge from compressor. (c) Valve insecure or inadequately mounted. (d) Hydraulic fluid discharge or leak.	X	X  X X	X   X
1.1.8. Couplings for trailer brakes (electrical & pneumatic)	Disconnect and reconnect braking system coupling between towing vehicle and trailer.	(a) Tap or self sealing valve defective. (b) Tap or valve insecure or inadequately mounted. (c) Excessive leaks. (d) Not functioning correctly	X X	X X  X X	   X X
1.1.9. Energy storage reservoir pressure tank	Visual inspection.	(a) Tank damaged, corroded or leaking. (b) Drain device inoperative. (c) Tank insecure or inadequately mounted.	X X	X X X	

1/ 'requirements' are laid down by type-approval requirements at the date of first registration or first entry into service as well as retrofitting obligations or national legislation.

Mandatory		Recommendation				
Item	Method	Main Reasons for Rejection	Defect Assessment			
			MiD	MaD	DD	
1.1.10. Brake servo units, master cylinder (hydraulic systems)	Visual inspection of the components while the braking system is operated.	(a) Defective or ineffective servo unit. (b) Master cylinder defective or leaking. (c) Master cylinder insecure. (d) Insufficient brake fluid. (e) Master cylinder reservoir cap missing. (f) Brake fluid warning light illuminated or defective. (g) Incorrect functioning of brake fluid level warning device.	X X X X	X X X	X X	
1.1.11. Rigid brake pipes	Visual inspection of the components while the braking system is operated.	(a) Eminent risk of failure or fracture. (b) Pipes or connections leaking. (c) Pipes damaged or excessively corroded. (d) Pipes misplaced.	X	X X X	X X X	
1.1.12. Flexible brake hoses	Visual inspection of the components while the braking system is operated.	(a) Eminent risk of failure or fracture. (b) Hoses damaged, chafing, twisted or too short. (c) Hoses or connections leaking. (d) Hoses bulging under pressure. (e) Hoses porous.	X	X X X X	X X X	
1.1.13. Brake linings and pads	Visual inspection.	(a) Lining or pad excessively worn. (b) Lining or pad contaminated (oil, grease etc.). (c) Lining or pad missing		X X	X X X	
1.1.14. Brake drums, brake discs	Visual inspection.	(a) Drum or disc excessively worn, excessively scored, cracked, insecure or fractured. (b) Drum or disc contaminated (oil, grease, etc.) (c) Drum or disc missing. (d) Back plate insecure.		X X X	X X	
1.1.15. Brake cables, rods, levers, linkages	Visual inspection of the components while the braking system is operated.	(a) Cable damaged or knotted. (b) Component excessively worn or corroded. (c) Cable, rod or joint insecure. (d) Cable guide defective. (e) Restriction to free movement of the braking system. (f) Abnormal movement of the levers/linkage indicating maladjustment or excessive wear.		X X X X	X X	
1.1.16. Brake actuators (including spring brakes or hydraulic cylinders)	Visual inspection of the components while the braking system is operated.	(a) Actuator cracked or damaged. (b) Actuator leaking. (c) Actuator insecure or inadequately mounted. (d) Actuator excessively corroded. (e) Insufficient or excessive travel of operating piston or diaphragm mechanism. (f) Dust cover missing or excessively damaged.	X	X X X X	X X X	
1.1.17. Load sensing valve	Visual inspection of the components while the braking system is operated.	(a) Defective linkage. (b) Linkage incorrectly adjusted. (c) Valve seized or inoperative. (d) Valve missing. (e) Missing data plate. (f) Data illegible or not in accordance with requirements. <u>1/</u>	X X	X X X	X X	

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
1.1.18. Slack adjusters and indicators	Visual inspection.	(a) Adjuster damaged, seized or having abnormal movement, excessive wear or incorrect adjustment. (b) Adjuster defective. (c) Incorrectly installed or replaced.		X X X	
1.1.19. Endurance braking system (where fitted or required)	Visual inspection.	(a) Insecure connectors or mountings. (b) System obviously defective or missing.	X	X X	
1.1.20. Automatic operation of trailer brakes	Disconnect brake coupling between towing vehicle and trailer.	Trailer brake does not apply automatically when coupling disconnected.			X
1.1.21. Complete braking system	Visual inspection.	(a) Other system devices (e.g. anti-freeze pump, air dryer, etc.) damaged externally or excessively corroded in a way that adversely affects the braking system. (b) Leakage of air or anti-freeze. (c) Any component insecure or inadequately mounted. (d) Inappropriate repair or modification to any component.	X	X X X	X  X
1.1.22. Test connections (where fitted or required)	Visual inspection.	(a) Missing. (b) Damaged, unusable or leaking.	X	X X	
1.2. Service braking performance and efficiency					
1.2.1. Performance	During a test on a static brake testing machine or, if impossible, during a road test apply the brakes progressively up to maximum effort.	(a) Inadequate braking effort on one or more wheels. (b) Braking effort from any wheel is less than 70% of maximum effort recorded from the other wheel on the same axle. Or in the case of testing on the road, the vehicle deviates excessively from a straight line and comes out of a corridor 3 m wide . (c) No gradual variation in brake effort (grabbing). (d) Abnormal lag in brake operation of any wheel. (e) Excessive fluctuation of brake force during each complete wheel revolution.		X X  X X X	X X



Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
1.2.2. Efficiency	<p>Test with a static brake testing machine or, if one cannot be used for technical reasons, by a road test using a decelerometer. Vehicles or a trailer has to be inspected following the standards given by ISO 21069, or according to the requirements or equivalent methods.</p> <p>Laden vehicle braking system performance should be assessed by testing the vehicle laden, or by evaluation using a method based on extrapolation or by some other acceptable means.</p> <p>Note: The efficiency of overrun brakes can be fully tested on a static brake testing machine by use of a special device or partially tested by applying the parking brake.</p>	Does not give at least the minimum figure laid down in requirements. <u>1/</u>		X	X
1.3. Secondary (emergency) braking performance and efficiency (if met by separate system)					
1.3.1. Performance	If the secondary braking system is separate from the service braking system, use the method specified in 1.2.1.	<p>(a) Inadequate braking effort on one or more wheels.</p> <p>(b) Braking effort from any wheel is less than 70% of maximum effort recorded from another wheel on the same axle specified. Or in the case of testing on the road, the vehicle deviates excessively from a straight line comes out of a corridor 3 m wide .</p> <p>(c) No gradual variation in brake effort (grabbing).</p>		X	X
1.3.2. Efficiency	If the secondary braking system is separate from the service braking system, use the method specified in 1.2.2.	Braking effort less than 50% of the service brake performance defined in section 1.2.2 in relation to the maximum authorized mass or, in the case of semi-trailers, to the sum of the authorized axel loads.		X	X
1.4. Parking braking performance and efficiency					
1.4.1. Performance	Apply the brake during a test on a static brake testing machine and/or during a road test with a decelerometer.	Brake inoperative on one side or in the case of testing on the road, the vehicle deviates excessively from a straight line.		X	X
1.4.2. Efficiency	Test with a static brake testing machine or by a road test using either an indicating or recording decelerometer or with the vehicle on a slope of known gradient. Goods vehicles should, if possible, be tested laden.	Does not give at least for all vehicles a braking ratio of 18% in relation to the maximum authorized mass, or, for motor vehicles, of 12% in relation to the maximum authorized combination mass of the vehicle, whichever is the greater.		X	X

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
1.5.	Endurance braking system performance	Visual inspection and, where possible, test whether the system functions.	(a) No gradual variation of efficiency (not applicable to exhaust brake systems). (b) System not functioning.	X X	
1.6.	Anti-lock braking system (ABS)	Visual inspection and inspection of warning device.	(a) Warning device malfunctioning. (b) Warning device shows system malfunction. (c) Wheel speed sensors missing or damaged. (d) Wirings damaged. (e) Other components missing or damaged.	X X X X X	
1.7	Electronic brake system (EBS)	Visual inspection of warning device.	(a) Warning device malfunctioning. (b) Warning device shows system malfunction.	X X	
<b>2. STEERING</b>					
2.1. Mechanical condition					
2.1.1.	Steering gear condition	With the vehicle over a pit or on a hoist and with the road wheels off the ground or on turn tables, rotate the steering wheel from lock to lock. Visual inspection of the operation of the steering gear.	(a) Roughness in operation of gear. (b) Sector shaft twisted or splines worn. (c) Excessive wear in sector shaft. (d) Excessive movement of sector shaft. (e) Leaking.	X X X X X	X X X
2.1.2.	Steering gear casing attachment	With vehicle on a pit or hoist and the weight of the vehicle road wheels on the ground, rotate steering / handle bar wheel clock-wise and anticlockwise or using a specially adapted wheel play detector. Visual inspection of the attachment of gear casing to chassis.	(a) Steering gear casing not properly attached. (b) Elongated fixing holes in chassis. (c) Missing or fractured fixing bolts. (d) Steering gear casing fractured.	X X X X	X X X
2.1.3.	Steering linkage condition	With the vehicle over a pit or on a hoist and with the road wheel on ground, rock steering wheel clockwise and anti-clockwise or using a specially adapted wheel play detector. Visual inspection of steering components for wear, fractures and security.	(a) Relative movement between components which should be fixed. (b) Excessive wear at joints. (c) Fractures or deformation of any component. (d) Absence of locking devices. (e) Misalignment of components (e.g. track rod or drag link). (f) Inappropriate repair or modification. (g) Dust cover missing, damaged or severely deteriorated.	X X X X X X	X X X X
2.1.4.	Steering linkage operation	With the vehicle over a pit or on a hoist and with the road wheels on ground and the engine running (power steering), rotate steering wheel from lock to lock. Visual inspection of movement of linkages.	(a) Moving steering linkage fouling a fixed part of chassis. (b) Steering stops not operating or missing.	X X	

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
2.1.5. Power steering	Check steering system for leaks and hydraulic fluid reservoir level (if visible). With the road wheels on ground and with the engine running, check that the power steering system is operating.	(a) Fluid leak. (b) Insufficient fluid. (c) Mechanism not working. (d) Mechanism fractured or insecure. (e) Misalignment or fouling of components. (f) Inappropriate repair or modification. (g) Cables/hoses damaged, excessively corroded.	X	X X X X X X	X X X X X
2.2. Steering wheel and column					
2.2.1. Steering wheel condition	With the road wheels on the ground, rock steering wheel from side to side at right angles to column and apply slight downward and upward pressure. Visual inspection of play.	(a) Relative movement between steering wheel and column indicating looseness. (b) Absence of retaining device on steering wheel hub. (c) Fracture or looseness of steering wheel hub, rim or spokes.		X X X	X X
2.2.2. Steering column	With the vehicle over a pit or on a hoist and the mass of the vehicle on the ground, push and pull the steering wheel in line with column, push steering wheel in various directions at right angles to the column. Visual inspection of play, and condition of flexible couplings or universal joints.	(a) Excessive movement of centre of steering wheel up or down. (b) Excessive movement of top of column radially from axis of column. (c) Deteriorated flexible coupling. (d) Attachment defective. (e) Inappropriate repair or modification.	[ ]	X X X X	[ ] X X
2.3. Steering play	With the vehicle over a pit or on a hoist, the mass of the vehicle on the road-wheels, the engine running for vehicles with power steering and with the road wheels in the straight-ahead position, lightly turn the steering wheel clockwise and anti-clockwise as far as possible without moving the road wheels. Visual inspection of free movement.	Free play in steering excessive (for example movement of a point on the rim exceeding one fifth of the diameter of the steering wheel or not in accordance with the requirements. <sup>1/</sup>		X	X
2.4. Wheel alignment (X) <u>2/</u>	Check alignment of steered wheels with suitable equipment.	Alignment not in accordance with vehicle manufacturer's data or requirements. <u>1/</u>	X	X	
2.5. Trailer steered axle turntable	Visual inspection or using a specially adapted wheel play detector.	(a) Component damaged or cracked. (b) Excessive play. (c) Attachment defective.		X X X	X X X

<sup>2/</sup> '(X)' Identifies items which are related to the condition of the vehicle and its suitability for use on the road but which are not considered essential in a periodic inspection.

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
3. VISIBILITY					
3.1. Field of vision	Visual inspection from driving seat.	Obstruction within driver's field of view that materially affects his view in front or to the sides.	X	X	
3.2. Condition of glass	Visual inspection.	(a) Cracked or discoloured glass or transparent panel (if permitted). (b) Glass or transparent panel (including reflecting or tinted film) that does not comply with specifications in the requirements. <u>1/</u> (c) Glass or transparent panel in unacceptable condition.	X X	X X	X
3.3. Rear-view mirrors or devices	Visual inspection.	(a) Mirror or device missing or not fitted according to the requirements. <u>1/</u> (b) Mirror or device inoperative, damaged, loose or insecure.	X X	X X	
3.4. Windscreen wipers	Visual inspection and by operation.	(a) Wipers not operating or missing. (b) Wiper blade missing or obviously defective.	X	X X	
3.5. Windscreen washers	Visual inspection and by operation.	Washers not operating adequately.	X	X	
3.6. Demisting system (X) <u>2/</u>	Visual inspection and by operation.	System inoperative or obviously defective.	X		
4. LAMPS, REFLECTORS AND ELECTRICAL EQUIPMENT					
4.1. Headlamps					
4.1.1. Condition and operation	Visual inspection and by operation.	(a) Defective or missing light / light source. (b) Defective or missing projection system (reflector and lens). (c) Lamp not securely attached.	X X	X X X	
4.1.2. Alignment	Determine the horizontal aim of each headlamp on dipped beam using a headlamp aiming device or a screen.	Aim of a headlamp not within limits laid down in the requirements. <u>1/</u>		X	
4.1.3. Switching	Visual inspection and by operation.	(a) Switch does not operate in accordance with the requirements. <u>1/</u> (Number of headlamps illuminated at the same time) (b) Function of control device impaired.	X	X X	
4.1.4. Compliance with requirements <u>1/</u> (X) <u>2/</u>	Visual inspection and by operation.	(a) Lamp, emitted colour, position or intensity not in accordance with the requirements. <u>1/</u> (b) Products on lens or light source which obviously reduce light intensity or change emitted colour. (c) Light source and lamp not compatible	X X	X X X	

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
4.1.5. Levelling devices (where mandatory) (X) <u>2/</u>	Visual inspection and by operation if possible.	(a) Device not operating. (b) Manual device cannot be operated from driver's seat.		X X	
4.1.6. Headlamp cleaning device (where mandatory) (X) <u>2/</u>	Visual inspection and by operation if possible.	Device not operating.	X	X	
4.2. Front and rear position lamps, side marker lamps and end outline marker lamps					
4.2.1. Condition and operation	Visual inspection and by operation.	(a) Defective light source. (b) Defective lens. (c) Lamp not securely attached.	X	X X X	
4.2.2. Switching	Visual inspection and by operation.	(a) Switch does not operate in accordance with the requirements. <u>1/</u> (b) Function of control device impaired.	X	X X	
4.2.3. Compliance with requirements. <u>1/</u>	Visual inspection and by operation.	(a) Lamp, emitted colour, position or intensity not in accordance with the requirements. <u>1/</u> (b) Products on lens or light source which reduce light intensity or change emitted colour.	X X	X X	
4.3. Stop Lamps					
4.3.1. Condition and operation	Visual inspection and by operation.	(a) Defective light source. (b) Defective lens. (c) Lamp not securely attached.	X X X	X X X	X
4.3.2. Switching	Visual inspection and by operation.	(a) Switch does not operate in accordance with the requirements. <u>1/</u> (b) Function of control device impaired.	X	X X	X
4.3.3. Compliance with requirements. <u>1/</u>	Visual inspection and by operation.	(a) Lamp, emitted colour, position or intensity not in accordance with the requirements. <u>1/</u>	X	X	
4.4. Direction indicator and hazard warning lamps					
4.4.1. Condition and operation	Visual inspection and by operation.	(a) Defective light source. (b) Defective lens. (c) Lamp not securely attached	X X X	X X X	
4.4.2. Switching	Visual inspection and by operation.	Switch does not operate in accordance with the requirements. <u>1/</u>	X	X	
4.4.3. Compliance with requirements. <u>1/</u>	Visual inspection and by operation.	Lamp, emitted colour, position or intensity not in accordance with the requirements. <u>1/</u>	X	X	
4.4.4. Flashing frequency	Visual inspection and by operation.	Rate of flashing not in accordance with the requirements. <u>1/</u>	X	X	
4.5. Front and rear fog lamps					
4.5.1. Condition and operation	Visual inspection and by operation.	(a) Defective light source. (b) Defective lens. (c) Lamp not securely attached.	X X X	X X X	

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
4.5.2. Alignment (X) 2/	By operation and using a headlamp aiming device.	(a) Front fog lamp out of horizontal alignment when the light pattern has cut-off line.	X	X	
4.5.3. Switching	Visual inspection and by operation.	(a) Switch does not operate in accordance with the requirements. 1/	X	X	
4.5.4. Compliance with requirements. 1/	Visual inspection and by operation.	(a) Lamp, emitted colour, position or intensity not in accordance with the requirements. 1/		X	
		(b) System does not operate in accordance with the requirements. 1/	X	X	
4.6. Reversing lamps					
4.6.1. Condition and operation	Visual inspection and by operation.	(a) Defective light source. (b) Defective lens. (c) Lamp not securely attached.	X X X		
4.6.2. Compliance with requirements. 1/	Visual inspection and by operation.	(a) Lamp, emitted colour, position or intensity not in accordance with the requirements. 1/	X	X	
		(b) System does not operate in accordance with the requirements. 1/	X	X	
4.6.3. Switching	Visual inspection and by operation.	(a) Switch does not operate in accordance with the requirements. 1/	X	X	
4.7. Rear registration plate lamp					
4.7.1. Condition and operation	Visual inspection and by operation.	(a) Lamp throwing direct light to the rear. (b) Defective light source. (c) Lamp not securely attached.	X X X	X X X	
4.7.2. Compliance with requirements 1/	Visual inspection and by operation.	System does not operate in accordance with the requirements. 1/	X		
4.8. Retro-reflectors, conspicuity (retro reflecting) markings and rear marker plates					
4.8.1. Condition	Visual inspection.	(a) Reflecting equipment defective or damaged. (b) Reflector not securely attached.	X X	X X	
4.8.2. Compliance with requirements. 1/	Visual inspection.	(a) Device, reflected colour or position not in accordance with the requirements. 1/	X	X	
4.9. Tell-tales mandatory for lighting equipment					
4.9.1. Condition and operation	Visual inspection and by operation.	Not operating.	X	X	
4.9.2. Compliance with requirements. 1/	Visual inspection and by operation.	Not in accordance with the requirements. 1/	X		
4.10. Electrical connections between towing vehicle and trailer or semi-trailer	Visual inspection: if possible examine the electrical continuity of the connection.	(a) Fixed components not securely attached.	X	X	
		(b) Damaged or deteriorated insulation.	X	X	
		(c) Trailer or towing vehicle electrical connections not functioning correctly.		X	X
4.11. Electrical wiring	Visual inspection with vehicle over a pit or on a hoist, including inside the engine compartment in some cases.	(a) Wiring insecure or not adequately secured.	X	X	X
		(b) Wiring deteriorated	X	X	X
		(c) Damaged or deteriorated insulation.	X	X	X

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
4.12. Non obligatory lamps and retro-reflectors (X) 2/	Visual inspection and by operation.	(a) A lamp/retro-reflector fitted not in accordance with the requirements. 1/ (b) Lamp operation not in accordance with the requirements. 1/ (c) Lamp/retro-reflector not securely attached.	X X X	X X X	
4.13. Battery	Visual inspection.	(a) Insecure. (b) Leaking. (c) Defective switch (if required). (d) Defective fuses (if required). (e) inappropriate ventilation (if required)	X X	X X X X X	
<b>5. AXLES, WHEELS, TYRES AND SUSPENSION</b>					
<b>5.1. Axles</b>					
5.1.1. Axles	Visual inspection with vehicle over a pit or on a hoist. Wheel play detectors may be used and are recommended for vehicles over 3.5 tonnes gross vehicle mass (GVM).	(a) Axle fractured or deformed. (b) Insecure fixing to vehicle. (c) Inappropriate repair or modification.		X X	X X X
5.1.2. Stub axles	Visual inspection with vehicle over a pit or on a hoist. Use of wheel play detectors is recommended. Apply a vertical or lateral force to each wheel and note the amount of movement between the axle beam and stub axle.	(a) Stub axle fractured. (b) Excessive wear in the swivel pin and/or bushes. (c) Excessive movement between stub axle and axle beam. (d) Stub axle pin loose in axle.		X X X	X X X
5.1.3. Wheel bearings	Visual inspection with the vehicle over a pit or on a hoist. Wheel play detectors may be used and are recommended for vehicles over 3.5 tonnes GVM. Rock the wheel or apply a lateral force to each wheel and note the amount of upward movement of the wheel relative to the stub axle.	(a) Excessive play in a wheel bearing. (b) Wheel bearing too tight, jammed.		X X	X X
<b>5.2. Wheels and tyres</b>					
5.2.1. Road wheel hub	Visual inspection.	(a) Any wheel nuts or studs missing or loose. (b) Hub worn or damaged.		X X	X X
5.2.2. Wheels	Visual inspection of both sides of each wheel with vehicle over a pit or on a hoist.	(a) Any fracture or welding defect. (b) Tyre retaining rings not properly fitted. (c) Wheel badly distorted or worn. (d) Wheel size or type not in accordance with the requirements 1/ and effecting road safety.		X X X	X X X

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
5.2.3. Tyres	Visual inspection of the entire tyre by either rotating the road wheel with it off the ground and the vehicle over a pit or on a hoist, or by rolling the vehicle backwards and forwards over a pit.	(a) Tyre size, load capacity, approval mark or speed rating not in accordance with the requirements <u>1/</u> and effecting road safety. (b) Tyres on same axle or on twin wheels of different sizes. (c) Tyres on same axle of different construction (radial / cross-ply). (d) Any serious damage or cut to tyre. (e) Tyre tread depth not in accordance with the requirements. <u>1/</u> (f) Tyre rubbing against other components. (g) Re-grooved tyres not in accordance with requirements. <u>1/</u> (h) Air pressure monitoring system malfunctioning or obviously inoperative.	X	X	X
5.3. Suspension system					
5.3.1. Springs and stabilizer	Visual inspection with vehicle over a pit or on a hoist. The use of wheel play detectors is recommended.	(a) Insecure attachment of springs to chassis or axle. (b) A damaged or fractured spring component. (c) Spring missing. (d) Inappropriate repair or modification.		X	X
5.3.2. Shock absorbers	Visual inspection with vehicle over a pit or on a hoist or using special equipment, if available.	(a) Insecure attachment of shock absorbers to chassis or axle. (b) Damaged shock absorber.	X	X	
5.3.2.1. Efficiency testing of damping (X) <u>2/</u>	Use special equipment and compare left /right differences and/or absolute values given by manufacturers .	(a) Significant difference between left and right. (b) Given minimum values not reached.		X	
5.3.3. Torque tubes, radius arms, wishbones and suspension arms	Visual inspection with vehicle over a pit or on a hoist. Wheel play detectors may be used and are recommended for vehicles over 3.5 tonnes GVM.	(a) Insecure attachment of component to chassis or axle. (b) A damaged, fractured or excessively corroded component. (c) Inappropriate repair or modification.		X	X
5.3.4. Suspension joints	Visual inspection with vehicle over a pit or on a hoist. Wheel play detectors may be used and are recommended for vehicles over 3.5 tonnes GVM.	(a) Excessive wear in swivel pin and/or bushes or at suspension joints. (b) Dust cover missing or severely deteriorated.	X	X	X
5.3.5. Air suspension	Visual inspection.	(a) System inoperative. (b) Any component damaged, modified or deteriorated in a way that would adversely affect the functioning of the system. (c) Audible system leakage.		X	X



Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
6. CHASSIS AND CHASSIS ATTACHMENTS					
6.1. Chassis or frame and attachments					
6.1.1. General condition	Visual inspection with vehicle over a pit or on a hoist.	(a) Fracture or deformation of any side or cross member. (b) Insecurity of strengthening plates or fastenings. (c) Excessive corrosion which affects the rigidity of the assembly.		X X X	X X X
6.1.2. Exhaust pipes and silencers	Visual inspection with vehicle over a pit or on a hoist.	(a) Insecure or leaking exhaust system. (b) Fumes entering cab or passengers compartment.		X X	X X
6.1.3. Fuel tank and pipes (including heating fuel tank and pipes)	Visual inspection with vehicle over a pit or on a hoist, use of leak detecting devices in case of LPG/CNG systems.	(a) Insecure tank or pipes. (b) Leaking fuel or missing or ineffective filler cap. (c) Damaged or chafed pipes. (d) Fuel stopcock (if required) not operating correctly. (e) Fire risk due to - Leaking fuel - Fuel tank or exhaust improperly shielded - Engine compartment condition. (f) LPG/CNG system not in accordance with requirements <u>1</u> /. 	X	X X X X X X	X X X X
6.1.4. Bumpers, lateral protection and rear underrun devices	Visual inspection.	(a) Looseness or damage likely to cause injury. (b) Device obviously not in compliance with the requirements. <u>1</u> /	X	X X	X X
6.1.5. Spare wheel carrier (if fitted)	Visual inspection.	(a) Carrier not in proper condition. (b) Carrier fractured or insecure. (c) A spare wheel not securely fixed in carrier and likely to fall off.	X	X X	X X
6.1.6. Coupling mechanisms and towing equipment	Visual inspection for wear and correct operation with special attention to any safety device fitted and /or use of measuring gauge.	(a) Component damaged, defective or cracked. (b) Excessive wear in a component. (c) Attachment defective. (d) Any safety device missing or not operating correctly. (e) Any indicator not working. (f) Inappropriate repair or modification.		X X X X X X	X X X X
6.1.7. Transmission	Visual inspection.	(a) Loose or missing securing bolts. (b) Excessive wear in transmission shaft bearings. (c) Excessive wear in universal joints. (d) Deteriorated flexible couplings. (e) A damaged or bent shaft. (f) Bearing housing fractured or insecure. (g) Dust cover missing or severely deteriorated. (h) Illegal power-train modification.	X	X X X X X X X	X X X X X
6.1.8. Engine mountings	Visual inspection not necessarily on a pit or hoist.	Deteriorated, loose or fractured mountings.		X	X

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
6.1.9 Engine performance	Visual inspection.	(a) Control unit illegal modified. (b) Illegal engine and/or power-train modification.		X X	
6.2. Cab and bodywork					
6.2.1. Condition	Visual inspection.	(a) A loose or damaged panel or part likely to cause injury. (b) Insecure body pillar. (c) Permitting entry of engine or exhaust fumes. (d) Inappropriate repair or modification.		X X X X	X X X X
6.2.2. Mounting	Visual inspection over a pit or on a hoist.	(a) Body or cab insecure. (b) Body/cab obviously not located squarely on chassis. (c) Insecure or missing fixing of body/cab to chassis or cross members. (d) Excessive corrosion at fixing points on integral bodies.		X X X X	X X X X
6.2.3. Doors and door catches	Visual inspection.	(a) A door will not open or close properly. (b) A door likely to open inadvertently or one that will not remain closed. (c) Door, hinges, catches, pillar, missing, loose or deteriorated.	X	X X X	X X X
6.2.4. Floor	Visual inspection over a pit or on a hoist.	Floor insecure or badly deteriorated		X	X
6.2.5. Driver's seat	Visual inspection.	(a) A loose seat or seat with defective structure. (b) Adjustment mechanism not functioning correctly.		X X	X X
6.2.6. Other seats	Visual inspection.	(a) Seats in defective condition or insecure. (b) Seats fitted not in accordance with requirements. <u>1/</u>	X X	X X	
6.2.7. Driving controls	Visual inspection and by operation.	Any control necessary for the safe operation of the vehicle not functioning correctly.		X	X
6.2.8. Cab steps	Visual inspection.	(a) Step or step ring insecure. (b) Step or ring in a condition likely to cause injury to users.	X	X X	
6.2.9. Other interior and exterior fittings and equipment	Visual inspection.	(a) Attachment of other fitting or equipment defective. (b) Other fitting or equipment not in accordance with the requirements. <u>1/</u> (c) Leaking hydraulic equipment.	X X	X X	
6.2.10. Mudguards (wings), spray suppression devices	Visual inspection.	(a) Missing, loose or badly corroded. (b) Insufficient clearance to road wheel. (c) Not in accordance with the requirements. <u>1/</u>	X X X	X X X	

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
<b>7. OTHER EQUIPMENT</b>					
7.1. Safety-belts/buckles and restraint systems					
7.1.1. Security of safety-belts/buckles mounting	Visual inspection.	(a) Anchorage point badly deteriorated. (b) Anchorage loose.		X X	X X
7.1.2. Condition of safety-belts/buckles.	Visual inspection and by operation.	(a) Mandatory safety-belt missing or not fitted. (b) Safety-belt damaged. (c) Safety-belt not in accordance with the requirements. <u>2/</u> (d) Safety-belt buckle damaged or not functioning correctly. (e) Safety-belt retractor damaged or not functioning correctly.	X X	X X X X	
7.1.3. Safety belt load limiter	Visual inspection.	Load limiter missing or not suitable for vehicle.		X	
7.1.4. Safety belt pre-tensioners	Visual inspection.	Pre-tensioner missing or not suitable for vehicle.		X	
7.2. Fire extinguisher (X) <u>2/</u>	Visual inspection.	(a) Missing. (b) Not in accordance with the regulations. <u>1/</u>	X	X X	
7.3. Locks and anti-theft device	Visual inspection and by operation.	(a) Device not functioning to prevent vehicle being driven. (b) Defective or inadvertently locking or blocking	X	X	X
7.4. Warning triangle (if required)(X) <u>2/</u>	Visual inspection.	Missing or incomplete. Not in accordance with the requirements. <u>1/</u>	X X		
7.5. First aid kit. (if required)(X) <u>2/</u>	Visual inspection.	Missing, incomplete or not in accordance with the requirements. <u>1/</u>	X		
7.6. Wheel chocks (wedges) (if required) (X) <u>2/</u>	Visual inspection.	Missing or not in good condition.	X	X	
7.7. Audible warning device	Visual inspection and by operation.	(a) Not working. (b) Control insecure. (c) Not in accordance with the requirements. <u>1/</u>	X X X	X X X	
7.8. Speedometer	Visual inspection or by operation during road test or by electronically means.	(a) Not fitted in accordance with the requirements. <u>1/</u> (b) Not operational. (c) Not capable of being illuminated.	X X X	X X X	
7.9. Tachograph (if fitted/required)	Visual inspection.	(a) Not fitted in accordance with the requirements. <u>1/</u> (b) Not operational. (c) Defective or missing seals. (d) Calibration plaque missing, illegible or out of date. (e) Obvious tampering or manipulation. (f) Size of tyres not compatible with calibration parameters	X	X X X X X X	

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
7.10. Speed limitation device (if fitted/required)	Visual inspection and by operation if equipment available.	(a) Not fitted in accordance with the requirements. <u>1/</u> (b) Obviously not operational. (c) Incorrect set speed (if checked). (d) Defective or missing seals. (e) Calibration plaque missing, illegible or out of date. (f) Size of tyres not compatible with calibration parameters.	X	X X X X	
7.11. Odometer if available (X) <u>2/</u>	Visual inspection.	(a) Obviously manipulated (fraud). (b) Obviously inoperative.	X X	X X	
<b>8. SUPPLEMENTARY TESTS FOR PASSENGER CARRYING VEHICLES M2, M3</b>					
8.1. Doors					
8.1.1. Entrance and exit doors	Visual inspection and by operation.	(a) Defective operation. (b) Deteriorated condition. (c) Defective emergency control. (d) Remote control of doors or warning devices defective. (e) Not in accordance with the requirements. <u>1/</u>	X	X X X X	
8.1.2. Emergency exits	Visual inspection and by operation (where appropriate).	(a) Defective operation. (b) Emergency exits signs missing or illegible. (c) Missing hammer to break glass. (d) Not in accordance with requirements. <u>1/</u>	X X	X X X X	
8.2. Demisting and defrosting system (X) <u>2/</u>	Visual inspection and by operation.	(a) Not operating correctly. (b) Emission of toxic or exhaust gases into driver's or passenger compartment. (c) Defective defrosting (if compulsory).	X	X X X	X
8.3. Ventilation & heating system (X) <u>2/</u>	Visual inspection and by operation.	(a) Defective operation (b) Emission of toxic or exhaust gases into driver's or passenger compartment	X	X X	X
8.4. Seats					
8.4.1 Passenger seats (including seats for accompanying personnel)	Visual inspection.	(a) Seats in defective condition or insecure. (b) Folding seats (if allowed) not working automatically. (c) Not in accordance with the requirements. <u>1/</u>	X X	X X	
8.4.2. Driver's seat (additional requirements)	Visual inspection.	(a) Defective special devices such as anti-glare shield or anti-dazzle screen (b) Protection for driver insecure or not in accordance with requirements. <u>1/</u>	X X	X X	
8.5. Interior lighting and destination devices (X) <u>2/</u>	Visual inspection and by operation.	Device defective or not in accordance with requirements. <u>1/</u>	X	X	
8.6. Gangways, standing areas	Visual inspection.	(a) Insecure floor. (b) Defective rails or grab handles. (c) Not in accordance with the requirements. <u>1/</u>	X X	X X X	X

Mandatory		Recommendation			
Item	Method	Main Reasons for Rejection	Defect Assessment		
			MiD	MaD	DD
8.7. Stairs and steps	Visual inspection and by operation (where appropriate).	(a) Deteriorated or damaged condition. (b) Retractable steps not operating correctly. (c) Not in accordance with requirements. <u>1/</u>	X	X X	X
8.8. Passenger communication system (X) <u>2/</u>	Visual inspection and by operation.	Defective system.	X	X	
8.9. Notices (X) <u>2/</u>	Visual inspection.	(a) Missing, erroneous or illegible notice. (b) Not in accordance with requirements. <u>1/</u>	X X	X X	
8.10. Requirements regarding the transport of children. (X) <u>2/</u>					
8.10.1. Doors	Visual inspection.	Protection of doors not in accordance with the requirements <sup>1/</sup> regarding this form of transport.	X	X	
8.10.2. Signalling and special equipment	Visual inspection.	Signalling or special equipment absent or not in accordance with requirements. <u>1/</u>	X	X	
8.11. Requirements regarding the transport of disabled persons. (X) <u>2/</u>					
8.11.1. Doors, ramps and lifts	Visual inspection and by operation.	(a) Defective operation. (b) Deteriorated condition. (c) Defective control(s). (d) Defective warning device(s). (e) Not in accordance with the requirements. <u>1/</u>	X X X X X	X X X X X	
8.11.2. Wheelchair fixings	Visual inspection and by operation if appropriate.	(a) Defective operation. (b) Deteriorated condition. (c) Defective control(s). (d) Not in accordance with the requirements. <u>1/</u>	X X X X	X X X X	
8.11.3. Signalling and special equipment	Visual inspection.	Signalling or special equipment absent or not in accordance with requirements. <u>1/</u>	X	X	
8.12. Other special equipment (X) <u>2/</u>					
8.12.1. Installations for food preparation	Visual inspection.	(a) Installation not in accordance with the requirements. <u>1/</u> (b) Installation damaged to such an extent that it would be dangerous to use it.	X	X X	
8.12.2. Sanitary installation	Visual inspection.	Installation not in accordance with the requirements. <u>1/</u>	X	X	
8.12.3. Other devices (e.g. audio-visual systems)	Visual inspection.	Not in accordance with the requirements. <u>1/</u>	X	X	

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