

# RECOMMENDATIONS

## COMMISSION RECOMMENDATION

of 5 July 2010

**on the assessment of defects during roadworthiness testing in accordance with Directive 2009/40/EC of the European Parliament and of the Council on roadworthiness tests for motor vehicles and their trailers**

(2010/378/EU)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 292 thereof,

Whereas:

- (1) In the interests of road safety, environmental protection and fair competition it is important to ensure that vehicles in operation are properly maintained and tested, so that they can maintain their performance as guaranteed by type-approval, without excessive degradation, throughout their lifetime.
- (2) In addition to the standards and methods referred to in Directive 2009/40/EC of the European Parliament and of the Council of 6 May 2009 on roadworthiness tests for motor vehicles and their trailers <sup>(1)</sup>, inspectors conducting vehicle testing should be provided with guidelines in order to ensure a harmonised assessment of the failures listed in Annex II to that Directive.
- (3) The findings of two projects, Autofore <sup>(2)</sup> and IDELSY <sup>(3)</sup>, which recently dealt with future options for roadworthiness testing, and the outcome of an open and factual dialogue with stakeholders have been taken into account.
- (4) To reflect the seriousness of failures, three categories of failures should be introduced.
- (5) Each category of failure should contain the consequences for the use of the vehicle in that condition.
- (6) This Recommendation is a first step towards a uniform assessment of the deficiencies identified during roadworthiness testing within the Union,

HAS ADOPTED THIS RECOMMENDATION:

Member States should assess failures detected during a roadworthiness test of a vehicle in accordance with the guidelines set out in the Annex to this Recommendation.

Done at Brussels, 5 July 2010.

*For the Commission*  
Siim KALLAS  
Vice-President

<sup>(1)</sup> OJ L 141, 6.6.2009, p. 12.

<sup>(2)</sup> Autofore study on the Future Options for Roadworthiness Enforcement in the European Union, [http://ec.europa.eu/transport/roadsafety/publications/projectfiles/autofore\\_en.htm](http://ec.europa.eu/transport/roadsafety/publications/projectfiles/autofore_en.htm)

<sup>(3)</sup> IDELSY Initiative for Diagnosis of Electronic Systems in Motor Vehicles for PTI, [http://ec.europa.eu/transport/roadsafety/publications/projectfiles/idelsy\\_en.htm](http://ec.europa.eu/transport/roadsafety/publications/projectfiles/idelsy_en.htm)

## ANNEX

**1. Assessment of defects and definitions**

In the framework of the implementation of Directive 2009/40/EC, this Recommendation lists the vehicle systems and components to be tested and the guidelines which Member States are recommended to apply during roadworthiness tests to determine whether the condition of the vehicle is acceptable.

**2. Guidelines for the assessment of defects and definitions**

The guidelines for assessing failures, including technical defects and other non-compliances, that are found during periodic testing of vehicles are categorised in three groups, as follows:

MINOR DEFECTS (MiD)

MAJOR DEFECTS (MaD)

DANGEROUS DEFECTS (DD)

Each defect category should be defined by reference to the condition of the vehicle as follows:

MINOR DEFECTS

Technical defects that have no significant effect on the safety of the vehicle and other minor non-compliances. The vehicle does not necessarily have to be re-examined as it can reasonably be expected that the detected defects will be rectified without delay.

MAJOR DEFECTS

Defects that may prejudice the safety of the vehicle 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 subject to conditions. The competent authorities in the Member States must adopt a procedure for setting the conditions under which the vehicle may be used before passing another roadworthiness test.

DANGEROUS DEFECTS

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.

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.

For defects which can be classified in more than one category, it should be the responsibility of the inspector carrying out the test to categorise the defects according to their severity, in accordance with national legislation.

Requirements for type-approval at the time of approval, first registration or first entry into service should be taken into consideration during the defect assessment. Nevertheless, some items will be covered by retrofitting requirements.

**Guidelines for defect assessment**

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
<b>0. IDENTIFICATION OF THE VEHICLE</b>				
0.1. Registration number plates (if needed by requirements <sup>(6)</sup> )	(a) Number plate(s) missing or so insecure/fixated that it is (they are) likely to fall off.		X	
	(b) Inscription missing or illegible.	X	X	
	(c) Not in accordance with vehicle documents or records.		X	

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
0.2. Vehicle identification chassis/serial number	(a) Missing or cannot be found. (b) Incomplete, illegible. (c) Not in accordance with vehicle documents or records.		X X X	
<b>1. BRAKING EQUIPMENT</b>				
1.1. Mechanical condition and operation				
1.1.1. Service brake pedal/hand lever pivot	(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	(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	
1.1.3. Vacuum pump or compressor and reservoirs	(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 <sup>(a)</sup> . (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	Malfunctioning or defective gauge or indicator.	X	X	
1.1.5. Hand operated brake control valve	(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, electronic parking brake	(a) Ratchet not holding correctly. (b) Excessive wear at lever pivot or in ratchet mechanism. (c) Excessive movement of lever indicating incorrect adjustment.	X	X X X	

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
	(d) Activator missing, damaged or inoperative.		X	
	(e) Incorrect functioning, warning indicator shows malfunction.		X	
1.1.7. Braking valves (foot valves, unloaders, governors)	(a) Valve damaged or excessive air leak.		X	X
	(b) Excessive oil discharge from compressor.	X		
	(c) Valve insecure or inadequately mounted.		X	
	(d) Hydraulic fluid discharge or leak.		X	X
1.1.8. Couplings for trailer brakes (electrical & pneumatic)	(a) Tap or self-sealing valve defective.	X	X	
	(b) Tap or valve insecure or inadequately mounted.	X	X	
	(c) Excessive leaks.		X	X
	(d) Not functioning correctly.		X	X
1.1.9. Energy storage reservoir pressure tank	(a) Tank damaged, corroded or leaking.	X	X	
	(b) Drain device inoperative.	X	X	
	(c) Tank insecure or inadequately mounted.		X	
1.1.10. Brake servo units, master cylinder (hydraulic systems)	(a) Defective or ineffective servo unit.		X	
	(b) Master cylinder defective or leaking.		X	X
	(c) Master cylinder insecure.		X	X
	(d) Insufficient brake fluid.	X	X	
	(e) Master cylinder reservoir cap missing.	X		
	(f) Brake fluid warning light illuminated or defective.	X		
	(g) Incorrect functioning of brake fluid level warning device.	X		
1.1.11. Rigid brake pipes	(a) Imminent risk of failure or fracture.		X	X
	(b) Pipes or connections leaking.		X	X
	(c) Pipes damaged or excessively corroded.		X	X
	(d) Pipes misplaced.	X	X	
1.1.12. Flexible brake hoses	(a) Imminent risk of failure or fracture.		X	X
	(b) Hoses damaged, chafing, twisted or too short.	X	X	
	(c) Hoses or connections leaking.		X	X

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
	(d) Hoses bulging under pressure.		X	X
	(e) Hoses porous.		X	
1.1.13. Brake linings and pads	(a) Lining or pad excessively worn.		X	X
	(b) Lining or pad contaminated (oil, grease, etc.).		X	X
	(c) Lining or pad missing.			X
1.1.14. Brake drums, brake discs	(a) Drum or disc excessively worn, excessively scored, cracked, insecure or fractured.		X	X
	(b) Drum or disc contaminated (oil, grease, etc.).		X	
	(c) Drum or disc missing.			X
	(d) Back plate insecure.		X	
1.1.15. Brake cables, rods, levers, linkages	(a) Cable damaged or knotted.		X	X
	(b) Component excessively worn or corroded.		X	X
	(c) Cable, rod or joint insecure.		X	
	(d) Cable guide defective.		X	
	(e) Restriction to free movement of the braking system.		X	
	(f) Abnormal movement of the levers/linkage indicating maladjustment or excessive wear.		X	
1.1.16. Brake actuators (including spring brakes or hydraulic cylinders)	(a) Actuator cracked or damaged.		X	X
	(b) Actuator leaking.		X	X
	(c) Actuator insecure or inadequately mounted.		X	X
	(d) Actuator excessively corroded.		X	X
	(e) Insufficient or excessive travel of operating piston or diaphragm mechanism.		X	X
	(f) Dust cover missing or excessively damaged.	X	X	
1.1.17. Load sensing valve	(a) Defective linkage.		X	
	(b) Linkage incorrectly adjusted.		X	
	(c) Valve seized or inoperative.		X	X
	(d) Valve missing.			X
	(e) Missing data plate.	X		
	(f) Data illegible or not in accordance with requirements <sup>(4)</sup> .	X		

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
1.1.18. Slack adjusters and indicators	(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)	(a) Insecure connectors or mountings. (b) System obviously defective or missing.	X	X  X	
1.1.20. Automatic operation of trailer brakes	Trailer brake does not apply automatically when coupling disconnected.			X
1.1.21. Complete braking system	(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 <sup>(1)</sup> .		X  X  X	X   X
1.1.22. Test connections (where fitted or required)	(a) Missing. (b) Damaged, unusable or leaking.		X  X	
1.2. Service braking performance and efficiency				
1.2.1. Performance	(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. (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
1.2.2. Efficiency	Does not give at least the minimum figure as follows:  Vehicles registered first time after entry into force of this Directive: — Category N1: 50 %, — Category M1: 58 %, — Category M2 and M3: 50 %, — Category N2 and N3: 50 %,		X	X

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
	<ul style="list-style-type: none"> <li>— Category O2 (XX) <sup>(c)</sup>, O3 and O4:               <ul style="list-style-type: none"> <li>— for semi-trailers: 45 %</li> <li>— for drawbar trailers: 50 %</li> </ul> </li> <li>Vehicles registered before entry into force of this Directive:               <ul style="list-style-type: none"> <li>Category N1: 45 %</li> <li>Category M1, M2 and M3: 50 % <sup>(?)</sup></li> <li>Category N2 and N3: 43 % <sup>(?)</sup></li> <li>Category O2 (XX) <sup>(c)</sup>, O3 and O4: 40 % <sup>(4)</sup></li> <li>Other categories (XX) <sup>(c)</sup>.                   <ul style="list-style-type: none"> <li>— Categories L (both brakes):                       <ul style="list-style-type: none"> <li>— Category L1e: 42 %</li> <li>— Category L2e, L6e: 40 %</li> <li>— Category L3e: 50 %</li> <li>— Category L4e: 46 %</li> <li>— Category L5e, L7e: 44 %</li> </ul> </li> <li>— Categories L (rear wheel brake):                       <ul style="list-style-type: none"> <li>— all categories: 25 %</li> </ul> </li> </ul> </li> </ul> </li> </ul>			

### 1.3. Secondary (emergency) braking performance and efficiency (if met by separate system)

1.3.1. Performance	<ul style="list-style-type: none"> <li>(a) Inadequate braking effort on one or more wheels.</li> <li>(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.</li> <li>(c) No gradual variation in brake effort (grabbing).</li> </ul>		X	X
1.3.2. Efficiency	<p>Braking effort less than 50 % <sup>(5)</sup> of the service brake performance defined in Section 1.2.2 in relation to the maximum authorised mass or, in the case of semi-trailers, to the sum of the authorised axel loads</p> <p>(except L1e and L3e).</p>		X	X

### 1.4. Parking braking performance and efficiency

1.4.1. Performance	<p>Brake inoperative on one side or in the case of testing on the road, the vehicle deviates excessively from a straight line.</p>		X	X
1.4.2. Efficiency	<p>Does not give at least for all vehicles a braking ratio of 16 % in relation to the maximum authorised mass, or, for motor vehicles, of 12 % in relation to the maximum authorised combination mass of the vehicle, whichever is the greater</p> <p>(except L1e and L3e).</p>		X	X

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
1.5. Endurance braking system performance	(a) No gradual variation of efficiency (not applicable to exhaust brake systems).		X	
	(b) System not functioning.		X	
1.6. Anti-lock braking system (ABS)	(a) Warning device malfunctioning.		X	
	(b) Warning device shows system malfunction.		X	
	(c) Wheel speed sensors missing or damaged.		X	
	(d) Wirings damaged.		X	
	(e) Other components missing or damaged.		X	
1.7. Electronic brake system (EBS)	(a) Warning device malfunctioning.		X	
	(b) Warning device shows system malfunction.		X	

## 2. STEERING

### 2.1. Mechanical condition

2.1.1. Steering gear condition	(a) Roughness in operation of gear.		X	
	(b) Sector shaft twisted or splines worn.		X	X
	(c) Excessive wear in sector shaft.		X	X
	(d) Excessive movement of sector shaft.		X	X
	(e) Leaking.	X	X	
2.1.2. Steering gear casing attachment	(a) Steering gear casing not properly attached.		X	X
	(b) Elongated fixing holes in chassis.		X	X
	(c) Missing or fractured fixing bolts.		X	X
	(d) Steering gear casing fractured.		X	X
2.1.3. Steering linkage condition	(a) Relative movement between components which should be fixed.		X	X
	(b) Excessive wear at joints.		X	X
	(c) Fractures or deformation of any component.		X	X
	(d) Absence of locking devices.		X	
	(e) Misalignment of components (e.g. track rod or drag link).		X	
	(f) Inappropriate repair or modification.		X	X
	(g) Dust cover missing, damaged or severely deteriorated.	X	X	

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
2.1.4. Steering linkage operation	(a) Moving steering linkage fouling a fixed part of chassis.		X	
	(b) Steering stops not operating or missing.		X	
2.1.5. Power steering	(a) Fluid leak.		X	X
	(b) Insufficient fluid.	X	X	
	(c) Mechanism not working.		X	X
	(d) Mechanism fractured or insecure.		X	X
	(e) Misalignment or fouling of components.		X	X
	(f) Inappropriate repair or modification.		X	X
	(g) Cables/hoses damaged, excessively corroded.		X	X
2.2. Steering wheel, column and handle bar				
2.2.1. Steering wheel/handle bar condition	(a) Relative movement between steering wheel and column indicating looseness.		X	
	(b) Absence of retaining device on steering wheel hub.		X	X
	(c) Fracture or looseness of steering wheel hub, rim or spokes.		X	X
2.2.2. Steering column/yokes and forks	(a) Excessive movement of centre of steering wheel up or down.		X	
	(b) Excessive movement of top of column radially from axis of column.		X	
	(c) Deteriorated flexible coupling.		X	
	(d) Attachment defective.		X	X
	(e) Inappropriate repair or modification.			X
2.3. Steering play	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>(6)</sup> ).		X	X
2.4. Wheel alignment (X) <sup>(6)</sup>	Alignment not in accordance with vehicle manufacturer's data or requirements <sup>(6)</sup> .	X	X	
2.5. Trailer steered axle turntable	(a) Component damaged or cracked.		X	X
	(b) Excessive play.		X	X
	(c) Attachment defective.		X	X

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
2.6. Electronic Power Steering (EPS)	(a) EPS Malfunction Indicator Lamp (MIL) indicates any kind of failure of the system.		X	
	(b) Inconsistency between the angle of the steering wheel and the angle of the wheels.		X	X
	(c) Power assistance not working.		X	

### 3. VISIBILITY

3.1. Field of vision	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	(a) Cracked or discoloured glass or transparent panel (if permitted).	X	X	
	(b) Glass or transparent panel (including reflecting or tinted film) that does not comply with specifications in the requirements <sup>(a)</sup> (XX) <sup>(c)</sup> .	X	X	
	(c) Glass or transparent panel in unacceptable condition.		X	X
3.3. Rear-view mirrors or devices	(a) Mirror or device missing or not fitted according to the requirements <sup>(a)</sup> .	X	X	
	(b) Mirror or device inoperative, damaged, loose or insecure.	X	X	
3.4. Windscreen wipers	(a) Wipers not operating or missing.		X	
	(b) Wiper blade missing or obviously defective.	X	X	
3.5. Windscreen washers	Washers not operating adequately.	X	X	
3.6. Demisting system (X) <sup>(b)</sup>	System inoperative or obviously defective.	X		

### 4. LAMPS, REFLECTORS AND ELECTRICAL EQUIPMENT

4.1. Headlamps				
4.1.1. Condition and operation	(a) Defective or missing light/light source.	X	X	
	(b) Defective or missing projection system (reflector and lens).	X	X	
	(c) Lamp not securely attached.		X	
4.1.2. Alignment	Aim of a headlamp not within limits laid down in the requirements <sup>(a)</sup> .		X	
4.1.3. Switching	(a) Switch does not operate in accordance with the requirements <sup>(a)</sup> (number of headlamps illuminated at the same time).	X	X	
	(b) Function of control device impaired.		X	

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
4.1.4. Compliance with requirements <sup>(4)</sup>	(a) Lamp, emitted colour, position or intensity not in accordance with the requirements <sup>(4)</sup> . (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	
4.1.5. Levelling devices (where mandatory)	(a) Device not operating. (b) Manual device cannot be operated from driver's seat.		X  X	
4.1.6. Headlamp cleaning device (where mandatory)	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	(a) Defective light source. (b) Defective lens. (c) Lamp not securely attached.		X  X	
4.2.2. Switching	(a) Switch does not operate in accordance with the requirements <sup>(4)</sup> . (b) Function of control device impaired.	X	X  X	
4.2.3. Compliance with requirements <sup>(4)</sup>	(a) Lamp, emitted colour, position or intensity not in accordance with the requirements <sup>(4)</sup> . (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	(a) Defective light source. (b) Defective lens. (c) Lamp not securely attached.	X  X	X  X	X
4.3.2. Switching	(a) Switch does not operate in accordance with the requirements <sup>(4)</sup> . (b) Function of control device impaired.	X	X  X	X
4.3.3. Compliance with requirements <sup>(4)</sup>	Lamp, emitted colour, position or intensity not in accordance with the requirements <sup>(4)</sup> .	X	X	
4.4. Direction indicator and hazard warning lamps				
4.4.1. Condition and operation	(a) Defective light source. (b) Defective lens.	X  X	X  X	

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
	(c) Lamp not securely attached.	X	X	
4.4.2. Switching	Switch does not operate in accordance with the requirements <sup>(a)</sup> .	X	X	
4.4.3. Compliance with requirements <sup>(a)</sup>	Lamp, emitted colour, position or intensity not in accordance with the requirements <sup>(a)</sup> .	X	X	
4.4.4. Flashing frequency	Rate of flashing not in accordance with the requirements <sup>(a)</sup> .	X	X	
4.5. Front and rear fog lamps				
4.5.1. Condition and operation	(a) Defective light source.	X	X	
	(b) Defective lens.	X	X	
	(c) Lamp not securely attached.	X	X	
4.5.2. Alignment (X) <sup>(b)</sup>	Front fog lamp out of horizontal alignment when the light pattern has cut-off line.	X	X	
4.5.3. Switching	Switch does not operate in accordance with the requirements <sup>(a)</sup> .	X	X	
4.5.4. Compliance with requirements <sup>(a)</sup>	(a) Lamp, emitted colour, position or intensity not in accordance with the requirements <sup>(a)</sup> .		X	
	(b) System does not operate in accordance with the requirements <sup>(a)</sup> .	X	X	
4.6. Reversing lamps				
4.6.1. Condition and operation	(a) Defective light source.	X		
	(b) Defective lens.	X		
	(c) Lamp not securely attached.	X	X	
4.6.2. Compliance with requirements <sup>(a)</sup>	(a) Lamp, emitted colour, position or intensity not in accordance with the requirements <sup>(a)</sup> .	X	X	
	(b) System does not operate in accordance with the requirements <sup>(a)</sup> .	X	X	
4.6.3. Switching	Switch does not operate in accordance with the requirements <sup>(a)</sup> .	X	X	
4.7. Rear registration plate lamp				
4.7.1. Condition and operation	(a) Lamp throwing direct light to the rear.	X	X	
	(b) Defective light source.	X	X	
	(c) Lamp not securely attached.	X	X	

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
4.7.2. Compliance with requirements <sup>(a)</sup>	System does not operate in accordance with the requirements <sup>(a)</sup> .	X		
4.8. Retro-reflectors, conspicuity (retro-reflecting) markings and rear marker plates				
4.8.1. Condition	(a) Reflecting equipment defective or damaged.	X	X	
	(b) Reflector not securely attached.	X	X	
4.8.2. Compliance with requirements <sup>(a)</sup>	Device, reflected colour or position not in accordance with the requirements <sup>(a)</sup> .	X	X	
4.9. Tell-tales mandatory for lighting equipment				
4.9.1. Condition and operation	Not operating.	X	X	
4.9.2. Compliance with requirements <sup>(a)</sup>	Not in accordance with the requirements <sup>(a)</sup> .	X		
4.10. Electrical connections between towing vehicle and trailer or semi-trailer	(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	(a) Wiring insecure or not adequately secured.	X	X	X
	(b) Wiring deteriorated.	X	X	X
	(c) Damaged or deteriorated insulation.	X	X	X
4.12. Non-obligatory lamps and retro-reflectors (X) <sup>(b)</sup>	(a) A lamp/retro-reflector fitted not in accordance with the requirements <sup>(a)</sup> .	X	X	
	(b) Lamp operation not in accordance with the requirements <sup>(a)</sup> .	X	X	
	(c) Lamp/retro-reflector not securely attached.	X	X	
4.13. Battery(ies)	(a) Insecure.	X	X	
	(b) Leaking.	X	X	
	(c) Defective switch (if required).		X	
	(d) Defective fuses (if required).		X	
	(e) Inappropriate ventilation (if required).		X	

## 5. AXLES, WHEELS, TYRES AND SUSPENSION

5.1. Axles				
5.1.1. Axles	(a) Axle fractured or deformed.			X
	(b) Insecure fixing to vehicle.		X	X

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
	(c) Inappropriate repair or modification.		X	X
5.1.2. Stub axles	(a) Stub axle fractured.			X
	(b) Excessive wear in the swivel pin and/or bushes.		X	X
	(c) Excessive movement between stub axle and axle beam.		X	X
	(d) Stub axle pin loose in axle.		X	X
5.1.3. Wheel bearings	(a) Excessive play in a wheel bearing.		X	X
	(b) Wheel bearing too tight, jammed.		X	X
5.2. Wheels and tyres				
5.2.1. Road wheel hub	(a) Any wheel nuts or studs missing or loose.		X	X
	(b) Hub worn or damaged.		X	X
5.2.2. Wheels	(a) Any fracture or welding defect.			X
	(b) Tyre retaining rings not properly fitted.		X	X
	(c) Wheel badly distorted or worn.		X	X
	(d) Wheel size or type not in accordance with the requirements <sup>(4)</sup> and effecting road safety.		X	
5.2.3. Tyres	(a) Tyre size, load capacity, approval mark or speed rating not in accordance with the requirements <sup>(4)</sup> and effecting road safety.		X	X
	(b) Tyres on same axle or on twin wheels of different sizes.		X	
	(c) Tyres on same axle of different construction (radial/cross-ply).		X	
	(d) Any serious damage or cut to tyre.		X	X
	(e) Tyre tread depth not in accordance with the requirements <sup>(4)</sup> .		X	X
	(f) Tyre rubbing against other components.	X	X	
	(g) Regrooved tyres not in accordance with requirements <sup>(4)</sup> .		X	X
	(h) Air pressure-monitoring system malfunctioning or obviously inoperative.	X	X	
5.3. Suspension system				
5.3.1. Springs and stabiliser	(a) Insecure attachment of springs to chassis or axle.		X	X

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
	(b) A damaged or fractured spring component.		X	X
	(c) Spring missing.		X	X
	(d) Inappropriate repair or modification.		X	X
5.3.2. Shock absorbers	(a) Insecure attachment of shock absorbers to chassis or axle.	X	X	
	(b) Damaged shock absorber showing signs of severe leakage or malfunction.		X	
5.3.2.1. Efficiency testing of damping (X) <sup>(b)</sup>	(a) Significant difference between left and right.		X	
	(b) Given minimum values not reached.		X	
5.3.3. Torque tubes, radius arms, wishbones and suspension arms	(a) Insecure attachment of component to chassis or axle.		X	X
	(b) A damaged, fractured or excessively corroded component.		X	X
	(c) Inappropriate repair or modification.		X	X
5.3.4. Suspension joints	(a) Excessive wear in swivel pin and/or bushes or at suspension joints.		X	X
	(b) Dust cover missing or severely deteriorated.	X	X	
5.3.5. Air suspension	(a) System inoperable.			X
	(b) Any component damaged, modified or deteriorated in a way that would adversely affect the functioning of the system.		X	X
	(c) Audible system leakage.		X	

## 6. CHASSIS AND CHASSIS ATTACHMENTS

### 6.1. Chassis or frame and attachments

6.1.1. General condition	(a) Fracture or deformation of any side or cross member.		X	X
	(b) Insecurity of strengthening plates or fastenings.		X	X
	(c) Excessive corrosion which affects the rigidity of the assembly.		X	X
6.1.2. Exhaust pipes and silencers	(a) Insecure or leaking exhaust system.		X	
	(b) Fumes entering cab or passengers compartment.		X	X
6.1.3. Fuel tank and pipes (including heating fuel tank and pipes)	(a) Insecure tank or pipes.		X	X
	(b) Leaking fuel or missing or ineffective filler cap.		X	X

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
	(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 or hydrogen system not in accordance with requirements <sup>(4)</sup> .	X	X	X
6.1.4. Bumpers, lateral protection and rear underrun devices	(a) Looseness or damage likely to cause injury when grazed or contacted. (b) Device obviously not in compliance with the requirements <sup>(4)</sup> .		X	X
6.1.5. Spare wheel carrier (if fitted)	(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
6.1.6. Coupling mechanisms and towing equipment	(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) Obstruct registration plate or any lamp (when not in use). (g) Inappropriate repair or modification.	X	X	X
6.1.7. Transmission	(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

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
6.1.8. Engine mountings	Deteriorated, obviously and severely damaged, loose or fractured mountings.		X	X
6.1.9. Engine performance	(a) Control unit illegal modified.		X	
	(b) Illegal engine modification.		X	
6.2. Cab and bodywork				
6.2.1. Condition	(a) A loose or damaged panel or part likely to cause injury.		X	X
	(b) Insecure body pillar.		X	X
	(c) Permitting entry of engine or exhaust fumes.		X	X
	(d) Inappropriate repair or modification.		X	X
6.2.2. Mounting	(a) Body or cab insecure.		X	X
	(b) Body/cab obviously not located squarely on chassis.		X	
	(c) Insecure or missing fixing of body/cab to chassis or cross members.		X	X
	(d) Excessive corrosion at fixing points on integral bodies.		X	X
6.2.3. Doors and door catches	(a) A door will not open or close properly.		X	
	(b) A door likely to open inadvertently or one that will not remain closed.		X	X
	(c) Door, hinges, catches, pillar, missing, loose or deteriorated.	X	X	
6.2.4. Floor	Floor insecure or badly deteriorated		X	X
6.2.5. Driver's seat	(a) A loose seat or seat with defective structure.		X	X
	(b) Adjustment mechanism not functioning correctly.		X	X
6.2.6. Other seats	(a) Seats in defective condition or insecure.	X	X	
	(b) Seats fitted not in accordance with requirements <sup>(4)</sup> .	X	X	
6.2.7. Driving controls	Any control necessary for the safe operation of the vehicle not functioning correctly.		X	X
6.2.8. Cab steps	(a) Step or step ring insecure.	X	X	
	(b) Step or ring in a condition likely to cause injury to users.		X	

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
6.2.9. Other interior and exterior fittings and equipment	(a) Attachment of other fitting or equipment defective.		X	
	(b) Other fitting or equipment not in accordance with the requirements <sup>(a)</sup> .	X	X	
	(c) Leaking hydraulic equipment.	X	X	
6.2.10. Mudguards (wings), spray suppression devices	(a) Missing, loose or badly corroded.	X	X	
	(b) Insufficient clearance to road wheel.	X	X	
	(c) Not in accordance with the requirements <sup>(a)</sup> .	X	X	

### 7. OTHER EQUIPMENT

#### 7.1. Safety belts/buckles and restraint systems

7.1.1. Security of safety belts/buckles mounting	(a) Anchorage point badly deteriorated.		X	X
	(b) Anchorage loose.		X	X
7.1.2. Condition of safety belts/buckles.	(a) Mandatory safety belt missing or not fitted.		X	
	(b) Safety belt damaged.	X	X	
	(c) Safety belt not in accordance with the requirements <sup>(a)</sup> .	X	X	
	(d) Safety belt buckle damaged or not functioning correctly.		X	
	(e) Safety belt retractor damaged or not functioning correctly.		X	
7.1.3. Safety belt Load limiter	Load limiter obviously missing or not suitable with the vehicle.		X	
7.1.4. Safety belt Pre-tensioners	Pre-tensioner obviously missing or not suitable with the vehicle.		X	
7.1.5. Airbag	(a) Airbags obviously missing or not suitable with the vehicle.		X	
	(b) Airbag obviously non-operative.		X	
7.1.6. SRS Systems	SRS MIL indicates any kind of failure of the system.		X	
7.2. Fire extinguisher (X) <sup>(b)</sup>	(a) Missing.		X	
	(b) Not in accordance with the requirements <sup>(a)</sup> .	X	X	
7.3. Locks and anti-theft device	(a) Device not functioning to prevent vehicle being driven.	X		
	(b) Defective or inadvertently locking or blocking.		X	X

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
7.4. Warning triangle (if required) (X) <sup>(b)</sup>	(a) Missing or incomplete.	X		
	(b) Not in accordance with the requirements <sup>(a)</sup> .	X		
7.5. First aid kit. (if required) (X) <sup>(b)</sup>	Missing, incomplete or not in accordance with the requirements <sup>(a)</sup> .	X		
7.6. Wheel chocks (wedges) (if required) (X) <sup>(b)</sup>	Missing or not in good condition.	X	X	
7.7. Audible warning device	(a) Not working.	X	X	
	(b) Control insecure.	X		
	(c) Not in accordance with the requirements <sup>(a)</sup> .	X	X	
7.8. Speedometer	(a) Not fitted in accordance with the requirements <sup>(a)</sup> .	X	X	
	(b) Not operational.	X	X	
	(c) Not capable of being illuminated.	X	X	
7.9. Tachograph (if fitted/required)	(a) Not fitted in accordance with the requirements <sup>(a)</sup> .	X	X	
	(b) Not operational.		X	
	(c) Defective or missing seals.		X	
	(d) Calibration plaque missing, illegible or out of date.		X	
	(e) Obvious tampering or manipulation.		X	
	(f) Size of tyres not compatible with calibration parameters.		X	
7.10. Speed limitation device (if fitted/required)	(a) Not fitted in accordance with the requirements <sup>(a)</sup> .	X	X	
	(b) Obviously not operational.		X	
	(c) Incorrect set speed (if checked).		X	
	(d) Defective or missing seals.		X	
	(e) Calibration plaque missing, illegible or out of date.		X	
	(f) Size of tyres not compatible with calibration parameters.		X	
7.11. Odometer if available (X) <sup>(b)</sup>	(a) Obviously manipulated (fraud).	X	X	
	(b) Obviously inoperative.	X	X	

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
7.12. Electronic Stability Control (ESC) if fitted/required	(a) Wheel speed sensors missing or damaged. (b) Wirings damaged. (c) Other components missing or damaged. (d) Switch damaged or not functioning correctly. (e) ESC MIL indicates any kind of failure of the system.		X	
<b>8. NUISANCE</b>				
8.1. Noise				
8.1.1. Noise suppression system	(a) Noise levels in excess of those permitted in the requirements <sup>(6)</sup> . (b) Any part of the noise suppression system loose, likely to fall off, damaged, incorrectly fitted, missing or obviously modified in a way that would adversely affect the noise levels.		X	X
8.2. Exhaust emissions				
8.2.1. Petrol engine emissions				
8.2.1.1. Exhaust emissions control equipment	(a) Emission control equipment fitted by the manufacturer absent, modified or obviously defective. (b) Leaks which would affect emission measurements.	X	X	
8.2.1.2. Gaseous emissions	(a) Either, gaseous emissions exceed the specific levels given by the manufacturer. (b) Or, if this information is not available, the CO emissions exceed, (i) for vehicles not controlled by an advanced emission control system, — 4,5 %, or — 3,5 %, according to the date of first registration or use specified in requirements <sup>(6)</sup> ; (ii) for vehicles controlled by an advanced emission control system, — at engine idle: 0,5 %, or — at high idle: 0,3 %, or — at engine idle: 0,3 % <sup>(6)</sup> , or — at high idle: 0,2 %, according to the date of first registration or use specified in requirements <sup>(6)</sup> . (c) Lambda outside the range $1 \pm 0,03$ or not in accordance with the manufacturer's specification. (d) OBD readout indicating significant malfunction.		X	X

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
8.2.2. Diesel engine emissions				
8.2.2.1. Exhaust emission control equipment	(a) Emission control equipment fitted by the manufacturer absent or obviously defective.  (b) Leaks which would affect emission measurements.	X	X	
8.2.2.2. Opacity  Vehicles registered or put into service before 1 January 1980 are exempted from this requirement	(a) For vehicles registered or put into service for the first time after the date specified in requirements <sup>(a)</sup> opacity exceeds the level recorded on the manufacturer's plate on the vehicle.  (b) Where this information is not available or requirements <sup>(a)</sup> do not allow the use of reference values, for naturally aspirated engines: 2,5 m <sup>-1</sup> , for turbo-charged engines: 3,0 m <sup>-1</sup> , or, for vehicles identified in requirements <sup>(a)</sup> or first registered or put into service for the first time after the date specified in requirements <sup>(a)</sup> : 1,5 m <sup>-1</sup> <sup>(7)</sup> .		X	
8.3. Electromagnetic interference suppression				
Radio-interference (X) <sup>(b)</sup>	Any requirements of the requirements <sup>(a)</sup> not met.	X		
8.4. Other items related to the environment				
8.4.1. Fluid leaks	Any excessive fluid leak likely to harm the environment or to pose a safety risk to other road users.		X	X
<b>9. SUPPLEMENTARY TESTS FOR PASSENGER CARRYING VEHICLES M2, M3</b>				
9.1. Doors				
9.1.1. Entrance and exit doors	(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 <sup>(a)</sup> .		X	
9.1.2. Emergency exits	(a) Defective operation.  (b) Emergency exits signs missing or illegible.  (c) Missing hammer to break glass.  (d) Not in accordance with requirements <sup>(a)</sup> .	X	X	
9.2. Demisting and defrosting system (X) <sup>(b)</sup>	(a) Not operating correctly.	X	X	

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
	(b) Emission of toxic or exhaust gases into driver's or passengers compartment.		X	X
	(c) Defective defrosting (if compulsory).		X	
9.3. Ventilation & heating system (X) <sup>(b)</sup>	(a) Defective operation.	X	X	
	(b) Emission of toxic or exhaust gases into driver's or passengers compartment.		X	X
9.4. Seats				
9.4.1. Passenger seats (including seats for accompanying personnel)	(a) Seats in defective condition or insecure.	X	X	
	(b) Folding seats (if allowed) not working automatically.	X	X	
	(c) Not in accordance with the requirements <sup>(a)</sup> .	X	X	
9.4.2. Driver's seat (additional requirements)	(a) Defective special devices such as anti-glare shield or anti-dazzle screen.	X	X	
	(b) Protection for driver insecure or not in accordance with requirements <sup>(a)</sup> .	X	X	
9.5. Interior lighting and destination devices (X) <sup>(b)</sup>	Device defective or not in accordance with requirements <sup>(a)</sup> .	X	X	
9.6. Gangways, standing areas	(a) Insecure floor.		X	X
	(b) Defective rails or grab handles.	X	X	
	(c) Not in accordance with the requirements <sup>(a)</sup> .	X	X	
9.7. Stairs and steps	(a) Deteriorated or damaged condition.	X	X	X
	(b) Retractable steps not operating correctly.		X	
	(c) Not in accordance with requirements <sup>(a)</sup> .	X	X	
9.8. Passenger communication system (X) <sup>(b)</sup>	Defective system.	X	X	
9.9. Notices (X) <sup>(b)</sup>	(a) Missing, erroneous or illegible notice.	X		
	(b) Not in accordance with requirements <sup>(a)</sup> .	X	X	
9.10. Requirements regarding the transport of children (X) <sup>(b)</sup>				
9.10.1. Doors	Protection of doors not in accordance with the requirements <sup>(a)</sup> regarding this form of transport.	X	X	
9.10.2. Signalling and special equipment	Signalling or special equipment absent or not in accordance with requirements <sup>(a)</sup> .	X	X	
9.11. Requirements regarding the transport of disabled persons (X) <sup>(b)</sup>				

Item	Reasons for failure	Guidelines for defect assessment		
		MiD	MaD	DD
9.11.1. Doors, ramps and lifts	(a) Defective operation.	X	X	
	(b) Deteriorated condition.	X	X	
	(c) Defective control(s).	X	X	
	(d) Defective warning device(s).	X	X	
	(e) Not in accordance with the requirements <sup>(a)</sup> .	X	X	
9.11.2. Wheelchair fixings	(a) Defective operation.	X	X	
	(b) Deteriorated condition.	X	X	
	(c) Defective control(s).	X	X	
	(d) Not in accordance with the requirements <sup>(a)</sup> .	X	X	
9.11.3. Signalling and special equipment	Signalling or special equipment absent or not in accordance with requirements <sup>(a)</sup> .	X	X	
9.12. Other special equipment (X) <sup>(b)</sup>				
9.12.1. Installations for food preparation	(a) Installation not in accordance with the requirements <sup>(a)</sup> .	X	X	
	(b) Installation damaged to such an extent that it would be dangerous to use it.		X	
9.12.2. Sanitary installation	Installation not in accordance with the requirements <sup>(a)</sup> .	X	X	
9.12.3. Other devices (e.g. audiovisual systems)	Not in accordance with the requirements <sup>(a)</sup> .	X	X	

<sup>(1)</sup> Inappropriate repair or modification means a repair or modification that adversely affects the road safety of the vehicle or has a negative effect on the environment.

<sup>(2)</sup> 48 % for vehicles not fitted with ABS or type approved before 1 October 1991.

<sup>(3)</sup> 45 % for vehicles registered after 1988 or from the date specified in requirements whichever is the later?

<sup>(4)</sup> 43 % for semi-trailers and drawbar trailers registered after 1988 or from the date in requirements whichever is the later.

<sup>(5)</sup> 2,2 m/s<sup>2</sup> for N1, N2 and N3 vehicles.

<sup>(6)</sup> Type-approved according to limits in row A or B section 5.3.1.4 of Annex I to Council Directive 70/220/EEC (OJ L 76, 6.4.1970, p. 1) or later or first registered or put into service after 1 July 2002.

<sup>(7)</sup> Type approved according to limits in row B section 5.3.1.4 of Annex I to Directive 70/220/EEC or later; row B1, B2 or C section 6.2.1 of Annex I to Council Directive 88/77/EEC (OJ L 36, 9.2.1988, p. 33) or later or first registered or put into service after 1 July 2008.

Notes:

<sup>(a)</sup> 'requirements' are laid down by type-approval requirements at the date of approval, first registration or first entry into service as well as retrofitting obligations or national legislation in the country of registration.

<sup>(b)</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.

<sup>(c)</sup> (XX) This reason for failure only applies if testing is required by national legislation.