



WELLINGTON, NEW ZEALAND

PURSUANT to Section 155 (a) and (b) of the Land Transport Act 1998

I, **Harry James Duynhoven**, Minister for Transport Safety,

HEREBY make the following ordinary rule:

Land Transport Rule: Vehicle Exhaust Emissions

SIGNED AT Wellington

This day of 2007

Harry James Duynhoven
Minister for Transport Safety

Land Transport Rule
Vehicle Exhaust Emissions 2007
Rule 33001/2

ISSN 1173-1559

Published by

Land Transport New Zealand
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Printed and distributed by
Wickliffe Limited

PO Box 932, Dunedin, New Zealand

Land Transport Rule
Vehicle Exhaust Emissions 2007
Rule 33001/2

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Objective of the Rule

Land Transport Rule: Vehicle Exhaust Emissions 2007 (the revised Rule) is part of a series of legislative measures aimed at achieving improvements in air quality by reducing the levels of harmful emissions from motor vehicles. Other policies included improvement in the reduction of sulphur in diesel in 2006, the further improvements in fuel standards planned for 2009 and 2010 (necessary for the technologies required to meet higher emissions standards set out in the Rule), the introduction of the visible smoke check in 2006 and planned further investigation of in-service emissions testing.

The aim of the revised Rule is to progressively improve the emissions standards of vehicles entering the New Zealand fleet by requiring newly imported vehicles to have been manufactured to progressively increasing new emissions standards. For a given engine size, newer vehicles that are manufactured to newer technologies are also likely to be more fuel-efficient and this, in turn, will help to reduce the emissions of 'greenhouse' gases such as carbon dioxide.

The revised Rule applies to motor vehicles that are required to be certified for entry into, or operation in, service. Exceptions are provided from certain requirements for vehicles manufactured before 1 January 1990, tractors, motor sport vehicles, immigrants' vehicles, special interest vehicles¹, mobile cranes, and low volume production vehicles that comply with the emissions requirements of the *Low Volume Vehicle Code*.

¹ Motor sport vehicles, immigrants' vehicles (those being imported by genuine immigrants) and special interest vehicles are all terms defined in the Frontal Impact Rule.

Contribution of vehicle emissions to poor air quality. Vehicle emissions are a contributing factor to poor air quality, particularly in urban areas, and are known to have an adverse effect on health. Vehicle emissions in this category include carbon monoxide, nitrogen oxides, sulphur dioxide, hydrocarbons, ozone, benzene and particulate matters. Diesel emissions are of particular concern because the fine particulates (PM₁₀) produced by combustion of diesel fuel are generally considered to be the most harmful to human health.

Emissions standards requirements for new vehicles. The revised Rule updates and replaces *Land Transport Rule: Vehicle Exhaust Emissions 2006*, which introduced requirements for the checking of vehicles at warrant of fitness (WoF) and certificate of fitness (CoF) inspections to identify those that emit gross pollutants. It carries over the requirement for new imported vehicles entering the New Zealand fleet from 1990 to comply with emissions standards (first set in place by *Land Transport Rule: Vehicle Exhaust Emissions 2003*).

From 3 January 2008, the revised Rule (*section 2*) requires compliance with more stringent standards than those in place in the 2006 Rule, with the intention that new standards (such as the proposed Euro 5 and Japan 09 standards) be progressively introduced in coming years following their adoption in their relevant jurisdictions. These measures are intended to reduce the lag time for the introduction of new vehicle standards from three or four years behind the United States, Japan or Europe to a lag of only two years from the introduction in the relevant jurisdiction.

The practice of delaying the implementation of emissions standards for existing model vehicles (ie, those models of vehicle that were already in production in the previous year or years) behind new model vehicles has been continued. The requirements for existing model vehicles will now be

implemented two years after the requirements in the relevant jurisdiction. This is to prevent New Zealand implementing standards ahead of when they are required in the parent jurisdictions.

In order to harmonise with Australia, the Rule now requires compliance with the Australian Design Rules from the same date as Australia for all standards.

Introduction of minimum standards for imported used vehicles. The revised Rule takes a further step towards improving emissions standards by incorporating by reference (under *section 165* of the *Land Transport Act 1998*) minimum emissions standards for used imported vehicles entering the fleet from 3 January 2008. For light vehicles (ie, those under 3500 kg gross vehicle mass (GVM)) powered by petrol, liquefied petroleum gas (LPG) and compressed natural gas (CNG), the Rule sets the minimum emissions standard as the Japan 98 standard or an equivalent from one of the other jurisdictions from which New Zealand sources most of its motor vehicles, (ie, Australia, the European Union and the United States). From 3 January 2008, used imported heavy petrol, LPG and CNG vehicles have to comply with the Japan 00/02 standard or its equivalent. The Rule then implements the Japan 05 standard for petrol, LPG and CNG vehicles from 2012.

The revised Rule also significantly tightens requirements for diesel vehicles. Most of the significant health and air quality issues with transport are associated with diesel vehicle emissions. Because Japanese diesel vehicle emissions standards were not, until recently, very stringent compared to European standards, the revised Rule sets the Japan 02/04 standard as the minimum. This is a high standard, roughly equivalent to the Euro 3 emissions standard. It should ensure that other policies that might encourage the uptake of fuel efficient diesel vehicles will not cause unintended problems for air quality. As with the

petrol standard, the Japan 05 standard will be implemented in 2012. That standard is considered equivalent to Euro 5.

Other measures introduced. The revised Rule introduces a number of other measures to support the strengthened vehicle emissions standards requirements. Used imported vehicles entering the fleet will be required to undertake a metered emissions test to ensure they continue to meet the emissions standards to which they were manufactured (*section 2*). The in-service requirements for motor vehicles (including motorcycles) to have a visible smoke test at WoF or CoF inspection to identify badly polluting vehicles has been carried over from the 2006 Rule (*section 4*).

At the request of the vehicle industry, the Rule clarifies that vehicles must be fitted with on-board diagnostic equipment if this is required by the emissions standards (see definition of *emissions control equipment*).

The revised Rule prohibits the removal of, or tampering with, emissions control technology on vehicles registered in New Zealand. Any vehicle with modified exhaust equipment must continue to be able to pass the same emissions test in place at entry for used vehicles. This measure is important as it makes it clear that it is not acceptable to remove or modify emissions control equipment on a vehicle in such a way as to make the emissions worse. It will also help enable new policies to be developed which will target the emissions of the in-service fleet.

Vehicles operated solely by the New Zealand Defence Force, however, are allowed to be fitted with a device to override the exhaust emissions control to enable them to operate on a range of fuel types when required.

The revised Rule states who is responsible for ensuring compliance with its requirements: vehicle

operators, repairers, modifiers and vehicle inspectors and inspecting organisations. This links the Rule to provisions of the *Land Transport (Offences and Penalties) Regulations 1999*.

Consistency with international obligations. The requirements in the revised Rule take into account international best practice. The Rule is also consistent with the Trans-Tasman Mutual Recognition Agreement and incorporates Australian standards.

Economic and social impact. The revised Rule has been subjected to economic analysis. Both the Ministry of Transport and representatives of the imported used vehicle industry commissioned research into the economic and social impact of the proposals (see *Extent of consultation*). It is generally accepted that the measures may have an adverse impact on the used vehicle industry by restricting access to lower-cost, older vehicles built to earlier standards. In turn, this may have an effect on buyers of used vehicles through increased prices for newer vehicles, although there is disagreement on the actual extent of any likely price increase.

Although supporting the government intention to improve the technology of vehicles in the New Zealand fleet, the industry suggested that the proposed measures would not produce the desired effects, and proposed alternative measures. The revised Rule is generally supported by groups interested in air quality and the new vehicle industry. The revised Rule takes into account the submissions made by the industry and, in particular, delays the implementation of the Japan 00/02 standard by one year from the date in the public consultation draft of the Rule, which proposed that it come into effect on 1 January 2008.

Extent of consultation

Extensive consultation on the Rule proposals took place, particularly with affected industry groups. Discussion began in mid 2005 when officials of the Ministry of Transport began meeting with interested parties in a wide range of forums to discuss and develop the proposals.

The first of the Vehicle Emissions Forums involving a broad group of stakeholders was held in August 2005. It included representatives of trade and industry groups, consumer and motoring industry groups, and central and regional government officials. The forums provided an opportunity to update stakeholders on the current situation relating to air quality and vehicle emissions and to outline the challenges that had to be met. The forums also allowed stakeholders to have input into identifying and prioritising policy for managing vehicle emissions through means other than testing.

These forums provided a starting point for subsequent workshops on managing vehicle emissions, which the Ministry of Transport held on a regular basis with stakeholder groups in Wellington. The workshops provided a valuable means for drawing on the expertise of interested groups in developing and implementing policies. Feedback from the workshops was used in shaping the development of policy in the Ministry.

In 2006, the Ministry of Transport gave an extensive presentation on vehicle emissions to two conferences and workshops in Auckland and Wellington hosted by the Energy Federation of New Zealand in cooperation with the Ministry of Transport. Presentations were also made to seminars in Auckland and Christchurch organised by the Independent Motor Vehicle Dealers Association (IMVDA) in April 2007. During the formal consultation phase, the Ministry of Transport also took part in seminars organised by

the Motor Trade Association (MTA) in seven of the main centres. In addition, the Ministry of Transport and Land Transport New Zealand worked with representatives of affected industry groups in ensuring the smooth implementation of the Rule.

Formal consultation on the draft Rule began in May 2007 when Land Transport NZ made the yellow (public consultation) draft available to about 850 organisations and individuals who had registered their interest in the Rule. The availability of the yellow draft was publicised in metropolitan and selected regional daily newspapers, *Te Karere National News* and the *New Zealand Gazette*. The draft was also made available, together with Questions and Answers, on the Land Transport NZ website. Submissions on the yellow draft closed on 9 July 2007.

Land Transport NZ received 84 submissions on the draft Rule. At the request of the IMVDA and the MTA, an extension of time was given until early August 2007 to allow industry groups to make a supplementary submission on the findings of jointly commissioned research. Following analysis of the submissions, Land Transport NZ and the Ministry of Transport considered recommendations for redrafting the Rule for government scrutiny. The submissions received on the draft Rule were taken into account in redrafting the Rule. The Rule was submitted to Cabinet before being signed by the Minister for Transport Safety.

Part 1 Rule requirements

Section 1 Application

1.1 Title

This Rule is *Land Transport Rule: Vehicle Exhaust Emissions 2007*.

1.2 Scope of Rule

1.2(1) This Rule applies to petrol, diesel, LPG and CNG motor vehicles.

1.2(2) This Rule does not apply to ancillary engines that do not power the vehicle's wheels.

1.2(3) *Section 2* specifies requirements:

- (a) with which a motor vehicle must comply before it may be certified for entry into service in New Zealand under *Land Transport Rule: Vehicle Standards Compliance 2002*; and
- (b) that are, for the purposes of *Land Transport Rule: Vehicle Standards Compliance 2002*, the applicable requirements for the exhaust emissions systems and exhaust control equipment of motor vehicles certified for entry into service in New Zealand.

1.2(4) *Sections 3 and 4* specify requirements:

- (a) with which a motor vehicle must comply so as to be operated on a road; and
- (b) that are, for the purposes of *Land Transport Rule: Vehicle Standards Compliance 2002*, the applicable requirements for inspection and

certification of exhaust emissions systems and exhaust control equipment.

1.3 Date when Rule comes into force

1.3(1) This Rule revokes and replaces *Land Transport Rule: Vehicle Exhaust Emissions 2006*, which came into force on 27 October 2006.

1.3(2) Except as provided in 1.3(3), this Rule comes into force on 3 January 2008.

1.3(3) The following provisions come into force on 1 May 2008:

- (a) *paragraph 2.1(2)(c)*; and
- (b) *paragraphs 2.2(3)(a) and (b)*; and
- (c) *clause 2.3*; and
- (d) *paragraph 3.1(2)(c)*.

1.4 Application of Rule provisions

If there is a conflict between a provision of this Rule and a provision of *Land Transport Rule: Vehicle Standards Compliance 2002*, the provision of *Land Transport Rule: Vehicle Standards Compliance 2002* applies.

Section 2 **Entry requirements**

2.1 **Scope of *section 2***

- 2.1(1) Except as provided in 2.1(2), this section applies to vehicles of Classes MA, MB, MC, MD1, MD2, MD3, MD4, ME, NA, NB and NC in *Table A* in *Part 2* that are:
- (a) required by *Land Transport Rule: Vehicle Standards Compliance 2002* to be certified for entry into service; and
 - (b) certified for entry into service on or after 3 January 2008.

- 2.1(2) This section does not apply to:
- (a) vehicles manufactured before 1 January 1990; or
 - (b) tractors; or
 - (c) Class MA or Class MC motor sport vehicles.

2.2 **Vehicle emissions standards**

- 2.2(1) Except as provided in 2.2(2) and 2.2(3), a vehicle to which this section applies must have complied when manufactured or modified with:
- (a) an approved vehicle emissions standard:
 - (i) specified in *Table 2.1*, *Table 2.2*, *Table 2.3* or *Table 2.4* of *Schedule 1*;
 - (ii) that is relevant to its class and fuel type;

- (iii) to the extent that the standard applies to the exhaust emissions system and emissions control equipment; or
- (b) a more recent version of the standard; or
- (c) a higher standard.

[Note: 'Higher standard' is a defined term.]

2.2(2) A vehicle used exclusively by the New Zealand Defence Force may be fitted with a defeat device to override an exhaust emissions control on the vehicle.

2.2(3) This clause does not apply to:

- (a) Class MA, MB or MC immigrants' vehicles; or
- (b) Class MA or Class MC special interest vehicles; or
- (c) mobile cranes; or
- (d) low volume production vehicles that comply with the emissions requirements of the *Low Volume Vehicle Code*.

2.3 Used vehicles or modified new vehicles

A vehicle to which this section applies must pass the metered test prescribed in *Schedule 2* on entry into service if it is:

- (a) a used vehicle; or
- (b) a new vehicle that has been modified such that the modification might prevent the vehicle being able to pass the test.

Section 3 **Metered test**

3.1 **Scope of *section 3***

3.1(1) Except as provided in 3.1(2), this section applies to vehicles of Classes MA, MB, MC, MD1, MD2, MD3, MD4, ME, NA, NB and NC in *Table A* in *Part 2* that:

- (a) are required by *Land Transport Rule: Vehicle Standards Compliance 2002* to be certified for entry into service; and
- (b) were certified for entry into service on or after 1 May 2008.

3.1(2) This section does not apply to:

- (a) vehicles manufactured before 1 January 1990; or
- (b) tractors; or
- (c) Class MA or Class MC motor sport vehicles.

3.2 **Metered test**

A vehicle's exhaust emissions system or exhaust control equipment must not be modified so as to prevent the vehicle being able to pass the metered test prescribed in *Schedule 2*.

Section 4 Visible smoke check

4.1 Scope of *section 4*

This section applies to all motor vehicles that:

- (a) must be certified for operation in service under *section 7* of *Land Transport Rule: Vehicle Standards Compliance 2002*; and
- (b) are powered by an internal combustion engine.

4.2 Visible smoke check

4.2(1) A vehicle to which this section applies must not emit clearly visible smoke when the vehicle's engine is running at its normal operating temperature, under either of the following conditions:

- (a) for a continuous period of five seconds when the engine is idling;
- (b) as the engine is being accelerated rapidly to approximately 2500 revolutions per minute or approximately half the maximum engine speed (whichever is lower).

4.2(2) *Subclause 4.2(1)* does not apply if the driver of the vehicle produces documentation that proves that:

- (a) the engine is original equipment for the vehicle; and
- (b) the engine's design does not allow the vehicle to reasonably comply.

Section 5 Responsibilities

5.1 Responsibilities of repairers and modifiers

A person who repairs or modifies a vehicle's exhaust emissions system or exhaust control equipment must ensure that:

- (a) if the vehicle is one to which *section 3* applies, the vehicle is able to pass the metered test prescribed in *Schedule 2*; and
- (b) if the vehicle is one to which *section 4* applies, the repair or modification does not prevent the vehicle from complying with that section.

5.2 Responsibilities of vehicle inspectors and inspecting organisations

A vehicle inspector or inspecting organisation must not certify a motor vehicle under *Land Transport Rule: Vehicle Standards Compliance 2002* if the inspector or inspecting organisation has reason to believe that the vehicle does not comply with this Rule.

Section 6 **Transitional and savings provisions**

6.1 Transitional and savings provision

6.1(1) A vehicle that was inspected at the border before 1 February 2008 is deemed to comply with 2.2(1) if it would have complied with *section 2* of *Land Transport Rule: Vehicle Exhaust Emissions 2006* had that Rule not been revoked.

6.1(2) For the purpose of 2.2(1) and *table 2.1* of *Schedule 1*, a vehicle that complied when manufactured or modified with the Japan 98 Idling Standard, and has the Japanese emission code GF, HK, GG or HL, is deemed to have complied when manufactured or modified (as appropriate) with Japan 98.

Part 2 Definitions

ADR 30/01	is an abbreviation for <i>Australian Design Rule 30/01, Diesel Engine Exhaust Smoke Emissions</i> .
ADR 79/00	is an abbreviation for <i>Australian Design Rule 79/00, Emission Control for Light Vehicles</i> .
ADR 79/01	is an abbreviation for <i>Australian Design Rule 79/01, Emission Control for Light Vehicles</i> .
ADR 80/00	is an abbreviation for <i>Australian Design Rule 80/00, Emission Control for Heavy Vehicles</i> .
ADR 80/01	is an abbreviation for <i>Australian Design Rule 80/01, Emission Control for Heavy Vehicles</i> .
ADR 80/02	is an abbreviation for <i>Australian Design Rule 80/02, Emission Control for Heavy Vehicles</i> .
ADR 80/03	is an abbreviation for <i>Australian Design Rule 80/03, Emission Control for Heavy Vehicles</i> .
Approved vehicle emissions standard	means a vehicle emissions standard specified in <i>Table 2.1, 2.2, 2.3 or 2.4</i> and, to avoid doubt, an approved vehicle emissions standard is an approved vehicle standard for the purposes of <i>Land Transport Rule: Vehicle Standards Compliance 2002</i> .
BAR-97	means the California Bureau of Automotive Repair's <i>BAR-97 Emissions Inspection System Specifications</i> .
Compressed natural gas or CNG	means compressed gas consisting of more than 50% methane by volume.
CNG vehicle	means a vehicle that operates, or is designed to operate, on compressed natural gas or a CNG mixture.

- Diesel** means a refined petroleum distillate:
- (a) having a viscosity and distillation range that is intermediate between those of kerosene and light lubricating oil, whether or not it contains additives; and
 - (b) that is intended for use as fuel in internal combustion engines ignited by compression.
- Diesel vehicle** means a vehicle that operates, or is designed to operate, on diesel or a diesel mixture.
- Emissions control equipment** includes on-board diagnostics.
- Enter service** in relation to a vehicle, means to begin to be operated in service on the road in New Zealand for the first time in compliance with registration requirements of the *Transport (Vehicle and Driver Registration and Licensing) Act 1986* and **entry into service** shall be construed accordingly.
- Euro 3** in relation to:
- (a) a petrol or LPG vehicle, is an abbreviation for:
 - (i) *UN/ECE Regulation No. 83, uniform provisions concerning the approval of vehicles with regard to the emission of pollutants according to engine fuel requirements (E/ECE/324E/ECE/TRANS/505/Rev.1 /Add.82/Rev.2)* as amended by row A or B of the table to clause 5.3.1.4 of the 05 series of amendments; or
 - (ii) *Council Directive 70/220/EEC* as amended by *Council Directive 98/69/EC* as per the limit values in row A or B of the table to clause 5.3.1.4 of Annex I of *98/69/EC*;

- (b) a diesel vehicle, is an abbreviation for:
- (i) *UN/ECE Regulation No. 49 – uniform provisions concerning the approval of compression-ignition (CI) and natural gas (NG) engines as well as positive-ignition (PI) engines fuelled with liquid petroleum gas (LPG) and vehicles equipped with CI and NG engines and PI engines fuelled with LPG, with regard to the emissions of pollutants by the engine (E/ECE/324E/ECE/TRANS/505/Rev.1/Add.48/Rev.3/Amend.1) as amended by row A of Table 1 and/or 2 (as appropriate), in section 5.2.1 of the 03 series of amendments; or*
 - (ii) *Council Directive 88/77/EEC of 3 December 1987 on the approximation of the laws of the Member States relating to measures to be taken against the emission of gaseous pollutants from diesel engines for use in vehicles, as amended by Council Directive 1999/96/EC as per the limit values in row A of Table 1 and, if applicable, row A of Table 2, in section 6.2.1; or*
 - (iii) *UN/ECE Regulation No. 24, uniform provisions concerning:*
 - (A) *the approval of compression ignition (C.I.) engines with regard to the emission of visible pollutants;*
 - (B) *the approval of motor vehicles with regard to the installation of C.I. engines of an approved type;*
 - (C) *the approval of motor vehicles equipped with C.I. engines with*

regard to the emission of visible pollutants by the engine;

- (D) *the measurement of power of C.I. engine,*

(E/ECE/324E/ECE/TRANS/505/Rev.1 /Add.23/Rev.2) incorporating the 03 series of amendments; or

- (iv) *Council Directive 72/306/EEC of 2 August 1972 on the approximation of the laws of the Member States relating to the measures to be taken against the emission of pollutants from diesel engines for use in vehicles as amended by Council Directive 97/20/EC.*

Euro 4

- (a) is an abbreviation for:

- (i) *UN/ECE Regulation No. 49 – uniform provisions concerning the approval of compression-ignition (CI) and natural gas (NG) engines as well as positive-ignition (PI) engines fuelled with liquid petroleum gas (LPG) and vehicles equipped with CI and NG engines and PI engines fuelled with LPG, with regard to the emissions of pollutants by the engine
(E/ECE/324E/ECE/TRANS/505/Rev.1 /Add.48/Rev.3/Amend.1) as amended by row B1 of Table 1 and/or 2 (as appropriate), in section 5.2.1 of the 03 series of amendments; or*
- (ii) *UN/ECE Regulation No. 83, uniform provisions concerning the approval of vehicles with regard to the emission of pollutants according to engine fuel requirements
(E/ECE/324E/ECE/TRANS/505/Rev.1 /Add.82/Rev.2) as amended by row B*

of the table to clause 5.3.1.4 of the 05 series of amendments; or

- (iii) *Council Directive 70/220/EEC*, as amended by *Council Directive 98/69/EC* as per the limit values in row B of the table to clause 5.3.1.4 of Annex I of *Directive 98/69/EC*; or
 - (iv) *Council Directive 88/77/EEC of 3 December 1987 on the approximation of the laws of the Member States relating to measures to be taken against the emission of gaseous pollutants from diesel engines for use in vehicles*, as amended by *Council Directive 1999/96/EC* as per the limit values in row B1 of Tables 1 and/or 2 (as applicable) in section 6.2.1; and
- (b) includes:
- (i) *UN/ECE Regulation No. 24, uniform provisions concerning:*
 - (A) *the approval of compression ignition (C.I.) engines with regard to the emission of visible pollutants;*
 - (B) *the approval of motor vehicles with regard to the installation of C.I. engines of an approved type;*
 - (C) *the approval of motor vehicles equipped with C.I. engines with regard to the emission of visible pollutants by the engine;*
 - (D) *the measurement of power of C.I. engine,*

(E/ECE/324E/ECE/TRANS/505/Rev.1 /Add.23/Rev.2) incorporating the 03 series of amendments;

- (ii) *Council Directive 72/306/EEC of 2 August 1972 on the approximation of the laws of the Member States relating to the measures to be taken against the emission of pollutants from diesel engines for use in vehicles as amended by Council Directive 97/20/EC.*

Existing model	means, in relation to a vehicle, not a new model vehicle.
Heavy vehicle	means a vehicle that is either: <ul style="list-style-type: none"> (a) of Class MD3, MD4, ME, NB, NC, TC or TD; or (b) a vehicle (not of a class specified in <i>Table A: Vehicle classes</i>) with a gross vehicle mass that exceeds 3500 kg.
Higher standard	means an approved vehicle emissions standard that would have applied to the vehicle: <ul style="list-style-type: none"> (a) in the case of <i>Table 2.2</i> or <i>2.4</i>, if the vehicle was manufactured at a later date; or (b) in the case of <i>Table 2.1</i> or <i>2.3</i>, if the vehicle was certified for entry into service during a later period.
Immigrant's vehicle	has the same meaning as in <i>Land Transport Rule: Frontal Impact 2001</i> .
Inspected at the border	means, in relation to a vehicle, inspected at the time of its importation into New Zealand.

Inspecting organisation	has the same meaning as in <i>Land Transport Rule: Vehicle Standards Compliance 2002</i> .
ISO 3930	means ISO Standard 3930:2000 <i>Instruments for measuring vehicle exhaust emissions</i> .
Japan 98	means: <ul style="list-style-type: none"> (a) <i>Japan Safety Regulations for Road Vehicles, Article 31 – Emission Control Device</i>, as revised by Japanese <i>Ministry of Transport Ordinance 22</i> issued on 31 March 1997, as established by the relevant <i>Japan Safety Regulations for Road Vehicles</i> test procedures, technical standards and circulars; or (b) <i>the Mean Value Standards for Motor Vehicle Exhaust Emissions, Circular of Chigi No. 129 of April 4, 1985</i>, as amended by <i>Circulars of Chigi No. 56 of April 2, 1986, Chigi No. 9 of January 23, 1987, Chigi No. 108 of May 29, 1989, Chigi No. 161 of June 28, 1991, Jikan No. 344 of December 17, 1993 and Jikan No.102 of April 11, 1997</i>, <p>as evidenced by the Japanese emissions codes ‘GD’, ‘HG’, ‘GC’, ‘HH’, ‘GE’, ‘HJ’, ‘BA’, ‘BB’.</p>
Japan 98 Idling Standard	means Paragraph 8 (Idling Operation for CO of Gasoline- or LPG-fueled Motor Vehicles) and Paragraph 9 (Idling Operation for HC of Gasoline- or LPG-fueled Motor Vehicles) of <i>Japan Safety Regulations for Road Vehicles, Article 31 – Emission Control Device</i> , as revised by Japanese <i>Ministry of Transport Ordinance 22</i> issued on 31 March 1997, as established by the relevant <i>Japan Safety Regulations for Road Vehicles</i> test procedures, technical standards and circulars.
Japan 00/02	means <i>Japan Safety Regulations for Road Vehicles, Article 31 – Emission Control Device</i> , as revised by

	Japanese <i>Ministry of Transport Ordinance 67</i> issued on 30 September 1998, as established by the relevant Japan <i>Safety Regulations for Road Vehicles</i> test procedures, technical standards and circulars.
Japan 02/04	means Japan <i>Safety Regulations for Road Vehicles, Article 31 – Emission Control Device</i> , as revised by Japanese <i>Ministry of Transport Ordinance 31</i> issued on 5 September 2000, as established by the relevant Japan <i>Safety Regulations for Road Vehicles</i> test procedures, technical standards and circulars.
Japan 05	means Japan <i>Safety Regulations for Road Vehicles, Article 31 – Emission Control Device</i> , as revised by the Ministry of Land Infrastructure and Transport Notification No. 1317 of 26 September 2003, as established by the relevant Japan <i>Safety Regulations for Road Vehicles</i> test procedures, technical standards and circulars.
Light vehicle	means a vehicle that is not a heavy vehicle.
Liquefied petroleum gas or LPG	means propane, propylene, butane, butylene or isobutene; and includes a mixture consisting wholly or principally of any such substance, whether or not the mixture contains any other hydrocarbon.
LPG vehicle	means a vehicle that operates, or is designed to operate, on liquefied petroleum gas or an LPG mixture.
Low volume production vehicle	means a motor vehicle of a class in <i>Table A: Vehicle classes</i> , other than Class MD3, MD4, ME, NB, NC, TC or TD, that is manufactured, assembled or scratch-built in quantities of 200 or less at any one location in any one year by a manufacturer whose total production of motor vehicles does not exceed 200 units over the same period and where the construction of the vehicle directly or indirectly

	affects compliance of the vehicle with any of the vehicle standards prescribed by New Zealand law.
Low volume vehicle code	means the code of the Low Volume Vehicle Technical Association Incorporated.
Mobile crane	does not include a truck mounted with crane apparatus.
Modify	in relation to a vehicle, means to change the vehicle from its original state by altering, substituting, adding or removing any structure, system, component or equipment; but does not include repair.
Motor vehicle	has the same meaning as in <i>section 2(1)</i> of the <i>Land Transport Act 1998</i> .
Motor sport vehicle	has the same meaning as in <i>Land Transport Rule: Frontal Impact 2001</i> .
New vehicle	means a vehicle that: <ul style="list-style-type: none">(a) has not been registered and operated in New Zealand or any other country; and(b) has not been operated on a road in New Zealand or any other country as a demonstration or courtesy vehicle; and(c) has not been used for training or testing purposes; and(d) is not a scratch-built vehicle that contains components that have been fitted to a vehicle that has been operated on the road in New Zealand or in any other country.
New model vehicle	means, in relation to a vehicle, manufactured in the calendar year in which the vehicle model was first manufactured.

OIML R99	means Organisation Internationale de Métrologie Légale Recommendation OIML R99 <i>Instruments for measuring vehicle exhaust emissions</i> .
Original equipment	means equipment that is: <ul style="list-style-type: none">(a) fitted by the vehicle manufacturer when the vehicle is manufactured; or(b) approved by the vehicle manufacturer for use in a specific vehicle type for a specific purpose.
Petrol	means a refined petroleum distillate: <ul style="list-style-type: none">(a) normally boiling within the limits of 30°C to 220°C;(b) whether or not it contains additives;(c) that is intended for use as a fuel in spark-ignition internal combustion engines.
Petrol vehicle	means a vehicle that operates, or is designed to operate, on petrol or a petrol mixture.
Repair	means to restore a damaged or worn vehicle, its structure, systems, components or equipment; and includes the replacement of damaged or worn structures, systems, components or equipment with equivalent undamaged or new structures, systems, components or equipment.
Scratch-built vehicle	means a motor vehicle that is either: <ul style="list-style-type: none">(a) assembled from previously unrelated components and construction materials that have not been predominantly sourced from donors of a single make or model and that, in its completed form, never previously existed as a mass-produced vehicle, although

the external appearance may resemble or replicate an existing vehicle; or

(b) a modified production vehicle that contains less than the following components from a mass-produced vehicle of a single make and model:

(i) 40% of the chassis rails and 50% of the crossmembers, or alternatively, 40% of a spaceframe, or 40% of the floorpan of a unitary constructed body, whichever is appropriate; and

(ii) for light vehicles, 40% of the bodywork (based on the surface area of body panels but not including the floorpan, internal bracing, subpanels, bulkheads or firewall).

Smoke does not include water vapour.

Special interest vehicle has the same meaning as in *Land Transport Rule: Frontal Impact 2001*.

Tractor means a motor vehicle (other than a traction engine) constructed principally for towing an agricultural trailer or powering agricultural implements.

UN/ECE is an abbreviation for United Nations Economic Commission for Europe.

US 98D means:

(a) *Federal Regulation 40 CFR Part 86, Control of Emissions from New and In-Use Highway Vehicles and Engines – Subpart 86.098-11 Emission standards for 1998 and later model year diesel heavy-duty engines and vehicles* as established by the relevant *Federal Regulation 40 CFR Part 86* certification and test procedures; or

- (b) *Title 13 of the California Code of Regulations* in force in California on 31 December 1998.

US 98P

means:

- (a) *Federal Regulation 40 CFR Part 86, Control of Emissions from New and In-Use Highway Vehicles and Engines – Subpart 86.098-10 Emission standards for 1998 and later model year Otto-cycle heavy-duty engines and vehicles* as established by the relevant *Federal Regulation 40 CFR Part 86* certification and test procedures; or
- (b) *Title 13 of the California Code of Regulations* in force in California on 31 December 1998.

US 2001

means:

- (a) *Federal Regulation 40 CFR Part 86, Control of Emissions from New and In-Use Highway Vehicles and Engines –*
 - (i) *Subpart 86.1811-01 Emission standards for light-duty vehicles;*
 - (ii) *Subpart 86.1812-01 Emission standards for light-duty trucks 1;*
 - (iii) *Subpart 86.1813-01 Emission standards for light-duty trucks 2;*
 - (iv) *Subpart 86.1814-01 Emission standards for light-duty trucks 3;*
 - (v) *Subpart 86.1815-01 Emission standards for light-duty trucks 4,*

in each case as established by the relevant *Federal Regulation 40 CFR Part 86* certification and test procedures; or

- (b) *Title 13 of the California Code of Regulations* in force in California on 31 December 2001.

- US 2004** means:
- (a) *Federal Regulation 40 CFR Part 86, Control of Emissions from New and In-Use Highway Vehicles and Engines – Subpart 86.1811-04 Emission standards for light-duty vehicles, light-duty trucks and medium-duty passenger vehicles as established by the relevant Federal Regulation 40 CFR Part 86 certification and test procedures; or*
 - (b) *Federal Regulation 40 CFR Part 86, Control of Emissions from New and In-Use Highway Vehicles and Engines – Subpart 86.004-11 Emission standards for 2004 and later model year diesel heavy-duty engines and vehicles as established by the relevant Federal Regulation 40 CFR Part 86 certification and test procedures; or*
 - (c) *Title 13 of the California Code of Regulations in force in California on 31 December 2004.*
- US 2007** means *Federal Regulation 40 CFR Part 86, Control of air pollution from new and in-use motor vehicles and new and in-use motor vehicle engines certification and test procedures – Subpart A 40 CFR 86.007-11 as supplemented by the requirements of Schedule 3 to this Rule.*
- US 2008** means *Federal Regulation 40 CFR Part 86, Control of air pollution from new and in-use motor vehicles and new and in-use motor vehicle engines certification and test procedures – Subpart A 40 CFR 86.008-10 Emission standards for 2008 and later model year Otto-cycle heavy-duty engines and vehicles.*
- Used vehicle** means a vehicle, including a vehicle that has been used for the purpose of demonstration in connection with the sale of a similar vehicle, that has, at any time before being offered or displayed for sale, been:

- (a) registered under:
 - (i) the *Transport Act 1962*; or
 - (ii) the *Transport (Vehicle and Driver Registration and Licensing Act) 1986*; or
 - (iii) any corresponding legislation in any other country; or
- (b) used for a purpose not connected with its manufacture or sale.

Vehicle has the same meaning as in *section 2(1)* of the *Land Transport Act 1998*.

Vehicle inspector has the same meaning as in *Land Transport Rule: Vehicle Standards Compliance 2002*.

Vehicle standard means a technical specification with which a motor vehicle, its structure, systems, components or equipment must comply, and which is adopted by:

- (a) the New Zealand Standards Council; or
- (b) any international, national or regional organisation with functions similar to the New Zealand Standards Council.

Table A Vehicle classes

Class	Description
AA (Pedal cycle)	A vehicle designed to be propelled through a mechanism solely by human power.
AB (Power-assisted pedal cycle)	A pedal cycle to which is attached one or more auxiliary propulsion motors having a combined maximum power output not exceeding 200 watts.
LA (Moped with two wheels)	A motor vehicle (other than a power-assisted pedal cycle) that: (a) has two wheels; and (b) either: (i) has an engine cylinder capacity not exceeding 50 ml and a maximum speed not exceeding 50 km/h; or (ii) has a power source other than a piston engine and a maximum speed not exceeding 50 km/h.
LB (Moped with three wheels)	A motor vehicle (other than a power-assisted pedal cycle) that: (a) has three wheels; and (b) either: (i) has an engine cylinder capacity not exceeding 50 ml and a maximum speed not exceeding 50 km/h; or (ii) has a power source other than a piston engine and a maximum speed not exceeding 50 km/h.
LB 1	A Class LB motor vehicle that has one wheel at the front and two wheels at the rear.
LB 2	A Class LB motor vehicle that has two wheels at the front and one wheel at the rear.
LC (Motor cycle)	A motor vehicle that: (a) has two wheels; and (b) either: (i) has an engine cylinder capacity exceeding 50 ml; or (ii) has a maximum speed exceeding 50 km/h.
LD (Motor cycle and side-car)	A motor vehicle that: (a) has three wheels asymmetrically arranged in relation to the longitudinal median axis; and (b) either: (i) has an engine cylinder capacity exceeding 50 ml; or (ii) has a maximum speed exceeding 50 km/h.

Table A Vehicle classes (continued)

Side-car	A car, box, or other receptacle attached to the side of a motor cycle and supported by a wheel.
LE (Motor tri-cycle)	A motor vehicle that: (a) has three wheels symmetrically arranged in relation to the longitudinal median axis; and (b) has a gross vehicle mass not exceeding one tonne; and (c) either: (i) has an engine cylinder capacity exceeding 50 ml; or (ii) has a maximum speed exceeding 50 km/h.
LE 1	A Class LE motor vehicle that has one wheel at the front and two wheels at the rear.
LE 2	A Class LE motor vehicle that has two wheels at the front and one wheel at the rear.
Passenger vehicle	A motor vehicle that: (a) is constructed primarily for the carriage of passengers; and (b) either: (i) has at least four wheels; or (ii) has three wheels and a gross vehicle mass exceeding one tonne.
MA (Passenger car)	A passenger vehicle (other than a Class MB or Class MC vehicle) that has not more than nine seating positions (including the driver's seating position).

Table A **Vehicle classes (continued)**

Class	Description
MB (Forward control passenger vehicle)	A passenger vehicle (other than a Class MC vehicle): (a) that has not more than nine seating positions (including the driver's seating position); and (b) in which the centre of the steering wheel is in the forward quarter of the vehicle's total length.
MC (Off-road passenger vehicle)	A passenger vehicle, designed with special features for off-road operation, that has not more than nine seating positions (including the driver's seating position), and that: (a) has four-wheel drive; and (b) has at least four of the following characteristics when the vehicle is unladen on a level surface and the front wheels are parallel to the vehicle's longitudinal centre-line and the tyres are inflated to the vehicle manufacturer's recommended pressure: (i) an approach angle of not less than 28 degrees; (ii) a breakover angle of not less than 14 degrees; (iii) a departure angle of not less than 20 degrees; (iv) a running clearance of not less than 200 mm; (v) a front-axle clearance, rear-axle clearance, or suspension clearance of not less than 175 mm.
Omnibus	A passenger vehicle that has more than nine seating positions (including the driver's seating position). An omnibus comprising two or more non-separable but articulated units shall be considered as a single vehicle.
MD (Light omnibus)	An omnibus that has a gross vehicle mass not exceeding 5 tonnes.
MD 1	An omnibus that has a gross vehicle mass not exceeding 3.5 tonnes and not more than 12 seats.
MD 2	An omnibus that has a gross vehicle mass not exceeding 3.5 tonnes and more than 12 seats.
MD 3	An omnibus that has a gross vehicle mass exceeding 3.5 tonnes but not exceeding 4.5 tonnes.
MD 4	An omnibus that has a gross vehicle mass exceeding 4.5 tonnes but not exceeding 5 tonnes.

Table A Vehicle classes (continued)

ME (Heavy omnibus)	An omnibus that has a gross vehicle mass exceeding 5 tonnes.
Goods vehicle	<p>A motor vehicle that:</p> <p>(a) is constructed primarily for the carriage of goods; and</p> <p>(b) either:</p> <p>(i) has at least four wheels; or</p> <p>(ii) has three wheels and a gross vehicle mass exceeding one tonne.</p> <p>For the purpose of this description:</p> <p>(a) a vehicle that is constructed for both the carriage of goods and passengers shall be considered primarily for the carriage of goods if the number of seating positions multiplied by 68 kg is less than 50% of the difference between the gross vehicle mass and the unladen mass;</p> <p>(b) the equipment and installations carried on special purpose vehicles not designed for the carriage of passengers shall be considered to be goods;</p> <p>(c) a goods vehicle that has two or more non-separable but articulated units shall be considered to be a single vehicle.</p>
NA (Light goods vehicle)	A goods vehicle that has a gross vehicle mass not exceeding 3.5 tonnes.
NB (Medium goods vehicle)	A goods vehicle that has a gross vehicle mass exceeding 3.5 tonnes but not exceeding 12 tonnes.
NC (Heavy goods vehicle)	A goods vehicle that has a gross vehicle mass exceeding 12 tonnes.

Table A **Vehicle classes (continued)**

Class	Description
Trailer	A vehicle without motive power that is constructed for the purpose of being drawn behind a motor vehicle.
TA (Very light trailer)	A single-axled trailer that has a gross vehicle mass not exceeding 0.75 tonnes.
TB (Light trailer)	A trailer (other than a Class TA trailer) that has a gross vehicle mass not exceeding 3.5 tonnes.
TC (Medium trailer)	A trailer that has a gross vehicle mass exceeding 3.5 tonnes but not exceeding 10 tonnes.
TD (Heavy trailer)	A trailer that has a gross vehicle mass exceeding 10 tonnes.

Part 3 Schedules

Schedule 1 Approved emissions standards

Table 2.1 Vehicle exhaust emissions requirements for used petrol, LPG and CNG vehicles

Certified for entry into service	Approved vehicle emissions standard	
	Used petrol, LPG and CNG vehicles	
	Light vehicles	Heavy vehicles
On or after 3 January 2008 and before 1 January 2009	ADR 79/00; Euro 2; Japan 98; or US 2001	ADR 80/02; Japan 00/02; or US 98P
On or after 1 January 2009 and before 1 January 2012	ADR 79/01; Euro 3; Japan 00/02; or US 2001	ADR 80/02; Japan 00/02; or US 98P
On or after 1 January 2012 and before 1 January 2013	ADR 79/02; Euro 4; Japan 05; or US 2004	ADR 80/02; Euro 4; Japan 05; or US 2004

Table 2.2 Vehicle exhaust emissions requirements for new petrol, LPG and CNG vehicles

Date of manufacture	Approved vehicle emissions standard			
	New petrol, LPG and CNG vehicles			
	Light vehicles		Heavy vehicles	
	New model	Existing model	New model	Existing model
Before 3 January 2008	ADR 79/01; Euro 3; Japan 00/02; or US 2001	ADR 79/01; Euro 3; Japan 00/02; or US 2001	ADR 80/01; Japan 00/02; or US 98P	ADR 80/01; Japan 00/02; or US 98P
On or after 3 January 2008 and before 1 January 2009	Before 1 July 2008 ADR 79/01; On or after 1 July 2008 ADR 79/02; Euro 4; Japan 05; or US 2004	ADR 79/01; Euro 3; Japan 00/02; or US 2001	ADR 80/02; Euro 4; Japan 05; or US 2004	ADR 80/02; Euro 4 Japan 00/02; or US 98P
On or after 1 January 2009 and before 1 January 2010	ADR 79/02; Euro 4; Japan 05; or US 2004	ADR 79/01; Euro 4; Japan 05; or US 2004	ADR 80/02; Euro 4; Japan 05; or US 2004	ADR 80/02; Euro 4; Japan 05; or US 2004
On or after 1 January 2010 and before 1 January 2011	ADR 79/02; Euro 4; Japan 05; or US 2004	Before 1 July 2010 ADR 79/01; On or after 1 July 2010 ADR 79/02; Euro 4; Japan 05; or US 2004	ADR 80/03; Euro 4; Japan 05; or US 2004	ADR 80/02; Euro 4; Japan 05; or US 2004

Table 2.3 Vehicle exhaust emissions requirements for used diesel vehicles

Certified for entry into service	Approved vehicle emissions standard	
	Used diesel vehicles	
	Light vehicles	Heavy vehicles
On or after 3 January 2008 and before 1 January 2009	ADR 30/01 and ADR 79/01; Euro 4; Japan 02/04; or US 2004	ADR 30/01 and ADR 80/00 Euro 3; Japan 02/04; or US 2004
On or after 1 January 2009 and before 1 January 2010	ADR 30/01 and ADR 79/01; Euro 4; Japan 02/04; or US 2004	ADR 30/01 and ADR 80/02; Euro 4; Japan 02/04; or US 2004
On or after 1 January 2010 and before 1 January 2013	ADR 30/01 and ADR 79/01; Euro 4; Japan 05; or US 2004	ADR 30/01 and ADR 80/02; Euro 4; Japan 05; or US 2004

Table 2.4 Vehicle exhaust emissions requirements for new diesel vehicles

Date of manufacture	Approved vehicle emissions standard			
	New diesel vehicles			
	Light vehicles		Heavy vehicles	
	New model	Existing model	New model	Existing model
Before 3 January 2008	ADR 79/01 and ADR 30/01; Euro 4; Japan 02/04; or US 2004	ADR 79/01 and ADR 30/01; Euro 4; Japan 02/04; or US 2004	ADR 80/00 and ADR 30/01; Euro 3; Japan 02/04; or US 2004	ADR 80/00 and ADR 30/01; Euro 3; Japan 02/04; or US 98D
On or after 3 January 2008 and before 1 January 2009	ADR 79/01 and ADR 30/01; Euro 4; Japan 05; or US 2004	ADR 79/01 and ADR 30/01; Euro 4; Japan 02/04; or US 2004	ADR 80/02 and ADR 30/01; Euro 4; Japan 05; or US 2004	ADR 80/00 and ADR 30/01; Euro 3; Japan 02/04; or US 2004
On or after 1 January 2009 and before 1 January 2010	ADR 79/01 and ADR 30/01; Euro 4; Japan 05; or US 2004	ADR 79/01 and ADR 30/01; Euro 4; Japan 05; or US 2004	ADR 80/02 and ADR 30/01; Euro 4; Japan 05; or US 2007	ADR 80/02 and ADR 30/01; Euro 4; Japan 02/04; or US 2004
On or after 1 January 2010 and before 1 January 2011	ADR 79/01 and ADR 30/01; Euro 4; Japan 05; or US 2004	ADR 79/01 and ADR 30/01; Euro 4; Japan 05; or US 2004	ADR 80/03 and ADR 30/01; Euro 4; Japan 05; or US 2007	ADR 80/02 and ADR 30/01; Euro 4; Japan 05; or US 2004

Schedule 2 Metered test

Part A – Metered test standards

1.0 Petrol, LPG and CNG vehicles

A petrol, LPG or CNG vehicle must not exceed the applicable maximum carbon monoxide and hydrocarbon emissions limits in *Table 3.1*, when it is tested in accordance with the procedures and equipment prescribed in *Part B* of this *Schedule*.

Table 3.1 Limits for carbon monoxide and hydrocarbon emissions for petrol or LPG vehicles

Vehicle	Carbon monoxide	Hydrocarbons (parts per million)
A motor vehicle powered by a four-stroke or rotary engine	1%	300
A motor vehicle powered by a two-stroke engine.	4.5%	7800

2.0 Diesel vehicles

A diesel vehicle must not exceed 25% opacity when it is tested in accordance with the procedures and equipment prescribed in *Part C* of this *Schedule*.

Part B - Procedure for measuring petrol, LPG or CNG, CO and HC exhaust emissions

1.0 Scope

This part prescribes the procedure and equipment for measuring exhaust emissions of carbon monoxide (CO) and hydrocarbons, from petrol, LPG or CNG vehicles tested in idle condition.

2.0 Procedure

2.1 Pre-testing

2.1.1 The apparatus for measuring carbon monoxide or hydrocarbons must be warmed up and calibrated before use, in accordance with the manufacturer's directions.

2.1.2 The sampling probe (ie, the exhaust gas sampling part of the measuring apparatus) must be inserted sufficiently into the exhaust pipe so as to prevent the admission of open air, assuring sampling of exhaust gas only.

2.2 During the test

2.2.1 For the duration of the test:

- (a) the vehicle's engine must be idling;
- (b) the acceleration pedal must be released;
- (c) the handbrake must be applied; and
- (d) the vehicle's transmission must be:
 - (i) in neutral; or

- (ii) if the vehicle is an automatic, in park.

2.3 Re-testing

2.3.1 If a vehicle fails the test, it may be necessary to ensure that it has reached normal operating temperature as recommended by the manufacturer.

2.3.2 The vehicle's operating temperature must be measured using a temperature measuring probe.

2.3.4 The temperature measuring probe should be thoroughly checked, maintained, calibrated and used in accordance with the manufacturer's instructions.

3.0 Equipment (Exhaust emission analysers)

3.1 The instruments used for analysing exhaust emissions must be:

- (a) capable of testing carbon monoxide and hydrocarbon emissions; and
- (b) comply with:
 - (i) *BAR-97 Emissions Inspection System Specifications*; or
 - (ii) *OIML R99/ISO 3930 Instruments for measuring vehicle exhaust emissions, Class 1 Standards*; or
 - (iii) *Japan Safety Regulations for Road Vehicles, Technical Standard - Machinery Equipment for Vehicle Inspection* as specified by the Minister for Transport in Announcement No. 375 of 14 June 1995.

- 3.2 The instruments should be thoroughly checked, maintained and calibrated in accordance with the respective manufacturers' instructions.

Part C - Procedure for measuring diesel smoke during rapid acceleration under no-load condition

1.0 Scope

This part prescribes the procedure, standards and equipment for measuring vehicle exhaust smoke emitted from diesel engines when the engine is accelerated rapidly from idle condition.

2.0 Approved procedure for testing

The vehicle's exhaust smoke must be measured using the procedure in Japanese Industrial Standard *JIS D 1101:1985, Diesel Engine Smoke Measurement*.

3.0 Testing standards

Correct procedures must be followed during the testing and measuring process to ensure that the required testing standards are achieved.

3.1 Pre-testing

The following procedures must be carried out before testing of the vehicle begins.

- 3.1.1 Residual smoke must be purged. The purge (or sweep of residual smoke) must be performed before the sampling of diesel smoke.

- 3.1.2 The equipment to be used must be warmed up and calibrated in accordance with the manufacturer's direction.

- 3.1.3 The measuring probe (the exhaust emission part of the diesel smoke measuring system) must be inserted sufficiently into the exhaust pipe to prevent open air from entering the pipe and ensure that only exhaust gas is sampled.

3.2 Operation of the vehicle during testing

- 3.2.1 The vehicle must be stationary, with the handbrake applied and the transmission:
- (a) in neutral; or
 - (b) if the vehicle is an automatic, in park.

Racing (purge) (see diagram)

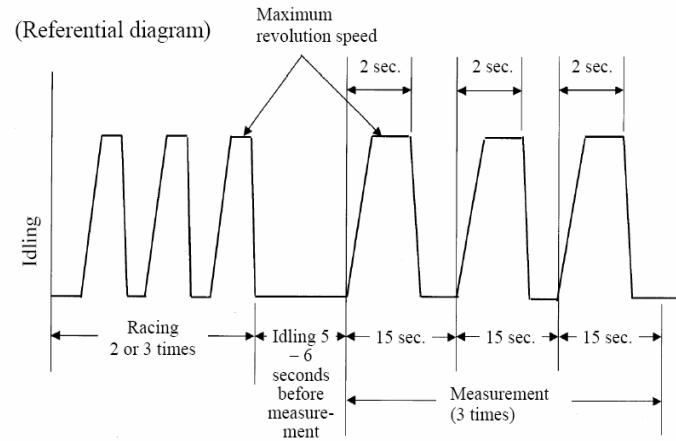
- 3.2.2 When the engine is idling the accelerator must be depressed rapidly to the full governed revolutions per minute (RPM).
- 3.2.3 Immediately after the engine reaches its maximum (governed) RPM, the accelerator must be released to return the engine to idling. This operation must be repeated twice.

Idling (see diagram)

- 3.2.4 The engine must run in idling for five or six seconds.

3.3 Measuring (see diagram)

- 3.3.1 The accelerator must be fully depressed, and kept in this state for two seconds.
- 3.3.2 The accelerator must then be released for 13 seconds, during which time the diesel smoke must be sampled. This operation must be repeated twice.



3.4 Sampling of diesel smoke

3.4.1 A sample of 0.33 litres must be absorbed through a filter paper by means of a pump-type exhaust smoke sampling device.

3.4.2 The degree to which the filter paper is polluted, due to the smoke contained in the vehicle's exhaust emissions, must be measured by the exhaust smoke analyser measurement device.

3.5 Handling of measured values

3.5.1 The degree of pollution must be an average of three measured values.

4.0 Equipment (Exhaust smoke analyser)

4.1 The equipment prescribed in Japanese Industrial Standard *JIS D 8004, Reflection Type Smokemeters for Automobile Diesel Engines* must be used for analysing exhaust emissions.

4.2 The equipment used in testing must be used in accordance with the manufacturer's directions.

Schedule 3 US 2007 – Additional requirements

Additional requirements for vehicles manufactured to US 2007

Vehicles certified as compliant with US 2007 must also meet the following additional requirements:

- 1.0 Except as provided in subclauses 1.1 and 1.2, engines shall meet the emission limits specified in 40 CFR Part 86 Sections 86.007-11(a)(1) (i)(A), (ii)(A), (iii)(A) and (iv)(A) and 86.007-11(a)(3)SET(i).

- 1.1 Engines need not comply with the nitrogen oxides and particulate limits specified in §86.007-11 (a)(1)(i)(A) and (iv)(A) if the emissions of nitrogen oxides and particulates from the engine do not exceed the limits specified for the transient test under either Option 1 or Option 2 in Table 4.1 when tested in accordance with the transient test cycle specified in Subpart N 86.1333-2007.

- 1.2 Engines need not comply with the weighted average emission limits specified in §86.007-11 (a)(3)SET(i), provided the emissions of nitrogen oxides and particulates from the engine do not exceed the limits specified for the steady state test under either Option 1 or Option 2 in Table 4.1 when tested to the supplemental emissions test specified in Subpart N §86.1360-2007.

Table 4.1 Emission limit options for US Transient and Steady State tests

		Emission limits (g/kWh)	
		Oxides of nitrogen	Particulates
Transient test	Option 1	2.0	0.03
	Option 2	3.0	0.01
Steady State test	Option 1	2.0	0.02
	Option 2	3.0	0.01

- 2.0 Engines must be tested in accordance with the applicable test procedures specified in *Subpart N 40 CFR 86.1300 series – Emission Regulations for new Otto-cycle and diesel heavy duty engines; gaseous and particulate exhaust test procedures*.
- 3.0 Engines that operate on diesel or liquefied petroleum gas must satisfy the relevant useful life provisions not to exceed test requirements and rules regarding use of auxiliary emission control devices applicable to 2007, 2008 and 2009 model year diesel heavy-duty engines and vehicles under CFR Part 86.
- 4.0 Engines that operate on diesel or liquefied petroleum gas, and require the use of a consumable reagent in order to achieve the emission limits specified in US 2007, must be equipped with an on-board diagnostics (OBD) system that complies with the Stage 2 requirements described in section 6.5 of Annex I and section 3.3 of Annex IV of European Commission Directive 2005/78/EC¹ as amended by Directive 2006/51/EC².

¹ Commission Directive 2005/78/EC of 14 November 2005 implementing Directive 2005/55/EC of the European Parliament and of the Council on the approximation of the laws of the Member States relating to the measures to be taken against the emission of gaseous and particulate pollutants from compression-ignition engines for use in vehicles, and the emission of gaseous pollutants from positive

- 5.0 Engines must not be equipped with a defeat device or utilise a defeat strategy.

ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles and amending Annexes I, II, III, IV and VI thereto.

² Commission Directive 2006/51/EC of 6 June 2006 amending for the purposes of adapting to technical progress Annex I to Directive 2005/55/EC of the European Parliament and of the Council and Annexes IV and V to Directive 2005/78/EC as regards requirements for the emission control monitoring system for use in vehicles and exemptions for gas engines.