



Ministry of **Transport**
TE MANATŪ WAKA

WELLINGTON, NEW ZEALAND

PURSUANT to sections 152 and 155(a) and (b) of the Land Transport Act 1998

I, **Steven Joyce**, Minister of Transport,

HEREBY make the following ordinary rule:

Land Transport Rule: Vehicle Exhaust Emissions Amendment

SIGNED AT Wellington

This 18th day of APRIL 2009



Steven Joyce
Minister of Transport



Land Transport Rule Vehicle Exhaust Emissions Amendment 2009

Rule 33001/3

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Land Transport Rule

Vehicle Exhaust Emissions Amendment 2009

Rule 33001/3

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Objective of the Rule

Land Transport Rule: Vehicle Exhaust Emissions Amendment 2009 amends *Land Transport Rule: Vehicle Exhaust Emissions 2007* (the Rule), which aims to achieve improvements in air quality by reducing the levels of harmful emissions from motor vehicles.

The objectives of this amendment to *Land Transport Rule: Vehicle Exhaust Emissions 2007* are:

- to align the Rule with provisions in *Land Transport Rule: Frontal Impact 2001* relating to ‘special interest vehicles’;
- to update and correct various definitions of standards; and
- to allow testing agents to use an opacimeter test as an alternative to the filter paper test, for testing vehicle emissions.

Extent of consultation

For the purposes of consultation, amendments proposed to *Land Transport Rule: Vehicle Exhaust Emissions 2007* and eleven other Land Transport Rules were combined into a single draft Rule, *Land Transport Rule: Omnibus Amendment 2008* (the Omnibus Amendment Rule).

On 19 August 2008, the NZ Transport Agency (NZTA) sent details of the amendment proposals by letter or email to approximately 1500 groups and individuals who had registered an interest in the Rules to be amended. The draft Omnibus Amendment Rule was made available through the NZTA Contact Centre and, together with Questions and Answers, was also available on the NZTA website. The availability of the draft for comment was publicised in the metropolitan daily newspapers in Auckland, Hamilton, Wellington, Christchurch and Dunedin and in the *New Zealand Gazette*. The NZTA received 24 submissions on the draft Omnibus Amendment Rule, of which 10 commented on the proposed requirements in this Rule.

Following consultation, the provisions in the draft Omnibus Amendment Rule were split into 12 separate amendment Rules, including this Rule. The submissions that were received were taken into account in drafting this amendment Rule before it was submitted to the Minister of Transport for signing.

Section 1 Application

- 1.1 Title**
- 1.1(1) This Rule is *Land Transport Rule: Vehicle Exhaust Emissions Amendment 2009*.
- 1.1(2) This Rule amends *Land Transport Rule: Vehicle Exhaust Emissions 2007*.
- 1.2 Date when Rule comes into force**
- This Rule comes into force on 7 May 2009.

Section 2 Amendments to Rule requirements

- 2.1 Scope of the Rule**
- Paragraph 2.2(3)(b)* is amended by deleting the words “or Class MC”.
- 2.2 Definitions**
- 2.2(1) *Part 2* is amended by inserting the following definition of “ADR 79/02”:
- “ADR 79/02 is an abbreviation for *Australian Design Rule 79/02, Emission Control for Light Vehicles*.”
- 2.2(2) *Part 2* is amended by inserting the following definition of “Euro 2”:
- “Euro 2
- (a) for a Class MA, MB, MC, MD1 or MD2 vehicle, means:
- (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.1/Amend.2)*

incorporating the 03 series of amendments; or

- (ii) *Council Directive 70/220/EEC as amended by Council Directive 94/12/EC; or*
- (b) for a Class NA vehicle means:
- (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.1/Amend.4) incorporating the 04 series of amendments; or*
 - (ii) *Council Directive 70/220/EEC as amended by Council Directive 96/69/EC; or*
- (c) for a heavy vehicle, means:
- (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), incorporating the 02 series of amendments, as per the limit values in row B of the Table in section 5.2.1; 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 96/11/EC, as per the limit values in row B of the Table in section 6.2.1; and*

(d) for a diesel vehicle, also 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; or

(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 89/491/EC.”

2.2(3) Part 2 is amended by substituting the following definition for the definition of “Euro 3”:

“Euro 3

- (a) means:
- (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) incorporating the 05 series of amendments, as per the limit values in row A of the table to clause 5.3.1.4; or*
 - (ii) *Council Directive 70/220/EEC as amended by Council Directive 98/69/EC as per the limit values in row A of the table to clause 5.3.1.4 of Annex I of 98/69/EC; or*
 - (iii) *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), incorporating the 03 series of amendments, as per the limit values in row A or C of Table 1 and/or 2 (as appropriate), in section 5.2.1; 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 A or C of Table 1 and/or 2 (as appropriate), in section 6.2.1; or*
- (v) *Council Directive 2005/55/EC of 28 September 2005 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 ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles as per the limit values in row A or C of Table 1 and/or 2 (as appropriate), in section 6.2.1; and*

- (b) for a diesel vehicle, also 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; or
 - (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.”*

2.2(4) *Part 2* is amended by substituting the following definition for the definition of “Euro 4”:

“Euro 4

- (a) means:
- (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) incorporating the 05 series of amendments, as per the limit values in row B of the table to clause 5.3.1.4; or*
 - (ii) *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 98/69/EC; or*
 - (iii) *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) incorporating the 03 series of amendments, as per the limit values in row B1 or C of Table 1 and/or 2 (as appropriate), in section 5.2.1; 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 or C of Table 1 and/or 2 (as appropriate), in section 6.2.1; or*
 - (v) *Council Directive 2005/55/EC of 28 September 2005 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 ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles as per the limit values in row B1 or C of Table 1 and/or 2 (as appropriate), in section 6.2.1; and*
- (b) for a diesel vehicle, also includes:
- (i) *UNECE 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

(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.”*

2.3

Schedule 2

2.3(1)

Part A of Schedule 2 is amended by substituting the following for clause 2.0:

“2.0 Diesel vehicles

“2.1 A diesel vehicle must be tested in accordance with:

“(a) the procedures and equipment prescribed in *Part C* of this *Schedule*; or

“(b) the alternative procedure and equipment prescribed in *Part D* of this *Schedule*.

“2.2 If a vehicle is tested in accordance with *Part C*, it must not exceed 25% opacity.

- “2.3 If a vehicle is tested in accordance with *Part D*:
- “(a) the first or second measurement must result in an optical absorption coefficient of less than or equal to 0.64m^{-1} ; or
 - “(b) the average of three measurements must result in an optical absorption coefficient of less than or equal to 0.8m^{-1} .”

2.3(2) *Part C* of *Schedule 2* is amended by substituting the words “(see diagram 1)” for the words “(see diagram)” in:

- (a) the heading to *paragraphs 3.2.2* and *3.2.3*;
- (b) the heading to *paragraph 3.2.4*;
- (c) the heading to *paragraph 3.3*.

2.3(3) The diagram in *Part C* of *Schedule 2* is amended by inserting the following title:

“Diagram 1 Diesel emissions test cycle using a filter paper test”.

2.3(4) *Schedule 2* is amended by inserting the following Part:

“Part D – Alternative procedure for measuring exhaust emissions of diesel vehicles (using an opacimeter)”

1.0 Scope

This part prescribes an alternative procedure for measuring vehicle exhaust smoke emitted from diesel engines.

2.0 Testing

2.1 Pre-testing

2.1.1 The vehicle must be brought to the normal operating temperature.

- 2.1.2 The equipment must be readied before use, in accordance with the equipment manufacturer's instructions.

2.2 During testing

For the duration of the test:

- (a) the vehicle must be stationary; and
- (b) the handbrake must be applied; and
- (c) the vehicle's transmission must be:
 - (i) in neutral; or
 - (ii) if the vehicle is an automatic, in park.

2.3 Operation of the vehicle

- 2.3.1 During the test procedure, the vehicle operation cycle must follow these phases (see diagram 2):

Purge

- 2.3.2 Residual smoke must be purged from the vehicle's exhaust system before the vehicle's diesel smoke is sampled.

Idling before testing

- 2.3.3 The engine must be run at idle for five or six seconds before the first test cycle.

Inserting probe

- 2.3.4 The probe (the exhaust gas sampling part of the measuring equipment) must be inserted sufficiently into the exhaust pipe to prevent outside air from entering the probe and to ensure that only exhaust gas is sampled.

Test cycle

- 2.3.5 The accelerator pedal must be fully and rapidly depressed for a period of two seconds, then released for three seconds (see diagram 2).
- 2.3.6 Despite 2.3.5, if the opacimeter has a function allowing the measurement of engine RPM, the accelerator pedal should only be depressed until the highest engine RPM is indicated by the opacimeter (rather than for the fixed period of two seconds).
- 2.3.7 The exhaust emission must be sampled throughout this (five-second) period.

Idling between test cycles

- 2.3.8 The engine must be run at idle for 4-10 seconds between each test cycle that is performed.

2.4 Measured values

- 2.4.1 One, two or three test cycles must be performed as necessary.
- 2.4.2 If the result of measurement 1 is:
- (a) less than or equal to an optical absorption coefficient (OAC) of 0.64m^{-1} , the vehicle passes the test;
 - (b) more than an OAC of 0.64m^{-1} , the test cycle must be repeated.
- 2.4.3 If the result of measurement 2 is:
- (a) less than or equal to an OAC of 0.64m^{-1} , the vehicle passes the test;
 - (b) more than 0.64m^{-1} , the test cycle must be repeated.

- 2.4.4 If the average of the three measurements is:
- (a) less than or equal to an OAC of 0.8m^{-1} , the vehicle passes the test;
 - (b) more than an OAC of 0.8m^{-1} , the vehicle fails the test.
- 2.4.5 To avoid doubt, if the vehicle does not meet the prescribed standard after three test cycles, the vehicle fails the test.

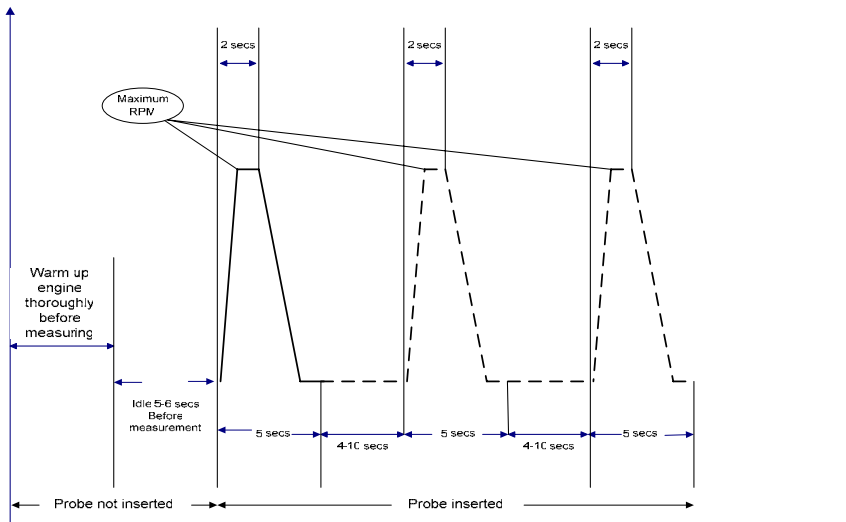


Diagram 2 Diesel emissions test cycle using an opacimeter

3.0 Equipment (Exhaust smoke analyser)

- 3.1 The instruments used for analysing exhaust emissions must comply with ISO 11614:1999 *Reciprocating internal combustion compression-ignition engines - Apparatus for measurement of the opacity and for determination of the light absorption coefficient of exhaust gas.*
- 3.2 The equipment must be thoroughly checked, maintained, calibrated and used in accordance with the manufacturer's directions.