Correct as at 19th June 2026. It may be superseded at any time.

Extract taken from: Entry certification > Inspection and certification > Exhaust

11 Exhaust

11-1 Exhaust system and silencer

Reasons for rejection

Mandatory equipment

1. A vehicle does not comply with the requirements relating to mandatory equipment set out in:

- **VIRM: In-service certification, section 11-1, general vehicles**
- **VIRM: In-service certification, section 11-1, heavy vehicles**
- **VIRM: In-service certification, section 11-1, light PSVs**
- **VIRM: In-service certification, section 11-1, heavy PSVs**

Compliance with approved standards

2. A class LC, LD, LE, MA, MB, MC, MD1, MD2, MD3, MD4, ME, NA, NB or NC vehicle, other than one listed in Table 11-1-1, manufactured on or after 1 January 1985 and certified for entry on or after 1 June 2008:

a) did not comply, or cannot be demonstrated to have complied, with at least one of the approved standards listed in Table 11-1-2 at the time the vehicle was manufactured, or

b) exceeded the noise limits in Table 11-1-2 when it was tested in accordance with the standards in Table 11-1-2 at the time the vehicle was manufactured, or

c) does not have evidence that the vehicle has passed an LVVTA objective noise test, for instance:

i. the owner cannot produce a valid ‘Objective exhaust noise emission test certificate’ (Figure 11-1-1), or

ii. the exhaust system tailpipe is not fitted with a valid LVVTA noise test label (Figure 11-1-2) or an appropriate LVV data plate (Figure 11-1-3)

Condition and performance

3. A vehicle does not comply with the requirements relating to condition and performance set out in:

- **VIRM: In-service certification, section 11-1, general vehicles**
- **VIRM: In-service certification, section 11-1, heavy vehicles**
- **VIRM: In-service certification, section 11-1, light PSVs**
- **VIRM: In-service certification, section 11-1, heavy PSVs**

Table 11-1-1. Vehicles deemed to comply with approved noise standards and drive-by noise limits

Evidence of compliance with an approved noise standard and noise limit is not required for the following vehicles:
• any vehicle that may be entry certified because it already meets all other approved vehicle standards applicable to the vehicle • any vehicle manufactured for a market that requires compliance with FMVSS, ECE, EEC, ADR or Japanese standards

Table 11-1-2. List of approved noise standards and drive-by noise limits

A vehicle manufactured on or after 1985 for which evidence of compliance with an approved standard and noise level is required must comply with the following:		
Approved noise standard	**Vehicle class**	**Maximum noise level (dBA)**
ISO 362 BS 3425 SAE J1470 ADR 28/01 TRIAS 20	LC, LD, LE (engine capacity of 125 cc or less) LC, LD, LE (engine capacity more than 125 cc) MA, MB, MC, MD1, MD2, NA MD3, MD4, ME, NB, NC (power output 150 kW or less) MD3, MD4, ME, NB, NC (power output more than 150 kW)	82 86 81 86 88

Figure 11-1-1. Objective exhaust noise emission test certificate

LOW VOLUME VEHICLE TECHNICAL ASSOCIATION Inc

Objective Exhaust Noise Emission Test Certificate

Vehicle and owner details: *(white copy for vehicle owner)*

Owner: (Name)		(Contact Ph #) ( )
Vehicle: (Make)	(Model)	(Sub-model)
(Year)	(Colour)	(VIN)
Engine: (Make)	(Code if known)	(Modified?)
(Cylinder configuration & #)	(Camshaft & valve arrangement)	

Exhaust system description & details:

(a) Exhaust manifold(s): (make/type)

(b) Front pipe(s): (OD/material/length)

(c) Muffler(s)/resonator(s) #1: (make/material/length/OD)

(d) Intermediate pipe(s): (OD/material/length)

(e) Muffler(s)/resonator(s) #2: (make/material/length/OD)

(f) Tail-pipe(s): (OD/material/length)

(g) Other exhaust system details: (catalytic convertor(s)/balance pipe/additional mufflers/other)

Low Volume Vehicle Certifier's declaration:

LVV Certifier: (Name)	(ID)	(Contact Ph #) ( )
☐ PASS:	Approval label: (Number)	(Location of label)

I, the above-named Low Volume Vehicle Certifier appointed by the Low Volume Vehicle Technical Association (Inc) for the purpose of Objective Exhaust Noise Emission Testing, declare that, I carried out an objective exhaust noise emission test on the above-described vehicle in accordance with the procedures specified by Low Volume Vehicle Standard 90-20, and confirm that at the time of testing the vehicle complied with all requirements of, and emitted exhaust noise emissions not exceeding that specified by, Low Volume Vehicle Standard 90-20. (Signed) ..... (Date) .....

LVV certifier's authentication (only if pass is recorded):

[Authenticity sticker with hologram security feature]

☐ **FAIL**: Recommendations to vehicle owner on bringing the exhaust system into compliance (expert advice is offered without any guarantees of a pass as a result of the advice given or implied):

Vehicle exhaust system schematic:

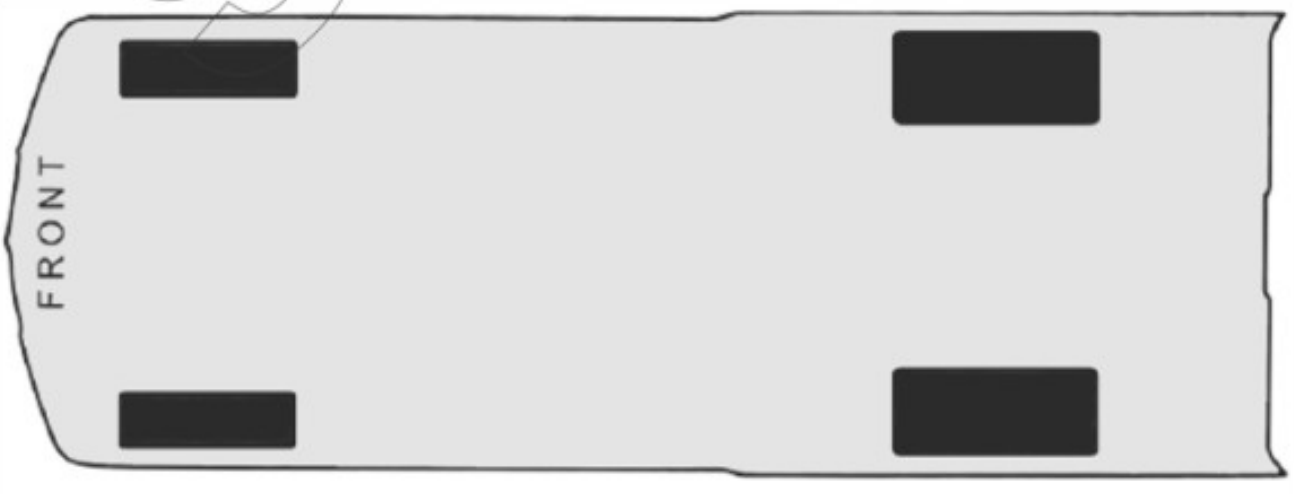


Figure 11-1-2. Objective noise test label

Figure 11-1-3. Green objective noise test electronic data plate and orange electronic data plate

From September 2025 a vehicle that passes an objective noise test (ONT) will be fitted with an electronic data plate (EDP), which will include either a green or orange label.

The green label indicates the EDP only contains ONT information, however the vehicle may also have an older style LVV engraved certification plate.

The orange label will be used when the vehicle has been LVV certified for modifications and may only cover modifications, but where an ONT is required and passed the EDP will cover both the ONT data and the LVV certified modifications.

Figure 11-1-4. Sample of objective noise test data

OBJECTIVE NOISE TEST (ONT) CERTIFICATION DETAILS	
ONT Date	04 Jun 2025
Manifold	
Front Pipe(s)	60mm OD Steel 550mm long
Muffler/Resonator	N/A
Intermediate Pipe(s)	2 x 50mm OD Steel 750mm long into Y pipe
2nd Muffler/Resonator	2 x 400mm x 100mm
Tail Pipe(s)	2 x 600mm x 45 OD into 2 x 500mm x 63 OD stainless, aftermarket rear sections
Other Exhaust System Details	Silencer plugs fitted to exhaust tips
Certifier	
Certifier ID	
Note	

Summary of legislation

Applicable legislation

- Land Transport Rule: Vehicle Equipment 2004

Mandatory equipment

1. A vehicle must comply with the requirements relating to mandatory equipment set out in:

- VIRM: In-service certification, section 11-1, general vehicles
- VIRM: In-service certification, section 11-1, heavy vehicles
- VIRM: In-service certification, section 11-1, light PSVs
- VIRM: In-service certification, section 11-1, heavy PSVs

Compliance with approved standards

2. A class LC, LD, LE, MA, MB, MC, MD1, MD2, MD3, MD4, ME, NA, NB or NC vehicle manufactured on or after 1 January 1985 and certified for entry on or after 1 June 2008 must comply with:

a) an approved standard and not exceed the relevant noise limit, as specified in Table 11-1-2, or

b) the LVVTA objective noise test.

Condition and performance

3. The exhaust system and silencer must comply with the requirements relating to condition and performance set out in the relevant section of the VIRM: In-service certification, section 11-1.

Modification

4. A vehicle must comply with the requirements relating to modifications set out in:

- VIRM: In-service certification, section 11-1, general vehicles
- VIRM: In-service certification, section 11-1, heavy vehicles
- VIRM: In-service certification, section 11-1, light PSVs
- VIRM: In-service certification, section 11-1, heavy PSVs.

11-2 Exhaust emissions

Reasons for rejection

Compliance with approved standards

1. A vehicle that is less than 20 years old and required to comply with an approved (or a more recent version, or a higher) exhaust emission standard did not comply or cannot be demonstrated to have complied with at least one of the standards listed in the following tables or in **Technical bulletin 28** at the time the vehicle was manufactured or modified.

The following tables only list approved vehicle exhaust emissions standards. More recent versions of the standards and higher standards (as well as approved standards) are listed in **Technical bulletin 28**

- Table 11-2-1 Exhaust emissions requirements for class MA, MB, MC, MD1, MD2, NA vehicles (except used-import disability vehicles) – see Note 3
- Table 11-2-2 Exhaust emissions requirements for class MA, MB, MC, MD1, MD2, NA used-import disability vehicles – see Note 3
- Table 11-2-3 Exhaust emissions requirements for class MD3, MD4, ME, NB, NC vehicles
- Table 11-2-4 Exhaust emissions requirements for class LA, LB, LC, LD, LE vehicles

Performance and modification

2. A vehicle that is required to pass the prescribed metered test (see 4. under **Compliance with approved standards**) does not pass the prescribed metered emissions test (see **section 11-3, Metered emissions test specifications**).

3. The exhaust system does not comply with requirements relating to performance set out in the **VIRM: In-service certification, section 11-2**

4. A vehicle that is required to comply with an exhaust emission standard doesn't illuminate a malfunction lamp self test related to emissions and/or engine systems when the ignition is first cycled (on).

5. A vehicle that is required to comply with an exhaust emission standard displays a message or warning which may indicate a fault or noncompliance of the engine or the vehicle's emissions system (other than a warning system self test cycle).

Note 1

Technical bulletin 28 describes methods of identifying compliance with emissions standards, and explains how to record the information in LANDATA.

Note 2

1. **New model vehicle** means a new motor vehicle that has a date of manufacture occurring in the same calendar year as that in which the particular model of the vehicle was first manufactured.

2. **Existing model vehicle** means a new vehicle that is not a new model vehicle.

3. **New** means a vehicle that has not been previously registered or operated and is not a low volume vehicle. Operation expressly for the purpose of the specific vehicle's, manufacture, delivery to New Zealand and entry certification is

exempt. Using the vehicle in activities like demonstration, training, testing, courtesy or transport services is operation.

4. **Used** means a vehicle that has been previously registered (anywhere) or operated and is not new. Refer to **9 Definitions and abbreviations**

Note 3

Disability vehicle means a light vehicle that is used for the transportation of a person with a disability and is modified to do either or both of the following:

- enable a person in a wheelchair to safely enter and exit the vehicle and enable the person and the wheelchair to be safely restrained while the vehicle is moving:
- provide a person in a wheelchair or of limited mobility with assistance to enter and exit the vehicle through the use of a swivel or swing-out seat.

A different definition of disability vehicle is used to exempt vehicles from the Clean Vehicle Standard.

Table 11-2-1 Exhaust emissions requirements for Class MA, MB, MC, MD1, MD2, NA vehicles (except used-import disability vehicles)

- see Note 3

Date of border inspection (used vehicles) or manufacture (new vehicles)	Fuel type	Used or new	Exhaust emissions requirements
Before 30 April 2024	Petrol, CNG/LPG	Used	Euro 4; or US 2004; or Japan 05; or ADR 79/02
		New	Euro 5; or US 2007; or Japan 05; or ADR 79/04
	Diesel	Used	Euro 4; or US 2004; or Japan 05; or ADR 30/01 and ADR 79/01
		New	Euro 5; or US 2007; or Japan 05; or ADR 79/04
From 30 April 2024 to 30 June 2027	Petrol, CNG/LPG	Used	Euro 5; or US Tier 2; or Japan 2005 Low Harm; or Japan 2018; or ADR 79/04

Date of border inspection (used vehicles) or manufacture (new vehicles)	Fuel type	Used or new	Exhaust emissions requirements
New	Euro 5; or US Tier 2; or Japan 2005 Low Harm; or Japan 2018; or ADR 79/04		
Diesel	Used	Euro 5; or US Tier 2; or Japan 09; or ADR 79/04	
	New	Euro 5; or US Tier 2; or Japan 09; or ADR 79/04	
From 1 July 2027 to 30 June 2028	Petrol, CNG/LPG	Used	Euro 5; or US Tier 2; or Japan 2005 Low Harm; or Japan 2018; or ADR 79/04

Date of border inspection (used vehicles) or manufacture (new vehicles)	Fuel type	Used or new	Exhaust emissions requirements
New	For existing model vehicles (Note 2) Euro 5; or US Tier 2; or Japan 2005 Low Harm; or Japan 2018; or ADR 79/04 For new model vehicles (Note 2) Euro 6d; or US Tier 3; or Japan 2018 Low Harm; or UNR83/08		
Diesel	Used	Euro 5; or US Tier 2; or Japan 09; or ADR 79/04	

Date of border inspection (used vehicles) or manufacture (new vehicles)	Fuel type	Used or new	Exhaust emissions requirements
New	For existing model vehicles (Note 2) Euro 5; or US Tier 2; or Japan 09; or ADR 79/04 For new model vehicles (Note 2) Euro 6d; or US Tier 3; or Japan 2018; or UNR83/08		
From 1 July 2028	Petrol, CNG/LPG	Used	Euro 6d; or US Tier 3; or Japan 2018 Low Harm; or UNR83/08
		New	Euro 6d; or US Tier 3; or Japan 2018 Low Harm; or UNR83/08

Date of border inspection (used vehicles) or manufacture (new vehicles)	Fuel type	Used or new	Exhaust emissions requirements
Diesel	Used	Euro 6d; or US Tier 3; or Japan 2018; or UNR83/08	
	New	Euro 6d; or US Tier 3; or Japan 2018; or UNR83/08	

Table 11-2-2 Exhaust emissions requirements for used-import disability vehicles – Class MA, MB, MC, MD1, MD2, NA

- see Note 3

Date of border inspection (used vehicles) or manufacture (new vehicles)	Fuel type	Exhaust emissions requirements
Before 30 April 2024	Petrol, CNG/LPG	Euro 4; or US 2004; or Japan 05; or ADR 79/02
	Diesel	Euro 4; or US 2004; or Japan 05; or ADR 30/01 and ADR 79/01
30 April 2024 to 31 December 2030	Petrol, CNG/LPG	Euro 5; or US Tier 2; or Japan 2005; or ADR 79/04
	Diesel	Euro 5; or US Tier 2; or Japan 2005; or ADR 79/04

Date of border inspection (used vehicles) or manufacture (new vehicles)	Fuel type	Exhaust emissions requirements
From 1 January 2031	Petrol, CNG/LPG	Euro 6d; or US Tier 3; or Japan 2018; or UNR83/08
	Diesel	Euro 6d; or US Tier 3; or Japan 2018; or UNR83/08

Table 11-2-3 Exhaust emissions requirements for Class MD3, MD4, ME, NB, NC vehicles

Date of border inspection (used vehicles) or manufacture (new vehicles)	Exhaust emissions standards	
	Used	**New**
Before 30 April 2024	Euro IV; or US 2004; or Japan 05; or ADR 30/01 and ADR 80/02	Euro V; or US 2007; or Japan 05; or Japan 09; or ADR 80/03
30 April 2024 to 31 October 2024	Euro V; or US Tier 2; or Japan 09; or ADR 80/03	Euro V; or US Tier 2; or Japan 09; or ADR 80/03
1 November 2024 to 31 October 2025	Euro V; or US Tier 2; or Japan 09; or ADR 80/03	For existing model vehicles (Note 2) Euro V; or US Tier 2; or Japan 09; or ADR80/03 For new model vehicles (Note 2) Euro VI step C; or US Tier 3; or US 2013; or Japan 2016; or ADR 80/04; or UNR49/06(Supp.4); or UNR83/07

Date of border inspection (used vehicles) or manufacture (new vehicles)	Exhaust emissions standards	
	Used	New
From 1 November 2025	Euro VI step C; or US Tier 3; or US 2013; or Japan 2016; or ADR 80/04; or UNR49/06(Supp.4); or UNR83/07	Euro VI step C; or US Tier 3; or US 2013; or Japan 2016; or ADR 80/04; or UNR49/06(Supp.4); or UNR83/07

Table 11-2-4 Exhaust emissions requirements for Class LA, LB, LC, LD, LE vehicles

Date of border inspection (used vehicles) or manufacture (new vehicles)	Exhaust emissions standards	
	Used	New
From 30 April 2025 to 31 December 2026	Euro 4m, or US 2010m, or Japan 2012m	Euro 4m; or US 2010m; or Japan 2012m
From 1 January 2027	Euro 5m; or US 2010m; or Japan 2016m	Euro 5m; or US 2010m; or Japan 2016m

Summary of legislation

Applicable legislation

- Land Transport Rule: Vehicle Exhaust Emissions 2007

Compliance with approved standards

1. The following are required to meet an approved vehicle exhaust emissions standard, or a more recent version of the standard or a higher standard:

- Vehicles that are:
  - petrol, CNG, LPG or diesel vehicles, and
  - class LA, LB, LC, LD, LE, MA, MB, MC, MD1, MD2, MD3, MD4, ME, NA, NB or NC, and
  - less than 20 years old. Less than 20 years old means first registered outside of New Zealand **or** manufactured 20 years or less before its date of certification for entry into service.

2. The following are not required to meet an approved vehicle exhaust emissions standard, or a more recent version of the standard or a higher standard:

- **Tractors** – meaning a motor vehicle (other than a traction engine) constructed principally for towing an agricultural trailer or powering agricultural implements.
- **Class MA or Class MC motorsport vehicles** – as defined in the Land Transport Rule: Frontal Impact 2001.
- **Immigrants' vehicles** – meaning a motor vehicle that has been identified in writing, under Land Transport Rule: Frontal Impact 2001, or in accordance with Schedule 4 by the Director or by an organisation appointed by the Director under 5.3(2).
- **Class MA special interest vehicles**
- **Mobile cranes** – this doesn't include a truck mounted with crane apparatus.
- **Scratchbuilt vehicles** – as specified in paragraph (a) of the definition of ‘low volume vehicle’ that comply with the emissions requirements of the Low Volume Vehicle Code.
- **Military vehicles** – as referred to in regulation 5(e) of the Land Transport (Clean Vehicle Standard) Regulations 2022.
- **Enduro, farm, special interest or trial motorcycles** – as defined in Land Transport Rule: Light-vehicle Brakes 2002.

3. The Land Transport Rule: Vehicle Exhaust Emissions doesn't apply to ancillary engines that don't power the vehicle's wheels (for example, refrigeration units, motorhome electricity generators).

4. Approved vehicle emissions standard and higher standard are defined terms:

- **Approved vehicle emissions standard** means a vehicle emissions standard specified in Table 11.-2-1, or Table 11-2-2, or Table 11-2-3 or Table 11-2-4 (Part 3 Schedule 1 of the Land Transport Rule Vehicle Exhaust Emissions 2007).
- **Higher standard** means an approved vehicle emissions standard that would have applied to the vehicle if the vehicle was inspected at the border or manufactured (as the case may be) during a later period.

5. **Land Transport Rule: Vehicle Exhaust Emissions 2007** defines Euro 4 as follows:

> *Euro 4*
>
> *(a) means:*
>
> *1. 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*
>
> *2. 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…*

This definition does not necessarily require the vehicle to be formally certified as Euro 4. The two elements required to meet this definition are:

1. The vehicle must be certified to UN/ECE Regulation 83.05 or EC Directive 70/220/EEC as amended by 98/69/EC (or a later amendment), and

2. The declared emissions values on that certification must be within the specified limits set out in Row B of the quoted table (the Euro 4 emissions limits).

In practice, it is possible for a vehicle to be formally certified in Europe as a Euro 3 vehicle, but for it to comply with the Row B emissions limits required for Euro 4. Such vehicles are certified to UN/ECE Regulation 83.05 or 98/69/EC, or later amendment, (which contain both Euro 3 and Euro 4 requirements) In cases like this, despite being formally certified as Euro 3, the vehicle meets the Emissions Rule definition as a Euro 4 vehicle and can be accepted as such.

Performance

6. The following must pass a metered test (see **section 11-3, Metered test specifications**).

- Vehicles that are:
  - petrol, CNG, LPG or diesel, and
  - class MA, MB, MC, MD1, MD2, MD3, MD4, ME, NA, NB or NC, and
  - less than 20 years old (first registered outside of New Zealand or manufactured 20 years or less before its date of certification for entry into service), and
  - either
    - used vehicles, or
    - new vehicles that have been modified such that the modification might prevent the vehicle being able to pass the vehicle's test.

7. The following vehicles are exempt from the requirement to pass a metered emissions test:

- tractors, or
- class MA or class MC motor sport vehicles.

8. The exhaust system must comply with requirements relating to performance set out in the **VIRM: In-service certification, section 11-2**.

Page amended **10 April 2025** (see **amendment details**)

11-3 Metered emissions test specifications

Applicable legislation

- **Land Transport Rule: Vehicle Exhaust Emissions 2007**, section 3.

Application

Group M or N vehicles less than 20 years old (Note 4) and certified for entry on or after 1 May 2008 must pass a prescribed metered exhaust emissions test, according to the following procedures and requirements.

Note 1

This requirement does not apply to tractors, class MA or MC motorsport vehicles, or a vehicle certified to the low-volume vehicle standard exhaust gas emissions 90–10(00).

Note 2

This requirement does not apply to vehicles being re-registered or new vehicles.

Note 3

The entry inspector must personally carry out the tail-pipe test. Other staff may prepare the vehicle for testing but the test must be carried out by the entry inspector.

Note 4

Less than 20 years old means “a motor vehicle first registered outside of New Zealand, or manufactured, 20 years or less before its date of certification for entry into service”.

Procedure for measuring exhaust emissions of petrol, LPG or CNG vehicles

1. The test equipment must be warmed up and calibrated before use, in accordance with the equipment manufacturer’s instructions.

2. Ensure the vehicle has reached normal operating temperature, as recommended by the vehicle manufacturer.

3. Insert the sampling probe (ie the exhaust gas sampling part of the measuring equipment) far enough into the exhaust pipe to prevent the admission of open air. This is to ensure that only exhaust gas is sampled.

4. For the duration of the test:

    a) the vehicle’s engine must be idling, and

    b) the acceleratior pedal must be released, and

    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.

Pass requirements

A petrol, LPG or CNG vehicle must not exceed the applicable maximum carbon monoxide and hydrocarbon emissions limits set out in below.

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

Re-testing

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

Procedure for measuring exhaust emissions of diesel vehicles (using an opacimeter)

Pre-testing

1. The vehicle must be brought to the normal operating temperature as recommended by the manufacturer.

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

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.

Operation of the vehicle while testing

During the test procedure, the vehicle operation cycle must follow these phases (refer to Figure 11-3-1):

1. Purge

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

2. Inserting probe

a) 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 ensure that only exhaust gas is sampled.

3. Idling before testing

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

4. Test cycle

a) The accelerator pedal must be fully and rapidly depressed, held in this state for two seconds, then released for three seconds (refer to Figure 11-3-2).

b) Despite the above, if the opacimeter has a function allowing the measurement of the engine revloutions per minute (RPM), the accelerator pedal should only be depressed until the maximum available RPM is indicated by the opacimeter (rather than for the fixed period of two seconds).

c) The exhaust emissions must be sampled throughout this (five-second) period.

5. Idling between test cycles

a) The engine must be run at idle for 4–10 seconds between each test cycle that is performed.

Measured values

1. One, two or three test cycles must be performed as necessary.

    a) If the result of measurement 1 is:

        i. less than or equal to an optical absorption coefficient (OAC) of 0.64m-1, the vehicle passes the test,

        ii. more than an OAC of 0.64m-1, the test cycle must be repeated.

    b) If the result of measurement 2 is:

        i. less than or equal to an OAC of 0.64m-1, the vehicle passes the test,

        ii. more than 0.64m-1, the test cycle must be repeated.

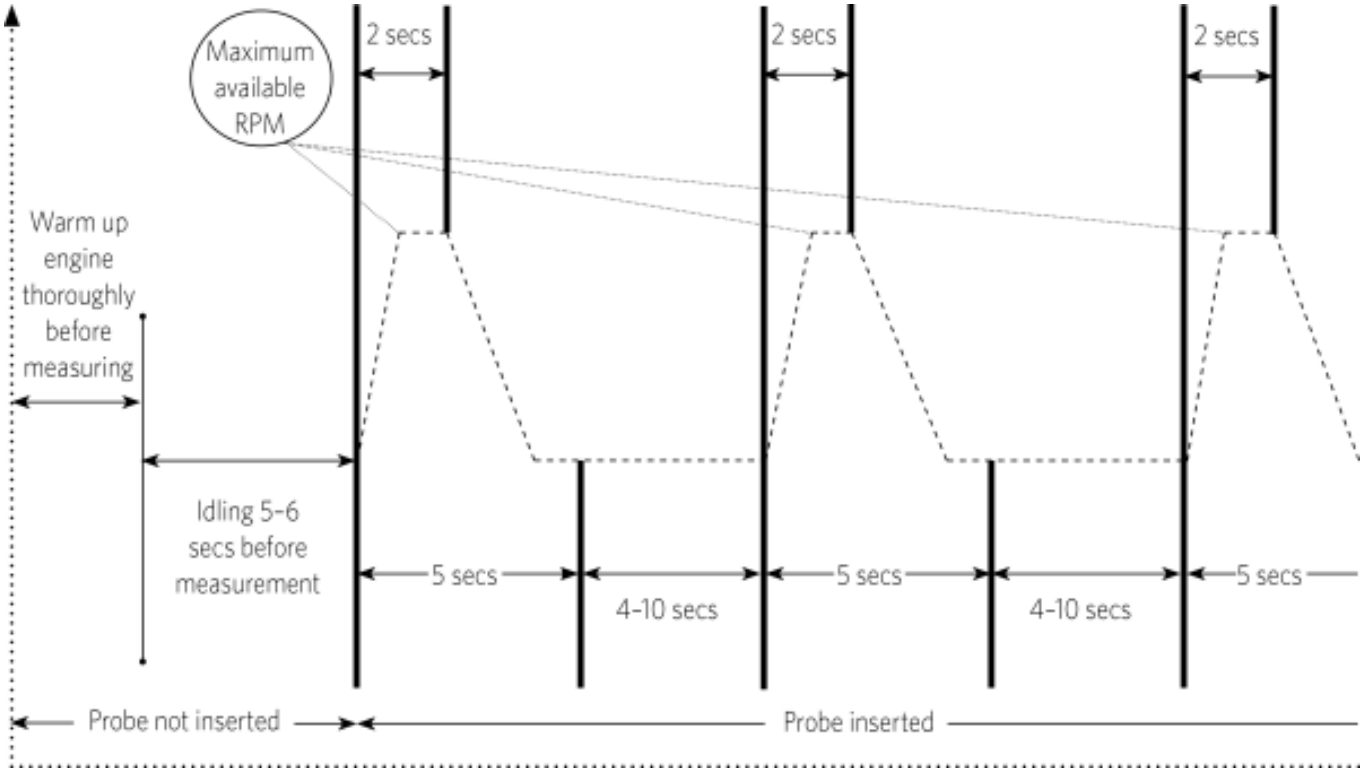
    c) If the average of the three measurements is:

        i. less than or equal to an OAC of 0.80m-1, the vehicle passes the test,

        ii more than an OAC of 0.80m-1, the vehicle fails the test.

2. To avoid doubt, if the vehicle does not meet the prescribed standard after three test cycles, the vehicle fails the test.

Figure 11-3-1. Diesel exhaust emission test vehicle operation cycle using an opacimeter



Procedure for measuring exhaust emissions of diesel vehicles (using filter paper test equipment)

Pre-testing

1. The test equipment must be warmed up and calibrated before use, in accordance with the equipment manufacturer's instructions.

2. Insert the sampling probe (ie the exhaust gas sampling part of the measuring equipment) far enough into the exhaust pipe to prevent the admission of open air. This is to ensure that only exhaust gas is sampled.

Operation of the vehicle 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.

During the test procedure, the vehicle operation cycle must follow these phases (refer to Figure 11-3-2 over the page):

1. Racing purge
   - a) When the engine is idling, rapidly depress the accelerator to the maximum available RPM.
   - b) Immediately after the engine reaches its maximum available RPM, release the accelerator to return the engine to idling.
   - c) Repeat this two more times.
2. Idling phase
   - a) Run the engine at idle for five or six seconds.
3. Measuring phase
   - a) Fully depress the accelerator and hold for two seconds.
   - b) Release the accelerator for 13 seconds and sample the diesel smoke during this period.
   - c) Repeat this two more times.

Diesel sampling requirements

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

2. Class 5A filter paper (or equivalent) must be used.

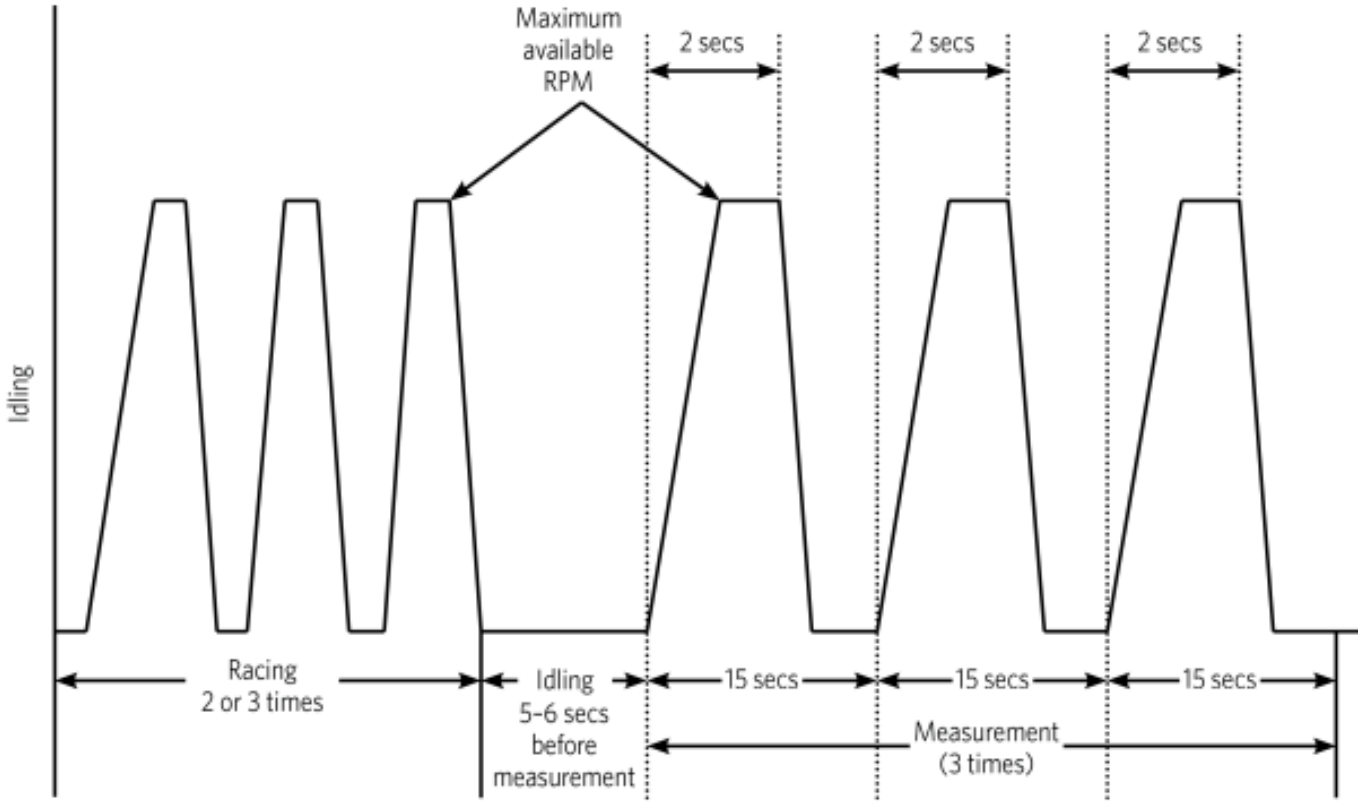
3. The extent the filter paper is polluted by the smoke contained in the vehicle's exhaust emissions must be measured by a prescribed exhaust smoke analyser measurement device.

4. The final result must be calculated as an average of the three measured values obtained during the test procedure.

Pass requirements

A diesel vehicle must not exceed 25% opacity.

Figure 11-3-2 Diesel exhaust emission test vehicle operation cycle



Page amended **1 January 2013** (see **amendment details**).