

New environmental rules for domestic voyaging commercial ships under 400 GT

**This guideline explains the Marine Protection Rules Part 199
and how they apply to domestic voyaging ships under 400 GT**



New environmental rules for domestic voyaging commercial ships under 400 gross tonnage

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Disclaimer

These guidelines provide information and explanations about the requirements set out in the marine protection rules, but are not a substitute for the rules themselves, which are the law. These guidelines refer to provisions in the Marine Protection Rules Part 199, Prevention of air pollution from ships.

maritimenz.govt.nz/rules

1. About the rules

Environmental rules restricting activities that cause air pollution from ships have been introduced in New Zealand. This booklet gives essential information on these rules for operators of New Zealand commercial ships less than 400 GT (gross tonnage) that don't visit ports outside of New Zealand.

Visit maritimenz.govt.nz/airpollution for more detailed information, information on larger ships, or for ships that visit ports outside New Zealand. The *Guide for Marine Protection Rules Part 199: Prevention of air pollution from ships* and the Marine Protection Rules Part 199 (Part 199) give more detail.

The Part 199 rules implement the International Maritime Organization (IMO) convention MARPOL Annex VI. The Part 199 rules came into force in New Zealand progressively from **26 August 2022**. All the requirements will be included in the initial survey of ships that become New Zealand ships from 1 January 2023.

Ships this booklet applies to that are New Zealand ships before 1 January 2023, will be surveyed for compliance with Part 199 at the first intermediate or renewal survey after 1 April 2023. The engine requirements will be included in these surveys either from 1 April 2023 or from 1 January 2029. Check section 5 for details.

The rules are designed to control emissions of sulphur oxides (SO_x), nitrogen oxides (NO_x), volatile organic substances (VOC) from crude oil tankers, ozone depleting substances (ODS), emissions from incineration, and to reduce the carbon intensity of larger ships. These all pose a risk to people and the marine environment. Many countries around the world have similar regulations in place, which are also based on Annex VI of the IMO MARPOL Convention.

While some requirements in the new Part 199 Rules only apply to ships over 400 GT, some will apply to all ships – including domestic voyaging commercial ships under 400 GT.

Notes

The Part 199 Marine Protection Rules do not apply to ships that solely operate in inland waters, such as on lakes or rivers.

Jet boats that are regulated under the Part 40 Rules that have a Certificate of Survey need to meet the Part 199 Rules. Jet boats regulated under Part 82 are not.

Some of the engine rules in this booklet apply to New Zealand ships that travel within New Zealand's jurisdiction (within New Zealand's Exclusive Economic Zone). The rules for engines on ships that travel outside of New Zealand's jurisdiction (even if they do not visit international ports) are different. See the *Guide for Marine Protection Rules Part 199: Prevention of air pollution from ships* at maritimenz.govt.nz/airpollution for further information (or talk to your surveyor).

2. Fuel rules

The rules require all ships to use compliant low-sulphur fuels or use approved equipment to achieve the same low-sulphur emission level from 26 August 2022.

Operators can assume that all petrol, diesel and gaseous fuels commercially available in New Zealand from 26 August 2022 will be compliant.

For ships using heavier fuel oils, see the *Guide for Marine Protection Rules Part 199: Prevention of air pollution from ships* at maritimenz.govt.nz/airpollution for further information (or talk to your fuel supplier).

The register of marine fuel suppliers can be found on the [MBIE Trading Standards website](https://www.mbie.govt.nz/trading-standards).

The Engine Fuel Specification Regulations include the specifications for marine fuels sold in New Zealand.

3. Incinerator rules

There are rules around the design and use of incinerators.

If you have an incinerator on your ship or are considering installing an incinerator, see the *Guide for Marine Protection Rules Part 199: Prevention of air pollution from ships* at maritimenz.govt.nz/airpollution for further information (or talk to your surveyor).

4. Ozone depleting substances rules

Equipment that uses ozone-depleting substances (ODS) is heavily restricted, and use on newer ships is banned outright.

See the *Guide for Marine Protection Rules Part 199: Prevention of air pollution from ships* at maritimenz.govt.nz/airpollution for further information (or talk to your surveyor).

5. Engine rules

Important note

This version (2.0) of this booklet reflects the engine rules that apply from 1 January 2023.

The engine rule information in any previous version of this booklet is to be disregarded.

The engine rules place restrictions on the levels of emissions of nitrogen oxides (NO_x) from many installed engines over 130 kW (174.3 HP).

Any engine that is subject to the rules must operate within specified NO_x emission levels and have specific documentation to be compliant.

5.1 Which engines are subject to the rules?

The rules apply to all installed engines over 130 kW output power that run on liquid or gaseous fuel, other than those solely used for emergency purposes, that:

- were installed on existing domestic voyaging ships on or after 19 May 2005 or
- had a major conversion after that date or
- are installed on a ship that becomes a New Zealand ship on or after 1 January 2023, regardless of the ship's date of construction or the date the engine was installed.

These rules apply based on the output power of the installed engine, regardless of the size of the vessel or ship the engine is installed on. The word 'ship' is used throughout this booklet for ease of reading.

Clarifying terms

An engine is 'installed' if the engine's fuel, cooling or exhaust system is an integral part of the ship. For example, an outboard engine fuelled from a tank that is part of the structure of the ship would be 'installed', while an outboard engine with a portable fuel tank would not be 'installed'. A portable stationary engine (not used for propulsion) that has been permanently fixed to the ship would be considered 'installed'.

A 'major conversion' is:

- the installation of an additional engine or
- any 'substantial modification' to the existing engine (defined in the NO_x Technical Code 2008) or
- the increase of the maximum continuous rating of the engine by more than 10% or
- a complete engine replacement (excluding replacement with an identical engine only in the case of ships constructed before 1 January 2000).

What does "a New Zealand ship" mean?

- A "New Zealand ship" means a ship that is registered under the Ship Registration Act 1992; and includes a ship that is not registered under that Act but is required or entitled to be registered under that Act.

5.2 Which engines are not subject to the rules?

The engine rules don't apply if:

- The engine is 130kW or less or
- The engine does not run on liquid or gaseous fuel or
- The engine is not "installed" or
- The engine is on a ship that is used entirely on inland waterways (such as lakes or rivers) or
- The engine was installed on an existing* New Zealand ship prior to 19 May 2005, and it has not undergone a major conversion after that date.

*An 'existing' New Zealand ship is a one that was a New Zealand ship on or before 1 January 2023 when the rules came into effect.

If the engine was installed before 19 May 2005 and it has not undergone a major conversion after that date, that engine is not subject to the Part 199 rules if the ship was already a New Zealand ship before 1 January 2023.

5.3 When do I need to demonstrate that my engine is compliant?

For ships that were New Zealand ships before 1 January 2023, compliance will be checked at an intermediate or renewal survey - after either 1 April 2023 or 1 January 2029 - depending when the engine was installed.

For an **existing engine** – one that was installed before 1 January 2023:

- You will need to demonstrate that an existing engine is compliant at the ship's next intermediate or renewal survey **on or after 1 January 2029**. Compliance must be demonstrated by 30 June 2032 at the latest.

For a **new engine** – one that was installed on or after 1 January 2023:

- You will need to demonstrate that a new engine is compliant at the ship's **next survey after 1 April 2023**.

For ships that become a New Zealand ship on or after 1 January 2023, engines need to be compliant and have the correct documentation at the ship's initial survey.

5.4 Emissions Tiers

MARPOL Annex VI has three "Tiers" of NO_x emissions levels. For ships that do not voyage outside of New Zealand waters, only Tiers I and II are applicable under the Part 199 rules (Tier III applies only to ships operating in emissions control areas (ECAs), none of which are in NZ waters).

These Tiers are commonly referred to as "IMO Tier I" and "IMO Tier II". They place limits on the allowed emissions of NO_x in grams per kilowatt hour (g/kWH), based on the rated speed, as outlined in the table

below.

Tier	Engine install / major conversion date	Total Weighted Cycle Emission Limit (g/kWh)		
		N= Engine's rated speed (RPM)		
		N < 130	N = 130 to 1999	N ≥ 2000
I	On or after 19 May 2005 (or installed before 1 Jan 2011 for new ships)	17.0	$45 \cdot n(-0.2)$ e.g. 720rpm = 12.1	9.8
II	On or after 1 Jan 2011	14.4	$44 \cdot n(-0.23)$ e.g. 720rpm = 9.7	7.7

Which engines need to meet Tier II (2)?

- If the engine was installed on or after 1 January 2011, it needs to meet Tier II. This includes any engine installed on or after 1 January 2023, and the requirement applies regardless of the date of the ship's construction.
- If the engine underwent a major conversion on or after 1 January 2011 and the ship was constructed on or after that date, the engine needs to meet Tier II after the major conversion.
- Engines on a ship that becomes a New Zealand ship on or after 1 January 2023 need to meet Tier II if:
 - they were installed on or after 1 January 2011; **or**
 - they had a major conversion on or after 1 January 2011.

Which engines need to meet Tier I (1)?

- If the engine was installed between 19 May 2005 and 31 December 2010, it needs to meet Tier I.
- If the engine underwent a major conversion on or after 19 May 2005 and the ship was constructed at any date before 31 December 2010, the engine needs to meet Tier I after the major conversion.
- Engines on a ship that becomes a New Zealand ship on or after 1 January 2023 need to meet Tier I if they were installed at any date on or before 31 December 2010, **and** have not had a major conversion after 31 December 2010.
 - This applies to any "New Zealand-new" ship - regardless of when before 31 December 2010 it was built, and regardless of whether its engines were installed before 19 May 2005.

A Tier II engine meets all Tier I requirements due to the lower emissions limit; however, the opposite is not true - a Tier I engine will not meet Tier II requirements.

An engine that meets Tier II (or Tier III) requirements may be used on any domestic ship, but an engine that only meets Tier I requirements cannot be used if that engine needs to meet Tier II.

5.5 Demonstrating compliance – documentation options

There are two options for documents that an operator needs to hold to show that an engine is compliant, if compliance is required to be demonstrated for that engine. These are:

Option 1 – A Technical File and Engine International Air Pollution Prevention (EIAPP) Certificate

A Technical File is normally provided with compliant compression ignition engines by the manufacturer at the time of purchase. It may be possible to get these from the engine supplier at a later date.

The Technical File can be either for the specific, individual engine; *or* for the parent engine of an engine family or group if the engine in question is a ‘member engine’ of that family or group.

The Technical file must have information on the NO_x emissions of the engine, so whether the engine meets the applicable Emissions Tier (I or II) can be determined.

The Technical File must then be approved by Maritime NZ. This is done as part of an application made to Maritime NZ for an Engine International Air Pollution Prevention (EIAPP) certificate– see maritimenz.govt.nz/airpollution for details on this process.

If the Technical File is correct and demonstrates that the engine’s emissions are in line with the applicable Tier requirements, then Maritime NZ will approve the Technical File and issue an EIAPP Certificate, which will be attached to the Technical File. In the case of an engine with a Technical File and EIAPP that have been approved by/issued by or on behalf of an overseas maritime administration, the Technical File will need to be reapproved and the EIAPP reissued by Maritime NZ.

These documents are specified in MARPOL Annex VI and are internationally recognised. An EIAPP certificate does not expire, and will last for the life of the engine (unless the engine undergoes a major conversion after the EIAPP has been issued). The certificate will become invalid if the engine is not maintained sufficiently and operated within its design parameters.

Domestic ships that voyage internationally, that voyage outside New Zealand jurisdiction, or that wish to hold international certification **must** have option 1 documentation. Visit maritimenz.govt.nz/airpollution and see the *Guide for Marine Protection Rules Part 199: Prevention of air pollution from ships* for more information.

Option 2 – A manufacturer’s declaration/certificate of conformity to an acceptable Standard

Operators with the following types of engine over 130 kW must hold documentation to show that the engine meets a particular standard, as listed below.

Option 2 is only available for the specific types of engine listed below, and is only available for engines on ships that do not leave waters under New Zealand’s jurisdiction.

Spark-Ignition Engines

For **spark-ignition (petrol) engines**, a manufacturer's declaration/certificate of conformity to one of the following standards:

- Directive 2013/53/EU of the European Parliament and of the Council on recreational craft and personal watercraft or
- USA EPA Air Pollution Controls 40 CFR Part 1045 – Control of emissions from spark-ignition propulsion marine engines and ships or
- Australian Product Emissions Standards Rules 2017.

The spark-ignition standards listed above all meet or exceed the NO_x emissions limits of Tier II.

Operators of ships that were already NZ ships before 1 January 2023 with spark-ignition engines that were installed prior to 1 January 2011 are not required to hold documentation for those engines.

For ships that become New Zealand ships on or after 1 January 2023 that have spark-ignition engines that were installed prior to 1 January 2011, those engines will be assessed at the initial survey on a case-by-case basis. The following evidence needs to be supplied at the ship's initial survey:

- evidence that the engine meets an appropriate emissions standard for spark-ignition engines acceptable to the Director, which meets or betters the equivalent IMO Tier I NO_x emissions limits; or
- evidence of the actual NO_x emissions of the engine, which meet or better the IMO Tier I NO_x emissions limits.

Stationary/auxiliary engines

For **stationary/auxiliary engines not used for propulsion** (e.g. engines used for power generation or to power machinery such as cranes or winches), a manufacturer's declaration/certificate of conformity to one of the following standards:

For Tier II:

- USA EPA non-road diesel engine emission standards Tier 2 (or higher)
- Euro non-road emissions standards Stage II (or higher) – Directive 97/68EC of the European Parliament and of the Council on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery.

For Tier I:

- USA EPA Nonroad Compression-Ignition Engines: Exhaust Emission Standards Tier 1 (or higher)
- European non-road emissions standards Stage I (or higher) – Directive 97/68EC of the European Parliament and of the Council on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery.

6 What happens at survey?

An Annex VI endorsement will become a requirement as part of a ship's Certificate of Survey, to ensure that a ship is complying with the Part 199 rules.

For a domestic voyaging ship that becomes a New Zealand ship on or after 1 January 2023, the Annex VI endorsement will be a requirement for the initial survey. For a ship that was already a New Zealand ship at 1 January 2023, the Annex VI endorsement will be a requirement from 1 April 2023.

The endorsement will cover the portions of the Part 199 Rules that apply to the ship at the date of the survey. Most of these rules (e.g. fuel, incinerators, ODS) will be immediately applicable, but the engine rules will not apply to all ships immediately - see section 5.3 for details.

6.1 Engine rules at survey

At the applicable survey (see section 5.3), the surveyor will check that each engine has the required documentation to demonstrate the engine's compliance to emission Tier I or II as required.

Surveys will also include checks that engine installation and maintenance has been conducted in line with the manufacturer's manual, to make sure that NO_x emissions are not likely to have increased above the allowed limits because of changes made during or after installation or due to poor engine maintenance.

The combination of the documentation (from Option 1 or 2) and the checks of changes and maintenance must satisfy the surveyor that the NO_x emissions from the engine are likely to remain within the limits imposed by the applicable emissions tier.

If the surveyor determines that the engine is compliant, has the required documentation and remains in good order, then that portion of the Annex VI endorsement for the Certificate of Survey will be satisfied.