



Commercial Harbor Craft 2022 Amendments

California Code of Regulations, Title 17, Section 93118.5

Attachment to the Opacity Testing Factsheet

Date: December 27, 2022

Specific details on the opacity testing and emission control repair requirements can be found in the [regulation text subsection \(k\) Opacity Testing and Emission Control Repair Requirements \(CCR Title 17, section 93118.5\)](#). In the case of any discrepancy between this document and the regulation order, the regulation language applies.

Testing Procedures

Opacity testing procedures can be found in subsection (k)(1)(B) of the regulation text.

Test procedures for Main Propulsion Engines by certified tester:

1. Transit vessel to a safe location in open waters
2. Stop vessel, clutch-in with engines at idle
3. Transition controls from idle to full throttle within 2 seconds
4. Record opacity measurement for 15 seconds or until engines reach full power, whichever is longer
5. Repeat test procedure five more times
6. Final opacity measurement will be the average of the 0.5-second maximum of the last three accelerations

Opacity Measurement Locations:

- For vessels with dry exhaust system: measurements are taken at the exhaust stack.
- For vessels with wet exhaust system or exhaust exits near the waterline: measurements are taken near the engine (post-DPF if equipped) but before the point/location of any seawater injection into exhaust system utilizing either a full or partial-flow opacity meter capable of sampling exhaust from a fitting on the exhaust pipe.

Additional Compliance Requirements

New Engine Exemption:

- Engines with model year 2020 or newer are exempt from biennial testing until four years after the model year of the engine.
- For example, a 2021 model year engine is exempt until 2025, and the first opacity test of the engine must be performed and reported to CARB by March 31, 2026.

Vessels Coming to Operate in California:

- If
 - any vessel(s) coming from outside of California will be in Regulated California Waters (RCW) for more than 30 consecutive days,
 - engines are newly installed on a vessel (such as a newly acquired engine or a swing engine), or
 - a vessel has been out of service and in dry-dock,

opacity testing must be performed and reported on all applicable engines within 30 days of operating within RCW, unless the engine meets the new engine exemption above or has been tested to meet opacity limits within the last two years.

- If such a vessel remains in RCW, the test results would satisfy opacity testing requirements required by March 31 of the next even-numbered calendar year.
- For example, if a vessel was tested in December 2025, this test would satisfy the test required by March 31, 2026, and the vessel's next required opacity test would be by March 31, 2028.

Requirements for Swing Engines:

- Swing engines are exempt from opacity testing requirements when kept dockside, however they must be tested within 30 days of being installed into a vessel.

Alternative Compliance Methods:

- If the required snap testing procedure for main propulsion engines is not feasible due to safety concerns or engine configuration, CARB may approve an alternative compliance method.
 - The alternative method must include detection of an increase in soot accumulation rates in the aftertreatment control device and describe how the owner or operator will be able to provide necessary maintenance and repair.
- For Category 2 or 3 engines, a letter provided by a third-party SAE- or OEM-certified technician demonstrating the engine is in proper operating condition may be provided to CARB.

Confirmatory Opacity Testing by CARB:

- CARB may perform confirmatory opacity testing in the field or audit opacity test records at any time.
- If CARB has reason to believe that an engine may be operating with emission control malfunctions, CARB can request a vessel owner or operator to provide an engine or emission control system inspection report from a factory-certified engine or emission control system dealer/distributor engine within 30 days.

Frequently Asked Questions (FAQs):

1. Can vessel operators test opacity on their own engines?

Yes, as long as the vessel operator is certified to perform CHC opacity testing by completing the training course that will be offered by California Council on Diesel Education and Technology (CCDET) at numerous technical colleges throughout California starting in 2023.

2. If an engine fails the opacity test, does the engine need to be taken out of service immediately?

No. The engine can continue operation for a maximum of 30 days after the date of the failed test. If the engine/aftertreatment is not repaired and re-tested with passing result within the 30 days, then the engine must be taken out of service. If the engine cannot pass the opacity test after the repairs, then it must be kept out of service until it passes the applicable opacity limits.

3. Can tests be performed by means of steady-state mode?

No. The commercial harbor craft opacity testing procedure outlined in subsection (k)(1)(B) of the 2022 CHC Amendments utilizes the SAE J1667 test standard, which is a transient opacity testing procedure. Additionally, the transient test procedure is more likely to reveal intermittent engine emission control subsystem faults.