

---

**APPROVED RETROFIT EMISSION REDUCTION MEASURE CLASSIFICATIONS**

Effective Date: January 1, 2015

---

**PURPOSE**

The purpose of this document is to provide direction to registrants on retrofit emission reduction measure (ERM) classifications approved by the district director pertaining to Part 6 of Metro Vancouver's Non-Road Diesel Engine Emission Regulation Bylaw No. 1161 (the Bylaw).

**ACRONYMS AND TERMS**

Acronyms and terms are as defined in the Bylaw

**BACKGROUND**

The Bylaw requires owners and operators of Tier 0 and Tier 1 non-road diesel engines (NRDE), 25 horsepower (hp) and greater, to register, label and pay registration fees in order to operate their engines within Metro Vancouver.

The Bylaw allows for reduction, refund and exemption of registration fees if the particulate matter (PM) emission rate from a Tier 0 or Tier 1 NRDE is reduced using an approved ERM. Fees are reduced proportionate to the percentage PM reduction achieved. Eighty percent of the fees paid by the registrant in the previous three years will be refunded if an engine is upgraded to a Tier 2 or greater emission standard or permanently retired from use in Metro Vancouver. Full exemption from fees can be achieved if the PM emission rate of that Tier 0 or Tier 1 NRDE meets the emission standard of a Tier 2 or greater NRDE.

A diesel particulate filter (DPF), achieving 85% PM reduction, will upgrade the PM emission rate of any Tier 0 or Tier 1 NRDE to a Tier 2 or greater emission standard.

A diesel oxidation catalyst (DOC), achieving 20% PM reduction, will upgrade the PM emission rate of most 1988 or newer Tier 0 NRDE to a Tier 1 emission standard with the exception of the following horsepower ranges:

- 25-49hp (requires 37% PM reduction);
- 100-174hp (requires 23% PM reduction); and
- 175-299hp (requires 26% PM reduction).

**APPROVED RETORFIT ERM CLASSIFICATIONS**

The following retrofit ERM classifications are hereby approved by the District Director, subject to the listed conditions:

1. ERMs verified by the US Environmental Protection Agency (EPA) or the California Air Resources Board (CARB) for use with non-road diesel engines on a specified engine in accordance with the EPA verification letter or CARB executive order, or
2. ERMs verified by EPA or CARB for use with **non-road** diesel engines on a non-specified engine with ERM manufacturer assurance that it meets or exceeds emission reductions of 20% particulate matter for DOCs, and 85% particulate matter for DPFs, or
3. ERMs verified by EPA or CARB for use with **on-road** diesel engines on a non-specified engine with ERM manufacturer assurance that it meets or exceeds emission reductions of 20% particulate matter for DOCs, and 85% particulate matter for DPFs.

All ERM approvals will be subject to the following conditions:

- Each ERM application will be reviewed on a case-by-case basis by Metro Vancouver. The application will not be approved if the district director has reason to believe the emission reductions are unlikely to be achieved in a particular case;
- There will be a maximum approval period of 5 years for any ERM from the date of installation unless otherwise approved by the district director;
- All NRDEs will require an engine pre-assessment conducted by an installer, authorized by the ERM manufacturer, prior to the approval and installation of the ERM. The pre-assessment results will be provided to Metro Vancouver as part of the ERM application;
- The ERM must be installed by an authorized installer;
- Registrants will provide an assurance letter from the ERM manufacturer indicating the PM % reduction achieved by the ERM if using ERM classification 2 or 3;
- Registrants will keep NRDE and ERM maintenance records to demonstrate optimal performance based on ERM manufacturers specifications; and
- Registrants will inform Metro Vancouver immediately if the ERM is replaced, removed or modified.

ERM approvals will be rescinded if the ERM does not operate to reduce the particulate matter emission rate in the manner for which the district director gave approval. ERMs that do not meet the criteria of the approved classifications as stated above, will require full engineering and technical review by Metro Vancouver in order to be considered. Contact Metro Vancouver for more information on the requirements.

**Resources**

- [EPA verified device list](#)
- [CARB verified device list](#)
- [ERM application form](#)
- [ERM fact sheet](#)
- [PM emission standards fact sheet](#)