

HARVARD DIESEL EMISSIONS CONTROLS FOR CONSTRUCTION VEHICLES SPECIFICATION

All Contractor and Sub-Contractor diesel-powered non-road construction equipment with engine horsepower (HP) ratings of 60 HP and above, which is located or used on the project for a period in excess of 20 working days, shall be retrofitted with Emission Control Devices in order to reduce diesel emissions. In addition, all motor vehicles and construction equipment shall comply with all pertinent local, state and federal regulations covering exhaust emission controls and safety.

The reduction of emissions of particulate matter (PM), carbon monoxide (CO), and hydrocarbons (HC) from diesel-powered equipment shall be accomplished by installing Retrofit Emission Control Devices and by using ultra low sulfur diesel fuel.

The acceptable Retrofit Emission Control Devices for the project shall consist at a minimum of diesel oxidation catalysts that are verified by EPA or certified by the manufacturer to provide a minimum emissions reduction of 20 percent for PM, 40 percent for CO, and 50 percent for HC. The Emission Control Devices must be either included on the Environmental Protection Agency (EPA) *Verified Retrofit Technology List* (www.epa.gov/otaq/retrofit/retroverifiedlist.htm) or be judged by the Owner to be equivalent to the EPA standards.

A current list of Harvard acceptable diesel oxidation catalysts can be found on the webpage: www.greencampus.harvard.edu/retrofits. For questions about this list, contact the Harvard Green Campus Initiative: (617) 495-0551. As of January 2007, the following retrofits are acceptable:

Manufacturer	Device Name
DCL	Mine-X DOC
Donaldson	6000
Engelhard	CMX Catalyst Muffler
Engine Control Systems	AZPurifier ; AZ Purimuffler
Johnson Mathey	CEM Catlyst Muffler

All diesel fuel used on the project site must be ultra low sulfur diesel which contains no more than 15 parts per million (ppm) sulfur.

Construction shall not proceed until the Contractor has submitted a certified list of the non-road diesel-powered construction equipment that will be retrofitted with emission control devices. The list shall include (1) the equipment number, type, make and Contractor/Sub-Contractor name; and (2) the emission control device make, model and EPA verification number. Equipment that has been retrofitted with an emission control device shall be stenciled or otherwise clearly marked as "Low Emission Equipment". The Contractor shall also submit a certified letter stating the type and source of diesel fuel that will be used.

The Contractor shall submit monthly reports, updating the same information stated above, including the quantity of diesel fuel used. The addition or deletion of non-road diesel equipment shall be indicated in the report.

In addition to installing the required emission control devices, the Contractor shall use methods to control nuisance odors associated with diesel emissions from construction equipment including without limitation the following:

- (1) turning off diesel combustion engines on construction equipment not in active use, and on trucks that are idling while waiting to load or unload material for five minutes or more, as stipulated in the MA state anti-idling law which contains the following exceptions: vehicles being serviced, vehicles making deliveries that need to keep their engines running (to power refrigerators, for example), and vehicles that need to run their engines to operate accessories;
- (2) locating diesel equipment away from the general public and sensitive receptors (e.g., fresh air intakes, air conditioners and windows); and
- (3) utilizing electronically-powered scissor/man lifts.

In selecting a contractor, Harvard will give preference to those who commit to emissions reductions strategies that go beyond the basic requirements specified above, especially to those strategies that further reduce PM emissions. Such additional strategies could include, but are not limited to:

(1) Diesel Particulate Filters

Manufacturer	Device Name
Caterpillar	Diesel Particulate Filter
Engelhard	DPX Catalyzed Diesel Particulate Filter
Johnson Matthey	CRT or CCRT Particulate Filter
Engine Control Systems	Combifilter
DCL	Mine-X Sootfilter

(2) Cleaner and/or Renewable Fuels:

- Biodiesel
- Ethanol in any gasoline powered vehicle or generator

Any costs associated with implementing the diesel emissions controls as specified in this section shall be included in the general cost of the contract.