STATE OF CONNECTICUT
Regulation of Environmental Protection

Section 22a-174-18. Control of particulate matter and visible emissions.

(a) Definitions. For the purposes of this section, the following definitions shall apply:

(1) "Calendar quarter" means a consecutive three (3) month period (non-overlapping) beginning on January 1, April 1, July 1 or October 1;

(2) "Flue-fed incinerator" means an incinerator with a single flue that serves as both the charging chute and the flue to transport combustion products to the atmosphere;

(3) "Incinerator" means, notwithstanding section 22a-174-1 of the Regulations of Connecticut State Agencies, any device, apparatus, equipment or structure used for destroying, reducing or salvaging by fire any material or substance, including but not limited to, refuse, rubbish, garbage, trade waste, debris or scrap, or facilities for cremating human or animal remains;

(4) "One-minute block average" means, for measurements taken at a source using opacity CEM equipment, the average of six (6) or more data points equally spaced over one minute; and, for measurements taken using 40 CFR 60, Appendix A, Reference Method 9, the average of four or more data points equally spaced over a one minute period;

(5) "Shutdown" means the period of time beginning when the owner or operator of a stationary source initiates the process of ceasing the operation of such source and ending when operation thereof has completely ceased;

(6) "Six-minute block average" means, for measurements taken at a source using opacity CEM equipment, the average of thirty-six (36) or more data points equally spaced over a six (6) minute period; and, for measurements taken using 40 CFR 60, Appendix A, Reference Method 9, the average of twenty-four or more data points equally spaced over a six (6) minute period;

(7) "Stationary reciprocating internal combustion engine" means any spark ignited or compression ignited engine that is also a stationary source as defined in section 22a-174-1 of the Regulations of Connecticut State Agencies; and

(8) "Startup" means the time beginning when the owner or operator of a stationary source initiates the process of setting such source into operation.

(b) Visible emission standards.

(1) Stationary sources without opacity CEM equipment. Except as provided in subsection (j) of this section, an owner or operator of any stationary source without opacity CEM equipment for which opacity is measured using visual observation shall not exceed the following visible emissions limits:

(A) Twenty percent (20%) opacity during any six-minute block average as measured by 40 CFR 60, Appendix A, Reference Method 9; or

(B) Forty percent (40%) opacity as measured by 40 CFR 60, Appendix A, Reference Method 9, reduced to a one-minute block average.

(2) Stationary sources with opacity CEM equipment. Except as provided in subsection (j) of this section, an owner or operator of a stationary source for which opacity is measured using opacity CEM equipment shall not exceed the following visible emissions limits:

(A) Twenty percent (20%) opacity during any six-minute block average; or

(B) Forty percent (40%) opacity during any one-minute block average.

(3) Mobile sources. Except as provided in subsection (j) of this section, no person shall cause or allow:

(A) Any visible emissions from a gasoline powered mobile source for longer than five (5) consecutive seconds;

(B) Visible emissions from a diesel powered mobile source of a shade or density equal to or darker than twenty percent (20%) opacity for more than ten (10) consecutive seconds, during which time the maximum shade or density shall be no darker than forty percent (40%) opacity; or

(C) A mobile source to operate for more than three (3) consecutive minutes when such mobile source is not in motion, except as follows:

(i) When a mobile source is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control,

(ii) When it is necessary to operate defrosting, heating or cooling equipment to ensure the safety or health of the driver or passengers,

(iii) When it is necessary to operate auxiliary equipment that is located in or on the mobile source to accomplish the intended use of the mobile source,

(iv) To bring the mobile source to the manufacturer's recommended operating temperature,

(v) When the outdoor temperature is below twenty degrees Fahrenheit (20 degrees F),

(vi) When the mobile source is undergoing maintenance that requires such mobile source be operated for more than three (3) consecutive minutes, or

(vii) When a mobile source is in queue to be inspected by U.S. military personnel prior to gaining access to a U.S. military installation.

(c) Control of airborne particulate matter and fugitive particulate matter.

(1) No person shall cause or allow any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall be in accordance with good industrial practice as determined by the commissioner and shall include, but not be limited to:

(A) The use of water or other appropriate material to prevent airborne particulate matter generated by the demolition of buildings or other structures; construction operations; the clearing or grading of land; or the grading, construction or improvement of roads;

(B) The application of asphalt, water, suitable materials or covers to material stockpiles and other surfaces that can give rise to airborne particulate matter;

(C) The use of hoods, fans, fabric filters or other devices to enclose and vent the handling of materials that can give rise to airborne particulate matter;

(D) The covering, while in motion, of open-bodied trucks, open-bodied trailers and railroad cars transporting materials capable of giving rise to airborne particulate matter;

(E) The prompt removal of earth or other material deposited onto paved streets by trucking, earth moving equipment, erosion or other means; and

(F) The use of containment methods for sandblasting or similar operations.

(2) No person shall cause or allow the emission of visible particulate matter beyond the legal boundary of the property on which such emission occurs that either:

(A) Remains near ground level beyond such property boundary; or

(B) Diminishes the health, safety or enjoyment of people using a building or structure located beyond the property boundary.

(3) No person shall emit particulate matter into the ambient air in such a manner as to cause a nuisance.

(d) Emission standards for incinerators and prohibitions on flue-fed incinerators.

(1) No owner or operator shall cause or allow the construction, installation or operation of a flue-fed incinerator.

(2) Particulate matter emission standards for incinerators. No owner or operator shall cause or allow the operation of any incinerator that will result in particulate matter emissions in excess of the particulate matter emission standards set forth in subparagraph (A) or (B) of this subdivision:

(A) For incinerators for which construction or modification commenced on or after July 1, 1979, 0.08 grains per standard cubic foot corrected to twelve percent (12%) carbon dioxide (CO_2) over a two (2) hour average or 0.18 grams per cubic meter corrected to twelve percent (12%) carbon dioxide (CO_2) over a two (2) hour period; and

(B) For incinerators for which construction or modification commenced prior to July 1, 1979, 0.4 pounds of particulate per thousand pounds of flue gases adjusted to fifty percent (50%) excess air.

(3) Visible and fugitive emission standards for incinerators. No owner or operator of any incinerator shall cause or allow unburned waste or ash particulate emissions that are individually discernible by the human eye measured using 40 CFR 60, Appendix A, Reference Method 9 and 40 CFR 60, Appendix A, Reference Method 22.

(e) Particulate matter emission standards for fuel-burning equipment.

(1) The owner or operator of fuel-burning equipment subject to section 22a-174-3a or former section 22a-174-3 of the Regulations of Connecticut State Agencies shall emit no more than 0.10 pounds of particulate matter per million BTU of heat input or the particulate matter standard of a permit applicable to such equipment, whichever is more stringent.

(2) The owner or operator of fuel-burning equipment subject to former section 22a-174-2 of the Regulations of Connecticut State Agencies shall emit no more than the following particulate matter levels:

(A) 0.14 pounds of particulate matter per million BTU of heat input if the fuel burned is residual oil (No. 4 or No. 6 oil);

(B) 0.12 pounds of particulate matter per million BTU of heat input if the fuel burned is distillate oil (No. 2 oil);

(C) 0.10 pounds of particulate matter per million BTU of heat input if the fuel burned is natural gas; or

(D) 0.20 pounds of particulate matter per million BTU of heat input for any other fuel burned.

(3) Notwithstanding subdivisions (1) and (2) of this subsection and except as provided in subsection (j) of this section, the owner or operator of a stationary reciprocating internal combustion engine with a maximum continuous brake horsepower output rating, as specified by the manufacturer, greater than or equal to 175 brake horsepower (bhp), shall emit no more than:

(A) 0.10 pounds of particulate matter per million BTU of heat input or combust only fuel with a sulfur content less than or equal to 0.05% by weight, if the stationary reciprocating internal combustion engine was manufactured prior to or in model year 1996; or

(B) 0.10 pounds of particulate matter per million BTU of heat input if the stationary reciprocating internal combustion engine was manufactured after model year 1996.

(f) Process industries -- general.

(1) For the purposes of this subsection, the provisions of subparagraphs (A) through (D) shall apply:

(A) “Process weight” means the total weight, in pounds, of all materials introduced into any specific process that may cause the emission of particulate matter, including solid fuels used in such process for purposes other than combustion and excluding combustion air, and liquid fuels, solid fuels and gaseous fuels burned;

(B) “Process weight rate” means the process weight for any specific process measured over a one (1) hour time period;

(C) The process weight rate of a cyclical or batch operation is derived by dividing the process weight by the number of hours in one complete operation of the process, excluding any time during which the equipment is idle; and

(D) The process weight rate of a continuous operation is derived by dividing the process weight for a time period of operation by the length of that period of time.

(2) Except as provided in subsection (g) of this section, no owner or operator of a process industry source shall cause or allow the emission of particulate matter to the

ambient air in any one hour from such source in excess of the emission rate calculated as required by subdivisions (3) and (4) of this subsection.

(3) To mathematically interpolate from Table 18-1 process weight rates up to and including sixty thousand pounds per hour (60,000 lbs/hr), the following equation shall be used:

$$Log\ E = Log\ 3.59 + 0.62 \times \left(Log \frac{P}{2000} \right)$$

where: P = Process weight rate in pounds per hour
E = Maximum allowable emission rate in pounds per hour
Log = The natural logarithm of the indicated value

(4) To mathematically interpolate and extrapolate from Table 18-1 process weight rates in excess of sixty thousand pounds per hour (60,000 lbs/hr), the following equation shall be used:

$$LogE = Log\ 17.31 + 0.16 \times \left(Log \frac{P}{2000} \right)$$

where: P = Process weight rate in pounds per hour
E = Maximum allowable emission rate in pounds per hour
Log = The natural logarithm of the indicated value

(5) To determine compliance with the requirements of this subsection, an interpretation resulting in the lowest allowable emission rate shall apply if the nature of any process or operation, or the design of any process unit, allows multiple interpretations.

(6) To determine the maximum allowable emission rate in accordance with this subsection for emissions that pass through a stack or stacks at a premises containing several similar process units, the total process weight shall include all such similar process units.

(7) To determine the maximum allowable emission in accordance with this subsection for a premises utilizing a series of operations that employ combinations of machines or other devices to process material, either continuously or in batches, the total process weight for such premises shall be the weight of all materials that may cause particulate matter emissions and are introduced into the series of operations, excluding all material that is the desired end product of any such series of operations.

Table 18-1. Interpolation/extrapolation table for determining particulate matter emission rates and process weight rates for process industries -- general.

Process weight rate (pounds per hour)	Emission rate (pounds per hour)
50	0.36

100	0.55
500	1.53
1,000	2.25
5,000	6.34
10,000	9.73
20,000	14.99
60,000	29.60
80,000	31.19
120,000	33.28
160,000	34.85
200,000	36.11
400,000	40.35
1,000,000	46.72

(g) Process industries -- specific.

(1) Iron foundry cupola. For the purposes of this subdivision, "iron foundry cupola" means a furnace used in the iron foundry industry that uses coke, a derivative of coal, as fuel. No owner or operator shall cause or allow the operation of any iron foundry cupola unless:

(A) Particulate matter control measures and/or control equipment remove at least ninety percent (90%) by weight of all particulate matter in the cupola discharge gases, or particulate matter emissions are less than or equal to 1.7 pounds of particulate matter per ton of iron produced, whichever practice or combination of practices results in the lowest particulate matter emissions; and

(B) Gases, vapors and gas-entrained effluents from such cupolas are incinerated at a minimum temperature of one thousand three hundred (1300) degrees Fahrenheit for a period of not less than three-tenths (0.3) of a second.

(2) Hot mix asphalt plant. No owner or operator shall cause or allow the operation of any hot mix asphalt plant unless:

(A) Particulate matter emissions are less than 0.10 pounds of particulate matter per ton of asphalt produced; and

(B) The operation conforms to the requirements set forth in subsection (c) of this section.

(3) Foundry sand process. No owner or operator shall cause or allow the operation of a foundry sand process unless:

(A) Particulate matter control measures and/or control equipment remove at least ninety percent (90%) of all airborne particulate matter from such process, or

particulate matter emissions are less than 0.75 pounds of particulate matter per ton of material cast, whichever practice or combination of practices results in the lowest particulate matter emissions; and

(B) The operation conforms to the requirements set forth in subsection (c) of this section.

(4) Concrete batching process. No owner or operator shall cause or allow the operation of a concrete batching process unless:

(A) Particulate matter control measures and/or control equipment remove at least ninety percent (90%) of all airborne particulate matter or 0.02 pounds of particulate matter per cubic yard of concrete, whichever practice or combination of practices results in the lowest particulate matter emissions; and

(B) The operation conforms to the requirements set forth in subsection (c) of this section.

(h) Control technology determinations.

To implement a control technology determination made by the commissioner, the commissioner may modify or revise a permit or issue an order to the owner or operator of a stationary source for which construction or major modification commenced after June 1, 1972 that requires more stringent emissions limitations than those set forth in subsections (b)(1) and (b)(2) of this section if such control technology determination does not result in a violation of the applicable provisions of 40 CFR 52, 60, 61, 62 or 63.

(i) Hazardous air pollutants.

Nothing in this section shall be construed to relieve an owner or operator from complying with all emissions limitations for hazardous air pollutants, hazardous materials or other hazardous substances.

(j) Excepted activities.

(1) The owner or operator of a stationary source shall not be subject to the visible emissions standards of subdivision (b)(2) of this section for measurements of opacity using opacity CEM equipment during a period of startup, shutdown * * *[1]; commissioner-approved stack testing; or intentional sootblowing, fuel switching or sudden load changing done in accordance with good engineering practices provided that:

(A) The owner or operator is required by permit, order or regulation to install, operate and maintain opacity CEM equipment at such stationary source, and the

[1] NOTE: EPA did not approve the phrase "or malfunction," in Section 22a-174-18(j)(1) into the Connecticut State Implementation Plan.

owner or operator is in compliance with such permit, order or regulation with regard to such opacity CEM equipment. If a stationary source is not subject to a permit, order or regulation requiring operation and maintenance of opacity CEM equipment, an owner or operator may certify on a form acceptable to the commissioner that:

(i) The owner or operator of such stationary source has installed opacity CEM equipment that meets the applicable criteria of 40 CFR 60, Appendices B and F, and

(ii) The owner or operator operates and maintains such installed opacity CEM equipment in compliance with the requirements of 40 CFR 60, Appendices B and F;

(B) The period of exception from the visible emissions standards of subdivision (b)(2) of this section does not exceed one-half of one percent (0.5%) of the total operating hours of such stationary source during any calendar quarter; and

(C) The owner or operator of the stationary source does not cause or allow visible emissions in excess of sixty percent (60%) opacity during any six-minute block average of the period of exception from the visible emissions standards of subsection (b)(2) of this section.

(2) * * *[2]

(3) Except for the use of open-bodied trucks and trailers subject to the requirements of subsection (c)(1)(D) of this section, a person engaged in agricultural operations shall be exempt from the requirements of subsection (c)(1) of this section provided such operations follow generally accepted agricultural practices and are in compliance with section 19a-341 of the Connecticut General Statutes.

(4) The owner or operator of any of the following sources shall be exempt from the requirements of subsection (b)(3) of this section:

(A) An antique mobile source over thirty years old;

(B) A mobile source used exclusively for racing;

(C) A mobile source while it is undergoing a mechanical repair or testing that affects the emission of visible air pollutants from such source;

[2] NOTE: EPA did not approve Section 22a-174-18(j)(2) into the Connecticut State Implementation Plan as Connecticut Department of Energy and Environmental Protection withdrew this section from the SIP submittal in a March 27, 2014 letter. Because Connecticut withdrew Section 22a–174–18(j)(2) from its SIP submission, stationary sources subject to a Federal NSPS will remain subject to the opacity limits contained in "Control of Particulate Emissions" under the SIP (See May 31, 1972; 37 FR 10842). See Section 19–508–18, "Control of Particulate Emissions" posted at http://www.epa.gov/region1/topics/air/sips/sips_ct.html.

(D) An aircraft;

(E) A locomotive operating on rails;

(F) A vessel operating on water; and

(G) Commonly used residential lawn, garden and snow removal equipment.

(5) The operation of equipment to generate smoke or fog by any branch of the United States military or any other federal or state agency shall be exempt from the requirements of subsections (b) and (e) of this section provided such operation is limited to training exercises or the preparation thereof.

(6) The owner or operator of any stationary reciprocating internal combustion engine that is an emergency engine, as defined in subsection (a)(2) of section 22a-174-22 of the Regulations of Connecticut State Agencies and has a maximum continuous brake horsepower output rating, as specified by the manufacturer, greater than or equal to 175 bhp shall not be subject to the particulate matter emissions standards of subsection (e) of this section.

(7) The owner or operator of a stationary reciprocating internal combustion engine with a maximum continuous brake horsepower output rating, as specified by the manufacturer, of less than 175 bhp shall not be subject to the requirements of subsection (e) of this section.

(8) The requirements of subsections (e), (f) and (g) of this section shall not apply to the owner or operator of a source subject to more stringent BACT requirements, provided that the source is operated in compliance with a BACT determination.

(9) A person conducting open burning pursuant to section 22a-174(f) of the Connecticut General Statutes or regulations adopted thereunder shall not be subject to the requirements of this section.

(10) If the owner or operator of a source possesses documentation demonstrating that the presence of uncombined water, such as water vapor, is the only reason for the failure of an emission to comply with the requirements of this section, then the provisions of this section shall not apply to that emission.

(11) The owner or operator of a municipal waste combustor as defined in section 22a-174-38 of the Regulations of Connecticut State Agencies shall be exempt from the requirements of this section.