

Chapter NR 415

CONTROL OF PARTICULATE EMISSIONS

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NR 415.01 Applicability; purpose. c1d APPLICABILITY. This chapter applies to all air contaminant sources which emit particulate matter and to their owners and operators.

c2d PURPOSE. This chapter is adopted under ss. 285.11, 285.13 and 285.17, Stats., to categorize particulate matter air contaminant sources and to establish emission limitations for these sources in order to protect air quality.

Note: Particulate emission limitations are also established in chs. NR 431 and 440 and ss. NR 485.05 and 485.055.

History: Cr. Register, September, 1986, No. 369, eff. 10-1-86; am. c1d, Register, May, 1992, No. 437, eff. 6-1-92; correction in c2d made under s. 13.93 c2md cbd 7., Stats., Register, December, 1996, No. 492.

NR 415.02 Definitions. The definitions in ch. NR 400 apply to the terms used in this chapter. In addition, the following definitions apply to the terms used in this chapter:

c2d XFugitive dustY means solid airborne particles emitted from any source other than a flue or stack.

c3d XHeatset web offset pressY means a type of lithographic press which requires a heated dryer to solidify the printing inks, uses a blanket cylinder to transfer ink from the plate cylinder to the surface to be printed, and prints on a surface which is fed to the press by a continuous roll web.

c5d XProcess weightY means the total weight of all materials that can be introduced into any direct source operation based on the design capacity of the source or a capacity level approved by the department, except liquid fuels, gaseous fuels and air.

c6d XPublic trafficable areaY means any trafficable area which is owned, operated, maintained or controlled by a municipality, interstate agency, state agency or federal agency.

c8d XRoadway areasY means any surface on which motor vehicles travel including, but not limited to, highways, roads, streets, parking areas and driveways.

c9d XSilt contentY means that portion by weight of a particulate material which will pass through a no. 200 c75 imd wire sieve as determined by the dry method in ASTM C136-01, incorporated by reference in s. NR 484.10 c1d, or other method approved by the department.

c10d XTrafficable areaY means any area, including but not limited to a parking lot or storage area, which is external to a building or structure, is reasonably capable of being traveled by a motor vehicle, and is accessible to a motor vehicle.

History: Renum. from NR 154.01, cr. cintro.d and c7d, Register, September, 1986, No. 369, eff. 10-1-86; renum. c3d to c9d to be c4d to c10d, cr. c3d, Register, April, 1989, No. 400, eff. 5-1-89; am. cintro.d and c9d, r. c1d, renum. c4d and c7d to be NR 400.02 c60md and c80md, Register, May, 1992, No. 437, eff. 6-1-92; am. c9d, Register, April, 1995, No. 472, eff. 5-1-95; am. c5d, Register, December, 1995, No. 480, eff. 1-1-96; am. c9d, Register, December, 1996, No. 492, eff. 1-1-97; am. cintro.d and c9d, Register, October, 1999, No. 526, eff. 11-1-99; CR 02-146: am c9d Register October 2003 No. 574, eff. 11-1-03.

NR 415.03 General limitations. No person may cause, allow or permit particulate matter to be emitted into the ambient air which substantially contributes to exceeding of an air standard, or creates air pollution.

History: Renum. from NR 154.11 c1d, Register, September, 1986, No. 369, eff. 10-1-86; am. Register, May, 1992, No. 437, eff. 6-1-92.

NR 415.035 Specific geographic areas for additional particulate emission control. c1d FUGITIVE DUST CONTROL AREAS. The requirements of s. NR 415.04 c2d, c3d and c4d apply for the following areas:

cad A portion of the city of Beloit within a line extending from the intersection of the Chicago and Northwestern railroad tracks and the body of water identified as Lennigan creek, east to the intersection of Washburn avenue and Wisconsin avenue, south on Wisconsin avenue to the intersection of Wisconsin avenue and Grand avenue, continuing southeast on Grand avenue to the intersection of Grand avenue and Dearborn avenue, continuing south on Dearborn avenue to the intersection of Dearborn avenue and the Wisconsin-Illinois border, west along the Wisconsin-Illinois border to the intersection of the Wisconsin-Illinois border and the Chicago and Northwestern railroad tracks, and north along the Chicago and Northwestern railroad tracks to the body of water identified as Lennigan creek.

cbd A portion of the city of Milwaukee within a line extending from the intersection of 55th street and Center street east on Center street to the shoreline of Lake Michigan, south along the shoreline of Lake Michigan to a point east of Morgan avenue, west to Morgan avenue, continuing west along Morgan avenue to the intersection of Morgan avenue and 6th street, north on 6th street to Oklahoma avenue, west on Oklahoma avenue to 55th street, and north on 55th street to Center street.

ccd A portion of the city of Waukesha within a line extending from the intersection of North street and an extension of Margaret street, east to Margaret street, continuing along Margaret street to the intersection of Margaret street and Highland boulevard, south on Highland boulevard to the intersection of Highland boulevard and Moreland boulevard, southwest on Moreland boulevard to the intersection of Moreland boulevard and Waukesha avenue, south on Waukesha avenue extended to the intersection of Main street and the railroad tracks and Arcadian avenue, west on Arcadian avenue to the intersection of Arcadian avenue and East avenue, north on East avenue to the intersection of East avenue and Buckley street, northwest across the Fox river to Union street, continuing northwest on Union street to the intersection of Union street and North street, and northeast on North street to the extension of Margaret street.

c2d DIRECT OR PORTABLE SOURCE CONTROL AREAS. The requirements of ss. NR 415.05 c3d, 415.06 c3d and c4d and 415.075 c3d apply for the following areas:

cad The portion of the city of Beloit within the boundaries specified in sub. c1d cad.

cbd The portion of the city of Milwaukee within the boundaries specified in sub. c1d cbd.

ccd The portion of the city of Waukesha within the boundaries specified in sub. c1d ccd.

History: CR 01-002: cr. Register October 2001 No. 550, eff. 11-1-01.

NR 415.04 Fugitive dust. No person may cause, allow or permit any materials to be handled, transported or stored without taking precautions to prevent particulate matter from becoming airborne. Nor may a person allow a structure, a parking lot, or a road to be used, constructed, altered, repaired, sand blasted or demolished without taking such precautions.

c1d Such precautions shall include, but not be limited to:

cad Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, or construction operations.

cbd Application of asphalt, water, suitable chemicals or plastic covering on dirt roads, material stockpiles and other surfaces which can create airborne dust, provided such application does not create a hydrocarbon, odor or water pollution problem.

ccd Installation and use of hoods, fans, and air cleaning devices to enclose and vent the areas where dusty materials are handled.

cdd Covering or securing of materials likely to become airborne while being moved on public roads, railroads or navigable waters.

ced Conduct of agricultural practices such as tilling of land or application of fertilizers in such manner as not to create air pollution.

cfid The paving or maintenance of roadway areas so as not to create air pollution.

c2d In addition to meeting the requirements of sub. c1d, any direct or portable source located in an area identified in s. NR 415.035 c1d; and any direct or portable source located near the areas whose aggregate fugitive dust emissions may cause an impact on the ambient air quality in the areas equal to or greater than an annual concentration of one microgram per cubic meter or a maximum 24-hour concentration of 5 micrograms per cubic meter, as determined by the analysis under ch. NR 401, shall meet the following RACT requirements:

cad Storage piles having a material transfer greater than 100 tons in any year are subject to the following requirements:

1. Storage piles of material having a silt content of 5% to 20% shall be treated with water, surfactants, stabilizers or chemicals; draped; or enclosed on a minimum of 3 sides. Access areas surrounding storage piles shall be watered, cleaned or treated with stabilizers as needed to prevent fugitive dust from vehicle traffic.

2. Storage piles of materials having a silt content of 20% or more shall be completely enclosed or draped except any part being worked, loaded or unloaded. Access areas surrounding storage piles shall be watered, cleaned or treated with stabilizers as needed to prevent fugitive dust from vehicle traffic.

cbd Materials handling operations are subject to the following requirements:

1. Materials handling operations, including but not limited to crushing, grinding, mixing, screening, compacting, conveying, handling of waste material with more than 5% silt, and loading

and unloading of railcar, truck, ship or barge shall have fugitive emissions controlled to 20% opacity when wind speeds are less than 25 miles per hour except for 3 minutes in any hour when fugitive emissions may equal 50% opacity.

2. Any device used to control fugitive emissions from materials handling operations which has a discharge to the ambient air shall be controlled equal to or less than 0.20 pounds of particulate matter per 1000 pounds of exhaust gas.

ccd Process fugitive emissions are subject to the following control requirements:

1. Any device used to control fugitive particulate emissions from processes which has a discharge to the ambient air shall be controlled to an exhaust gas concentration equal to or less than 0.20 pounds of particulate matter per 1000 pounds of exhaust gas.

2. Emissions from any building or structure egress other than a stack shall be controlled such that visible emissions do not exceed 20% opacity except for 3 minutes in any hour when fugitive emissions may equal 50% opacity.

c3d In addition to meeting the requirements of sub. c1d, private industrial or commercial trafficable areas, roads and driveways which are located in or within one mile of an area identified in s. NR 415.035 c1d, are 20,000 square feet or more in total area, are on contiguous property under common ownership or control, and are subject on 3 separate days during any 14 consecutive day period to motor vehicle traffic at any point within the roads, driveways or trafficable areas at a rate equal to or greater than 10 motor vehicles per 60 minute period, shall meet the following RACT requirements:

cad Be paved with asphalt, concrete or other material approved by the department, or use other methods of dust control which the department approves as representing RACT for the particular road, driveway or trafficable area. The other methods of dust control which may be approved by the department include but are not limited to periodic application of water or suitable chemicals. In assessing compliance with this subsection, the department shall consider the effects of the use of paving or other methods of dust control upon the rate and volume of surface water runoff and water quality.

cbd If paved, be kept reasonably free of material likely to become airborne, through a program of periodic cleaning.

c4d In addition to meeting the requirements of sub. c1d, any roadway or public trafficable area which is located in or within one mile of an area identified in s. NR 415.035 c1d and which is subject on 3 separate days during any 14 consecutive day period to motor vehicle traffic at any point within the roadway or public trafficable area at a rate equal to or greater than 10 motor vehicles per 60 minute period shall meet the RACT requirements of this subsection. For purposes of this subsection, ownership or control of different portions of a roadway or public trafficable area by different municipalities, interstate agencies, state agencies or federal agencies may not be considered in determining the contiguous area of the roadway or public trafficable area.

cad If paved, roadways and public trafficable areas subject to this subsection shall be kept, through a program of periodic cleaning, reasonably free of material likely to become airborne. This paragraph does not apply to a public trafficable area of less than 20,000 contiguous square feet in area unless the public trafficable area is also a roadway.

cbd If unpaved, roadways and public trafficable areas subject to this subsection shall be paved with asphalt, concrete or other material approved by the department, or use other methods of dust control which the department approves as representing RACT for the particular roadway or public trafficable area. The

other methods of dust control which may be approved by the department include but are not limited to periodic application of water or suitable chemicals. In assessing compliance with this subsection, the department shall consider the effects of the use of paving or other methods of dust control upon the rate and volume of surface water runoff and water quality. This paragraph does not apply to roadways or to public trafficable areas which have less than 20,000 contiguous square feet of unpaved surface area.

History: Renum. from NR 154.11 c2d and am. Register, September, 1986, No. 369, eff. 10-1-86; am. cintro.d, c1d cfd and c2d ccd 2., Register, May, 1992, No. 437, eff. 6-1-92; am. c1d cbd, c2d cad cintro.d, cbd cintro.d, and ccd cintro.d, c3d cad and c4d cbd, Register, December, 1995, No. 480, eff. 1-1-96; am. c4d cad and cbd, Register, October, 1999, No. 526, eff. 11-1-99; CR 01-002: am. c2d cintro.d, c3d cintro.d and cad, c4d cintro.d and cbd, r. c5d, Register October 2001 No. 550, eff. 11-1-01.

NR 415.05 Particulate matter emission limits for processes. No person may cause, allow or permit the emission of particulate matter to the ambient air from a direct or portable source involving a process in excess of the following limitations:

c1d All direct and portable sources on which construction or modification was commenced on or before April 1, 1972 shall meet the emission limitations of this subsection.

cad Cupolas melting more than 200 tons of metal in any year: 0.45 pounds of particulate matter per 1,000 pounds of gas.

cbd Electric arc or induction furnaces: 0.10 pounds of particulate matter per 1,000 pounds of gas.

ccd Open hearth furnaces: 0.20 pounds of particulate matter per 1,000 pounds of gas.

cdd Basic oxygen furnaces: 0.10 pounds of particulate matter per 1,000 pounds of gas.

ced Sintering plants: 0.20 pounds of particulate matter per 1,000 pounds of gas.

cfid Air melting furnaces: 0.30 pounds of particulate matter per 1,000 pounds of gas.

cgd Heating or preheating furnaces: 0.30 pounds of particulate matter per 1,000 pounds of gas.

chd Blast furnaces: 0.20 pounds of particulate matter per 1,000 pounds of gas.

cid Asphalt, concrete or aggregate mix plants: 0.30 pounds of particulate matter per 1,000 pounds of gas.

cjd Cement kilns: 0.20 pounds of particulate matter per 1,000 pounds of gas.

ckd Lime kilns: 0.20 pounds of particulate matter per 1,000 pounds of gas.

cLd Cement klinker coolers: 0.30 pounds of particulate matter per 1,000 pounds of gas.

cmd Grinding, drying, mixing, conveying, sizing or blending: 0.20 pounds of particulate matter per 1,000 pounds of gas.

cnd Grain processing or handling: 0.40 pounds of particulate matter per 1,000 pounds of gas.

cod Any other process not enumerated: 0.40 pounds of particulate matter per 1,000 pounds of gas.

c2d All direct and portable sources on which construction or modification is commenced after April 1, 1972 shall meet the emission limitations of this subsection. The allowable emissions of particulate matter are calculated by the use of the equation

$$E = 3.59 P^{0.62}$$

for process weight rates up to 60,000 pounds per hour and by use of the equation

$$E = 17.31 P^{0.16}$$

for process weight rates of 60,000 pounds per hour or more, where E is the allowable emissions in pounds per hour and P is

the process weight rate in tons per hour. If the calculated emission rate is less restrictive than the applicable concentration specified under sub. c1d based on the maximum exhaust flow rate and normal exhaust gas temperature, the limitation under sub. c1d shall apply.

Note: Some examples of these calculations are given in the following table.

Process Weight Rate clbs{hrd	Emission Rate clbs{hrd
50.....	0.36
100.....	0.56
500.....	1.52
1,000.....	2.33
5,000.....	6.33
10,000.....	9.74
20,000.....	14.96
60,000.....	29.57
80,000.....	31.23
120,000.....	33.33
160,000.....	34.90
200,000.....	36.16
400,000.....	40.41
1,000,000.....	46.79

c3d In addition to meeting the requirements of subs. c1d and c2d, any direct or portable source located in or near an area identified in s. NR 415.035 c2d whose aggregate particulate emissions, excluding fugitive dust, may cause an impact on the ambient air quality in the areas equal to or greater than an annual concentration of one microgram per cubic meter or a maximum 24-hour concentration of 5 micrograms per cubic meter shall meet the following RACT emission limitations:

cad Sources on which construction or modification was commenced on or before April 1, 1972 may not emit more than 0.20 pounds of particulate matter per 1000 pounds of exhaust gas.

cbd Sources on which construction or modification was commenced after April 1, 1972 may not emit more than the emissions limits of sub. c2d or 0.20 pounds of particulate matter per 1000 pounds of exhaust gas, whichever is more restrictive.

c4d Notwithstanding sub. c3d, any cupola may emit up to, but not more than 0.25 pounds of particulate matter per 1000 pounds of exhaust gas.

History: Renum. from NR 154.11 c3d and am. Register, September, 1986, No. 369, eff. 10-1-86; correction in c2d cad 1. made under s. 13.93 c2md cbd 7., Stats., Register, April, 1989; am. cintro.d, c1d cbd to cod, c2d cad cintro.d and 1., c3d cbd, c5d cintro.d, r. c2d cad 2. and 3., cbd, Register, May, 1992, No. 437, eff. 6-1-92; am. c2d, Register, December, 1995, No. 480, eff. 1-1-96; CR 01-002: am. c3d cintro.d, r. c5d, Register, October 2001 No. 550, eff. 11-1-01.

NR 415.06 Particulate matter emission limits for fuel burning installations. No person may cause, allow or permit the emission of particulate matter to the ambient air from any indirect heat exchanger, power or heating plant, fuel-burning installation or pulp recovery furnace with maximum heat input more than one million Btu per hour in excess of one of the following limitations:

c1d All installations on which construction or modification was commenced on or before April 1, 1972 shall meet the emission limitations of this subsection:

cad All installations shall meet the emission limitation of 0.60 pounds of particulate matter from any stack per million Btu heat input.

cbd Installations located in subregion 1 of the Lake Michigan Intrastate AQCR shall meet the emission limitation of 0.30 pounds of particulate matter from any stack per million Btu heat input.

ccd Installations located in the Southeastern Wisconsin Intrastate AQCR shall meet the following requirements:

1. Installations of 250 million Btu per hour or less: maximum emission defined by the equation

$$E = 0.3 - 0.0006I$$

where I is heat input in millions of Btu per hour and E is maximum allowable particulate matter emissions from any stack in pounds per million Btu heat input.

2. Installations of more than 250 million Btu per hour: maximum emission from any stack of 0.15 pounds of particulate matter per million Btu heat input.

c2d All installations on which construction or modification is commenced after April 1, 1972 shall meet the emission limitations of this subsection:

cad Installations of 250 million Btu per hour or less except as provided in par. **cbd**: maximum emission from any stack of 0.15 pounds of particulate matter per million Btu heat input.

cbd Installations of 100 million Btu per hour or less which are not located in the Southeastern Wisconsin Intrastate AQCR and which burn only wood, or wood simultaneously with liquid or gaseous fossil fuel: maximum emission from any stack of 0.50 pounds of particulate matter per million Btu heat input except that installations located in subregion 1 of the Lake Michigan Intrastate AQCR shall meet the requirements of sub. **c1d cbd**.

ccd Installations of more than 250 million Btu per hour: maximum emission from any stack of 0.10 pounds of particulate matter per million Btu heat input.

c3d In addition to meeting the requirements of sub. **c1d** or **c2d**, all installations located in or near an area identified in s. NR 415.035 **c2d** whose aggregate particulate emissions, excluding fugitive dust, may cause an impact on the ambient air quality in the areas equal to or greater than an annual concentration of one microgram per cubic meter or a maximum 24-hour concentration of 5 micrograms per cubic meter shall meet the following RACT emission limitations:

cad Installations of 100 million Btu per hour or less: maximum emission from any stack of 0.24 pounds of particulate matter per million Btu heat input.

cbd Installations of more than 100 million Btu per hour on which construction or modification commenced on or before April 1, 1972: maximum emission from any stack of 0.15 pounds of particulate matter per million Btu heat input.

ccd Installations of more than 100 million Btu per hour but of not more than 250 million Btu on which construction or modification commenced after April 1, 1972: maximum emission from any stack of 0.15 pounds of particulate matter per million Btu heat input.

cdd Installations of more than 250 million Btu per hour on which construction or modification commenced after April 1, 1972: maximum emission from any stack of 0.10 pounds of particulate matter per million Btu heat input.

c4d Notwithstanding sub. **c3d cad** or **cbd**, any fuel burning installation of 250 million Btu per hour or less on which construction or modification was commenced on or before April 1, 1972 may emit up to, but not more than, an emission rate defined by the equation

$$E = 0.3 - 0.0006I$$

where I is the heat input in millions of Btu per hour and E is the maximum allowable particulate matter emissions from any stack in pounds per million Btu heat input, if the installation has an emission rate based on original design or equipment performance test conditions, whichever is more restrictive, which is less than the limit set by the above equation, and the emission control system of the installations has not been allowed to degrade more than 0.05 pound per million Btu heat input from original design or acceptance performance test conditions.

History: Renum. from NR 154.11 c4d and am. Register, September, 1986, No. 369, eff. 10-1-86; correction in c2d cbd made under s. 13.93 c2md cbd 7., Stats.,

Register, April, 1989; am. cintro.d, c1d cad, cbd, ccd 1. and 2., c2d cad to ccd, c3d cad to cdd and c4d, Register, May, 1992, No. 437, eff. 6-1-92; am. c1d cad, cbd, ccd cintro.d, 1., Register, February, 1995, No. 470, eff. 3-1-95; am. c1d ccd 1. and c4d, Register, October, 1999, No. 526, eff. 11-1-99; CR 01-002: am. c3d cintro.d and c4d, r. c5d, Register October 2001 No. 550, eff. 11-1-01.

NR 415.07 Particulate matter emission limits for incinerators. No person may cause, allow or permit particulate matter, concentrations corrected to 12% carbon dioxide, to be emitted to the ambient air from any incinerator in excess of one of the following limitations:

c1d All incinerators on which construction or modification was commenced on or before April 1, 1972 shall meet the emission limits of this subsection.

cad Incinerators located throughout the state; emissions of:

1. Incinerators rated at over 500 pounds of waste per hour: 0.50 pounds of particulate per 1,000 pounds of exhaust gas.

2. Incinerators rated at 500 pounds of waste per hour or less: 0.60 pounds of particulate per 1,000 pounds of exhaust gas.

cbd Incinerators located in subregion 1 of the Lake Michigan Intrastate AQCR or in the Southeastern Wisconsin Intrastate AQCR; in addition to meeting the emission limits of par. **cad** these incinerators shall meet the following emission limits:

1. Incinerators of 5 cubic feet capacity or more: 0.30 pounds of particulate per 1,000 pounds of exhaust gas.

2. Prefabricated domestic incinerators below 5 cubic feet capacity may not exceed the performance emission requirements prescribed by the American National Standards Institute for domestic incinerators, standard Z21.6, incorporated by reference in s. NR 484.11 **c3d**.

c2d All incinerators on which construction or modification is commenced after April 1, 1972 shall meet the emission limits of this subsection.

cad Incinerators other than those specified in par. **cbd**; emissions in excess of:

1. Incinerators rated at 4,000 pounds of waste per hour or more: 0.15 pounds of particulate per 1,000 pounds of exhaust gas.

2. Incinerators rated at over 500 pounds of waste per hour and less than 4,000 pounds of waste per hour: 0.20 pounds of particulate per 1,000 pounds of exhaust gas.

3. Incinerators rated at 500 pounds of waste per hour or less other than prefabricated domestic incinerators below 5 cubic feet capacity: 0.30 pounds of particulate matter per 1,000 pounds of exhaust gas.

4. Prefabricated domestic incinerators below 5 cubic feet capacity may not exceed the performance emission requirements prescribed by the American National Standards Institute for domestic incinerators, standard Z21.6, incorporated by reference in s. NR 484.11 **c3d**.

cbd Sewage treatment plant sludge and grit incinerators on which construction or modification is commenced after February 1, 1975; emissions may not exceed 1.30 pounds per ton of dry sludge or grit input c0.65 grams per kilogram of dry sludge or grit inputd.

History: Renum. from NR 154.11 c5d and am. Register, September, 1986, No. 369, eff. 10-1-86; am. cintro.d, c1d cbd 2., c2d cad 4. and cbd, Register, May, 1992, No. 437, eff. 6-1-92; am. c1d cad cintro.d, cbd cintro.d and 2., c2d cad 4., Register, December, 1995, No. 480, eff. 1-1-96; correction in c1d cbd 2. and c2d cad 4., made under s. 13.93 c2md cbd 7., Stats., Register October 2003 No. 574.

NR 415.075 Particulate matter emission limitations for ledge rock quarries and industrial sand mines. **c1d** APPLICABILITY. cad Except as provided in par. **cbd**, the provisions of this section are applicable to the following operations and emission points in ledge rock quarries and industrial sand

mines: blasting, drilling, roads, storage piles and use of haul trucks.

cbd Operations at any of the following ledge rock quarries and industrial sand mines are not subject to the provisions of subs. [c2d](#) to [c4d](#):

1. Ledge rock quarries with actual production of less than 25,000 tons per month on a rolling 12 month average.
2. Ledge rock quarries with actual operation of less than 365 days per 5 year period.
3. Industrial sand mines with actual production of less than 2,000 tons per month on a rolling 12 month average.

ccd When a ledge rock quarry or industrial sand mine is operated by more than one owner or operator, then actual production and actual operation shall be cumulative at the site. The applicable particulate emissions limitations of this section shall be applicable to all subsequent operators or owners at that site.

c2d PARTICULATE EMISSION LIMITATIONS IN ALL AREAS OF THE STATE. cad No person may cause, allow or permit the use of any parking lot, road or other area by haul trucks or any drilling or blasting without taking precautions to prevent particulate matter from becoming airborne. These precautions shall be taken to the extent necessary so that any applicable requirements are met and shall include one or more of the following:

1. Application of asphalt, water or suitable chemicals on unpaved roads or other areas used by haul trucks which can create airborne dust, provided the application does not create a hydrocarbon, odor or water pollution problem.
2. Posting and maintenance of a 10 MPH speed limit on paved or unpaved roads or other areas used by haul trucks inside the facility[s] property line.
3. Covering, treatment or securing of materials likely to become airborne from haul trucks during transport, prior to any transportation off site from the quarry or mine.
4. Use of wet drilling or other means of control approved by the department.
5. The use of blast hole stemming materials that have been approved by either the department or the department of safety and professional services.
6. Any precautions proposed by the owner or operator and accepted by the department in a permit or fugitive dust control plan.
7. Use of no precautions where control measures are unnecessary due to site or meteorological conditions.

cbd In addition to meeting the requirements of par. [cad](#), the owner or operator shall control fugitive emissions from a road or other area used by haul trucks and from drilling so that visible emissions do not exceed 20% opacity at the source.

ccd The owner or operator shall submit to the department the fugitive dust control plan described in sub. [c6d](#).

c3d PARTICULATE EMISSIONS LIMITATIONS FOR OPERATIONS IN SPECIFIC GEOGRAPHIC AREAS. In addition to meeting the limitations of sub. [c2d](#), the owner or operator of any ledge rock quarry or industrial sand mine located in an area identified in s. [NR 415.035 c1d](#) shall do all of the following:

cad Prior to a haul truck[s] departure from plant property, the haul truck[s] wheels and tires shall be sprayed with water or otherwise cleaned at the exit point from plant property.

cbd Storage piles of material having a silt content of greater than 5% shall be treated with water, surfactants, stabilizers or chemicals; draped; or enclosed on a minimum of 3 sides. The height of enclosure shall ensure that excessive fugitive dust emissions are prevented. Access areas surrounding storage piles shall

be watered, cleaned or treated with stabilizers as needed to prevent fugitive dust from vehicle traffic.

ccd Emissions from all fugitive sources related to the operation of the quarry shall be controlled so that no visible emissions from these sources, as measured using Method 22 in Appendix A of [40 CFR part 60](#), incorporated by reference in s. [NR 484.04 c18d](#), cross the facility[s] property line.

cdd Emissions from activities not associated with processing equipment, including but not limited to roads, other areas used by haul trucks, storage piles and drilling, shall be controlled so that visible emissions do not exceed 5% opacity at the source.

ced Roads and other areas used by haul trucks shall be paved with asphalt, concrete or other material approved by the department, or treated by other methods of dust control which the department approves for the particular road, driveway or trafficable area so that the visible emissions limits of pars. [ccd](#) and [cdd](#) are met. Other methods of dust control which may be approved by the department include but are not limited to periodic application of water or suitable chemicals provided the application does not create a hydrocarbon, odor or water pollution problem. In reviewing and approving other materials or methods for compliance with this subsection, the department shall consider the effects of the use of paving or other methods of dust control upon the rate and volume of surface water runoff and water quality. All roads and other areas, if paved, shall be kept free of material likely to become airborne, through a program of periodic cleaning.

c4d AMBIENT AIR MONITORING. cad Except as provided in par. [cbd](#), the owner or operator of any operation subject to the provisions of this section shall set up, operate and report the results obtained with a particulate matter ambient air monitoring system. The monitoring system shall comply with all of the following requirements:

1. A plan that describes the ambient air monitoring program shall be submitted to the department within 30 days of the date of issuance of a permit under ch. [NR 406](#) or [407](#).
2. The department shall review the plan to determine whether it will provide accurate and reliable monitoring at the operation site. Department approval, conditional approval or disapproval of any ambient air monitoring plan shall be completed within 60 days of receipt of the plan.

3. Monitoring for particulate matter shall be conducted for a 24-hour period on the 6 day schedule established by the U.S. environmental protection agency, or more frequently if required by the department. The department shall specify the schedule in the approved plan.

4. Monitoring results shall be submitted to the department on a monthly basis. Results for each month shall be postmarked or received by the department no later than the last day of the following month.

5. The owner or operator shall start monitoring by 120 days from the date of permit issuance under ch. [NR 407](#) or as specified in the ambient air monitoring plan for any source subject to the permit requirements of ch. [NR 406](#).

cbd The owner or operator of a source may apply for, and the department may grant, a variance from the monitoring requirements of this subsection if the applicant demonstrates that the general public will not be exposed to significant levels of particulate matter from the source, and that the source[s] emissions units and processes are controlled to a level which meets all applicable requirements. The department may review any variance granted under this paragraph on a biennial basis. Following its review, the department may modify, extend or rescind the variance.

c5d RECORDKEEPING. Each owner or operator of any ledge rock quarry or industrial sand mine shall keep the following records. Recordkeeping and access to these records shall be in accordance with ss. [NR 439.03](#) to [439.05](#).

cad Records of actual operation on a monthly basis.

cbd Records of actual production on a monthly basis.

c6d FUGITIVE DUST CONTROL PLAN. cad Each owner or operator of any ledge rock quarry or industrial sand mine shall prepare a fugitive dust control plan to prevent, detect and correct malfunctions, equipment failures or other circumstances which may cause any applicable emission limitation to be violated or which may cause air pollution. The plan shall be in writing, and updated as needed, and shall include all of the following:

1. Identification of the individual responsible for implementing the fugitive dust control plan.

2. The maximum intervals for inspection and routine maintenance of fugitive dust control equipment, including a description of the items or conditions that will be checked.

3. Schedules for watering, treating or periodic cleaning of roads, trafficable areas and storage piles.

4. A listing of materials, equipment and spare parts that will be maintained in inventory.

5. Other information as the department may deem pertinent.

cbd The department may order any owner or operator to submit the plan required by par. [cad](#) to the department for review. The department may request any owner or operator to amend the plan if deemed necessary for malfunction prevention or the reduction of excess emissions.

ccd No owner or operator may fail to implement the plan required under par. [cad](#) or as amended under par. [cbd](#).

cdd All air pollution control equipment shall be operated and maintained in conformance with good engineering practices to minimize the possibility for the exceedance of any emission limitations.

History: Cr. [Register, June, 1994, No. 462](#), eff. 7-1-94; am. [c2d cad 5](#). and [c3d ccd](#), [Register, December, 1995, No. 480](#), eff. 1-1-96; [CR 01-002](#): am. [c3d cintro.d](#), [Register, October 2001 No. 550](#), eff. 11-1-01; correction in [c3d ccd](#) made under s. [13.93 c2md cbd 7](#)., [Stats., Register October 2003 No. 574](#); correction in [c2d cad 5](#). made under s. [13.92 c4d cbd 6](#)., [Stats., Register April 2023 No. 808](#).

NR 415.076 Particulate matter emission limitations for crushed stone and sand and gravel plants. c1d APPLICABILITY. cad Except as provided in par. [cbd](#), the provisions of this section are applicable to the following direct or portable sources in fixed or portable crushed stone and sand and gravel plants: each crusher, screening operation, bucket elevator, belt conveyor or storage bin.

cbd Direct or portable sources at the following plants are not subject to the provisions of this section:

1. Fixed sand and gravel plants and fixed crushed stone plants with capacities of 25 tons per hour or less.

2. Portable sand and gravel plants and portable crushed stone plants with capacities of 150 tons per hour or less.

c2d FUGITIVE DUST CONTROL. No person may cause, allow or permit any crusher, screen, bucket elevator, belt conveyor, storage bin or any transfer point on belt conveyors to be used without taking precautions to prevent particulate matter from becoming airborne. These precautions shall be taken to the extent necessary so that any applicable requirements are met and shall include one or more of the following:

cad Use, where possible, of water, or chemicals approved by the department, for control of dust.

cbd Installation and use of hoods, enclosures, buildings, fans and air cleaning devices to enclose and vent the areas where materials are handled.

ccd The use of spray bars or other wet dust suppression methods.

cdd Any precautions proposed by the owner or operator and accepted by the department.

ced Use of no precautions where control measures are unnecessary due to site or meteorological conditions.

History: Cr. [Register, June, 1994, No. 462](#), eff. 7-1-94.

NR 415.08 RACT requirements for coking operations. c1d This section applies to all coking operations.

c2d Visible emissions from charging procedures shall be limited by the application of RACT. RACT includes:

cad The use and maintenance of suitable jumper pipes and leveling bar smoke boots,

cbd The use and maintenance of suitable seals on larry car drop sleeves and leveling bar smoke boots,

ccd The use and maintenance of a steam aspiration system which provides maximum safe levels of negative pressure on the oven chamber during the charging operation, and

cdd The completion of each charging procedure, including sweeping excess coal into the oven just charged, as quickly as possible.

c3d Fugitive emissions from pushing operations shall be captured by a traveling hood and controlled to not more than 0.080 pounds of particulate matter per 1000 pounds of exhaust gas. Any emissions escaping capture may not exceed 20% opacity for each pushing operation, as determined by the average of 6 consecutive observations made at 15 second intervals.

c4d There may be no visible emissions from 90% of the doors of all coke ovens in use; 95% of all coke oven charging port lids on ovens in use; and 90% of all offtake piping on ovens in use, except those open for charging, pushing, cleaning and maintenance as determined by a one pass observation.

c5d Quench towers for the application of water on hot coke shall be equipped with grit arrestors or equivalent equipment approved by the department. Water used in quenching may not include coke by-product plant effluent, and total dissolved solids in make-up quenching water shall be less than 750 milligrams per liter.

c6d Coke oven combustion stacks may not emit more than 0.10 pounds of particulate matter per 1000 pounds of exhaust gas or have visible emissions greater than 20% opacity.

History: Renum. from NR 154.11 [c7d](#) and am. [Register, September, 1986, No. 369](#), eff. 10-1-86; am. [c3d](#) and [c5d](#), [Register, May, 1992, No. 437](#), eff. 6-1-92; am. [c1d](#), [Register, December, 1995, No. 480](#), eff. 1-1-96.

NR 415.09 Compliance schedule for sources of condensible particulate matter. c1d GENERAL COMPLIANCE SCHEDULE. If a source on which construction or modification was last commenced on or before July 1, 1975, other than a heatset web offset press, fails to meet a particulate emission limitation in this chapter because of the inclusion of condensible particulate matter, as defined in s. [NR 439.02 c4d](#), in the determination of emission rates or concentrations, the owner or operator of the source shall achieve final compliance with the applicable limitation by October 1, 1990.

c2d COMPLIANCE SCHEDULE FOR HEATSET WEB OFFSET PRESSES. If a heatset web offset press on which construction or modification was last commenced on or before July 1, 1975 fails to meet a particulate emission limitation in this chapter because of the inclusion of condensible particulate matter, as defined in s. [NR 439.02 c4d](#), in the determination of emission rates or concentrations, the owner or operator of the source shall achieve final compliance with the applicable limitation by October 1, 1990.

c3d COMPLIANCE SCHEDULE FOR HEATSET WEB OFFSET PRESSES. If a heatset web offset press on which construction or modification was last commenced on or before July 1, 1975 fails to meet a particulate emission limitation in this chapter because of the inclusion of condensible particulate matter, as defined in s. [NR 439.02 c4d](#), in the determination of emission rates or concentrations, the owner or operator of the source shall achieve final compliance with the applicable limitation by October 1, 1990.

trations, the owner or operator of the source may not exceed the following increments of progress in achieving compliance with that limit:

cad Submit plans for achieving compliance or request a variance in accordance with the provisions of sub. [c3d cad](#) by July 1, 1993.

cbd Award any necessary contracts by July 1, 1994.

ccd Commence construction, installation or modification of any emission control system by December 31, 1994.

cdd Complete construction, installation or modification of any emission control system by July 1, 1995.

ced Achieve final compliance with the applicable emission limit by December 31, 1995.

c3d VARIANCE. Notwithstanding sub. [c2d](#), the owner or operator of a source constructed or modified on or before July 1, 1975 which fails to meet a particulate emission limitation in this chapter because of the inclusion of condensible particulate matter, as defined in s. [NR 439.02 c4d](#), in the determination of emission rates or concentrations may request in writing a variance from the emission limitation from the department under par. [cad](#) on or before July 1, 1993 if the source is a heatset web offset press.

cad The department may grant a variance under this paragraph and set an alternate emission limitation under the criteria and procedures outlined in s. [NR 436.05 c2d](#) and [c3d](#) if compliance with the emission limitation is shown to be technologically or economically infeasible.

cbd The department shall grant a variance under this paragraph and set an alternate emission limitation if the following criteria are met:

1. The variance will not delay attainment or prevent maintenance of any ambient air quality standard, as determined by methods acceptable to the department.

2. The applicable particulate emission limitation for the air contaminant source for which a variance is requested was promulgated on or before October 1, 1987.

3. The request for variance includes the report of a test conducted according to the methods and procedures of s. [NR 439.07](#), for the air contaminant source for which the variance is requested, which demonstrates noncompliance with the applicable particulate emission limitation.

4. The air contaminant source for which a variance is requested is not reasonably capable of complying with the applicable emission limitation except by means of the installation and operation of an electrostatic precipitator, fabric filter baghouse or wet scrubber for particulates or the source is equipped with such a control device and demonstrates to the department[s satisfaction that compliance is still not achievable.

ccd The department may revoke or modify any variance granted under this subsection in accordance with the provisions of s. [NR 436.05 c4d](#).

History: Cr. [Register, September, 1987, No. 381](#), eff. 10-1-87; am. c1d cintro.d and ccd, renum. c2d to be c3d and am. cintro.d, cr. c2d, [Register, April, 1989, No. 400](#), eff. 5-1-89; am. c1d cintro.d, c3d cintro.d, r. c1d cad to ced., [Register, December, 1995, No. 480](#), eff. 1-1-96.