

# MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

## AIR QUALITY DIVISION

### PART 3. EMISSION LIMITATIONS AND PROHIBITIONS—PARTICULATE MATTER

#### **R 336.1301 Standards for density of emissions.**

Rule 301. (1) Except as provided in subrules (2), (3), and (4) of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following:

(a) A 6-minute average of 20% opacity, except for 1 6-minute average per hour of not more than 27% opacity.

(b) A limit specified by an applicable federal new source performance standard.

(c) A limit specified as a condition of a permit to install or permit to operate.

(2) The provisions of this rule shall not apply to any process or process equipment for which fugitive visible emission limitations are specified in any other administrative rule of the department.

(3) The provisions of subrule (1) of this rule shall not apply to visible emissions due to uncombined water vapor.

(4) Upon request by the owner of a process or process equipment for which an allowable particulate emission rate is established by R 336.1331, the department may establish an alternate opacity. Such alternate opacity shall not be established by the department unless the department is reasonably convinced of all of the following:

(a) That the process or process equipment subject to the alternate opacity is in compliance or on a legally enforceable schedule of compliance with the other rules of the department.

(b) That compliance with the provisions of subrule (1) of this rule is not technically or economically reasonable.

(c) That reasonable measures to reduce opacity have been implemented or will be implemented in accordance with a schedule approved by the department.

History: 1979 ACS 1, Eff. Jan. 19, 1980; 1985 MR 2, Eff. Feb. 22, 1985; 2002 MR 5, Eff. Mar. 19, 2002.

#### **R 336.1303 Grading visible emissions.**

Rule 303. The opacity of a visible emission shall be determined by a qualified observer and shall be certified in accordance with, and using the procedures specified in, reference method 9 or an alternative method approved by the department.

History: 1979 ACS 1, Eff. Jan. 19, 1980; 1985 MR 2, Eff. Feb. 22, 1985; 2002 MR 5, Eff. Mar. 19, 2002.

### **R 336.1310 Open burning**

Rule 310. (1) A person shall not cause or permit open burning of refuse, garbage, or any other waste materials, except for the burning of any of the following:

(a) Waste disposal material from and at 1- or 2-family dwellings that does not contain plastic, rubber, foam, chemically treated wood, textiles, electronics, chemicals, or hazardous materials, if the burning does not violate any other department rules.

(b) Structures and other materials used exclusively for fire prevention training.

(c) Trees, logs, brush, and stumps in accordance with applicable state and local regulations if the burning is not conducted within a priority I area as listed in table 33, a priority II area as listed in table 34, nor closer than 1400 feet to an incorporated city or village limit and if the burning does not violate any other department rules.

(d) Beekeeping equipment and products, including frames, hive bodies, hive covers, combs, wax, and honey, if burned for bee disease control.

(e) Logs, brush, charcoal, and similar materials that are used in preparing food or for recreation.

(f) Wooden fruit or vegetable storage bins constructed from untreated lumber if both of the following requirements are met:

(i) The burning is conducted for disease or pest control.

(ii) The burning is not conducted at any of the following locations:

(A) Within a priority I area as listed in table 33 or a priority II area as listed in table 34.

(B) In a city or village.

(C) Within 1,400 feet outside the boundary of a city or village.

(2) The exceptions specified in subrule (1) of this rule do not authorize open burning if prohibited by local law or regulation.

History: 1980 AACCS; 1999 AACCS; 2013 MR 6, Eff. April 1, 2013.

### **R 336.1331 Emission of particulate matter.**

Rule 331. (1) It is unlawful for a person to cause or allow the emission of particulate matter from any process or process equipment in excess of any of the following limits:

(a) The maximum allowable emission rate listed in table 31.

(b) The maximum allowable emission rate listed by the department on its own initiative or by application. A new listed value shall be based upon the control results achievable with the application of the best technically feasible, practical equipment available. This applies only to processes and process equipment not assigned a specific emission limit in table 31.

(c) The maximum allowable emission rate specified as a condition of a permit to install or a permit to operate.

(d) The maximum allowable emission rate specified in a voluntary agreement, performance contract, stipulation, or an order of the department.

(e) The maximum allowable emission rate as determined by table 32 for processes and process equipment not covered in subdivisions (a) to (d) of this subrule.

(2) Compliance with any emission limit required by this rule shall be determined by using the corresponding reference test method specified in table 31 or the reference test method deemed appropriate by the department for processes or process equipment not listed in table

31.

(3) Tables 31, 32, 33, 34, and figure 31 read as follows:

**TABLE 31**  
Particulate matter emission schedule

Process or process equipment	Capacity rating for each unit	Maximum allowable emission at operating conditions <sup>1</sup> (lbs. Particulate/1,000 lbs. gas except as noted)	Applicable reference test method
<b>A. Fuel burning equipment</b>			
1. Pulverized coal (includes cyclone furnaces)	0-1,000,000 lbs. steam per hour.	See figure 31 for maximum emission limit.	5B or 5C
	Over 1,000,000 lbs. steam per hour	Apply to department for specific emission limit.	
2. Other modes of firing coal (other than pulverized)	0-100,000 lbs. steam per hour.	0.65 until superseded by A.3 and A.4.	5B or 5C
	100,000-300,000 lbs. <sup>2</sup> steam per hour.	0.65 - 0.45	
	Over 300,000 lbs. steam per hour.	Apply to department for specific emission limit.	
3. Other modes of firing coal (other than pulverized)	0-20,000,000 Btu per hour input.	0.65 effective immediately.	5B or 5C
	Existing fuel-burning equipment which is in a single structure and which has a combined coal-fired existing capacity less than 250,000,000 Btu per hour.	20,000,001 to 100,000,000 Btu per hour input.	0.45 compliance shall be achieved as expeditiously as practical, but not later than July 1, 1981.
		Over 100,000,000 Btu per hour input	0.30 compliance shall be achieved as expeditiously as practical, but not later than December 31, 1982.
4. Other modes of firing coal (other than pulverized) Existing fuel-burning equipment which is in a single structure and which has a combined existing capacity equal to or greater than 250,000,000 Btu per hours.	All sizes	0.30 compliance shall be achieved as expeditiously as practical, but not later than December 31, 1982.	5B or 5C
5. Other modes of firing coal (new processes or process equipment <sup>6</sup> )	All sizes	0.10	5B or 5C

Process or process equipment	Capacity rating for each unit	Maximum allowable emission at operating conditions <sup>1</sup> (lbs. Particulate/1,000 lbs. gas except as noted)	Applicable reference test method
6. Wood (sawdust, shavings, hogged, other) where heat input of wood fuel greater than 75% of total heat input.  All other combination fuel-burning equipment that uses		0.50  Apply to department for specific emission limit.	5B or 5C
7. Combination fuel-firing or combination fuel/waste-firing (new process or process equipment)	All sizes	Apply to department for specific emission limit.	5B or 5C
	Rating in pounds waste per hour		
<b>B. Incinerators</b>			
1. Residential apartments, commercial and industrial <sup>3,4</sup>	0-100 Over 100	0.65 0.30	5B or 5C 5B or 5C
2. Municipal	All	0.30	5B or 5C
3. Pathological <sup>4</sup>		0.20	5B or 5C
4. Manure drying or incineration <sup>4</sup>		0.20	5B or 5C
5. Liquid waste incinerator		0.10 compliance shall be achieved as expeditiously as practical, but not later than December 31, 1982.	5B or 5C
6. Sewage sludge incinerator		0.20 compliance shall be achieved as expeditiously as practical, but not later than December 31, 1982.	5B or 5C
7. Combination fuel-firing or combination fuel/waste-firing (new process or process equipment)	All sizes	Apply to department for specific emission limit.	5B or 5C
	Rating in pounds waste per hour		
<b>C. Steel manufacturing</b>			
1. Basic oxygen furnaces A. Primary control equipment <sup>12</sup> B. Secondary control equipment <sup>13</sup> C. Primary control equipment if also used to control charging and tapping emissions		0.057 <sup>11</sup> 0.038 <sup>11</sup> 0.057 <sup>11</sup>	5D 5D 5D

Process or process equipment	Capacity rating for each unit	Maximum allowable emission at operating conditions <sup>1</sup> (lbs. Particulate/1,000 lbs. gas except as noted)	Applicable reference test method
2. Electric furnaces A. Primary control equipment <sup>14</sup> B. Secondary control equipment <sup>15</sup> C. Primary control equipment if also used to control charging and tapping emissions		0.057 <sup>11</sup> 0.010 <sup>11</sup> 0.010 <sup>11</sup>	5D 5D or 5E 5D or 5E
3. New sintering plants <sup>6</sup> A. Main windbox B. Discharge		0.067 <sup>11</sup> 0.038 <sup>11</sup>	5D or 5E 5D
4. Existing sintering plants A. Main windbox & discharge		0.125 <sup>11</sup>	5D
5. Blast furnaces Blast furnace casthouse air cleaning device <sup>17</sup>		0.02	5D
6. Coke oven combustion stacks		0.095	5D
7. Coke oven push control equipment		0.10 lbs./ton of coke	5D
9. Scarfing operations		0.057 <sup>11</sup>	5D during scarfing operation
D. Ferrous cupola foundry operations <sup>5</sup>			
1. Existing production cupolas <sup>7</sup>	0-10 10-20 Over 20	0.40 0.25 0.15	5B or 5C 5B or 5C 5B or 5C
2. Existing jobbing cupolas <sup>7</sup>		0.40	5B or 5C
3. Electric arc melting		0.10	5B or 5C
4. Sand handling		0.10	5B or 5C
5. All new cupolas <sup>6</sup>	0-15 Over 15	1.8 - 0.7 <sup>2, 8</sup> 0.7 <sup>8</sup>	5B or 5C
E. Chemical and mineral kilns		0.20	5B or 5C
F. Asphalt paving plants			
1. Located within a priority I or II area (before January 1, 1980)		0.30	5B or 5C
2. Located within a priority I or II area (after January 1, 1980)		0.10	5B or 5C
3. Located outside priority I and II areas		0.30	5B or 5C
G. Cement manufacture			
1. Kiln - wet or dry process		0.25	5B or 5C

Process or process equipment	Capacity rating for each unit	Maximum allowable emission at operating conditions <sup>1</sup> (lbs. Particulate/1,000 lbs. gas except as noted)	Applicable reference test method
2. Clinker coolers (before January 1, 1981)		0.30	5B or 5C
(after January 1, 1981)		0.10	5B or 5C
3. Grinding, crushing, and other material handling.		0.15	5B or 5C
H. <u>Iron ore pelletizing</u> Grate kilns and traveling grates	Over 600,000 300,000-600,000 100,000-300,000 0-100,000	Apply to department for specific emission limit. 0.10 0.15 0.20	 5B or 5C 5B or 5C 5B or 5C
I. <u>Fertilizer plants (including ammoniator, granulator, reactor, dryer, cooler blender and all other processes</u> Compliance shall be achieved as expeditiously as practical, but not later than January 1, 1981.		0.10	5B or 5C
J. <u>Exhaust systems serving material handling equipment not otherwise listed in table 31</u> Compliance shall be achieved as expeditiously as practical, but not later than July 1, 1981.		0.10	5B or 5C

Footnotes:

1. Fuel burning and incineration limitation shall be calculated to 50% excess air.
2. Emission limitations for specific ratings are determined by linear interpolation between the ranges shown.
3. These emission limitations do not apply to domestic incinerators (defined as having not more than 5 cubic feet of storage capacity).
4. Afterburner or approved equivalent is mandatory.
5. Differentiation between jobbing and production foundries.  
Cupolas used in a jobbing foundry are the same as those used in a production foundry and vary in size only according to the quantity of iron melted per hour. However, the cupolas in a jobbing foundry are run intermittently just long enough at one time to pour the molds that are ready on the foundry floor, job by job. This might be for a 2- to 4-hour period per day for any number of days per week.  
Production foundry cupolas melt continuously to pour a succession of molds that are constantly being prepared to reserve this continuous flow of iron. This could become 8 hours, 16 hours, or 24 hours per day for any number of days per week.
6. New processes or process equipment are defined as those for which the permit to install was issued after January 18, 1980.
7. Any existing cupolas are considered to be in compliance with table 31 of R 336.1331 if they

- meet the particulate emission limit for new cupolas.
8. Pounds of particulate per ton of charged material.
  9. Milligrams per liter of total dissolved solids in the quench water.
  10. Milligrams per liter of total dissolved solids in the make-up water.
  11. Compliance shall be determined by means of a comparison between the emission limit and the measured emission rate calculated on a dry basis (pounds particulate per 1,000 pounds dry gas).
  12. "Primary control equipment", as applied to basic oxygen furnaces, means the control equipment designed to capture and control particulate emissions during oxygen blowing.
  13. "Secondary control equipment", as applied to basic oxygen furnaces, means the control equipment designed to capture and control particulate emissions during process steps other than oxygen blowing.
  14. "Primary control equipment", as applied to electric furnaces, means the control equipment designed to capture and control particulate emissions during meltdown and refining.
  15. "Secondary control equipment", as applied to electric furnaces, means the control equipment designed to capture and control particulate emissions during process steps other than meltdown and refining.
  16. "Standard Methods for the Examination of Water and Wastewater" (14th edition) section 208C, as modified in R336.2033, shall be used as the applicable test method.
  17. The mass emission limit specified is not applicable where fume suppression technology, approved by the department, is used to control blast furnace casthouse emissions.

FIGURE 31

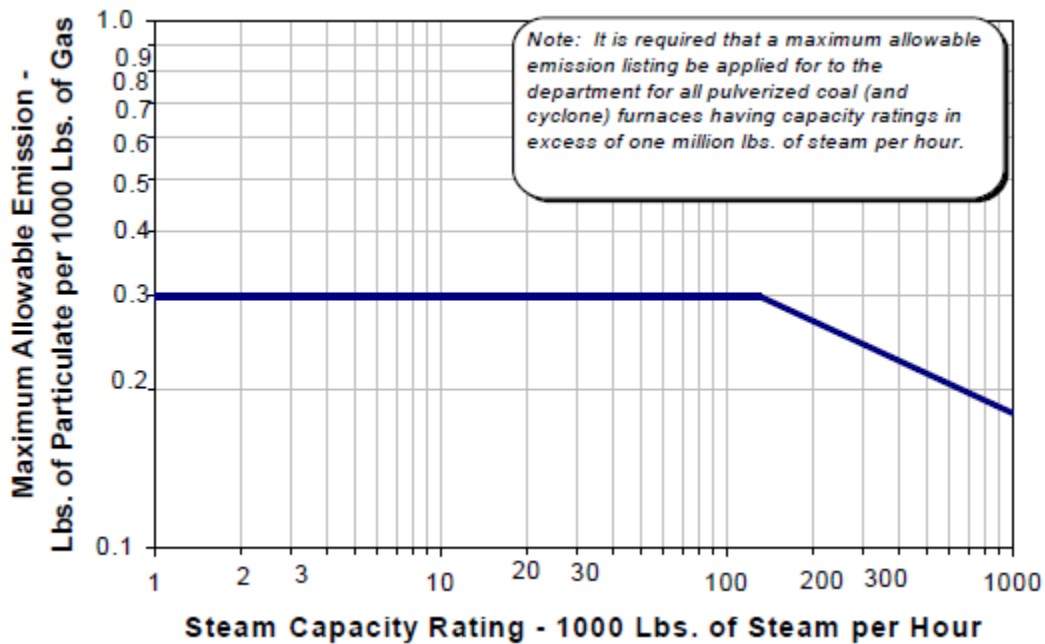


TABLE 32

Allowable rate of emission based on process weight rate <sup>a</sup>					
Process weight rate		Rate of Emission	Process weight rate		Rate of emission
Lb/hr	Tons/hr	Lb/hr	Lb/hr	Tons/hr	Lb/hr
100	0.05	0.55	16,000	8.0	16.5
200	0.10	0.88	18,000	9.0	17.9
400	0.20	1.40	20,000	10.0	19.2
600	0.30	1.83	30,000	15.0	25.2
800	0.40	2.22	40,000	20.0	30.5
1,000	0.50	2.58	50,000	25.0	35.4
1,500	0.75	3.38	60,000	30.0	40.0
2,000	1.00	4.10	70,000	35.0	41.3
2,500	1.25	4.76	80,000	40.0	42.5
3,000	1.50	5.38	90,000	45.0	43.6
3,500	1.75	5.95	100,000	50.0	44.6
4,000	2.00	6.52	120,000	60.0	46.3
5,000	2.50	7.58	140,000	70.0	47.8
6,000	3.00	8.56	160,000	80.0	49.0
7,000	3.50	9.49	200,000	100.0	51.2
8,000	4.00	10.40	1,000,000	500.0	69.0
9,000	4.50	11.20	2,000,000	1,000.0	77.6
10,000	5.00	12.00	6,000,000	3,000.0	92.7
12,000	6.00	13.60			

<sup>a</sup> Interpolation of the data in this table for process weight rates up to 60,000 lb/hr shall be accomplished by use of the equation  $E = 4.10 P^{0.67}$  and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lb/hr shall be accomplished by use of the equation  $E = 55.0 P^{0.11} - 40$ , where E = rate of emission in lb/hr and P = process weight in tons/hr.

Process weight -- The total amount of all material introduced into a process, including solid fuels, but excluding liquid fuels and gaseous fuels when these are used as fuels and air introduced for purposes of combustion.

Process weight rate -- For continuous or long-term operation: The total process weight for the entire period of operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof. For batch operations: The total process weight for a period which covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such period.



TABLE 33

Priority I areas

<u>County</u>	<u>Area</u>
Calhoun	T2S, R4W, Section 34
Genesee	Starting on Industrial Avenue, north to Stewart Avenue, east to Hitchcock Street, south to Olive Avenue (extended), south to Robert T. Longway Boulevard, west and southwest to Industrial Avenue.
Lapeer	T7N, R12E, that portion of Section 17 which lies south of M-21 and east of Fairground Road.
Monroe	Starting where Sandy Creek empties into Lake Erie, northwest to Maple Avenue (extended north-northeast), southwest to Elm Avenue, west to Herr Road, south to Dunbar Road and east to Plum Creek (which empties into Lake Erie).
Saginaw	Starting at Tittabawassee Road, east to I-75, east and south to Washington Avenue, west to 6th Street, north to Carrolton Street, northeast to Zilwaukee Street, north to Westervelt Street, north to Tittabawassee Road.
Wayne	Area included within the following (counter clockwise): Lake St. Clair to Moross Road to Seven Mile Road to VanDyke Road to Eight Mile Road to Wyoming Road to Seven Mile Road to Schaeffer Road to Fenkell Road to Greenfield Avenue to Joy Road to Southfield Expressway to Ford Road to Telegraph Road to Cherry Hill Road to Beech-Daly Road (extended) to Michigan Avenue to Inkster Road to Carlisle Street to Middle Belt Road to Vanborn Road to Wayne Road to Pennsylvania Road to Middle Belt Road to Sibley Road to Telegraph Road to King Road to Grange Road to Sibley Road to Jefferson Avenue to Bridge Street (Grosse Ile) extended to Detroit River.

TABLE 34

Priority II areas

<u>County</u>	<u>Area</u>
Bay	T14N, R5E, Sections 14 to16 and 21 to 23.
Delta	T39N, R22W, Sections 19, 30, south one-half of 17, and south one-half of 18.
Genesee	Starting on Industrial Avenue, north to Pierson Road, east to Dort Highway, south to Hitchcock Street, south to Olive Avenue (extended), south to Robert T. Longway Boulevard, west and southwest to Industrial Avenue.

Macomb T4N, R14E, Sections 27, 28, 33, and 34.

Manistee T21N, R16W, Sections 7, 18, and 19; T21N, R17W, Sections 12 and 13.

Midland T14N, R2E, Sections 14 to 16, 21 to 23, 26 to 28, and 33 to 35.

Monroe T5S, RIOE, Sections 8, 9, and 15 to 17.

Muskegon T9N, R16W, Sections 5 and 6; T10N, R16W, Sections 21, 22, and 27 to 34.

Saginaw Northeast section: starting on Tittabawassee Road, east to I-75, south to Wadsworth Avenue, west to I-675, west and north to Tittabawassee Road.

Southwest section: T12N, R4E, the eastern half of Section 34 (that which is east of Maple Street) and Section 35.

St. Clair T6N, R17E, Sections 2 to 4, 9 to 11, 14 to 16, 21, 22, and 28.

Wayne he area included within the following (counter clockwise): Lake St. Clair to Eight Mile Road to Schaeffer Road to McNichols Road to Greenfield Avenue to Schoolcraft Avenue to Evergreen Road to Joy Road to Telegraph Road to Ford Road to Beech-Daly Road to Cherry Hill Road to Inkster Road to Carlisle Street to Middle Belt Road to VanBorn Road to Wayne Road to Ecorse Road to Haggerty Highway to Tyler Road to Belleville Road to I-94 to Rawsonville Road to Oakville Waltz Road to Will Carleton Road to the Huron River to Lake Erie, except subarea listed in table 33.

History: 1979 ACS 1, Eff. Jan. 19, 1980; 1985 MR 2, Eff. Feb. 22, 1985; 1992 MR 9, Eff. Oct. 31, 1992; 2002 MR 5, Eff. Mar. 19, 2002.

**R 336.1331 Emission of particulate matter.**

TABLE 31  
Particulate matter emission schedule

<u>Source</u>	<u>Capacity rating for each unit.</u>	Maximum allowable emission at operating conditions <sup>(a)</sup> (lbs. particulate per 1,000 lbs. gas <u>except as noted</u> )	<u>Applicable reference test method</u>
C. Steel manufacturing			
7. Coke oven coal preheater equipment effective after July 1, 1979		0.45	5B or 5C

History: 1979 ACS 1, Eff. Jan. 19, 1980.

**R 336.1350 Emissions from larry-car changing of coke ovens.**

Rule 350. (1) During a charging period of a coke oven, a person shall not cause or permit to be discharged into the outer air any visible emission from any larry-car or charging holes, except that a visible emission may be emitted for a period or periods aggregating 100 seconds during any 4 consecutive charging periods on a coke battery.

(2) Compliance with the limit specified in this rule shall be determined using reference test method 9B.

History: 1980 AACs; 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1351 Charging hole emissions from coke ovens.**

Rule 351. (1) A person shall not cause or permit to be discharged into the outer air any visible emission from any coke oven charging hole, except that visible emissions may be emitted from not more than 4% of all charging holes on a coke battery.

(2) Compliance with the limit specified in this rule shall be determined using reference test method 9B.

History: 1980 AACs; 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1352 Pushing operation fugitive emissions from coke ovens.**

Rule 352. (1) During a pushing operation, a person shall not cause or permit to be discharged into the outer air, from any opening between the oven and the coke-receiving car or from the coke-receiving car, a visible emission with a density of more than 25% opacity, except that 1 pushing operation of any 8 consecutively observed pushing operations shall be permitted to exceed this requirement.

(2) A person shall not cause or permit to be discharged into the outer air, from the coke in any coke-receiving car as it travels from the oven to the quench tower, a visible emission with a density of more than 25% opacity, except that 1 trip to the quench tower in any 8 consecutively observed trips per battery shall be permitted to exceed this requirement.

(3) Compliance with the limits specified in this rule shall be determined using reference test method 9B.

History: 1980 AACs; 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1353 Standpipe assembly emissions during coke cycle from coke ovens.**

Rule 353. (1) During a coking cycle, a person shall not cause or permit to be discharged into the outer air any visible emission from any standpipe assembly, except that visible emissions may be emitted from a number of standpipe assembly emission points on the coking cycle not to exceed 4% of all standpipe assembly emission points on the operating ovens of a coke battery.

(2) Compliance with the limit specified in this rule shall be determined using reference test method 9B.

History: 1980 AACs; 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1354 Standpipe assembly emissions during decarbonization from coke ovens.**

Rule 354. A person shall not cause or permit any standpipe lid to be open for decarbonization on any coke oven which is more than 3 ovens ahead of the oven being pushed

History: 1980 AACCS; 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1355 Coke oven gas collector main emissions from slot-type coke ovens.**

Rule 355. A person shall not cause or permit to be discharged to the atmosphere any visible emission from the coke oven gas collector main.

History: 1980 AACCS; 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1356 Coke oven door emissions from coke ovens; doors that are 5 meters or shorter.**

Rule 356. (1) A person shall not cause or permit to be discharged into the outer air any visible emission from any pushside door, cokeside door, or leveling door serving a coke oven equipped with doors that are 5 meters or shorter, with the following exceptions:

(a) A visible emission may be emitted from not more than 10% of the total pushside doors on the coke battery.

(b) A visible emission may be emitted from not more than 10% of the total cokeside doors on the coke battery.

(c) A visible emission may be emitted from not more than 10% of the total leveling doors on the coke battery.

(2) Visible emissions emanating from the doors of a coke oven that has been pipeline charged within 1 hour of the time of observation shall not be considered when calculating the percentage of doors leaking.

(3) Compliance with the limits specified in subrule (1) of this rule shall be determined using reference test method 9B.

History: 1980 AACCS; 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1357 Coke oven door emissions from coke ovens; doors that are taller than 5 meters.**

Rule 357. (1) A person shall not cause or permit to be discharged into the outer air any visible emission from any pushside door, cokeside door, or leveling door serving a coke oven equipped with doors that are taller than 5 meters, with the following exceptions:

(a) A visible emission may be emitted from not more than 12% of the total pushside doors on the coke battery.

(b) A visible emission may be emitted from not more than 12% of the total cokeside doors on the coke battery.

(c) A visible emission may be emitted from not more than 10% of the total leveling doors on the coke battery.

(2) A person shall not cause or permit the operation of a coke battery equipped with coke oven doors taller than 5 meters, unless both of the following provisions are met:

- (a) There is access to a facility to maintain and repair doors and buckstays.
- (b) An inventory of cleaned and repaired doors is maintained to comply with all of the following:
  - (i) The number of inventoried pushside doors exceeds 5% of the number of pushside doors in service.
  - (ii) The number of inventoried cokeside doors exceeds 5% of the number of cokeside doors in service.
  - (iii) The number if inventoried leveling doors exceeds 5% of the number of leveling doors in service.
- (3) Compliance with the limits specified in subrule (1) of this rule shall be determined using reference test method 9B.

History: 1980 AACs; 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1358 Roof monitor visible emissions at steel manufacturing facilities from electric arc furnaces and blast furnaces.**

Rule 358. (1) A person shall not cause or permit to be discharged to the outer air, at a steel manufacturing facility, from a roof monitor source of emission of an electric arc furnace, or a blast furnace, a visible emission with a density of more than 20% opacity.

(2) Compliance with the limit of this rule shall be determined using reference test method 9 as described in R. 336.2004(1)(1).

History: 1985 MR 2, Eff. Feb 22, 1985; 1998 MR 3, Eff. Apr. 30, 1998.

**R 336.1359 Visible emissions from scarfer operation stacks at steel manufacturing facilities.**

Rule 359. (1) A person shall not cause or permit to be discharged to the outer air, from a scarfer operation stack at a steel manufacturing facility, a visible emission with a density of more than 25% opacity.

(2) Compliance with the limit of this rule shall be determined using reference test method 9A.

History: 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1360 Visible emissions from coke oven push stacks.**

Rule 360. (1) A person shall not cause or permit to be discharged to the outer air, from a coke oven push stack, a visible emission with a density of more than 20% opacity.

(2) Compliance with the limit specified in this rule shall be determined using reference test method 9B.

History: 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1361 Visible emissions from blast furnaces casthouse operations at steel manufacturing facilities.**

Rule 361. (1) A person shall not cause or permit to be discharged to the outer air from a blast furnace stack a visible emission with a density of more than 10% opacity.

(2) Compliance with the limit of this rule shall be determined using reference method 9 as described in R. 336.2004(1)(1).

History: 1985 MR 2, Eff. Feb 22, 1985; 1998 MR 3, Eff. Apr. 30, 1998.

**R 336.1362 Visible emissions from electric arc furnace operations at steel manufacturing facilities.**

Rule 362. (1) A person shall not cause or permit to be discharged to the outer air, from an electric arc furnace stack, a visible emission with a density of more than 10% opacity.

(2) Compliance with the limit of this rule shall be determined using reference method 9 as described in R. 336.2004(1)(1).

History: 1985 MR 2, Eff. Feb 22, 1985; 1998 MR 3, Eff. Apr. 30, 1998.

**R 336.1363 Visible emissions from argon-oxygen decarburization operations at steel manufacturing facilities.**

Rule 363. (1) A person shall not cause or permit to be discharged to the outer air, from an argon-oxygen decarburization stack, a visible emission with a density of more than 10% opacity.

(2) Compliance with the limit of this rule shall be determined using reference method 9 as described in R. 336.2004(1)(1).

History: 1985 MR 2, Eff. Feb 22, 1985; 1998 MR 3, Eff. Apr. 30, 1998.

**R 336.1364 Visible emissions from basic oxygen furnace operations.**

Rule 364. (1) A person shall not cause or permit to be discharged to the outer air, from a basic oxygen furnace secondary control device, a visible emission with a density of more than 20% opacity.

(2) A person shall not cause or permit to be discharged to the outer air, from a basic oxygen furnace shop roof monitor, a visible emission with a density of more than 20% opacity.

(3) Compliance with the limits of this rule shall be determined using reference method 9C.

History: 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1365 Visible emissions from hot metal transfer operations at steel manufacturing facilities.**

Rule 365. (1) A person shall not cause or permit to be discharged to the outer air, from a hot

metal transfer operation stack, a visible emission with a density of more than 20% opacity.

(2) A person shall not cause or permit to be discharged to the outer air from a building or enclosure containing a hot metal transfer operation, a fugitive visible emission with a density of more than 20% opacity.

(3) Compliance with the limits of this rule shall be determined using reference method 9C.

History: 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1366 Visible emissions from hot metal desulphurization operations at steel manufacturing facilities.**

Rule 366. (1) A person shall not cause or permit to be discharged to the outer air, from a hot metal desulphurization operation stack, a visible emission with a density of more than 20% opacity.

(2) A person shall not cause or permit to be discharged to the outer air from a building or enclosure containing a hot metal desulphurization operation, a fugitive visible emission with a density of more than 20% opacity.

(3) Compliance with the limits of this rule shall be determined using reference method 9C.

History: 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1367 Visible emissions from sintering operations.**

Rule 367. (1) A person shall not cause or permit to be discharged to the outer air, from a sintering operation control device, a visible emission with a density of more than 20% opacity.

(2) A person shall not cause or permit to be discharged to the outer air, from a sintering operation, a fugitive visible emission with a density of more than 20% opacity.

(3) Compliance with the limits of this rule shall be determined using reference method 9 as described in R 336.2004(1)(h).

History: 1985 MR 2, Eff. Feb. 22, 1985.

**R 336.1370 Collected air contaminants.**

Rule 370. (1) Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air.

(2) At a minimum, in priority I and II areas listed in tables 33 and 34, the use of 1 or more of the following material handling methods is required for the transport of collected air contaminants:

(a) Enclosed trucking or transporting vehicles.

(b) Enclosed, pneumatic, or screw conveying transporting equipment.

(c) Water or dust suppressant sprays.

(d) An acceptable method which is equivalent to the methods listed in subdivisions (a), (b), and (c) of this subrule.

History: 1979 ACS 5, Eff. Feb. 18, 1981.

**R 336.1371 Fugitive dust control programs other than areas listed in table 36.**

Rule 371. (1) Based on ambient air quality measurements or substantive complaints, the department may request that the person who is responsible for the operation of any facility which processes, uses, stores, transports, or conveys bulk materials, such as, but not limited to, coal, coke, metal ores, limestone, cement, sand, gravel, and material from air pollution control devices, or a facility which has activities specifically identified in R 336.1372 and which facility is in an area not listed in table 36, submit a fugitive dust control program. The department shall notify the person who is responsible for the operation of the facility of the provisions of R 336.1372 which apply to the facility and the reasons for the department's notification. Except as provided in subrule (3) of this rule, the control program shall be submitted to the department not later than 6 months after notification.

(2) A fugitive dust control program which is required by subrule (1) of this rule shall be in writing and shall provide for all of the following:

(a) Using 1 or more combinations of available technologies, operating practices, or methods listed in R 336.1372 as are reasonably necessary to control fugitive dust emissions.

(b) Consideration of the quantity, moisture content, specific gravity, and the particle size distribution of the bulk materials. The more friable, drier, lighter, and finer the bulk material is, the more effective the fugitive dust control methods incorporated into the control program shall be.

(c) The keeping and maintenance of records consistent with the various activities to be implemented under the control program.

(d) Identification of the control technologies, methods, or control equipment, if any, to be implemented or installed and the schedule, including increments of progress, for implementation or installation.

(3) Within 3 months following notification by the department that a fugitive dust control program is required, the person who is responsible for operating the facility has the opportunity to demonstrate, to the satisfaction of the department, that any part of the facility is not subject to the provisions of this rule.

(4) If a control program is not submitted within 6 months after notification by the department, then the department may proceed, pursuant to the act, toward the entry of a final order which contains a control program that meets the requirements of subrule (2) of this rule.

(5) The control program is subject to review and approval by the department. The department shall approve a control program only upon the entry of a legally enforceable order or as part of an approved permit to install or operate. If, in the opinion of the department, the program does not adequately meet the requirements set forth in subrule (2) of this rule, then the department may disapprove the program, state its reasons for disapproval, and require the preparation and submittal of an amended program within a specified time period. If, within the specified time period, an amended program is either not submitted or is submitted but, in the opinion of the department, fails to meet the requirements of subrule (2) of this rule, then the department may proceed, pursuant to the act, toward the entry of a final order which contains a control program that meets these requirements.

(6) After approval by the department, the person who is responsible for the preparation of the control program shall begin implementation of the program pursuant to the schedule contained in the control program.



(7) Either the person who is responsible for a facility or the department may request a revision to a department-approved control program to meet changing conditions. The department shall review the revision following the requirements of subrule (5) of this rule.

(8) Table 36 reads as follows:

TABLE 36

<u>County</u>	<u>Area</u>
Bay	T14N, R5E, Sections 14 to 16 and 21 to 23.
Calhoun	T2S, R4W, Section 34.
Delta	T39N, R22W, Sections 19, 30, south one-half of 17, and south one-half of 18.
Genesee	Starting on Industrial Avenue, north to Pierson Road, east to Dort Highway, south to Hitchcock Street, south to Olive Avenue (extended), south to Robert T. Longway Boulevard, west and southwest to Industrial Avenue.
Lapeer	T7N, R12E, that portion of Section 17 which lies south of M-21 and east of Fairground Road.
Macomb	T4N, R14E, Sections 27, 28, 33, and 34.
Manistee	T21N, R16W, Sections 7, 18, and 19; T21N, R17W, Sections 12 and 13.
Midland	T14N, R2E, Sections 14 to 16, 21 to 23, 26 to 28, and 33 to 35.
Monroe	Starting where Sandy Creek empties into Lake Erie, northwest to Maple Avenue (extended north-northeast), southwest to Elm Avenue, west to Herr Road, south to Dunbar Road and east to Plum Creek (which empties into Lake Erie).
Muskegon	T9N, R16W, Sections 5 and 6; T10N, R16W, Sections 21, 22, and 27 to 34.
Saginaw	Northeast section: starting on Tittabawassee Road, east to I-75, south to Wadsworth Avenue, west to I-675, west and north to Tittabawassee Road.  Southwest section: T12N, R4E, the eastern half of Section 34 (that which is east of Maple Street) and Section 35. St. Clair T6N, R17E, Sections 2 to 4, 9 to 11, 14 to 16, 21, 22, and 28.
Wayne	Area included within the following (counter clockwise): Lake St. Clair to Moross Road to Seven Mile Road to Vandyke Road to Eight Mile Road to Wyoming Road to Seven Mile Road to Schaeffer Road to Fenkell Road to Greenfield Avenue to Joy Road to Southfield Expressway to Ford Road to Telegraph Road to Cherry Hill Road to Beech-Daly Road (extended) to Michigan Avenue to Inkster Road to Carlisle Street to Middle Belt Road to Vanborn Road to Wayne Road to Pennsylvania Road to Middle Belt Road to Sibley Road to Telegraph Road to King Road to Grange Road to Sibley Road to Jefferson Avenue to Bridge Street (Grosse Ile) extended to Detroit River. Also included is that portion of the City of Riverview which is south of Sibley Road and the City of Trenton.

History: 1979 ACS 5, Eff. Feb. 18, 1981; 1985 MR 4, Eff. Apr. 23, 1985; 2002 MR 5, Eff. Mar. 19, 2002.

**R 336.1372 Fugitive dust control program; required activities; typical control methods.**

Rule 372. (1) A fugitive dust control program which is required by R 336.1371 and which deals with 1 or more of the fugitive dust sources listed in this rule may include any of the typical control methods listed in this rule for that source.

(2) The following provisions apply to the loading or unloading of open storage piles of bulk materials as a source of fugitive dust:

(a) Open storage piles of bulk materials, hereinafter referred to as "piles", which meet any of the following 3 conditions need not be included in a fugitive dust control program:

(i) All piles of the same material at a manufacturing or commercial location which have a total volume of less than 100 cubic meters (131 yards<sup>3</sup>).

(ii) Any piles at a manufacturing or commercial location if the total annual volumetric throughput of all the stored material at the site is less than 10,000 cubic meters (13,100 yards<sup>3</sup>).

(iii) Any single pile at a manufacturing or commercial location that has a volume of less than 42 cubic meters (55 yards<sup>3</sup>).

(b) Typical control methods for controlling fugitive emissions resulting from the loading or unloading of piles may include, but are not limited to, the following:

(i) Completely enclosing the pile within a building furnished with department-approved air pollution control equipment.

(ii) Using pneumatic conveying or telescopic chutes.

(iii) Spraying the working surface of the pile with water or dust-suppressant compound.

(iv) Directing engine exhaust gases that are generated by the machine used on the piles for loading or unloading upwards.

(v) Minimizing the drop distance from which the material is discharged into the pile. The drop distance shall be specified in the control program.

(vi) Periodic removal of spilled material in areas within 100 meters (328 feet) from the pile. The frequency of removal shall be specified in the control program.

(3) All of the following provisions apply to the transporting of bulk materials as a source of fugitive dust:

(b) Trucks which have less than a 2-ton capacity that are used to transport sand, gravel, stones, peat, and topsoil are exempt from the provisions of this subrule.

(c) Typical control methods for controlling fugitive emissions resulting from the transporting of bulk materials by truck may include, but are not limited to, the following:

(i) Completely covering open-bodied trucks.

(ii) Cleaning the wheels and the body of each truck to remove spilled materials after the truck has been loaded.

(iii) Use of completely enclosed trucks.

(iv) Tarping the truck when operating empty if residue has not been completely removed after emptying.

(v) Cleaning the residue from the inside of the truck after emptying.

(vi) Loading trucks so that no part of the load making contact with any sideboard, side panel, or rear part of the load enclosure comes within 6 inches of the top part of the enclosure.

(vii) Maintaining tight truck bodies so that leakages within the body will be eliminated and

future leakages prevented.

(viii) Spraying the material being transported in a vehicle with a dust suppressant. The frequency of spraying shall be specified in the control program.

(ix) Restricting the speed of the vehicle which transports the material. The speed of the vehicle shall be specified in the control program.

(4) The following provision applies to outdoor conveying as a source of fugitive dust: Typical control methods for controlling fugitive emissions resulting from conveying bulk materials may include, but are not limited to, the following:

(a) Completely enclosing all conveyor belts and equipping them with belt wipers and hoppers of proper size to prevent excessive spills.

(b) Enclosing transfer points and, if necessary, exhausting them to a baghouse or similar control device at all times when the conveyors are in operation.

(c) Equipping the conveyor belt with not less than 210-degree enclosures.

(d) Restricting the speed of conveyor belts. The belt speed shall be specified in the control program.

(e) Periodically cleaning the conveyor belt to remove the residual material. The frequency of cleaning shall be specified in the control program.

(f) Minimizing the distance between transfer points. The distance between transfer points shall be specified in the control program.

(g) Removing the spilled material from the ground under conveyors. The frequency of removal shall be specified in the control program.

(5) The following provisions apply to roads and lots as sources of fugitive dust:

(a) Roads and lots which are located within industrial, commercial, and government-owned facilities and which meet the following 2 conditions are not subject to the requirement of submitting a fugitive dust control program:

(i) The traffic volume is less than 10 vehicles per day on a monthly average.

(ii) The lots are less than 500 square meters (5,382 feet<sup>2</sup>) in area.

(b) Typical control methods for controlling fugitive emissions resulting from roads and lots located within industrial, commercial, and government-owned facilities may include, but are not limited to, the following:

(i) Paving roads and parking lots with a hard material, such as concrete, asphalt, or an equivalent which is approved by the department.

(ii) Mechanically cleaning paved surfaces by vacuum sweeping, wet sweeping, or flushing. The frequency of cleaning shall be specified in the control program.

(iii) Washing the wheels of every truck leaving the plant premises.

(iv) Treating the roads and lots with oil or a dust-suppressant compound which is approved by the department. The frequency of application shall be specified in the control program.

(v) Periodically maintaining off-road surfaces with gravel where trucks have frequent access. The frequency of maintenance shall be specified in the control program.

(6) The following provisions apply to inactive storage piles as sources of fugitive dust:

(a) Inactive storage piles that are less than or equal to 500 cubic meters (654 yards<sup>3</sup>) in volume are not subject to the requirement of submitting a fugitive dust control program.

(b) Typical control methods for controlling fugitive emissions resulting from inactive storage piles may include, but are not limited to, the following:

(i) Completely covering the pile with tarpaulin or other material approved by the department.

(ii) Completely enclosing the pile within a building.

(iii) Enclosing the pile with not less than 3 walls so that no portion of the stored material is higher than the walls.

(iv) Periodically spraying the piles with water or other dust-suppressant compound approved by the department. The frequency of application shall be specified in the control program.

(v) Growing vegetation on and around the pile.

(7) The following provisions apply to building ventilation as a source of fugitive dust:

(a) This subrule is applicable to all of the following:

(i) Ferrous and nonferrous foundries.

(ii) Electric arc furnaces, blast furnace casthouses, sinter plants, and basic oxygen processes at iron and steel production facilities.

(iii) Metal heat treating.

(iv) Metal forging.

(v) Bulk material handling, storage, drying, screening, and crushing.

(vi) Metal fabricating and welding.

(vii) Briquetting, sintering, and pelletizing operations.

(viii) Machining and pressing of metal.

(ix) Stone, clay, and glass production.

(x) Lime, cement, and gypsum production.

(xi) Chemical and allied product production.

(xii) Asphalt and concrete mixing operations.

(b) Typical control methods for controlling fugitive emissions resulting from building openings, such as roof monitors, powered and unpowered ventilators, doors, windows, and holes in the building structure integrity, may include, but are not limited to, the following:

(i) Exhausting the entire building to a dust collection system which is acceptable to the department.

(ii) Using local hoods connected to a dust collection system to capture emissions within the building.

(iii) Establishing and maintaining operating procedures and internal housekeeping practices (specify details).

(iv) Installing removable filter media across the vent openings.

(8) The following provisions apply to fugitive dust emissions from construction, renovation, or demolition activities located in priority I areas:

(a) This subrule is applicable to the owner or prime contractor, except for those owners or prime contractors who construct, renovate, or demolish less than 12 single-family dwelling units per year.

(b) Typical control methods for controlling fugitive dust emissions from construction, renovation, or demolition activities may include, but are not limited to, the following:

(i) Spraying of all work areas with water or other dust-suppressant compound which is approved by the department.

(ii) Completely covering the debris, excavated earth, or other airborne materials with tarpaulin or any other material which is approved by the department.

(iii) Any other method acceptable to the department.

History: 1979 ACS 5, Eff. Feb. 18, 1981; 2002 MR 5, Eff. Mar. 19, 2002.

**R 336.1374 Particulate matter contingency measures; area listed in table 37.**

(1) The provisions of this rule apply to all of the following that are within the area listed in table 37:

- (a) Mining operations, standard industrial classification major groups 10 through 14.
- (b) Manufacturing operations, standard industrial classification major groups 20 through 39.
- (c) Railroad transportation, standard industrial classification major group 40.
- (d) Motor freight transportation and warehousing, standard industrial classification major group 42.
- (e) Electric services, standard industrial classification group 491.
- (f) Sanitary services, standard industrial classification group 495.
- (g) Steam supply, standard industrial classification group 496.

TABLE 37

<u>County</u>	<u>Area</u>
Wayne	The area bounded by Michigan Avenue from its intersection with I-75 west to I-94; I-94 southwest to Greenfield Road; Greenfield Road south to Schaefer; Schaefer south and east to Jefferson Avenue; Jefferson Avenue (Biddle Avenue in Wyandotte) south to Sibley Road; Sibley Road west to Fort Street; Fort Street south to King Road; King Road east to Jefferson Avenue; Jefferson Avenue south to Helen Avenue; Helen Avenue and extension east to the Trenton Channel; the Trenton Channel north to the Detroit River north to the Ambassador Bridge; Ambassador Bridge to I-75; and I-75 to Michigan Avenue.

(2) Upon a formal determination and written notification by the department or the United States environmental protection agency that an ambient air quality monitor located within the area defined in table 37 has recorded a violation of the national ambient air quality standards for particulate matter with an aerodynamic diameter less than 10 microns (PM-10) as defined in 40 C.F.R. §50.6, a company which is in compliance with the criteria specified in subrule (1) of this rule and which has any portion of its facility property boundaries located within 1 mile of the monitor that recorded the violation shall be in compliance with 1 or both of the following provisions, as applicable:

(a) If the violation is of the annual PM-10 national ambient air quality standards, then the company shall be in compliance with the requirements of subrule (3)(a) of this rule within 60 days after receipt of the notification or shall implement the fugitive dust control strategies submitted pursuant to subrule (3)(b) of this rule within 60 days after receipt of the notification.

(b) If the violation is of the 24-hour PM-10 national ambient air quality standard, then a company that is located in the portion of an area which has a 1-mile radius centered upon the monitor and which remains after the largest contiguous portion of the circular area is removed that contains wind direction sectors for which no detectable wind speed measurements were made for all calendar days used as the basis for the 24-hour PM-10 violation, shall be in compliance with the requirements of subrule (3) of this rule within 60 days after receipt of the notification or shall implement the fugitive dust control strategies submitted pursuant to

subrule (3)(b) of this rule within 60 days after receipt of the notification. The determination shall be made using wind rose plots generated with wind speed and direction data obtained from the Detroit metropolitan airport, unless more representative data is available.

If a company elects to submit process or combustion source control strategies pursuant to subrule (3)(b)(ii) or (iii) of this rule, then the company shall commence the schedule to implement the process or combustion source control strategies upon notification of a violation of the national ambient air quality standard for PM-10. If 60 days has passed after a company is notified of a violation of the PM-10 national ambient air quality standard and control strategies have been submitted to the department pursuant to subrule (3)(b) of this rule which have not yet been approved into the state implementation plan by the United States environmental protection agency, then the company shall be subject to the opacity limit in subrule (3)(a) of this rule pursuant to the implementation procedures contained in this rule until the company has been notified that the control strategies have been approved by the United States environmental protection agency as a revision to the Michigan state implementation plan and written notification has been received by the department from the company stating that the controls have been implemented.

The provisions of 40 C.F.R. §50.6 (2000), are adopted by reference in these rules and are available for inspection and purchase at the Department of Environmental Quality, Air Quality Division, P.O. Box 30260, Lansing, Michigan 48909-7760, at cost. Copies may be obtained from the Superintendent of Documents, Government Printing Office, P.O. Box 371954, Pittsburgh, Pennsylvania 15250-7954, at a cost as of the time of adoption of these rules of \$28.00, or on the United States government printing office internet web site at <http://www.access.gpo.gov>.

(3) The owner or operator of a facility that is subject to the requirements of this rule shall comply with either of the following provisions:

(a) The owner or operator shall not allow the fugitive dust emissions from any paved or unpaved road to exceed an opacity of more than 10%. The opacity shall be determined by method 9 specified in 40 C.F.R. Part 60, appendix A, which is adopted by reference in R 336.2004, except that the number of readings for each vehicle pass will be 3 taken at 5-second intervals. The first reading shall be at the point of maximum opacity. The second and third readings shall be at the same point with respect to the roadway, which is a point where the observer stands at right angles to the plume not less than 15 feet away from the plume and observes approximately 4 feet above the surface of the roadway or parking area. After 4 vehicles have passed, the 12 readings will be averaged.

(b) The owner or operator shall submit, to the department, control strategies and compliance schedules in compliance with any of the following provisions:

(i) The owner or operator shall submit, to the air quality division, control strategies that will reduce total annual facility-wide fugitive dust emissions of PM-10 by not less than 15%.

(ii) An owner or operator may as an alternative to the requirement of paragraph (i) of this subdivision, submit control strategies which provide for reductions in allowable PM-10 emissions that are equal to 15% of a facility's total annual fugitive dust emissions of PM-10 from process emission or fuel combustion sources and which include a reasonable schedule for the implementation of the control strategies. The baseline used in calculating the percent reduction for a process or combustion control strategy shall be determined using the maximum operating rate for the source and the lowest allowable particulate emission limit applicable to the source contained in any of the following:

- (A) A state administrative rule.
- (B) A state consent order.
- (C) A state installation permit.
- (D) A state operating permit.

(iii) An owner or operator may elect to obtain the PM-10 emission reductions required by this subdivision through a combination of the requirements specified in paragraphs (i) and (ii) of this subdivision.

(4) The control strategies and compliance schedules submitted pursuant to, and complying with, the requirements of subrule (3)(b) of this rule shall be approved by the air quality division through the issuance of department consent orders. Before a company may substitute control strategies or compliance schedules for the opacity limit in subrule (3)(a) of this rule, the state shall have submitted the consent orders to the United States environmental protection agency for approval as a revision to the Michigan state implementation plan, the United States environmental protection agency shall have approved the orders and incorporated them into the Michigan state implementation plan, and the department shall have received written notification from the company stating that the fugitive dust control measures are being implemented or that the company has begun to implement the process source control measure implementation schedule.

(5) For the purposes of this rule, "wind direction sector" means equal portions of a circular area consisting of any 1 of 16 possible areas consisting of 22.5 degrees of angle centered about the compass points north, north northeast, northeast, east northeast, east, east southeast, southeast, south southeast, south, south southwest, southwest, west southwest, west, west northwest, northwest, and north northwest.

History: 1995 MR 7, Eff. July 26, 1995; 2002 MR 5, Eff. Mar. 19, 2002.