2.54 Rubber Tire Manufacturing Industry (NSPS Sources)

2.54.1 Applicability and Designation of Affected Facilities

(a) The provisions of this source category apply to the following affected facilities in rubber tire manufacturing plants: each undertread cementing operation, each sidewall cementing operation, each tread end cementing operation, each bead cementing operation, each green tire spraying operation, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation.

(b) The provisions of this source category apply to each facility identified in paragraph (a) of this section that commences construction or modification after January 20, 1983.

2.54.2 Notations used under this source category are defined below:

B_o = total number of beads cemented at a particular bead cementing affected facility for a month

C_a = concentration of VOC in gas stream in vents after a control device (parts per million by volume)

C_b = concentration of VOC in gas stream in vents before a control device (parts per million by volume)

C_f = concentration of VOC in each gas stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (parts per million by volume)

D_c = density of cement or spray material (grams per litre)

D_r = density of VOC recovered by an emission control device (grams per litre)

E = emission control device efficiency, inlet versus outlet (fraction)

F_c = capture efficiency, VOC captured and routed to one control device versus total VOC used for an affected facility (fraction)

F_o = fraction of total mass of VOC used in a month by all facilities served by a common cement or spray material distribution system that is used by a particular affected facility served by the common distribution system

G = monthly average mass of VOC used per tire cemented or sprayed with a water-based green tire spray for a particular affected facility (grams per tire)

G_b = monthly average mass of VOC used per bead cemented for a particular bead cementing affected facility (grams per bead)

L_c = volume of cement or spray material used for a month (liters)

L_r = volume of VOC recovered by an emission control device for a month (liters)

M = total mass of VOC used for a month by all facilities served by a common cement or spray material distribution system (grams)

M_o = total mass of VOC used at an affected facility for a month (grams)

M_r = mass of VOC recovered by an emission control device for a month (grams)

N = mass of VOC emitted to the atmosphere per tire cemented or sprayed with a water-based green tire spray for an affected facility for a month (grams per tire)

N_b = mass of VOC emitted per bead cemented for an affected facility for a month (grams per bead)

Q_a = volumetric flow rate in vents after a control device (dry standard cubic meters per hour)

Q_b = volumetric flow rate in vents before a control device (dry standard cubic meters per hour)

Q_f = volumetric flow rate of each stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (dry standard cubic meters per hour)

R = overall efficiency of an emission reduction system (fraction)

T_d = total number of days in monthly compliance period (days)

T_o = total number of tires cemented or sprayed with water-based green tire sprays at a particular affected facility for a month

W_o = weight fraction of VOC in a cement or spray material.

2.54.3 Performance Test and Compliance Provisions

(a) Section 1.2(d) does not apply to the monthly performance test procedures required by this source category. Section 1.2(d) does apply to initial performance tests and to the performance tests specified under paragraphs (b)(2) and (b)(3) of this section. Section 1.2(f) does not apply when Method 24 is used.

(b) Performance tests shall be conducted as follows:

(1) The owner or operator of an affected facility shall conduct an initial performance test, as required under Section 1.2, except as described under paragraph (j) of this section. The owner or operator of an affected facility shall thereafter conduct a performance test for each month, except as described under paragraphs (b)(4), (g)(1) and (j) of this section. Initial and monthly performance tests shall be conducted according to the procedures in this section.

(2) The owner or operator of an affected facility who elects to use a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), as described under paragraphs (f) and (g) of this section, shall repeat the performance test when directed by the Director or when the owner or operator elects to operate the capture system or control device at conditions different from the most recent determination of overall reduction efficiency. The performance test shall be conducted in accordance with the procedures described under paragraphs (f)(2)(i) through (iv) of this section.

(3) The owner or operator of an affected facility who seeks to comply with the equipment design and performance specifications, as described under paragraph (j) of this section, shall repeat the performance test when directed by the Director or when the owner or operator elects to operate the capture system or control device at conditions different from the most recent determination of control device efficiency or measurement of capture system retention time or face velocity. The performance test shall be conducted in accordance with the procedures described under paragraph (f)(2)(ii) of this section.

(4) The owner or operator of each tread end cementing operation and each green tire spraying operation using only water-based sprays (inside and/or outside) containing less than 1.0 percent, by weight, of VOC is not required to conduct a monthly performance test as described in paragraph (d) of this section. In lieu of conducting a monthly performance test, the owner or operator of each tread end cementing operation and each green tire spraying operation shall submit formulation data or the results of Method 24 analysis annually to verify the VOC content of each tread end cement and each green tire spray material, provided the spraying formulation has not changed during the previous 12 months. If the spray material formulation changes, formulation data or Method 24 analysis of the new spray shall be conducted to determine the VOC content of the spray and reported within 30 days as required under §2.54.5(j).

(c) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation where the owner or operator seeks to comply with the uncontrolled monthly VOC use (kg/mo) limits (NSPS Standards), the owner or operator shall use the following procedure to determine compliance with the applicable (depending upon duration of compliance period) uncontrolled monthly VOC use limit specified under §60.542(a) (1)(ii), (2)(ii), (6)(ii), (7)(iv), (8)(ii), (9)(ii), and (10)(ii).* If both undertread cementing and sidewall cementing are performed at the same affected facility during a month, then the kg/mo limit specified under §60.542(a)(1)(ii)* shall apply for that month.

(1) Determine the density and weight fraction VOC (including dilution VOC) of each cement or green tire spray from its formulation or by analysis of the cement or green tire spray using Method 24. If a dispute arises, the Director may require an owner or operator who used formulation data to analyze the cement or green tire spray using Method 24.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) by the following procedure:

(i) For each affected facility for which cement or green tire spray is delivered in batch or via a distribution system that serves only the affected facility:

$$M_o = \sum_{i=1}^{a} L_{ci}\ D_{ci}\ W_{oi}$$

where: "a" equals the number of different cements or green tire sprays used during the month that are delivered in batch or via a distribution system that serves only a single affected facility.

(ii) For each affected facility for which cement or green tire spray is delivered via a common distribution system that also serves other affected or existing facilities:

(A) Calculate the total mass of VOC used for all of the facilities served by the common distribution system for the month (M):

$$M = \sum_{i=1}^{b} L_{ci}\ D_{ci}\ W_{oi}$$

where: "b" equals
the number of different cements or green tire sprays used during the month that are delivered via a common distribution system that also serves other affected or existing facilities.

(B) Determine the fraction (F_o) of M used at the affected facility by comparing the production records and process specifications for the material cemented or sprayed at the affected facility for the month to the production records and process specifications for the material cemented or sprayed at all other facilities served by the common distribution system for the month or by another procedure acceptable to the Director.

(C) Calculate the total monthly mass of VOC used at the affected facility for the month (M_o):

$$M_o = MF_o$$

(3) Determine the time duration of the monthly compliance period (T_d).

(d) For each tread end cementing operation and each green tire spraying operation where water-based cements or sprays containing 1.0 percent by weight of VOC or more are used (inside and/or outside) that do not use a VOC emission reduction system, the owner or

operator shall use the following procedure to determine compliance with the g/tire limit specified under §60.542(a)(3), (a)(5)(i), (a)(5)(ii), (a)(7)(i), and (a)(7)(ii).*

(1) Determine the density and weight fraction VOC as specified under paragraph (c)(1) of this section.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) as specified under paragraph (c)(2) of this section.

(3) Determine the total number of tire cemented or sprayed at the affected facility for the month (T_o) by the following procedure:

(i) For a tread end cementing operation, T_o equals the number of tread or combined tread/sidewall components that receive an application of tread end cement for the month.

(ii) For a green tire spraying operation that uses water-based inside green tire sprays, T_o equals the number of green tires that receive an application of water-based inside green tire spray for the month.

(iii) For a green tire spraying operation that uses water-based outside green tire sprays, T_o equals the number of green tires that receive an application of water-based outside green tire spray for the month.

(4) Calculate the mass of VOC used per tire cemented or sprayed at the affected facility for the month (G):

$$G = \frac{M_o}{T_o}$$

(5) Calculate the mass of VOC emitted per tire cemented or sprayed at the affected facility for the month (N):

$$N = G$$

(e) For each bead cementing operation that does not use a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with the g/bead limit specified under §60.542(a)(4).*

(1) Determine the density and weight fraction VOC as specified under paragraph (c)(1) of this section.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) as specified under paragraph (c)(2) of this section.

(3) Determine the number of beads cemented at the affected facility during the month (B_o) using production records; B_o equals the number of beads that receive an application of cement for the month.

(4) Calculate the mass of VOC used per bead cemented at the affected facility for the month (G_b):

$$G_b = \frac{M_o}{B_o}$$

(5) Calculate the mass of VOC emitted per bead cemented at the affected facility for the month (N_b):

$$N_b = G_b$$

(f) For each tread end cementing operation and each bead cementing operation that use a VOC emission reduction system with a control device that destroys VOC

(e.g., incinerator), the owner or operator shall use the following procedure to determine compliance with the emission limit specified under §60.542(a) (3) and (4).*

(1) Calculate the mass of VOC used per tire cemented at the affected facility for the month (G), as specified under paragraphs (d)(1) through (4) of this section, or mass of VOC used per bead cemented at the affected facility for the month (G_b), as specified under paragraphs (e)(1) through (4) of this section.

(2) Calculate the mass of VOC emitted per tire cemented at the affected facility for the month (N) or mass of VOC emitted per bead cemented for the affected facility for the month (N_b):

$$N = G\,(1 - R)$$

$$N_b = G_b\,(1 - R)$$

For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed under paragraphs (f)(2)(i) through (iv) of this section. After the initial performance test, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test. No monthly performance tests are required. The performance test shall be repeated during conditions described under paragraph (b)(2) of this section.

(i) The owner or operator of an affected facility shall construct a temporary enclosure around the application and drying areas during the performance test for the purpose of capturing fugitive VOC emissions. The enclosure must be maintained at a negative pressure to ensure that all evaporated VOC are measurable. Determine the fraction (F_c) of total VOC used at the affected facility that enters the control device:

$$F_c = \frac{\sum_{i=1}^{m} C_{bi}\, Q_{bi}}{\sum_{i=1}^{m} C_{bi}\, Q_{bi} + \sum_{i=1}^{n} C_{fi}\, Q_{fi}}$$

where: "m" is the number of vents from the affected facility to the control device, and "n" is the number of vents from the affected facility to the atmosphere and from the temporary enclosure.

Note: An alternate method for determining F pursuant to Section 1.2(b) may be approved by the Director if he determines that the results will be adequate for indicating whether the affected facility is in compliance.

(ii) Determine the destruction efficiency of the control device (E) by using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the control device:

$$E = \frac{\sum_{i=1}^{m} C_{bi}\, Q_{bi} - \sum_{i=1}^{p} C_{ai}\, Q_{ai}}{\sum_{i=1}^{m} C_{bi}\, Q_{bi}}$$

where: "m" is the number of vents from the affected facility to the control device, and "p" is the number of vents after the control device.

(iii) Determine the overall reduction efficiency (R):

$$R = EF_c$$

(iv) The owner or operator of an affected facility shall have the option of substituting the following procedure as an acceptable alternative to the requirements prescribed under paragraph (f)(2)(i) of this section. This alternative procedure is acceptable only in cases where a single VOC is used and is present in the capture system. The average capture efficiency value derived from a minimum of three runs shall constitute a test.

(A) For each run, "i", measure the mass of the material containing a single VOC used. This measurement shall be made using a scale that has both a calibration and a readability to within 1 percent of the mass used during the run. This measurement may be made by filling the direct supply reservoir (e.g., trough, tray, or drum that is integral to the operation) and related application equipment (e.g., rollers, pumps, hoses) to a marked level at the start of the run and then refilling to the same mark from a more easily weighed container (e.g., separate supply drum) at the end of the run. The change in mass of the supply drum would equal the mass of material used from the direct supply reservoir. Alternatively, this measurement may be made by weighing the direct supply reservoir at the start and end of the run or by weighing the direct supply reservoir and related application equipment at the start and end of the run. The change in mass would equal the mass of the material used in the run. If only the direct supply reservoir is weighed, the amount of material in or on the related application equipment must be the same at the start and end of the run. All additions of VOC containing material made to the direct supply reservoir during a run must be properly accounted for in determining the mass of material used during that run.

(B) For each run, "i", measure the mass of the material containing a single VOC which is present in the direct supply reservoir and related application equipment at the start of the run, unless the ending weight fraction VOC in the material is greater than or equal to 98.5 percent of the starting weight fraction VOC in the material, in which case, this measurement is not required. This measurement may be made directly by emptying the direct supply reservoir and related application equipment and then filling them to a marked level from an easily weighed container (e.g., separate supply drum). The change in mass of the supply drum would equal the mass of material in the filled direct supply reservoir and related application equipment. Alternatively, this measurement may be made by weighing the direct supply reservoir and related application equipment at the start of the run and subtracting the mass of the empty direct supply reservoir and related application equipment (tare weight).

(C) For each run, "i", the starting weight fraction VOC in the material shall be determined by Method 24 analysis of a sample taken from the direct supply reservoir at the beginning of the run.

(D) For each run, "i", the ending weight fraction VOC in the material shall be determined by Method 24 analysis of a sample taken from the direct supply reservoir at the end of the run.

(E) For each run, "i", in which the ending weight fraction VOC in the material is greater than or equal to 98.5 percent of the starting weight fraction VOC in the material, calculate the mass of the single VOC used (M_i) by multiplying the mass of the material used in the run by the starting weight fraction VOC of the material used in the run.

(F) For each run, "i", in which the ending weight fraction VOC in the material is less than 98.5 percent of the starting weight fraction VOC in the material, calculate the mass of the single VOC used (M_i) as follows:

(1) Calculate the mass of VOC present in the direct supply reservoir and related application equipment at the start of the run by multiplying the mass of material in the direct supply reservoir and related application equipment at the start of the run by the starting weight fraction VOC in the material for that run.

(2) Calculate the mass of VOC present in the direct supply reservoir and related application equipment at the end of the run by multiplying the mass of material in the direct supply reservoir and related application equipment at the end of the run by the ending weight fraction VOC in the material for that run. The mass of material in the direct supply reservoir and related application equipment at the end of the run shall be calculated by subtracting the mass of material used in the run from the mass of material in the direct supply reservoir and related application equipment at the start of the run.

(3) The mass of the single VOC used (M_i) equals the mass of VOC present in the direct supply reservoir and related application equipment at the start of the run minus the mass of VOC present in the direct supply reservoir and related application equipment at the end of the run.

(G) If Method 25A is used to determine the concentration of the single VOC in the capture system, then calculate the capture efficiency (FC_i) for each run, "i", as follows:

$$FC_i = \frac{C_i \frac{W}{V} Q_i}{(M_i)(10^6)}$$

Where:

C_i = Average concentration of the single VOC in the capture system during run "i" (parts per million by volume) corrected for background VOC [see §60.547(a)(5)].*

W = Molecular weight of the single VOC, expressed as mg per mg-mole.

V = 2.405×10^{-5} m^3/mg-mole. This is the volume occupied by one mg-mole of ideal gas at standard conditions (20°C, 1 atmosphere) on a wet basis.

Q_i = Volumetric flow in m^3 in the capture system during run "i" adjusted to standard conditions (20°C, 1 atmosphere) on a wet basis (see §60.547(a)(5)].*

10^6 = ppm per unity.

M_i = Mass in mg of the single VOC used during run "i".

(H) If Method 25 is used to determine the concentration of the single VOC in the capture system, then calculate the capture efficiency

(FC_i) for each run, "i", as follows:

$$FC_i = \frac{\frac{C_i}{(NC)(10^6)}\frac{(W)}{(V)}Q_i}{M_i}$$

Where:

C_i = Average concentration of the single VOC in the capture system during run "i" (parts per million, as carbon, by volume) corrected for background VOC [see §60.547(a)(5)].*

W = Molecular weight of the single VOC, expressed as mg per mg-mole.

V = 2.405×10^{-5} m^3/mg-mole. This is the volume occupied by one mg-mole of ideal gas at standard conditions (20°C, 1 atmosphere) on a wet basis.

Q_i = Volumetric flow in m^3 in the capture system during run "i" adjusted to standard conditions (20°C, 1 atmosphere) on a dry basis [see §60.547(a)(5)].*

10^6 = ppm per unity.

M_i = Mass in mg of the single VOC used during run "i".

NC = Number of carbon atoms in one molecular of the single VOC.

(I) Calculate the average capture efficiency value, F_c as follows:

$$F_c = \frac{\sum_{i=1}^{n} FC_i}{n}$$

Where: "n" equals the number of runs made in the test (n>3). In cases where an alternative procedure in this paragraph is used, the requirements in paragraphs (f)(2) (ii) and (iii) of this section remain unchanged.

(g) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation that use a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), the owner or operator shall use the following procedure to determine compliance with the percent emission reduction requirement specified under §60.542(a) (1)(i), (2)(i), (6)(i), (7)(iii), (8)(i), (9)(i), and (10)(i).*

(1) For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed under paragraphs (f)(2)(i) through (iii) of this section. The performance test shall be repeated during conditions described under paragraph (b)(2) of this section.

(h) For each tread end cementing operation and each bead cementing operation that uses a VOC emission reduction system with a control device that recovers VOC (e.g., carbon adsorber), the owner or operator shall use the following procedure to determine compliance with the emission limit specified under §60.542(a) (3) and (4).*

(1) Calculate the mass of VOC used per tire cemented at the affected facility for the month (G), as specified under paragraphs (d) (1) through (4) of this section, or mass of VOC used per bead cemented at the affected facility for the month (G_b), as specified under paragraphs (e) (1) through (4) of this section.

(2) Calculate the total mass of VOC recovered from the affected facility for the month (M_r):

$$M_r = L_r D_r$$

(3) Calculate the overall reduction efficiency for the VOC emission reduction system (R) for the month:

$$R = \frac{M_r}{M_o}$$

(4) Calculate the mass of VOC emitted per tire cemented at the affected facility for the month (N) or mass of VOC emitted per bead cemented at the affected facility for the month (N_b):

$$N = G\,(1 - R)$$

$$N_b = G_b\,(1 - R)$$

(i) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation that use a VOC emission reduction system with a control device that recovers (VOC) (e.g., carbon adsorber), the owner or operator shall use the following procedure to determine compliance with the percent reduction requirement specified under §60.542(a) (1)(i), (2)(i), (6)(i), (7)(iii), (8)(i), (9)(i), and (10)(i).*

(1) Determine the density and weight fraction VOC as specified under paragraph (c)(1) of this section.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) as described under paragraph (c)(2) of this section.

(3) Calculate the total mass of VOC recovered from the affected facility for the month (M_r) as described under paragraph (h)(2) of this section.

(4) Calculate the overall reduction efficiency for the VOC emission reduction system (R) for the month as described under paragraph (h)(3) of this section.

(j) Rather than seeking to demonstrate compliance with the provisions of §60.542(a) (1)(i), (2)(i), (6)(i), (7)(iii), or (9)(i)* using the performance test procedures described under paragraphs (g) and (i) of this section, and owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation that use a VOC emission reduction system may seek to demonstrate compliance by meeting the equipment design and performance specifications listed under paragraphs (j)(1), (2), and (4) through (6) or under paragraphs (j)(1) and (3) through (6) of this section, and by conducting a control device efficiency performance test to determine compliance as described under paragraph (j)(7) of this section. The owner or operator shall conduct this performance test of the control device efficiency no later than 180 days after initial startup of the affected facility, as specified under Section 1.2(a).

(1) For each undertread cementing operation, each sidewall cementing operation, and each Michelin-B operation, the cement application and drying area shall be contained in an enclosure that meets the criteria specified under paragraphs (j)(2), (4), and (5) of this section; for each green tire spraying operation where organic solvent-based sprays are used, the spray application and drying area shall be contained in an enclosure that meets the criteria specified under paragraphs (j)(3), (4), and (5) of this section.

(2) The drying area shall be enclosed between the application area and the water bath or

to the extent necessary to contain all tire components for at least 30 seconds after cement application, whichever distance is less.

(3) Sprayed green tires shall remain in the enclosure for a minimum of 30 seconds after spray application.

(4) A minimum face velocity of 100 feet per minute shall be maintained continuously through each permanent opening into the enclosure when all temporary enclosure openings are closed. The cross-sectional area of each permanent opening shall be divided into at least 12 equal areas, and a velocity measurement shall be performed at the centroid of each equal area with an anemometer or similar velocity monitoring device; the face velocity of each permanent opening is the average value of the velocity measurements taken. The monitoring device shall be calibrated and operated according to the manufacturer's instructions. Temporary enclosure openings shall remain closed at all times except when worker access is necessary.

(5) The total area of all permanent openings into the enclosure shall not exceed the area that would be necessary to maintain the VOC concentration of the exhaust gas stream at 25 percent of the lower explosive limit (LEL) under the following conditions:

(i) The facility is operating at the maximum solvent use rate;

(ii) The face velocity through each permanent opening is 100 feet per minute; and

(iii) All temporary openings are closed.

(6) All captured VOC are ducted to a VOC emission control device that is operated on a continuous basis and that achieves at least a 95 percent destruction or recovery efficiency.

(7) The efficiency of the control device (E) for the initial performance test is determined by using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the control device as described under paragraph (f)(2)(ii) of this section. The control device efficiency shall be redetermined during conditions specified under paragraph (b)(3) of this section.

(k) Each owner or operator of an affected facility who initially elected to be subject to the applicable percent emission reduction requirement specified under §60.542(a)(1)(i), (2)(i), (6)(i), (7)(iii), (8)(i), (9)(i), or (10)(i)* and who later seeks to comply with the applicable total (uncontrolled) monthly VOC use limit specified under §60.542(a)(1)(ii), (2)(ii), (6)(ii), (7)(iv), (8)(ii), (9)(ii), or (10)(ii)* shall demonstrate, using the procedures described under paragraph (c) of this section, that the total VOC use at the affected facility has not exceeded the applicable total (uncontrolled) monthly VOC use limit during each of the last 6 months of operation. The owner or operator shall be subject to the applicable percent emission reduction requirement until the conditions of this paragraph and §60.546(h)* are satisfied.

(l) In determining compliance for each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation, the owner or operator shall include all the VOC used, recovered, or destroyed from cements and organic solvent-based green tire sprays including those cements or sprays used for tires other than those defined under §60.541(a)*.

(m) In determining compliance for each tread end cementing operation, each bead cementing operation, and each green tire spraying operation, the owner or operator shall include only those tires defined under §60.541(a)* when determining T_o and B_o.

(n) For each undertread cementing operation and each sidewall cementing operation that does not use a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with the 25 g/tire limit specified in §60.542a.*

(1) Calculate the total mass of VOC (M_o) used at the affected facility for the month by the following procedure.

(i) For each affected facility for which cement is delivered in batch or via a distribution system which serves only that affected facility:

$$M_o = \sum_{i=1}^{n} L_{ci}\ D_{ci}\ W_{oi}$$

Where: "n" equals the number of different cements or sprays used during the month.

(ii) For each affected facility for which cement is delivered via a common distribution system which also serves other affected or existing facilities.

(A) Calculate the total mass (M) of VOC used for all of the facilities served by the common distribution system for the month:

$$M = \sum_{i=1}^{n} L_{ci}\ D_{ci}\ W_{oi}$$

Where: "n" equals
the number of different cements or sprays used during the month.

(B) Determine the fraction (F_o) of "M" used by the affected facility by comparing the production records and process specifications for the material cemented at the affected facility for the month to the production records and process specifications for the material cemented at all other facilities served by the common distribution system for the month or by another procedure acceptable to the Director.

(C) Calculate the total monthly mass of VOC (M_o) used at the affected facility:

$$M_o = MF_o$$

(2) Determine the total number of tires (T_o) processed at the affected facility for the month by the following procedure.

(i) For undertread cementing, T_o equals the number of tread or combined tread/sidewall components which receive an application of undertread cement.

(ii) For sidewall cementing, T_o equals the number of sidewall components which receive an application of sidewall cement, divided by 2.

(3) Calculate the mass of VOC used per tire processed (G) by the affected facility for the month:

$$G = \frac{M_o}{T_o}$$

(4) Calculate the mass of VOC emitted per tire processed (N) for the affected facility for the month:

$$N = G$$

(5) Where the value of the mass of VOC emitted per tire processed (N) is less than or equal to the 25 g/tire limit specified under §60.542a*, the affected facility is in compliance.

(a)

and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Director.

Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder for the temperature of the gas

shall have an accuracy of 1 percent of the temperature being measured in °
±0.5 C, whichever is greater.

(2)

monitoring devices, each equipped with a continuous recorder, for the temperature in the gas stream immediately before and after the catalyst bed of the incinerator. The

being measured in ° ±0.5 C, whichever is greater.

(3)

spraying operation where organic solvent-based sprays are used, or Michelin-B operation where a carbon adsorber is used to meet the performance requirements §2.54.3(j)(6), an organics monitoring device used to indicate the

infrared, photoionization, or thermal conductivity, equipped with a continuous recorder, for the outlet of the carbon bed.

An owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation

requirements specified under §
the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Director may request further information and will

2.54.5 Recordkeeping Requirements

Each owner or operator of an affected facility that uses a thermal incinerator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the

the gas stream in the combustion zone was more than 28° °F) below the combustion zone

thermal incinerator that demonstrated that the affected facility was in compliance.

(b) lytic incinerator shall maintain continuous records of the temperature of the gas stream both upstream and downstream of the

temperature measured before the catalyst bed is more than 28°
temperature measured before the catalyst bed during the most recent determination of destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was

across the catalyst bed is less than 80 percent of the temperature difference measured during the most recent determination of the destruction efficiency of the catalytic incinerator that

(c) Each owner or operator of an undertread cementing operation, sidewall cementing operation,

operation that uses a carbon adsorber to meet the requirements specified under §
shall maintain continuous records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases is more than 20 percent

monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the affected facility was in compliance.

Each owner or operator of an undertread cementing operation, sidewall cementing operation,

green tires spraying operation where organic solvent-based sprays are used, Michelin-A operation, Michelin-B operation, or Michelin-C-automatic operation who seeks to comply with a specified kg/mo uncontrolled VOC use limit shall maintain records of monthly VOC use and the number of days in each compliance period.

(e) Each owner or operator that is required to conduct monthly performance tests, as specified under §2.54.3(b)(1), shall maintain records of the results of all monthly tests.

(f) Each owner or operator of a tread end cementing operation and green tire spraying operation using water-based cements or sprays containing less than 1.0 percent by weight of VOC, as specified under §60.543(B)(4)*, shall maintain records of formulation data or the results of Method 24 analysis conducted to verify the VOC content of the spray.

2.54.6 Test Methods and Procedures

(a) The test methods in Appendix A to this text, except as provided under §1.2(b), shall be used to determine compliance with these standards as follows:

(1) Method 24 or formulation data for the determination of the VOC content of cements or green tire spray materials. In the event of dispute, Method 24 shall be the reference method. For Method 24, the cement or green tire spray sample shall be a 1-liter sample collected in a 1-liter container at a point where the sample will be representative of the material as applied in the affected facility.

(2) Method 25 as the reference method for the determination of the VOC concentrations in each stack, both entering and leaving an emission control device. The owner or operator shall notify the Director 30 days in advance of any test by Method 25. For Method 25, the sampling time for each of three runs shall be at least 1 hour. Method 1 shall be used to select the sampling site, and the sampling point shall be the centroid of the duct or at a point no closer to the walls than 1 meter. The minimum sample volume shall be 0.003 dry standard cubic meter (dscm) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Director.

(3) Method 2, 2A, 2C, or 2D, as appropriate, as the reference method for determination of the flow rate of the stack gas. The measurement site shall be the same as for the Method 25 sampling. A velocity traverse shall be made once per run within the hour that the Method 25 sample is taken.

(4) Method 4 for determination of stack gas moisture.

(5) Method 25 or Method 25A for determination of the VOC concentration in a capture system prior to a control device when only a single VOC is present [see §60.543(f)(2)(iv)(G)* and (f)(2)(iv)(H)]*. The owner or operator shall notify the Director 30 days in advance of any test by either Method 25 or Method 25A. Method 1 shall be used to select the sampling site and the sampling point shall be the centroid of the duct or at a point no closer to the walls than 1 meter. Method 2, 2A, 2C, or 2D, as appropriate, shall be used as the test method for the concurrent determination of gas flow rate in the capture system.

(i) For Method 25, the sampling time for each run shall be at least 1 hour. For each run, a concurrent sample shall be taken immediately upwind of the application area to determine the background VOC concentration of air drawn into the capture system. Subtract this reading from the reading obtained in the capture system for that run. The minimum sample volume shall be 0.003 dry standard cubic meter (dscm) except that shorter sampling times or smaller volumes, when necessitated by process variable or other factors, may be approved by the Director. Use Method 3 to determine the moisture content of the stack gas.

(ii) For Method 25A, the sampling time for each run shall be at least 1 hour. Instrument calibration shall be performed by the procedure given in Method 25A using the single VOC present in the capture system. A different

calibration gas may be used if the results are corrected using an experimentally determined response factor comparing the alternative calibration gas to the single VOC used in the process. After the instrument has been calibrated, determine the background VOC concentration of the air drawn into the capture system immediately upwind of the application area for each run. The instrument does not need to be recalibrated for the background measurement. Subtract this reading from the reading obtained in the capture system for that run. The Method 25A results shall only be used in the alternative procedure for determination of capture efficiency described under §60.543(f)(2)(iv)(G).*

2.54.7 Reporting Requirements

Unless other specified by the Director, each owner or operator of subject to the provisions of this source category shall follow the reporting requirements of §60.546.*

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*Code of Federal Regulations, Title 40, Part 60.