§ 63.4360 What are the general requirements for performance tests?

(a) You must conduct each performance test required by §§ 63.4340 or 63.4350 according to the requirements in §§ 63.7(e)(1) and under the conditions in this section, unless you obtain a waiver of the performance test according to the provisions in § 63.7(h).

(1) Representative web coating/printing or dyeing/finishing operation(s) for which you use the organic HAP overall control efficiency option or the oxidizer outlet organic HAP concentration option. If there were no deviations from the organic HAP overall control efficiency limitations, submit a statement that you were in compliance with the emission limitations during the reporting period because the organic HAP overall control efficiency for each compliance period was greater than or equal to the applicable organic HAP overall control efficiency in Table 1 to this subpart, and you achieved the operating limits required by § 63.4292 and the work practice standards required by § 63.4293 during each compliance period. If there were no deviations from the oxidizer outlet organic HAP concentration limit, submit a statement that you were in compliance with the oxidizer outlet organic HAP concentration limit, the efficiency of the capture system is 100 percent, and you achieved the operating limits required by § 63.4292 and the work practice standards required by § 63.4293 during each compliance period.

(b) Consistent with §§ 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction of the emission capture system, add-on control device, or web coating/printing operation may affect emission capture or control device efficiency and must be reported as specified in §§ 63.4310(c)(6) and 63.4311(a)(7).

§ 63.4361 How do I determine the emission capture system efficiency?

You must use the procedures and test methods in this section to determine...
capture efficiency as part of the performance test required by §§63.4340 or 63.4350.

(a) Assuming 100 percent capture efficiency. You may assume the capture system efficiency is 100 percent if both of the conditions in paragraphs (a)(1) and (2) of this section are met.

(1) The capture system meets the criteria in Method 204 of appendix M to 40 CFR part 51 for a PTE and directs all the exhaust gases from the enclosure to an add-on control device.

(2) All regulated materials applied in the web coating/printing or dyeing/finishing operation are applied within the capture system; regulated material solvent flash-off, curing, and drying occurs within the capture system; and the removal or evaporation of cleaning materials from the web coating/printing operation surfaces they are applied to occurs within the capture system. For example, this criterion is not met if the web enters the open shop environment when moving between the application station and a curing oven.

(b) Measuring capture efficiency. If the capture system does not meet both of the criteria in paragraphs (a)(1) and (2) of this section, then you must use one of the three protocols described in paragraphs (c), (d), and (e) of this section to measure capture efficiency. The capture efficiency measurements use TVH capture efficiency as a surrogate for organic HAP capture efficiency. The capture efficiency measurement must consist of three test runs. Each test run must be at least 3 hours duration or the length of a production run, up to 8 hours.

(1) Either use a building enclosure or construct an enclosure around the web coating/printing or dyeing/finishing operation where regulated materials are applied, and all areas where emissions from these applied regulated materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the web coating/printing or dyeing/finishing operation where capture devices collect emissions for routing to an add-on control device, such as the entrance and exit areas of an oven or tenter frame, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of appendix M to 40 CFR part 51.

(2) Use Method 204A or 204F of appendix M to 40 CFR part 51 to determine the mass fraction of TVH liquid input from each regulated material used in the web coating/printing or dyeing/finishing operation during each capture efficiency test run. To make the determination, substitute TVH for each occurrence of the term volatile organic compounds (VOC) in the methods.

(3) Use Equation 1 of this section to calculate the total mass of TVH liquid input from all the regulated materials applied in the web coating/printing or dyeing/finishing operation during each capture efficiency test run.

\[
TVH_{\text{applied}} = \sum_{i=1}^{n}(TVH_i)(M_i) \quad \text{(Eq. 1)}
\]

Where:

\(TVH_{\text{applied}}\) = Mass of liquid TVH in regulated materials applied in the web coating/printing or dyeing/finishing operation during the capture efficiency test run, kg.

\(TVH_i\) = Mass fraction of TVH in regulated material, i, that is applied in the web coating/printing or dyeing/finishing operation.
coating/printing or dyeing/finishing operation during the capture efficiency test run, kg TVH per kg material.

\[ M_i = \text{Total mass of regulated material, } i, \text{ applied in the web coating/printing or dyeing/finishing operation during the capture efficiency test run, kg.} \]

\[ n = \text{Number of different regulated materials applied in the web coating/printing or dyeing/finishing operation during the capture efficiency test run.} \]

(4) Use Method 204D or E of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) Use Method 204D if the enclosure is a temporary total enclosure.

(ii) Use Method 204E if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound-emitting operations inside the building enclosure, other than the web coating/printing or dyeing/finishing operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.

(5) For each capture efficiency test run, determine the percent capture efficiency of the emission capture system using Equation 2 of this section:

\[ CE = \left( \frac{\text{TVH}_{\text{applied}} - \text{TVH}_{\text{uncaptured}}}{\text{TVH}_{\text{applied}}} \right) \times 100 \]  

(Eq. 2)

Where:

\[ CE = \text{Capture efficiency of the emission capture system vented to the add-on control device, percent.} \]

\[ \text{TVH}_{\text{applied}} = \text{Total mass of TVH liquid input applied in the web coating/printing or dyeing/finishing operation during the capture efficiency test run, kg.} \]

\[ \text{TVH}_{\text{uncaptured}} = \text{Total mass of TVH that is not captured by the emission capture system and that exits from the temporary total enclosure or building enclosure during the capture efficiency test run, kg.} \]

(6) Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.

(d) **Gas-to-gas protocol using a temporary total enclosure or a building enclosure.** The gas-to-gas protocol compares the mass of TVH emissions captured by the emission capture system to the mass of TVH emissions not captured. Use a temporary total enclosure or a building enclosure and the procedures in paragraphs (d)(1) through (5) of this section to measure emission capture system efficiency using the gas-to-gas protocol.

(1) Either use a building enclosure or construct an enclosure around the web coating/printing or dyeing/finishing operation where regulated materials are applied, and all areas where emissions from these applied regulated materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the web coating/printing or dyeing/finishing operation where capture devices collect emissions generated by the web coating/printing or dyeing/finishing operation for routing to an add-on control device, such as the entrance and exit areas of an oven or a tenter frame, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of appendix M to 40 CFR part 51.

(2) Use Method 204B or 204C of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions captured by the emission capture system during each capture efficiency test run as measured at the inlet to the add-on control device. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) The sampling points for the Method 204B or 204C measurement must be upstream from the add-on control device and must represent total emissions routed from the capture system and entering the add-on control device.
§ 63.4362 How do I determine the add-on control device emission destruction or removal efficiency?

You must use the procedures and test methods in this section to determine the add-on control device emission destruction or removal efficiency as part of the performance test required by §§63.4340 and 63.4350. You must conduct three test runs as specified in §63.7(e)(3) and each test run must last at least 1 hour.

(a) For all types of add-on control devices, use the test methods as specified in paragraphs (a)(1) through (5) of this section.

(1) Use Method 1 or 1A of appendix A to 40 CFR part 60, as appropriate, to select sampling sites and velocity traverse points.

(2) Use Method 2, 2A, 2C, 2D, 2F, or 2G of appendix A to 40 CFR part 60, as appropriate, to measure gas volumetric flow rate.

(3) Use Method 3, 3A, or 3B of appendix A to 40 CFR part 60, as appropriate, for gas analysis to determine dry molecular weight. You may also use as an alternative to Method 3B, the manual method for measuring the oxygen, carbon dioxide, and carbon monoxide content of exhaust gas in ANSI/ASME PTC 19.10–1981, “Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus]” (incorporated by reference, see §63.14).

(4) Use Method 204D or 204E of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) Use Method 204D if the enclosure is a temporary total enclosure.

(ii) Use Method 204E if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound-emitting operations inside the building enclosure, other than the web coating/inking or dyeing/finishing operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.

(5) Determine the capture efficiency of the emission capture system as the average of the capture efficiencies measured in the three test runs.

(e) Alternative capture efficiency protocol. As an alternative to the procedures specified in paragraphs (c) and (d) of this section, you may determine capture efficiency using any other capture efficiency protocol and test methods that satisfy the criteria of either the DQO or LCL approach as described in appendix A to subpart KK of this part.