



Ohio Administrative Code

Rule 3745-51-784 Tanks - air emission standards for tanks and containers.

Effective: June 12, 2023

(A) This rule applies to the control of air pollutant emissions from tanks for which paragraph (B) of rule 3745-51-782 of the Administrative Code references the use of this rule for such air emission control.

(B) The remanufacturer or other person who stores or treats the hazardous secondary material shall control air pollutant emissions from each tank subject to this rule in accordance with the following requirements as applicable:

(1) For a tank that manages hazardous secondary material that meets all of the conditions specified in paragraphs (B)(1)(a) to (B)(1)(c) of this rule, the remanufacturer or other person who stores or treats the hazardous secondary material shall control air pollutant emissions from the tank in accordance with the "Tank Level 1" controls specified in paragraph (C) of this rule or the "Tank Level 2" controls specified in paragraph (D) of this rule.

(a) The hazardous secondary material in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

(i) For a tank design capacity equal to or greater than one hundred fifty-one cubic meters (m^3), the maximum organic vapor pressure limit for the tank is 5.2 kilopascals (kPa).

(ii) For a tank design capacity equal to or greater than seventy-five m^3 but less than one hundred fifty-one m^3 , the maximum organic vapor pressure limit for the tank is 27.6 kPa.

(iii) For a tank design capacity less than seventy-five m^3 , the maximum organic vapor pressure limit for the tank is 76.6 kPa.

(b) The hazardous secondary material in the tank is not heated by the remanufacturer or other person



who stores or treats the hazardous secondary material to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous secondary material is determined for the purpose of complying with paragraph (B)(1)(a) of this rule.

(2) For a tank that manages hazardous secondary material that does not meet all of the conditions specified in paragraphs (B)(1)(a) to (B)(1)(c) of this rule, the remanufacturer or other person stores or treats the hazardous secondary material shall control air pollutant emissions from the tank by using "Tank Level 2" controls in accordance with the requirements of paragraph (D) of this rule. An example of tanks required to use "Tank Level 2" controls is a tank for which the hazardous secondary material in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in paragraph (B)(1)(a) of this rule.

(C) Remanufacturers or other persons who store or treats the hazardous secondary material controlling air pollutant emissions from a tank using "Tank Level 1" controls shall meet the requirements specified in paragraphs (C)(1) to (C)(4) of this rule:

(1) The remanufacturer or other person who stores or treats that hazardous secondary material shall determine the maximum organic vapor pressure for a hazardous secondary material to be managed in the tank using "Tank Level 1" controls before the first time the hazardous secondary material is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures specified in paragraph (C) of rule 3745-51-783 of the Administrative Code. Thereafter, the remanufacturer or other person who stores or treats the hazardous secondary material shall perform a new determination whenever changes to the hazardous secondary material managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in paragraph (B)(1)(a) of this rule, as applicable to the tank.

(2) The tank shall be equipped with a fixed roof designed to meet the following specifications:

(a) The fixed roof and the fixed roof's closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous secondary material in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be



an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).

(b) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

(c) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either:

(i) Equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or

(ii) Connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and shall be operating whenever hazardous secondary material is managed in the tank, except as provided for in paragraphs (C)(2)(c)(ii)(1) to (C)(2)(c)(ii)(2) of this rule.

(A) During periods when it is necessary to provide access to the tank for performing the activities of paragraph (C)(2)(c)(ii)(2) of this rule, venting of the vapor headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. After completion of the activity, the remanufacturer or other person who stores or treats the hazardous secondary material shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

(B) During periods of routine inspection, maintenance, or other activities needed for normal operations, and for removal of accumulated sludge or other residues from the bottom of the tank.

(d) The fixed roof and the fixed roof's closure devices shall be made of suitable materials that will minimize exposure of the hazardous secondary material to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and



closure devices shall include organic vapor permeability, the effects of any contact with the hazardous secondary material or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(3) Whenever a hazardous secondary material is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

(a) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(i) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. After completion of the activity, the remanufacturer or other person who stores or treats the hazardous secondary material shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

(ii) To remove accumulated sludge or other residues from the bottom of tank.

(b) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the remanufacturer or other person who stores or treats the hazardous secondary material based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.



(c) Opening of a "safety device," as defined in rule 3745-51-781 of the Administrative Code, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The remanufacturer or other person who stores or treats the hazardous secondary material shall inspect the air emission control equipment in accordance with the following requirements

(a) The fixed roof and the fixed roof's closure devices shall be visually inspected by the remanufacturer or other person who stores or treats the hazardous secondary material to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(b) The remanufacturer or other person who stores or treats the hazardous secondary material shall perform an initial inspection of the fixed roof and the fixed roof's closure devices on or before the date that the tank becomes subject to this rule. Thereafter, the remanufacturer or other person who stores or treats the hazardous secondary material shall perform the inspections at least once every year except under the special conditions provided for in paragraph (L) of this rule.

(c) In the event that a defect is detected, the remanufacturer or other person who stores or treats the hazardous secondary material shall repair the defect in accordance with the requirements of paragraph (K) of this rule.

(d) The remanufacturer or other person who stores or treats the hazardous secondary material shall maintain a record of the inspection in accordance with the requirements specified in paragraph (B) of rule 3745-51-789 of the Administrative Code.

(D) Remanufacturers or other persons who store or treat the hazardous secondary material controlling air pollutant emissions from a tank using "Tank Level 2" controls shall use one of the following tanks:

(1) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in paragraph (E) of this rule;



- (2) A tank equipped with an external floating roof in accordance with the requirements specified in paragraph (F) of this rule;
- (3) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (G) of this rule;
- (4) A pressure tank designed and operated in accordance with the requirements specified in paragraph (H) of this rule; or
- (5) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in paragraph (I) of this rule.
- (E) The remanufacturer or other person who stores or treats the hazardous secondary material who controls air pollutant emissions from a tank using a fixed roof with an internal floating roof shall meet the requirements specified in paragraphs (E)(1) to (E)(3) of this rule.
- (1) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:
- (a) The internal floating roof shall be designed to float on the liquid surface except when the floating roof shall be supported by the leg supports.
- (b) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:
- (i) A single continuous seal that is either a "liquid-mounted seal" or a "metallic shoe seal," as defined in rule 3745-51-781 of the Administrative Code; or
- (ii) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.
- (c) The internal floating roof shall meet the following specifications:



- (i) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.
 - (ii) Each opening in the internal floating roof shall be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.
 - (iii) Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least ninety per cent of the opening.
 - (iv) Each automatic bleeder vent and rim space vent shall be gasketed.
 - (v) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.
 - (vi) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.
- (2) The remanufacturer or other person who stores or treats the hazardous secondary material shall operate the tank in accordance with the following requirements:
- (a) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.
 - (b) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.
 - (c) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.



(3) The remanufacturer or other person who stores or treats the hazardous secondary material shall inspect the internal floating roof in accordance with the procedures specified as follows:

(a) The floating roof and the floating roof's closure devices shall be visually inspected by the remanufacture or other person who stores or treats the hazardous secondary material to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, the internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the hazardous secondary material surface from the atmosphere; or the slotted membrane has more than ten per cent open area.

(b) The remanufacturer or other person who stores or treats the hazardous secondary material shall inspect the internal floating roof components as follows except as provided in paragraph (E)(3)(c) of this rule:

(i) Visually inspect the internal floating roof components through openings on the fixed-roof (e.g., manholes and roof hatches) at least once every twelve months after initial fill, and

(ii) Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every ten years.

(c) As an alternative to performing the inspections specified in paragraph (E)(3)(b) of this rule for an internal floating roof equipped with two continuous seals mounted one above the other, the remanufacturer or other person who stores or treats the hazardous secondary material may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every five years.

(d) Prior to each inspection required by paragraph (E)(3)(b) or (E)(3)(c) of this rule, the remanufacturer or other person who stores or treats the hazardous secondary material shall notify the director in advance of each inspection to provide the director with the opportunity to have an observer present during the inspection. The remanufacturer or other person who stores or treats the



hazardous secondary material shall notify the director of the date and location of the inspection as follows:

(i) Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the remanufacturer or other person who stores or treats the hazardous secondary material so that the notification is received by the director at least thirty calendar days before refilling the tank except when an inspection is not planned as provided for in paragraph (E)(3)(d)(ii) of this rule.

(ii) When a visual inspection is not planned and the remanufacturer or other person who stores or treats the hazardous secondary material could not have known about the inspection thirty calendar days before refilling the tank, the remanufacturer or other person who stores or treats the hazardous secondary material shall notify the director as soon as possible, but no later than seven calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that the notification is received by the director at least seven calendar days before refilling the tank.

(e) In the event that a defect is detected, the remanufacturer or other person who stores or treats the hazardous secondary material shall repair the defect in accordance with the requirements of paragraph (K) of this rule.

(f) The remanufacturer or other person who stores or treats the hazardous secondary material shall maintain a record of the inspection in accordance with the requirements specified in paragraph (B) of rule 3745-51-789 of the Administrative Code.

(4) "Safety devices," as defined in rule 3745-51-781 of the Administrative Code, may be installed and operated as necessary on any tank complying with the requirements of paragraph (E) of this rule.

(F) The remanufacturer or other person who stores or treats the hazardous secondary material who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in paragraphs (F)(1) to (F)(3) of this rule.



(1) The remanufacturer or other person who stores or treats the hazardous secondary material shall design the external floating roof in accordance with the following requirements:

(a) The external floating roof shall be designed to float on the liquid surface except when the floating roof shall be supported by the leg supports.

(b) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(i) The primary seal shall be a "liquid-mounted seal" or a "metallic shoe seal," as defined in rule 3745-51-781 of the Administrative Code. The total area of the gaps between the tank wall and the primary seal shall not exceed two hundred twelve square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least sixty-one centimeters above the liquid surface.

(ii) The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not exceed 21.2 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

(c) The external floating roof shall meet the following specifications:

(i) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.

(ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.

(iii) Each access hatch and each gauge float well shall be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.



- (iv) Each automatic bleeder vent and each rim space vent shall be equipped with a gasket.

- (v) Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least ninety per cent of the area of the opening.

- (vi) Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.

- (vii) Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.

- (viii) Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.

- (ix) Each gauge hatch and each sample well shall be equipped with a gasketed cover.

- (2) The remanufacturer or other person who stores or treats the hazardous secondary material shall operate the tank in accordance with the following requirements:
 - (a) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

 - (b) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device shall be open for access.

 - (c) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

 - (d) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

 - (e) Rim space vents shall be set to open only at those times that the roof is being floated off the roof



leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(f) The cap on the end of each unslotted guide pole shall be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.

(g) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well shall be opened for access.

(h) Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

(3) The remanufacturer or other person who stores or treats the hazardous secondary material shall inspect the external floating roof in accordance with the procedures specified as follows:

(a) The remanufacturer or other person who stores or treats the hazardous secondary material shall measure the external floating roof seal gaps in accordance with the following requirements:

(i) The remanufacturer or other person who stores or treats the hazardous secondary material shall perform measurements of gaps between the tank wall and the primary seal within sixty calendar days after initial operation of the tank after installation of the floating roof and, thereafter, at least once every five years.

(ii) The remanufacturer or other person who stores or treats the hazardous secondary material shall perform measurements of gaps between the tank wall and the secondary seal within sixty calendar days after initial operation of the tank after installation of the floating roof and, thereafter, at least once every year.

(iii) If a tank ceases to hold hazardous secondary material for a period of one year or more, subsequent introduction of hazardous secondary material into the tank shall be considered an initial operation for the purposes of paragraphs (F)(3)(a)(i) to (F)(3)(a)(ii) of this rule.

(iv) The remanufacturer or other person who stores or treats the hazardous secondary material shall



determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:

(A) The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

(B) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.

(C) For a seal gap measured under paragraph (F)(3) of this rule, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(D) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in paragraph (F)(1)(b) of this rule.

(v) In the event that the seal gap measurements do not conform to the specifications in paragraph (F)(1)(b) of this rule, the remanufacturer or other person who stores or treats the hazardous secondary material shall repair the defect in accordance with the requirements of paragraph (K) of this rule.

(vi) The remanufacturer or other person who stores or treats the hazardous secondary material shall maintain a record of the inspection in accordance with the requirements specified in paragraph (B) of rule 3745-51-789 of the Administrative Code.

(b) The remanufacturer or other person who stores or treats the hazardous secondary material shall visually inspect the external floating roof in accordance with the following requirements:



(i) The floating roof and the floating roof's closure devices shall be visually inspected by the remanufacturer or other person who stores or treats the hazardous secondary material to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The remanufacturer or other person who stores or treats the hazardous secondary material shall perform an initial inspection of the external floating roof and if the external floating roof's closure devices on or before the date that the tank becomes subject to this rule. Thereafter, the remanufacturer or other person who stores or treats the hazardous secondary material shall perform the inspections at least once every year except for the special conditions provided for in paragraph (L) of this rule.

(iii) In the event that a defect is detected, the remanufacturer or other person who stores or treats the hazardous secondary material shall repair the defect in accordance with the requirements of paragraph (K) of this rule.

(iv) The remanufacturer or other person who stores or treats the hazardous secondary material shall maintain a record of the inspection in accordance with the requirements specified in paragraph (B) of rule 3745-51-789 of the Administrative Code.

(c) Prior to each inspection required by paragraph (F)(3)(a) or (F)(3)(b) of this rule, the remanufacturer or other person who stores or treats the hazardous secondary material shall notify the director in advance of each inspection to provide the director with the opportunity to have an observer present during the inspection. The remanufacturer or other person who stores or treats the hazardous secondary material shall notify the director of the date and location of the inspection as follows:

(i) Prior to each inspection to measure external floating roof seal gaps as required under paragraph (F)(3)(a) of this rule, written notification shall be prepared and sent by the remanufacturer or other person who stores or treats the hazardous secondary material so that the notification is received by



the director at least thirty calendar days before the date the measurements are scheduled to be performed.

(ii) Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the remanufacturer or other person who stores or treats the hazardous secondary material so that the notification is received by the director at least thirty calendar days before refilling the tank except when an inspection is not planned as provided for in paragraph (F)(3)(c)(iii) of this rule.

(iii) When a visual inspection is not planned and the remanufacturer or other person who stores or treats the hazardous secondary material could not have known about the inspection thirty calendar days before refilling the tank, the owner or operator shall notify the director as soon as possible, but no later than seven calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that the notification is received by the director at least seven calendar days before refilling the tank.

(4) "Safety devices," as defined in rule 3745-51-781 of the Administrative Code, may be installed and operated as necessary on any tank complying with the requirements of paragraph (F) of this rule.

(G) The remanufacturer or other person who stores or treats the hazardous secondary material who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the requirements specified in paragraphs (G)(1) to (G)(3) of this rule.

(1) The tank shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(a) The fixed roof and the fixed roof's closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank.

(b) Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric



pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions.

(c) The fixed roof and the fixed roof's closure devices shall be made of suitable materials that will minimize exposure of the hazardous secondary material to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout the intended service life of the fixed roof and closure devices. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include organic vapor permeability, the effects of any contact with the liquid and the liquid's vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(d) The closed-vent system and control device shall be designed and operated in accordance with the requirements of rule 3745-51-787 of the Administrative Code.

(2) Whenever a hazardous secondary material is in the tank, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

(a) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

(i) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. After completion of the activity, the remanufacturer or other person who stores or treats the hazardous secondary material shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.



- (ii) To remove accumulated sludge or other residues from the bottom of a tank.

- (b) Opening of a "safety device," as defined in rule 3745-51-781 of the Administrative Code, is allowed at any time conditions require doing so to avoid an unsafe condition.

- (3) The remanufacturer or other person who stores or treats the hazardous secondary material shall inspect and monitor the air emission control equipment in accordance with the following procedures:
 - (a) The fixed roof and the fixed roof's closure devices shall be visually inspected by the remanufacturer or other person who stores or treats the hazardous secondary material to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

 - (b) The closed-vent system and control device shall be inspected and monitored by the remanufacturer or other person who stores or treats the hazardous secondary material in accordance with the procedures specified in rule 3745-51-787 of the Administrative Code.

 - (c) The remanufacturer or other person who stores or treats the hazardous secondary material shall perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this rule. Thereafter, the remanufacturer or other person who stores or treats the hazardous secondary material shall perform the inspections at least once every year except for the special conditions provided for in paragraph (L) of this rule.

 - (d) In the event that a defect is detected, the remanufacture or other person who stores or treats the hazardous secondary material shall repair the defect in accordance with the requirements of paragraph (K) of this rule.

 - (e) The remanufacturer or other person who stores or treats the hazardous secondary material shall maintain a record of the inspection in accordance with the requirements specified in paragraph (B) of rule 3745-51-789 of the Administrative Code.



(H) The remanufacturer or other person who stores or treats the hazardous secondary material who controls air pollutant emissions by using a pressure tank shall meet the following requirements.

(1) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to the tank's design capacity.

(2) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in paragraph (D) of rule 3745-51-783 of the Administrative Code.

(3) Whenever a hazardous secondary material is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except under either or the following conditions as specified in paragraph (H)(3)(a) or (H)(3)(b) of this rule.

(a) At those times when opening of a "safety device," as defined in rule 3745-51-781 of the Administrative Code, is required to avoid an unsafe condition.

(b) At those times when purging of inerts from the tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of rule 3745-51-787 of the Administrative Code.

(I) The remanufacturer or other person who stores or treats the hazardous secondary material who controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in paragraphs (I)(1) to (I)(4) of this rule.

(1) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T- Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741 appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The remanufacturer or other person who stores or treats the hazardous secondary material shall perform



the verification procedure for the enclosure as specified in section 5.0 to "Procedure T- Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(2) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in rule 3745-51-787 of the Administrative Code.

(3) "Safety devices," as defined in rule 3745-51-781 of the Administrative Code, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of paragraphs (I)(1) to (I)(2) of this rule.

(4) The remanufacturer or other person who stores or treats the hazardous secondary material shall inspect and monitor the closed-vent system and control device as specified in rule 3745-51-787 of the Administrative Code.

(J) The remanufacturer or other person who stores or treats the hazardous secondary material shall transfer hazardous secondary material to a tank subject to this rule in accordance with the following requirements:

(1) Transfer of hazardous secondary material, except as provided in paragraph (J)(2) of this rule, to the tank from another tank subject to this rule shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the hazardous secondary material to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when the individual drain system meets the requirements of 40 CFR Part 63 subpart RR- "National Emission Standards for Individual Drain Systems."

(2) The requirements of paragraph (J)(1) of this rule do not apply when transferring a hazardous secondary material to the tank under any of the following conditions:

(a) The hazardous secondary material meets the average VO concentration conditions specified in paragraph (C)(1) of rule 3745-51-782 of the Administrative Code at the point of material origination.



(b) The hazardous secondary material has been treated by an organic destruction or removal process to meet the requirements in paragraph (C)(2) of rule 3745-51-782 of the Administrative Code.

(c) The hazardous secondary material meets the requirements of paragraph (C)(4) of rule 3745-51-782 of the Administrative Code.

(K) The remanufacturer or other person who stores or treats the hazardous secondary material shall repair each defect detected during an inspection performed in accordance with the requirements of paragraph (C)(4), (E)(3), (F)(3), or (G)(3) of this rule as follows:

(1) The remanufacturer or other person who stores or treats the hazardous secondary material shall make first efforts at repair of the defect no later than five calendar days after detection, and repair shall be completed as soon as possible but no later than forty-five calendar days after detection except as provided in paragraph (K)(2) of this rule.

(2) Repair of a defect may be delayed beyond forty-five calendar days if the remanufacturer or other person who stores or treats the hazardous secondary material determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous secondary material normally managed in the tank. In this case, the remanufacturer or other person who stores or treats the hazardous secondary material shall repair the defect the next time the process or unit that is generating the hazardous secondary material managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(L) After the initial inspection and monitoring of the cover as required by the applicable provisions of rules 3745-51-780 to 3745-51-789 of the Administrative Code, subsequent inspection and monitoring may be performed at intervals longer than one year under the following special conditions:

(1) In the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the remanufacturer or other person who stores or treats the hazardous secondary material may designate a cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:



(a) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or monitor, if required.

(b) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable provision of rules 3745-51-780 to 3745-51-789 of the Administrative Code, as frequently as practicable during those times when a worker can safely access the cover.

(2) In the case when a tank is buried partially or entirely underground, a remanufacturer or other person who stores or treats the hazardous secondary material is required to inspect and monitor, as required by the applicable provisions of this rule, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see rule 3745-50-11 of the Administrative Code titled "Incorporated by reference."]