



Draft 246-272C WAC

On-site Sewage System Tanks

Purpose and Administration

246-272C- 0001 – Authority, Purpose, and Objectives

246-272C-0005 – Administration

246-272C-0010 – Applicability and Relationship to Other Rules

246-272C-0020 – Definitions

246-272C-0030 – Required Rule Review

Sewage Tank Approvals and Registered List Requirements

246-272C-0110 – General Requirements

246-272C-0120 – Sewage Tank Registered List Requirements: Prefabricated Tanks

246-272C-0130 – Sewage Tank Registered List Renewals

246-272C-0140 – Sewage Tank Registered List Replaces the Approved On-site Sewage Tanks List

246-272C-0150 – Sewage Tank Approvals: Cast-In-Place Tanks

Design and Construction Requirements

246-272C-0200 – Design Drawing Requirements for Sewage Tanks

246-272C-0210 – General Design and Construction Requirements

246-272C-0220 – Additional Requirements for Septic Tanks

246-272C-0230 – Additional Requirements for Grease Interceptors

246-272C-0240 – Additional Requirements for Pump Tanks

246-272C-0250 – Identification

Installation and Testing Requirements

246-272C-0400 – Excavation, Placement, and Backfill

246-272C-0410 – Testing for Watertightness

246-272C-0420 – Tank Watertightness Certification and Submittal Requirements

Waivers, Compliance, and Enforcement

246-272C-0500 – Waiver of State Regulations

246-272C-0520 – Enforcement

246-272C-0540 – Notice of Decision: Adjudicative Proceeding

Severability

246-272C-0650 – Severability

Fees

246-272C-0990 – Fees

Purpose and Administration

246-272C-0001 – Authority, Purpose, and Objectives

246-272C-0005 – Administration

246-272C-0010 – Applicability and Relationship to Other Rules

246-272C-0020 – Definitions

246-272C-0030 – Required Rule Review

246-272C-0001 – Authority, Purpose, and Objectives

- (1) **Authority.** This chapter is adopted by the state board of health under the authority in chapter 43.20 RCW and chapter 43.70 RCW.
 - (a) RCW 43.20.050 authorizes the state board of health to adopt rules and standards for the prevention, control, and abatement of health hazards and nuisances related to the disposal of sewage and adopt standards and procedures governing the design, construction, and operation of sewage treatment and disposal facilities [RCW 43.20.050(2)(b)]. The state board of health shall also adopt rules for the design, construction, installation, operation, and maintenance of those on-site sewage systems with design flows of less than three thousand five hundred gallons per day.
 - (b) RCW 43.70.310 encourages the state board of health and the department of health to integrate policies that protect the environment along with those designed to preserve public health when common policies exist.
- (2) **Purpose.** The purpose of this chapter is to protect public health and safety by assuring proper design, construction, and maintenance of all tanks used in on-site sewage systems. Proper sewage tank design and construction will help prevent:
 - (a) Surface or ground water leaking into tanks and adversely impacting the treatment and/or dispersal functions of system components; and
 - (b) Sewage from tanks leaking into the soil and adversely impacting ground water or surface water, or causing sewage to surface on the ground.
- (3) **Objectives.** This chapter establishes requirements and provides measures to achieve effective long-term sewage treatment and limit the discharge of contaminants to waters of the state.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (a) establishes design and construction standards and requires department review and approval of prefabricated sewage tanks and cast-in-place sewage tanks;
- (b) creates a process to register prefabricated sewage system tank designs;
- (c) establishes sewage system tank testing requirements, including watertightness testing;
- (d) establishes manufacturer, installer, and department of health requirements and responsibilities; and
- (e) establishes sewage system tank review and registration fees.

246-272C-0005 –Administration

The department shall administer this chapter under the authority and requirements of chapter 43.70 RCW and chapter 70.118 RCW. The local health officers shall administer portions of this chapter related to on-site sewage systems with design flows of less than 3,500 gallons per day, as described in chapter 70.05 RCW.

246-272C-0010 – Applicability and Relationship to Other Rules

- (1) This chapter applies to all prefabricated sewage tanks and all cast-in-place sewage tanks. This chapter contains specific requirements for:
 - (a) manufacturers of prefabricated sewage tanks and builders of cast-in-place sewage tanks;
 - (b) anyone designing sewage tanks;
 - (c) the department of health who reviews, registers, and approves sewage tank designs;
 - (d) those installing sewage tanks; and
 - (e) the local health officer and the department who approve on-site sewage system designs, plans, specifications, and installations.
- (2) This chapter does not apply to:
 - (a) facilities regulated by the department of ecology; and
 - (b) reclaimed water systems as described in chapter 90.46 RCW.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (3) This chapter does not apply to geomembrane containment vessels for public domain treatment technologies. An example of this excluded technology is PVC containment vessels for public domain packed bed filters.
 - (4) This chapter establishes sewage tank design, construction, and testing requirements and does not contain all requirements for on-site sewage systems. Additional requirements for on-site sewage systems, including maintenance requirements, are found in chapter 246-272A WAC and chapter 246-272B WAC.
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246-272C-0020 – Definitions

"**AASHTO**" means American Association of State and Highway Transportation Officials.

"**Approved**" means a written statement of acceptability issued by the department of health or the local health officer.

"**Baffle**" means a device placed in a sewage tank for multiple functions, including dissipating energy, directing solids, retaining solids, and drawing liquid off at a specific depth.

"**Cast-in-place tank**" means a sewage tank specifically designed for and constructed at the location where it will be used.

"**Department**" means the Washington state department of health.

"**Designer**" means a person who matches site and soil characteristics with appropriate on-site sewage technology. Throughout this chapter this term applies to on-site sewage treatment system designers licensed under chapter 18.210 RCW.

"**Design engineer**" means a professional engineer who designs an on-site sewage treatment system or a sewage tank. The design engineer must be experienced in working with on-site sewage systems and waste treatment if designing systems, and experienced in working with structural, hydraulic, hydrostatic, earth, and traffic loads if designing a sewage tank. If the sewage tank is considered a "significant structure", as defined in chapter 18.43 RCW, the design engineer must be legally registered as a structural engineer.

"**Effluent**" means liquid discharged from a sewage tank or other on-site sewage system component.

"**Greywater**" means the sewage or wastewater generated from showers, baths, spas, hand basins, laundry tubs, washing machines, dishwashers, and kitchen sinks. It does not include sewage from toilets.

"**Grease interceptor tank**" means a watertight tank similar in design to a septic tank receiving greywater that may contain grease, such as from food service establishments. The interceptor tank is designed and constructed to permit adequate separation of grease from the rest of the sewage prior to discharge into an approved sewage treatment and disposal or dispersal system.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

"Holding tank" means a large tank which receives and stores sewage from one or more facilities or dwellings for removal, treatment, and dispersal of the sewage at another location.

"Holding tank sewage system" means an on-site sewage system that uses a holding tank, the services of a septic pumper/hauler, and off-site treatment and disposal of the sewage generated.

"Installer" means a person approved by the local health officer to install on-site sewage systems or components, or as defined in chapter 246-272B for large on-site sewage systems.

"Local health officer" means the health officer of the city, county, or city-county health department or district within the state of Washington, or a representative authorized by and under the direct supervision of the local health officer, as defined in chapter 70.05 RCW.

"On-site sewage system" (OSS) means an integrated system of components, located on or nearby the property it serves, that conveys, stores, treats, and/or provides subsurface soil treatment and dispersal of sewage. It consists of a collection system, a treatment component or treatment sequence, and a soil dispersal component. An on-site sewage system also refers to a holding tank sewage system or other system that does not have a soil dispersal component.

"Prefabricated tank" means a sewage tank that is manufactured off-site and delivered to the site for installation.

"Professional engineer" means a person who, by reason of his or her special knowledge of the mathematical and physical sciences and the principles and methods of engineering analysis and design, acquired by professional education and practical experience, is qualified to practice engineering as defined in chapter 18.43 RCW, as attested by his or her legal registration as a professional engineer. Structural engineering is recognized as a specialized branch of professional engineering.

"Pump tank" means a tank that contains pumping or dosing equipment.

"Septage" means the mixture of solid wastes, scum, sludge, and liquids pumped from within septic tanks, pump chambers, holding tanks, and other OSS components.

"Septic pumper" means a person approved by the local health officer to remove and transport sewage or septage from on-site sewage systems. May also be called "septic hauler".

"Septic tank" means a sewage tank serving as a pretreatment receptacle that receives the discharge of sewage from a building sewer or sewers, designed and constructed to allow separation of settleable and floating solids from the liquid, detention, and anaerobic digestion of the organic matter prior to discharge of the liquid.

"Sewage" means any urine, feces, and the water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments or other places. May also be called "wastewater".

"Sewage tank" means a watertight prefabricated or cast-in-place septic tank, pump tank, holding tank, grease interceptor tank, re-circulating filter tank, a tank used with a proprietary

DRAFT 246-272C WAC – On-Site Sewage System Tanks

product, and any other tank used in an on-site sewage system. This term also includes tanks used in a septic tank effluent pump or vacuum collection/transmission system for an on-site sewage system.

“Trash tank” means a type of sewage tank that removes material from sewage that microorganisms cannot degrade before the sewage enters a chamber where decomposition occurs.

"Watertight" means liquids are prevented from entering or escaping except through designed openings such as inlets, outlets, inter-compartmental wall fittings or baffles.

WAC 246-272C-0030 – Required Rule Review

The department shall review this chapter to evaluate the effectiveness every five years or as required by chapter 34.05 RCW- Administrative Procedure Act.

Sewage Tank Approvals and Registered List Requirements

246-272C-0110 – General Requirements

246-272C-0120 – Sewage Tank Registered List Requirements: Prefabricated Tanks

246-272C-0130 – Sewage Tank Registered List Renewals

246-272C-0140 – Sewage Tank Registered List Replaces the Approved On-site Sewage Tank List

246-272C-0150 – Sewage Tank Approvals: Cast-In-Place Tanks

246-272C-0110 – General Requirements

- (1) All sewage tanks must meet the design, construction, installation, testing, and registration requirements specified in this chapter.
- (2) The department shall review and approve all prefabricated tank design and construction plans.
- (3) The department shall review and approve all cast-in-place sewage tanks in accordance with this chapter. The department shall review and approve cast-in-place tank designs prior to installation.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (4) Designers and design engineers shall only specify the use of prefabricated tanks on the Sewage Tank Registered List or a cast-in-place sewage tank approved by the department in their on-site sewage system designs, plans, and specifications.
- (5) Installers shall only install prefabricated sewage tanks on the Sewage Tank Registered List or construct a cast-in-place tank that has been approved by the department. If a cast-in-place tank is proposed, it must be approved per WAC 246-272C-0150.
- (6) Manufacturers or their agents shall not sell a prefabricated sewage tank in Washington state that is not on the department’s Sewage Tank Registered List.
- (7) Local health officers and the department shall only approve designs and installations containing either a prefabricated sewage tank on the Sewage Tank Registered List or a cast-in-place sewage tank approved by the department.

246-272C-0120 – Sewage Tanks Registered List Requirements: Prefabricated Tanks

- (1) **Manufacturer responsibilities.** Manufacturers shall:
 - (a) register with the department all models and sizes of prefabricated sewage tanks built using design and construction plans the department has reviewed and approved; and
 - (b) apply to the department to register their sewage tank model(s) and size(s).
- (2) The manufacturer or their agent must fill-out an application form, provide the information listed in the table below, and submit all the information to the department.

(a) Manufacturer information:	(i) Manufacturer name; (ii) Mailing address; (iii) Street address; (iv) Phone number; and (v) Email address.
(b) Manufacturer’s authorized contact information:	(i) The name of the manufacturer’s authorized contact; (ii) Mailing address; (iii) Street address; (iv) Phone number; and (v) Email address.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

<p>(c) If there is an agent, manufacturer's agent information:</p>	<p>(i) Name of the manufacturer's agent; (ii) Mailing address; (iii) Street address; (iv) Phone number; (v) Email address; and (vi) A signed and dated statement from the agent verifying agent status. The statement shall include the following: "I certify that I represent (<i>insert manufacturing company name</i>) and I am authorized to prepare or direct the preparation of this application for registration. I attest, under penalty of law, that this document and all attachments are true, accurate, and complete."</p>
<p>(d) Watertightness certification:</p>	<p>(i) The manufacturer shall submit a statement certifying their sewage tank is watertight: (A) at the point of manufacturing; or (B) if the manufacturer installs the tank, the manufacturer may submit a statement certifying the sewage tank is watertight after installation.</p>
<p>(e) A full set of design drawings with supporting calculations:</p>	<p>(i) The design drawings submitted shall be stamped by the design engineer. (ii) The design drawings shall meet all the requirements in WAC 246-272C-0200</p>
<p>(f) Installation instructions.</p>	
<p>(g) A description of the function of the sewage tank along with any known limitation on its use.</p>	
<p>(h) A professional engineer's certification:</p>	<p>(i) The design engineer shall complete and submit a statement with the design documents. (ii) The statement shall certify the tank meets all standards and requirements of this chapter.</p>
<p>(h) The fee for prefabricated sewage tank review and approval described in WAC 246-272C-0990.</p>	

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (3) **Responsibilities: Manufacturers With Tanks on the Sewage Tank Registered List.** Manufacturers of registered sewage tanks shall:
- (a) notify the department in writing of changes in contact information between registration renewal periods. Examples of such changes include manufacturer's name, email address, mailing address, street address and phone number.
 - (b) re-register by submitting a complete application to the department, their tank(s) each time a design change is made that materially affects the integrity of the sewage tank or the sewage tank's performance. The department may require a new review and approval of the design and construction plan, in addition to re-registering tanks that undergo design changes.
 - (c) pay any additional fee, beyond the base fee, for design and construction plan review and approval as required by the department.
 - (d) pay the annual fee.
- (4) **Responsibilities: Department.** The department shall maintain a list of registered prefabricated sewage tank models and sizes. The department will update the list periodically, adding and removing sewage tank information as necessary to keep the list current.
- (5) When the department receives an application, all information, and fees, the department shall:
- (a) review applications submitted in the order received;
 - (b) verify the application is complete. The department will return incomplete applications to the applicant or applicant's agent; and
 - (c) if complete, review and evaluate the design and construction plans and all information submitted to determine whether all applicable requirements are met.
- (6) When the department finds the tank design and construction plans meet all applicable requirements, the department shall:
- (a) approve the application and the sewage tank design and construction plans;
 - (b) notify the applicant of the department's decision in writing;
 - (c) bill the manufacturer or agent for any additional fee owed beyond the base fee; and
 - (d) when all fees are paid, add the specific tank model number, size, and manufacturer information to the Sewage Tank Registered List.
- (7) When the department finds the tank design and construction plans do not meet all applicable requirements, the department shall:

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (a) deny the application;
 - (b) notify the applicant in writing of the department’s decision, stating the specific reasons for denial.
- (8) The department may remove sewage tanks on the Sewage Tank Registered List between renewal periods when the department finds:
- (a) the sewage tank design and construction plans or methods are changed to the extent a new application is required; or
 - (b) the manufacturer or agent fails to pay the annual registration fee; or
 - (c) problems with the sewage tank(s).
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246-272C-0130 – Sewage Tank Registered List Renewals

- (1) All prefabricated sewage tank registrations are valid for up to three years. Registration expires on December 31st of the third year following:
- (a) the initial registration; or
 - (b) the most recent renewal.
- (2) A manufacturer shall apply to renew the registration for each sewage tank model and size on the registered list.
- (a) The department will send a renewal application to the most recent street address listed for the manufacturer or manufacturer’s agent.
 - (b) The manufacturer shall complete, sign, and submit the renewal application to the department along with the following:
 - (i) a signed certification verifying that no changes occurred over the last three years that materially affect the integrity of the sewage tank or the sewage tank’s performance. The certification must include a full description of any changes; and
 - (ii) the fee payment, as established in WAC 246-272C-0990.
- (3) As part of the sewage tank registration renewal process, the department may:
- (a) request field assessment comments from local health officers, utilities, or other sewage tank users no later than October 31st of the year prior to when the registration must be renewed. These comments may include concerns about a variety of field assessment issues such as product function, product reliability, and problems arising with operation and maintenance;

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (b) notify the manufacturer of any tank the nature of the field assessment comments.
- (4) The department shall review and then approve the renewal application except when:
- (a) a manufacturer does not apply for renewal before or on the registration expiration date. If the department does not receive a renewal application, the department shall remove the affected sewage tank model number, size, and other information from the registered list no earlier than 60 days after the expiration date; or
 - (b) the manufacturer does not submit a complete renewal application. The department shall remove the affected sewage tank model number, size, and other information from the registered list; or
 - (c) field assessment comments or other information submitted describe issues or problems with the sewage tank(s).
 - (i) The department may delay renewal until the manufacturer submits information the department finds satisfactorily answers the concerns and issues.
 - (ii) The department may remove the sewage tank model number, size, and other information from the registered list if manufacturer does not submit information, or the department finds the information does not satisfactorily answer concerns and issues.
 - (d) when changes to the design and construction plans materially affect the integrity of the sewage tank, its performance, or differ substantially from the original approval. Examples of such changes include, but are not limited to, changes in volume, wall thickness, placement or diameters of access ports, sealing mechanisms, and inlet/outlet design or materials. The department shall remove the tank model number, size, and manufacturer's information from the registered list.
- (5) Sewage tank model(s) and size(s) removed from the Sewage Tank Registered List are no longer eligible for:
- (a) the registered list renewal process;
 - (b) sale in Washington state; and
 - (c) installation in Washington state.
- (6) Manufacturers intending to register the sewage tank model(s) and size(s) again shall meet the requirements in WAC 246-272C-0110 and WAC 246-272C-0120.
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DRAFT 246-272C WAC – On-Site Sewage System Tanks

246-247C-0140 – Sewage Tank Registered List Replaces the Approved On-site Sewage Tanks List

- (1) The department shall phase out the Approved On-site Sewage Tanks List and switch to using the Sewage Tank Registered List described in WAC 246-272C-0120.
 - (a) The Approved On-site Sewage Tanks List becomes static on January 1, 2010. After December 31, 2009, no tank information will be added to the list.
 - (b) The Approved On-site Sewage Tanks List remains in effect through December 31, 2010.
 - (2) After January 1, 2010, prefabricated tank manufacturers or their agents must comply with the requirements of WAC 246-272C-0012. Designs may be submitted for the new approval process any time after January 1, 2010.
 - (3) Starting January 1, 2011, the department or local health officer shall only allow use of prefabricated sewage tanks from the Sewage Tank Registered List.
 - (4) Between January 1, 2010 and December 31, 2010, the department or local health officer may allow the use of pre-fabricated sewage tanks from either list. During this transition period, the department may make changes or delete sewage tanks from the List of Approved On-site Sewage Tanks as needed.
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246-272C-0150 – Sewage Tank Approvals: Cast-In-Place Tanks

- (1) An on-site sewage system applicant or their agent proposing to use a cast-in-place sewage tank shall:
 - (a) apply to the department to use a cast-in-place sewage tank;
 - (b) submit the design and construction plans prepared and stamped by a design engineer to the to the department for review and approval; and
 - (c) receive department approval for the cast-in-place sewage tank prior to constructing the tank.
- (2) The applicant or their agent must fill out the cast-in-place sewage tank application form and submit it to the department.
- (3) In addition to the application, the applicant must provide and submit, at a minimum, the following information to the department to verify the requirements of WAC 246-272C-0200 through 0250 are met:
 - (a) cast-in-place tank design drawings and supporting calculations stamped by a design engineer;

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (b) limits of all design loads of the tank including maximum traffic loading and earth loading;
 - (c) specific excavation, compaction, bedding, tank construction, and backfill requirements; and
 - (d) a certification from the sewage tank’s design engineer stating the tank meets the requirements of these rules. The engineer must submit the certification with the design documents.
- (4) When the department receives an application, all information, and fees, the department shall:
- (a) verify the application is complete. The department will return incomplete applications to the applicant or applicant’s agent.
 - (b) if complete, review and evaluate the design and construction plans and all information submitted to determine whether all applicable requirements are met.
- (5) When the department finds the tank design and construction plans meet all applicable requirements, the department shall:
- (a) approve the application and the sewage tank design and construction plans;
 - (b) determine any additional fee owed beyond the base fee and bill the manufacturer or agent ; and
 - (c) notify the applicant of the department’s decision in writing.
- (6) After receiving the department’s approval on the design and construction plans, the design engineer shall:
- (a) conduct an inspection of the completed cast-in-place sewage tank;
 - (b) verify all applicable requirements were satisfied;
 - (c) verify all excavation, backfill, and compaction conform to the project design specifications submitted by the design engineer and approved by the department; and
 - (d) submit to the department a construction completion certification for the cast-in-place sewage tank.
- (7) When the department finds the tank design and construction plans do not meet all applicable requirements, the department shall:
- (a) deny the application;
 - (b) state the specific reasons; and

- (c) notify the applicant of the department’s decision in writing.

Design and Construction Requirements

246-272C-0200 – Design Drawing Requirements for Sewage Tanks

246-272C-0210 – General Design and Construction Requirements

246-272C-0220 – Additional Requirements for Septic Tanks

246-272C-0230 – Additional Requirements for Grease Interceptors

246-272C-0240 – Additional Requirements for Pump Tanks

246-272C-0250 – Identification

246-272C–0200 – Design Drawing Requirements for Sewage Tanks

- (1) The design engineer shall stamp all design drawings with supporting calculations and instructions and submit the drawings to the department. The design engineer shall also verify that the requirements of WAC 246-272C-0200 through 0300 are satisfied.
- (2) The drawings shall specify and show in an obvious place the tank design loading, the maximum traffic loading and, the earth loading.
- (3) Drawings of the sewage tank(s) must be complete and show all dimensions, capacities, reinforcement, structural calculations, and such other data the department determines is pertinent. A video of the manufacturing process may be included with the submission. The drawings must be drawn to scale and show:
 - (a) a side section view of the tank with details on inlets, outlets, and any inter-compartmental devices;
 - (b) material specifications;
 - (c) a plan and side section view of the tank showing dimensions of tank, including thickness of various portions of the tank;
 - (d) reinforcement details;
 - (e) the size and location of all inspection and maintenance access, and inlet and outlet openings in the tank;
 - (f) the number of compartments;

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (g) the liquid capacity of each compartment in the tank;
- (h) the excavation, backfill, compaction, depth of bury, bedding and installation requirements; and
- (i) design load limits.

246-272C–0210 – General Design and Construction Requirements

- (1) **Sewage Tank Loads.** Sewage tanks must be designed and constructed to withstand all structural, hydraulic, hydrostatic, earth loads, and any anticipated traffic loads. They shall be designed and constructed so they:
 - (a) do not collapse or crack when subjected to the anticipated loads when the tanks are either full or empty;
 - (b) support a dead load equivalent to at least three (3) feet of earth cover with a unit density of at least 110 lb/ft³ and a 2,500 lb_f wheel load concentration over the critical elements of the tank. Tanks installed with more than three (3) feet of earth cover must be reinforced to support the additional load;
 - (c) account for and support earth backfill and hydrostatic pressures. Minimum lateral load calculations must include pressures due to effective weight of adjacent earth backfill and hydrostatic loads assuming a water table is at ground level.
 - (d) allow for septage pumping during high groundwater conditions. Internal hydrostatic pressures must be not be included in the calculations to allow for septage pumping during high groundwater conditions assuming a water table is at ground level.
 - (e) account for buoyancy effects assuring an adequate flotation safety factor in high ground water areas.
 - (f) withstand a wheel load of 16,000 lb_f/wheel with fourteen (14) feet axle spacing consistent with a HS20-44 loading as designated by AASHTO, if designed for use as a "traffic bearing tank".
- (2) **Construction Materials.** Sewage tanks shall be designed and constructed of solid, durable and watertight materials that do not corrode or decay. Steel sewage tanks are prohibited. Acceptable materials include:
 - (a) concrete for cast-in-place tanks; and
 - (b) concrete, fiberglass, polyethylene or other solid, durable, watertight material that does not corrode or decay for prefabricated tanks.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (3) **Connections and Components.** Sewage tanks must be designed and constructed using structurally sound and watertight access connections or components, either into the tank or through the tank's walls. Sewage tank connections and related components include:
 - (a) inlet and outlet fixtures;
 - (b) electrical conduits; and
 - (c) access ports, inspection ports, and risers.
- (4) **Inlets, outlets, and inter-compartmental fittings or baffles.**
 - (a) Sewage tank inlets, outlets, inter-compartmental fittings, and baffles must:
 - (i) provide effective scum and sludge retention;
 - (ii) contain tees, constructed of PVC conforming to or exceeding the requirements of ASTM D 3034 or ABS conforming to or exceeding the requirements of ASTM D 2680;
 - (iii) be constructed of a durable material and attached to the walls of the tank with corrosion resistant fasteners;
 - (b) All inlet and outlet devices require tees or baffles;
 - (c) All wall fitting or baffle openings in the wall (inlet, outlet, and inter-compartmental) shall accommodate sanitary tees or baffles that have a minimum of four (4) inches inside diameter. For larger capacity tanks, the diameter shall be greater to accommodate the design flow.
 - (d) Concrete baffles will be allowed if cast with the tank pour. Concrete baffles installed after the tank has been poured are not allowed.
- (5) **Seals and Gaskets.** Seals and gaskets for inlet, outlet, and inter-compartmental fittings must be resilient, watertight, corrosion-resistant, and flexible. Seals meeting ASTM C-1644 or equivalent must be used to join the tank wall and the PVC piping to prevent leakage at the wall connection.
- (6) **Watertightness.** Sewage tanks shall be watertight and prevent surface drainage and ground water from entering into the tank or connected chambers.
- (7) **Air Space and Venting.** Sewage tanks shall provide air space to allow gases to vent through the main building sewer vent or other plumbing vent stacks to the atmosphere.
 - (a) Air space must be above the liquid surface in the tank back and through the tank's inlet.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (b) Sewage tanks must maintain at least a 1-inch air space between the underside of the top of the tank and the top of any of the inlet, outlet, or inter-compartmental fitting to vent gases.
- (c) Sewage tanks that do not adequately vent through the building plumbing vent stacks must:
 - (i) use a carbon-filtered vent above the ground surface; or
 - (ii) bury the end of vent in a gravel trench. The local health officer or the department may approve other methods for venting sewage tanks.
- (8) **Confined Space.** Designs must take into account whether the space is a confined space. Confined spaces must comply with the requirements in chapter 296-809 WAC - Confined Spaces.
- (9) **Forms or Processes.** Manufacturers of prefabricated sewage tanks may use any form or process for tank construction provided the tank meets or exceeds the standards and requirements.
- (10) **Coatings.** Coatings, sealants or liners may be added to the inside or outside of the sewage tanks to enhance corrosion protection and watertightness of the tanks.
 - (a) All coatings, sealants, or liners must be rated by the manufacturer for sewage or sewage effluent.
 - (b) All coatings, sealants, or liners must be warranted by the coating manufacturer for such use.
- (11) **Access Openings.** Access openings shall be large enough for a person with equipment to easily clean, maintain, remove, and replace sewage tank components.
 - (a) The minimum diameter of the sewage tank opening shall be:
 - (i) 18 inches for tanks with a liquid volume of less or equal to than 2,000 gallons; and
 - (ii) 20 inches for tanks with a liquid volume greater than 2,000 gallons.
 - (b) Maximum distance between access points on a tank shall be 10 feet center-to-center.
 - (c) Access openings shall be located above the inlet and the outlet.
 - (d) Access openings shall be located directly above any pumping or dosing equipment and/or effluent screen or filter.
 - (e) Risers shall be a minimum of 24 inches.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (f) Connection of the riser to the tank and the connection of additional riser sections shall incorporate joint grooves or adapters to prevent lateral movement and to remain watertight.
- (g) Access and riser openings shall be covered with a lockable lid or other type of secured lid to prevent unauthorized entry.
- (h) Access risers and lids shall be structurally sound to withstand the anticipated site-specific load conditions of the riser.

246-272C-0220 – Additional Requirements for Septic Tanks

- (1) **Septic Tank Compartments.** Septic tanks shall be designed and constructed with a minimum of two (2) compartments:
 - (a) The first compartment shall consist of at least 1/2 to 2/3 the total required liquid volume of the tank; and
 - (b) The second compartment shall consist of at least 1/2 to 1/3 of the remaining total liquid volume of the tank.
- (2) **Septic Tank Inlets.** Septic tank inlets shall meet the following :
 - (a) The inlet sanitary tee or baffle extends at least 8 inches downward below the liquid level;
 - (b) The inlet sanitary tee or baffle extends above the liquid surface at least to the crown of the inlet pipe; and
 - (c) The invert of the inlet pipe is a minimum of two (2) inches above the invert of the tank outlet.
- (3) **Septic Tank Outlets.** Septic tank outlets shall meet the following:
 - (a) The outlet sanitary tee or baffle extends below the liquid level at least 30%, but not more than 40% of the liquid depth for tanks with straight vertical sides;
 - (b) The outlet sanitary tee or baffle extends below the liquid level at least 25%, but not more than 35% of the liquid depth in horizontal cylindrical tanks; and
 - (c) The outlet tee extends above the liquid level to a point not less than one (1) inch from the underside of the top of the tank to provide for scum storage and venting.
 - (d) Septic tank outlet tees shall be fitted with an effluent screening device which retains solids greater than one-eighth (1/8) of an inch in size. The effluent screening device shall be:

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (i) sized with a maximum mesh or opening of 1/8 inch;
 - (ii) made of a corrosion-resistant material;
 - (iii) constructed to prevent scum or other floatable solids from discharging from the tank by bypassing the screen or filter;
 - (iv) installed to prevent dislodging or misalignment and must be easily removable and/or designed, constructed and installed for easy and thorough cleaning;
 - (v) sized to allow for cleaning at the same time as the required monitoring maintenance for the system; and
 - (vi) sized for a minimum wetted filter area of 12 ft².
- (3) **Septic Tank Inter-Compartmental Wall Fittings.** The department requires septic tank inter-compartmental wall fittings.
- (a) Inter-compartmental wall fittings shall:
 - (i) extend below the liquid level at least 30%, but not more than 40% of the liquid depth for tanks with straight vertical sides; or
 - (ii) extend below the liquid level at least 25%, but not more than 35% of the liquid depth in horizontal cylindrical tanks.
 - (b) Slots or ports may be used as inter-compartmental fittings.
 - (i) The location of the slot or port shall be at the same depth as the bottom of outlet tees or baffles; and
 - (ii) The opening shall have a minimum area of twelve (12) square inches with a minimum vertical dimension of four (4) inches.
- (4) **Septic tank Inter-Compartmental Walls.** The department requires septic tank inter-compartmental walls that:
- (a) restrict solids from moving from one compartment to the other except through the inter-compartmental wall fittings; and
 - (b) withstand pumping of the adjacent compartment without risking structural damage or functional failure.
- (5) **Septic Tank Scum Storage.** The septic tank shall allow air space volume for scum storage of at least 10 percent of the liquid volume of the tank. This volume shall consist of at least 9 inches between the underside of the top of the tank and the liquid level throughout the tank. The department may approve an increase or decrease in the air space requirements. The department may add air space requirements as needed.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (6) **Septic Tank Length to Width Ratio.** A specific length to width ratio based on liquid capacity is required.
 - (a) The length of septic tanks with a liquid capacity of less than 3,000 gallons shall be a minimum of 1.25 times the width. The department may approve of a smaller ratio to calculate the sewage tank length.
 - (b) The length of septic tanks with a liquid capacity greater than or equal to 3,000 gallons shall be a minimum of 1.5 times the width unless the department approves a ratio smaller than 1.5 to 1.
 - (7) **Septic Tank Liquid Capacity Depth.** Septic tanks shall contain a liquid depth of not less than three feet and not more than six feet (seven feet in horizontal cylindrical tanks). Manufacturers may design septic tank depths greater than six or seven feet, but credit for effective volume requirements will only be given for a maximum of six feet (or seven feet for horizontal cylindrical tanks).
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246-272C-0230 – Additional Requirements for Grease Interceptors

- (1) **Grease Interceptor Compartments.** Grease interceptor tanks shall be designed and constructed with a minimum of two (2) compartments.
 - (a) The first compartment shall consist of at least 1/2 to 2/3 the total required liquid volume of the tank; and
 - (b) The second compartment shall consist of at least of 1/2 to 1/3 of the remaining liquid volume of the tank.
- (2) **Grease Interceptor Inlets.** The department requires grease interceptor inlets to meet the following:
 - (a) The tee or baffle must extend into the liquid a distance within eighteen (18) inches from the bottom of the tank;
 - (b) The inlet sanitary tee or baffle must extend above the liquid surface at least to the crown of the inlet pipe; and
 - (c) The invert of the inlet pipe must be a minimum of two (2) inches above the invert of the tank outlet.
- (3) **Grease Interceptor Outlets.** The department requires grease interceptor outlets. The grease interceptor outlet must provide for adequate grease storage and meet the following:
 - (a) The outlet sanitary tee or baffle must extend into the liquid to a point between six (6) inches and twelve (12) inches of the bottom of the tank; and

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (b) The outlet tee or baffle must extend above the liquid level at least six (6) inches but to a point not less than one (1) inch from the underside of the top of the tank.
- (4) **Grease Interceptor Inter-Compartmental Wall Fittings.** The department requires that all grease interceptor inter-compartmental wall fittings.
- (a) Inter-compartmental wall fittings must extend into the liquid to a point between six (6) inches and twelve (12) inches of the bottom of the tank.
 - (b) Slots or ports may be used as inter-compartmental fittings.
 - (i) The location of the slot or port shall be at the same depth as the bottom of outlet tees or baffles; and
 - (ii) The opening shall have a minimum area of twelve (12) square inches with a minimum vertical dimension of four (4) inches.
- (5) **Grease Interceptor Inter-Compartmental Walls.** Grease interceptor inter-compartmental walls shall:
- (a) Restrict solids from moving from one compartment to the other except through the inter-compartmental wall fittings; and
 - (b) Withstand pumping of the adjacent compartment without risking structural damage or functional failure.
- (6) **Grease Interceptor Tank Liquid Depth.** Grease interceptor tanks shall contain a liquid depth of not less than three feet and not more than six feet (seven feet in horizontal cylindrical tanks). Manufacturers may design grease interceptor tanks depths greater than six or seven feet, but credit for effective volume requirements will only be given for a maximum of six feet (or seven feet for horizontal cylindrical tanks).
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246-272C-0240 – Additional Requirements for Pump Tanks

- (1) A sanitary tee or baffle is required when effluent is pumped into the pump tank.
 - (2) The sanitary tee or baffle for a pump tank must meet the following requirements:
 - (a) The inlet sanitary tee or baffle must be installed on the inlet of the pump tank; and
 - (b) The inlet sanitary tee or baffle shall extend into the tank a minimum of eight (8) inches below the invert elevation of the inlet pipe.
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DRAFT 246-272C WAC – On-Site Sewage System Tanks

246-272C-0250 – Identification

- (1) Manufacturers shall permanently identify each sewage tank with a label. The label shall display the following information:
 - (a) manufacturer name or logo (if a prefabricated tank);
 - (b) the tank’s liquid capacity in gallons;
 - (c) inlet and outlet location(s);
 - (d) maximum burial depth;
 - (e) the tank model number, (if a prefabricated tank); and
 - (f) the date manufactured or constructed.
- (2) The permanent identification label or a picture of the label on each tank shall be located above the maximum burial depth and either:
 - (a) on the top near the inlet end of the tank; or
 - (b) inside the riser, if the riser is cast in the tank.

Installation and Testing Requirements

246-272C-0400 – Excavation, Placement, and Backfill

246-272C-0410 – Testing for Watertightness

246-272C-0420 – Tank Watertightness Certification and Submittal Requirements

246-272C-0400 – Excavation, Placement, and Backfill

- (1) Sewage tanks must be approved by the department as described in WAC 246-272C-0110 through WAC 246-272C-0150 and installed in accordance with the manufacturer’s instructions.
- (2) Sewage tanks must be placed on a level grade.
- (3) Sewage tanks must be placed on undisturbed soil so that settling does not occur. If the excavation is dug too deep, it must be backfilled to the proper elevation with either sand or a suitable bedding material and compacted.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (a) All excavation, backfill, and compaction requirements for prefabricated concrete, fiberglass, and polyethylene sewage tanks shall conform to manufacturer's recommendations; and
 - (b) All excavation, backfill, and compaction requirements for cast-in-place sewage tanks shall conform to project design specifications submitted by the tank's design engineer.
- (4) Backfill around the sewage tanks shall be placed in such a manner as to prevent damage to the tank and connecting pipes.
 - (5) All cleanout, inspection, and equipment access risers must be adequately sealed where necessary to prevent leakage into the sewage tanks from the access structure.
 - (6) Septic tanks and grease interceptors installed in series must be installed to ensure positive flow between the tanks at all times.
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246-272C-0410 – Testing for Watertightness

- (1) All sewage tanks shall be tested for watertightness at the project site. The installer, manufacturer, or delivery entity may perform the watertightness test.
- (2) All watertightness tests shall be verified to the invert of the outlet except:
 - (a) for a pump chamber or holding chamber;
 - (b) when a local health officer requires a different testing location on the sewage tank; or
 - (c) when the department specifies a different testing location on the sewage tank.
- (3) The watertightness test must be witnessed by a person other than the tester.
 - (a) For on-site sewage systems with design flows of less than 3,500 gallons per day, the project design engineer, designer, installer, local health officer, or homeowner, (when homeowner acts as the designer and installer) may witness and verify the test.
 - (b) For all on-site sewage systems with design flows of 3,500 gallons per day to 100,000 gallons per day, the department, installer, or project design or professional engineer must witness and verify the test.
- (4) Sewage tanks must be tested for watertightness in accordance with the most recent version of ASTM C 1227 Section 9.2.1 - "Vacuum Testing" or Section 9.2.2 - "Water-Pressure Testing".
- (5) Any installer, manufacturer, or delivery entity performing vacuum testing must follow these steps:

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (a) Seal the empty tank;
 - (b) Temporarily seal access openings, risers, and inlet and outlet pipes; and
 - (c) Introduce negative pressure into the tank and apply a vacuum to four (4) inches (100 mm) of mercury. The tank is approved if 90% of vacuum is held for two (2) minutes.
- (6) Any installer, manufacturer, or delivery entity performing water-pressure testing must follow these steps:
- (a) Seal the empty tank;
 - (b) Temporarily seal access openings, risers, and inlet and outlet pipes;
 - (c) Fill the tank with water, and let stand for 24 hours; and
 - (d) Add water to refill the tank, if needed. The tank is approved if water level is held for 1 hour.
- (7) The local health officer or the department shall reject all tanks that fail watertightness testing.
- (a) If the tank leaks, the local health officer or the department may allow repairs and additional testing after repairs before rejecting the sewage tank.
 - (b) Additional testing must be completed in accordance with the requirements of 246-272C-0410 (3) and (4), except for tank standing time when using the water-pressure test method. Under this method, a twenty-four (24) hour standing time after filling the tank with water is not required.

246-272C-0420 – Tank Watertightness Certification and Submittal Requirements

- (1) All sewage tanks must be certified as watertight after installation.
- (2) For sewage tanks used in on-site sewage systems of less than 3,500 gallons per day, the project design engineer, designer, installer, or homeowner must complete a form and submit it to the regulatory agency of jurisdiction following installation.
 - (a) The local health officer or regulatory agency of jurisdiction may designate who fills out the form.
 - (b) In areas where local regulations allow homeowners to design and install sewage treatment systems, the homeowner shall:
 - (i) certify the tank meets the watertightness standard;

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (ii) certify the tank successfully meets the watertightness testing requirements; and
 - (iii) complete and submit the certification to the regulatory agency of jurisdiction.
- (3) For sewage tanks used in on-site sewage systems with design flows of 3,500 gallons per day and above, the manufacturer, project design engineer, or installer must complete the form and submit it to the department following installation.

Waivers, Compliance, and Enforcement

246-272C-0500 – Waiver of State Regulations

246-272C-0520 – Enforcement

246-272C-0540 – Notice of Decision: Adjudicative Proceeding

246-272C-0500 – Waiver of State Regulations

- (1) The department may, on a case by case basis, grant a waiver from specific requirements of this chapter.
- (2) The manufacturer or tank design engineer must request a waiver in writing and state the reason(s) for the waiver.
- (3) The department will evaluate the waiver request and determine whether the waiver request is consistent with the applicable standards and with the intent of these rules.
 - (a) If yes, the department will issue the waiver; or
 - (b) If no, the department will reject the request and state the reasons in writing.
- (4) The local health officer may grant a waiver from specific requirements of this chapter if:
 - (a) the waiver request is evaluated by the local health officer on an individual, site-by-site basis;
 - (b) the local health officer determines that the waiver is consistent with the standards in, and the intent of, these rules;
 - (c) the local health officer submits quarterly reports to the department regarding any waivers approved or denied; and
 - (d) based on review of the quarterly reports, if the department finds that the waivers previously granted have not been consistent with the standards in, and the intent of these rules, the department shall provide technical assistance to the local health officer to correct the inconsistency, and may notify the local and state boards of

DRAFT 246-272C WAC – On-Site Sewage System Tanks

health of the department's concerns. If upon further review of the quarterly reports, the department finds that the inconsistency between the waivers granted and the state board of health standards has not been corrected, the department may suspend the authority of the local health officer to grant waivers under this section until such inconsistencies have been corrected.

- (5) The department shall develop guidance to assist local health officers in the application of waivers.
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246-272C-0520 – Enforcement

- (1) The department shall enforce the provisions of chapter 246-272C WAC.
- (2) When a person violates the provisions under this chapter, the department or office of the attorney general may initiate enforcement or disciplinary actions, or any other legal proceeding authorized by law including, but not limited to, any one or a combination of the following:
 - (a) informal administrative conferences, convened at the request of the department or tank manufacturer, to explore facts and resolve problems;
 - (b) orders directed to the tank manufacturer or person causing or responsible for the violation of the rules of chapter 246-272C WAC;
 - (c) denial, suspension, modification, or revocation of approvals, registrations, or certification;
 - (d) the penalties under chapter 70.05 RCW and 43.70.190 RCW; and
 - (e) civil or criminal action.
- (3) Orders authorized under this section include the following:
 - (a) orders requiring corrective measures; and
 - (b) orders to stop work and/or to stop sales of sewage tanks until the manufacturer obtains all certifications and approvals required by rule or statute.
- (4) Enforcement orders issued under this section shall:
 - (a) be in writing;
 - (b) name the person or persons to whom the order is directed;
 - (c) briefly describe each action or inaction constituting the violation(s) and WAC or RCW citation;

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (d) specify any required corrective action, if applicable;
 - (e) specify the effective date of the order, with time or times of compliance;
 - (f) provide notice of the consequences of failure to comply or repeated violation(s), as appropriate. Such notices may include a statement that continued or repeated violation(s) may subject the violator to:
 - (i) denial, suspension, or revocation of approval or registration;
 - (ii) referral to the office of attorney general; and/or
 - (iii) other appropriate remedies.
 - (g) provide the name, business address, and phone number of the department staff person who may be contacted regarding an order.
- (5) Enforcement orders shall be personally served in the manner of service of a summons in a civil action or in a manner showing proof of receipt.
- (6) The department shall have cause to deny the application or reapplication, or to revoke, suspend, or modify a required registration of a tank of any person who:
- (a) fails or refuses to comply with the provisions of chapter 246-272C WAC, or any other statutory provision;
 - (b) obtains or attempts to obtain a required certificate or approval by misrepresentation; or
 - (c) manufactures a tank which structurally fails or collapses.

246-272C-0540 – Notice of Decision: Adjudicative Proceeding

- (1) All local boards of health shall:
- (a) maintain an administrative appeals process to consider procedural and technical conflicts arising from the administration of local regulations; and
 - (b) establish rules for conducting hearings requested to contest a local health officer's actions.
- (2) The department shall provide notice of the denial, suspension, modification or revocation of a permit, certification, or approval consistent with chapter 43.70.115 RCW, Chapter 34.05 RCW, and chapter 246-10 WAC.

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (3) A person contesting a departmental decision regarding a permit, certificate, or approval may file a written request for an adjudicative proceeding consistent with chapter 246-10 WAC.
- (4) Department actions are governed under the Administrative Procedure Act, chapter 34.05 RCW, chapter 43.70.115 RCW, this chapter, and chapter 246-10 WAC.

Severability

246-272C-0650 – Severability

If any provision of this chapter or its application to any person or circumstances is held invalid, the remainder of this chapter, or the application of the provision to other persons or circumstances shall not be affected.

Fees

246-272C-0990 – Fees **(dependent on outcome of requested fee proposal)**

- (1) Fees for sewage tank design review and approval are as follows:

Category	Base Fee	Hourly Fee
Sewage tank design review and approval (cast-in-place tanks)	\$408.00	\$102.00 per hour if the application requires more than four hours of review time.
Sewage Tank Registered List - initial application or re-application (prefabricated tanks)	\$408.00	\$102.00 per hour if the application requires more than four hours of review time.
Sewage Tank Registered List Renewal	\$204.00	\$102.00 per hour if the application required more than two hours of review time.
Annual registration fee.	\$102.00	No hourly fee

DRAFT 246-272C WAC – On-Site Sewage System Tanks

- (2) The base fee is required at the time of application. Any hourly fees for additional review time must be paid in full before the tank is approved or registered.
 - (3) The department may bill the annual fee in 2 or 3 year increments to coincide with registration renewal cycle.
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End of Draft Rule