

*Recommended Standards and Guidance for Performance,
Application, Design, and Operation and Maintenance*

On-site Sewage System Tanks

July 2007



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Preface

The recommended standards contained in this document have been developed for statewide application. Regional differences may, however, result in application of this technology in a manner different than it is presented here. In some localities, greater allowances than those described here may reasonably be granted. In other localities, allowances that are provided for in this document may be restricted. In either setting, the local health officer has full authority in the application of this technology, consistent with Chapter 246-272A WAC and local jurisdictional rules. If any provision of these recommended standards is inconsistent with local jurisdictional rules, regulations, ordinances, policies, procedures, or practices, the local standards take precedence. Application of the recommended standards presented here is at the full discretion of the local health officer.

Local jurisdictional application of these recommended standards may be:

- 1) **Adopted as part of local rules, regulations or ordinances** - When the recommended standards, either as they are written or modified to more accurately reflect local conditions, are adopted as part of the local rules, their application is governed by local rule authority.
- 2) **Referred to as technical guidance in the application of the technology** - The recommended standards, either as they are written or modified to more accurately reflect local conditions, may be used locally as technical guidance.

Application of these recommended standards may occur in a manner that combines these two approaches. How these recommended standards are applied at the local jurisdictional level remains at the discretion of the local health officer and the local board of health.

The recommended standards presented here are provided in typical rule language to assist those local jurisdictions where adoption in local rules is the preferred option. Other information and guidance is presented in text boxes with a modified font style to easily distinguish it from the recommended standards.

Glossary of Terms: A glossary of common terms for all RS&Gs can be found on the DOH Web site at <http://www.doh.wa.gov/ehp/ts/ww/pubs-ww-rsg.htm#glossary>.

Typical RS&G Organization:

Standards Section	Explanation
Performance	How this technology is expected to perform (treatment level and function)
Application	How this technology is to be applied. This section includes conditions that must be met prior to proceeding with design. Topics in this section describe the “approved” status of the technology, component listing requirements, permitting, installation, testing and inspection requirements, etc.
Design	How this technology is to be designed and constructed (includes minimum standards that must be met to obtain a permit).
Operation and Maintenance	How this technology is to be operated and maintained (includes responsibilities of various parties, recommended maintenance tasks and frequency, assurance measures, etc)
Appendices	Design examples, figures and tables, specific applications, and design and installation issues.

Introduction

The intent of this standard is to provide manufacturers, engineers and reviewing agencies a standard to apply to the design, manufacture and construction of t structurally sound and watertight sewage tanks for use in on-site wastewater systems. This standard includes basic criteria without providing detailed technical specifications. Provisions and recommendations for installation and use of Sewage Tanks are also included in this document.

This standard covers prefabricated and cast-in-place septic tanks, pump tank/dosing chambers, holding tanks, grease interceptors, recirculating/mixing tanks and any other tanks as they relate to on-site sewage systems including tanks for use with approved proprietary devices, hereinafter referred to as Sewage Tanks.

1. Applicability

1.1. Watertightness

The intent of these standards is to meet the provisions and requirements of WAC 246-272A and WAC 246-272B for protecting the public health by minimizing the potential for public exposure to sewage from on-site sewage systems and adverse effects to public health that discharges from on-site sewage systems may have on ground and surface waters. WAC 246-272A states sewage leaking from a septic tank, pump chamber, holding tank, or collection system as an example of a system failure. Therefore, sewage tanks must be designed and constructed to be watertight to prohibit leakage of sewage from the tank for the purpose of limiting public exposure to sewage. Additionally, sewage tanks must be designed and constructed to be watertight to prevent the entrance of surface drainage and ground water into the tank which may lead to hydraulic overload, unpredictable performance, and failure of the sewage system. Additionally, sewage tanks must be designed to be structurally sound to prevent deformation as they are subjected to variable loading conditions in a wide range of environments.

1.2. Listing

The department will review each tank submittal for compliance with these standards. Following approval by the department, each tank will be included on the List of Approved On-site Sewage Tanks.

1.3. Application

The local health officer and the department will apply these standards to the installation of prefabricated or cast-in-place septic tanks, pump tank/dosing chambers, holding tanks, grease interceptors, recirculating filter tanks, trash tanks preceding aerobic treatment units, and any other tanks as they relate to on-site sewage systems including tanks for use with proprietary devices manufactured for use in Washington. Excluded are:

- 1.3.1. Tanks that are an integral part of a proprietary treatment component where the tank was part of the system that underwent the National Sanitation Foundation ANSI/NSF Standard 40 protocol or EPA Environmental Technology Verification Program ETV protocol and that product is registered with the department. These tanks are still subject to the on-site testing requirement for water-tightness.
- 1.3.2. PVC containment vessels for public domain packed bed filters.

2. Approval Requirements

2.1. Sewage Tanks Approval - Process and Requirements

- 2.1.1. All sewage tanks will be reviewed by the department. The department will maintain a list of approved on-site sewage tanks meeting the requirements established in these standards. Such tank listing is a condition of approval for use. The department will update the list as necessary to include the latest approved tanks.
- 2.1.2. Manufacturers of prefabricated sewage tanks can get their tank reviewed with the department by submitting a complete application in the format provided by the department, including:
 - 2.1.2.1. Manufacturer name, mailing address, street address and phone number;
 - 2.1.2.2. Contact individual name, mailing address, street address, and phone number. The contact individual must be vested with the authority to represent the manufacturer in this capacity;
 - 2.1.2.3. A signed and dated certification by the manufacturer's agent specifically including the following statement, "I certify that I represent (INSERT MANUFACTURING COMPANY NAME) and I am authorized to prepare or direct the preparation of this application for approval. I attest, under penalty of law, that this document and all attachments are true, accurate, and complete"
 - 2.1.2.4. A set of design drawings and supporting calculations stamped by a licensed structural engineer. The design shall specifically indicate the design loading of the tank including maximum traffic loading and earth loading. Drawings of the sewage tanks must be complete and show all dimensions, capacities, reinforcement, structural calculations and such other pertinent data as may be required. A video of the manufacturing process may be included with the submission. The drawings must include, but not be limited to:
 - 2.1.2.4.1. Plan view showing dimensions of tank, reinforcement details, and the size and location of any openings in the tank;
 - 2.1.2.4.2. Side section view of the tank showing dimensions and thickness and reinforcement details;
 - 2.1.2.4.3. Liquid capacity of each compartment in the tank must be clearly stated on the drawings;
 - 2.1.2.4.4. Specific excavation, backfill, compaction, depth of bury, bedding and installation requirements.

- 2.1.2.4.5. Limits of all design loads.
- 2.1.2.5. A professional engineer shall complete and submit a certification form with the design documents which states that the tank meets the requirements of these standards including the water-tightness standard. The design must specifically indicate the design loading of the tank including maximum traffic loading and earth loading.
- 2.1.2.6. The manufacturer shall complete and submit a certification which certifies their sewage tank as being watertight at the point of manufacturing or be responsible for placing the tank in its excavation on the project site and performing the water-tightness test after placement.
- 2.1.2.7. The fee described in WAC 246-272A-990.
- 2.1.3. Upon receipt of an application the department shall:
 - 2.1.3.1. Verify that the application is complete;
 - 2.1.3.2. Determine if the tank meet all the applicable requirements;
 - 2.1.3.3. If the tank meets all the applicable requirements, place the tank on the approved list.
- 2.1.4. All approvals are valid for up to three years, expiring on December 31 of the third year following initial approval or renewal.
- 2.1.5. In order to renew a sewage tank registration, a manufacturer shall:
 - 2.1.5.1. Apply for renewal of a sewage tank approval using the form provided by the department.
 - 2.1.5.2. Provide an affidavit to the department verifying whether or not the product has changed over the previous three years. If the product has changed, the affidavit must also include a full description of the changes. If the product has changed in a way that may affect performance, the product may not be renewed and shall meet the requirements for initial registration. 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.
 - 2.1.5.3. Submit the fee established in WAC 246-272A-990.
- 2.1.6. As part of approval renewal, the Department may:

- 2.1.6.1. Request field assessment comments from local health officers 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, including product function, product reliability, and problems arising with operation and maintenance;
 - 2.1.6.2. Discuss with the Technical Advisory Committee (TAC) any field assessment information that may impact tank approval renewal;
 - 2.1.6.3. Notify the manufacturer of any tank to be discussed with the TAC, prior to discussion with the TAC, regarding the nature of comments received; and
- 2.1.7. The department shall renew the tank approval unless:
- 2.1.7.1. The manufacturer of a tank does not apply for renewal; or
 - 2.1.7.2. The department concludes tank approval renewal should not be given or should be delayed until the manufacturer submits information that satisfactorily answers concerns and issues it has about the tank.

2.2. Cast-In-Place Sewage Tanks

- 2.2.1. Cast-in-place sewage tanks shall be approved by the department prior to installation.
- 2.2.2. Design drawings and supporting calculations for cast-in-place sewage tanks stamped by a licensed structural engineer must be submitted to the department for review of compliance with these standards. The design must specifically indicate the design loading of the tank including maximum traffic loading and earth loading. The plans must be drawn to scale and show all dimensions, sanitary tees, accesses, and material specifications. The drawings must include, but not be limited to:
 - 2.2.2.1. Plan view showing dimensions of tank, reinforcement details, and the size and location of any openings in the tank;
 - 2.2.2.2. Side section of the tank showing dimensions, thickness, and reinforcement details;
 - 2.2.2.3. Liquid capacity of each compartment in the tank;
 - 2.2.2.4. Specific excavation, backfill, compaction, bedding and installation requirements;
 - 2.2.2.5. Limits of all design loads.

- 2.2.2.6. A certification form stating the tank meets the requirements of these standards, including the water-tightness standard, must be completed by the engineer and submitted with the design documents.
- 2.2.3. Upon receipt of an application the department shall:
 - 2.2.3.1. Verify that the application is complete;
 - 2.2.3.2. Determine if the tank meets all the applicable requirements.
 - 2.2.3.3. If the tank meets all applicable requirements, approve the tank on a project by project basis prior to construction.

3. Design and Construction Requirements

3.1. General Requirements

- 3.1.1. Sewage tanks, inlet/outlet penetrations, electrical conduit penetrations and riser/tank connections must be designed and constructed to be structurally sound and watertight in order to prohibit leakage of sewage from the tank for the purpose of limiting public exposure to sewage and to provide maximum treatment efficiency. Additionally, sewage tanks must be designed and constructed to be watertight to prevent the entrance of surface drainage and ground water into the tank, which may lead to hydraulic overload, unpredictable performance, and failure of the sewage system.
- 3.1.2. Sewage tanks must be cast-in-place concrete or pre-fabricated tanks constructed of solid durable inherently watertight materials (concrete, fiberglass, or polyethylene) and not subject to corrosion or decay.
- 3.1.3. Steel sewage tanks are prohibited.
- 3.1.4. Sewage tanks must be designed by a licensed structural engineer to withstand all structural, hydraulic, hydrostatic, earth loads, and any anticipated traffic loads. Sewage tanks must be designed so that they will not collapse or rupture when subjected to the anticipated loads when the tanks are either full or empty.
- 3.1.5. Sewage tanks must be designed to support a dead load equivalent to at least three (3) feet of earth cover with a unit density of at least 110 lb./ft.³ and a 2,500 lbf 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. Minimum lateral load must include pressures due to effective weight of adjacent earth backfill and hydrostatic loads assuming a water table is at ground level. Internal hydrostatic pressures must be omitted to allow for septage pumping during high groundwater conditions assuming a water table is at ground level.

- 3.1.6. Tanks designated as "traffic bearing tanks" must be designed to withstand a wheel load of 16,000 lbf/wheel with fourteen (14) feet axle spacing consistent with a HS20-44 loading as designated by AASHTO.
- 3.1.7. The engineer must consider buoyancy effects assuring an adequate flotation safety factor in high ground water areas.
- 3.1.8. Pre-cast or prefabricated sewage tanks may be manufactured in any form or process provided the tank meets or exceeds these standards.

3.2. Compartments – Septic Tanks and Grease Interceptors

3.2.1. Septic Tanks

- 3.2.1.1. Septic tanks must have a minimum of two (2) compartments with the first compartment liquid level equal to one-half (1/2) to two-thirds (2/3) of the total liquid volume.
- 3.2.1.2. For septic tanks with a liquid capacity less than 3,000 gallons the length of the septic tank must be a minimum of 1.25 times the width unless the department approves a ratio smaller than 1.25:1.
- 3.2.1.3. For septic tanks with a liquid capacity greater than or equal to 3,000 gallons the length of the septic tank must be a minimum of 1.5 times the width unless the department approves a ratio smaller than 1.5:1.
- 3.2.1.4. The inter-compartmental wall must be sufficiently water-tight so solids cannot move from one compartment to the other except through the inter-compartmental wall fittings.
- 3.2.1.5. The inter-compartmental wall must be structurally sound to withstand pumping of the adjacent compartment without risking structural damage or functional failure.

3.2.2. Grease Interceptors

- 3.2.2.1. Grease interceptors must have a minimum of two (2) compartments with the first compartment liquid level equal to one-half (1/2) to two-thirds (2/3) of the total liquid volume.
- 3.2.2.2. The inter-compartmental wall must be sufficiently water-tight so solids cannot move from one compartment to the other except through the inter-compartmental wall fittings.

- 3.2.2.3. The inter-compartmental wall must be structurally sound to withstand pumping of adjacent compartment without risking structural damage or functional failure.

3.3. Liquid Depth - Septic Tanks and Grease Interceptors

Liquid depth may not be less than three feet and not more than six feet (seven feet in horizontal cylindrical tanks). Depths greater than six or seven feet may exist, but credit for effective volume requirements will only be given for six feet (or seven feet for horizontal cylindrical tanks).

3.4. Access

- 3.4.1. Access for maintenance and inspection for all sewage tanks shall be at finished grade. The only exception is that the local health officer may allow the access to a septic tank to be at a maximum depth of six inches below finished grade when the tank is part of a OSS serving a single family residence and the OSS consists only of a septic tank and a gravity flow SSAS.
- 3.4.2. Access to each septic tank shall be provided by at least two access openings, each of which shall be at least twenty (20) inches in minimum dimension.
- 3.4.3. One access opening shall be placed over the inlet and one access opening shall be placed over the outlet.
- 3.4.4. Whenever a first compartment exceeds twelve (12) feet in length, an additional access opening shall be provided over the baffle wall.
- 3.4.5. If accesses are brought to finished grade, the extensions shall be at least twenty-four (24) inches in diameter. The connection of the riser to the tank and the connection of additional riser sections shall incorporate joint grooves or adapter to prevent lateral movement of the riser.
- 3.4.6. Access must be provided above any pumping/dosing equipment and/or filters and must be large enough to allow for ease of servicing the equipment and removal of equipment.
- 3.4.7. If accesses are brought to finished grade; the access must be provided with a lockable lid or secured to prevent unauthorized entry. The access riser and lid must be structurally sound to withstand the anticipated site-specific load conditions.

3.5. Scum Storage - Septic Tanks

An air space must be provided in the tank for scum storage. The air space must have a volume of at least 10 percent of the liquid volume of the septic tank. This air space between the underside of the top of the tank and the liquid level must be at least 9 inches throughout the tank unless otherwise approved by the department.

3.6. Venting

- 3.6.1. Sewage tanks must maintain at least a 1-inch air space between the underside of the top of the tank and the top of the inlet, outlet, and inter-compartmental fittings to allow the required ventilation of the gases through the main building plumbing vent stacks.
- 3.6.2. Sewage tanks that will not adequately vent through the building plumbing vent stacks must be provided with either a carbon-filtered vent above the ground surface or by terminating the vent in a buried gravel trench. The local health officer or the department may approve other methods for venting sewage tanks.

3.7. Inlets, Outlets, and Inter-compartmental Fittings or Baffles

3.7.1. General

- 3.7.1.1. Inlets, outlets, and inter-compartmental fittings or baffles of each tank or compartment must be arranged to provide effective retention of scum and sludge and free ventilation above the liquid surface in the tank back through the tank's inlet allowing gases to vent through the building's sewer vent stack to the atmosphere.
- 3.7.1.2. The inlet, outlet, and inter-compartmental wall fitting or baffle opening in the wall must be not less than four (4) inches inside diameter. The diameter shall be increased as necessary on large capacity tanks to accommodate the flow.
- 3.7.1.3. Tees or baffles must be used for all inlet and outlet devices and must be not less than four (4) inches inside diameter or equivalent cross sectional area. Diameter or equivalent cross sectional area must be increased as necessary on large capacity tanks to accommodate the flow.
- 3.7.1.4. Tees must be 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. Resilient, watertight, sealed, non-corrosive and flexible gaskets, seals meeting ASTM C-1644 or approved equal, must be used at the inlet, outlet, and inter-compartmental fittings to join the tank wall and the PVC or ABS piping to prevent leakage at the wall connection.

3.7.1.5. Baffles must be constructed of a durable material and attached to the walls of the tank with corrosion resistant fasteners. Concrete baffles will not be allowed.

3.7.1.6. Inlets and outlets must be located in a septic tank or grease interceptor to maximize the pathway between the inlet and outlet.

3.7.2. Septic Tank Inlets

3.7.2.1. The inlet sanitary tee or baffle must extend at least 8 inches below the liquid level. The inlet sanitary tee or baffle must extend above the liquid surface at least to the crown of the inlet pipe.

3.7.2.2. The invert of the inlet pipe must be a minimum of two (2) inches above the invert of the tank outlet.

3.7.3. Septic Tank Outlets

3.7.3.1. The outlet tee or baffle must extend below the liquid level at least 30%, but not more than 40% of the liquid depth for tanks with straight vertical sides.

3.7.3.2. The outlet tee or baffle must extend below the liquid level at least 25%, but not more than 35% of the liquid depth in horizontal cylindrical tanks.

3.7.3.3. The outlet tee must extend 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.

3.7.3.4. The outlet tee shall be fitted with an effluent screen device. This device shall have the following characteristics:

3.7.3.4.1. Retains solids greater than one eighth of an inch in size

3.7.3.4.2. Made of non-corrosive material

3.7.3.4.3. Installed to prevent dislodging or misalignment

3.7.3.4.4. Easily removable and/or designed, constructed and installed for easy and thorough cleaning

3.7.3.4.5. Constructed to prevent scum or other floatable solids from discharging from the tank by bypassing the screen or filter

3.7.3.4.6. Sized such that will not need cleaning any more often than the required monitoring and maintenance frequency for the system. A minimum wetted filter area of 12 ft² is recommended.

3.7.4. Septic Tank Inter-compartmental Wall Fittings

- 3.7.4.1. Must extend below the liquid level at least 30%, but not more than 40% of the liquid depth for tanks with straight vertical sides.
- 3.7.4.2. Must extend below the liquid level at least 25%, but not more than 35% of the liquid depth in horizontal cylindrical tanks.
- 3.7.4.3. Slots or ports may be used as the inter-compartmental fitting. The location of the slot or port shall be at the same depth as the bottom of outlet tees or baffles. The opening shall have a minimum area of 12 square inches with a vertical dimension of 4 inches.

3.7.5. Grease Interceptors Inlets

- 3.7.5.1. The inlet sanitary tee or baffle must extend into the liquid a distance within eighteen (18) inches from the bottom of the tank. The inlet tee or baffle must extend above the liquid surface at least to the crown of the inlet pipe.
- 3.7.5.2. The invert of the inlet pipe must be a minimum of two (2) inches above the invert of the tank outlet.

3.7.6. Grease Interceptors Outlets

- 3.7.6.1. The outlet 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.
- 3.7.6.2. The outlet tee or baffle must extend above the liquid level at least 6-inches but to a point not less than one (1) inch from the underside of the top of the tank to provide for adequate grease storage.

3.7.7. Grease Interceptors 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.

3.7.8. Pump Tanks

- 3.7.8.1. In tanks where effluent flows by gravity into the pump/dosing tank, an inlet sanitary tee or baffle is not required.
- 3.7.8.2. In tanks where effluent is pumped into the pump tank, a sanitary tee or baffle must be installed on the inlet of the pump tank.

- 3.7.8.3. 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.
- 3.7.8.4. The inlet tee shall extend above the invert of the tee at least to the crown of the inlet pipe.

3.8. Coatings

Coatings, sealants or liners may be added to the inside or outside of the sewage tanks to enhance the corrosion protection and water-tightness of the tanks. All coatings, sealants, or liners must be rated by the manufacturer for sewage or sewage effluent (if installed on the inside surfaces of the tank) and must be warranted by the coating manufacturer for such duty.

3.9. Identification

- 3.9.1. Each sewage tank must be permanently labeled with the following information on the top of the tank near the inlet end of the tank or inside of the riser (for manufactures who cast in risers):
 - 3.9.1.1. Manufacturer Name or Logo;
 - 3.9.1.2. Liquid capacity of the tank in gallons;
 - 3.9.1.3. The tank model number and manufacturing date; and
 - 3.9.1.4. Maximum burial depth.
- 3.9.2. The inlet and outlet must be adequately labeled.

4. Installation and Testing Requirements

4.1. Excavation, Placement, and Backfill

- 4.1.1. The sewage tanks must be placed on a level grade. 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 washed sand or pea gravel.
- 4.1.2. All excavation, backfill, and compaction requirements for prefabricated concrete, fiberglass, and polyethylene sewage tanks shall conform to manufacturer's recommendations. Backfill around the sewage tanks shall be placed in such a manner as to prevent damage to the tank and connecting pipes.
- 4.1.3. All excavation, backfill, and compaction requirements for cast-in-place sewage tanks shall conform to project design specifications submitted by a licensed

structural engineer. Backfill around the sewage tanks shall be placed in such a manner as to prevent damage to the tank and connecting pipes.

- 4.1.4. All cleanout, inspection, and equipment access risers must be adequately sealed in a watertight and structurally sound fashion.
- 4.1.5. Septic tanks and grease interceptors installed in series must be installed in such a manner to ensure positive flow between the tanks at all times. Therefore tanks shall be installed so that the inlet invert of each successive tank shall be a minimum of 2 inches below the outlet invert of the preceding tank. This may ensure positive flow between the tanks during normal operation and in the event of slight ground settling after installation. The local health officer or the department may approve other acceptable methods.
- 4.1.6. If sewage tanks are used in series or parallel to attain total required tank capacity, adaptors or gaskets (conforming to ASTM C 564) or flexible transition couplings (conforming to ASTM C 1173) are required for all piping connections between sewage tanks to allow some deflection due to earth movement without damaging the tank-pipe seal joint.
- 4.1.7. The contractor is responsible for making all corrective measures at the point of installation to ensure a completely watertight tank if the leakage is due to installation of the tank(s) and not due to manufacturing of the tank.

4.2. Testing for Water-tightness

- 4.2.1. Sewage tanks must be tested for water-tightness at the project site and witnessed by the local health officer or by an individual, such as the project design engineer, designer, installer, or homeowner (if the sewage system was designed or installed by the homeowner where local regulations allow), designated by the local health officer. For all LOSS, all sewage tanks must be tested for water-tightness at the project site and witnessed by the department or by the project design engineer. If the tank manufacturer (as per section 3.1.2.6) or tank delivery entity performs the watertightness test, the requirements in this subsection must be followed.
- 4.2.2. Sewage tanks must be tested for water-tightness in accordance with ASTM C 1227 Section 9.1.1 - "Vacuum Testing" or 9.1.2 - "Hydrostatic Testing".
- 4.2.3. Vacuum Testing Steps
 - 4.2.3.1. Seal the empty tank.
 - 4.2.3.2. Temporarily seal access openings, risers, and inlet and outlet pipes.
 - 4.2.3.3. Introduce negative pressure into the tank and apply a vacuum to 4 in. (100 mm) of mercury. The tank passes the watertightness test when the 4 in. of

negative pressure is held for a period of 5 minutes with no measurable loss of pressure. If the vacuum drops before completion of the 5 minutes, it shall be brought back to 4 in. (100 mm) of mercury and held for a further 5 minutes with no measurable loss of vacuum.

4.2.4. Hydrostatic Testing Steps

- 4.2.4.1. Seal the empty tank.
 - 4.2.4.2. Seal access openings, risers, and inlet and outlet pipes.
 - 4.2.4.3. Fill the empty tank with water to a point at least 2 inches above the point of riser connection to the top of the tank. Let the tank stand for 1 hour. If there is a measurable drop in the water surface elevation, refill the tank and let the tank stand for 1 hour. The tank passes the watertightness test once the water level is held for 1 hour without any measurable loss. Tanks shall not be rejected for damp spots on the exterior concrete surface.
- 4.2.5. When leakage occurs, if the tank is not rejected by the local health officer or the department, an additional water-tightness test should be made on the tank after repairs have been completed. The test must be completed in accordance with Section 5.2.

4.3. Tank Certification and Submittal Requirements

- 4.3.1. Sewage tanks must be certified as being watertight at the point of installation by the project design engineer, designer or installer.
- 4.3.2. A certification form must be completed by the individual designated by the Local Health Officer or regulatory agency of jurisdiction such as the project design engineer, designer or installer and submitted to the regulatory agency of jurisdiction following installation of each sewage tank that assures that the tank meets the water-tightness standard and that the tank has successfully met the water-tightness testing requirements.

Appendix A: Sample Forms

CERTIFICATION OF WATERTIGHTNESS OF SEWAGE TANKS

The following SEWAGE TANK has been tested following installation of the SEWAGE TANK, and has successfully met the watertightness testing requirements per Recommended Standards and Guidance for Onsite Sewage System Tank.

Manufacturer's Name or Logo:

Type of Sewage Tank:

Material Type:

Liquid Capacity:

Tank Location:

**Project Design Engineers, Certified Designer,
or Certified Installer**

Date

CERTIFICATION OF PREFABRICATED SEWAGE TANKS

The following SEWAGE TANK meets all the requirements, including certification of watertightness, of the Recommended Standards and Guidance for Onsite Sewage System Tank.

Type of Sewage Tank:

Material Type:

Liquid Capacity:

Maximum Depth of Bury:

Traffic Rated (yes/no):

EXCEPTIONS:

Manufacturer's
Name:

Address:

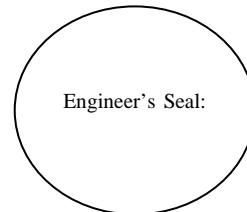
Phone:

Contact:

Engineer

Date

**Please return completed form to:
Department of Health
Wastewater Management
Spokane Regional Office
1500 W. Fourth Avenue, Suite 403
Spokane WA 99201-7256**



CERTIFICATION OF CAST-IN-PLACE SEWAGE TANKS

The following SEWAGE TANK meets all the requirements of the “Recommended Standards and Guidance for Onsite Sewage System Tank”.

Type of Sewage Tank:

Material Type:

Liquid Capacity:

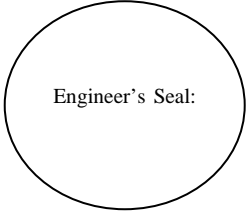
Maximum Depth of Bury:

Traffic Rated (yes/no):

EXCEPTIONS:

Engineer

Date



Engineer's Seal:

Please return completed form to:
Department of Health
Wastewater Management
Spokane Regional Office
1500 W. Fourth Avenue, Suite 403
Spokane WA 99201-7256