

Septic Tank, Grease Trap, and Holding Tank Standards and Specifications

420-3-1-.47

(1) A new, replacement, or repaired septic tank, grease trap or holding tank used in Alabama after the effective date of these Rules shall be designed and constructed in accordance with the following specifications and standards:

Tank Sizing

420-3-1-.47(1)(f)

The minimum hydraulic detention time shall be two days (48 hours)

In no case shall the septic tank effective liquid capacity be less than 1000 gallons

How to determine sewage tank volume:

Knowns:

1 cu.ft. = 7.481 gal.

**Inside length X Inside width X liquid depth =
cubic volume**

**IF Tank inside measurements =
5' wide x 10' long x 4' liquid depth**

Then $5 \times 10 \times 4 = 200$ cu.ft.

and $200 \text{ cu.ft.} \times 7.481 \text{ gal/cu.ft} =$

1,496 gal. tank

Septic Tank Sizing

420-3-1-.47(1)(g)

The effective liquid capacity for dwellings shall be based on the number of bedrooms proposed or that can be anticipated:

Sizing: See Table 8 in the Appendices

1 bedroom home= 1,000 gallon tank

2 bedroom home= 1,000 gallon tank

3 bedroom home= 1,000 gallon tank

4 bedroom home= 1,000 gallon tank

5 bedroom home= 1,500 gallon tank

for each additional bedroom--add + 250 gal. per bedroom

6 bedroom home= 1,750gallon tank

7 bedroom home= ?

420-3-1-.47(1)(f) -

Septic tank sizing to serve

Establishments

is determined by the actual sewage flow as
determined by 420-3-1-.36

"... From Table 1..."

Appendix A

Table 1
Flow and Organic Loading

<u>Generator</u>	<u>Design Unit</u>	<u>Design BOD/TSS</u> lbs/day	<u>Design Flow</u> gpd
<u>DWELLINGS (Rule) 2/</u>			
Dwelling (8 bedrooms or fewer)	per bedroom	0.4 (min)	150 (300 min)
9 or more bedrooms to a single system	per person	0.2 (min)	75 (min)
<u>ESTABLISHMENTS (guidelines) 3/</u>			
Airports (not including food service)	per passenger	0.02	5
(not including food service)	per employee	0.05	15
Airport	per employee	0.05	25
Office	per employee	0.05	25
Marinas			
with bathhouse or showers or toilets	per boat slip	0.15	10
Motels			
no cooking facility	per bedroom	0.40	120
cooking facility	per bedroom	0.80	175
Movie Theater (no food preparation)	per seat	0.02	4
Restaurants	per seat	0.2	50
Restaurants			
Interstate or through highway	per seat	0.7	100-180
Interstate rest areas	per person	0.01	5
Service station	per vehicle serviced	0.01	10
Factories & office buildings	per person per 8-hr shift		
No Shower		0.06	15
With Shower		0.08	25
Laundromats, 9 to 12 machines	per machine	0.3	500
Stores Shopping centers exclusive of food preparation	per 1000 sq ft. of floor space	0.1	200
<u>Institutions/Establishments</u>			
Churches (no food service)	per seat	0.002	3
Hospitals	per bed	0.7	300
Schools (with or without cafeteria)			
with shower	per person	0.06	16
with out shower	per person	0.04	10
Boarding schools	per person	0.2	75
Nursing homes	per bed	0.3	200
Assisted Living	per bed	0.2	100
Community colleges	per student and faculty	0.04	15
<u>Recreational Establishments</u>			
Theaters, auditorium type	per seat	0.02	5
Picnic areas	per person	0.01	5
Camps, day no meals served	per person	0.05	5
Camps resort day & night			
with limited plumbing	per space	0.05	50
Luxury camps			
With flush toilets	per camp site	0.1	100
Sanitary station	per camp site	0.05	50

Example:

School without cafeteria or gym showers which has 150 students.

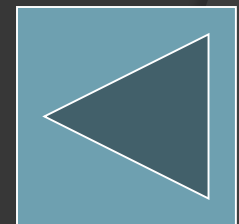
Table 1 = Schools = 10 Gal/person/day

Students = X 150 persons

Total flow = 1,500 gal/day

Two days retention = X 2 days

3,000 gallon septic tank



Example #2:

Calculate a Restaurant with 20 seats.

Table 1:

Restaurant (per seat)=	50 gal/per/day
	<u>X 20</u> seats
Total flow =	1000 gal/per/day
Two days retention =	<u>X 2</u> days
Size tank =	2,000 gallon tank

420-3-1-.47 (1)(f)

Minimum requirements for Grease Traps

Two (2) days (48 hr.) retention

MINIMUM CAPACITY 1,000 gal.

(Same as regular septic tanks)

Size of grease trap for 800 gal/day flow of kitchen waste from a restaurant:

- **800 gpd x 2 days = 1,600 gal. grease trap required.**

Size of grease trap for 75 gal/day flow of kitchen waste:

- **75 gpd x 2 days = 150 gal. therefore GT must be sized at 1,000 gal. to meet minimum.**

420-3-1-.55 Holding Tank Requirements

(1) Applications that propose using holding tanks as an onsite sewage disposal system are to be **submitted by an engineer** and shall be permitted in the same manner as septic tanks.

(2) The use of a holding tank for a dwelling shall be **prohibited as part of a permanent OSS.**

(a) Use of a holding tank at a dwelling on a temporary basis may be approved by the Board when a permanent OSS has been approved and is expected to be in service in a reasonable time.

(3) Local Health Departments may permit a holding tank to be used on a temporary basis with a building other than a dwelling until another approved means of sewage treatment and disposal is available. The period of use shall be stated in the permit and shall be a reasonable and defined time frame. Prior to the end of this period, the permittee shall present information to the LHD regarding the abandonment or proposed continued use of the holding tank. **To explore other options of treatment and disposal, the LHD may require the permittee to submit an engineering analysis of other options and their cost.** The LHD shall decide whether to renew the permit and shall establish the terms and conditions of continued use.

420-3-1-.55 Holding Tank Requirements (continued)

(4) The design, construction and use of a holding tank shall be as follows:

(a) A holding tank shall be permitted and obtained from a tank manufacturer holding a permit issued under Rule 420-3-1-.51, Prefabricated Septic Tank, Grease Trap and Holding Tank Permit; or the proposed tank shall be inspected and certified in writing by the engineer to be structurally sound and suitable for the intended purpose.

(b) Holding tank capacity shall be calculated using the sewage flows in Rule 420-3-1-.36, Design Flow and Wastewater Concentrations. The tank shall be sized to provide a capacity 25% larger than the projected sewage flow accumulation between scheduled pumpings and as a buffer in case of weather conditions, temporary unavailability of a sewage tank pumper, or other adverse conditions.

(c) A holding tank shall be equipped with a visual or audible alarm for high water alert, and the alarm point shall be no higher than two-thirds (67%) of tank effective liquid capacity. The alarm shall be placed in a location of easy recognition, and shall be labeled "Alarm-Sewage Holding Tank."

(d) All practical water-conservation measures shall be incorporated into designs/systems proposing the use of holding tanks.

(e) A holding tank shall be maintained and pumped at such frequency as to prevent public health hazards or nuisances. The minimum frequency for inspection shall be weekly.

420-3-1-.55 Holding Tank Requirements (continued)

- The conditions of operation which may be prescribed by the ADPH in the permit for a holding tank shall include, but not be limited to, the requirement that the owner/user:
 1. **Contract with a sewage tank pumper** permitted under Rule 420-3-1-.34, Sewage Tank Pumping Permit. **The contract shall provide that the pumper maintain, and make available to the ADPH, a complete record of pumping activities at the site,** as set forth in Rule 420-3-1-.34, Sewage Tank Pumping Permit. A copy of this contract shall be placed on file with the ADPH.
 2. **Deliver** to the ADPH, on a periodic basis established by the LHD not to exceed quarterly, **copies of the sewage tank pumper's bills, statements or invoices.**
 3. **Provide written and notarized authorization to allow the ADPH to initiate required maintenance at the owner's/user's expense if either noncompliance with these Rules or legal notices results in an imminent or existing health hazard or nuisance.**
- (5) A holding tank shall be properly abandoned in compliance with Rule 420-3-1-.56, Abandonment of a Sewage Tank, when its permitted use expires.

420-3-1-.56 Abandonment of a Sewage Tank

When the use of a sewage tank is discontinued; or when the system cannot be made to comply with these rules; or when the property is condemned, the tank shall be abandoned, and its further use prohibited. **An abandoned tank shall be pumped out by an AOWB-licensed pumper.** An empty tank may be removed at the property owner's option, or to make room for new system components. If no replacement component is intended, the hole left by the removal of a tank shall be filled with sand or soil. **An empty tank left in place shall be filled with sand or soil. As an additional recommended step, the bottom of the tank may be ruptured.**