Septic Tanks, Distribution Boxes, and Chamber Leaching Systems Approved for Use in Santa Cruz County

Distribution Boxes: Installation Procedures and Approved Models

A distribution box is used to divide the effluent flow from a septic tank into two or more leach trenches for soil absorption. Equal distribution is very important in order to take advantage of all of the available leaching area. Spreading the effluent dose over all parts of the system maintains a relatively low soil loading rate and provides better effluent treatment. Distribution boxes also provide a readily accessible means of locating the leaching device, making flow adjustments as needed, monitoring the disposal system, and making additions to the system.

Distribution boxes are typically made of polyethylene or reinforced concrete with plumbing "knock outs" into the box. The inlet must be higher than the outlets, with all outlets at the same level. The box must be large enough to accommodate the pipes and fittings used and still allow for flow adjustment. A sturdy gas-tight lid (and risers **as** needed) shall be provided to allow access from the surface. A list of approved manufacturers and distribution box model numbers is presented below.

The correct installation of distribution boxes requires proper planning and careful construction techniques. The location of the box(es) and associated plumbing, as well as the required elevations, must be worked out in advance. Grading of all portions of the system must be done with care such that the leach trench maximum allowable depth may be maintained. The distribution box(es) must be "wet set" on a pad of cement or grout on level undisturbed or mechanically compacted soil. All the outlet plumbing must be set into the box as level as possible with final flow adjustments made prior to final backfill. All piping must be resealed with grout or caulking compound. Environmental Health staff must perform an inspection that demonstrates that the flow out of the box has been properly adjusted as part of construction inspection for final system approval. Adequate water must be available at the site for the flow test.

Fine adjustments of flows to each leachfield shall be made as necessary to maintain the proper function of the distribution box. If any leachfield fails, a valve must be installed on the pipe from the distribution box to the leachfield and closed to stop the failure.

Approved Effluent Distribution Devices

M. C. Nottingham	Models: D-48 (5 exit ports) D-49 (3 exit ports)
Tom's Septic Tanks	Septic tank with built-in AD@ box All separate AD@ boxes
O.S.I.	Hydrosplitter
Zabel	Flow-divider

(Other IAPMO or NSF approved devices may be approved for use in Santa Cruz County by the Health Officer upon submittal of satisfactory supporting documentation)

Approved Septic Tanks

(Approved as of 6/7/2021. Additional tanks may be added as approved by the Health Officer.)

Material	Brand	Sizes (Gallons)	IAPMO Certified	NSF Certified
Fiberglass	Loomis	750/1000/ 1250/1500	Yes	No
	Fiber Enterprises	750/1000/1250/1500/ 2000/3000/3500/4000/ 4500/5000/6000/7000/ 8000/9000/10000/11000/ 12000	Yes	No
	Orenco	500/1000/1500/2000	Yes	Yes, NSF 40
	Xerxes	1000/1500	Yes	No
Polyethylene	Norwesco	500/1000/1250/1500	Yes	No
	Roth Multitank	300/500/750/900/1000/ 1060/1250/1500	Yes	Yes, NSF 61
	Snyder	750/900/1050/1250/1500/	Yes	No
	Infiltrator	540/1060/1530	Yes	No
Concrete	Jensen Precast	750/1000/1200/1500/ 2000/25000	Yes	No
	Don Chapin Pinnacle	750/1000/1250/1500/ 2000/2500/ 3000	Yes	No
	Selvage	810/1200/1500/2000	Yes	No
	P & L Concrete	500/750/1000/1200/1500/ 1900/2000	Yes	No

Chamber Leaching Systems

These regulations have been developed and promulgated pursuant to Section 7.38.150(B)(2) of the County Code. This section of the County Code directs the Health Officer to develop regulations and standards for the use of chamber leaching systems. The following regulations shall be used for the sizing, installation and inspection of chamber leaching systems, only. All other aspects of onsite wastewater treatment and disposal shall be regulated as provided by Chapter 7.38 of the County Code and the Santa Cruz Local Area Management Plan.

Review of Proprietary Leaching Chambers and Approval for Use

Chamber leaching devices are proprietary products that are engineered to provide for the disposal of septic tank effluent. Since each product may have different design aspects that may affect the infiltration of effluent into the ground, the manufacturers of each product must provide a product package for the review of the Health Officer that supports the use of their product. The package must contain the following documentation:

1) Studies conducted by agencies not associated with the manufacturer regarding the use of the product as a leaching device.
2) Acceptance or approval letters by other regulatory agencies.
3) Review or approval documents from recognized standards and testing organizations, such as International Association of Plumbing and Mechanical Officials (IAPMO), Underwriters Laboratories, Uniform Plumbing Code, ANSI, NSF, etc.
4) Recommended sizing and installation standards.

The Health Officer shall evaluate the package regarding the quality of the studies conducted, the quality and quantity of the agencies and organizations that permit and/or endorse the product and shall evaluate the manufacturer's recommended sizing and installation standards for appropriateness in Santa Cruz County. The Health Officer shall specify sizing requirements based on soil characteristics, manufacturer's recommendations and percolation rates, and shall specify installation requirements and construction inspection points. Chamber leaching systems must be sized to provide at least 70% of the infiltration area of a standard rock-filled trench. Similarly, to rock filled trenches, commercial systems will be designed based on the peak daily flow.

County Code permits a reduction of leaching requirements where there is an approved pretreatment device such as a sand filter or approved proprietary treatment unit prior to the leaching device. The greater of the two, either the 30% reduction or the pretreatment device reduction, shall apply.

Infiltrator Systems, Inc. Chambers

A product package has been prepared and submitted by Infiltrator System. The package contains studies conducted by researchers at the University of Wisconsin, the Water Authority of Western Australia, the City of Amarillo, and numerous other independent research reports that support the use of Infiltrator products. The Uniform Plumbing Code recognizes the use of plastic chamber leaching devices. Infiltrator products are approved in 15 states and 24 counties in California. After evaluating the package prepared by Infiltrator Systems, Inc., leaching chambers models: Quick4 High Capacity, Quick4 Standard, Quick4 Equalizer 36 and Quick4 Equalizer 24 are approved for use in Santa Cruz County. For commercial installation, only the Infiltrator Quick4 High Capacity model will be permitted. Model H-20 Infiltrator products were approved in May 1999, for use in

driveways and parking lots. Installation of dispersal systems under pavement requires traffic rated design, and at least 50% of the final cover over the dispersal area must be permeable, unless enhanced treatment is provided.

Sizing

Infiltrator devices must provide at least 70% of the square footage of infiltration surface as a conventional rock-filled trench, based on projected flow and soil characteristics:

Required Conventional Infiltration Area (Square feet)

Bedrooms:		1	2	3	4	5	Additional
	Flow gpd:	250	300	375	450	525	75
Perc MPI	App Rate						
<1	--	--	--	--	--	--	--
1	1.2	208	250	313	375	438	63
5	1.2	208	250	313	375	438	63
10	0.8	313	375	469	563	656	94
15	0.73	342	411	514	616	719	103
20	0.66	379	455	568	682	795	114
25	0.59	424	508	636	763	890	127
30	0.53	472	566	708	849	991	142
35	0.48	521	625	781	938	1094	156
40	0.42	595	714	893	1071	1250	179
45	0.37	676	811	1014	1216	1419	203
50	0.31	806	968	1210	1452	1694	242
55	0.26	962	1154	1442	1731	2019	288
60	0.2	1250	1500	1875	2250	2625	375
60-120	--	--	--	--	--	--	--

Enhanced Treatment (BOD <30 mg/L) Infiltration Area (Square Feet)

Bedrooms:		1	2	3	4	5	Additional
	Flow gpd:	250	300	375	450	525	75
Perc MPI	App Rate						
<1	1.6	156	188	234	281	328	47
1	1.6	156	188	234	281	328	47
5	1.6	156	188	234	281	328	47
10	1.6	156	188	234	281	328	47
15	1.46	171	205	257	308	360	51
20	1.32	189	227	284	341	398	57
25	1.18	212	254	318	381	445	64
30	1.06	236	283	354	425	495	71
35	0.96	260	313	391	469	547	78
40	0.84	298	357	446	536	625	89
45	0.74	338	405	507	608	709	101
50	0.62	403	484	605	726	847	121
55	0.52	481	577	721	865	1010	144
60	0.4	625	750	938	1125	1313	188
90-120	0.2	1250	1500	1875	2250	2625	375

Installation

All setbacks and maximum trench depth requirements specified in Chapter 7.38 shall apply to the installation and siting of all chamber leaching devices. Trenches for the Quick4 High Capacity and Quick4 Standard Models shall be placed at least 3 feet edge to edge and the Quick4 Equalizer 36 and Quick4 Equalizer 24 shall be at least 2 feet edge to edge. The installer shall read and follow the manufacturer's installation instructions, including installation procedures for the H-20 rated models in driveways and parking lots. Inspection risers shall be provided at the end of each trench. Traffic rated riser boxes with cast iron grade rings and lids are required for inspection risers in driveways or parking lots.

Installation Procedures

1. The installer shall demonstrate to the EH inspector that trenches are level and prepared (scarified) according to the manufacturer's instructions. Representative sections of each trench shall be left open until inspected.

2. The trench may not be deeper than 4'.

3. If the soils are fine sands, the sides of the chambers shall have pea gravel placed around the infiltrator slots to prevent sealing of the slots.

4. For all soils the trench shall be scarified, and the installer will place pea gravel or ¾ inch washed crushed rock around the infiltrator slots to prevent the slots from being sealed.

5. Filter fabric or leach field paper shall be placed over the pea gravel but cannot be used as a replacement for pea gravel.

6. A perforated pipe will be installed all the way through the infiltrator chambers and secured in place.

7. Risers shall be installed to run at both ends of the chamber trench at the full depth of the trench and must be secured to the infiltrators.

8. Risers are to be used as an inspection port and must be easily accessible with Christie boxes or cut a minimum of 16 inches above grade.

9. Prior to filling the trench, place construction paper the length of the trench.

10. Gopher barrier is required at the bottom of the trench unless waived in by EH.

11. Erosion control is required during the periods of October 15 through April 15.