

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Residential Services Section DIVISION OF WATER RICHARDSON & ROBBINS BUILDING 89 KINGS HIGHWAY DOVER, DELAWARE 19901

Phone (302) 739-9947

June 18, 2024

Dave Simon Product Specialist 28305 Livingston Ave. Valencia Pipe Company Valencia, CA 91355

RE: Application for septic tank review/approval

Dear Mr. Simon,

The Division of Water has received and reviewed your request that submitted drawings titled 87-41720 1000 GALLON TWO COMPARTMENT HDPE SEPTIC TANK be approved for use in Delaware. DNREC is pleased to inform you that the above referenced septic tank has been approved for use in Delaware. Installation of the approved tank must be in*stalled* in accordance with manufacturers guidelines, designers proposed components and specified permit conditions.

As a condition of this approval no substitution of components is allowed without written approval from the design engineer and pre approval from the Department.

If you have any questions, please contact the Department at 302-739-9947.

Sincerely,

James Powell

James Powell Program Manager I, Residential Services Section Division of Water

IAPMO RESEARCH AND TESTING, INC.

5001 E. Philadelphia Street, Ontario, CA 91761 • Phone (909) 472-4100 • Fax (909) 472-4244 • www.iapmort.org







CERTIFICATE OF LISTING



IAPMO Research and Testing, Inc. is a product certification body in which its product certification system includes inspection and testing of samples taken from the supplier's stock or from the market or a combination of both to verify compliance to the requirements of applicable codes and standards. This activity is coupled with periodic surveillance of the supplier's factory and/or warehouses as well as the assessment of the supplier's Quality Assurance System. This listing is subject to the conditions set forth in the characteristics below and is not to be construed as any recommendation, assurance or guarantee by IAPMO Research and Testing, Inc. of the product acceptance by Authorities Having Jurisdiction.

Issued To:

VALENCIA PIPE COMPANY

28305 LIVINGSTON AVE VALENCIA, CA 91355, United States

Product: Prefabricated Septic Tanks

Products are in compliance with the following code(s): Uniform Plumbing Code (UPC®) National Plumbing Code of Canada Products are certified to the following standard(s) IAPMO/ANSI Z1000-2019 and CSA B66-2021

File Number: 16181

Effective Date: April 2024

Chairman, Product Certification Committee



Void After:

April 2029*

Chief Technical Service Officer

*This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

This listing period is based upon the last date of the month indicated on the Effective Date and Void After Date shown above. Any change in material, manufacturing process, marking or design without having first obtained the approval of the Product Certification Committee, or any evidence of non-compliance with applicable codes and standards or of inferior workmanship, may be deemed sufficient cause for revocation of this listing. Production of or reference to this form for advertising purposes may be made only by specific written permission of IAPMO Research and Testing, Inc. Any alteration of this certificate could be grounds for revocation of the listing. This document shall be reproduced in its entirety.



Г	12 11 10 9 8 7 6 5 4 3 2 1		
Н	3	1	Н
G		(G
F	Outlet Side		F
E			E
D			D
С		(С
В	ITEM #IMFGR PART #DESCRIPTIONQT187-417201000g 2C HDPE Septic Tank12SPL-BR-0044 Inch Inlet/Outlet Tee2385-SPL-001-L20" Black Domed Lid; SS Screws24WTL-001-FMTank Adapter Ring2Secondary Compartment: 330585-SPL-ER-G4 Inch Gasket2	Y 	В
A	Complies with FDA standards 21 CFR 177.1520 (1) 3.1 and 3.2 3 year limited warranty UV resistant BPA Free HDPE Empty weight: 311 Shipping Class: 300 Includes 2 4" tees and gaskets Image: Class:	D TC A2	A







Valencia Pipe Company 20" Domed Septic Tank Lid Assembly Model # SPL-001-L



Item #	Mfgr Part #	Description	Qty
1	SPL-001	Black lid	1

UNLESS (OTHERWISE SPECIFIED:	FINISH:		DEBURR AND	DO	NOT SCALE DRAWING	REVISION
DIMENSIONS ARE IN INCHES				BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	VCES:						
LINEAF	R:						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN							
CHKD							
APPV'D							
MFG				MATERIAL: High Density Polyethylene (HDPE)			
QA				WEIGHT: 2 lbs.		SCALE:	SHEET: 1 OF 1



Valencia Pipe Company 20" Greem Domed Septic Tank Lid Model # 89-RISL-GRN



Item #	Mfgr Part #	Description	Qty
1	89-RISL-GRN	Tuf Tite 20" Domed Lid	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO	NOT SCALE DRAWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	•						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL: Co	polymer Polyp	propylene	
QA				WEIGHT: 3.5 lbs.		SCALE:	SHEET: 1 OF 1





Item #	Mfgr Part #	Description	Qty
1	SPL-ER-004	4" white ABS ANSI/NSF baffle tee	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCA	LE DRAWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR							
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 1 lb 3 oz	SCALE:		SHEET: 1 OF 1



1



Item #

Mfgr Part #

4

Qty

Description

						0		_	1
					1	89-EF4	4" white AB	S ANSI/NSF baffle tee	1
					2	89-B4035	Sch 40 to	o SDR-35 Bushing	1
					3	SPL-ER-G	4" bla	ck rubber gasket	1
					4	89-EF4	4" Yelle	ow Effluent Filter	1
					5	89-SD4	4" White PVC	C Solid Waste Deflector	1
UNLESS OTHERWISE SPECIFIED:		FINISH:		DEBURR AND	DO	NOT SCALE D	RAWING	REVISION	
DIMENS	ONS ARE IN INCHES			BREAK SHARP					
SURFAC	E FINISH:			EDGES					
TOLERA	NCES:								
LINEA	R:								
ANGU	LAR:								
	NAME	SIGNATURE	DATE	TITLE:					
DRAWN	N Tuf-Tite								
CHKI	D D. Simon		April 2024						
APPV'I)								
MFC	Ĵ			MATERIAL:				-	
QA	A			WEIGHT: 4.04 lbs		SCALE:		SHEET: 1 OF 1	











Material: High-Impact Polypropylene Color: Yellow

Item #	Mfgr Part #	Description	Qty
1	89-EF4	4" Yellow Effluent Filter	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DC	NOT SCALE DRAWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	•						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 15 oz.		SCALE:	SHEET: 1 OF 1



Valencia Pipe Company 4" Baffle Tee Gasket Model # SPL-ER-G



Item #	Mfgr Part #	Description	Qty
1	SDL ED C	4" black rubber gasket, ASTM C-564 and	1
	SPL-ER-G	ASTM C-1563	1

UNLESS C	OTHERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAWING	REVISION	
DIMENSIO	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	2:						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN							
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 7.5 oz.	SCALE:	SHEET: 1 OF 1	



Valencia Pipe Company Schedule 4 to SDR-35 Bushing Model # 89-B4035





Item #	Mfgr Part #	Description	Qty
1	89-B4035	Sch 40 to SDR-35 Bushing	1

UNLESS O	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAWIN	IG RE	VISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	CES:						
LINEAR							
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 2 oz.	SCALE:	S	SHEET: 1 OF 1



Valencia Pipe Company 4" Solid Waste Deflector Model # 89-SD4









Item #	Mfgr Part #	Description	Qty
1	89-SD4	4" White PVC Solid Waste Deflector	1

UNLESS O	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO	NOT SCALE DRAWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	CES:						
LINEAR							
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 3.1 oz.		SCALE:	SHEET: 1 OF 1



Valencia Pipe Company 20" Tank to Riser Adapter - Green Model # 89-20RTT



Item #	Mfgr Part #	Description	Qty
1	89-20RTT	20" Tank to Riser Adapter - Green	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAWING	6 REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP		
SURFACE	FINISH:			EDGES		
TOLERAN	CES:					
LINEAR	:					
ANGUL	AR:					
	NAME	SIGNATURE	DATE	TITLE:		
DRAWN	Tuf-Tite					
CHKD	D. Simon		April 2024			
APPV'D						
MFG				MATERIAL:		
QA				WEIGHT: 1 lb, 3 oz	SCALE:	SHEET: 1 OF 1



Valencia Pipe Company 3" x 20" Riser / Safety Pan - Green Model 89-20RISP



Item #	Mfgr Part #	Description	Qty
1	89-20RISP	3" x 20" diameter green riser / safety pan	1

UNLESS O	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP		
SURFACE	FINISH:			EDGES		
TOLERAN	CES:					
LINEAR	:					
ANGUL	AR:					
	NAME	SIGNATURE	DATE	TITLE:		
DRAWN	Tuf-Tite					
CHKD	D. Simon		April 2024			
APPV'D						
MFG				MATERIAL:		
QA				WEIGHT: 2.65 lbs.	SCALE:	SHEET: 1 OF 1





Item #	Mfgr Part #	Description	Qty
1	89-20RIS6	6" x 20" diameter green riser	1

UNLESS C	OTHERWISE SPECIFIED:	FINISH:		DEBURR AND	DC	NOT SCALE DRAWING	REVISION
DIMENSIO	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	2.						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 3 lbs, 5 oz		SCALE:	SHEET: 1 OF 1



Valencia Pipe Company 12" x 20" Riser Green Model # 89-20RIS12



Item #	Mfgr Part #	Description	Qty
1	89-20RIS12	12" x 20" diameter green riser	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRA	AWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	•						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 5 lbs 14 oz	SCALE:		SHEET: 1 OF 1

IAPMO RESEARCH AND TESTING, INC. CERTIFICATE OF LISTING



Issued To: VALENCIA PIPE COMPANY

File Number: 16181

Product: Prefabricated Septic Tanks

Effective Date: April 2024

Void After: April 2029

This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

Identification:

Each tank shall be marked with the following information: 1) manufacturer's name or trademark; 2) model number; 3) working liquid volume in gallons and liters; 4) date (i.e., month and year), date code, or identifier traceable to the date of manufacture; 5) maximum design load and maximum burial depth for which the tank is designed in feet and meters; 6) volume of the chamber(s) as a function of depth in gallons per inch and liters per centimeter (this can be affixed to the tank exterior or provided in the manufacturer's product literature); 7) inlet and outlet; 8) type of tank (e.g., H, T, S, P, ES or EP); and 7) statement "above-ground installation not permitted" or "AGINP" (where applicable). For a concrete tank, a marking shall indicate whether it is suitable for sulphate or non-sulphate soils, i.e. "SUL" or "NON-SUL". Markings shall be permanent, legible, and visible. Acceptable means of applying permanent markings shall include permanently affixed metal plates, etching, mechanical stamping, stamping with a permanent (non-water-soluble) ink, and molding in. Markings shall be located on the top of the tank near the access opening or at the end of the tank near the inlet. The product shall also bear the cUPC® certification mark adjacent to product markings.

Characteristics:

Prefabricated septic tanks made of concrete, fiber-reinforced polyester (FRP), thermoplastic, or steel. To be installed in accordance with the manufacturer's instructions and the latest edition of the Uniform Plumbing Code.

Products listed on this certificate have been tested by an IAPMO R&T recognized laboratory. This recognition has been granted based upon the laboratory's compliance to the applicable requirements of ISO/IEC 17025.

IAPMO RESEARCH AND TESTING, INC. CERTIFICATE OF LISTING



Issued To: VALENCIA PIPE COMPANY

Effective Date: April 2024

File Number: 16181

Product: Prefabricated Septic Tanks

Void After: April 2029

This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

Models

Model Number	Description
87-41718	1000 Gallon Single Compartment Septic Tank Yellow
87-41720	1000 Gallon Two Compartment Septic Tank Yellow
87-41758	1500 Gallon Single Compartment Septic Tank Yellow
87-41760	1500 Gallon Two Compartment Septic Tank Yellow



		Baffle placement: 65" fro	om side wall to b	affle on 2/3 (inlet) side; 35" fr	om side wall to baffle on 1/3 (outlet side).	
UNLESS O	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAW	VING REVISION
DIMENSIO	NS ARE IN INCHES			BREAK SHARP		
SURFACE I	FINISH:			EDGES		
TOLERANO	CES:					
LINEAR:						
ANGULA	AR:					
	NAME	SIGNATURE	DATE	TITLE:		
DRAWN			12/11/2023			
CHKD	D. Simon		March 2024	1000 GA	ALLON TWO COMPARTM	ENT SEPTIC TANK
APPV'D					INTERNAL BAFF	LE
MFG						
QA				MATERIAL: High	Density Polyethylene (HDPE)	
				WEIGHT: 17 lbs	SCALE:	SHEET: 1 OF



Valencia Pipe Company Tanks Septic Tank Buoyancy Mitigation Recommendations



	Valencia Pipe Company 1000 Gallon Septic Tank Additional Weight Necessary (Pounds)						
Inches of Soil	Inche	s of Groun	dwater Abo	ove Base of	Tank		
Cover On Top							
of Tank	6	12	18	24	30		
6			3351	3510	5469		
9			635	2594	4553		
12				1674	3633		
15					2715		
18					1797		
21							
24							
27							
30							



Some Suggestions:

	Valencia Pipe Company 1500 Gallon Septic Tank							
	Additional Weight Necessary (Pounds)							
Inches of Soil	Inche	s of Groun	dwater Abo	ove Base of	Tank			
Cover On Top								
of Tank	6	12	18	24	30			
6			549	3781	7013			
9				1959	5191			
12				135	3367			
15					1542			
18								
21								
24								
27								
30								

Concrete Block



Concrete Parking Lot Bumper

Installing an underground septic system is a labor- and time-intensive endeavor that requires some expertise.

If you are unsure of any aspect of your septic tank installation, hire or consult with a qualified tank installer.

 \ast - 90# (used for caluclation purposes) in clay soil

No additional weight or restraints necessary Amount of extra weight / restraint necessary (In pounds)

Valencia Pipe Company 28305 Livingston Ave. Valencia, CA 91355



www.valenciapipe.com (661) 257-3923 (661) 257-3928 (fax)



THE CONSULTING BUREAU INC

30 Wall Street, 8th Floor, Office 813, New York, NY 10005

Tel: 605-690-9946

Ali@consultingbureau.org

Engineerfny@gmail.com

April 20, 2024

To: Valencia Pipe Company, Tank Division 28305 Livingston Ave Valencia, CA 91355 United States



Subject: Documentation of tank buoyancy calculations and additional weights needed (for septic tank, 1000 gallon).

Description:

> The forces acting up and down on the tank will be determined.

57.96

- > The upward force is the buoyant force and is equal to the weight of the fluid displaced.
- > The downward forces are the weight of the tank and Groundwater Rise above Base of Tank, in addition to the weight of the soil on top of the tank.
- It will be considered that the upward force has a positive sign and the downward force has a negative sign, and then the resultant of the forces is found.
- If the resultant force is positive, the body tends to move upward. Therefore, an additional mass must be placed from above to equalize the weight and prevent buoyancy.
- If the resultant force is negative, then the resultant force is greater in the downward direction, so we do not need additional weights because there is no buoyancy.

Data:

- ✓ Height: 58 inch
- ✓ Width: 60 inch
- ✓ Length: 100.64 inch
- ✓ Thickness: 0.25 inch
- Soil :
 - Sand
 - Clay
 - Sandy/Clay Mix
- \checkmark Water density = 62.4 fb/ft3

<u>Goals</u>:

The goal is to create a table that includes a relationship between the Groundwater Rise above Base of Tank, the height of the soil above the tank, and the weight necessary to equalize the weight and prevent the tank from floating.





	Valenc	Valencia Pipe Company 1000 Gallon Septic Tank						
		Additional Weight Necessary						
Inches of	f Inch	es of Grour	ndwater Ab	ove Base of	f Tank			
Soil Cove	er 🛛							
On Top o	f	10	10	24	20			
Tank	6	12	18	24	30			
6		276	2235	4194	6153			
9			1481	3440	5399			
12			723	2682	4641			
15				1926	3885			
18					3129			
21					2373			
24								
27								
30								
	No additiona restraints n	l weight or ecessary	Amount restraint ne	of extra weigh cessary (in pou	t / inds)			

<u>Sandy Soil</u>

<u>Clay Soil</u>

	Valencia Pipe Company 1000 Gallon Septic Tank Additional Weight Necessary						
Inches of	Incl	nes of Grou	ndwater Ab	ove Base o	f Tank		
Soil Cover							
On Top of	6	10	r.		6		
Tank	6	12	6	24	6		
6			1551	3510	5469		
9			635	2594	4553		
12				1674	3633		
15					2715		
18					1797		
21							
24							
27							
30							
No additional weight or restraints necessary			Amount restraint ne	t of extra weigh ecessary (in por	nt / unds)		

	Va	Valencia Pipe Company 1000 Gallon Septic Tank Additional Weight Necessary						
Inches of	Inch	nes of Grour	ndwater Ab	ove Base of	Tank			
Soil Cove	r c							
Tank	6	12	6	24	6			
6			867	2826	4785			
9				1749	3708			
12					2625			
15					1545			
18								
21								
24								
27								
30								
	No additiona restraints r	No additional weight or restraints necessary		of extra weight / cessary (in poun	/ ds)			

Sandy Clay Soil

Results:

- 1. Find the necessary weights to prevent the tank from floating.
- 2. It has been observed that in many cases there is no need to put weights, as the tank does not float at all.
- 3. It is concluded from the table that if the height of the water around the tank is small, we do not need large weights to overcome the buoyancy.

Buoyancy Control Methods

Buoyancy control methods are vital for preventing uplift of structures like septic tanks in

buoyant soil conditions. There are several effective strategies to mitigate buoyancy forces and ensure stability:

1. Anchoring Systems: Installing anchors made of concrete or steel securely attach to the septic tank and buried deep into the soil. These anchors increase the system's weight and stability, countering uplift forces.



- 2. Ballast Weights: Placing ballast weights, typically made of concrete or metal, on or around the septic tank can counteract upward forces exerted by buoyant soil or groundwater. Properly positioned ballast weights significantly enhance system stability.
- 3. Deep Burial: Installing septic tanks at greater depths places them below fluctuating groundwater levels, minimizing uplift potential. However, deep burial may require additional excavation and construction considerations. VPC septic tanks should be buried at a minimum of 6" and a maximum of 30".
- 4. Engineering Solutions: Advanced techniques like soil stabilization or ground improvement methods can mitigate buoyancy. These solutions include soil compaction, grouting, or us



buoyancy. These solutions include soil compaction, grouting, or using geosynthetic materials to enhance soil strength.

5. Regulatory Compliance and Standards: Adhering to regulations and industry standards ensures effective buoyancy control. Compliance with guidelines and practices promotes responsible wastewater management and reduces risks associated with buoyancy.

By combining these methods and following regulations, stakeholders can mitigate buoyancy risks and ensure the stability and functionality of septic systems in buoyant soil environments. Proactive planning, proper design, and regular maintenance are crucial for long-term stability.

Conclusion

In conclusion, the issue of septic tank buoyancy is a critical consideration in the design, installation, and maintenance of septic systems. Buoyancy occurs when groundwater levels rise, exerting upward pressure on the tank, potentially causing it to float. This phenomenon poses significant risks, including structural damage, system failure, and environmental hazards.

To mitigate buoyancy risks, various strategies can be employed, such as proper tank anchoring, installation of ballast weights, or designing tanks with sufficient weight and depth to resist uplift forces. Regular inspection and maintenance are also essential to detect and address any buoyancy-related issues promptly.

SHOP DRAW	ING / SUBMITTAL RE	EVIEW	
APPROVED	APPROVED WITH CHANGE UBMIT REJECTED:	ES NOTED	
SUBMITTAL WAS REVIE CONFORMANCE TO CO IS RESPONSIBLE FOR AT JOB SITES FOR FABRICATION PROCE COORDINATION OF I	EWED FOR DESIGN CONFORMITY AND O DNTRACT DOCUMENTS ONLY. THE CON CONFIRMING AND CORRELATING DIM TOLERANCES, CLEARANCES, QUA SSES AND TECHNIQUES OF CONSTR HIS WORK WITH OTHER TRADES A E CONTRACT DOCUMENTS.	GENERAL TRACTOR IENSIONS NTITIES, RUCTION, ND FULL	- Aller
BY	AI/EIDATE4/26/	/24	4 P a g e
THE CONSUL			



THE CONSULTING BUREAU INC

30 Wall Street, 8th FL Office 813 New York, NY10005

Tell: 605-690-9946

Ali@consultingbureau.org

Engineerfny@gmail.com

April 20, 2024

To: Valencia pipe company 28305 Livingston Ave Valencia, CA 91355 United States



Subject: Documentation of the total liquid capacity and tank volumes calibrated in one-inch increments, (for septic tank, size 1000 gallon)

Description:

- A gradation of standards will be created for each inch linking the level of the water surface inside the tank and the volume of water inside it.
- The volume of water inside the tank was calculated using SolidWorks when the water level was only one inch.
- The previous step was repeated for each two-inch water level and the water volume was calculated again and so on until we obtained a set of values for water heights and volumes.
- In the table there is a third column of values that contains the amount of increase in the volume of water at this height compared to the previous height.
- After that, a curve was drawn between the height of the water in the tank and the volume of water inside it to further clarify the table data.
- Another curve was drawn between the height of the water in the tank and the amount of volume increase in this step over the previous step in the gradual process.

THE CONSULTING BUREAU INC | Engineering and Consulting

Data:

Height: 58 inch

Width: 60 inch

Length: 100.64 inch

Thickness: 0.315 inch

Goals:

Obtain a scale between the water level in the tank and the volume of water inside it (calibrated in one-inch increment)

Here is the table containing the columns:

- \checkmark The first contains the water rising inside the tank by an increment of one inch
- \checkmark The second contains the volume of the tank at the corresponding height in the previous column
- \checkmark The third contains the amount of increase at this height over the previous height.





	Liquid Volume	Volume Increment per inch increment
Water level with one inch increment	inside the tank	volume increment per inch increment
	(gallon)	in water iever
1.00	7.03	7.03
2.00	18.07	9.04
3.00	30.73	10.24
4.00	50.45	12.61
5.00	71.00	14.20
6.00	92.05	15.34
7.00	113.42	16.20
8.00	134.98	16.87
9.00	156.68	17.41
10.00	178.48	17.85
11.00	200.40	18.22
12.00	222.42	18.54
13.00	244.54	18.81
14.00	266.70	19.05
15.00	289.04	19.27
16.00	311.42	19.46
17.00	333.88	19.64
18.00	356.42	19.80
19.00	379.03	19.95
20.00	401.69	20.08
21.00	424.35	20.21
22.00	447.00	20.32
23.00	469.66	20.42
24.00	492.31	20.51
25.00	514.96	20.60
26.00	537.61	20.68
27.00	560.25	20.75
28.00	582.91	20.82
29.00	605.66	20.88
30.00	628.69	20.96
31.00	651.71	21.02
32.00	674.45	21.08
33.00	697.13	21.13
34.00	719.79	21.17
35.00	742.39	21.21
36.00	764.85	21.25
37.00	787.06	21.27
38.00	808.99	21.29
39.00	830.58	21.30

THE CONSULTING BUREAU INC | Engineering and Consulting

851.78	21.29
872.55	21.28
892.76	21.26
912.39	21.22
931.45	21.17
949.83	21.11
967.48	21.03
984.38	20.94
1,000.54	20.84
	851.78 872.55 892.76 912.39 931.45 949.83 967.48 984.38 1,000.54

Results:

- 1. Average increment in volume per inch = 19.1 gallon.
- 2. The Total Liquid Capacity = 1000 gallon
- 3. Tank Volumes Calibrated In One-Inch Increments.
- 4. The following Charts.

THE CONSULTING BUREAU INC | Engineering and Consulting

Charts



Conclusion

The volume of water was calculated from the point it reached one inch high in the tank, utilizing the SolidWorks program. Following this initial calculation, the water height was increased by one inch at each step, and the volume was recalculated until reaching the tank's maximum capacity. Subsequently, a correlation was established between the water level in the tank and its corresponding volume.

Additionally, the amount of volume increase per one-inch rise in water level was determined, allowing for the derivation of the average increase in tank water volume for each inch rise in water level. Furthermore, another correlation was drawn between the increment per inch in tank water height and the volume of water within the tank.

SHOP DRAWING /	SUBMITTAL REVIEW
X APPROVED □ □ REVISE AND RESUBMIT □	APPROVED WITH CHANGES NOTED REJECTED:
SUBMITTAL WAS REVIEWED FOR CONFORMANCE TO CONTRACT D IS RESPONSIBLE FOR CONFIRMI AT JOB SITES FOR TOLERAN FABRICATION PROCESSES AND COORDINATION OF HIS WORK COMPLIANCE WITH THE CONTRAC	DESIGN CONFORMITY AND GENERAL OCUMENTS ONLY. THE CONTRACTOR NG AND CORRELATING DIMENSIONS CES, CLEARANCES, QUANTITIES, TECHNIQUES OF CONSTRUCTION, WITH OTHER TRADES AND FULL CTOOCUMENTS.
ву <u>АІ / ОЕ</u>	DATE 4/22/24
THE CONSULTING B	

Prepared by: ALI IBRAHIM

Reviewed by: OMAR ELSHAHAT



<u>Underground Septic Tank</u> Installation Instructions

www.valenciapipe.com (661) 257-3923 info@valenciapipe.com

Septic Tanks are for UNDERGROUND use only. Failure to comply will void all warranties.

Always be sure to check your local codes relative to underground tank installations. Some states, counties, and/or municipalities have very strict codes, especially regarding septic tanks. Septic tanks may not be returned due to inspector rejections after installation.

VPC Underground Septic Tanks





(1 or 2 compartments)

Site Preparation & Tank Placement

- 1. Dig a hole that will provide a minimum of 6" and a maximum of 30" of cover over the top of the tank.
 - Allow 18" to 24" on both sides and both ends of the tank.
 - Possible tank collapse could occur if these allowances are not provided and may void the warranty.
- 2. Bedding material:
 - Well packed sand is the preferred bedding material.
 - 6" for regular soil terrain and 12" for rocky terrain.
 - Native soil is acceptable so long as it is flowable, compactable, rock free, and can provide uniform overall support, especially in the recessed rib areas.
 - Ensure all backfill material is free of wood, masonry debris, silt, and/or clay.
 - When bedding material is in place and the foundation for the tank is level, carefully lower the tank into place. • This is best done with 2-3 people depending on the size and weight of the empty tank.
 - Wiggle the tank around to seat it into the sand or pea gravel to and to allow the foundation bedding material to fully support the tank and bottom ribs.
- 3. Install supplied 4" tees and gaskets in the inlet and outlet holes in the tank prior to placing it in a properly sized excavated hole (see below).
 - The tees can be used with 4" schedule 40 pipe or 4" SDR 35 pipe.
 - Note the direction of the flow and that the inlet hole is higher than the outlet hole.
 - Use standard PVC cement to create a solvent weld to incoming lines and outbound leach field after the tank is lowered into the hole.
 - Note: If using ABS pipe, ensure the proper ABS-PVC cement is used. ABS-ABS or PVC-PVC cement will not suffice.

NOTE: High water tables can cause a septic tank to float to the surface. If your state, county, or city requires tank buoyancy mitigation, please refer to the Septic Tank Buoyancy Mitigation Recommendations included with these instructions and/or call professional qualified septic tank installer.

4. Optional: Install a manhole extension(s) if desired.



- Manhole extensions can be ordered along with your septic tank(s). 0 12", 6", and 3" high x 20" diameter.
 - Tank adapter ring is suggested for placement between the tank and the risers.



- Maximum burial level of our septic tanks is 30", so manhole extensions may be stacked on each other to obtain desired tank burial depth.
 - \circ Use butyl rope or silicone to create a watertight seal if stacking risers.
- Use the lid(s) supplied with the tank to place on top of the manhole extension and secure with provided stainless steel screws.

Backfilling

This is a very important phase of your installation. Please follow instructions carefully to ensure optimal tank performance.

- 5. Fill tank with 12" of water.
- 6. Backfill the excavation with 12" of clean backfill material.
 - IMPORTANT: Firmly compact the ends first, then the sides of the tank.
 - Upon completion of the first 12", continue this sequence all the way to the surface.
 - 12" of water in the tank; 12" of firmly compacted backfill around the tank.
 - Be sure to compact backfill under the inlet and outlet pipes.
- 7. As previously mentioned, 30" maximum burial level between the top of the tank and surface grade level.
- 8. Mound soil over the top of the tank to ensure positive drainage.

Important Additional Notes*

- ✓ Always check local codes to ensure plastic septic tanks can be used prior to purchasing or installation.
- ✓ Have a professional site survey done by a qualified, certified geologist prior to purchasing or installation.
- \checkmark Do not install any tank in a high-water table and/or in water saturated clay.
 - The tank may collapse and expel its contents.
- ✓ Don't store a plastic tank near a flame or heat in excess of 180°F.
- ✓ Protect the tank from sharp objects both in advance of installation and during installation.
- \checkmark Vehicles and/or heavy equipment can be detrimental to an underground tank.
 - Don't bury under the path of vehicles and/or heavy equipment.
- \checkmark Septic tanks should be kept full at all times.
 - If a septic tank is pumped for normal maintenance, it should be refilled immediately.
- Septic tanks are not holding tanks and should not be used as such.
 - Septic tanks may not be used for drinking water.
- ✓ HDPE (high density polyethylene) tanks can be repaired. Generally, here is how it is done:
 - 1. Tank must be unearthed and emptied (not necessarily uninstalled and removed from its hole).
 - 3. Purchase some HDPE strips or material.
 - 5. Repeat the process until the hole is completely filled and is secure.
 - 7. If desired, use no heavier than 80 grit sandpaper to smooth the surface. Do not over-sand.
- 2. Once the leaking point has been located, ensure there are no jagged edges and that the hole is "cleaned up". This can be done with a standard handheld grinding tool and some soapy water.
- 4. Use a medium or large tipped soldering iron to melt the material around the hole as well as to melt the HDPE strips into the hole.
- 6. Test fill with water to above the hole to ensure it is watertight. If not, add more HDPE.
- 8. Re-bury and re-compact as per original instructions (12" of water in tank followed 12" of compacted back-fill (starting with the ends)) and repeat until completely buried.

* - Failure of any of the above will void warranty.

VPC Tanks Limited Warranty

When installed in accordance with manufacturer's instructions, VPC (Valencia Pipe Company) warrants against defective materials and/or workmanship for three (3) years from the date of manufacture. Date of manufacture (serial number) can be found on the permanent label affixed to each tank. Should a defect appear within the warranty period, Valencia Pipe Company will supply a like replacement tank. Cost of removal and/or installation and consequential damages are not covered.

CONSUMER SHOULD CONTACT VALENCIA PIPE COMPANY PRIOR TO REMOVAL OF THE ALLEDGED DEFECTIVE TANK TO RECEIVE THE REQUIRED WARRANTY FORM.



DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Residential Services Section DIVISION OF WATER Richardson & Robbins Building 89 Kings Highway Dover, Delaware 19901

Phone (302) 739-9947

June 18, 2024

Dave Simon Product Specialist Valencia Pipe Company 28305 Livingston Ave. Valencia, CA 91355

RE: Application for septic tank review/approval

Dear Mr. Simon,

The Division of Water has received and reviewed your request that submitted drawings titled 87-41760 1500 GALLON TWO COMPARTMENT HDPE SEPTIC TANK be approved for use in Delaware. DNREC is pleased to inform you that the above referenced septic tank has been approved for use in Delaware. Installation of the approved tank must be in*stalled* in accordance with manufacturers guidelines, designers proposed components and specified permit conditions. As a condition of this approval no substitution of components is allowed without written approval from the design engineer and pre approval from the Department.

If you have any questions, please contact the Department at 302-739-9947.

Sincerely,

James Powell

James Powell Program Manager I, Residential Services Section Division of Water

IAPMO RESEARCH AND TESTING, INC.

5001 E. Philadelphia Street, Ontario, CA 91761 • Phone (909) 472-4100 • Fax (909) 472-4244 • www.iapmort.org







CERTIFICATE OF LISTING



IAPMO Research and Testing, Inc. is a product certification body in which its product certification system includes inspection and testing of samples taken from the supplier's stock or from the market or a combination of both to verify compliance to the requirements of applicable codes and standards. This activity is coupled with periodic surveillance of the supplier's factory and/or warehouses as well as the assessment of the supplier's Quality Assurance System. This listing is subject to the conditions set forth in the characteristics below and is not to be construed as any recommendation, assurance or guarantee by IAPMO Research and Testing, Inc. of the product acceptance by Authorities Having Jurisdiction.

Issued To:

VALENCIA PIPE COMPANY

28305 LIVINGSTON AVE VALENCIA, CA 91355, United States

Product: Prefabricated Septic Tanks

Products are in compliance with the following code(s): Uniform Plumbing Code (UPC®) National Plumbing Code of Canada Products are certified to the following standard(s) IAPMO/ANSI Z1000-2019 and CSA B66-2021

File Number: 16181

Effective Date: April 2024

Chairman, Product Certification Committee



Void After:

April 2029*

Chief Technical Service Officer

*This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

This listing period is based upon the last date of the month indicated on the Effective Date and Void After Date shown above. Any change in material, manufacturing process, marking or design without having first obtained the approval of the Product Certification Committee, or any evidence of non-compliance with applicable codes and standards or of inferior workmanship, may be deemed sufficient cause for revocation of this listing. Production of or reference to this form for advertising purposes may be made only by specific written permission of IAPMO Research and Testing, Inc. Any alteration of this certificate could be grounds for revocation of the listing. This document shall be reproduced in its entirety.



6	5	4		3	2	1	_
							H F E
		ITFM # M	IFGR PART #		FSCRIPTION	ΟΤΥ	C
LAA C		1	87-41760	1500g 2	C HDPE Septic Tan	k 1	
FRC		2 V	VIL-001-FM	Tan 4 Inch	K Adapter Ring	2	
		4 8	5-SPL-ER-G	4 11101	Inch Gasket	2	B
		5 8	5-SPL-001-L	20" Black	Domed Lid; SS Scre	ews 2	
		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:	FINISH:	DEBURR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION	-
		NAME SIC DRAWN	GNATURE DATE	COF NEW - OP	TITLE: 87-41760 1500 G COMPARTMENT TAN DWG NO.	ALLON TWO HDPE SEPTIC K	
PIP	ECOMPAN		WEIGHT:	998232 2000-0000	SCALE:1:20	SHEET 1 OF 7	
6	5	4		3	2	1	

Г	12 11 10 9	8	7	6	5	4		8	2	1	1
н											н
	Outlet Side				5						
G					2						G
_					(3)						
F		A La			—Inlet Si	ide					F
_											
E					4						E
D											D
С											С
_						ITEM #	MFGR PART # 87-41760	DE 1500g 2C	SCRIPTION HDPE Septic Tank	QTY 1	
B	Operating Volume (Glns) Primary Compartment: 1006	E	xploded View			2 3 4	WTL-001-FM SPL-BR-004 85-SPL-ER-G	Tank 4 Inch I 4 Iı	Adapter Ring nlet/Outlet Tee nch Gasket	2 2 2	В
	Secondary Compartment: 494					5 UNLESS OTHERWISE SPECIFI	85-SPL-001-L	20" Black Do	omed Lid; SS Screws	2	
	Complies with FDA standards 21 CFR 177.1520 (1) 3.1 and 3.2 3 year limited warranty		UV resistant BPA Free H	OPE	VDC	DIMENSIONS ARE IN MILLIN SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:	NETERS	BREAK SHARP EDGES		ne y joil JN	
A	Municipal and County codes may vary from your state approval. Please make sure you consult with your local sanitation department or plumber on requirements.	t	Empty weight: 458 Shipping Class: 300 Includes 2 4" tees and gas	kets	VALENCIA	NAME DRAWN CHK'D APPV'D MFG Q.A Image: Comparison of the second secon	SIGNATURE DATE Image: Signature DATE Image: Signature Image: Signature Image: Signature Image: Signature <td></td> <td>NILE: 87-41760 1500 GALL COMPARTMENT HDF TANK WG NO.</td> <td>ON TWO PE SEPTIC</td> <td>A</td>		NILE: 87-41760 1500 GALL COMPARTMENT HDF TANK WG NO.	ON TWO PE SEPTIC	A
	12 11 10 9	8	7	6	5	4	WEIGHT:	OPROFESSIONA	CALE:1:20 SHEET 2 O)F 7]	1



Valencia Pipe Company 20" Domed Septic Tank Lid Assembly Model # SPL-001-L

Item #	Mfgr Part #	Description	Qty
1	SPL-001	Black lid	1

UNLESS (OTHERWISE SPECIFIED:	FINISH:		DEBURR AND	DO	NOT SCALE DRAWING	REVISION
DIMENSIONS ARE IN INCHES				BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	VCES:						
LINEAF	R:						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN							
CHKD							
APPV'D							
MFG				MATERIAL: High Density Polyethylene (HDPE)			
QA				WEIGHT: 2 lbs.		SCALE:	SHEET: 1 OF 1

Valencia Pipe Company 20" Greem Domed Septic Tank Lid Model # 89-RISL-GRN

Item #	Mfgr Part #	Description	Qty
1	89-RISL-GRN	Tuf Tite 20" Domed Lid	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO	NOT SCALE DRAWING	REVISION
DIMENSIONS ARE IN INCHES		BREAK SHARP					
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	•						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL: Copolymer Polypropylene			
QA				WEIGHT: 3.5 lbs.		SCALE:	SHEET: 1 OF 1

Item #	Mfgr Part #	Description	Qty
1	SPL-ER-004	4" white ABS ANSI/NSF baffle tee	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCA	LE DRAWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR							
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 1 lb 3 oz	SCALE:		SHEET: 1 OF 1

1

Item #

Mfgr Part #

4

Qty

Description

						0		_	1
					1	89-EF4	4" white AB	S ANSI/NSF baffle tee	1
					2	89-B4035	Sch 40 to	o SDR-35 Bushing	1
					3	SPL-ER-G	4" bla	ck rubber gasket	1
					4	89-EF4	4" Yelle	ow Effluent Filter	1
					5	89-SD4	4" White PVC	C Solid Waste Deflector	1
UNLESS	OTHERWISE SPECIFIED:	FINISH:		DEBURR AND	DO	NOT SCALE D	RAWING	REVISION	
DIMENS	ONS ARE IN INCHES			BREAK SHARP					
SURFAC	E FINISH:			EDGES					
TOLERA	NCES:								
LINEA	R:								
ANGU	LAR:								
	NAME	SIGNATURE	DATE	TITLE:					
DRAWN	N Tuf-Tite								
CHKI	D D. Simon		April 2024						
APPV'I)								
MFC	Ĵ			MATERIAL:				-	
QA	A			WEIGHT: 4.04 lbs		SCALE:		SHEET: 1 OF 1	

Material: High-Impact Polypropylene Color: Yellow

Item #	Mfgr Part #	Description	Qty
1	89-EF4	4" Yellow Effluent Filter	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DC	NOT SCALE DRAWING	REVISION
DIMENSIONS ARE IN INCHES				BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	•						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 15 oz.		SCALE:	SHEET: 1 OF 1

Valencia Pipe Company 4" Baffle Tee Gasket Model # SPL-ER-G

Item #	Mfgr Part #	Description	Qty
1	SDL ED C	4" black rubber gasket, ASTM C-564 and	1
	SPL-ER-G	ASTM C-1563	1

UNLESS C	OTHERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAWING	REVISION	
DIMENSIO	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	2:						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN							
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 7.5 oz.	SCALE:	SHEET: 1 OF 1	

Valencia Pipe Company Schedule 4 to SDR-35 Bushing Model # 89-B4035

Item #	Mfgr Part #	Description	Qty
1	89-B4035	Sch 40 to SDR-35 Bushing	1

UNLESS O	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAWIN	IG RE	VISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	CES:						
LINEAR							
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 2 oz.	SCALE:	S	SHEET: 1 OF 1

Valencia Pipe Company 4" Solid Waste Deflector Model # 89-SD4

Item #	Mfgr Part #	Description	Qty
1	89-SD4	4" White PVC Solid Waste Deflector	1

UNLESS O	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO	NOT SCALE DRAWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	CES:						
LINEAR							
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 3.1 oz.		SCALE:	SHEET: 1 OF 1

Valencia Pipe Company 20" Tank to Riser Adapter - Green Model # 89-20RTT

Item #	Mfgr Part #	Description	Qty
1	89-20RTT	20" Tank to Riser Adapter - Green	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAWING	6 REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP		
SURFACE	FINISH:			EDGES		
TOLERAN	CES:					
LINEAR	:					
ANGUL	AR:					
	NAME	SIGNATURE	DATE	TITLE:		
DRAWN	Tuf-Tite					
CHKD	D. Simon		April 2024			
APPV'D						
MFG				MATERIAL:		
QA				WEIGHT: 1 lb, 3 oz	SCALE:	SHEET: 1 OF 1

Valencia Pipe Company 3" x 20" Riser / Safety Pan - Green Model 89-20RISP

Item #	Mfgr Part #	Description	Qty
1	89-20RISP	3" x 20" diameter green riser / safety pan	1

UNLESS O	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP		
SURFACE	FINISH:			EDGES		
TOLERAN	CES:					
LINEAR	:					
ANGUL	AR:					
	NAME	SIGNATURE	DATE	TITLE:		
DRAWN	Tuf-Tite					
CHKD	D. Simon		April 2024			
APPV'D						
MFG				MATERIAL:		
QA				WEIGHT: 2.65 lbs.	SCALE:	SHEET: 1 OF 1

Item #	Mfgr Part #	Description	Qty
1	89-20RIS6	6" x 20" diameter green riser	1

UNLESS C	OTHERWISE SPECIFIED:	FINISH:		DEBURR AND	DC	NOT SCALE DRAWING	REVISION
DIMENSIO	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	2.						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 3 lbs, 5 oz		SCALE:	SHEET: 1 OF 1

Valencia Pipe Company 12" x 20" Riser Green Model # 89-20RIS12

Item #	Mfgr Part #	Description	Qty
1	89-20RIS12	12" x 20" diameter green riser	1

UNLESS C	THERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRA	AWING	REVISION
DIMENSIC	ONS ARE IN INCHES			BREAK SHARP			
SURFACE	FINISH:			EDGES			
TOLERAN	ICES:						
LINEAR	•						
ANGUL	AR:						
	NAME	SIGNATURE	DATE	TITLE:			
DRAWN	Tuf-Tite						
CHKD	D. Simon		April 2024				
APPV'D							
MFG				MATERIAL:			
QA				WEIGHT: 5 lbs 14 oz	SCALE:		SHEET: 1 OF 1

IAPMO RESEARCH AND TESTING, INC. CERTIFICATE OF LISTING

Issued To: VALENCIA PIPE COMPANY

File Number: 16181

Product: Prefabricated Septic Tanks

Effective Date: April 2024

Void After: April 2029

This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

Identification:

Each tank shall be marked with the following information: 1) manufacturer's name or trademark; 2) model number; 3) working liquid volume in gallons and liters; 4) date (i.e., month and year), date code, or identifier traceable to the date of manufacture; 5) maximum design load and maximum burial depth for which the tank is designed in feet and meters; 6) volume of the chamber(s) as a function of depth in gallons per inch and liters per centimeter (this can be affixed to the tank exterior or provided in the manufacturer's product literature); 7) inlet and outlet; 8) type of tank (e.g., H, T, S, P, ES or EP); and 7) statement "above-ground installation not permitted" or "AGINP" (where applicable). For a concrete tank, a marking shall indicate whether it is suitable for sulphate or non-sulphate soils, i.e. "SUL" or "NON-SUL". Markings shall be permanent, legible, and visible. Acceptable means of applying permanent markings shall include permanently affixed metal plates, etching, mechanical stamping, stamping with a permanent (non-water-soluble) ink, and molding in. Markings shall be located on the top of the tank near the access opening or at the end of the tank near the inlet. The product shall also bear the cUPC® certification mark adjacent to product markings.

Characteristics:

Prefabricated septic tanks made of concrete, fiber-reinforced polyester (FRP), thermoplastic, or steel. To be installed in accordance with the manufacturer's instructions and the latest edition of the Uniform Plumbing Code.

Products listed on this certificate have been tested by an IAPMO R&T recognized laboratory. This recognition has been granted based upon the laboratory's compliance to the applicable requirements of ISO/IEC 17025.

IAPMO RESEARCH AND TESTING, INC. CERTIFICATE OF LISTING

Issued To: VALENCIA PIPE COMPANY

Effective Date: April 2024

File Number: 16181

Product: Prefabricated Septic Tanks

Void After: April 2029

This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

Models

Model Number	Description
87-41718	1000 Gallon Single Compartment Septic Tank Yellow
87-41720	1000 Gallon Two Compartment Septic Tank Yellow
87-41758	1500 Gallon Single Compartment Septic Tank Yellow
87-41760	1500 Gallon Two Compartment Septic Tank Yellow

Valencia Pipe Company 1500g Septic Baffle Part # 85-ST-1500-BL

		Baffle placement: 65" fro	om side wall to b	affle on 2/3 (inlet) side; 35" fro	om side wall to baffle on 1/3 (outlet side).	
UNLESS C	OTHERWISE SPECIFIED:	FINISH:		DEBURR AND	DO NOT SCALE DRAWI	NG REVISION
DIMENSIONS ARE IN INCHES				BREAK SHARP		
SURFACE FINISH:				EDGES		
TOLERAN	ICES:					
LINEAR	2:					
ANGUL	AR:					
	NAME	SIGNATURE	DATE	TITLE:		
DRAWN			12/11/2023			
CHKD	D. Simon		March 2024	1500 GA	ALLON TWO COMPARTME	NT SEPTIC TANK
APPV'D					INTERNAL BAFFL	E
MFG						
QA				MATERIAL: High	Density Polyethylene (HDPE)	
				WEIGHT: 19 lbs	SCALE:	SHEET: 1 OF 1

Valencia Pipe Company Tanks Septic Tank Buoyancy Mitigation Recommendations

	Valencia Pipe Company 1000 Gallon Septic Tank						
	Additional Weight Necessary (Pounds)						
Inches of Soil	Inche	s of Groun	dwater Abo	ove Base of	Tank		
Cover On Top							
of Tank	6	12	18	24	30		
6			3351	3510	5469		
9			635	2594	4553		
12				1674	3633		
15					2715		
18					1797		
21							
24							
27							
30							

Some Suggestions:

	Valencia Pipe Company 1500 Gallon Septic Tank						
	Ad	Additional Weight Necessary (Pounds)					
Inches of Soil	Inche	s of Groun	dwater Abo	ove Base of	Tank		
Cover On Top							
of Tank	6	12	18	24	30		
6			549	3781	7013		
9				1959	5191		
12				135	3367		
15					1542		
18							
21							
24							
27							
30							

Concrete Block

Concrete Parking Lot Bumper

Installing an underground septic system is a labor- and time-intensive endeavor that requires some expertise.

If you are unsure of any aspect of your septic tank installation, hire or consult with a qualified tank installer.

 \ast - 90# (used for caluclation purposes) in clay soil

No additional weight or restraints necessary Amount of extra weight / restraint necessary (In pounds)

Valencia Pipe Company 28305 Livingston Ave. Valencia, CA 91355

www.valenciapipe.com (661) 257-3923 (661) 257-3928 (fax)

THE CONSULTING BUREAU INC

30 Wall Street, 8th Floor, Office 813, New York, NY 10005

Tel: 605-690-9946

Ali@consultingbureau.org

Engineerfny@gmail.com

April 20, 2024

To: Valencia Pipe Company, Tank Division 28305 Livingston Ave Valencia, CA 91355 United States

Subject: Documentation of tank buoyancy calculations and additional weights needed (for septic tank, 1500 gallon)

Description:

- > The forces acting up and down on the tank will be determined.
- > The upward force is the buoyant force and is equal to the weight of the fluid displaced.
- > The downward forces are the weight of the tank and Groundwater Rise above Base of Tank, in addition to the weight of the soil on top of the tank.
- It will be considered that the upward force has a positive sign and the downward force has a negative sign, and then the resultant of the forces is found.
- If the resultant force is positive, the body tends to move upward. Therefore, an additional mass must be placed from above to equalize the weight and prevent buoyancy.
- If the resultant force is negative, then the resultant force is greater in the downward direction, so we do not need additional weights because there is no buoyancy.

Data:

- ✓ Height: 58 inch
- ✓ Width: 60 inch
- ✓ Length: 100.46 inch
- ✓ Thickness: 0.25 inch
- ✓ Soil :
 - Sand
 - Clay
 - Sand Clay
- $\checkmark \quad \text{Water density} = 62.4 \text{ fb/ft3}$

Goals:

The goal is to create a table that includes a relationship between the Groundwater Rise above Base of Tank, the height of the soil above the tank, and the weight necessary to equalize the weight and prevent the tank from floating.

		Valencia Pipe Company 1500 Gallon Septic Tank Additional Weight Necessary					
Inches of	of	Inch	es of Grour	ndwater Ab	ove Base of	f Tank	
Soil Cov	/er						
On Top Tank	of	6	12	6	24	6	
6				2238	5470	8702	
9				738	3969	7201	
12					2467	5699	
15					964	4196	
18						2693	
21						1191	
24							
27							
30							
		No additional restraints no	l weight or ecessary	Amount restraint ne	of extra weight cessary (in pou	t / nds)	

<u>Sandy Soil</u>

<u>Clay Soil</u>

	Valenci	Valencia Pipe Company 1500 Gallon Septic Tank Additional Weight Necessary					
Inches of	Incl	Inches of Groundwater Above Base of Tank					
Soil Cover							
Tank	6	12	6	24	6		
6			549	3781	7013		
9				1959	5191		
12				135	3367		
15					1542		
18							
21							
24							
27							
30							
	No additiona restraints r	l weight or necessary	Amount restraint ne	t of extra weigh ecessary (in po	nt / unds)		

		Valencia Pipe Company 1500 Gallon Septic Tank Additional Weight Necessary					
Inches of	f	Inch	Inches of Groundwater Above Base of Tank				
Soil Cove	er						
On Top o Tank)İ	6	12	6	24	6	
<u>1 alik</u> 6		0	12	0	2092	5324	
9						3180	
12						1034	
15						1051	
18							
21							
24							
27							
30							
		No additional weight or restraints necessary		Amount restraint ne	of extra weight / cessary (in poun	/ ds)	

Sandy Clay

<u>Results</u>

- 1. Find the necessary weights to prevent the tank from floating.
- 2. It has been observed that in many cases there is no need to put weights, as the tank does not float at all.
- 3. It is concluded from the table that if the height of the water around the tank is small, we do not need large weights to overcome the buoyancy.

Buoyancy Control Methods

Buoyancy control methods are vital for preventing uplift of structures like septic tanks in

buoyant soil conditions. There are several effective strategies to mitigate buoyancy forces and ensure stability:

1. Anchoring Systems: Installing anchors made of concrete or steel securely attach to the septic tank and buried deep into the soil. These anchors increase the system's weight and stability, countering uplift forces.

2. Ballast Weights: Placing ballast weights, typically made of concrete or metal, on or around the septic tank can counteract upward forces exerted by buoyant soil or groundwater. Properly positioned ballast weights significantly enhance system stability.

- 3. Deep Burial: Installing septic tanks at greater depths places them below fluctuating groundwater levels, minimizing uplift potential. However, deep burial may require additional excavation and construction considerations.
- 4. Engineering Solutions: Advanced techniques like soil stabilization or ground improvement methods can mitigate buoyancy. These solutions include soil compaction, grouting, or using geosynthetic materials to enhance soil strength.
- 5. Regulatory Compliance and Standards: Adhering to regulations and industry standards ensures effective buoyancy control. Compliance with guidelines and practices promotes responsible

wastewater management and reduces risks associated with buoyancy.

By combining these methods and following regulations, stakeholders can mitigate buoyancy risks and ensure the stability and functionality of septic systems in buoyant soil environments. Proactive planning, proper design, and regular maintenance are crucial for long-term stability.

Conclusion

In conclusion, the issue of septic tank buoyancy is a critical consideration in the design, installation, and maintenance of septic systems. Buoyancy occurs when groundwater levels rise, exerting upward pressure on the tank, potentially causing it to float. This phenomenon poses significant risks, including structural damage, system failure, and environmental hazards.

To mitigate buoyancy risks, various strategies can be employed, such as proper tank anchoring, installation of ballast weights, or designing tanks with sufficient weight and depth to resist uplift forces. Regular inspection and maintenance are also essential to detect and address any buoyancy-related issues promptly.

SHOP DRAWING	6 / SUBMITTAL REVIEW	
APPROVED	APPROVED WITH CHANGES NOTED	
SUBMITTAL WAS REVIEWED F CONFORMANCE TO CONTRAC IS RESPONSIBLE FOR CONF AT JOB SITES FOR TOLEF FABRICATION PROCESSES COORDINATION OF HIS W COMPLIANCE WITH THE CON	FOR DESIGN CONFORMITY AND GENERAL CT DOCUMENTS ONLY. THE CONTRACTOR IRMING AND CORRELATING DIMENSIONS RANCES, CLEARANCES, QUANTITIES, AND TECHNIQUES OF CONSTRUCTION, ORK WITH OTHER TRADES AND FULL IRACTDOCUMENTS.	THE OF A
BYAI/EI	DATE 04-26-2024	PROFFS
THE CONSULTING	BUREAU INC.	TOFES

THE CONSULTING BUREAU INC

30 Wall Street, 8th FL Office 813 New York, NY10005

Tell: 605-690-9946

ali@consultingbureau.org

engineerfny@gmail.com

April 22, 2024

To: Valencia pipe company 28305 Livingston Ave Valencia, CA 91355 United States

Subject: Documentation of The Total Liquid Capacity And Tank Volumes Calibrated In One-Inch Increments, (for septic tank, size 1500gallon)

Description:

- A gradation of standards will be created for each inch linking the level of the water surface inside the tank and the volume of water inside it.
- The volume of water inside the tank was calculated using SolidWorks when the water level was only one inch.
- The previous step was repeated for each two-inch water level and the water volume was calculated again and so on until we obtained a set of values for water heights and volumes.
- In the table there is a third column of values that contains the amount of increase in the volume of water at this height compared to the previous height.
- After that, a curve was drawn between the height of the water in the tank and the volume of water inside it to further clarify the table data.
- Another curve was drawn between the height of the water in the tank and the amount of volume increase in this step over the previous step in the gradual process.

Data:

Height: 64.9 inch

Width: 55 inch

Length: 135.57 inch

Thickness: 0.315 inch

Goals:

Obtain a scale between the water level in the tank and the volume of water inside it (calibrated in one-inch increment)

Here is the table containing the columns:

- \checkmark The first contains the water rising inside the tank by an increment of one inch
- \checkmark The second contains the volume of the tank at the corresponding height in the previous column
- \checkmark The third contains the amount of increase at this height over the previous heigh

Water level with one inch increment	Liquid Volume inside the tank (gallon)	Volume Increment per inch increment in water level
1	8.77	8.77
2	22.68	11.34
3	38.84	12.95
4	63.36	15.84
5	89.04	17.81
6	115.33	19.22
7	142.20	20.31
8	169.22	21.15
9	196.41	21.82
10	223.73	22.37
11	251.16	22.83
12	278.70	23.22
13	306.33	23.56
14	334.06	23.86
15	361.87	24.12
16	389.76	24.36
17	417.71	24.57
18	445.74	24.76
19	473.83	24.94
20	501.97	25.10

THE CONSULTING BUREAU INC | Ali A Ibrahim

21	530.17	25.25
22	558.40	25.38
23	586.71	25.51
24	615.05	25.63
25	643.42	25.74
26	671.82	25.84
27	700.23	25.93
28	728.63	26.02
29	757.00	26.10
30	785.41	26.18
31	813.86	26.25
32	842.55	26.33
33	871.20	26.40
34	899.67	26.46
35	928.07	26.52
36	956.44	26.57
37	984.83	26.62
38	1,013.29	26.67
39	1,041.65	26.71
40	1,069.97	26.75
41	1,098.17	26.78
42	1,126.23	26.81
43	1,154.06	26.84
44	1,181.59	26.85
45	1,208.86	26.86
46	1,235.75	26.86
47	1,262.13	26.85
48	1,288.12	26.84
49	1,313.54	26.81
50	1,338.19	26.76
51	1,362.20	26.71
52	1,385.50	26.64
53	1,408.00	26.57
54	1,429.56	26.47
55	1,450.16	26.37
56	1,469.86	26.25
57	1,488.47	26.11
58	1,505.77	25.96

Results:

- 1. Average increment in volume per inch = 24.4 gallon.
- 2. The Total Liquid Capacity = 1500 gallon
- 3. Tank Volumes Calibrated In One-Inch Increments.
- 4. The following Charts.

Conclusion

The volume of water was calculated from the point it reached one inch high in the tank, utilizing the SolidWorks program. Following this initial calculation, the water height was increased by one inch at each step, and the volume was recalculated until reaching the tank's maximum capacity. Subsequently, a correlation was established between the water level in the tank and its corresponding volume.

Additionally, the amount of volume increase per one-inch rise in water level was determined, allowing for the derivation of the average increase in tank water volume for each inch rise in water level. Furthermore, another correlation was drawn between the increment per inch in tank water height and the volume of water within the tank.

SHOP DRAWING	/ SUBMITTAL REVIEW
☑ APPROVED☑ REVISE AND RESUBMIT	APPROVED WITH CHANGES NOTED REJECTED:
SUBMITTAL WAS REVIEWED FI CONFORMANCE TO CONTRAC IS RESPONSIBLE FOR CONFIL AT JOB SITES FOR TOLER FABRICATION PROCESSES A COORDINATION OF HIS WC COMPLIANCE WITH THE CONT	OR DESIGN CONFORMITY AND GENERAL TOCUMENTS ONLY. THE CONTRACTOR RMING AND CORRELATING DIMENSIONS ANCES, CLEARANCES, QUANTITIES, ND TECHNIQUES OF CONSTRUCTION, NRK WITH OTHER TRADES AND FULL RACTDOCUMENTS.
BYAI / OE	DATE 4/22/24
THE CONSULTING	BUREAU INC.

Prepared by: ALI IBRAHIM

Reviewed by: OMAR ELSHAHAT

<u>Underground Septic Tank</u> Installation Instructions

www.valenciapipe.com (661) 257-3923 info@valenciapipe.com

Septic Tanks are for UNDERGROUND use only. Failure to comply will void all warranties.

Always be sure to check your local codes relative to underground tank installations. Some states, counties, and/or municipalities have very strict codes, especially regarding septic tanks. Septic tanks may not be returned due to inspector rejections after installation.

VPC Underground Septic Tanks

(1 or 2 compartments)

Site Preparation & Tank Placement

- 1. Dig a hole that will provide a minimum of 6" and a maximum of 30" of cover over the top of the tank.
 - Allow 18" to 24" on both sides and both ends of the tank.
 - Possible tank collapse could occur if these allowances are not provided and may void the warranty.
- 2. Bedding material:
 - Well packed sand is the preferred bedding material.
 - 6" for regular soil terrain and 12" for rocky terrain.
 - Native soil is acceptable so long as it is flowable, compactable, rock free, and can provide uniform overall support, especially in the recessed rib areas.
 - Ensure all backfill material is free of wood, masonry debris, silt, and/or clay.
 - When bedding material is in place and the foundation for the tank is level, carefully lower the tank into place. • This is best done with 2-3 people depending on the size and weight of the empty tank.
 - Wiggle the tank around to seat it into the sand or pea gravel to and to allow the foundation bedding material to fully support the tank and bottom ribs.
- 3. Install supplied 4" tees and gaskets in the inlet and outlet holes in the tank prior to placing it in a properly sized excavated hole (see below).
 - The tees can be used with 4" schedule 40 pipe or 4" SDR 35 pipe.
 - Note the direction of the flow and that the inlet hole is higher than the outlet hole.
 - Use standard PVC cement to create a solvent weld to incoming lines and outbound leach field after the tank is lowered into the hole.
 - Note: If using ABS pipe, ensure the proper ABS-PVC cement is used. ABS-ABS or PVC-PVC cement will not suffice.

NOTE: High water tables can cause a septic tank to float to the surface. If your state, county, or city requires tank buoyancy mitigation, please refer to the Septic Tank Buoyancy Mitigation Recommendations included with these instructions and/or call professional qualified septic tank installer.

4. Optional: Install a manhole extension(s) if desired.

- Manhole extensions can be ordered along with your septic tank(s). 0 12", 6", and 3" high x 20" diameter.
 - Tank adapter ring is suggested for placement between the tank and the risers.

- Maximum burial level of our septic tanks is 30", so manhole extensions may be stacked on each other to obtain desired tank burial depth.
 - \circ Use butyl rope or silicone to create a watertight seal if stacking risers.
- Use the lid(s) supplied with the tank to place on top of the manhole extension and secure with provided stainless steel screws.

Backfilling

This is a very important phase of your installation. Please follow instructions carefully to ensure optimal tank performance.

- 5. Fill tank with 12" of water.
- 6. Backfill the excavation with 12" of clean backfill material.
 - IMPORTANT: Firmly compact the ends first, then the sides of the tank.
 - Upon completion of the first 12", continue this sequence all the way to the surface.
 - 12" of water in the tank; 12" of firmly compacted backfill around the tank.
 - Be sure to compact backfill under the inlet and outlet pipes.
- 7. As previously mentioned, 30" maximum burial level between the top of the tank and surface grade level.
- 8. Mound soil over the top of the tank to ensure positive drainage.

Important Additional Notes*

- ✓ Always check local codes to ensure plastic septic tanks can be used prior to purchasing or installation.
- ✓ Have a professional site survey done by a qualified, certified geologist prior to purchasing or installation.
- \checkmark Do not install any tank in a high-water table and/or in water saturated clay.
 - The tank may collapse and expel its contents.
- ✓ Don't store a plastic tank near a flame or heat in excess of 180°F.
- ✓ Protect the tank from sharp objects both in advance of installation and during installation.
- \checkmark Vehicles and/or heavy equipment can be detrimental to an underground tank.
 - Don't bury under the path of vehicles and/or heavy equipment.
- \checkmark Septic tanks should be kept full at all times.
 - If a septic tank is pumped for normal maintenance, it should be refilled immediately.
- Septic tanks are not holding tanks and should not be used as such.
 - Septic tanks may not be used for drinking water.
- ✓ HDPE (high density polyethylene) tanks can be repaired. Generally, here is how it is done:
 - 1. Tank must be unearthed and emptied (not necessarily uninstalled and removed from its hole).
 - 3. Purchase some HDPE strips or material.
 - 5. Repeat the process until the hole is completely filled and is secure.
 - 7. If desired, use no heavier than 80 grit sandpaper to smooth the surface. Do not over-sand.
- 2. Once the leaking point has been located, ensure there are no jagged edges and that the hole is "cleaned up". This can be done with a standard handheld grinding tool and some soapy water.
- 4. Use a medium or large tipped soldering iron to melt the material around the hole as well as to melt the HDPE strips into the hole.
- 6. Test fill with water to above the hole to ensure it is watertight. If not, add more HDPE.
- 8. Re-bury and re-compact as per original instructions (12" of water in tank followed 12" of compacted back-fill (starting with the ends)) and repeat until completely buried.

* - Failure of any of the above will void warranty.

VPC Tanks Limited Warranty

When installed in accordance with manufacturer's instructions, VPC (Valencia Pipe Company) warrants against defective materials and/or workmanship for three (3) years from the date of manufacture. Date of manufacture (serial number) can be found on the permanent label affixed to each tank. Should a defect appear within the warranty period, Valencia Pipe Company will supply a like replacement tank. Cost of removal and/or installation and consequential damages are not covered.

CONSUMER SHOULD CONTACT VALENCIA PIPE COMPANY PRIOR TO REMOVAL OF THE ALLEDGED DEFECTIVE TANK TO RECEIVE THE REQUIRED WARRANTY FORM.