











Global Tank Specialists

CST INDUSTRIES, INC.



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CST Industries, Inc. specializes in the design and supply of pre-engineered steel storage tanks. Engineered Storage Products Company (ESP), a division of CST Industries, manufactures tanks using glass-fused-steel and thermosetting modified epoxy powder lining systems, the most advanced innovations available in steel tank lining technology. CST has been dedicated to the design, fabrication and innovation of steel tanks since 1893. A worldwide leader, the company has built water and wastewater tanks in over 125 countries and has an extensive network of sales offices, agents and distributors around the globe.

A world leader in factory lined steel tanks.

ESP is noted for its excellence in glass-fused-to-steel technology and over the past decade has introduced a steady stream of glass tank innovations for the Aquastore[®] and Permaglas[®] brands. Research and development has also been ongoing in thermosetting modified powder epoxy coating systems for TecStore[®] brand tanks.

Why build a factory lined steel tank?

ESP tanks provide the highest quality and lowest maintenance coating systems in the liquid storage tank industry. They are specifically engineered for exceptional corrosion control, abrasion resistance and a longer service life.

Higher Quality - Factory applied glass-fused-to-steel and thermo-set bakedon modified epoxy tank lining systems outperform air cured factory and field applied coatings.

Faster – Modular pre-engineered steel tanks and dedicated fabrication plants offer quick delivery and easier assembly.

Lower cost – Competitive pricing and reduced maintenance costs provide significantly lower life cycle costs and subsequent savings over the tank life.

Flexibility – Capacities from 13 m³ to 45,000 m³. A wide variety of configurations are available.

Proven – Over a century of experience in designing, engineering and fabricating steel tanks. Over 250,000 tanks in over 125 countries worldwide!

LIQUID TANK Application chart

	Power Generation	Water Supply	Water Treatment	Wastewater Treatment	Irrigation Systems	General Industry	Agriculture
Potable water		1	1			 ✓ 	
Industrial process water	✓	✓	1			1	1
Salt water			✓				
Brine/Borehole water			1		✓		
Clearwell tank		✓	1				
Chlorine contact		✓	1				
Brackish water		✓	1		✓		
Deionized water	1	✓	1			1	
Demineralized water	1	✓	1			1	
Reverse osmosis water	1	✓	1			1	
Desalinated water	1	✓	1		✓	1	
Ultrapure water	1		1			1	
Boiler feed water	 ✓ 						
Buffer/Balance tanks				1			
Aerobic digester				1			
Anaerobic digester				1			1
Clarifier tank			1	1			
Trickling filter tank			1	1			
Settling tank			1	1			
Aeration tank			1	1			
Landfill leachate				1			
Fire protection water	1					1	
Treated effluent water	1		1	✓	✓		
Irrigation water					✓		 ✓
Liquid manure				✓	✓		1
Lime slurry			✓	✓			
Carbonate slurry			1	1			



Glass-Fused-to-Steel Factory "Engineered" Technology

Glass-fused-to-steel is the premium lining technology in the storage and process tank market. The glass lining's physical properties are specially suited to municipal and industrial storage applications. The factory applied silica glass coating on Aquastore[®] tanks forms a hard, inert barrier for both the interior and exterior tank surfaces to guard against weather and corrosion. Glass-fused-to-steel is impermeable to liquids and vapors, controls undercutting caused by corrosion and offers excellent impact and abrasion resistance. The color won't fade or chalk and it never needs repainting.



A new, state-of-the-art porcelain enameling furnace was installed at ESP in 2006. The world's largest porcelain enameling furnace, it improves efficiency and produces extremely high quality sheets every time.

Exterior Face Base Steel Exterior A Coat Cobalt Blue Top Coat

Vitrium Technology

New process technology has resulted in the development of ESP's newest glass innovation – Vitrium^m. This internal glass lining combines the outstanding chemical and physical resistant properties of Titanium Dioxide (TiO₂) saturated glass with a highly engineered ultra-fine glass structure surface to create a high performance glass-fused-to-steel technology. Vitrium features and benefits include:

- Tough TiO₂ glass formulations provide longer life
- Electrostatic base coat application ensures consistent quality
- Maximum coating effectiveness without requiring increased coating thickness
- Unique process technologies provide factory certified "holiday-free" sheets
- Process efficiencies lead to competitive pricing
- Ideal for both cold and hot climates

In 2007, Vitrium EN[™] was introduced. Vitrium EN is compliant with the full range of Euro Norm testing requirements under the EN15282 specification for glass-fused-to-steel tanks. This new innovation provides significant benefits in economy and performance in the marketplace.

Modified Epoxy Tank Lining Technology

For some applications, organic linings are preferred. Modified epoxy tank lining technology is used for pure water, ultra-pure water, de-mineralized water, de-ionised water and ultrafiltration water applications. It is also preferred for very large capacity storage tanks due to its improved economics when coating the required thicker steel. For these applications, CST offers its TecStore product line with Kuo-Lon[®] thermosetting modified epoxy lining system. Kuo-Lon is a new generation thermosetting epoxy powder coating that combines outstanding chemical resistance with exceptional physical properties in a thermally cured tank lining system. It is formulated specifically for such products as highly treated water, potable water, wastewater, sewage, brines and chemicals where its inertness and corrosion resistance are a clear advantage over other coating systems.*

TecStore is especially suited for heavy industrial facilities such as power or desalination plants, for ultrapure water applications and for large scale potable and service water storage.

Glass lined wall sheet edges are mechanically beveled and are thermally sprayed with a stainless steel alloy.

Interior Face

Bolt holes are covered with sealant during assembly, so metal is not exposed to the air or the stored product.

EN15282 Glass Analysis Summary

The recently implemented standard EN15282:2007 - Vitreous and porcelain enamels - Design of bolted steel tanks for the storage or treatment of water or municipal or industrial effluents and sludges provides comprehensive glass-fused-to-steel performance and testing standards. There are four classifications of glass specified in EN15282 with different grades specified for different applications. This chart summarizes the glass coating requirements and specifications. CST's glass linings fully comply with the EN 15282 specification.

Property	Class 1	Class 2	Class 3	Class 4
EN15282 Application Categories (See Note 1)	Thermophylic/pasteurization digester-roof & top ring	 Industrial effluent process & treatment Thermophylic/pasteurization digester cylinders Municipal mesophyllic digester roof & top ring Liquid Leachate Municipal sludge treatment roof & top ring Borehole/brackish & sea water 	Municipal sludge treatment cylinders Municipal sludge & sludge cake storage Filter tanks Potable water (DWI listed Reg 31) Potable water (ANSI/NSF 61 listed)	Municipal mesophyllic digester cylinders Storm & Fire water
Other Applications (not listed in EN15282) These applications are suitable for glass fused to steel coatings, and the Class designated is based on ESP Aquastore 50+ year's experience, testing and general industry acceptance.	Specialist applications which cannot be met by the lower class glass formulations	Higher purity water, including RO, DI and De-min produced water – but not ultra pure applications where LSI less than -6.	Industrial service water	Agriculture (animal waste) slurry
Aquastore® (ESP) Permaglas® Coatings – the designated glass formulations fully comply with the relevant standards and testing for each the classifications noted. Customer orders should indicate the Class of Service required for their specific application.	Glass 97 EN®	Vitrium EN™	Vitrium I (Vitrium EN™ in full compliance w also supplied for Class 3 ar	vith all Class 2 requirements is
Resistance to chemical corrosion by citric acid at room temperature; EN 14483 1:2004 Clause 9, tested monthly or with each batch	Class AA	Class AA	Class A+	Class A
Resistance to chemical corrosion by sulphuric acid at room temperature; EN 14483 1:2004 Clause 10, tested monthly or with each batch	Class AA	Class A+	Test not required	Test not required
Resistance to chemical corrosion by hydrochloric acid at room temperature; EN 14483 1:2004 Clause 11, tested monthly or with each batch	Class AA	Class A+	Test not required	Test not required
Resistance to chemical corrosion by boiling citric acid; EN 14483 2:2004 Clause 10, tested annually	Max mass loss after 2.5 hours 0.75 gm/m²	Max mass loss after 2.5 hours 1.5 gm/m²	Max mass loss after 2.5 hours 3.0 gm/m²	Max mass loss after 2.5 hours 5.0 gm/m²
Resistance to chemical corrosion by boiling hydrochloric acid – Vapour phase; EN 14483 2:2004 Clause 12, tested annually	Max mass loss after 7 days 7.0 gm/m²	Max mass loss after 7 days 8.0 gm/m²	Test not required	Test not required
Resistance to chemical corrosion by boiling distilled or demineralized water; EN 14483 2:2004 Clause 13, tested annually	 Vapour phase max mass loss after 48 hours 5.0 gm/m² Liquid phase max mass loss after 48 hours 2.5 gm/m² 	Vapour phase max mass loss after 48 hours 7.5 gm/m ² Liquid phase max mass loss after 48 hours 2.5 gm/m ²	Vapour phase test not required Liquid phase max mass loss after 48 hours 2.5 gm/m ²	 Vapour phase test not required Liquid phase max mass loss after 48 hours 5.0 gm/m²
Resistance to chemical corrosion by standard detergent solutions; EN 14483 3:2004 Clause 9, tested annually	Max mass loss after 24 hours 2.5 gm/m²	Max mass loss after 24 hours 5.0 gm/m²	Test not required	Test not required
Resistance to chemical corrosion by hot sodium hydroxide; EN 14483 4:2004 Clause 9, tested annually	Max mass loss after 24 hours 6.0 gm/m²	Max mass loss after 24 hours 6.0 gm/m²	Max mass loss after 24 hours 7.0 gm/m²	Max mass loss after 24 hours 7.0 gm/m²
Resistance to thermal shock; ISO 2747, tested annually	300° C	300° C	Test not required	Test not required
Resistance to impact: Pistol test; ISO 4532, tested monthly or with each batch – Max damage < 2 mm in diameter after 24 hours	40 N force	40 N force	20 N Force	20 N force
Determination of the resistance to abrasion; ISO 6370 2, tested annually	Max mass loss 45 gm/m ²	Max mass loss 45 gm/m²	Test not required	Test not required
Scratch hardness of surface according to Mohs; EN 101, tested monthly or with each batch	Mohs 5	Mohs 5	Mohs 5	Mohs 5
Adherence level; EN 10209:1996 Annex D, tested monthly or with each batch	Class 2	Class 2	Class 2	Class 2
Enamel Thickness; EN ISO 2178:1995, frequency determined in accordance with ISO 2859 1 <i>(See Note 3)</i>	300µm - 500µm	260µm - 460µm	200µm - 400µm	160µm - 360µm
Defects – Inside Surface – No discontinuities, test frequency is every panel	EN 14430:2004 Test A Test voltage 1500v	EN 14430:2004 Test A Test voltage 1100v	EN 14430:2004 Test A Test voltage 900v	EN ISO 8289:2001 Method A 9 volt wet sponge test 90kΩ
Defects – Outside Surface, maximum visible defect size 1 mm, test frequency every panel	Visual inspection (see Note 2)	Visual inspection (see Note 2)	Visual inspection (see Note 2)	Visual inspection (see Note 2)
Defects – Outside Surface, maximum 3 visible defects per m² total panel area, test frequency every panel	Visual inspection (see Note 2)	Visual inspection (see Note 2)	Visual inspection (see Note 2)	Visual inspection (see Note 2)
Colour – Outside Surface, Colour and colour tolerances shall be agreed between interested parties, frequency determined in accordance with ISO 2859 1	Inspection using a colour comparator approved prior to production by the vitreous enameller	Inspection using a colour comparator approved prior to production by the vitreous enameller	Inspection using a colour comparator approved prior to production by the vitreous enameller	Inspection using a colour comparator approved prior to production by the vitreous enameller

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Notes: 1. Consult with supplier for suitability for specific applications. All applications subject to concentration and temperature considerations of the stored liquid.

2. It is permissible, when agreed between the contracting parties, to rectify defects with a material approved by the vitreous enameller for the purpose, applied according to the rectification material manufacturer's instructions. 3. Internal lining only — EN15282 allows manufacturer's standards for external glass coating thickness.

Engineering and Specifications

CST tanks incorporate design and material standards that are proven in thousands of tanks all over the world.

Engineering Design Standards

Aquastore and TecStore designs incorporate recognized standards assuring high quality and long-lasting industrial service liquid storage tanks. All CST product lines incorporate a minimum 30 year design life analysis performed in conformance with British Standard 7543:2003 (Guide to Durability of Buildings and Building Elements, Products and Components). While EN15282 is the standard design for international projects, CST also regularly designs to other international codes and standards including those noted below.

Standard	Authorization Body	Title/Description	Primary Applications	Primary Regions of Use		
ANSI/AWWA D103	American National Standards Institute - American Water Works Association	Factory-Coated Bolted Steel Tanks for Water Storage	Municipal (Public) Water Storage Tanks	North America		
FM- 4020/4021	Factory Mutual	Approval Standard for Ground Supported, Flat Bottom Steel Tanks for Fire Pump Suction	Fire Protection Water Storage Tanks	Worldwide		
NFPA-22	National Fire Protection Association	Water Tanks for Private Fire Protection	Fire Protection Water Storage Tanks	Worldwide		
AISC	American Institute of Steel Construction	Manual of Steel Construction	Water Storage Tanks	North America		
EN15282	CEN-European Committee for Standardization	Vitreous and porcelain enamels- Design of bolted steel tanks for the storage or treatment of water or municipal or industrial effluents and sludges	Municipal & Industrial Water & Wastewater Storage Tanks	Europe Middle East Africa Asia Pacific Islands Central & South America		

The CST Difference

Our network of distributors, agents and sales offices can offer the service, support and expertise you need to build a tank from inception to completion. Experience in your region and application knowledge are valuable during all stages from project development to specification to erection to the completed and tested tank. You can be assured you will receive the highest engineered quality, best service, longest product life and greatest value in liquid storage tanks.

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Material Specifications

Aquastore and TecStore material specifications for municipal and industrial service liquid storage tanks ensure the highest quality and longest tank life. Materials are carefully selected and inspected for conformance to rigid specifications.

Plates and Sheets – Steel plates and sheets used in the construction of the tank shell, tank floor (when supplied) and tank roof (when supplied), shall comply with the following minimum standards.



• Mild strength steel -ASTM A1011 Grade 30 - maximum allowable tensile stress 19,800 psi (13,652 N/cm²)

• High strength steel ASTM A1011 Grade 50 – maximum allowable tensile stress 33,000 psi (22,753 N/cm²) ASTM A1011 Grade 60 – maximum allowable tensile stress 39,600 psi (27,303 N/cm²) ASTM A1011 Grade 80 – maximum allowable tensile stress 52,800 psi (36,405 N/cm²) (Note: Aquastore sheets are Grades 30 and 50 (after firing), TecStore sheets are Grades 30, 60 and 80.)

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Rolled Structural Shapes - Material shall conform to minimum standards of ASTM A36 or AISI 1010.

Horizontal Wind Stiffeners - Intermediate horizontal wind stiffeners shall be of the "web truss" design with extended tail to create multiple layers of stiffener, permitting wind loads to distribute around tank. Web truss stiffeners shall be of steel with hot dipped galvanized coating.

Bolt Fasteners - Bolts used in tank lap joints shall be $\frac{1}{2}$ " (nominal 12mm) – 13 UNC-2A rolled threads. Bolt Material shall conform to the following:

- 1" (nominal 25mm) and 1-1/4" (nominal 32mm) bolt lengths SAE J429 Grade
 5—Tensile strength 120,000 psi minimum (82,737 N/cm²), Proof Load 85,000 psi minimum (58,605 N/cm²), Allowable shear stress 30,000 psi (20,684 N/cm²)
- Greater than 1-1/4" (nominal 32mm) bolt length SAE J429 Grade 8 Tensile strength 150,000 psi minimum (103,421 N/cm²), Proof Load 120,000 psi minimum (82,737 N/cm²), Allowable shear stress 40,000 psi (27,579 N/cm²)
- Bolt finish Zinc, mechanically deposited, 0.002 inches minimum (50 microns) under bolt head, on shank and threads.
- Bolt head encapsulation The entire bolt head up to the splines on the shank shall be encapsulated with high impact polypropylene copolymer. Resin shall be stabilized with an ultraviolet light resistant material such that the colour shall appear black. The copolymer shall be certified to meet the ANSI/NSF Standard 61 for indirect additives for drinking water supply applications.

Sealers - The lap joint sealant shall be a one component, moisture cured, polyurethane compound. The sealant shall be used to seal lap joints and bolt connections as well as for completing edge fillets for sheet notches and starter sheets. The sealant shall cure to a rubber-like consistency, have excellent adhesion to the tank lining system, low shrinkage and be suitable for interior and exterior use. Alternate sealants such as polysulfide and silicone compounds, may be used depending on the products to be stored.

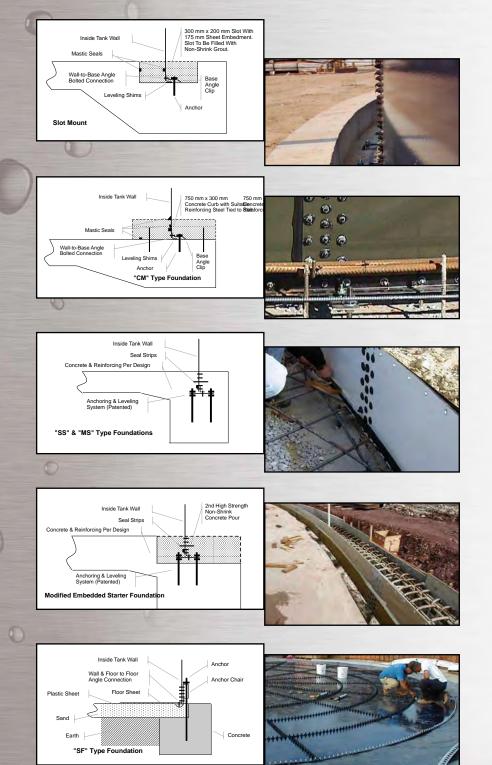
Constructing A Glass-Fused-to-Steel Tank

Every CST tank is factory engineered to customer specifications. Since all components are manufactured in the factory and easily assembled, CST tanks can be installed in many types of situations when field-welded steel and concrete tanks cannot. Tanks are most commonly assembled from the top down by trained building crews using a jacking system thus eliminating the need for cranes. Alternative assembly methods (scaffold build) and professionally supervised local building crews are frequently used for lower profile tanks.

Foundation arrangements

Depending on tank specifications, the typical foundation will be one of the following:





Slot Mount: Used for lower profile tanks, particularly suited for wastewater treatment applications.

Curb Mount: Used for lower profile tanks, well suited for tower mounted storage tanks.

Embedded Starter: Used for larger municipal and industrial applications and higher seismic applications.

Modified Starter: Combines Embedded Starter for large tank and higher seismic features with Slot Mount convenience.

Steel Floor: Used in applications where a steel floor is required, for example highly purified water, vegetable oils, petroleum products, etc.

Installation Sequence and Construction

The following construction sequence is typical of a medium to large ESP water storage tank with an embedded starter type foundation.



Excavation



Ring Wall and Compaction



Set Foundation Ring



Set Slab Reinforcing Steel



Install Water Seals



Install Panels



Pour and Complete Concrete Floor Slab



Apply Sealer



Set Up Jacks and Start Dome



Jack and Raise Tank to Install Panel Rings



Assemble and Complete Dome Structure/Panels



Completed Tank

Roof options

CST tanks can be adapted to accept a wide range of roof options. Each roof has specific features and benefits which make them unique and suitable for different specifications and project requirements. Typical roof options include:



Fabric Roof: Economical, for low profile tanks in low wind areas



Knuckle Roof: Available on tanks up to model 31 diameter



Gas Tight Roof: High quality, clear span for anaerobic digesters



Open Top: Standard for sewage and wastewater treatment applications



Geodesic Dome: Top-of-the-line, clear span, non-corroding all aluminum structure



Ribbed Roof: Economical, easy to install – for low profile tanks

Tank Designs to Meet Specific Application Needs



Industrial Wastewater



High Purity Water



Standpipe



Leachate

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Clarifier



Biodiesel



Sludge Storage/Mixing



Anaerobic Digestion



Industrial Service Water



Potable Water

Additional options and accessories.

1 - Cathodic Protection

An Aquastore tank's cathodic protection system where fitted uses sacrificial anodes to protect the reinforcing bars, mitigate corrosion and provide protection to internal submerged surfaces of the tank. It is incorporated into the Aquastore tank's warranty.

2 - Gravity Vent

Tank gravity vents are designed to allow for air exchange during filling and emptying. They are equipped with corrosion-resistant bird and insect screens.

3 - Ladder, Cage and Platform

Tank ladders are constructed of aluminum rails and rungs with hot-dip galvanized cages and step off platforms. Ladders with locking safety cage doors are available.

4 - Sidewall Manways

Tank manways are designed in accordance with AWWA D103 Standards. They are 24 inches (61 cm), 30 inches

(76 cm) or 36 inches (91 cm) in diameter and are manufactured with hot-dip galvanized or stainless steel.

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Caps and Sealer

Durable plastic bolt caps offer added protection to the external hardware against weather and corrosion. For specialized applications, sealer alternatives are available.

Walkways, Railings and Staircases

An option to the standard ladder and cage is a walkway and staircase. CST walkways are hot-dip galvanized steel and are appropriate for situations when regular overhead tank



Nozzles & Baffles

Nozzles and baffles are available depending on tank use and specifications. Engineering flexibility allows these accessories to be incorporated into overall tank design.





access is required. Both walkways and staircases are available from your local Authorized Dealer.

Level Indicators

Durable and functional, the liquid level indicator is a utilitarian option that can be installed as part of the assembly operation.

Services

Aquastore and TecStore tanks are marketed globally through a network of CST Sales Offices, Distributors and Agents. A full range of services is available including:

- Value engineering-total cost analysis
- Tank configuration and layout data
- Budget prices material and erection
- Product engineering specifications
- Design criteria assistance
- Foundation layouts
- Tank general arrangement layout drawings
- Firm prices material and erection
- Tank construction scheduling
- Approval drawings
- Structural calculations
- Certified drawings
- Tank construction or supervision
- Tank testing and commissioning
- Sectional tank inspection, repair & maintenance



When it comes to glass-fused-to-steel or modified epoxy coated tanks, you get the highest engineered quality, best service, longest product life and greatest value from CST Industires, Inc. Contact CST Industries International Service Group for all your global tank requirements.

CST Industries, Inc. 5400 Kansas Avenue Kansas City, KS USA 66106 Phone: +1-913-748-4514 Fax: +1-913-621-4071 **Email: info@tanks.com Web Site: www.tanks.com**

Sales and Service Offices

Latin America: Guadalajara, Mexico; Monterrey, Mexico; Buenos Aires, Argentina Europe: Alfreton, Derbyshire, England Middle East: Jebel Ali Free Zone, United Arab Emirates Asia: Singapore; Hanoi, Vietnam

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Engineered Storage Products Company Aquastore[®] and TecStore[™] Tank Capacity Chart Capacities in Cubic Meters

	CU			KILO,				HEIGHT Aquastore [®] and TecStore [™] Tank Capacity Chart Capacities in Cubic Meters												Actual Wall Height (mm) - From Top of Top Angle to Bottom of Bottom Angle # of Rings in tank														
			A . ()	-	-			10				07		10	54						70		07	00			400	110	445	440	40.4	400	400	100
	Model	Sheets		liters/mm Wall	5 1 473	9 2 870	14 4 266	19 5 663	23 7 060	28 8 457	32 9 853	37 11 250	41 12 647	46 14 044	51 15 440	55 16 837	60 18 234	64 19 631	69 21 027	74 22 424	78 23 821	83 25 218	87 26 614	92 28 011	96 29 408	101 30 805	106 32 201	110 33 598	115 34 995	119 36 392	124 37 788	129 39 185	133 40 582	138 41 979
	Diameter 11	per Ring 4	g (mm) 3 413	Height 9	1 13	2 26	3 39	4 52	5 65	6 77	7 90	8 103	9 116	10 128	11 141	12 154	13 167	14 180	15 192	16 205	17 218	18 231	19 243	20 256	21 269	22 282	23 295	24 307	25 320	26 333	27 346	28 358	29 371	30 384
	14	5	4 266	14	21	41	61	81	101	121	141	161	181	201	221	241	261	281	301	320	340	360	380	400	420	440	460	480	500	520	540	560	580	600
	17 20	6 7	5 119 5 972	21 28	30 41	59 80	88 120	117 159	145 198	174 237	203 276	232 315	260 354	289 393	318 433	347 472	375 511	404 550	433 589	462 628	490 667	519 706	548 746	576 785	605 824	634 863	663 902	691 941	720 980	749 1 019	778 1 059	806 1 098	835 1 137	864 1 176
	22	8	6 825	37	54	105	156	207	258	309	361	412	463	514	565	616	667	718	769	820	872	923	974	1 025	1 076	1 127	1 178	1 229	1 280	1 332	1 383	1 434	1 485	1 536
	25 28	9 10	7 679 8 532	46 57	68 84	133 164	198 244	262 324	327 404	392 483	456 563	521 643	586 723	650 803	715 883	780 963	844 1 042	909 1 122	974 1 202	1 038 1 282	1 103 1 362	1 168 1 442	1 232 1 522	1 297 1 601	1 362 1 681	1 426 1 761	1 491 1 841	1 556 1 921	1 621 2 001	1 685 2 080	1 750 2 160	1 815 2 240	1 879 2 320	1 944 2 400
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	39 42	14 15	11 944 12 798	112 129	165 189	322 369	478 549	635 728	791 908	948 1 088	1 104 1 267	1 261 1 447	1 417 1 627	1 574 1 806	1 730 1 986	1 887 2 166	2 043 2 345	2 200 2 525	2 356 2 705	2 513 2 884	2 669 3 064	2 826 3 244	2 982 3 423	3 139 3 603	3 295 3 783	3 452 3 962	3 608 4 142	3 765 4 322	3 921 4 501	4 078 4 681	4 234 4 861	4 391	4 547	
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	76	27	23 036	417	614	1 196	1 778	2 360	2 942	3 524	4 107	4 689	5 271	5 853	6 435	7 017	7 599	8 181	8 763		1								-	this	-			
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Ľ	84	30	25 595	515	758	1 477	2 195	2 914	3 633	4 351	5 070	5 788	6 507	7 226	7 944	8 663	9 382		-							-	TEIT							
μ	90	31 32	26 448 27 302	549 585	809 862	1 577 1 680	2 344 2 498	3 111 3 315	3 879 4 133	4 646 4 951	5 413 5 768	6 181 6 586	6 948 7 404	7 716 8 221	8 483 9 039	9 250 9 857	10 018 10 674										114							
Ξ	92 95	33 34	28 155 29 008	623 661	917 973	1 787 1 897	2 656 2 820	3 526 3 743	4 395 4 666	5 265 5 589	6 135 6 512	7 004 7 435	7 874 8 358	8 743 9 281	9 613 10 204	10 482 11 127											- see				Carlo			
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	109 112	39 40	33 274 34 127	870 915	1 281 1 347	2 495 2 625	3 710 3 903	4 924 5 180	6 139 6 458	7 353 7 735	8 568 9 013	9 783 10 291	10 997 11 568	12 212 12 846					1-6-6	delle fo	New D	Stands.												
	115 118	41 42	34 980 35 833	961 1 008	1 416 1 485	2 758 2 894	4 100 4 303	5 442 5 711	6 785 7 120	8 127 8 528	9 469 9 937	10 812 11 345	12 154 12 754	13 496					100	-	anne the	Contain of												
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	123 126	44 45	37 540 38 393	1 107 1 158	1 630 1 705	3 176 3 322	4 722 4 939	6 268 6 556	7 814 8 173	9 360 9 790	10 906 11 407	12 452 13 024	13 998 14 641							-		-	2-											
	129	46	39 246	1 210	1 782	3 471	5 161	6 851	8 540	10 230	11 920	13 609	15 299																					
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	137 140	49 50	41 805 42 659	1 373 1 429	2 022 2 105	3 939 4 101	5 856 6 098	7 774 8 094	9 691 10 090	11 608 12 087	13 525 14 083	15 442 16 079																			LO		•	
	143	51	43 512	1 487	2 190	4 267	6 344	8 421	10 498	12 575	14 652	16 729															_							
	146 148	52 53	44 365 45 218	1 546 1 606	2 277 2 365	4 436 4 608	6 595 6 851	8 755 9 094	10 914 11 337	13 073 13 580	15 232 15 824	17 391																			~			
	151	54	46 071	1 667	2 455	4 784	7 112	9 441	11 769	14 098	16 426	1		Г																				
	154 157	55 56	46 925 47 778	1 729	2 547 2 641	4 963 5 145	7 378 7 649	9 794 10 153	12 209 12 657	14 625 15 161	17 040 17 666	1					100		-							EN	IGIN	IEE	REC) ST	'OR	AGE		
	160 162	57 58	48 631 49 484	1 857 1 923	2 736 2 833	5 330 5 519	7 925 8 205	10 519 10 891	13 113 13 578	15 708 16 264	18 302 18 950	-				E			-								ROD							
	165	59	50 337	1 990	2 931	5 711	8 491	11 270	14 050	16 829	19 609				-	and the state			-															
	168 171	60 61	51 190 52 044	2 058 2 127	3 031 3 133	5 906 6 105	8 781 9 076	11 655 12 047	14 530 15 018	17 405 17 990						REE			ME												>			
	174	62	52 897	2 198	3 237	6 306	9 376	12 445	15 515	18 584						日開	新作		III.											-				
	176 179	63 64	53 750 54 603	2 269 2 342	3 342 3 449	6 511 6 720	9 681 9 991	12 850 13 261																										
	182	65	55 456	2 415	3 558	6 931	10 305	13 679	17 053	20 426				-	Toto		1.2	and in	雷					11	201		ľŲ'	1C		4	tor	Stor	0	
	185 188	66 67	56 309 57 163	2 490 2 566	3 668 3 780	7 146 7 365	10 625 10 949	14 103 14 534	17 581 18 118	21 060 21 703																IGURE	s & DO	mes			icu	201	C	
	190 193	68 69	58 016 58 869	2 644 2 722	3 894 4 009	7 586 7 811	11 278 11 613	14 971 15 414	18 663 19 216	22 355 23 018																				© CST II	ndustries, Inc.	. USA 2008		
	196	70	59 722	2 801	4 126	8 039	11 952	15 864	19 777	20010	1																							
	199	71	60 575	2 882	4 245	8 270	12 296	16 321	20 346]																								

Model Height Reference Actual Wall Height (mm) - From Top of Top Angle to Bottom of Bottom Angle # of Rings in tank











CST INDUSTRIES, INC.

HEIGHT

			Actual	liters/mm	5	9	14	19	23						
	Model	Sheets	Diameter	Wall	1 473	2 870	4 266	5 663	7 060						
	Diameter	per Ring	(mm)	Height	1	2	3	4	5						
	202	72	61 428	2 964	4 365	8 505	12 644	16 784	20 923						
	204	73 74	62 282	3 047	4 487	8 743	12 998	17 253	21 509 22 102						
	207 210	74 75	63 135 63 988	3 131 3 216	4 611 4 737	8 984 9 228	13 357 13 720	17 729 18 212	22 102 22 703						
	213	76	64 841	3 302	4 864	9 476	14 088	18 700	23 313						
	216	77	65 694	3 390	4 993	9 727	14 461	19 196	23 930						
	218	78	66 548	3 478	5 123	9 981	14 839	19 698	24 556						
	221 224	79 80	67 401 68 254	3 568 3 659	5 255 5 389	10 239 10 500	15 222 15 610	20 206 20 721	25 189 25 831						
	227	81	69 107	3 751	5 525	10 764	16 003	21 242	26 481						
	230	82	69 960	3 844	5 662	11 031	16 401	21 770	27 139						
	232	83	70 813 71 667	3 938 4 034	5 801 5 942	11 302 11 576	16 803 17 210	22 304	27 805						
	235 238	84 85	22 845 23 392												
	230	86	72 520 73 373	4 130 4 228	6 084 6 228	11 853 12 134	17 623 18 040	23 945	1						
	244	87	74 226	4 327	6 374	12 418	18 462	24 505							
	246	88	75 079	4 427	6 521	12 705	18 888	25 072							
	249 252	89 90	75 932 76 786	4 528 4 631	6 670 6 821	12 995 13 289	19 320 19 757	25 645 26 225	-						
	252	90 91	77 639	4 734	6 973	13 586	20 198	26 225							
	258	92	78 492	4 839	7 127	13 886	20 645	27 403	1						
	260	93	79 345	4 945	7 283	14 189	21 096	28 002							
	263	94	80 198	5 051	7 441	14 496	21 552	28 608							
	266 269	95 96	81 051 81 905	5 160 5 269	7 600 7 761	14 806 15 120	22 013 22 479	29 219 29 838	-						
	272	97	82 758	5 379	7 923	15 436	22 949	30 463							
Ŷ	274	98	83 611	5 491	8 087	15 756	23 425	31 094	1						
Ш	277	99	84 464	5 603	8 253	16 079	23 906	31 732	-						
	280 283	100 101	85 317 86 170	5 717 5 832	8 421 8 590	16 406 16 736	24 391 24 881	32 376							
DIAMETER	286	101	87 024	5 948	8 761	17 069	25 376								
A	288	103	87 877	6 065	8 934	17 405	25 876								
Δ	291	104	88 730	6 183	9 108	17 745	26 381								
	294 297	105 106	89 583 90 436	6 303 6 424	9 284 9 462	18 087 18 434	26 891 27 406								
	300	107	91 290	6 545	9 641	18 783	27 925		Notes to C						
	302	108	92 143	6 668	9 822	19 136	28 450		> Model N						
	305	109	92 996	6 792	10 005	19 492	28 979		> Height is						
	308 311	110 111	93 849 94 702	6 918 7 044	10 189 10 375	19 851 20 214	29 513 30 052		> No allow > Intermed						
	314	112	95 555	7 171	10 563	20 580	30 596		> Capacitie						
	316	113	96 409	7 300	10 752	20 949	31 145		> Charts a						
	319	114	97 262	7 430	10 944	21 321	31 699		> Wall heig						
	322 325	<u>115</u> 116	98 115 98 968	7 561 7 693	11 136 11 331	21 697 22 076	32 257 32 821								
	325	117	99 821	7 826	11 527	22 458	33 389								
	330	118	100 674	7 960	11 725	22 844	33 962								
	333	119	101 528	8 096	11 925	23 232	34 540								
	336	120	102 381	8 232 8 370	12 126	23 624	35 123								
	339 341	121 122	103 234 104 087	8 509	12 329 12 533	24 020 24 419	35 711 36 304								
	344	123	104 940	8 649	12 740	24 820	36 901								
	347	124	105 793	8 790	12 948	25 226	37 504								
	350	125	106 647	8 933	13 157	25 634	38 111								
	353 355	126 127	107 500 108 353	9 076 9 221	13 369 13 582	26 046 26 461	38 723 39 340								
	358	128	109 206	9 367	13 797	26 879	39 962								
	361	129	110 059	9 514	14 013	27 301	40 589		Ma						
	364 367	130 131	110 913 111 766	9 662 9 811	14 231 14 451	27 726 28 154	41 221 41 857		Wa Bolt						
	369	132	112 619	9 961	14 672	28 586	42 499								
	372 375	133 134	113 472 114 325	10 113 10 265	14 895 15 120	29 020 29 458	43 145 43 796								
	375	134	115 178	10 205	15 347	29 438	44 453								
	381 383	136 137	116 032 116 885	10 574 10 730	15 575 15 805	30 344 30 792	45 114 45 779								
		137	110 003	10730	10 000	50 132	-5115	I							

Model Height Reference Actual Wall Height (mm) - From Top of Top Angle to Bottom of Bottom Angle # of Rings in tank

Engineered Storage Products Company Aquastore[®] and TecStore[™] Tank Capacity Chart Capacities in Cubic Meters







otes to Capacity Charts:

Model Number => Diameter/Height. Example: Model "39/36" is 11.937m diameter and 11.231m high. If adding extension sheets, add corresponding letter to model number (i.e. "37/36A") Height is from bottom of bottom angle to top of top angle - and assumes a 2"x2"x1/4" (50x50x6mm) bottom angle and a 3"x3"x1/4" (75x75x6mm) top angle.

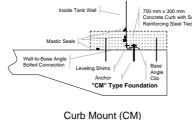
No allowance is made for internal concrete floor or freeboard. Diameters are "construction expanded" diameters.

Intermediate capacities are available by using "extension" sheets and starter rings. See chart below for details. Add appropriate letter to model number as noted above.

Capacities are in cubic meters. Volume (in liters) per mm of height is shown for each diameter to facilitate the calculation for net capacity.

- Charts are for general information only. Site specific design, wind, seismic, foundation and roof conditions, design codes and coatings will limit applicable sizes.
- Wall height adjustment guidelines:
 - For standard SS and MS starter ring foundations, add 227 mm to wall height
 - For standard SF foundation, add 433 mm to wall height
 - For standard SM foundation, deduct 175 mm from wall height
 - For Extension Ring "A" size, add 215 mm to wall height
 - For Extension Ring "B" size, add 430 mm to wall height
 - For Extension Ring "C" size, add 591 mm to wall height
- Inside Tank Wa

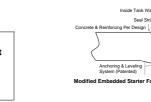
Slot Mount (SF)





Seal Strin

Anchoring & Level System (Patented "SS" & "MS" Type Four



Modified Embedded Starter (MES)

Embedded Short/Mid Starter (SS/MS)







