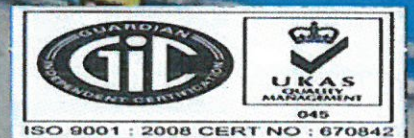


G - FRP

FRP (GRP) SECTIONAL WATER TANK



INTRODUCTION

G-FRP Industries Sdn Bhd manufactured FRP tanks have now been recognized and widely used in many areas including residential, commercial, industrial and also for the public works sector. **GRP** debotes Glassfibre Reinforced Polyester which is also known as **FRP** (Fibreglass Reinforced Polyester)

Product Warranty

G-FRP industries Sdn Bhd provides an extensive guarantee on GRP/FRP water storage tanks which is manufactured with premium grade material and high quality control of ten (10) years* (warranty apply) from the date of completion of tank installation, for manufacturing defects. Liability is strictly limited to replacing the water tank and not for any consequential loss resulting from the tank. Also, a warranty of one (1) year on installation against leakage is granted from the date of completion of tank installation.



GENERAL SPECIFICATIONS

Standard :

Singapore Standard SS245: 2014, MS 1390 : 2010 similar to British Standard BS 7491

Materials :

Sheet Moulding Compound (SMC) consists of :

Resin – Unsaturated polyester resin conforming to BS 3532 specification

Fiber Glass – Fibre glass sheet conforming to JIS R3411 to R3417 or BS 3396, BS 3496 and BS 3749 specifications

Manufacturing Process :

Hot pressed SMC compression moulding

Tank Structural Support :**Tie-rod System:**

External : Hot Dipped Galvanised Steel

Internal : SS304 Tie-rod

Roof Support : PVC/ABS pipes with GRP roof panel stiffener

External Braced System :

External : Hot Dipped Galvanised Steel

Internal : None (metal free inside, non-partitioned tank only)

Sealant :

Non toxic PVC foam/EPDM Rubber

Bolt, Nuts, Washers :

External : – Standard : Hot Dipped Galvanised Steel

– Optional : SS 304

Internal : – Standard : SS 304 (In-contact with water)

Roof : – Standard: Hot Dipped Galvanised Steel

Ladder :

External : – Standard : Hot Dipped Galvanised Steel, 300mm width

Internal : – Standard : Aluminium, 300mm width

– Optional : GRP or SS 304, 300mm width

Water Level Indicator :

Standard : Reversed Reading Mechanical Ball Float Type (Cat & Mouse)

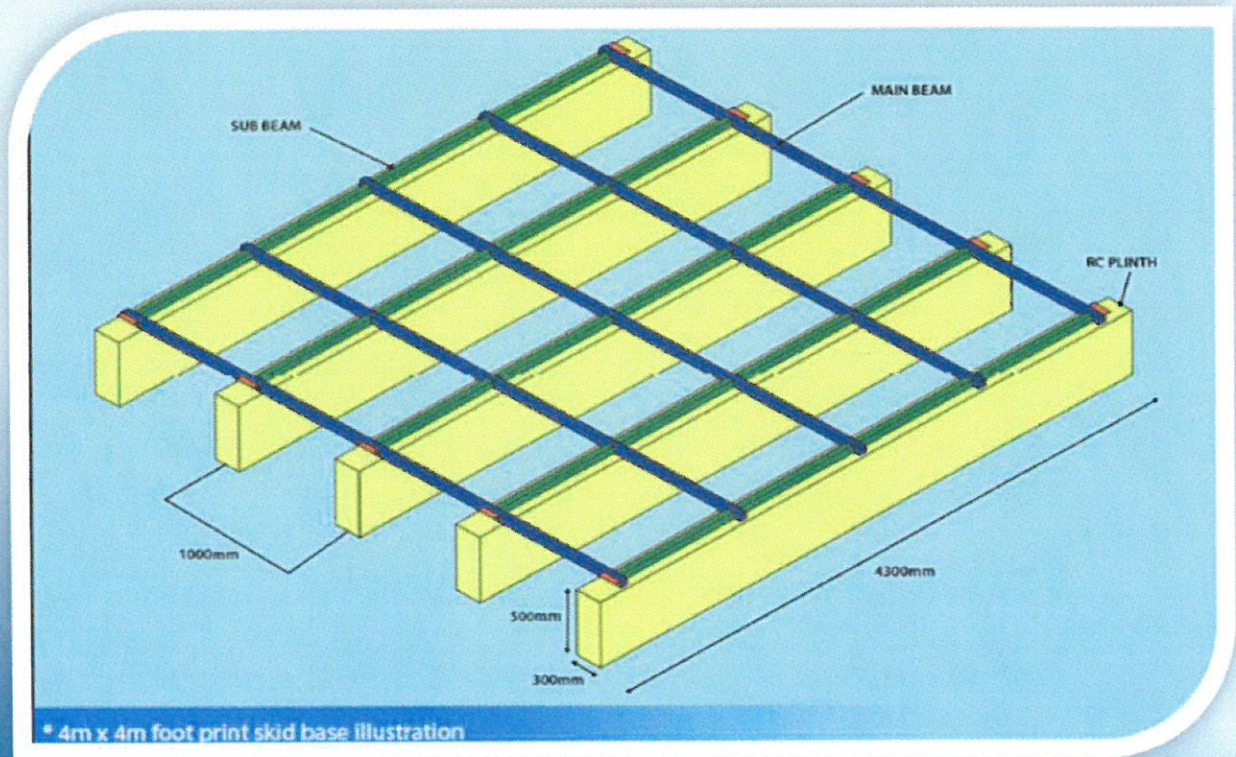
Optional : Direct Reading Clear Tube Type

Nozzel Panel :

- Pipe nozzles flange not inclusive
- Flat panels will be provided on request

SKID BASE SPECIFICATIONS

Skid base specifications for GRP sectional water tank



Tank Height	Main Beam	Sub Beam	Concrete Plinth Distance
1.0m	not provided	not provided	1000mm center to center
1.5m	Hollow Section 50mm x 50mm x 3mm	Hollow Section 50mm x 50mm x 3mm	1000mm center to center
2.0m	Hollow Section 50mm x 50mm x 3mm	Hollow Section 50mm x 50mm x 3mm	1000mm center to center
2.5m	Hollow Section 50mm x 50mm x 3mm	Hollow Section 50mm x 50mm x 3mm	1000mm center to center
3.0m	Hollow Section 50mm x 50mm x 3mm	Hollow Section 50mm x 50mm x 3mm	1000mm center to center
3.5m	Hollow Section 50mm x 50mm x 4mm	Hollow Section 50mm x 50mm x 4mm	1000mm center to center
4.0m	Hollow Section 50mm x 50mm x 4mm	Hollow Section 50mm x 50mm x 4mm	1000mm center to center

*G - FRP reserves the right to provide alternate skid base designs

G-FRP recommends an ideal concrete plinth size of 300mm (W) x 500mm (H), with maximum variance in height of not more than 1.22mm

G - FRP



G-FRP VENTURE MARKETING SDN BHD

(982292-T)

**No.20, Jalan Kundang Jaya 1,
Perindustrian Kundang Jaya,
48020 Kundang,
Selangor Darul Ehsan**

Tel: 03-6034 1525 Fax: 03-6034 2615

Email: sales@g-frp.com.my

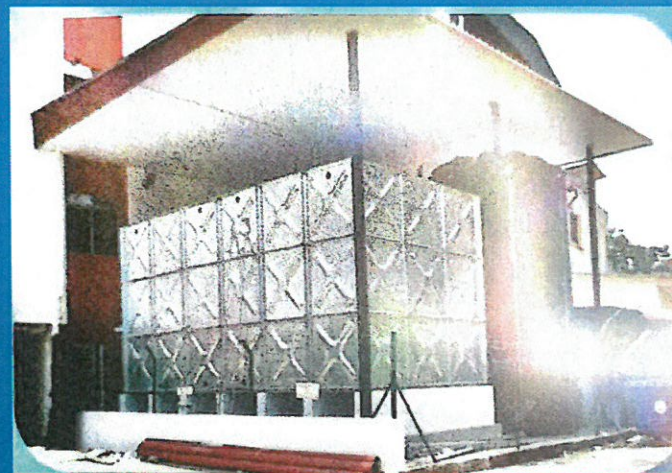
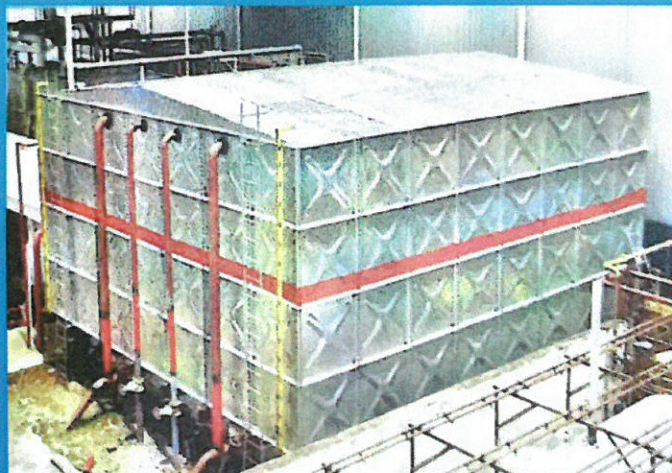
INTRODUCTION

G-FRP was established in 2011 with a commitment to provide our clients with finest and the best quality of product and services in the field of manufacturing pressed steel sectional storage tank. G-FRP brand pressed steel sectional storage tanks are manufactured to comply with British Standard BS 1564 : 1975 with external flanges and hot – dipped galvanized to ISO 1461 : 1999 standard. The main activities are to manufacture, supply and install G-FRP brand pressed steel sectional tank either stainless steel or mild steel panels which has wide range of protective coatings.

G-FRP branded tank panels size 4' x 4' and there are two materials which are mild steel or stainless SS304/SS316. The mild steel panels are coated with Hot – Dipped Galvanize or Painted. The tank panels come with thickness of 1mm to 6mm. The height tank can be reached until 16 feet. The panels are pressed by high capacity pressed (up to 1000t), giving consistent, dimensionally accurate and easy to install tank panels.



PRESSED STEEL TANK



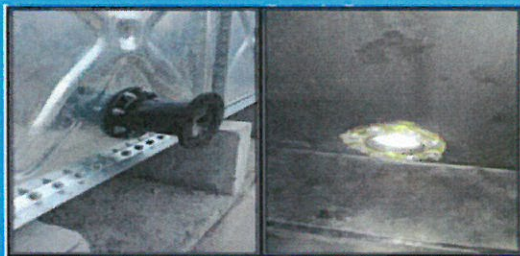
SERVICES



INSTALLATION OF
PRESSED STEEL TANK



INSTALLATION OF FRP
TANK



INSTALLATION OF
FLANGES AND FITTING



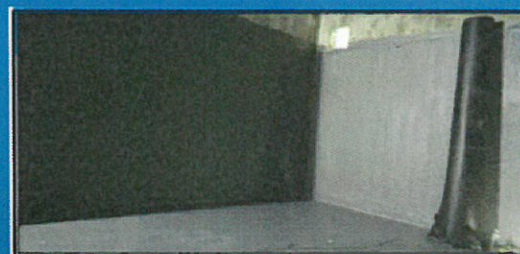
PRESSED STEEL TANK
HDPE LINING



TANK COATING



R.C TANK HDPE LINING



R.C TANK
WATERPROOFING



TANK REPAIR AND
REFURBISHMENT

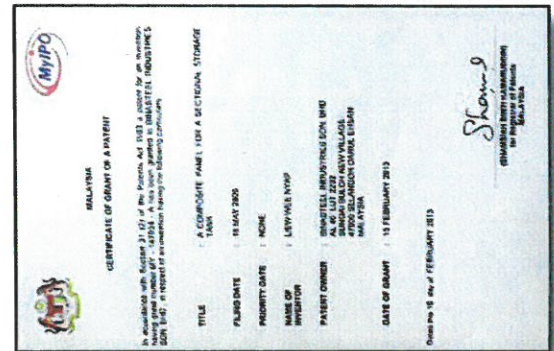


NOVA

ISS TANKS

Dura M&S Composite Stainless Steel





Established in 1987, Binasteel is a recognized pressed steel sectional tank manufacturer in Malaysia. With more than 27 years experience, our ability to advise and recommend suitable tanks for each requirement and specification has given us the edge over our competitors. Working in partnership with ACE Ingrand, both industry leaders merge their expertise to bring customers a new solution to water storage. We are able to propose the tank capacity as well a advising on the fastest and effective way for tank erection especially in awkward and difficult locations, where other forms of bulk storage system is unsuitable.

company profile

Over the years, Binasteel has gained its reputation for supplying high quality steel storage tanks. We have also been awarded Asia Pacific's Product Excellence Award in 2010.

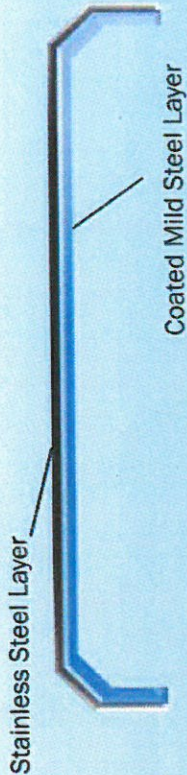
Most developing countries have adopted a more health conscious approach especially towards drinking water. Binasteel has put in a lot of effort and research to produce an economic and safe product for storing potable water.



tank design

- Patented under 1983 Patents Act
- Unique design combines 2 different types of steel & adopts an External Reinforcement System (ERS)

Composite Stainless Steel



Internal SS304/SS316 Surface



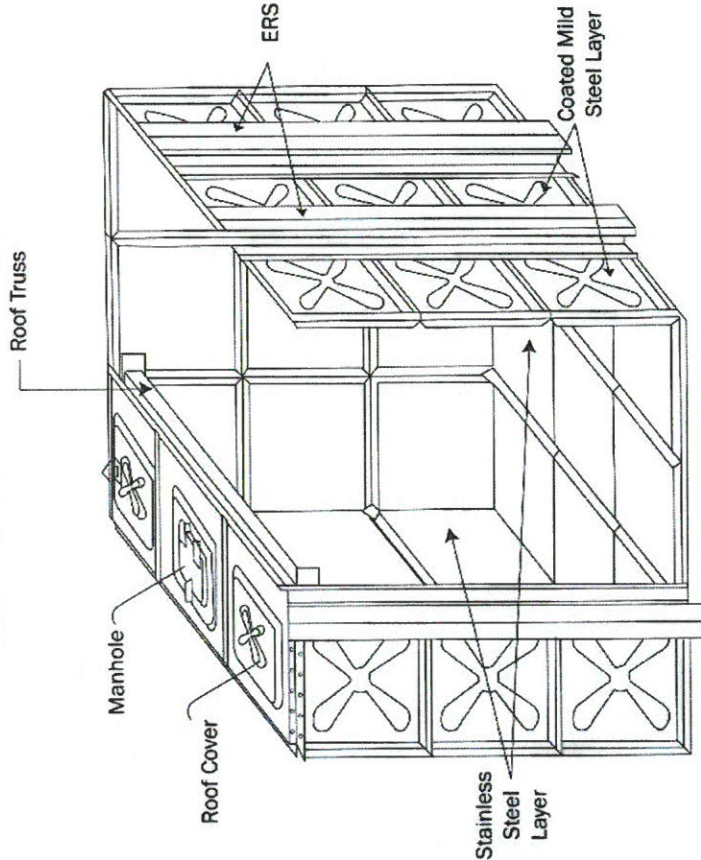
External Coated Mild Steel Surface



Material	
Tank Panel (Internal Layer)	Stainless Steel 304/316
Tank Panel (External Layer)	Coated Mild Steel
External Reinforcement	Galvanized Steel
Cover	Aluminium
Ladder (Internal/External)	Stainless Steel/Galvanized Steel
Level Indicator	Aluminium
Tank Panel Size	1m x 1m or 4' x 4'
Standard	British Standard (BS 1564:1975)
Panel Thickness	5.8mm or 6.8mm

*Coating as per client's specification

External Reinforcement System (ERS)



Project
Projek Perumahan Rakyat (PPR) at Ladang Se-
liau, Negeri Sembilan

Tank Details
20' x 20' x 8'H and 28' x 24' x 16'H

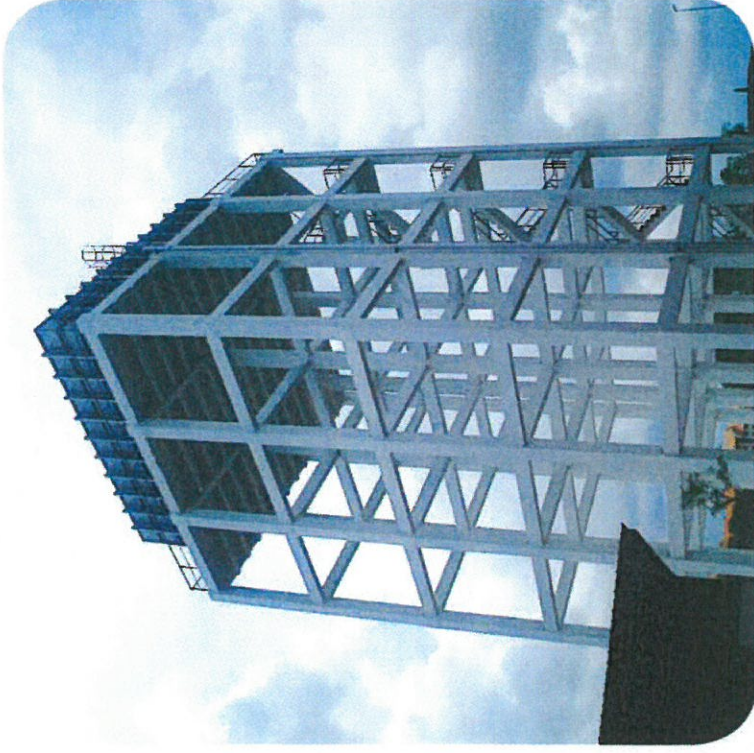
Tank Capacity
20,000 gallon and 67,000 gallon



Project
Projek Perumahan Rakyat (PPR) at
Batu Berendam, Melaka

Tank Details
11m x 11m x 3mH

Tank Capacity
80,000 gallon





or 1220mm high, 5mm thick plates

Nominal Tank Size Length by Breadth		No. of Plates	Nominal Capacity		Approx Empty Tank Weight	
ft	mm		gallon	m ³	cwt	kg
8 x 4	2440 x 1220	8	800	4	13	660
12 x 4	3660 x 1220	11	1,200	5	17	863
16 x 4	4880 x 1220	14	1,600	7	22	1,117
8 x 8	2440 x 2440	12	1,600	7	19	965
12 x 8	3660 x 3660	16	2,400	11	25	1,270
16 x 8	4880 x 3660	20	3,200	15	31	1,575
20 x 8	6100 x 3660	24	4,000	18	38	1,930
12 x 12	3660 x 3660	21	3,600	16	33	1,676
16 x 12	4880 x 3660	26	4,800	22	41	2,083
20 x 12	6100 x 3660	31	6,000	27	49	2,489
24 x 12	7320 x 3660	36	7,200	33	57	2,896
28 x 12	8540 x 3660	41	8,400	38	66	3,353
16 x 16	4880 x 4880	32	6,400	29	51	2,591
20 x 16	6100 x 4880	38	8,000	36	60	3,048
24 x 16	7320 x 4880	44	9,600	43	69	3,505
28 x 16	8540 x 4880	50	11,200	51	80	4,064
32 x 16	9760 x 4880	56	12,800	58	92	4,674
20 x 20	6100 x 6100	45	10,000	45	71	3,607
24 x 20	7320 x 6100	52	12,000	55	82	4,166
24 x 24	7320 x 7320	60	14,400	65	93	4,724
28 x 28	8540 x 8540	77	19,600	89	121	6,147



or 2440mm high, 5mm thick plates

Nominal Tank Size Length by Breadth		No. of Plates	Nominal Capacity		Approx Empty Tank Weight	
ft	mm		gallon	m ³	cwt	kg
8 x 4	2440 x 1220	14	1,600	3	23	1,168
12 x 4	3660 x 1220	19	2,400	11	32	1,626
16 x 4	4880 x 1220	24	3,200	15	41	2,083
8 x 8	2440 x 2440	20	3,200	15	33	1,673
12 x 8	3660 x 3660	26	4,800	22	43	2,184
16 x 8	4880 x 3660	32	6,400	29	53	2,692
20 x 8	6100 x 3660	38	8,000	36	62	3,150
12 x 12	3660 x 3660	33	7,200	33	54	2,743
16 x 12	4880 x 3660	40	9,600	44	65	3,302
20 x 12	6100 x 3660	47	12,000	55	77	3,912
24 x 12	7320 x 3660	54	14,400	65	88	4,470
28 x 12	8540 x 3660	61	16,800	76	100	5,080
16 x 16	4880 x 4880	48	12,800	58	79	4,013
20 x 16	6100 x 4880	56	16,000	73	92	4,674
24 x 16	7320 x 4880	64	19,200	87	106	5,385
28 x 16	8540 x 4880	72	22,400	102	120	6,096
32 x 16	9760 x 4880	80	25,600	116	134	6,807
20 x 20	6100 x 6100	65	20,000	91	109	5,537
24 x 20	7320 x 6100	74	24,000	109	121	6,147
24 x 24	7320 x 7320	84	28,800	131	139	7,061
28 x 28	8540 x 8540	105	39,200	178	172	8,738



or 3660mm high, 5mm thick plates

Nominal Tank Size Length by Breadth		No. of Plates	Nominal Capacity		Approx Empty Tank Weight	
ft	mm		gallon	m ³	cwt	kg
12 x 12	3660 x 3660	45	10,800	40	90	4,572
16 x 12	4800 x 3660	54	14,400	65	109	5,537
16 x 16	4880 x 4880	64	19,200	87	129	6,553
20 x 16	6100 x 4880	74	24,000	109	150	7,620
20 x 20	6100 x 6100	85	30,000	136	171	8,687
24 x 20	7320 x 6100	96	36,000	164	196	9,957
24 x 24	7320 x 7320	108	43,200	196	219	11,125
28 x 24	8540 x 7320	120	50,400	229	246	12,495
28 x 28	8540 x 8540	133	58,800	267	273	13,868
32 x 28	9760 x 8540	146	67,200	305	300	15,240
36 x 28	10980 x 8540	159	75,600	344	327	16,612
32 x 32	9760 x 9760	160	76,800	349	329	16,713
36 x 32	10980 x 9760	174	86,400	393	359	18,237
40 x 32	12200 x 9760	188	96,000	436	388	19,710
36 x 36	10980 x 10980	189	97,200	442	390	19,812
40 x 36	12200 x 10980	204	108,000	491	421	21,387
40 x 40	12200 x 12200	220	120,000	546	456	23,465
44 x 40	13420 x 12200	236	132,000	600	489	24,841
44 x 44	13420 x 13420	253	145,200	660	527	26,772
48 x 44	14640 x 13420	270	158,000	720	562	28,550
48 x 48	14640 x 14640	288	172,800	786	601	30,531
52 x 48	15860 x 14640	306	187,200	851	638	32,410
52 x 52	15860 x 15860	325	202,800	922	679	34,493



or 4880mm high, 5mm thick plates

Nominal Tank Size Length by Breadth		No. of Plates	Nominal Capacity		Approx Empty Tank Weight	
ft	mm		gallon	m ³	cwt	kg
12 x 12	3660 x 3660	57	14,400	65	125	6,350
16 x 12	4800 x 3660	68	19,200	87	152	7,722
16 x 16	4880 x 4880	80	25,600	116	175	8,890
20 x 16	6100 x 4880	92	32,000	145	201	10,211
20 x 20	6100 x 6100	105	40,000	182	230	11,684
24 x 20	7320 x 6100	118	48,000	218	260	13,208
24 x 24	7320 x 7320	132	57,600	262	292	14,834
28 x 24	8540 x 7320	146	67,200	305	322	16,358
28 x 28	8540 x 8540	161	78,400	356	355	18,034
32 x 28	9760 x 8540	176	89,600	407	390	19,812
36 x 28	10980 x 8540	191	100,800	458	422	21,438
32 x 32	9760 x 9760	192	102,400	466	426	24,641
36 x 32	10980 x 9760	208	115,200	524	464	23,571
40 x 32	12200 x 9760	224	128,000	582	498	25,298
36 x 36	10980 x 10980	225	129,600	589	506	25,705
40 x 36	12200 x 10980	242	144,000	655	539	27,381
40 x 40	12200 x 12200	260	160,000	727	580	29,464
44 x 40	13420 x 12200	278	176,000	800	620	31,496
44 x 44	13420 x 13420	297	193,600	880	665	33,782
48 x 44	14640 x 13420	316	211,200	960	707	35,916
48 x 48	14640 x 14640	336	230,400	1047	752	39,202
52 x 48	15860 x 14640	356	249,600	1135	798	40,538
52 x 52	15860 x 15860	377	270,400	1229	846	42,977



No. of Plates	Approx Empty Tank Weight		Nominal Capacity		Nominal Tank Size Length by Breadth	Nominal Capacity		Approx Empty Tank Weight		No. of Plates
	kg	m ³	gallon	m ³		gallon	m ³	kg	m ³	
8	410	2	440	2	2 x 1	880	4	760	4	14
11	560	3	660	3	3 x 1	1,320	6	1,070	6	19
14	760	4	880	4	4 x 1	1,760	8	1,320	8	24
12	660	4	880	4	2 x 2	1,760	8	1,120	8	20
16	870	6	1,320	6	3 x 2	2,640	12	1,430	12	26
20	1,060	8	1,760	8	4 x 2	3,520	16	1,730	16	32
24	1,270	10	2,200	10	5 x 2	4,400	20	2,190	20	38
21	1,120	9	1,980	9	3 x 3	3,960	18	1,870	18	33
26	1,370	12	2,640	12	4 x 3	5,280	24	2,250	24	40
31	1,630	15	3,300	15	5 x 3	6,600	30	2,630	30	47
36	1,880	18	3,960	18	6 x 3	7,920	36	3,110	36	54
32	1,670	16	3,520	16	4 x 4	7,040	32	2,750	32	48
38	1,980	20	4,400	20	5 x 4	8,800	40	3,170	40	56
44	2,290	24	5,280	24	6 x 4	10,560	48	3,610	48	64
50	2,640	28	6,160	28	7 x 4	12,320	56	4,080	56	72
56	2,950	32	7,040	32	8 x 4	14,080	64	4,450	64	80
45	2,340	25	5,500	25	5 x 5	11,000	50	3,580	50	65
52	2,750	30	6,600	30	6 x 5	13,200	60	4,070	60	74
45	2,980	27	5,940	27	3 x 3	7,920	36	4,013	36	57
54	3,610	36	7,920	36	4 x 3	10,560	48	4,775	48	68
64	4,270	48	10,560	48	4 x 4	14,080	64	5,690	64	80
74	4,980	60	13,200	60	5 x 4	17,600	80	6,553	80	92
85	5,740	75	16,500	75	5 x 5	22,000	100	7,468	100	105
96	6,510	90	19,800	90	6 x 5	26,400	120	8,382	120	118
108	7,320	180	23,760	180	6 x 6	31,680	144	9,398	144	132
120	8,180	126	27,720	126	7 x 6	36,960	168	10,414	168	146
132	8,990	144	31,680	144	8 x 6	42,240	192	11,430	192	160
133	9,090	147	32,340	147	7 x 7	43,120	196	44,532	196	161
146	9,970	168	36,960	168	8 x 7	49,280	224	12,589	224	176
159	10,880	189	41,580	189	9 x 7	55,440	252	13,716	252	191
160	10,980	192	42,240	192	8 x 8	56,320	256	13,817	256	192
174	11,940	216	47,520	216	9 x 8	63,360	288	14,935	288	208
188	12,960	240	52,800	240	10 x 8	70,400	320	16,154	320	224
189	13,010	243	53,460	243	9 x 9	71,280	324	16,256	324	225
220	15,190	300	66,000	300	10 x 10	88,000	400	18,796	400	260



Storage of clean water for longer durability periods

G-Cistern

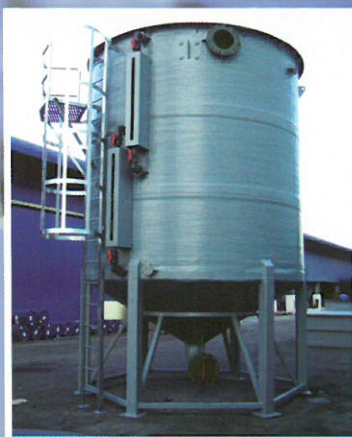
Water Storage Tanks



**One-Piece
FRP Cylindrical Closed Top Series**



**One-Piece
FRP Open Top Series**



**One-Piece
FRP Chemical Storage Tank**



Non-Toxic • Rust Free • Seamless • Sun Light Resistant • Cold Water or Chemical



ISO 9001 : 2008 CERT NO : 670842

SIRIM
Cert. No: PG-015308
BS EN 13290 : 2001

G-Cistern

FRP One Piece Cylindrical Closed Top Series (Tank Capacity & Sizes)

Model No.	Capacity Effective	Effective Height																																	
		1.0M Dia	1.1M Dia	1.2M Dia	1.3M Dia	1.4M Dia	1.5M Dia	1.6M Dia	1.7M Dia	1.8M Dia	1.9M Dia	2.0M Dia	2.1M Dia	2.2M Dia	2.3M Dia	2.4M Dia	2.5M Dia	2.6M Dia	2.7M Dia	2.8M Dia	2.9M Dia	3.0M Dia	3.1M Dia	3.2M Dia	3.3M Dia	3.4M Dia	3.5M Dia	3.6M Dia	3.7M Dia	3.8M Dia	3.9M Dia	4.0M Dia	4.1M Dia	4.2M Dia	
G-CT 1000	1,000	5.78	4.78	4.01	3.42	2.95	2.57	2.26	2.00	1.78	1.60	1.44	1.31	1.19	1.09	1.00	0.92	0.85	0.79	0.74	0.69	0.64	0.60	0.56	0.53	0.50	0.47	0.45	0.42	0.40	0.38	0.36	0.34	0.33	
G-CT 1500	1,500				5.13	4.42	3.85	3.39	3.00	2.68	2.40	2.17	1.97	1.79	1.64	1.51	1.39	1.28	1.19	1.11	1.03	0.96	0.90	0.85	0.80	0.75	0.71	0.67	0.63	0.60	0.57	0.54	0.52	0.49	
G-CT 2000	2,000						5.14	4.52	4.00	3.57	3.20	2.89	2.62	2.39	2.19	2.01	1.85	1.71	1.59	1.47	1.37	1.28	1.20	1.13	1.06	1.00	0.94	0.89	0.84	0.80	0.76	0.72	0.69	0.66	
G-CT 2500	2,500							5.64	5.00	4.46	4.00	3.61	3.28	2.99	2.73	2.51	2.31	2.14	1.98	1.84	1.72	1.61	1.50	1.41	1.33	1.25	1.18	1.11	1.06	1.00	0.95	0.90	0.86	0.82	
G-CT 3000	3,000								5.35	4.80	4.33	3.93	3.58	3.28	3.01	2.77	2.56	2.38	2.21	2.06	1.93	1.80	1.69	1.59	1.50	1.42	1.34	1.27	1.20	1.14	1.08	1.03	0.98	0.93	
G-CT 3500	3,500									5.60	5.06	4.59	4.18	3.82	3.51	3.24	2.99	2.77	2.58	2.41	2.25	2.11	1.98	1.86	1.75	1.65	1.56	1.48	1.40	1.33	1.26	1.20	1.15	1.10	
G-CT 4000	4,000										5.78	5.24	4.78	4.37	4.01	3.70	3.42	3.17	2.95	2.75	2.57	2.41	2.26	2.12	2.00	1.89	1.78	1.69	1.60	1.52	1.44	1.38	1.31	1.25	
G-CT 4500	4,500																																		
G-CT 5000	5,000																																		
G-CT 5500	5,500																																		
G-CT 6000	6,000																																		
G-CT 6500	6,500																																		
G-CT 7000	7,000																																		
G-CT 7500	7,500																																		
G-CT 8000	8,000																																		
G-CT 8500	8,500																																		
G-CT 9000	9,000																																		
G-CT 9500	9,500																																		
G-CT 10000	10,000																																		
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G-CT 17000	17,000																																		
G-CT 17500	17,500																																		

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** Remarks : 3.0m(Dia) To 4.2m(Dia) - Maximum Effective Height : 5.80m(H) , For Nominal Height To Add Approx : 300mm. Total Maximum Tank Height : 6.10(H) **

ADVANTAGES

- **SAFETY** - Conforming to BS 6920 which is safe for storage of drinking water and non toxic.
- **NON CORROSIVE** - Due to its properties, the water tanks are not affected by minerals and chlorine in the water supplied by all Jabatan Bekalan Air of the various states of Malaysia intended for the purpose of human consumption.
- **ULTRA VIOLET COATING** - The external layer of the tank is coated with a layer of flowcoat which is UV resistance to reduce penetration of UV light thus preventing the growth of micro organisms in the tank.
- **NON LEAKING** - All tanks come with Pre Laminated FRP Flanges and subjected to water leakage test at our factory before delivery, thus ensuring goods delivered are in good condition and maintenance free due to its manufacturing process as a FRP ONE-PIECE WATER STORAGE TANK (No joints) in compliance to BS EN 13280:2001 as certified by SIRIM QAS INTERNATIONAL SDN. BHD. (SIRIM No : PG 015306)

INSTALLATION INSTRUCTIONS

- Tank to be lifted/unloaded using crane or similar by using ropes or nylon slings to lifting lugs provided NOT at side fittings.
- Tank should only be lifted when empty of liquid or water.
- Tank should be placed on an elevated even surface such as concrete platform at least 150mm height from ground level, free from debris or stones.
- After tank is positioned, all piping and fittings should be supported with steel/concrete footing.
- Upon loading on the lorry/low loader, tank must be safeguard by wrapping slings around the body. Strictly NOT on pipes fittings.
- Fencing surrounding the tank area to prohibit unauthorized person from tampering as to prevent incident, e.g. Strike on tank with hammer, spanner or sharp object.
- Avoid placing the tank near heater, electric light-bulb or other source of heat.
- Method of opening hole for flanges - All tank opening are strictly to be done at our factory premises basing on the chop signed copy of shop drawing provided by us and confirmed by main contractor or plumber of the project. The tools used to do the opening are Impact Drill with the use of Metal Holesaw / Drill Bits.
- Standard flanges provided by manufacturer:
 - a) 1 inch to 2.5 inches opening - PVC tank connector (Jam Nut) upon special request for Pre-Laminated FRP Flanges (Table E) come with 4nos. of bolts holes.
 - b) 3 inches opening - Pre-Laminated FRP Flanges (Table E) come with 4 nos. of bolts holes.
 - c) 4 inches to 8 inches opening - Pre-Laminated FRP Flanges (Table E) come with 8nos. of bolts holes.
 - d) 10 inches to 16 inches opening - Pre-Laminated FRP Flanges come with 12 nos. of bolt holes.