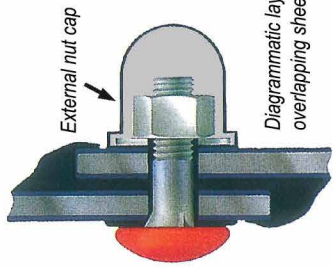


# PERMASTORE® TANKS & SILOS

## BOLTS

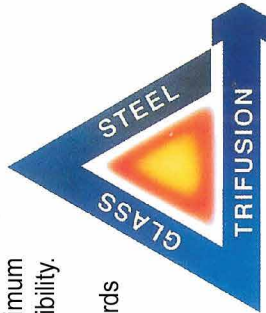
The bolts are special in both their shape and head coating. The head is mushroom shaped to give a large surface area which spreads the load on the glass beneath. The bolts are of high tensile steel, hot dipped spun galvanised and the coating on the head is generally a polypropylene plastic material. This type of coating is extremely stable chemically, hygienic and, under the head, provides an ideal seal against the panel.



External nut-caps of A,B, thermoplastic are provided.

TRIFUSION® is a specially developed 3 part glass-fused-to-steel protection which

- incorporates the exclusive PERMASTORE® 'pre-coat' cobalt rich ground coat and dedicated industrial protective coating.
- covers pH range pH2-pH11 subject to temperature and concentration.
- is tested to 1,100 volt zero defect with controlled test voltage  $\pm 1\%$  at probe contact and calibration records.
- controlled thickness of 280-460 microns gives maximum steel protection whilst maintaining optimum glass-to-steel adhesion and flexibility.
- ISO 9001 with four other standards are met on the TRIFUSION® quality test.



PERMASTORE® and TRIFUSION® are registered names of PERMASTORE® LIMITED, Eye, Suffolk, IP23 7HS, United Kingdom.

## THE ADVANTAGES OF PERMASTORE BOLTED TANK SYSTEMS

- Maintenance**  
The glass-fused -to-steel coating virtually eliminates coating maintenance internally and externally.
- Installation**  
Trained and dedicated in-house teams with proper equipment can speedily erect most sizes of PERMASTORE®.
- Expandability**  
With only minimal design-planning the PERMASTORE® tank can be extended at a future date without dismantling the existing tank.
- Relocation**  
The bolt-together feature permits relocation that protects the initial investment.
- Warranty/Service**  
We provide inspection service within warranty period of 10 years.



5 million Galls Tank

## SEALANTS

The mastic sealants are some of the most versatile components covering a range polyurethane, silicone and polysulphide based substances. It provides a seal between the joints, acts as a cushion between adjacent glass surfaces and protects any raw edges on those occasions when holes are site-cut.

Data sheets covering all types of sealants used in PERMASTORE® installations are available upon request.

## METAL ROOFING SHEET OR OTHER MATERIALS ON REQUEST

Roof c/w GRP ventilator. One 762mm (30inch) diameter manhole c/w GRP manhole railing. PERMASTORE® roof is available on request.

## TANK PLATE

The sheet is in standard-tank plate size 1.443m x 2.746m long. Steel plates are manufactured in different thicknesses and are either to BS 1449 grade HR3 or Euro Norm EU 149-80 High Strength Low Allow Steel of grade Fe E 355.

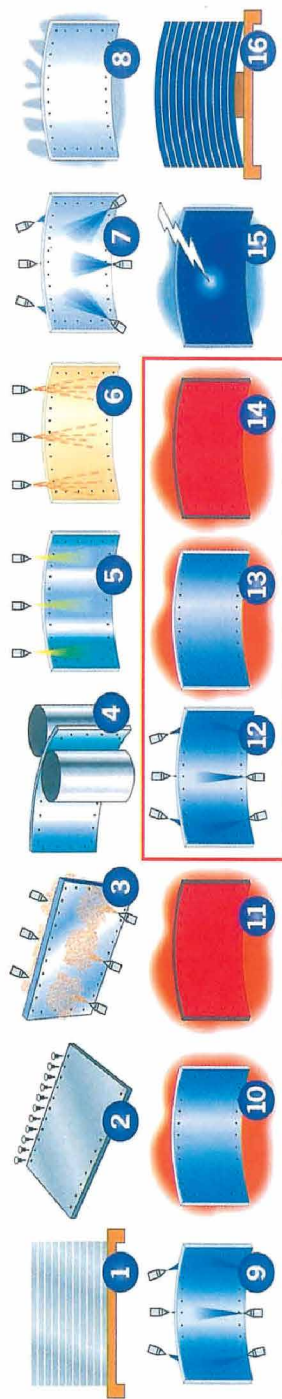


The fusion of glass to steel

## TANK ACCESSORIES

Tank's stainless steel internal and external galvanised ladders with safety cages lead to the inside of the tank through the roof's manhole.

## THE UNIQUE PERMASTORE® FUSION PRODUCTION PROCESS



FROM RAW STEEL TO FINISHED SHEET IN ONE CONTINUOUS PROCESS

- RAW STEEL
- PUNCHING AND CUT OUTS
- GRIT BLASTING OF STEEL TO SA 2 1/2 STANDARD
- ROLLING OF PANELS
- CHEMICAL CLEANING
- PRE-PROTECTIVE DOUSING
- APPLICATION OF NICKEL RICH PRE-COAT
- DRYING OVENS
- APPLICATION OF COBALT RICH GLASS LAYER
- BISQUE OVEN
- FIRED THROUGH FURNACE AT APPROXIMATELY 830°C
- 1,100 VOLTS CONTINUITY TESTING-ONE OF 16 QUALITY INSPECTIONS
- SHEETS PACKED ON INDIVIDUAL PROJECT BASIS \*Stage 12,13 and 14 are unique to TRIFUSION® and TRIFUSION® PLUS

## CAPACITY CHART LIQUID STORAGE

No. of Ring		1		2		3		4		5		6		7			
Nominal Height Ft.		5		10		15		20		25		30		35			
Actual Ht. Ft. Ins.		4 - 3		8 - 10		13 - 5		18 - 0		22 - 7		27 - 2		31 - 9			
Nominal Ht. M		1.293		2.690		4.087		5.483		6.880		8.277		9.673			
Diameter		C A P A C I T Y															
Norm	SPR	Actual ft. Ins.	Actual M	Galls	M³	Galls	M³	Galls	M³	Galls	M³	Galls	M³	Galls	M³		
11	4	11-2	3.416	2607	11.85	5241	24.64	8236	37.44	11051	50.23	13867	63.03	16683	75.83	19494	88.61
14	5	14-0	4.270	4068	18.49	8463	38.47	12857	58.44	17250	78.41	21644	98.38	25960	118	30360	138
17	6	16-10	5.124	5861	26.64	12190	55.41	18522	84.19	24860	113	31240	142	37400	170	43780	199
20	7	19-7	5.976	7979	36.27	16599	75.45	25300	115	33880	154	42460	193	51040	232	59620	271
22	8	22-5	6.830	10421	47.37	21683	98.56	33000	150	44220	201	55440	252	66660	303	77880	354
25	9	25-2	7.684	13191	59.95	27500	125	41580	189	55880	254	70180	319	84480	384	98560	448
28	10	28-0	8.538	16284	74.02	33880	154	51480	234	69080	314	86680	394	104280	474	121880	554
31	11	30-9	9.392	19701	89.55	40920	186	62260	283	83600	380	104720	476	126060	573	147400	670
34	12	33-7	10.246	23320	106	48620	221	74140	337	99220	451	124740	567	149820	681	175340	797
36	13	36-5	11.100	27500	125	57200	260	86900	395	116600	530	146520	666	176220	801	205920	936
39	14	39-2	11.954	31900	145	65440	302	100760	458	135300	615	169840	772	204160	928	238700	1085
42	15	42-0	12.808	36520	166	76120	346	115720	526	155320	706	194700	885	234300	1065	273900	1245
45	16	44-10	13.662	41580	189	86680	394	131780	599	176880	804	221760	1008	266860	1213	311960	1418
48	17	47-7	14.516	47080	214	97900	445	148720	676	199540	907	250360	1138	301180	1369	352000	1600
50	18	50-4	15.370	52800	240	109560	498	166540	757	223520	1016	280500	1275	337480	1534		
53	19	53-2	16.224	58740	267	122320	556	185680	844	249260	1133	312840	1422	376200	1710		
56	20	56-0	17.078	65340	297	135740	617	206360	938	276760	1258	347160	1578				
59	21	58-9	17.930	71720	326	149160	678	226820	1031	304260	1383	381700	1735				
62	22	61-7	18.784	78760	358	163680	744	248820	1131	333740	1517	418880	1904				
64	23	64-5	19.638	86020	391	179080	814	272140	1237	364980	1659	458040	2082				
67	24	67-2	20.492	93500	425	194700	885	295900	1345	396880	1804	498080	2264				
70	25	70-0	21.346	101640	462	211640	962	321460	1462	431420	1961	541200	2460				
73	26	72-9	22.200	109780	499	228360	1038	347160	1578	465740	2117	584100	2655				
76	27	75-7	23.054	118580	539	246840	1122	374880	1704	502920	2286	630960	2868				
78	28	78-4	23.908	127380	579	265100	1205	402820	1831	540320	2456	677820	3081				
81	29	81-2	24.760	136840	622	284460	1293	432300	1965	579920	2636	727540	3307				
84	30	84-0	25.616	146520	666	304700	1385	462880	2104	620840	2822	779020	3541				
87	31	86-9	26.470	156200	710	324940	1477	493680	2244	662200	3010	830940	3777				
90	32	89-7	27.324	166540	757	346720	1576	526680	2394	706420	3211	886600	4030				
92	33	92-4	28.178	176880	804	368060	1673	559240	2542	750200	3410	941160	4278				
95	34	95-2	29.032	188100	855	391160	1778	594440	2702	797280	3624	1000340	4547				
98	35	98-0	29.884	199320	906	414700	1885	630080	2864	845240	3842	1060620	4821				
101	36	100-9	30.738	210760	958	438460	1993	666160	3028	893420	4061	1121120	5096				
104	37	103-7	31.592	222640	1012	463320	2106	704000	3200	944240	4292	1184700	5385				
106	38	106-4	32.446	234740	1067	488180	2219	741840	3372	995060	4523	1248500	5675				
109	39	109-2	33.300	247280	1124	514580	2339	781660	3553	1048520	4766	1315820	5981				
112	40	112-0	34.154	260550	1184	541860	2465	823460	3743	1104840	5022	1326820	6031				
115	41	114-10	35.008	273680	1244	569360	2588	865040	3932	1160500	5275	1456180	6619				

## REFERENCE NOTE

The PERMASTORE® model consists of diameter followed by height.  
ref. eg: Model 5620  
Tank Internal Diameter - 17.078m  
Tank Height - 5.483m  
Gross Capacity - 1258m³

## PROVEN STORAGE

Water	Treatment
Drinking	Anaerobic Digester
Irrigation	Annular Tank System
Fish Farming	Sedimentation Tank
Fire Sprinkler	Sludge and Slurries



RWT is the specialist glass fused to steel tank supplier and installer pioneering from Malaysia for more than 20 years. More than 600 tanks have been successfully installed.



More than 30 years in Malaysia . With over 50 years history.

Your Reliable Water/ Wastewater/ Industrial Storage Solution

# RWT ENTERPRISE SDN BHD (216107M)

15-3, Jalan Medan Putra 1, Medan Putra Business Centre, 52200 Kuala Lumpur, Malaysia.

Tel: 603 6275.6887 Fax: 603 6277.2955 E-mail: rwt@rwt.com.my / sales@rwt.com.my

# Services & Experiences

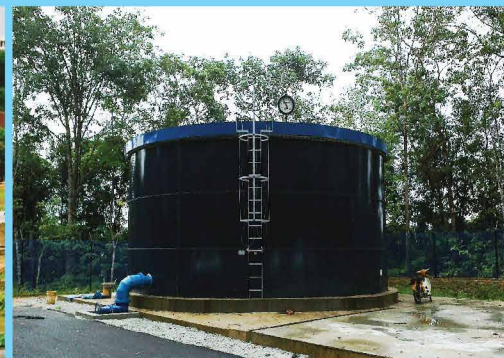
From design, supply, install to handing over to relevant authorities for private, government and semi government projects



74,000 gallons & 25,000 gallons N. Sembilan



830,000 gallons ITM Shah Alam



62,000 gallons Kemaman



Stainless Steel Roof Pulau Redang



Tapped Beam Roof Taiwan



GRP Roof Perak



1,440,000 gallons Melaka



2 x 33,000 gallons & 25,300 gallons Pahang



200,000 gallons & 390,000 gallons Selangor



500,000 & 400,000 gallons Besut Terengganu



100,000 gallons & 50,000 gallons Terengganu

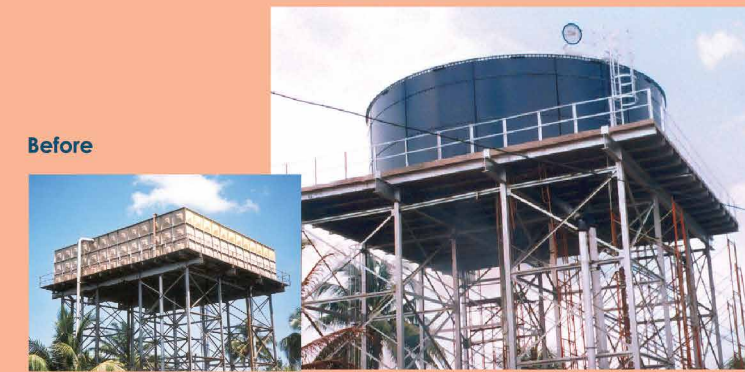


74,000 gallons each Kuching Sarawak

Proven in replacing G.R.P./ F.R.P., press steel and liner tanks with Permastore® on existing elevated structures



Before FFC 20,000 gallons After



Before G.R.P. / F.R.P. 150,000 gallons After



Before Liner Tank 400,000 gallons After



Before Press Steel 500,000 gallons After

Aesthetically design with facade to blend into environment/ identification



30,000 gallons & 10,000 gallons Besut



220,000 gallons Kota Bharu



660,000 gallons Melaka



270,000 gallons Alor Setar

Relocation of existing tank to protect initial investment



Initially installed & dismantled

Relocated

Repeat orders from satisfied customers

Tanks maintained by owner



1982 1st tank-Factory in Klang



1990 more tanks built-new factory in Shah Alam



1994 5th new tank built next to existing tanks

Tanks maintained by owner



1996 Golf Resort-220,000 gallons (Elev.) & 750,000 gallons (Ground)



2001 2nd set installed-250,000 gallons (Elev.) & 600,000 gallons (Ground)

Successfully proven in servicing and roof replacement for Permaglas Tanks (old version of glass coated tank) according to manufacturer's specifications



Kg. Jenalik, Kedah. Bulid 1990 Service & Roof Replacement-2011



Kubang Pasu, Kedah Build 1990 Service 2015



Bintangor, Sarawak Built -1988 Service-2000