

Large Thermoplastic Tanks & Bunds



FORBES



PLASTICS TANKS AND
ENVIRONMENTAL TECHNOLOGIES

Large Thermoplastic Tanks & Bunds in PE100 & Polypropylene

PUTTING CUSTOMERS FIRST

Delivering the best designs, best materials and best products has kept Forbes the leading manufacturer of custom built thermoplastic tanks since 1960. Striving to exceed performance demands in the storage vessel market, Forbes further enhances its product range by utilizing the latest manufacturing & materials technology.

The latest automated equipment enables Forbes to continue producing high quality, robust tanks economically.

LARGE HELIX WOUND THERMOPLASTIC TANKS

Offering long service life and being less susceptible to chemical attack, polyethylene and polypropylene tanks have traditionally been the preferred choice of the Chemical Engineer.

Manufactured using the latest thermoplastic extrusion techniques, Forbes new range of large helix, spirally wound, thermoplastic tanks are fabricated in black pigmented HDPE (High Density Polyethylene) material - PE100 grade and copolymer polypropylene producing a high quality, robust, corrosion resistant product. The helical (spiral) wound cylinder is free from welded seams reducing the risk of leakage & making it ideal for areas where high levels of hygiene are essential. It is also incredibly strong, with wall thicknesses in excess of 80mm being achievable.

Polyethylene tanks manufactured in black pigmented material can include an internal layer of light coloured blue PE100 for the vertical walls to aid inspection after manufacture and during the lifetime of the tank. The tank base is machine welded automatically by microprocessor controlled extrusion producing very strong, high quality welds. The tank roof is also extrusion welded.

Alternatively tanks can be manufactured in black copolymer polypropylene material can include an internal layer of natural unpigmented material.

WHAT IS PE100?

PE100 High Density Polyethylene material was developed in response to the problems of premature ageing and environmental stress cracking often seen in tanks manufactured using traditional polyethylene polymers.

PE100 has a completely different structure to the traditional polymers, having a much higher molecular weight & long polymer chains interlinked with one another, which require high pressure production techniques guaranteeing consistent known properties within the material allowing engineers to specify with confidence knowing that premature ageing will not occur.

BIGGER CAPACITY, LONGER LIFE

PE100 High Density Polyethylene & Copolymer Polypropylene materials enables Forbes to create thermoplastic tanks with capacities up to 100,000 litres. The vertical shell is produced with smooth internal surfaces. The tank is designed to the British & European design standard BS EN 12573:2000. The overall design safety factor (S) is selected depending on application. The design life is up to 25 years depending on contents with unlimited cyclic loading permitted although this can be increased depending on application.

STRONG, WEATHERABLE, DURABLE & ECOLOGICAL

Tanks are constructed to withstand 0.005 bar internal pressure & 0.003 bar vacuum and to withstand snow & wind loadings in the UK. Higher pressures, both internal & external, can be accommodated in the design if required. Additional external stiffening ribs can be applied to suit. The black pigmentation gives 100% resistance to UV light (sunlight).

The tanks are manufactured from virgin polymer which is 100% recyclable to ease end of life disposal issues.



AVAILABLE OPTIONS:
 Safety Bunds
 Contents gauges- mechanical & electrical
 Ladders & Platforms
 Insulation
 Heating
 Agitators
 Delivery & installation on site

TYPICAL ECONOMIC SIZES

FOR LARGE HELIX SPIRALLY WOUND THERMOPLASTIC TANKS

3 METRE DIAMETER (vertical cylindrical with flat base & conical roof)

REFERENCE	CAPACITY Its + 10% ullage	VERTICAL SHELL ht in mm	OVERALL HEIGHT in mm
HVT30/16	16000	2490	2895
HVT30/17	17000	2646	3050
HVT30/18	18000	2820	3225
HVT30/20	20000	3130	3532
HVT30/25	25000	3910	4315
HVT30/30	30000	4684	5090
HVT30/35	35000	5470	5870
HVT30/40	40000	6250	6650
HVT30/45	45000	7025	7430

3.5 METRE DIAMETER (vertical cylindrical with flat base & conical roof)

REFERENCE	CAPACITY Its + 10% ullage	VERTICAL SHELL ht in mm	OVERALL HEIGHT in mm
HVT35/16	16000	1846	2316
HVT35/20	20000	2304	2775
HVT35/25	25000	2873	3345
HVT35/30	30000	3450	3920
HVT35/35	35000	4020	4490
HVT35/40	40000	4595	5062
HVT35/45	45000	5165	5635
HVT35/50	50000	5740	6210
HVT35/55	55000	6310	6780
HVT35/60	60000	6880	7350

4 METRE DIAMETER (vertical cylindrical with flat base & conical roof)

REFERENCE	CAPACITY Its + 10% ullage	VERTICAL SHELL ht in mm	OVERALL HEIGHT in mm
HVT40/20	20000	1772	2312
HVT40/25	25000	2205	2745
HVT40/30	30000	2646	3186
HVT40/35	35000	3085	3625
HVT40/40	40000	3500	4040
HVT40/45	45000	3960	4500
HVT40/50	50000	4400	4940
HVT40/55	55000	4835	5374
HVT40/60	60000	5275	5815
HVT40/70	70000	6152	6692
HVT40/80	80000	7000	7540

ALSO AVAILABLE WITH SLOPING BASES & INTEGRAL SKIRTS



PERFORMANCE GUARANTEED

Chemical resistance is greatly enhanced with standard guarantees of up to 10 years not uncommon. This extended guarantee period is possible due to the design and the exceptional long-term chemical resistance of **PE100** & Copolymer Polypropylene.

Independent tests prove that **PE100** is more resistant to ageing and premature failure by environmental stress cracking with a staggering ratio of 80:1 better performance compared to linear polyethylene, giving significant long term economic benefits that are hard to ignore.

Customers are often unaware of the medium term degradation of lower specification materials used in the manufacture of moulded tanks compared with the specialised polymer materials we use throughout our products, which are necessary in chemical storage & processing facilities.

ADVANTAGES OF PE100 COMPARED TO OTHER POLYETHYLENE POLYMERS

- ✓ The risk of environmental stress cracking associated with many HDPE polymers is eliminated.
- ✓ Virtually eliminates ageing and degradation caused by chemical factors & ultra violet light.
- ✓ DVS2205 & EN12573 strictly conforming to design standards
- ✓ Physical strength is 15% greater than other HDPE polymers and up to 40% stronger than some linear HD polyethylenes.
- ✓ Proven long term testing of **PE100** polymers to ISO/TR 9080 ensure engineers can specify a known working life with confidence.
- ✓ Advanced, automated manufacturing processes produce smooth internal surfaces.
- ✓ **PE100** tanks are individually designed specifically for the required duty.
- ✓ Forbes preferred range of sizes can easily be adjusted to suit specific site constraints
- ✓ Standard **PE100** pipes & fittings are easily welded to the tanks, as unlike most moulded tanks, the polymer is the same.
- ✓ **PE100** allows a design life in excess of 25 years to DVS2205 & EN 12573. Long term guarantees are available.

Ticking all the right boxes - **PE100** is the chemical engineers answer to safe, long-term storage & processing of a vast range of liquids from water to highly toxic, aggressive chemicals.

PRODUCT RANGE

- ◆ Thermoplastics Tanks
- ◆ Tanks, Vessels & Fabrications
GRP/THERMOPLASTICS DUAL LAMINATES
- ◆ Tanks, Vessels & Silos
GRP COMPOSITES
- ◆ MINIBULK[®] Chemical Storage Systems
- ◆ Sectional Tanks
- ◆ Silos FOR SOLIDS & LIQUIDS
- ◆ Salt Saturators
- ◆ Pressure and Vacuum Vessels

- ◆ Fume and Odour Scrubbing Systems
- ◆ Vent Scrubbers
- ◆ CO₂ Degassers
- ◆ Stripping Towers
- ◆ Carbon Adsorption Units
- ◆ Bio Treatment Systems

- ◆ Ancillary Steelwork
- ◆ Skid Mounted Modules
- ◆ Turnkey Projects

For further information visit our website at: www.forbesgroup.co.uk



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