[redacted] CARLOW PRECAST TANKS LTD.

Manufacturers and Suppliers of Septic and Effluent Tanks for Sewage Treatment Systems, Water Reservoirs, Pumping Chambers, Culverts and Special Products.

Technical Data Sheet – 1000 Gallon Elliptical Precast Concrete Tank

Technical Data Sheet: 1000 Gallon Precast Concrete Tank & Standard 175mm Solid Lid.

General Description:

Single piece elliptical steel fibre reinforced precast concrete tank with a 175mm thk. conventionally reinforced precast concrete lid.

Max. Storage Capacity:

4.8 m^3

Load Capacity:

The tank & lid are designed for a soil overburden depth of up to 1m and the most critical of a 10 kN/m^2 imposed UDL or a 5,850 kg wheel load acting at any point on the lid surface. Heavy duty lids can be manufactured for more onerous load applications.

Materials:

Concrete:

Strength Grade:	C60/75 (75N)
Min. Cement Content:	350 kg/m^3
Max. Water / Cement Ratio	0.5
Max. Aggregate Size:	14mm
Max. Slump:	Not applicable – Self compacting mix.
Additives:	Glenium – Plasticiser / Water reducing agent.
	Crushed Limestone Powder – Filler

Reinforcement:

Tank:	40 kg/m^3 - 47/1.0 'Duoloc' Steel fibre reinforcement.
Lid	High yield type two reinforcement to BS 4449

Weights:

Tank:	3,200 kg (Without Internal Baffle Wall)
	3,450 kg (With Internal Baffle Wall)
Lid:	1,400 kg

Liquid Retention:

The tank is cast in a single pour to prevent the formation of cold joints. The joint between the tank & the lid is sealed with a bituminous filler (Note: The standard sealant is not suitable for potable water applications – In these instances a specialist sealant is required). The completed tank is designed to be watertight in accordance with BS 8007 – 'Code of practice for design of concrete structures for retaining aqueous liquids'.

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Ventilation:

Tanks for use in sewage, animal slurry or waste water applications should be adequately vented to prevent the accumulation of methane, hydrogen sulphide and other noxious gases. In addition to the obvious safety risks these gases can cause biogenic corrosion of concrete surfaces and significantly shorten the working life of the tank.

Design Life:

The tank has a design life of 50 years in a 'severe' category environment as defined by BS 8110.

Warranty:

The product warranty covers the first fifteen years from the date of delivery.

Manufacture:

Quality of manufacture, standard of workmanship & dimensional tolerances comply with BS 8110 Pt. 1. The tank is cast in one pour using self compacting concrete to prevent the formation of cold joints. All precast concrete elements are cured for a minimum of 48 hours prior to delivery.

Access Requirements:

The tank is generally delivered on a platform bodied truck with a hydraulic jib. Up to 6m reach is possible from the back of the truck to the centre point of the placement position. A minimum of 4.0m entrance width and 4.0m clear height are required.

Excavation & Base preparation requirements:

The depth of excavation should exceed the finished base level by a minimum of 150mm. The excavation should then be brought to level using crushed rock aggregate (40mm max. size), which must be compacted and levelled. In exceptional circumstances (Particularly heavy surface loading or unusually soft ground) a reinforced concrete base may be required.

The sides of the excavation must be suitably battered to avoid risk of collapse. To minimise the risks associated with deep, open excavations it is recommended that completion should be coordinated to coincide with the arrival of the tank. During placement it is imperative that personnel do not stand beneath a suspended load.

The safety of the excavation and the general works remains the responsibility of the purchaser.

Backfilling

The excavation may be backfilled using excavated material provided that topsoil is not used below a depth of 150mm and the backfill is free of large stones and cobbles (Larger than 75mm approx.). Where excavated material is unsuitable for backfilling crushed rock fill may be used (50mm maximum diameter). Backfilling should be completed in horizontal layers not exceeding 500mm depth, lightly compacted on completion of each layer (Note: Excessively heavy compaction can damage the tank). The lid should be in place and sealed before backfilling begins to avoid unnecessary contamination.

Fitting of Connecting Pipes:

For pipes of up to 300mm diameter the inlet and outlet openings can be fitted with moulded EDPM wall seals permitting a push through fit. The wall seals have an expected working life of greater than 50 years and are watertight to 0.5 Bar of external water pressure.

Floatation:

It is important to note that the tank will float if submerged in water when empty. If high external water levels are anticipated then a floatation check must be performed. Pending the result of this check appropriate anti floatation measures may be required. These measures include adding additional soil overburden or casting a hoop of insitu ballast concrete around the base of the tank.

Design Compliances:

BS 8007	Code of practice for design of concrete structures for retaining aqueous liquids.
BS 8110: Pt. 1	The structural use of concrete
	Dramix Design Guidelines for Steel Fibre Reinforced Concrete Structures - BEKAERT.

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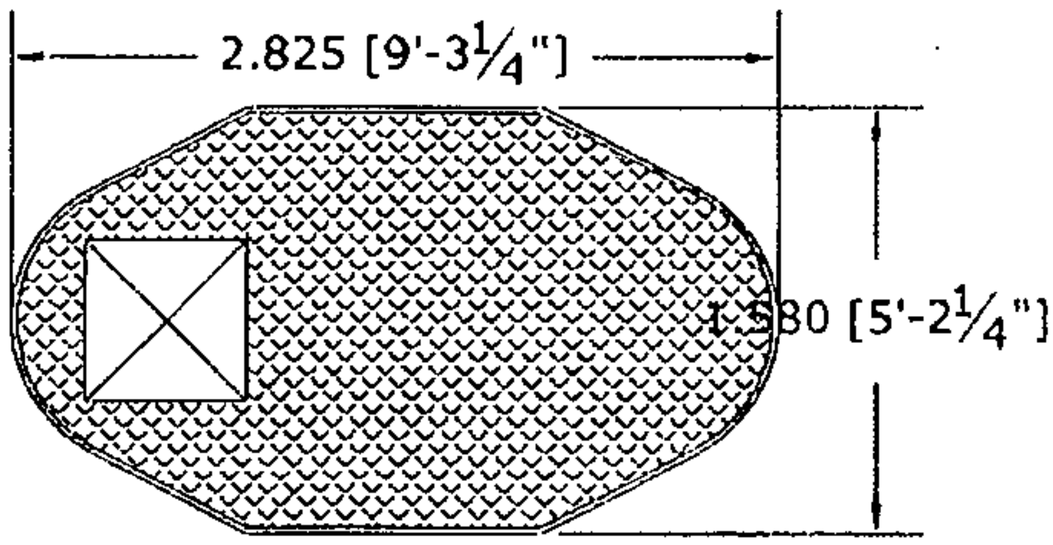
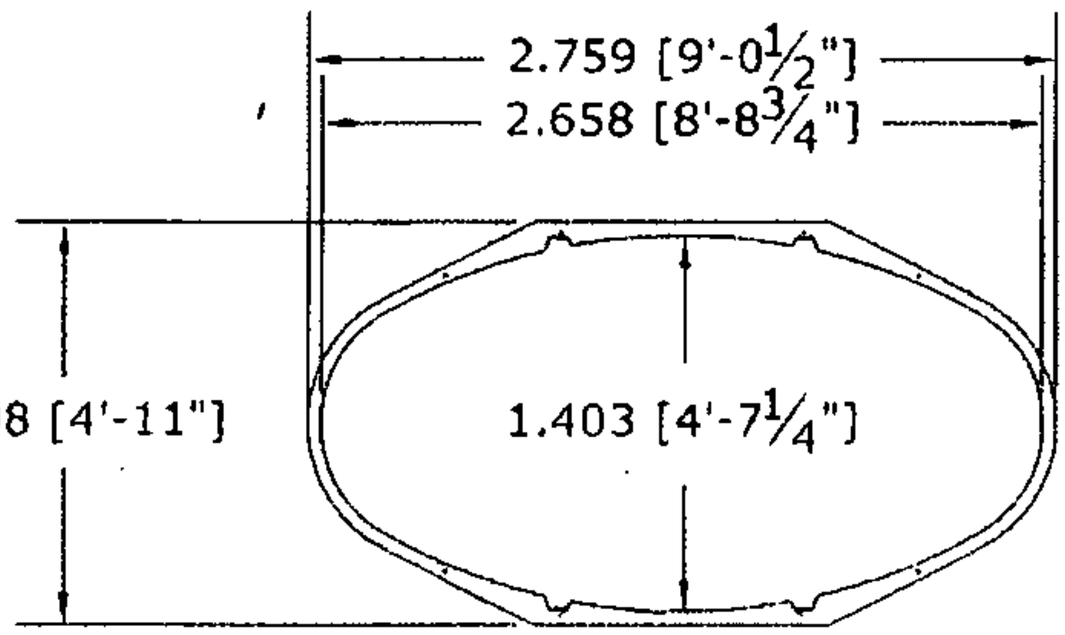
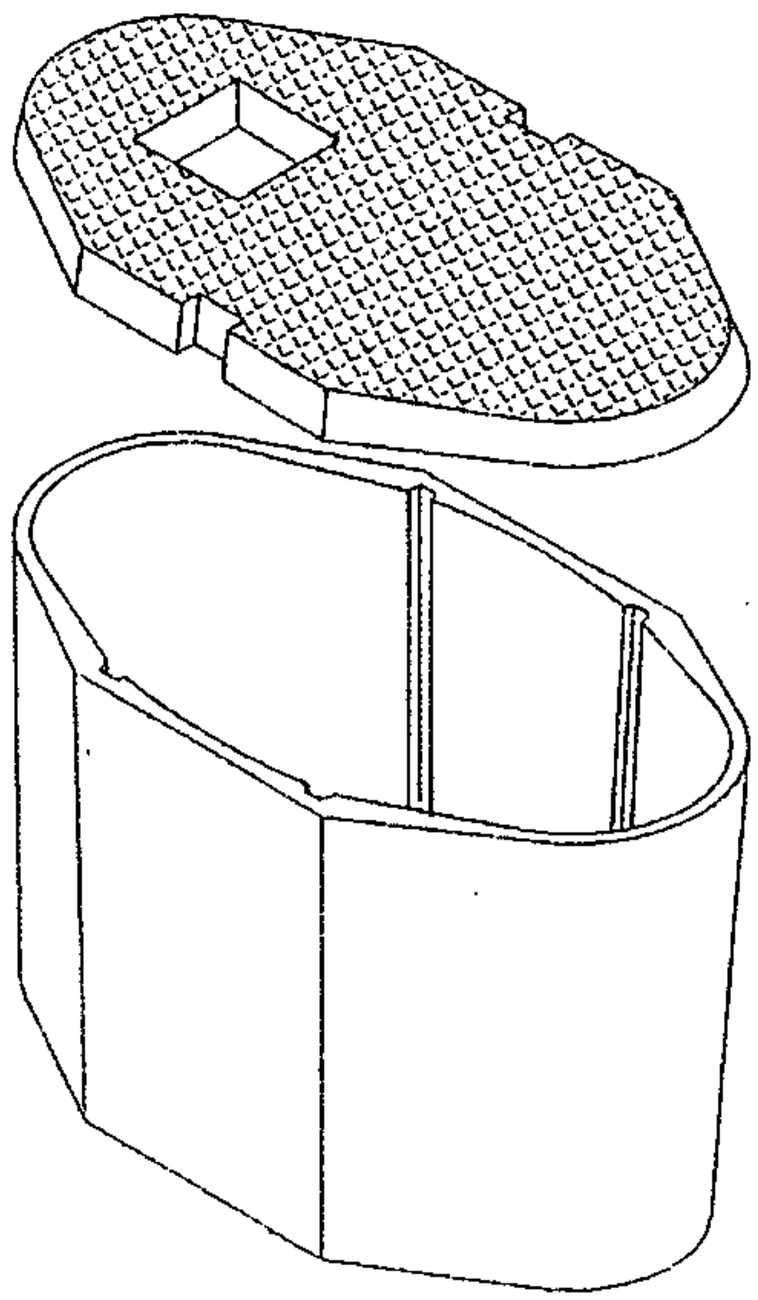
1000 GALLON (4.75 cubic metre) PRECAST CONCRETE TANK



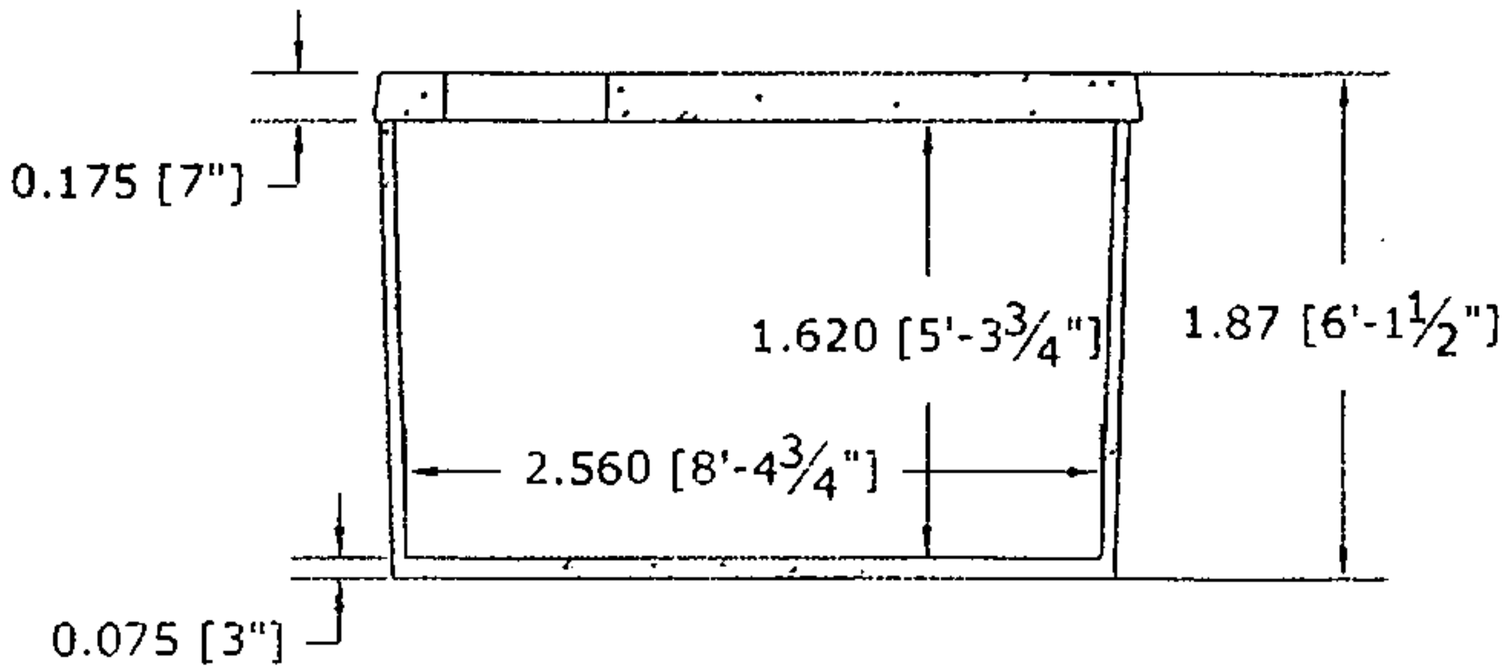
ROOF PLAN



FLOOR PLAN



3D VIEW



SECTION

600mm x 600mm access opening

Chequer plate patterned top surface to roof

Roof design to particular loading requirements

Standard weight 3.75 tonnes

Working capacity 1000 gallons (4.50 cubic metres)