

DID YOU KNOW?

We offer you solid and safe water storage solutions of the highest quality. Efficient production methods, fast and safe assembly ensure that our products can be utilised almost immediately. Our money-saving solutions and good track record prove that we aim to give our customers the best on the market.

Durable Longevity

Precast
concrete for
stronger
solutions.

The Dura Tank consists of precast concrete panels, prefabricated in a factory controlled environment for faster and a more cost-effective reservoir construction. It is ideal for mining industries, industrial and renewable energy projects.

WHY CHOOSE A DURA TANK

A concrete solution for a wide variety of applications

The Dura Tank is a cylindrical reservoir of pre-stressed, pre-casted concrete panels with grouted joints. Combined with horizontal post-tensioned strands, this new design enhances the versatility of the tank and meets the highest quality demand in the market.

The concept

The construction concept is based on combining the technology of prestressing and the post-tensioning of concrete panels on a cast-in situ bottom slab. The vertical joints between the precast and prestressed panels consist of a special grouted seal. Horizontal circumferential mono strands are pushed through cast-in ducts and post-tensioned in order to address the hoop stresses.

The horizontal joint between the panels and the bottom slab are concreted after the panels are lifted in place. This results in a waterproof tank that can be closed of by a precast, cast-in situ steel or tarpaulin roof.

The panels

The walls consist of slender precast panels, longitudinally prestressed. The panels are cast in various lengths of

3m, 5m, 6m and 7m. Different piping requirements can be catered for in the production yard, but must be communicated beforehand. Casting in a controlled factory environment allows us to use the best aggregates to ensure the very high quality and durability we all demand. After curing the panels it is shipped to site for installation.

The floor slab

The cast-in situ concrete floor is a site-specific engineer design. Floor slabs can vary from a normal floor slab up to a rafted slab on piles, depending on the soil conditions. The floor slab is cast by Aquadam, the client or by a local civil contractor. Using local civil contractors can reduce the cost of the floor slab, especially on remote sites, empowering local industries.

Construction of the panels

On site the panel joints are meticulously set out on the cast in-situ floor. A waterproofing mortar is applied on the joint between the panels. This mortar serves as a water sealant and transfers the load of the post-tensioning. The precast panels are lifted by crane and placed in position. After all the panels are placed, cables are fed

CHOOSE THE CAPACITY OR SIZE FOR THE SPECIFIC APPLICATION AND AREA

CAPACITIES



3m



7m



8.60m



32.60m



159m³
(159,000lt)



5,715m³
(5,715,000lt)

APPLICATIONS

- **FOR SEWAGE TREATMENT**
 - Sedimentation tanks
 - Digestion tanks
 - Aeration tanks
 - Storm water retention basins
- **FOR POTABLE WATER:**
 - Elevated reservoirs
 - Clarifiers
 - Filtration tanks
 - Rain water harvesting tanks
- **OTHER APPLICATIONS:**
 - Anaerobic digesters (Biogas)
 - Fermentation tanks
 - Sprinkler and fire fighting tanks
 - Safety tanks for flammable and dangerous liquids
 - Tanks for loose storage (salt, sand and chipping)
 - Agricultural applications

through the cast into ducts in the panels to tension the system. A special stress panel allows for these cables to be fed through, anchored and stressed a week after erection. Together, this ensures that the system is perfectly watertight and exceptionally durable.

Casting of the ring beam

After completion of the final post-tensioning process, the concrete surface at the wall and floor joint is carefully cleaned, pre-watered and the water-stop system is checked and altered if necessary. A 200mm concrete casting is performed around the bottom of the panels which constitute the bottom seal. □

FEATURES

Concrete units are produced in a controlled factory environment with guaranteed quality and durable longevity

• Relatively slender panels with reduced transport costs

• Efficient production and fast assembly provide shorter construction time and faster return on investment

• Mechanised and low labour intensive construction ensure a safer working environment in almost any weather condition

• Installation can be done virtually anywhere: sunken, partially buried or at ground level

• Different soil conditions can be addressed

• 'Supply and Install' product that's cost-effective and a money-saving solution

• Large variety of reservoirs in various configurations can be constructed

DESIGN SPECIFICATIONS

Design Code	Standard
EUROCODE 2:	Design of concrete structures - Part 3 "Liquid retaining and containment structures".
The South African Standard Code of Practice	Structural use of Concrete: SABS 0100-1 Edition 2.2 (2000).
The British Standard Code of Practice for	Design of Concrete Structures for retaining Aqueous Liquids: BS 8007:1987.
SABS 01060-1989:	Design loading for water retaining reservoirs, as amended 1990, 1991, 1993.



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086 100 10 10 • sales@aquadam.co.za

