MULLALY
A TANK SOLUTIONS COMPANY

FIBREGLASS PUMP STATION

DESCRIPTION

A Mullaly Fibreglass Pump Station is manufactured as a one-piece construction to exact project specifications providing a quick and cost-effective installation on site. The integral valve chamber minimises excavation periods and disruption to local flora and fauna as it requires less space in the overall design, resulting in a smaller environmental footprint and reduced installation costs.

In addition Mullaly can supply a separate wet well containing the submersible pump/pumps for the wastewater system where greater flexibility is required when configuring the waste water management solution.

Mullaly Pump stations are engineered and independently verified to withstand internal and external loadings providing a long design life.

USES

These FRP pump stations are suitable for a wide range of applications, including;

- Sewage Treatment Plants
- Subdivisions
- Commercial and Industrial Complexes
- Hospitals
- Mining and Construction Sites
- Camping and Caravan Parks
- Sporting Facilities
- Schools

ADVANTAGES

- WSAA- Water Services Association of Australia appraised and approved
- Reduces installation time and costs – no need for sealing or coating of surfaces or fittings
- Avoids differential settlement between wet wells and valve pits with a combo unit
- Improves serviceability by lowering confined spaces entry requirements to valve pit
- Long term design life and reduced life cycle costs
- 100% water tight, Solid wall construction from top to bottom

STANDARD SPECIFICATION SUMMARY

The following specification covers the main points to allow for when looking an FRP pump station design. A separate detailed specification can be sent through on request for all of the fit-out pipe work.

The unit shall be constructed as follows:

- An inner corrosion layer 0.5mm thick comprising vinyl ester resin reinforced with “C” glass or synthetic tissue.
- A backing layer 2.0mm thick comprising vinyl ester resin, reinforced with E Glass CSM, minimum 450g/m^2.
- An external corrosion layer 0.5mm thick comprising vinyl ester resin, reinforced with “C” glass or synthetic tissue.

The following Australian and International design standards shall be complied with:

- **AS 2634-1983** - Chemical Plant Equipment
- **AWWA C950** - Buried Structural Design
- **AS 9001-2008** - Quality systems for design/development, production, installation and servicing
- **AS 1170-1981** - Loading Code
- **BS 4994:1997** - Specification for design and construction of vessels and tanks in reinforced plastics
- **WSA 129:2011** - Industry Standard for Plastics Collection Tanks for Pressure and Vacuum Sewers

STRUCTURAL LAYER OF UNITS – VERTICAL SHAFT	VALUE
Ultimate Tensile Strength	600 MPa
Tensile Modulus	30 GPa
CORROSION BARRIER AND BASE	**VALUE**
Ultimate Tensile Strength	100 MPa
Tensile Modulus	7 GPa

STRUCTURAL DESIGN CRITERIA

The structural design of the FRP Walls of the Packaged Pump Stations shall be Solid FRP Construction to the design thickness specified by the Water Authority’s approved Registered Practicing Composite Engineer.

The FRP pump station must meet the following WSSA standards
WSA04-2005 V2.1 (or WSA 04:2018 draft) - Sewage Pumping Station Code of Australia

FRP components are to be designed as “stand alone” unit, capable of withstanding all internal and external loadings placed upon it with the exception of the following:

- Hydro static floatation forces, these are to be countered by external ballast material. Walls and base to be designed to withstand loading due to ground and hydrostatic pressures; and
- External loading placed on the roof of the FRP pits, to be taken by reinforced concrete slab spanning the station.
- Installation loads may be mitigated through suitable temporary supports or design assessment.

Prior to final design specific CAD fabrication drawings are to be supplied for the client’s approval, with detailed layout, description and locations of all fittings, connections and levels shown.

PRODUCT RANGE

PRODUCT NAME	DIAMETER (METRES)	DEPTH (METRES)
ME150	1.5	2-14
ME180	1.8	2-14
ME200	2.0	2-14
ME250	2.5	2-14
ME275	2.75	2-14
ME300	3.0	2-14
ME375	3.75	2-14

SUPPORTING DOCUMENTS

Please contact Mullaly directly for documentation such as installation guides, backfill guidelines, CAD drawings and ballast calculations as well general advice on pump station selection.