Polymaster

Self Draining Tanks

Installation Manual

Contents

APPLICATION NOTES

- Tanks are suitable for the storage of liquids up to and including 1.5 SG.
- Compatibility with fittings much be checked by user prior to filling tank
- Stability notes to be considered (see anchorage section)
- Drawings are available and may contain information relating to freight and handling
- Note: A Specific lifting guide exists as a separate document, please refer to this as part of planning your lift or contact Polymaster for a copy of the document.

About Polymaster

TRUSTED PARTNER

After a quarter of a century, Polymaster now stands as the industry standard in liquid storage. Why? Because we deliver more than a product. We deliver a promise. We are relied upon to store, secure and safeguard on behalf of our customers.

SOLUTIONS DELIVERED AT EVERY SCALE.

Whether it's a humble backyard water tank, complex chemical storage or vital firefighting equipment, we take on the responsibility our customers put in us because we know we have the unrivalled experience to deliver.

WE MAY BE KNOWN FOR OUR TANKS. WHAT WE PROVIDE IS ENGINEERED PERFECTION.

Our holistic solutions are creative, considered and customised. Integrated, state-of-the-art and end- to-end to meet specific problems. Best of all – they work. We have thousands of customers, businesses, government departments and entire communities to prove it.

Today, we continue to be proactive, investing time and energy into the role our technology will play in years to come. We're proud to be at the forefront of the industry, ahead of the curve and leading the way.

WE'RE AUTHENTIC

A proud Australian business since 1994, we've earned an industry leading reputation through reliable products and honest, trusted, dependable service. We listen to our clients, and we respond with quality solutions which will help them to thrive. Because at the end of the day, their business is our business.

WE'RE PRECISE

From our meticulous process to our extensive distribution network and after-sales support, every part of the Polymaster experience is carefully considered. The result? Precision designed products manufactured to perfection to do the job, and a holistic end-to-end service with complete care for guaranteed satisfaction.

WE'RE INNOVATIVE

We embrace each new challenge as a way to improve our products and our services. Known for thinking outside the square, we bring our collective creative smarts to every opportunity, disrupting conventional wisdom and delivering with energy and expertise. Every day, in every way, we go above and beyond.

QUALITY ASSURANCE

Our tanks undergo rigorous testing to ensure quality. This includes hydrostatic testing, and ultrasonic thickness testing to ensure the material we're using is the correct thickness. For our impact testing, a sample from each tank is frozen and impact is applied from a specified height.

RESEARCH & DEVELOPMENT

We're always innovating, with a range of polymers designed to store any type of chemical or liquid. Our polymer chemists are here to help you determine which type of material to use.

Quality Assurance

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ENGINEERING

Working closely with your engineering teams, our own highly skilled engineering personnel are ready to assist with all mechanical, polymer and chemical related requirements.

PROJECT MANAGEMENT

Our dedicated project managers take full control of all our industrial projects to ensure they stay on time and within budget, as well as providing you with the convenience of a single point of contact. At Polymaster our highly experienced project managers have an in-depth knowledge of industrial projects.

MANUFACTURING CAPABILITIES

From processing our raw materials through to the finished product's final fit-out, we have control over the entire manufacturing process to ensure absolute quality is upheld at every stage.

DELIVERY

Polymaster tanks can be delivered direct to site. We arrange specific delivery times to suit your timetable and on-site requirements.

SERVICE

Supplying the complete package from design and engineering right through to manufacturing. We arrange the fit out of dosing systems and much more, so you don't need to deal with multiple suppliers. We offer on-site maintenance and inspections post installation to ensure everything continues to run as smoothly as possible.

Australian Standards

Polymaster is certified to ISO9001 International Standards and undertakes regular audits from third- party auditors.

Our tanks are certified to the Polyethylene tank standard for water & chemicals, AS/NZS 4766:2006 for a range of chemical specific gravities. This means that every tank is independently tested & certified to SAI Global's AS/NZS 4766 standard and labelled to display manufacturing details and serial number for complete traceability.

ABOUT PRODUCT

Polymaster supply a wide range of chemical storage solutions with storage capacities up to 50,000 litres.
Our Industrial grade tanks are Australian made and certified to provide safe storage of diesel, oil, solvents, chemicals and other hazardous liquids. By following the installation requirements, this tank will give you many years of trouble-free service.

General Health & Safety

- Installation and use of this product should only be carried out by properly trained and approved personnel.
- This manual contains important information concerning the safe installation and use of this product. Read the manual carefully before installation and use, paying attention to all safety warnings.
- Users of this product are responsible for the safe and correct use of this product.
- Any changes to this product, which have been done without consulting the manufacturer, will invalidate all warranties and guarantees.
- The manufacturer will not be responsible for any accidents or damages caused by incorrect installation or use of this product.
- Polymaster recommends that customers asses the suitability of chemicals being stored with the materials used in the construction of this product
- The components must not be altered or tampered with due to potential risks to personnel.
- Users of this product are responsible for the safe and correct use of this product.
- It is the responsibility of the end user / customer to ensure appropriate PPE, health and safety measures, safe work practices are employed in conjunction with the use of this product.
- If present, control boards are not suited for use in areas where there may be risk of explosion.

Chemical Resistance

CHEMICAL RESISTANCE

A chemical resistance chart may be found on our website www.polymaster.com.au. It is recommended that you discuss your specific chemical storage requirements with a Polymaster consultant or study the comprehensive chemical chart to ensure compatibility.

A more comprehensive list is also available on request.

POLYETHYLENE MATERIALS

Polymaster uses a variety of Polyethylene resins that have been specially designed for the rotational moulding process in the manufacturing of chemical and process tanks. These advanced materials exceed all requirements of the Australian standard AS/NZS 4766 Polyethylene Storage Tanks for Water and Chemicals. Key features of the mechanical properties include: Excellent impact resistance, strength, environmental crack resistance. These materials also carry a high level of UV and antioxidant stabiliser designed for the harsh outdoor Australian environment, minimum of UV 12 rating.

TEMPERATURE & SG RATINGS

The temperature of the chemical / liquid stored has different effects on the Polyethylene and can produce different effects within the same chemical range. Contact a Polymaster consultant if you are unsure about your application. A continuous liquid temperature above 40 degrees Celsius is not recommended for these tanks. Tanks are designed to a maximum Specific Gravity (SG) rating to suit the application and must not be exceeded.

VENTING

These tanks cannot be pressurised and are designed to operate at atmospheric pressure. Proper venting stops pressure or vacuum developing as the tank is top ed or emptied. It is recommended that the vent should always exceed the size of the largest fill or discharge. Check that the chemical you are using is able to be vented to atmosphere without prior treatment.

GENERAL LOCATION

There are many aspects to consider when selecting the best location for your tank. Some points to consider are:

- Excessive wind or seismic forces
- Area subject to flooding
- Safe distance from any source / equipment generating heat or flames

Generally accessible location to ensure safe operation, maintenance and distance from other chemical in line with authority storage requirements.

Regulations

There may be local, state or national regulations that apply to your proposed tank and agitator installation. Check with the relevant authorities concerned to ensure all requirements are complied with. A thorough evaluation of the proposed site is recommended prior to any placement or installation works are carried out.

Service access and safe egress paths away and around the tank and agitator system in line with Australian and local authority requirements to suit the specific chemical being stored is the responsibility of the installer and user of the tank. Do not block any service access or egress paths. Position the tank and agitator system to allow for ease of regular inspection and maintenance. It is recommended that tanks are not installed adjacent to equipment or buildings that will impact cost effective removal and or replacement of the tank in the future. Use guards and physical restraints to prevent tank fittings and piping from impact damage and protect personnel from potential chemical leakage.

TRANSPORT, HANDLING AND STORAGE

These instructions should be read in their entirety before commencing installation of the Tank.

A. Loading and off-loading must be carried out using only professional equipment. Craneage at site is the responsibility of the customer/end user to suit the installation location.

For further advice, contact Polymaster on 1300 062 064

Installation

THESE INSTRUCTIONS SHOULD BE READ IN THEIR ENTIRETY BEFORE COMMENCING INSTALLATION OF THE TANK

- DO NOT TRANSPORT WITH LIQUID OR DRY MATTER INSIDE.
- The Tank must be protected against mechanical damage during transport and storage.
- Loading and off-loading must be carried out using only professional equipment. For Example, Crane rated to the tank weight. Craneage at site is the responsibility of the customer/end user to suit the installation location. Fittings covers, sockets or other protruding elements, which are not designed for lifting or moving the tank must not be used to lift or move the tank.
- The tank must never be pushed, pulled, dragged, or rolled.
- Loading and transport areas must be smooth and free of sharp edges. During transportation, the tank must be secured to prevent the tank from moving.
- Storage time of the chemical being stored is to follow the handling requirements specific to that material and is the responsibility of the customer/ end user. Consult with the chemical supplier for information.
- Tanks are not suitable for live loads, please discuss specific access requirements with Polymaster.
- For all tank installation and maintenance, please take into consideration Health & Safety and Local Building Regulations.
- A solid flat and level plinth suitable for the anchorage requirement of the tank is required. This plinth is to be engineered by the user and is to be compatible with the anchorage requirements detailed below. Engineering of any restraint or tethering system to suit specific local or chemical specific storage requirements is the responsibility of the customer/end user.
- Prior to installing, inspect for damage, if damaged do not install.
- In no cases should any modifications such as holes being drilled, or additional fittings installed into the tank wall in additional to those provided on the tank as supplied by Polymaster.
- The tanks must be adequately restrained to ensure stability whether full or empty.

USAGE

After installation, please ensure that this instruction booklet is left with the end user for future reference. Self-Draining Tanks are warranted against faulty manufacture, provided that the following criteria are adhered to (applicable to all models):

- The warranty excludes ancillary fittings such as contents measuring gauge or mechanical pumps. Further warranty information on ancillary fittings and pumps is detailed in the supplier's manual and/or product information.
- The tank is installed and commissioned in accordance with this installation guide.
- The tank is installed and commissioned by a suitably qualified person.
- The tank has not been subject to misuse, careless handling, faulty installation, or any repairs have not been attempted or carried out other than by authorized, competent service staff.
- The tank has been purchased by the end user and is not for hire purposes.
- The tank is installed above ground.

Installation (cont.)

- The tank is inspected every 3 months or to a total volume dispensed as required for that chemical or as specified by the dispensing/dosing system. Which-ever occurs first. This is to be performed by a suitably qualified service engineer or technician.
- Immediately upon discovery of any defect in the tank, the tank must be safely drained immediately and taken out of service in line with that chemical's safe handling procedures. We recommend contacting the chemical supplier as part of this process.

PIPING AND VALVES

All hoses, piping and valves must be adequately supported independently of the tank. Flexible connections must be used when connecting to fittings installed on the tank, to ensure successful installation and tank warranty. All fittings, valves, and piping should be shielded to prevent possible physical impact and protect personnel from chemical spray or leakage.
Also refer to the Flexible Connection sections in this manual.

WARNING: Failure to support and protect valves and piping and to provide engineered foundations for tank will void your warranty and could cause chemical release resulting in serious injury and or property damage.

FLEXIBLE CONNECTIONS

1. INSTALL FLEXIBLE CONNECTION IN ACCORDANCE WITH THE SPECIFIC MANUFACTURER'S INSTALLATION GUIDELINES.

Flexible connections are required to protect the tank and fitting from the normal movements during its service use and life, and to isolate them from external loads and vibrations coming from the attached piping systems.

A. Flexible connections are not to be used for correcting piping misalignment. The flexible connection and mating flanges must be installed in a centred, aligned and mated position.
B. Attach only FULL-FACE flanges to the flexible connection. They are not designed to attach directly to tank wall.
C. Ensure adequate clearance between bolt ends for full use of flexible connections.
D. Provide pipe support adjacent to the flexible connection.

Flexible Connection Recommended Minimum Specifications:

Axial Compression ≥ 38mm

II. Axial Extension ≥ 15mm
III. Lateral Deflection ≥ 19mm
IV. Angular Deflection ≥ 14° 2

INSTALLATION OF FLEXIBLE HOSE CONNECTIONS

A. Check flexible hose is compatible with chemical being stored and is of sufficient size.
B. Support the flexible hose in such a manner that horizontal and vertical movement is not impeded. It is the responsibility of the tank installer/ purchaser to install the appropriate flexible connections between the tank and pipework. Failure to comply with this will void Polymaster's warranty.

Installation (cont.)

TANK LIFTING POINTS

Note: Specific lift plans exist as a separate document, please refer to this as part of planning your lift, or contact Polymaster for a copy of the document.

In the event of tank relocation - the tank must be empty, A suitably equipped forklift maybe used, otherwise the tank lift should be performed using the moulded lifting lugs. Do not lift the tank by using any of the installed fittings. The tank must be empty when lifted, taking care not to damage the tank walls, base, roof, pipework, and fittings. Care must be taken to ensure the wire-rope assembles are only bearing the weight of the base. Please contact Polymaster for appropriate lifting plans, for your tank type.

ANCHORAGE

It is imperative that to maintain stability of the tank in high wind loads conditions on a near empty chemical tank, the minimum fill levels from the invert of the tank (under the outlet) identified in the table below. The only exception to this is when the chemical tank is being emptied in which the maximum time span for the empty chemical tank is recommended to be 48 hours as weather permits. If this length of time needs to be exceeded appropriately designed temporary tethers shall be installed from the lifting lugs at the top of the chemical tank down to the supporting reinforced concrete slab.

SG of CONTENTS	MIN FILL LEVEL (mm)
1.0	778
1.5	588

Care & Maintenance

Regular routine visual inspections of your agitator is important to ensure safety of personnel and preservation of stored chemical. Any sign of stress cracking, UV degradation and/or other signs of tank failure should be immediately reported and a full inspection carried out by authorised Polymaster personnel.

A. Plan and initiate a maintenance regime for the agitator system. Aim to keep all system equipment in good working condition.
B. Spare parts must comply with the requirements of the manufacturer and be of like for like type.
C. Any faults or alarms should be reported to the users station manager/site manager or equivalent immediately.
D. Protect against unauthorised access.
E. Carry out a daily visual check of the tank and ancillary equipment. Any leaks are to be promptly recorded, reported and repaired by a qualified service engineer or technician. If liquid is detected by alarm or observed around the tank, promptly record, report and arrange for corrective action. Corrective action may include locating the source of the liquid, possibly caused by an overfill event or leak. If the liquid source is not the result of an overfill event, contact Polymaster for additional advice. Further action may include emptying and isolating the tank.
F. Ensure that contamination not intended to be in the tank is prevented from entering at any time either by design or a managed maintenance regime. If the stored liquid or fumes are allowed to escape outside the tank, ensure you check local EPA, Australian standard and local Authority guidelines and requirements for compliance.
G. Metal items and control panels that could be affected by the fumes must be protected from corrosion by using good engineering practice. Additional corrosion protection to suit the chemical being stored is the responsibility of the customer or end user.

Recommended Care Instructions

ITEM/AREA OF INTEREST	ACTION RECOMMENDED	FREQUENCY
Visual Inspection	Visually inspect the entire unit for any changes in condition.	1 Month
Cleaning	Clean the unit regularly with soapy water and a cloth to remove any buildup of dust/ dirt/ chemical spillage.	3 Months
Location	Confirm that the installation environment matches that of the original installation. Review changes for any influence to the safe use of the tank such as wind or distance to people and traffic.	As Used / 12 Months
Tank Condition	Temperature & SG Ratings of the product. Review the product being stored in the tank and confirm that they match those intended for original tank use. Inspect abrasions or cuts on the tank. Assess tank for excessive weathering. Assess tank for any swelling, bulging or deformation of tank walls.	As Used / 3 Months
"Chemical Degradation and Compatibility"	Confirm the chemicals currently used are compliant with the original installation. Review any change with Polymaster and the Polymaster Chemical Compatibility Chart.	As Used / 12 Months
Valves	During normal operation, check the action of installed ball valve handles and/or Slide Gate.	As Used / 3 Months
Vent	Check and clean around the vent regularly to remove any buildup of dust/dirt. Check that there is nothing impeding the operation of the vent.	3 Months
Seals	When the unit is completely empty, undo and remove the PVC-U ball valves. Check the condition of the seals within the ball valve. Replace if the seals have deteriorated.	12 months
Gaskets	Visually inspect the condition of the flanges and connected fitting regularly for any changes or leaks. If any change is noted, completely drain the tank until empty then inspect and service the unit and replace gaskets as needed.	As Used / 3 Months
Screw Lids	Check that the screw lids are still tightly secured.	As Used/12 months.

Recommended Care Instructions

ITEM/AREA OF INTEREST	ACTION RECOMMENDED	FREQUENCY
Weld on Fittings	Investigate any degradation of weld and/or excessive stress marks. Check for any leakage or surface cracks developing. Check fitting distortion including vertical or horizontal alignment.	As Used/12 months
"Flexible Connections"	Check positioning and alignment of flexible connections. Assess compatibility of connector to user's systems. Review for excessive axial or lateral compression.	As Used / 3 Months
Electrical / Sensors	Visually inspect the condition of the power box and associated components. Clean the power box with a damp cloth to remove any buildup of dust/dirt/chemical spillage.	3 Months
Foundation/Base	Check the condition of the tank foundation for any erosion, cracking or subsidence. Repair as required. Ensure any repair materials meet the Installation Guide requirements.	3 Months
Moving	Refer to Installation Handling section for information on moving the tank.	
Tank Restraints	Review all restraints, tie down lugs and associated fasteners to ensure they are secure, meet "As Installed" condition and performance and are in good condition.	As Used / 3 Months

INTERNAL INSPECTION

It is recommended that an internal inspection is undertaken over regular intervals. Polymaster recommends this is done yearly. Empty the tank and neutralise any chemical remaining. All chemical handling must be safely performed in line with Australian Standards, EPA and local authority requirements for the specific chemical being stored. Where a confined space entry is possible, thoroughly clean the inside of the tank, a dirty tank will potentially mask faults. Examine the tank surface for any cracking or surface degradation. Pay particular attention around fittings and the base in the radius where the cone meets the wall.

If a confined space entry is not possible, clean inside as well as possible from the inspection cover and use a light to inspect the internals.

WARNING: Do not enter a tank without confined space entry training and relevant personnel and permits. Use adequate approved ventilation equipment when inspecting the internals of a tank as fumes and vapours may be present. Use necessary fall protection equipment to prevent against accidental falls relating to entry method or slippery conditions. Failure to comply with these warnings could result in injury or death.

Warranty

This guarantee is not valid for the following defects:

- Mechanical damaged caused by the user, dealer or improper maintenance.
- Faults, damage or premature wear caused by improper use.
- Damage caused by third parties.
- Repairs carried out by unauthorized service personnel.

Polymaster products are guaranteed against material or manufacturing defect and have the following guarantee period commencing from the date of the invoice:

- For polyethylene tanks: 5 years
- For accessories/components: 12 months (i.e. agitators and frames) – or as per manufacturers warranty
- Excluding Hoses, Nozzles and sensors which are 3 months

Polymaster

→ 1800 062 064
→ polymaster.com.au

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