



Hot Water Vessels



Date:		Inspection Authority:	
Capacity:		Com Allow:	
Design Temp:	°C	Operating Temp:	°C
Heating steam:	Bar	Electrical:	V
Design Pressure:	Bar	Working Pressure:	Bar
Test Pressure:	Bar	M.F.P.P.:	Bar
Burner - Primary 1:		Secondary:	
Primary 2:			

MACROTEC
Engineering Simplicity

Hot Water Vessels

Macrotec designs and manufactures a range of High Quality Vessels for hot water storage, for use with heat pumps, electrical elements, steam and waste heat.

Making use of the highest quality materials, our standard range of vessels are all rated at 600kPa and up to 95°C. All pressure vessels are supplied with a datapack containing the material certificates, welding certificates and the quality protocols followed. Third party testing and verification is available upon request.

Custom designed vessels are also available, with Macrotec producing a complete design to the required specifications.

SANS 347: All vessels are categorised and inspected according to SANS 347.

ASME VIII Div. I: All our vessels are designed in strict accordance with the pressure vessel standard ASME VIII Div. I to ensure global compliance of our design to the highest safety requirements.

ASME IX: Macrotec welding procedures and welders are certified to ASME IX, to ensure the highest level of quality during manufacturing.

ISO 9001:2008: Macrotec is certified to ISO 9001:2008 Quality Management Systems. To ensure the highest quality, all vessels go through an extensive quality protocol, including Dye Penetrant Inspection of welds and Dry Film Thickness testing of coatings.

What is a Hot Water Vessel?

Hot water vessels, also known as tanks or boilers, are used in the generation and storage of hot water. This is not only generated for bathrooms and kitchens, but for laundries, high temperature cleaning, wood drying, green houses, central heating and various industrial processes.

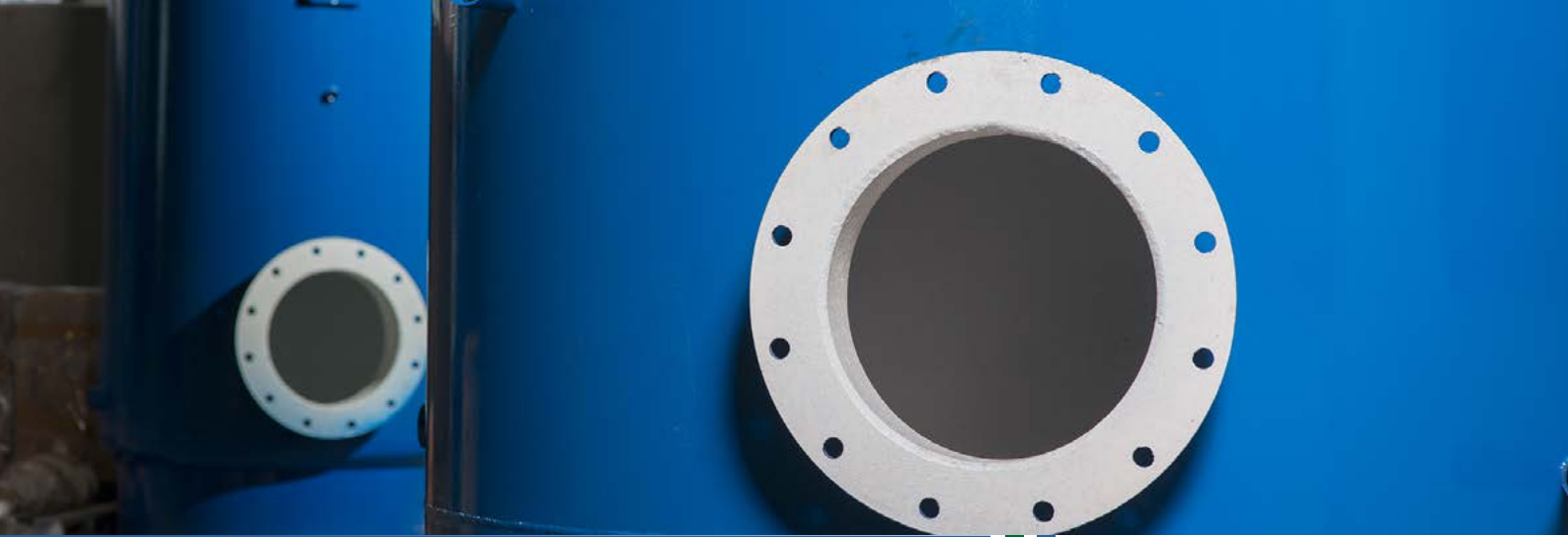
Water's use in heating applications is due to water being a good heat storage medium. Water has a high heating capacity, is easy to generate and store, non-toxic, and less dangerous than other storage methods. When efficiently insulated, heat losses will also be minimal.

Quality

Quality is a critical aspect to everything we do at Macrotec. From first contact with a customer, until decommissioning of equipment decades later, we strive to deliver great quality products and services.

We are certified to ISO 9001:2008 Quality Management Systems, with stringent checks on everything we do. This goes beyond checklists and QCP's, to strict control of manufacturing and processes and even to the thickness of the coating applied to every single product.

Our ethos is straightforward: Quality, Reliability, Simplicity, Value, and Technological Expertise.



Typical Uses:

Our vessels are used in various types of installations, most commonly in one of the following:

- **Heat Pumps:** Our vessels are used as a hot water storage tank, with the heat pump producing the hot water. Our pressure vessels have been designed in collaboration with major heat pump distributors to ensure compatible installation can be made. Back-up elements are also available, as are electrical panels to regulate the heat pump and back-up elements.
- **Calorifier with Electrical Elements:** Our vessel is equipped with elements to generate hot water, independent of any external hot water source.
- **Calorifier with Steam Bundle:** In these installations a steam bundle is used in place of electrical elements, with steam providing the energy source to heat the water.
- **Waste Heat:** In these installations, waste heat provides the heat source to heat the water. Hot water is heated, providing an energy efficient heating process.
- **Storage tank:** Vessels are purely used for storage, with water heating taking place in a different process.

Standard Vertical Vessel Range

Volume (L)	Dished End Diameter (mm)	Overall Height (mm)	Corrosion Allowance Dish (mm)	Corrosion Allowance Shell (mm)	Operating Pressure (kPa)	Design Pressure (kPa)	Test Pressure (kPa)	Dry Weight (kg)
500	750	1577	2,26	3,45	600	6734	876	280
1000	920	2035	1,61	3,08	600	678	888	380
1500	1070	2135	1,05	2,76	600	680	883	430
2000	1070	2685	1,02	2,74	600	685	891	525
2500	1280	2457	1,25	2,31	600	683	888	565
3000	1280	2857	1,22	2,29	600	687	894	645
3500	1280	3157	1,2	2,28	600	691	898	705
4000	1450	2964	2,58	2,93	600	688	895	875
4500	1450	3214	2,56	2,92	600	691	899	940
5000	1600	3065	2,01	2,61	600	690	896	980
6000	1700	3299	1,61	2,38	600	692	900	1110
7000	1800	3313	1,23	2,17	600	692	900	1175
8000	1900	3366	2,85	3,95	600	693	900	1605
9000	2100	3184	2,12	3,54	600	691	898	1665
10000	2200	3268	1,73	3,32	600	692	900	2190

Further Specifications

- Operating temperature of up to 96°C.
- Material of construction is SJ355JR/300WA (graded plate).
- Manhole of 400NB.
- Vessel is internally coated with glassflake epoxy to 250 micron.
- A sacrificial anode is supplied with each vessel.
- Two lifting lugs for easy lifting.

What makes our Hot Water Vessels better?

- No shortcuts are taken at Macrotec. Vessels are built in strict accordance with regulations, making sure our customers stay on the right side of safety requirements.
- All vessels are designed in accordance with ASME VIII Div. I, meaning that we use higher grades of material that is certified.
- At Macrotec we realise that real world conditions are normally less than ideal, thus we provide extra corrosion thickness and use higher quality coatings to ensure that you have no problems further down the line.
- To ensure longevity of your equipment, we have made it easy to maintain your vessels, with a large man-hole opening and an easy to apply coating system.
- If you need a custom port layout or if you face size constraints, we can design and manufacture a vessel to your exact requirements. Custom designs can include different materials, thickness, coatings, pressure or temperature ratings or sizing.
- Quality and reliability is our number one concern, thus we take a few extra steps to ensure quality, such as Dye Penetrant Testing of Welds and Thickness Testing of our coatings.

