

Design | Supply | Manufacture | Install | Commission

DHW & LTHW Generation	Heat Exchangers	Solar Energy
Booster Sets & Pressurisation	Package Plantrooms	Chillers & Heat Pumps
Steam Packages & Equipment	Gas & Biomass Boilers	Buffer Vessels
Condensate Removal & Recovery	CHP & Gasification CHP	Complete HVAC Integration



Enamelled Steel Material Description & Protection (ALG, ADG & ABG)

Our range of enamelled steel cylinders are manufactured from carbon steel. The internal of the tanks are coated with a modified epoxy resin, suitable for potable water. The tanks are then cured within an oven to complete the lining process. These tanks are manufactured and hydraulically tested (100% of tanks).

The corrosion protection treatment is an innovative system for protecting metals, introduced by recent developments in resin studies.

The lining of the cylinders has the following characteristics

- The glass enamel applied is inert and not subject to corrosion due to its high resistance to aging
- It is water repellent and impermeable to vapours and humidity
- It has practically zero moisture absorption and the thermal stability is maintained at both high and low temperatures, so that even ranges of -5°C to +95°C become bearable for the lining despite frequent cycles and maximum stress
- High impact resistance and very low coefficient of friction, which avoids large and dangerous adhesion phenomena, occurring in most cases to calcareous deposits
- Low dielectric constant that remains constant as the operating temperature changes

The treatment is carried out with the following phases:

- Sandblasting and phosphating of the internal surface of the tank
- Washing with demineralised water and subsequent drying
- Application of polymers and polymerisation
- Application of resins
- Cooked in oven at a temperature of approximately 200°C for 20 minutes

Hard Water Areas:

In some areas of the UK and the world, the water is hard. Hard water is water that has a mineral content (in contrast to soft water). Hard water is formed when water percolates through deposits of limestone and chalk which are largely made up of calcium and magnesium carbonates. These minerals when exposed to heat can deposit on the shell wall and can form scale and in some cases, corrode the cylinder wall. Corrosion of a metal structure occurs mainly in areas where there is a passage of current (redox process) from the structure to the external medium (water or gas) causing a dissolution process of the structure itself.

Considering the importance of protecting the metal from corrosion, the systematic control of the anode and the immediate replacement in case of consumption is highly recommended. To provide cathodic protection in our cylinders, we supply electronic anodes as standard.



Design | Supply | Manufacture | Install | Commission

DHW & LTHW Generation	Heat Exchangers	Solar Energy
Booster Sets & Pressurisation	Package Plantrooms	Chillers & Heat Pumps
Steam Packages & Equipment	Gas & Biomass Boilers	Buffer Vessels
Condensate Removal & Recovery	CHP & Gasification CHP	Complete HVAC Integration



Cathodic protection using impressed current electronic anode

As an alternative to galvanic systems (combination of materials with different electrical potential) another protection method is available, consisting in imparting to the metal structure to be protected a direct current equal and opposite, obtaining this way the neutralization of voltages formed inside the cylinder.

Thanks to modern techniques, an innovative cathodic protection electronic system is available, by impressing direct current. The Main advantages are:

- Active protection by impressing direct current from an external source.
- Excellent operational flexibility, for response to different types of internal lining and to variable mass of water.
- Maintenance costs reduction due to the permanent protection of the system.



Cathodic protection using sacrificial anodes

We also offer sacrificial anodes for our cylinders, our AMA-032 range, available in lengths of 500mm, 600mm and 800mm. Each anode has a 1¼" BSP male thread for installation and can be supplied with testers.

