Environmental status report for Bridgestone GRP tanks from Dematec Water

Dematec is committed to continuous environmental improvement. Our clients are generally showing an increased awareness of environmental issues when placing orders or making inquiries about our Bridgestone glass reinforced polymer (GRP) tanks. The concept of Green Buildings is gaining popularity. Recyclability, sustainability and carbon footprint impacts are becoming important considerations when designing and building. The life cycle of a water tank from manufacture through to its disposal is becoming the approach to choosing the most suitable tank for a building or outdoors.

Our externally reinforced Bridgestone GRP tanks offer significant environmental benefits – they weigh less and require less energy to transport and install than equivalent steel tanks, they have excellent mechanical properties and are corrosion free. Design life is in excess of 40 years and over this time, maintenance requirements will be minimal.

Approved for potable water

Bridgestone's GRP tanks are approved for potable water in this region – AS/NZS4020. They are also approved in the USA (NSF61) and other developed economies. Awareness of VOC emissions (volatile organic compounds) however has prompted some clients to seek more information about GRP. There are various forms of GRP (also known as FRP). The GRP used to make Bridgestone water tanks is a composite made from a Bridgestone compound called SMC and it is placed in a compression mould and cured under heat. The process eliminates any toxic potential (a phenomenon called "out-gassing" that occurs with lesser cured GRP and/or Poly type products). This process also results in minimal material wastage and is low in energy inputs. GRP from other sources may not be made in this fashion. Less expensive brands are likely to be made from spray-up or hand lay-up methods. These do not have the strength or the environmental attributes of Bridgestone's GRP panels.

No mess or waste on site

Every Bridgestone GRP water tank is made for the specific requirements of the client. The tank panels and steel supports are selected, packed on pallets and shipped to site for assembly. There is no need for cutting or welding on site and all materials are used in the installation, leaving behind a clean and safe site with zero wastage.

More energy efficient

Embodied energy refers to the amount of energy required to manufacture and to supply to the site of use of a product through to its destruction and decomposition. In a recent independent analysis of steel, aluminium, stainless steel and GRP for the construction of a bridge in The Netherlands, the environmental analysis of embodied energy put GRP as a clear winner. Each other option resulted in more than twice as high energy consumption. As far as pollution impacts, again the GRP option scored best, with structural steel second and aluminium third. The final decision on choice of material for the bridge structure was based on ecological factors and the GRP option was confirmed. Installation of the bridge took place in October 2001. (Refer to R A Daniel and G Nagtegaal, Pedestrian Bridge of Pultruded Sections as result of Ecological design.)

Highly recyclable

Externally reinforced Bridgestone GRP tanks have a design life in excess of 40 years. It is likely the tank will last well after this time, with very little maintenance required. Ultimately, the steel supports and the GRP panels can be completely recycled as scrap or put to other uses. Unlike steel or concrete tanks, the Bridgestone GRP tanks will not crack under the movement caused by seismic conditions or exposure to the extreme heat and cold of Australia. The GRP tanks are completely sealed and externally reinforced and this eliminates corrosion inside the tank and water pollution.