The new household name in water tanks

BIG RED

Modular **Waste Water Treatment** Plants

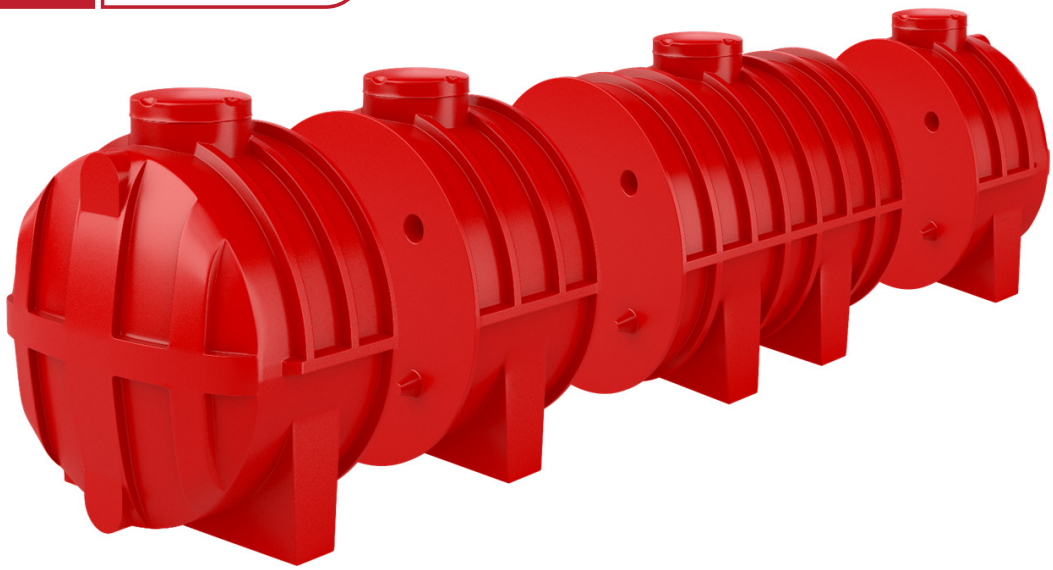
FULL REPLACEMENT 10 YEAR GUARANTEE

South Africa's 'plug & play', off-the-shelf, modular waste water treatment plants

INTRODUCING

BIG RED®

Modular **Waste Water Treatment** Plants



Available in 'up to 6 person' and 'up to 10 person' plant options.

HOW DOES THE BIG RED® WASTE WATER TREATMENT PLANT WORK?

- The overall objective of the waste water treatment plant is to provide a waste water treatment system that is capable of treating a wide range of probable waste water conditions while complying with the overall performance requirements which is to meet or exceed the Department of Water and Sanitation's requirements.

- The **BIG RED®** Process treats domestic and/or industrial waste water in three steps:
  1. Anaerobic Digestion,
  2. Aerobic Digestion and
  3. Clarification and Disinfection.

- The anaerobic section reduces BOD loading of the waste stream up to 40% and provides a suitable buffer/ retention time for further removal of organic solids. Here we utilize custom designed, multi-chambered septic tanks.

- The aerobic section further reduces BOD and other harmful properties in the waste stream which has a negative effect on the environment. The **BIG RED®** also adopts the nutrient removal process (the conversion of nitrates and nitrites from the waste stream) to nitrogen - a natural, safe occurring element.

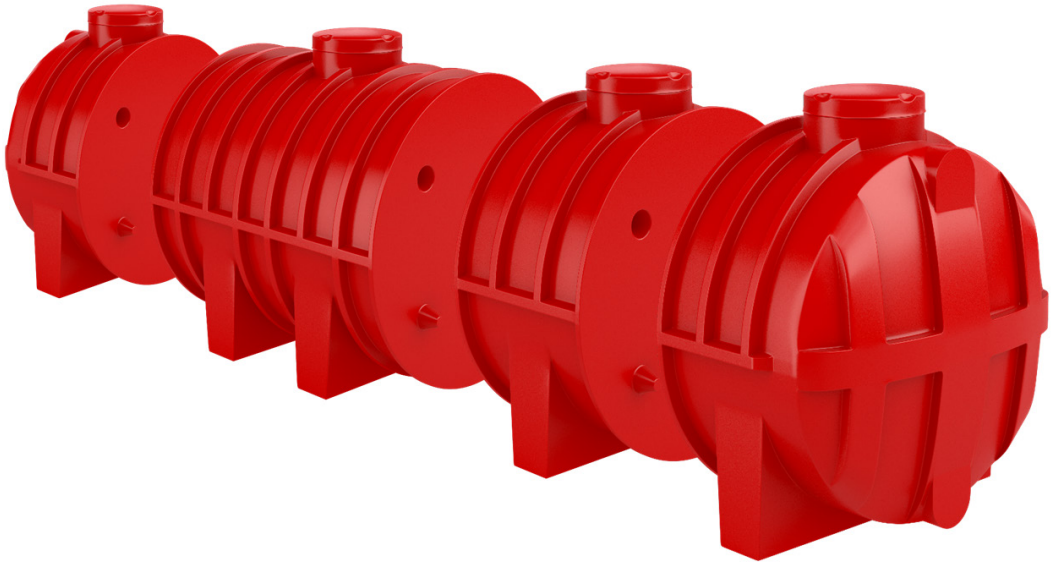
- Lastly, the disinfection process kills any remaining pathogens, such as *E. coli* and faecal coliforms in the waste stream to provide a clarified effluent ready for any non-potable reuse options such as irrigation, car washing and dust control, toilet flushing etc.

- The **BIG RED®** plant can be configured for above or below ground installation. Civil constructed units are also available on request.

THE BIOLOGICAL BREAKDOWN PROCESS

- **PRIMARY TREATMENT**

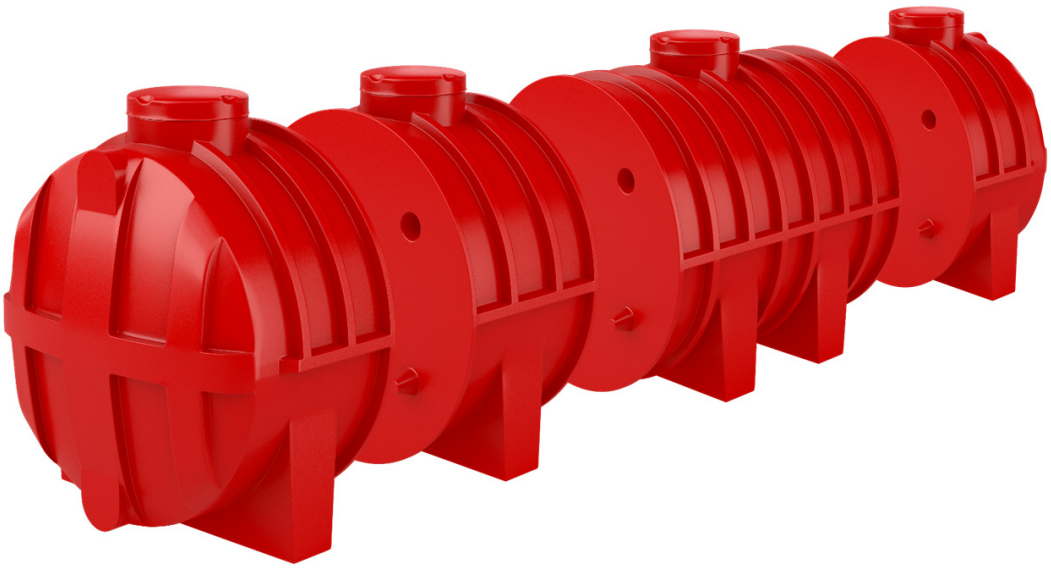
  This is done in the custom designed, multi-chambered septic tanks/anaerobic reactors. The liquid capacity of these septic tanks is determined by the number of users connected to a septic tank. The anaerobic treatment process occurs in enclosed tanks to prevent access to oxygen. In the anaerobic process, solids are intercepted and biologically broken down by anaerobic microorganisms that are in contact with the waste stream. This process requires at least twenty-four hours but should be retained for longer where possible. The longer retention time translates into a higher quality effluent with significant biological oxygen demand (BOD) reduction occurring before it flows into the biological reactor for secondary treatment.



- **SECONDARY TREATMENT**

  This is done in the aerobic biological reactor. In the process, air (oxygen) is introduced into the reactor. The design of the secondary treatment process allows us to circulate the waste water and keep the bio-mass in suspension. Well engineered bio-media with a large surface area is added to the bio-reactor to facilitate the removal of organic solids and aid the nitrogen cycle.

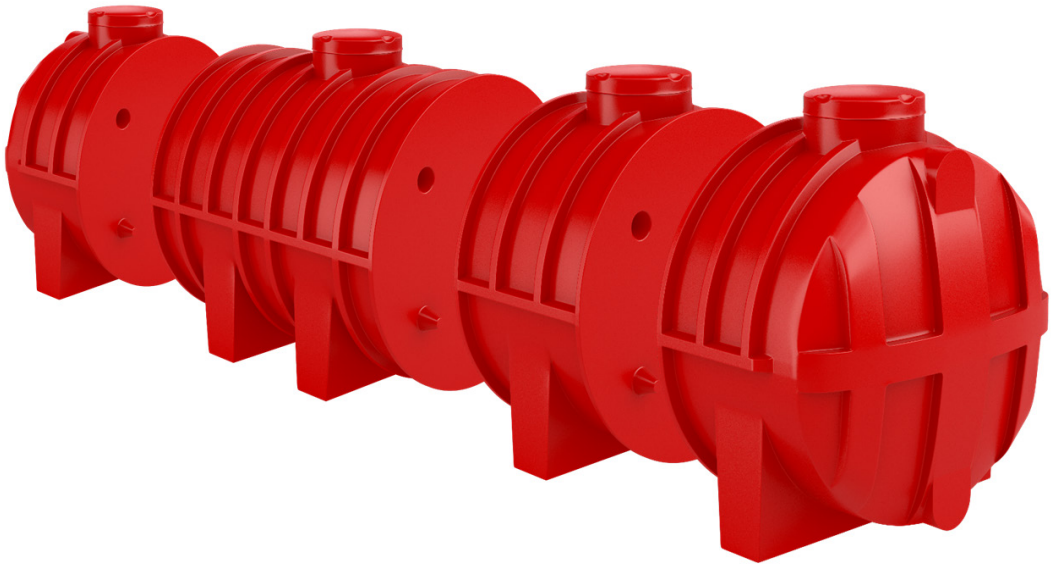
  Our systems use moving bed bio-reactor technology. The micro-organisms metabolize the organic material into carbon dioxide and other environmentally friendly end products.



- **THE TERTIARY TREATMENT**

  This process is a settlement and disinfection process. We subject the treated waste water from the secondary treatment process to chlorination on the domestic treatment plants and ozone on the larger and custom built plants. This is done as a precaution against pathogens that may have passed on from the second stage.

  For this to be effective, a contact period of at least thirty minutes should exist for pathogen destruction. We achieve this with a pumping chamber that has a storage capacity of 1500 litres before the submersible pump discharges the contents for reuse in the garden for irrigation. Nature is very effective in treating waste water that, once applied to the topsoil, aerobic bacteria in the root zone of plants will consume any remaining organic nutrients in the waste water. Waste water applied to the topsoil is also in contact with the powerful sterilization capabilities of UV rays present in sunlight.



BIG RED®

SANS 1731:2017

SABS ISO 9001

AGRÉMENT SOUTH AFRICA
innovative construction product assessments

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in water tanks

ALL ECO TANKS CARRY A FULL REPLACEMENT 10 YEAR GUARANTEE

Guarantee subject to the correct installation, as per our installation instructions.
For installation instructions or more information, please visit our website.

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