

SEWAGE TREATMENT

SABS publishes new standard for septic tanks - SABS 1904

The discovery of the septic tank is generally credited to a Frenchman, John Louis Mouras, who during the 1860s, constructed a masonry tank into which sewage, kitchen wastes and rainwater from a small dwelling in Vesoul, France, were collected before passing into a cesspool. Twelve years later the tank was opened and found, contrary to expectation, to be almost free of solids. As a result of this discovery, a series of experiments were conducted in collaboration with a priest, Abbe Moigno, a scientific authority. The satisfactory completion of these experiments induced Mouras to patent his invention on 2 September 1881. In the USA the household septic tank was first used in 1883 by Philbrick, and in England its use dates back to 1895 when Cameron introduced the system.

It is uncertain when household septic tanks originated in South Africa. Communal septic tanks were first used in 1898 by the British authorities at military camps, and it is probable that single household systems were introduced about the same time.

The prime function of a septic tank is only to condition the incoming raw sewage so that the solids are largely separated from the water, and are then subsequently degraded to base nutrients over time. In order for the septic tank to perform its full purpose as a wastewater treatment system, the effluent emanating from the tank must undergo further treatment and disposal.

STANDARDS

For many years, septic tanks were built *in situ* from conventional building materials such as bricks, cement and appropriate aggregates. SABS 0252-2: 1993, was subsequently produced to standardise the design principles of such built *in situ* septic tanks.

It is now known that the constructed septic tank has cost and design shortcomings, not least of which is the time taken to build it *in situ*. There is also the problem of how to

effectively seal the joint between the brickwork and floor slab and pipe entry and exit points, in order to prevent the inflow of ground water and the seepage of sewerage. The additional development of cracks in the floor and walls through differential soil settlement, result in the lowering of the water level in the tank thus depleting the effective zone for bacteriological breakdown of the solids. Furthermore, the formation of sulfuric acid in the sewer atmosphere within the tank, results in the destruction of the plaster through implosion, the resultant exposure and eating away of the mortar joints in the brickwork and the degradation of acid soluble cement materials such as the precast concrete roof.

SABS 1904

The world-wide development and ever-increasing general use over the past thirty years of prefabricated septic tanks that eliminate the problems associated with septic tanks built *in situ*, has necessitated the production in South Africa of an appropriate SABS standard for prefabricated septic tanks. SABS 1904 is the important result.

As the scope states, the standard "specifies the requirements for prefabricated septic tanks and ancillary equipment used for the partial treatment of domestic wastewater".

The standard will be of interest to all engaged in the manufacturing, installation and large-scale use of septic tanks.

To order the standard, please contact Magda Timmerman of Standards Sales by telephone (012) 428-6198, fax (012)344-1568, or e-mail timmermm@sabs.co.za.

For more information on the standard, please contact Gavin Pryce Lewis of Calcamite Sanitary Services (Pty) Ltd by telephone (031) 764 2529, fax (031) 764 5012, or e-mail prycelew@mweb.co.za.

JASWIC CHANGES WEB SITE

The Joint Acceptance Scheme for Water Services Installation Components (JASWIC), has moved their lists of accepted water and sanitation components from the Water Research Commission's server to a new web address at www.clock.co.za.

JASWIC, an interest group whose committee functions to the mutual benefit of its members and the community at large, aims to assist the SABS in the setting and maintaining of national standards for water supply and sanitation by maintaining a schedule of acceptable water services installation components for use by water service authorities, water service providers and consumers. JASWIC also develops training curricula and standards and is involved in information exchange. Please visit JASWIC at www.clock.co.za.