Water Technologies

Sernagiotto Products

Taking care of the world's water

SIEMENS

THE COMPANY

Since 1946, the name Sernagiotto has signified the highest attainable standards of quality and workmanship.
From over 30 years the Company identify high quality technologies in waste water and sludge treatment.

On July 2006 Siemens has completed its acquisition of Sernagiotto that has become Siemens Water Technologies SpA.

The headquarters and manufacturing facilities are located in Casteggio, Italy, which is 35 miles South West of Milan.

A vast network of computer aided design work stations are utilized in supporting the Company's capabilities in Equipment and Systems Engineering.

The modern, well equipped Research Centre continuosly develops new products and technologies for application to industrial and municipal Customer needs.

The Manufacturing Facilities ensure the necessary level of precision required by the high quality of its products, constantly checked by Quality Control personnel.

Technical Support is provided by a group of highly trained and dedicated technicians who install and start-up Products and Systems.

The Company has developed great skill in the design and build of "turnkey" technology based systems from its depth of traditional experience in the application and development of its in-house products.

The Marketing programme offers a vast range of equipment and systems to be applied to the treatment of water, waste water, sludges and acqueous suspensions.

The Company has experience in Municipal and Industrial applications such as pulp and paper, food processing, textile, tanning, chemical, pharmaceutical and mining.

Geographical Markets served include, besides Italy, all Europe, Mediterranean Basin, Australasia, North America and it is spreading our action in Middle East and Asia.

THE PRODUCTS

WATER TREATMENT

PRIMARY TREATMENTS: FINE SCREENING

DISCOSCREEN
Microscreen with rotating discs. The filtration unit consists of a screen cloth supported by the discs. The suspension is channelled through the pairs of the discs (1 to 6 pairs): while the liquid filters through the screen cloth, solids are continuously removed, thickened and expelled. The screen cloth and the structure are made from stainless steel.
Screen openings vary from 30 to 600 microns.

PRIMARY TREATMENTS: FINE SCREENING

ROTODRUM
Internally fed fine cylindrical rotating screen. The screen cylinder consists of wedgewire. The sewage is tangentially introduced into the screen through a special distribution headbox. Solids are captured within the cylinder, thickened and continuously discharged to the outside while the filtrate escapes through the spaces between the wedge-wire.
The Rotodrum is an all stainless steel construction.
The screen openings vary from 0,5 to 5 millimeters.

BIOLOGICAL TREATMENTS

BIODISC (RBC)
Biodisc plants enable the biological treatment of municipal and industrial waste water.
They provide high efficiency removal of carbon and nitrification/denitrification processes.
The use of biodiscs offer a remarkable saving of space. This minimizes environmental impact and simplifies plant management. Energy consumption is drastically reduced when compared to traditional processes.

WATER TREATMENTS

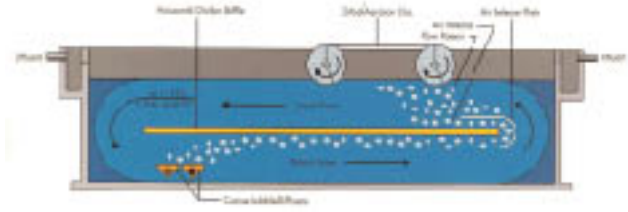
BIOLOGICAL TREATMENTS

MEMBRANE BIOREACTOR SYSTEMS - MBR
MBR technology utilizes hollow fibers ultrafiltration submerged membranes integrated in a biological process. Thanks to a low suction applied to the internal section of fibers, it is possible to achieve an efficient solid separation (outside-inside) without further clarification and tertiary treatments. The high quality of the treated effluent and low footprint required are the main advantages of this technology.

BIOLOGICAL TREATMENTS

VERTICAL LOOP REACTOR - VLR
The VLR® Reactor process is a design based on vertical looped reactors in series, which allows DO stratification. It is suited for simultaneous nitrification/denitrification, biological phosphorus removal and storm water treatment. The typical VLR system has two or more rectangular tanks placed side by side and operated in series. The first tank is used as an aerated anoxic reactor, in which an oxygen deficit is maintained and the DO level is kept near zero. The VLR process is ideal when land area is limited, when biological nutrient removal is required, when storm flow rates are high and when BOD loadings fluctuate widely.

BIOLOGICAL TREATMENTS



VERTICEL PROCESS
The VertiCel® biological nutrient removal system combines mechanical aeration in the anoxic tank with diffused aeration in the aerobic zones to optimize aeration efficiency. This design prevents short circuiting of ammonia through the system, reduces effluent levels to non-detectable, achieves higher kinetic reaction rate so basin volume can be reduced, can maintain different environments in each reactor for nitrogen phosphorus removal. A key element of the system is its Vertical Loop Reactor (VLR), a technology that has been successful in hundreds of installations.

WATER TREATMENT

CLARIFICATION

RIM-FLO/TOW-BRO
Activated sludge secondary clarifiers that combines the Rim-Flo® clarifier and the Tow-Bro® unitube sludge removal technologies, resulting in superior performance.
The Rim-Flo clarifier is a peripheral feed, peripheral take off clarifier used in sewage treatment plants. The hydraulic and mass loading capacity are twice than conventional clarifiers, allowing smaller footprint and lower construction cost.
The Tow-Bro Unitube sludge removal system assures positive, rapid removal of settled concentrated sludge in one revolution.

TERTIARY TREATMENTS - WATER REUSE

SIEMENS DISC FILTER
Disc filter with an innovative patented pleated filter panel design. The disc filter provides 40% more filtration area than any other woven media flat panel. The pleated panel design includes a robust pressure-assisted seal that allows the panel to sustain and operate at twice the headloss of any other flat panel disc filter in the marketplace today. The modular design offers flexibility for a broad range of flows and applications including tertiary filtration, water reuse and process water filtration.

TERTIARY TREATMENTS - WATER REUSE

SAND FILTER - ASF
An effective system for the removal of the insoluble solid substances from different kinds of water. The operation is very simple since it works by gravity and is fully automatic. The backwash of the filter bed starts automatically when the filter becomes clogged and is maintained by a siphon device. The washing flow decreases as time elapses which allows the mono crystalline quartz sand layer to reset.

SLUDGE TREATMENT

THICKENING

ROTOTIK
Mechanical rotating sludge thickener, capable to thicken the sludge up to a concentration of 10-12%.
The construction is entirely in stainless steel. The sludge is delivered to the external mixer to be conditioned with chemicals and then discharged inside the thickening drum. The drum consists of 4 zones separated by means of annular rings, each of which has an adjustable outlet enabling independent control of the sludge residence period in each zone.

THICKENING

GRAVITY TABLE OPTIMA
Sludge belt thickener. Water drains through a moving polyester filtering belt, separating solids contained in the sludge from the filtrate. The use of special plows improve drainage by alternate compressing, reversing and distributing the sludge on the belt. Even the most unstable sludge can be easily treated with this unit.
The Gravity Table Optima separates fast over 95% of the suspended solids from the sewage sludge, with a minimum consumption of polyelectrolyte.

DEWATERING

WR Greenland
Double belt press filter with an innovative design to get the highest performances ever reached by a belt press filter. That is achieved by increasing the working filtration area and the high efficiency of the low pressure system (wedging roll). The BPF WR fits all municipal and industrial applications.

SLUDGE TREATMENT

DEWATERING

SIERRA
Double belt press that offers quality and performance at a competitive price. The radial wedge design provides higher throughput rates, while achieving high cake solids and using less power. The modular frame design concept allows the press to be “custom designed” to fit almost every design application.

DEWATERING

CMF OPTIMA
Double belt press filter designed for dewatering both municipal and industrial sludges. The new modular frame concept combines outstanding performance with low capital costs, thus maximizing the benefits/costs ratio. It is suitable to treat sludges in a wide range of concentrations: the "Standard" version of the machine is designed to dewater regular solid concentration sludges, while the "Cascade" version in combination with a belt thickener fits for very diluited sludges. Modular high pressure zone is available with 8 rollers: in option, it can be easily converted to an 11 rollers, adding the 3 rollers module to increase final dryness.

DEWATERING

MDC
Double belt press filter for dewatering of biological sludges. Compact enclosed design, including a high pressure zone with 6/8 rolls. Simple and economic construction with minimum space requirement and average throughput. Frame available in hot dip galvanised or stainless steel.

SLUDGE TREATMENT

DEWATERING

SD
Double belt press filter for mineral slurries specifically designed to handle high flowrates at low inlet concentrations. The long gravity zone and the low pressure system with a large diameter perforated roller enables the machine to effectively dewater slurries with very fine and unstable solids.

DEWATERING

C
Double belt press filter designed for dewatering of fibrous products or primary/mixed fibrous sludge. Wide applications range from sludges with high ash content to highly fibrous sludge. In the high pressure zone, comprised at 7 "S" rolls of equal diameter, a linear pressure NIP can be fitted to further increase the final dryness to as much as 30-40%.

DEWATERING

P&P
Double belt press filter designed for very high pressure dewatering of fibrous sludges such as the paper mill primary sludge. 4 "S" pressure rolls and 3 NIP rolls guarantee a final cake dryness much higher than in the standard belt press filter. The design of the NIP pressure system permits the press to optimize the dewatering performance according to the sludge characteristics.

SLUDGE TREATMENT

DEWATERING

BELT PRESS - MOBIL UNIT
Belt press fully equipped with accessories (polymer station, pumps, control panel) and relevant connections, mounted on a trailer to be easily delivered on site and ready to be used. The mobile unit is used for tests and sludge dewatering service to clients.

DEWATERING

J-PRESS®
The J-Press® sidebar and overhead filter presses are efficient liquid/solids filtration and separation equipment.
They are used in a wide variety of industrial and municipal applications to recover both solids and liquids from waste or process stream. The J-Press® filter press is equipped with either chamber or diaphragm (membrane) squeeze plates and is a very cost effective method for producing high solids filter cake, along with an extremely high degree of clarify in the liquid effluent.
Capacities ranging from 3 m3 to 25 m3.

DEWATERING

PORTABLE DEWATERING TRAILER MOUNTED J-PRESS FILTER PRESS

The J-Press® filter press is designed for rugged operating conditions. Mounting on a specially built semi-trailer yields a completely self-contained mobile dewatering system. A trailer mounted mobile dewatering system enables the contract dewatered to better service the needs of clients in a wide variety of liquids/solids separation applications. Each mobile dewatering system, noted for its ease of operation, is delivered completely assembled and ready for immediate hook-up.

SLUDGE TREATMENT

POST-DEWATERING

ATLANTIS
High pressure, secondary dewatering system which is capable of re-pressing the cake from a primary dewatering source thereby producing cake solids never before achievable. The system is designed for automated and continuous operation. It is capable of increasing cake solids by as much as 6-12 percentage points even on unstable biological sludges. This results in greatly reduced costs relating to further treatment and disposal.

POST-DEWATERING

TSP
Twin screw press designed for high rate dewatering treatment of fibrous material such as the dewatering of primary paper mill sludge. The efficiency of the pressing system is such that very high dry solid content can be achieved at a high rate of throughput, while operating costs are kept to a minimum.

DEWATERING/DRYING

J-VAP
Sludge dewatering and drying, traditionally two separate steps, are combined in the J-Vap® system, which uses filter press and vacuum drying technology to achieve up to 99 percent solids in one step. The technology consists of a set of reduction chambers in which the slurry is dewatered and dried. The reduction chambers are clamped tightly together in a support module. An energy conversion module supplies heated water for pressurizing the reduction chambers and also includes a vacuum system used during the drying stage.

SLUDGE TREATMENT

CONVECTIVE DRYING

CTD
Rotating drum thermal dryer where the sludge is heated and conveyed by hot air. This system dries sludge and various types of organic waste with very high efficiency using an innovative system of total heat recovery. Special provisions for processing off gases permit release in compliance with the latest regulations. This is achieved by complete internal recycling of the evaporated gases. The capacity ranges from 1.000 kg/h to 10.000 kg/h of evaporated water.

THIN LAYER DRYING

ECOFLASH
Thermal dryer consisting of a cylindrical stator with a jacket heated either by steam or diathermic oil. The stator is equipped with an internal high speed rotor fitted with adjustable paddles. The paddles produce a thin layer of the product to be dried, enhancing water evaporation and are also used to move the product forward through the dryer. The capacity ranges from 750 kg/h to 3.000 kg/h of evaporated water.

BELT DRYING

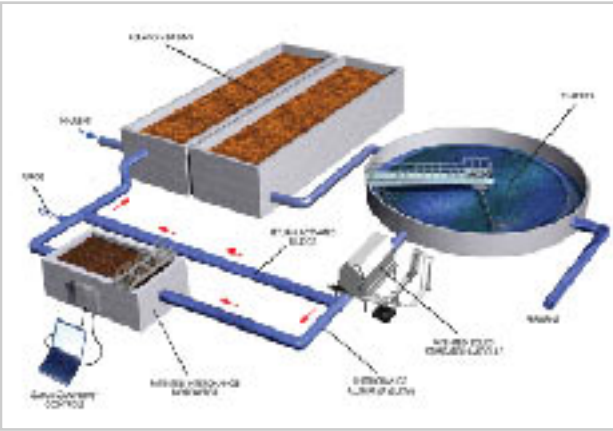
SBD
The high thermal efficiency belt dryer is particularly suitable for heat recovery from low temperature waste energy sources. The process is flexible and able to face great changes in the inlet product, thanks to the possibility to regulate both the belt speed and the process air temperature. The capacity ranges from 500 kg/h to 6.000 kg/h of evaporated water.

SLUDGE TREATMENT

BELT DRYING

J-MATE
Designed as a "stage two" dryer for further reducing sludge after mechanical dewatering, the J-Mate® dryer takes over where filter presses, vacuum filters and centrifuges leave off by providing sludge volume and weight reduction. J-Mate dryers are available in both continuous and batch configurations to reduce sludge disposal costs. Water removal rates range from 3 kg to 25 kg per hour on batch units, from 20 kg to 90 kg per hour on continuous units.

CANNIBAL



The Cannibal® solids reduction process virtually eliminates the biological solids produced by activated sludge wastewater treatment systems, as well as the costs associated with sludge wasting and removal. The complete destruction of biological solids is accomplished through an interchange recycle flow between the aerobic activated sludge process and a specially controlled sidestream bioreactor. This patented technology can be used for new plant designs or retrofitted into existing sites.

INTEGRATED SOLUTIONS

The high knowledge of processes and demand of the various industrial sectors allows Siemens Water Technologies to offer "integrated solutions" for waste and process water treatment, production of high-pure water, water re-use and sludge treatment. Solutions that guarantee high reliability, quality and efficient service

- PAPER MILL
- TEXTILE
- FOOD INDUSTRY
- MINING
- PETROCHEMICAL
- TANNERY
- CHEMICAL/PHARMACEUTICAL
- METALLURGICAL

ISO 9001:2000 - Cert. n° 0630

Siemens Water Technologies S.p.A.

Sernagiotto Products

Via Torino, 114
27045 Casteggio (PV) - Italy
Phone: +39 0383 8067.11
Fax: +39 0383 83782
e-mail: sernagiotto.water@siemens.com
www.sernagiotto.it

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