

DRYCAKE

Vanderbeken Enterprises Ltd.

SEDITANK: Grit Removal Solutions For a Better World.



For Flows up to 9MGD (400L/s)

DOC#SEDITANK-PRES-001
Rev. V11607R0

DRYCAKE

Vanderbeken Enterprises Ltd.

- ✓ DEVELOP process solutions partnerships to find efficiencies on new or existing process.
- ✓ DESIGN machines for solids recovery, liquid clarification, and minimize water consumption.
- ✓ DELIVER project specific solutions for better economic, and environmental process performance.

www.drycake.com | info@drycake.com



DRYCAKE

Vanderbeken Enterprises Ltd.

DRYCAKE is an engineered products and services company Focused on Process Equipment and Design for Volume Reduction and Water Recovery for municipal and industrial wastewater.

For over 20 years , our clients trust us to deliver process packages designed to meet their needs. We consider, foresee and respond to project needs and design, develop and deliver cost-effective and practical solutions. We are committed beyond product guarantees to process responsibility.

DRYCAKE engineers, packages, delivers, installs, commissions and supports Inlet Works Screening and Grit Removal systems, Decanter and Disc-Stack centrifugal mechanical separation packages, solid waste systems thermal drying and evaporation technology, and conveyor systems.



www.drycake.com | info@drycake.com

ENGINEERING AND DESIGN

Thanks to our professional R&D team, our range is always in evolving and constantly improving, and it represent today, the best choice in terms of quality and reliability, with the best performance.

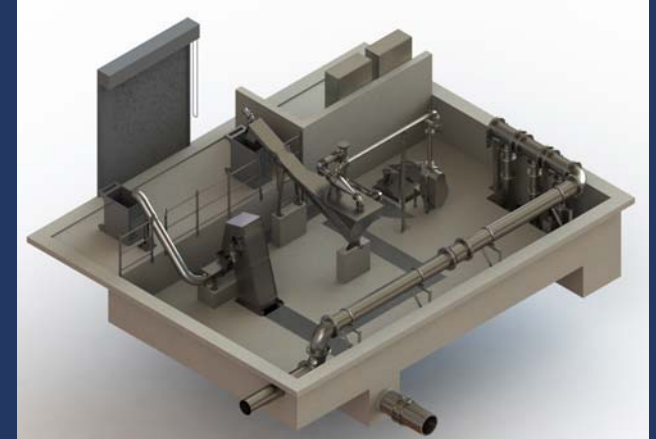
Part of our commitment to excellence is that we develop a 3D plant render of each installation showing the equipment installed.

DRYCAKE's technical department is able to develop all the required design activities from feasibility to as-built. Process Validation can be validated using our lab or on-site pilot services.

All the project phases are carried out by means of professional instruments.

Quality control during the entire design process guarantees the compliance with Customer's technical requirements and good manufacturing practices.

DRYCAKE plants are managed by PLC and equipped with all the necessary instruments to check continuously the main process parameters (temperatures, pressures, flow rates, etc.).



MANUFACTURING

With over 20 years of experience and hundreds of satisfied clients all over the world, DRYCAKE continues to provide with his specialized tailor-made wastewater conveying, filtration, sedimentation, centrifugation, and drying equipment

Quality checks are carried out during the whole manufacturing process in order to assure the compliance with UL and CSA, ASMI, ANSI Standards and certifications.



PRODUCTION METHOD

The performance of our machines is ensured by quality components and by our highly professional production team.

Our equipment is manufactured in high quality Stainless Steel , and is fully customizable according to project requirements and needs. Our Centrifuge rotating assemblies are centrifugally cast.

The production team is composed by assemblers and certified welders, experts in TIG (Tungsten Inert Gas) welding, a process of arc welding with consumable electrode (tungsten), under protection of inert gas. Especially useful for welding thin materials, this method is characterized by a stable arc and high quality welds, but it requires significant operator skill and can only be accomplished at relatively low speed. After the welding processes, the Stainless Steel is passivated by our operators.

All equipment is subject to 3rd party witnessed factory acceptance test prior to shipment



INSTALLATION, COMMISSIONING AND START-UP

DRYCAKE can provide complete site services

- Supervise installation.
- Operator training
- Maintenance training

Thanks to its experience and to the implementation of project control techniques DRYCAKE is able to deliver to the Client plants on time and on cost.

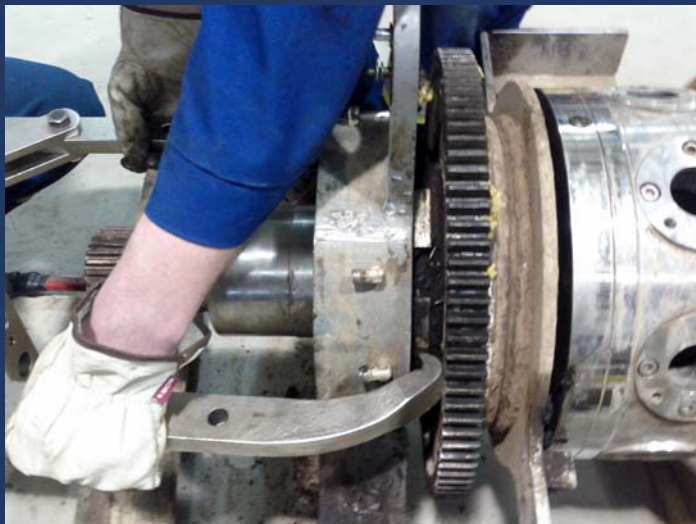


OPERATION AND MAINTENANCE

At the end of plant commissioning and start-up, DRYCAKE can assist the Customer with tailor-made services according to the Client request:

- Supervision contract
- Maintenance contract

DRYCAKE service centres cover North America



DRYCAKE

Vanderbeken Enterprises Ltd.

Markets

- Municipal
- Mining
- Food and Beverage
- Chemical
- Oil & Gas
- Pulp & Paper
- Industrial Processes
- System Integrators
- Biomass gasification



SEDITANK

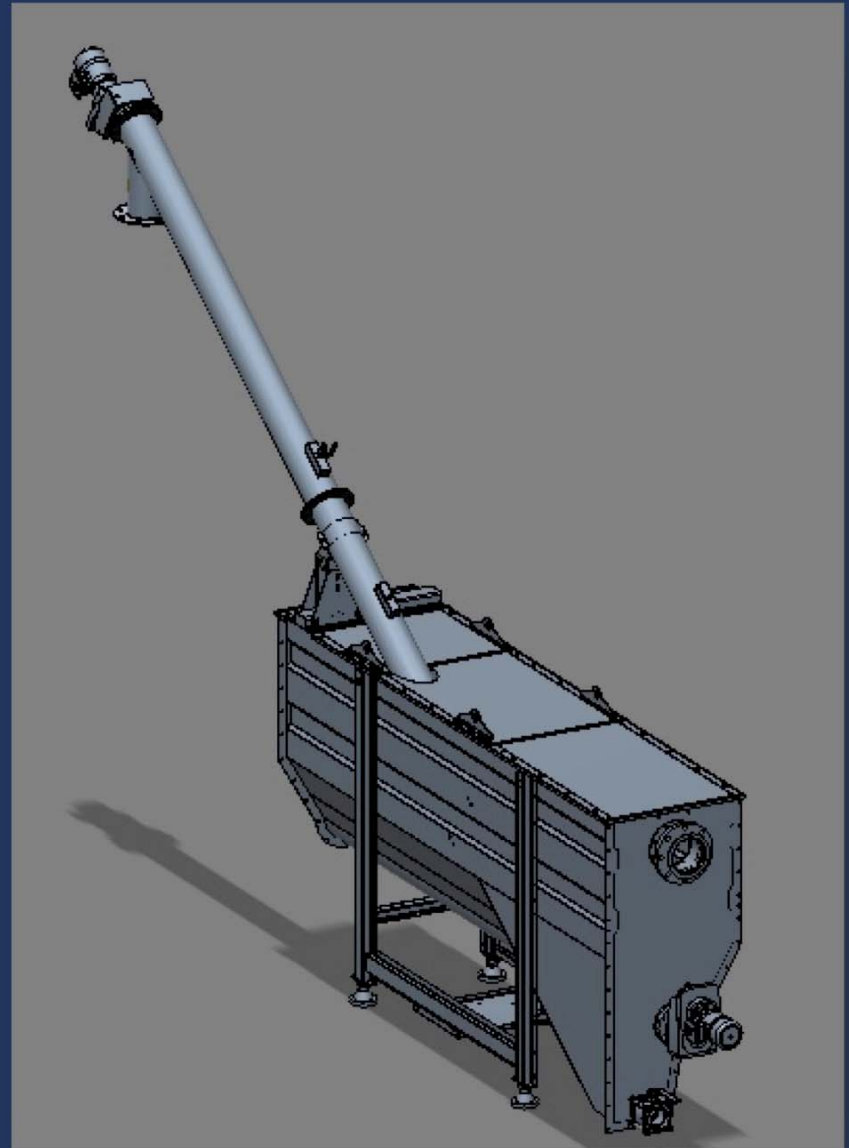
To prevent downtime due to Digester Grit Cleaning

The DRYCAKE SEDITANK is continuous system designed to remove grit from organics prior to introduction into the digester.

At the inlet of the organics stream after an organics separator.

The SEDITANK takes the organics stream after an organics separator and uses diffuses air in countercurrent to induce an high efficiency settling.

A Horizontal accumulates the grit for for removal by an inclined extraction conveyor

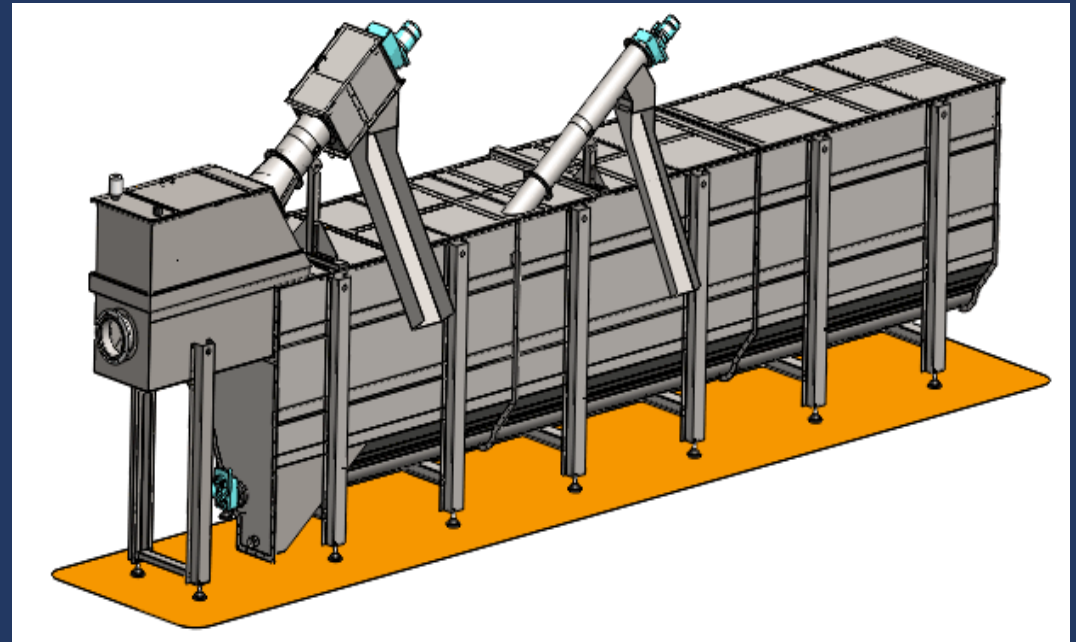


SEDITANK SYSTEM

INTRODUCTION

SEDITANK

- The SEDITANK is configurable as a complete screening and grit separation and fats, oil & grease (FOG) removal, all within a single packaged unit for a flow rate up to 400l/s (6340GPM)
- Waste water enters the screening section where gross solids are removed from the flow, washed, compacted and dewatered. The screened effluent then discharges to a hopper section where grit settling is induced.
- The grit is conveyed to a grit classifier and can be further washed prior to dewatering and disposal into a bin or a bagging system.



SEDITANK BENEFITS



SEDITANK

EFFICIENCY

- ✓ **SCREENING SOLIDS CONCENTRATION** up to 45%DS
- ✓ **WASHING EFFICIENCY OF THE ORGANIC MATTER** $\geq 90\%$
- ✓ **EFFICIENCY OF THE GRIT REMOVAL** $\geq 95\%$
- ✓ **FOR GRAIN SIZE** $\geq 200\mu\text{m}$ (0,2mm)
- ✓ **REDUCTION OF THE FLOATING ORGANIC MATTER** $\geq 97\%$
- ✓ **GRIT DRYNESS EFFICIENCY** 90% of dry material
- ✓ **EFFICIENCY OF GREASE REMOVAL** 85% (SEDITANK-FOG)

SEDITANK SYSTEM BENEFITS

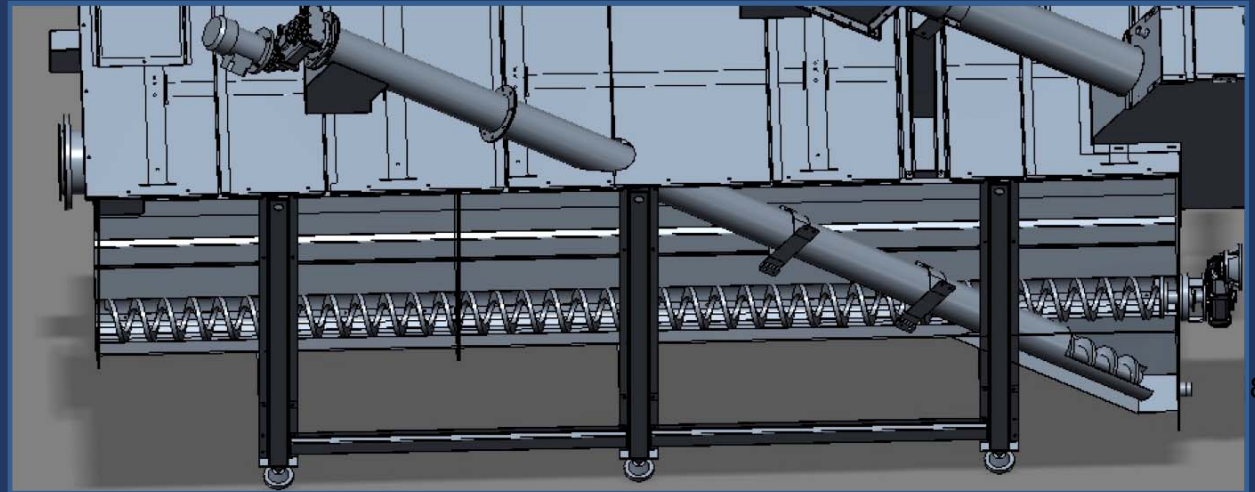
- ✓ Excellent grit capture rate
- ✓ High reliability and long life
- ✓ Reduced construction cost
- ✓ Low maintenance required
- ✓ Compact unit with small footprint
- ✓ Quick and easy to install
- ✓ Possibility to customize plant
- ✓ Configurable as a complete headworks unit.
- ✓ No odor nuisance

SEDITANK

SEDIMENTATION PRINCIPLE

Grit capture rate of 95 % with 75 mesh grit
(200 micron particle diameter).

- The settled grit is removed from the bottom of the grit channel with a horizontal grit screw.
- An inclined shafted screw then conveys and dewateres the collected grit.
- The grit discharges down a chute into a grit bin.

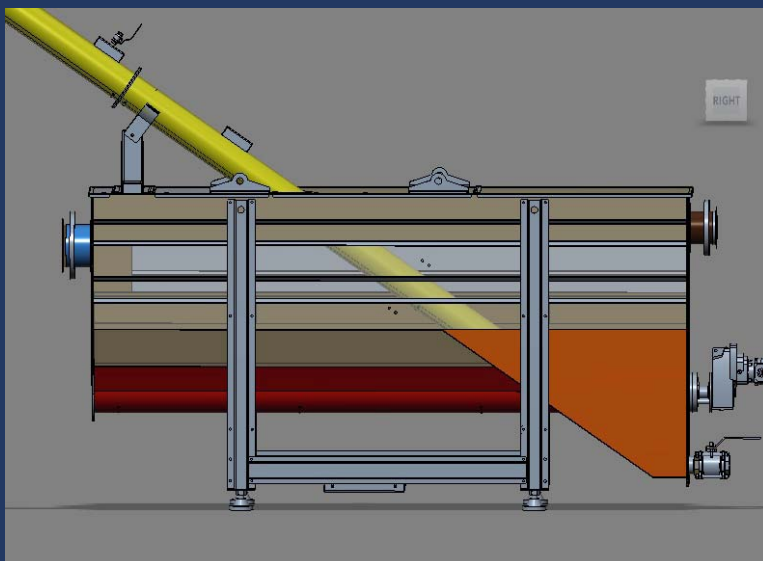


SCREWS

Horizontal bottom screw ⇒ SHAFTLESS

Extracting screw (inclined) ⇒ SHAFTED

- Inlet: Brown
- Outlet: Blue
- Horizontal Screw: Red
- Grit Collection hopper: Orange
- Grit Extraction Screw: Yellow

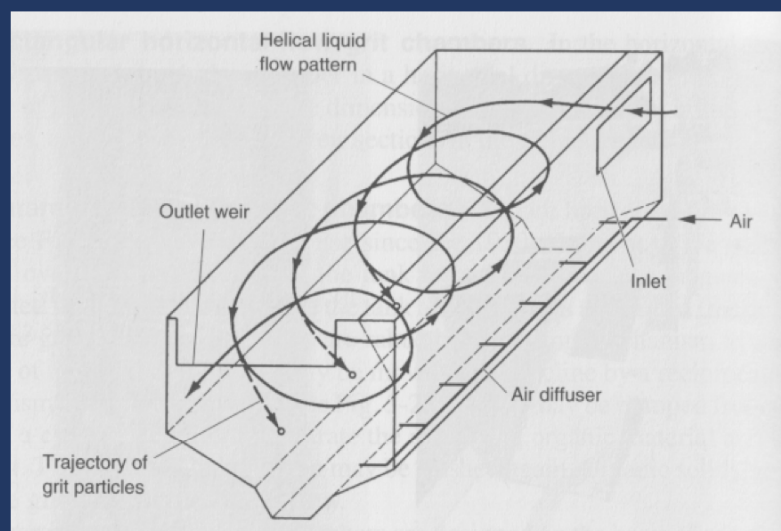


AIR DIFFUSERS

Low Pressure Air diffusers are installed to improve separation efficiency for higher viscosity, high organic matter sludge. For thinner sludge, it is not normally required.

The diffusion has very little impact on odor. From the surface it is very difficult to see any diffusion is occurring.

- Pressure: 0.3-0.5BAR (4-7PSI)
- Frequency: 20-30 seconds every 20-30mins.

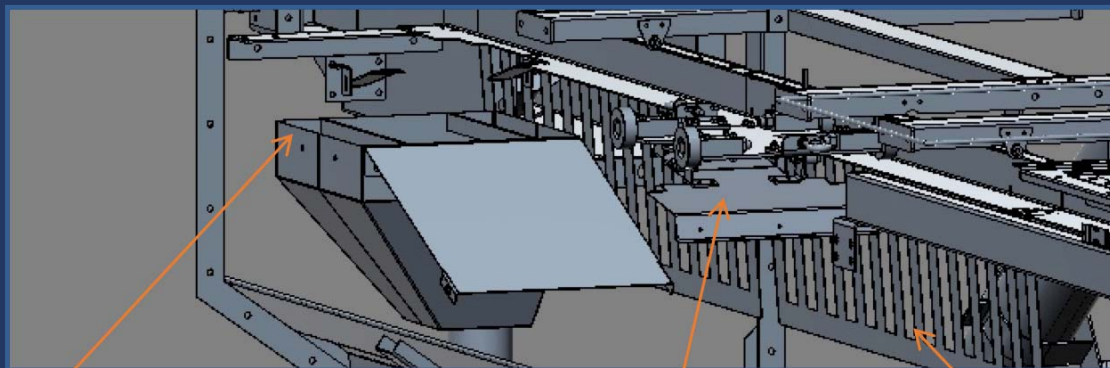


Source: Crites and Tchobanoglous, 1998.

SEDITANK-FOG

SEDITANK WITH EFFLUENT FOG REMOVAL SYSTEM

- Fat, oil and grease are collected in a grease trap that is connected with the parallel grit channel through slots in a separating wall.
- Floating fats and oils are skimmed off the water surface with a paddle scraper that is slowly pulled by a stainless steel rope. The paddle shape guarantees the removal virtually all floating matter. Odor caused by the anaerobic degradation of fat and grease is prevented.
- The skim layer is pushed over a weir into a grease hopper and then pumped for further treatment.



Grease hopper

Scraper

Slots

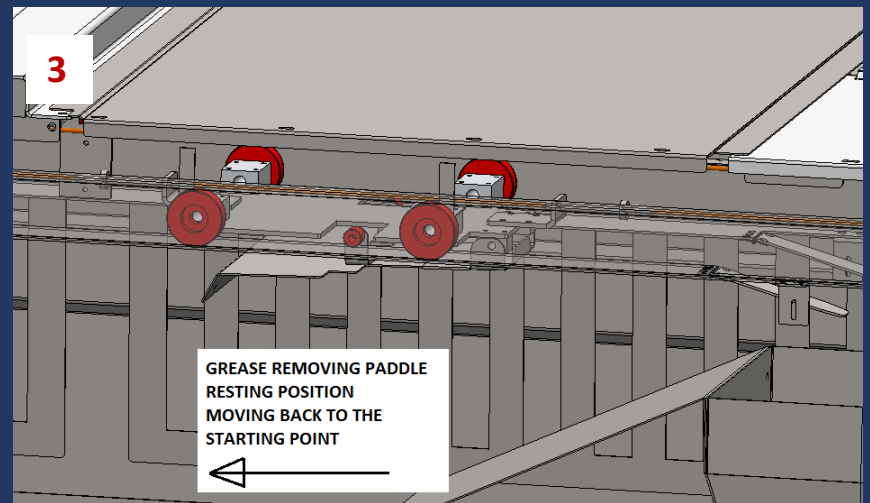
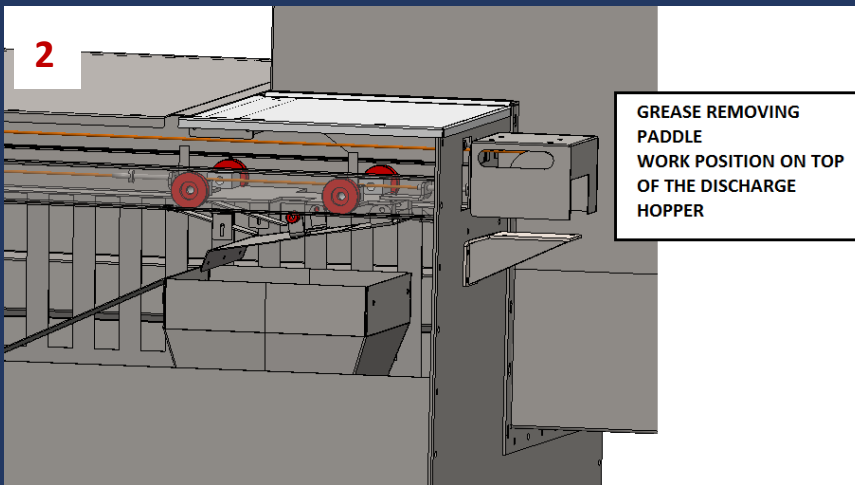
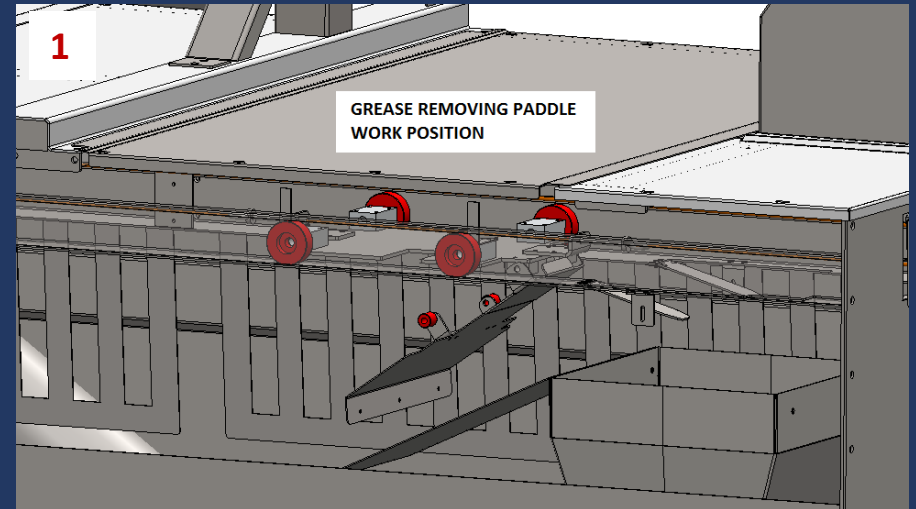


Grease floated

SEDITANK-FOG

FOG SCRAPER

SEDITANK



SEDITANK-FOG

PHOTOS

SEDITANK



Rake scraper mechanism



Grease collection system

SEDITANK

INSTALLATION PHOTO



Oils and Grease



Settled Grit

SEDITANK

SEDITANK SCREENING

SCREENINGS PHOTOS

To remove floating and lighter fractions of solids the SEDITANK is configurable with the entire DRYCAKE Screening range to make a complete pretreatment system.

Screening options

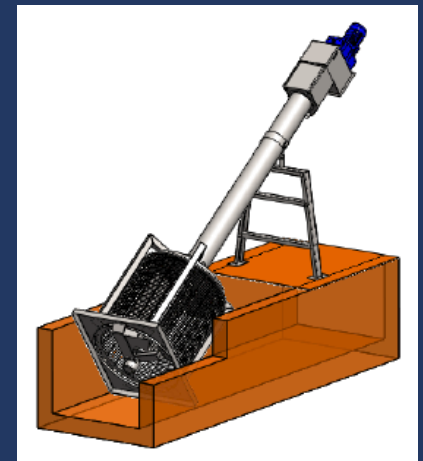
- **PERFOBASK:** Basket screw-screen
- **PERFODRUM:** Rotating Drum screen
- **MULTIRAKE:** Fine bar screen
- **PERFOPLATE:** Perforated plate screen
- **UNIDRUM:** Internally fed drum screen
- **STEPRAKE:** Step Screen

All systems can be supplied complete with:

- Launder Chute
- Compaction system
- Screenings washing
- Bagger system to prevent odor nuisance.



PERFOBASK



PERFODRUM

SEDITANK SCREEN

OPTIONS

Construction material:

- AISI 304/316 Stainless steel, pickled in an acid bath for corrosion protection

Options:

- Bypass rake screen for the screen section. (PERFOBASK and ROTODRUM)
- Two screen trains on a single grit tank.
- Winterization
- Continuous bagging systems are available to receive screenings and grit.

The SEDITANK can be supplied as a complete SEPTAMAX unit complete with:

- **Hauler Access Station**
- **Flowmeter**
- **Actuated Valve**
- **Control panel with Ethernet Communication**

SEDITANK COMPLETE TREATMENT CAPACITIES

SEDITANK CAPACITIES

(configured with PERFOBASK or ROTODRUM \varnothing 6mm meshes)

SEDITANK 15 \Rightarrow 15l/s (238GPM)

SEDITANK 30 \Rightarrow 30l/s (476GPM)

SEDITANK 45 \Rightarrow 45l/s (713GPM)

SEDITANK 60 \Rightarrow 60l/s (951GPM)

SEDITANK 80 \Rightarrow 80l/s (1268GPM)

SEDITANK 100 \Rightarrow 100l/s (1585GPM)

SEDITANK 150 \Rightarrow 150l/s (2378GPM)

SEDITANK 200 \Rightarrow 200l/s (3170GPM)

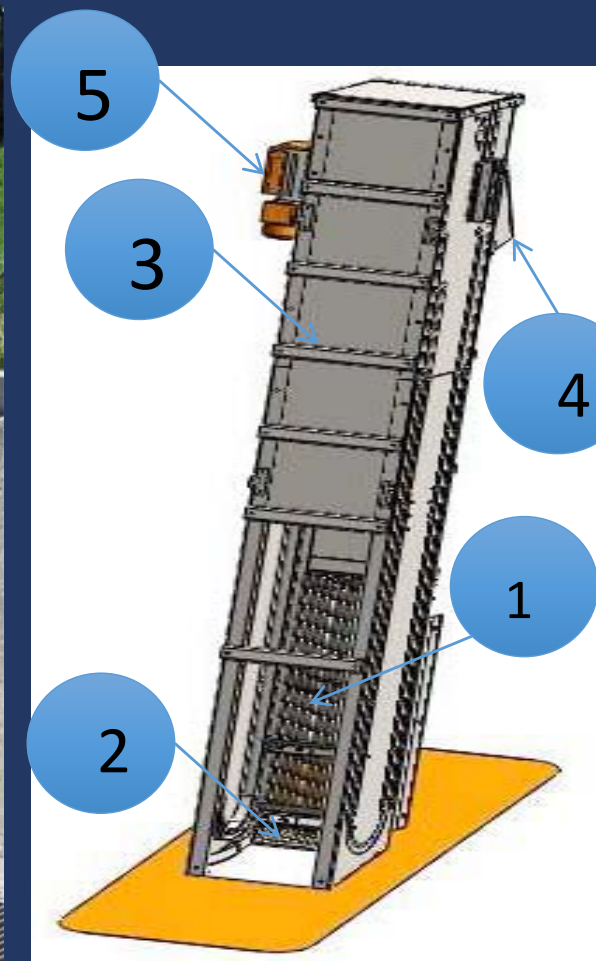
SEDITANK 250 \Rightarrow 250l/s (3963GPM)

SEDITANK 400 \Rightarrow 400l/s (6340GPM)

MULTIRAKE: Fine Bar Screen

PERFOPLATE: Perforated Plate Fine Screen

Operation of the screen is automatic. Equally spaced bars or holes form the screening area, and solids accumulate at the screen base until a water height level sensor activates the Rake or brush Mechanism.



# Item	Description
1A	MULTIRAKE: Bar space 6-60mm (1/4-2.5in)
1B	PERFOPLATE: Perforated holes
2A	MULTIRAKE: Rake
2B	PERFOPLATE: Brushes
3	Removable covers
4	Solid discharge
5	SEW Gearmotor

PERFOBASK: Screw-Screen

Operation:

- Basket blinds with effluent
- Water level rises
- Screw turns for brushes cleans the basket perforations
- Water level lowers
- Screw transports screenings to compaction zone before discharge

Maintenance:

- Low maintenance
- Simple operation
- No bearings
- Washing, compaction, and bagging in a single unit



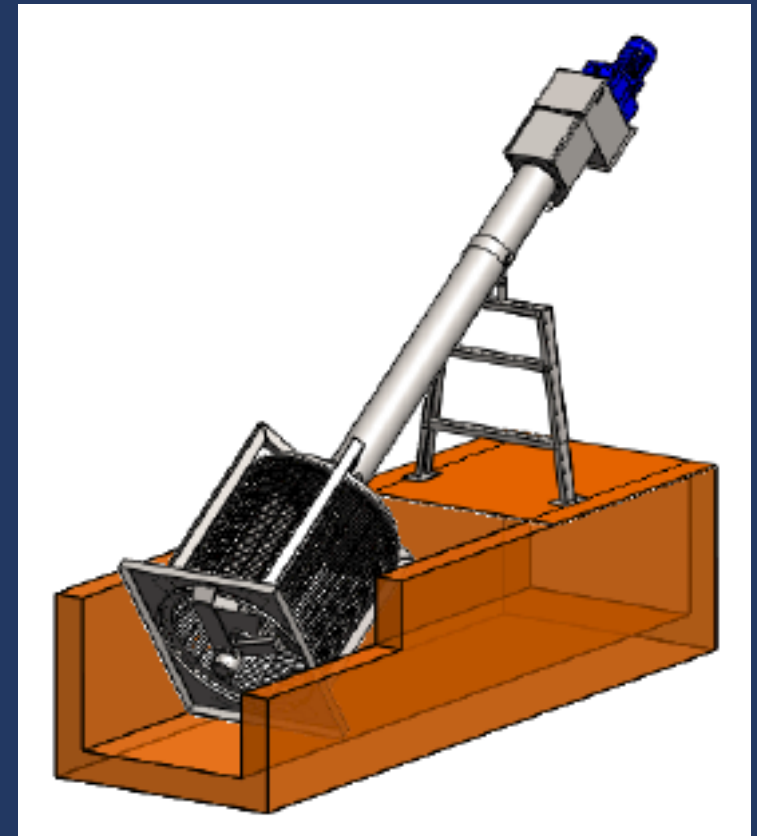
NYLON BRUSHES

- ✓ Durable
- ✓ Easy to replace

PERFODRUM:

ROTATING DRUM SCREEN

The PERFODRUM is high capacity perforated or wedgewire rotating drum screen. Influent enters the drum by means of a flange or channel. The drum openings blind with screenings and once the influent reaches a pre-designated level, the drum rotates to be cleaned by stationary brushes and a spray bar mounted on the outside of the drum. A screw transports the screenings out of the drum, washes and compacts them before discharging them into either a screenings discharge bin or an integrated bagging system.



SEDITANK-PERFOBASK-FOG

INSTALLATION PHOTO

SEDITANK-PERFOBASK

+ FOG REMOVAL

SEDITANK



SEDITANK-SCREEN

SEDITANK INSTALLATION PHOTOS WITH SCREEN

UNIT IN PORTUCEL VIANA



SCREENINGS



SCREENINGS



SEDITANK

DRYCAKE

Vanderbeken Enterprises Ltd.

**www.drycake.com
sales@drycake.com
1877-DRYCAKE**