



Filtration | Separation | Aeration | Online Robotic Sludge Management





Sureflo Techcon Pvt. Ltd. specializes in the design, engineering & manufacturing of automated Filtration, Separation, Diffused Aeration Systems, Operations of Online Robotic Cleaning Systems & Online Robotic Sludge Removal and Dewatering Systems. Sureflo has a wide range of indigenously designed specialised systems for Water Filtration, Wastewater Treatment, Sludge and Slurry Robotic Management and Processing, Tertiary Treatment and Recycling of Leachates and Industrial Effluents. Sureflo has installed and commissioned over 100 units of its unique filtration system "Automatic Valveless Gravity Filter" in India, USA, Africa, Myanmar, Nepal and many other places, which provides our clients crystal clear water without the need of electricity or manpower to operate. Sureflo has developed Iron Removal Filters which can remove high content of dissolved iron in water. Sureflo is the pioneer of introducing the "Online Robotic Sludge Removal and Management Services" for Oily Sludge Lagoons, Water Reservoirs, Effluent Tanks, Crude Oil Tanks, Acid Tanks, Cooling Tower Basins, Forebays, Sea water basins and many more. With over 12 different types of robotic systems Sureflo has replaced the conventional manual cleaning of tanks with its Industrial cleaning robots that provide the highest safety and "NO PRODUCTION LOSSES" to our esteemed clients. With an in-house strength of over 200 people along with 2 manufacturing facilities of 120,000 sq. ft in Goa and 160,000 sq. ft in WADA, India and warehousing in various locations of India, Sureflo has expanded in to the Middle Eastern, Southeast Asian, African, and North American markets providing its range of products and services to our clients globally. Sureflo's firm commitment to address specific environmental challenges enables us to conduct research and development to provide advanced technologies and quality solutions to our clients.



Automatic Valveless Gravity Filters (AVGF)

Sureflo Techcon specializes in design, engineering & manufacturing of AVGF, which are a popular choice amongst many clients in Power, Fertilizer, Steel and other sectors for applications such as Side stream filtration system of cooling towers which is practised to increase the COC (Cycle of Concentration). Sureflo AVGFs can be used in sewage / effluent treatment plants as polishing filters and are also used as prefilters in drinking water treatment plants. Few of our esteemed clients using Sureflo AVGFs are IFFCO, L&T, Tata, JSW, SAIL, OPGCL, Mahagenco and clients in other countries. Sureflo AVGFs offer a "No Electricity" and "No Manpower" system which in true sense is a FIT & FORGET system. We take every step to ensure a quality product right from design stage up to dispatch and commissioning stage.



- Minimum sand loss and carry over occur.
- No electricity required for operation.
- Stores own reservoir for backwash for backwash purpose.
- Automatic backwash, no manpower required.
- No backwash pumps, valves, flow controller required.
- Compact and modular design, uniform high quality filtered water.
- Most suitable for side stream filtration of recirculating of cooling tower water.
- No moving parts.
- Long and maintenance free life



Available in

Flow Range	5 M3/Hr to 750 M3/Hr (Stand Alone Units)
MOC	Carbon Steel / Stainless Steel
Applications	Side Stream Filtration for Cooling tower water recirculation, full stream filters
Industries Covered	Power, Steel, Fertiliser, Petrochemicals, Municipal, etc

Sureflo Decanter Centrifuges

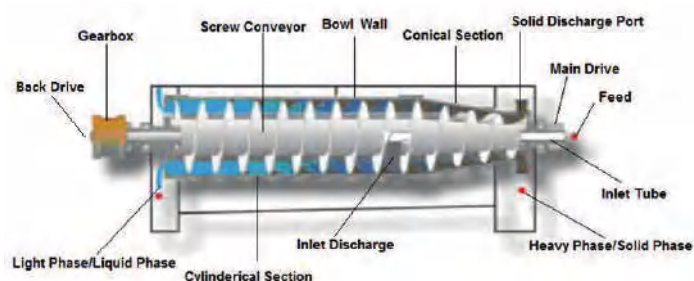
The Sureflo Decanter Centrifuges was developed with a focus on cost-efficiency, reliability and easy operation. The Sureflo design is used for sludge dewatering in a wide range of industrial wastewater treatment applications, as well as municipal wastewater treatment plants. Ideal for both small and medium-capacity installations.

Sureflo decanter centrifuges are designed to be efficient, simple to install, easy to maintain and straightforward to operate. Installation, operating and service life costs are minimal.

Process optimization

Sureflo decanter centrifuges can be adjusted to suit specific requirements by varying

- » The bowl speed to obtain the G-force required for the most efficient separation
- » The conveying speed for the most efficient balance between liquid clarity and solids dryness
- » The pond depth in the bowl for the most efficient balance between liquid clarity and solids dryness
- » The feed rate – Sureflo decanter centrifuges are designed to handle a wide range of different flow rates.



The STPL range features

- » Fully enclosed process sections
- » Critical parts made of wear-resistant material
- » High performance combined with low energy consumption.

Benefits

- » Reduces sludge volume, which cuts down on transport and disposal costs
- » Continuous operation
- » Compact, modular design saves space
- » Low installed power reduces electricity consumption.

Design

The rotating part of these decanter centrifuges is mounted on a compact, in-line frame, with main bearings at both ends. Vibration dampers are placed under the frame. The rotating part is enclosed in a casing with a cover and a bottom section with integrated outlets for both solids and the liquid being removed.

Drive System

In all Sureflo decanter centrifuges, the bowl is driven by an electric motor and a V-belt transmission drive. Power is transferred to the conveyor via a planetary gearbox. Operation can either be pre-set to a suitable set of parameters, or the difference between the speeds of the bowl and the conveyor can be controlled automatically, with no need for changing belts or pulleys.

Materials

The bowl, conveyor, inlet tube, outlets, cover and other parts in direct contact with process media are all made of stainless steel or material specified by customer. The discharge ports, conveyor flights and feed zone are protected with materials that are highly resistant to erosion. The frame is made of mild steel with an epoxy paint finish.

The Basic Core Controller

Each decanter centrifuge in the Sureflo range equipped with a variable frequency drive (VFD) as standard is delivered with the Basic Core Controller (BCC). This control package is capable of fully controlling the decanter operation, ensuring the most efficient performance and keeping costs for installation, commissioning, operation and maintenance to a minimum. The controller is also designed to measure the temperature of the bearings, and to monitor vibration levels.

Sustainable Membrane Technologies

HYDRO



Disc Membrane

- » Open channel unrestricted flow configuration
- » Turbidity & SDI Tolerant Module design
- » Low fouling, neutrally charged membrane cushion
- » High turbulence, non clogging module design
- » Minimize concentration polarization and physical flow impediment
- » Self-cleaning hydraulic effect with superior cleaning behaviour
- » Designed with effective Reynolds number (Re) for hydraulic distribution

Advantages of HYDRO

- » Less fouling and scaling
- » Turbidity and SDI tolerant system
- » Suitable for the separation of dissolved solids, COD, BOD, suspended & colloidal particles.
- » Reliable at variable feed conditions. High-quality product water with consistent recovery
- » Modular and flexible construction
- » Can exchange with similar disc membrane systems without modification
- » The individual membrane can be cleaned, inspected and exchanged
- » Small footprint
- » Easy operation and maintenance

CorFlo



Tubular Membrane

- » Made of robust PVDF and Modified PES
- » Hydrophilic membranes
- » Highly durable and long membrane life
- » Very high selectivity
- » Solvent, acid, and alkali resistant
- » Higher flux rate
- » Abrasion-resistant membrane
- » Minimal pre-treatment requirements
- » Economically priced
- » Effective cleaning

Applications

- » Water & wastewater treatment
- » COD, BOD, TSS reduction
- » Catalyst recovery
- » Molecule recovery
- » Juice & Wine clarification/concentration
- » Precious metal recovery
- » Acid & Alkali recovery
- » Food & Dairy product concentration
- » Separation of suspended solids, Oil & Grease
- » Treatment of emulsions & suspensions
- » Recovery of Ammonia, Caustic & Brine
- » Concentration of soya milk, coffee extract, starch etc.

SPARO



Spacer Membrane

- » The geometrical shape ensures a shorter feed path & uniform distribution
- » Open channel formation with higher thickness ensures less fouling and deposits on the membranes
- » Membranes are designed to maintain less pressure drop
- » Advanced membrane chemistry will provide uniform performance, constant flux & high operational stability.
- » The overall design will ensure reduced downtime, less power consumption, less cleaning cost & increased membrane life.

Applications

- » SPARO membranes are widely used in effluent and wastewater treatment applications where suspended and the turbid matter is moderately present. In many cases, costly pretreatment such as ultrafiltration can be avoided as the membranes can perform with a higher SDI limit and are tolerant to turbidity to a greater extent.
- » SPARO membranes can be accommodated in a typical spiral wound membrane plant due to their dimensions advantages. Often no modification or little modifications are required. Hence, it is an ideal replacement for the existing system.

We provide Technologies to produce high-quality water from any source, recycle wastewater, convert effluent into new resources and recover precious materials from the waste liquid. With decades of experience and innovations in our stake, we strive in providing cost-effective, safe and environmentally responsible solutions in filtration, separation, reclamation and restoration of water. We are focusing on continuous improvement; to transform the way safe water is sustainably delivered & protected and add value to our customers and surrounding communities.

Online Robotic Sludge Removal & Dewatering Services.

Accumulation of sludge in the bottom of tanks, basins, lagoons, reservoirs tend to be a herculean task to clean with the existing conventional cleaning systems that involve manpower, vacuum suckers and so on, leading to high downtime, high labour involvement, inefficient cleaning and huge production losses. Not to ignore the dangers involved in hiring manpower for doing such tasks that can lead to various safety violations and health issues.

Sureflo provides Online Robotic Sludge Removal and Management services which follow a "NO MAN ENTRY" concept and a "NO SHUTDOWN" concept, proving to be one of the most efficient and safest ways for sludge management in the industry.



Online Robotic Sludge Removal Systems



Oily Sludge Lagoon: Robotic Sludge Removal



Robotic Phosphoric Tank Sludge Removal



Robotic Sludge Removal In Cooling Tower Basins



ETP – STP Tank Sludge Removal



Online Robotic Forebay Cleaning In Power Plants

Major Applications

- » Cooling tower basin cleaning
- » Oily Pits cleaning
- » ETP Tank Cleaning
- » API separator cleaning
- » Phosphoric tank sludge cleaning
- » Phosphoric lagoon cleaning
- » Tank cleaning
- » Forebay cleaning in thermal power plants
- » Acidic sludge removal
- » Many other segments
- » Fire water Pond Sludge Removal
- » Lagoon Sludge Removal



Unmanned Remote Controlled Dredging Services.

Sureflo launches India's first endogenously designed and manufactured unmanned dredge system that works remotely with wireless remote and is capable of cleaning reservoirs and lagoons in an online condition without man entry.

Sureflo dredge system can remove silt, sludge, ash and other settled solids from reservoirs, lagoons, basins with a pumping capacity of 150 m³/hr. and more.

The remote-controlled dredges are ideal solutions for dredging in complex and difficult environments. With minor modifications or addition of accessories, it can be used for a wide range of applications from ports, lagoons, basins, ponds, quarries, mines to industrial and municipal basins.

The remote-controlled dredges UR-DS are ideal solutions for dredging in complex and difficult environments.

- » With minor modifications or addition of accessories, the UR-DS can be used for a wide range of applications from ports, lagoons, basins, ponds, quarries, mines to industrial and municipal basins.
- » Remote control operation provides highest safety of operation as the dredge system is unmanned and remotely operated hence achieving "No Man Entry" concept.
- » UR-DS is compact but powerful and can be built for dredging operations of up to 1000 m³/hr.
- » UR-DS have a low draft and hence can be used for cleaning of shallow and narrow basins where large conventional dredge systems may find various operational difficulties.



Main Features:

- » **Remotely Operated:** Unmanned dredger with remote operations provide highest safety standards in the industry.
- » **Compact Design:** Sureflo UR-DS are compact but powerful and can operate at various capacities up to 1000 m³/hr.
- » **Varied Application:** Sureflo UR-DS are tailor made for a wide range of applications ranging from desilting of basins, ash removal from lagoons, reservoir or fire water pond cleaning, removal of sediments from tailing ponds to many more such applications.
- » **Modernization of cleaning:** Sludge detection monitors and flow totalizers provide easy detection of sludge or silt in the basin and quantify the job in a more accurate fashion.
- » **Recycling of Water Services:** Sureflo UR-DS along with Sureflo Mobile treatment systems provide state of the art dewatering of sludge along recycling of water back to the basin / pond hence providing minimum water wastage and maximum recycling while cleaning of ponds and basins.
- » **Hydraulically Operated System:** The Sureflo UR-DS operations that are inside water are hydraulically operated. The Sureflo UR-DS operations that are on land are electrically operated.

Aeration Diffusers

Aeration is the heart of any sewage or industrial effluent treatment plant. Sureflo provides diffused aeration systems for various STP/ETP technologies such as SBR, MBR, ASP, MBBR, etc. with design, engineering, manufacturing, installation, and commissioning support to its clients.

Today Sureflo is one of biggest supplier of diffused aeration systems and spares in MOC EPDM, PU and Silicon. Our aeration systems are being used in many municipal sewage treatment plants and industrial effluent treatments plants making us preferred choice of EPC partners and end clients.

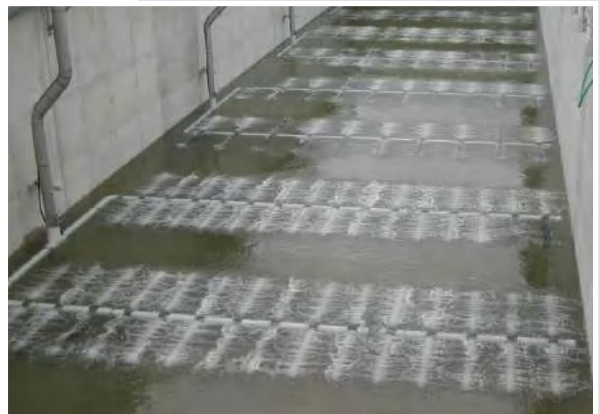
With an in-house SOTE testing facility, Sureflo provides top quality diffusers to its clients world wide.



Fine Bubble Diffusers

Aeration System mixes air into sewage water or effluent to induce oxygen. The bubble size is important to have better oxygen transfer efficiency and save energy consumption. We supply fine bubble diffusers in EPDM, PU and Silicon based on the type of treatment technology. Sureflo fine bubble diffusers are being used in various municipal sewage treatment and industrial effluent treatment plants providing high oxygen transfer efficiency and durable membrane life.

Available in disc fine bubble diffuser and tube fine bubble diffusers configuration.

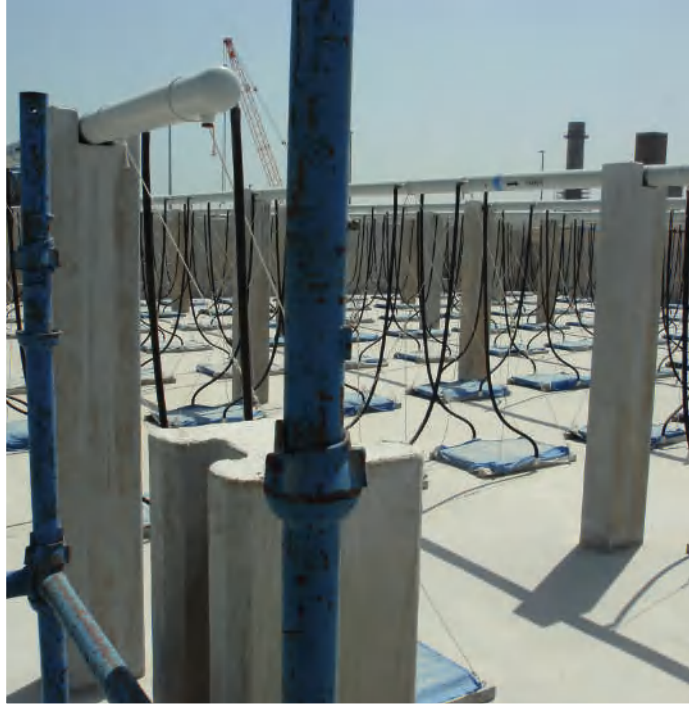


Coarse Bubble Diffusers

Coarse bubble diffusers also known as large bubble diffusers offers moderate oxygen transfer efficiency. The coarse bubble diffusers contain dozens of series of large bubble diffusers. Sureflo offers full range of course bubble diffusers along with installation guidance to EPCs. Different diffusers design can be mounted on CPVC, SS, VC or ABS material.

Retrievable Diffused Aeration Plants

Sureflo designs complete aeration plants as per customer data, provides onsite consultancy in aeration plant setup for ETP & STP in fixed and retrievable grid configuration. Sureflo specialises in designing and manufacturing of efficient retrievable / liftable / modular diffuser systems which are custom made as per our client's requirements.



Available in

- » Disc, Tube and Panel grid systems.
- » Retrieval grid systems for easy maintenance without shutting down.
- » Fix Grid Systems.
- » Floating Lateral Systems.
- » Submerged lateral Systems.
- » Modular Systems.
- » Lagoon Aeration Systems.
- » Industry Specific Aeration Systems.
- » Factory manufactured system with flanged mechanical connection for easy installation.

Oil Removal & Separation Services

Floating Oil Removal & Separation (FORS)

Sureflo builds and operates mobile Floating Oil Removal and Separation (FORS) systems which removes floating oil along with suspended sludge from complex industrial structures such as cooling towers, holding pools, lagoons, tanks and water bodies using floating skimmers, pumps and separates the oil, water and solids from each other in its' mobile treatment system.

Automated Systems For Floating Oil Recovery & Separation (FORS-A)

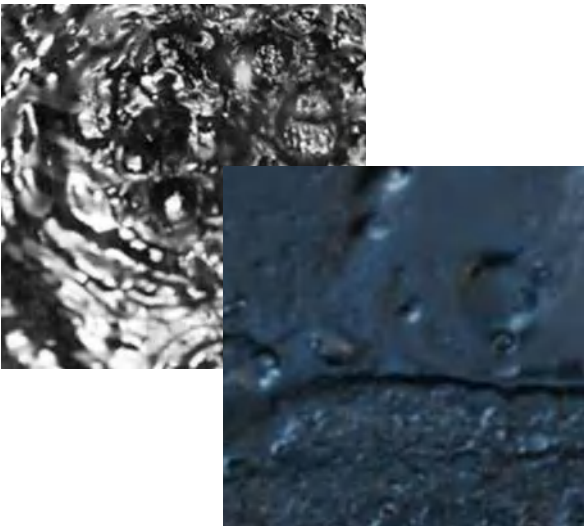
Sureflo is a well-known name in floating oil / slop oil removal and separation, having removed and recovered over 10,000 m3 of floating / slop oil at many refineries in India. Sureflo provides mobile systems that remove floating slop oil and separate the solids and water from it, providing the client a desired output quality of recovered oil at a fast recovery rate. In order to optimize the long and continuous removal and separation process, Sureflo has upgraded its mobile FORS systems to automated process with remote access (FORS-A), designed to trigger continuous operations with minimum supervision, achieve targets and desired output qualities in accordance with client's requirements.

These systems are standalone, require minimum intervention or control from supervisors. Sureflo FORS-A can be controlled from a remote center using Sureflo software systems.



Why Sureflo FORS-A

- » One-time setup for long duration.
- » Software controlled operations.
- » Automated oil recovery operations.
- » Minimum periodic maintenance required.
- » Remote management possible from offsite locations.
- » Complete real-time data of operations and historic data access.
- » Very high output efficiency and quality.
- » System is suitable for free oil as well as emulsified oil removal and separation.



Slop Oil Removal & Recovery For Reprocessing

Slop oil is a common factor in refineries. Everyday unwanted slop is produced in process and stored in slop tanks. This takes lot of space, is hazardous and revenue lost for refinery.

Sureflo is one of top company engaged in Slop oil recovery for reprocessing. Our compact and mobile units are easy to setup at site.

We do complete slop recovery from tank, separation of crude and sediments. The recovered oil with BS&W < 3% is pumped to the client's tank or header line for reprocessing.

Why Sureflo Techcon

- » Long experience of working in refineries.
- » 100 % success record in oily sludge, slop oil removal and separation.
- » Experienced technical team.

Insitu Aeration Diffuser Cleaning Services

The Most efficient method to clean and restore aeration diffusers

- » Aeration is the greatest energy consumer at a wastewater treatment facility amounting to an approximate of 45 to 70% of plant energy.
- » All fine pore membranes foul regardless of make and manufacturer.
- » Factors that cause diffuser fouling: Bio film coating, plugging diffuser orifice, scaling/precipitation of inorganic salts.
- » Fouling reduces efficiency as well as performance.
- » Sureflo offers in-situ chemical cleaning of diffusers that not only clean the diffusers but gives better performance, efficiency and reduce energy requirements for diffuser operations.
- » Fouled State: Notice large bubbles and sporadic aeration pattern of a dirty membrane. – High Pressure & Low Efficiency.
- » After cleaning: Bubbles are much smaller and more even distribution of air. Pressure and Efficiency Restored.



Before -
Typical fouled
diffuser



After - In-Situ
Cleaning

Energy Saving

- » Significantly reduce energy that is devoted to running blowers for aeration.
- » Reduction in energy consumption = \$\$\$ Savings \$\$\$
- » No need to take your system off-line. Can clean membranes while continuing to treat the wastewater and while the air is still on.
- » Excellent alternative to the expensive option of replacing membranes. Consider cleaning before replacing membranes.
- » Struggling to maintain DO – clean your membranes which will increase your oxygen transfer efficiency and increase DO.
- » Blower pressure too high – clean your membranes which will reduce pressure and either turn down blower or turn a spare blower off.
- » Local and knowledgeable support.
- » Greatest return on investment.
- » Extend the life of membranes by cleaning the membranes. All membranes are required to be cleaned periodically.

How Do You Know If Acid Cleaning Your Membranes Is Right For You?

- » Are you meeting Dissolved Oxygen demand?
- » Are you using more air now (higher blower rpm, increased blower pressure, using an additional blower) to treat the same amount of wastewater?
- » Are you looking for ways to cut costs and improve efficiency?
- » Were you once able to get proper treatment, but now struggle to get required treatment?
- » Are you meeting permit requirements?
- » Are your blowers popping the PRV valve (pressure relief valve) on occasion?
- » Is there an increase in influent that may require more aeration capacity?
- » Looking for an economical way to clean your membranes (Ceramic or rubber)?
- » Do you have funds in your maintenance budget but not capital budget to improve process performance?

No Man Entry Crude Oil Tank Cleaning



Main Customer's Benefits

- » Lower direct costs of cleaning.
- » Recycling of up to 95% of sediments that can re-used by customer.
- » Reduced cost in disposal of only 5% (Five Percent) of sediments which require special post-treatment.
- » Substantially shorter shut-down time.

Large refineries and petrochemical companies hold heavy oils, as crude oil, in large tanks. With time, heavy sediments accumulate at the bottom of the tanks, partially obstructing the tank & preventing its proper and economical operation. Maintenance teams must shut-down operation & clean the sediments. They also perform routine maintenance, e.g., welding, that require a gas-free state within the tank.

Cleaning such tanks requires a massive work force & long shut-down periods of the tank, up to several months. Furthermore, petrochemical companies do not accept the sediments for re-use. Regulations classify these sediments as hazardous waste which requires disposal in special depositories. All this makes tank cleaning a costly operation.

Sureflo Techcon Pvt Ltd has robotic arms with high pressure pumps for removal of deposited in sludge in the tank and a mobile physio-chemical treatment system to recover oil, recycle water and obtain dry cake with oil content less than 10%. Our systems are designed for No Man Entry cleaning concept. Sureflo "MINI" robots are used for final cleaning stage of the tanks.

Robotic Sea Water Basin Cleaning

Marine growth and silt accumulate in the bottom of sea water intake channels, desalination plants, cooling tower basins, etc. Sureflo has developed unique robotics systems to remove the silt and marine growth in an online condition without man entry / diver entry.



Sea Water Basin Cleaning using Sureflo Robotic systems

Accumulation of silt and marine growth in sea water intake basins and cooling tower basins causes frequent choking in cooling water network and results in efficiency reduction of the system.

Conventional systems of cleaning sea water intake basins and cooling tower basins are dependent on entry of human divers in the bottom of the basin and cleaning with the help of suction pipes which may prove to be unsafe, time consuming and inefficient.

In the age of Robotics, Sureflo offers Online and No Man Entry based Robotic systems that can remove the silt and marine growth of shells upto 4" in size without any human entry into the basin and without a shutdown of the process.

Robotic cleaning has proven to be faster, safer and highly efficient, providing our clients the benefits of Zero Production Losses and Highest Safety Standards for cleaning of their basin.



Custom Solutions

Sureflo designs and manufactures customized robotic systems to suit the requirements of our client for tank cleaning. Sureflo has developed over 12 different models with varying dimensions and sludge removal abilities.



Dewatering Solutions

Dry cake disposal using Sureflo Robotics + Dewatering package accounts to a reduction of up to 90% of sludge disposal needs when compared to conventional methods of cleaning using vacuum suckers and man entry.



Safety First

Highest level of safety for tank cleaning as we follow a No Man Entry Concept

Sureflo uPVC Pipes

Sureflo pipes are high quality and used for high pressure systems like water distribution, aeration, irrigation, and plumbing systems. Sureflo UPVC pipes are best suited for cold water flow applications. These pipes are UV stabilized and leak proof.



Features

- » Strong and light weight
- » Durable
- » UV stabilized
- » Maximum flow rate
- » Chemical resistance
- » Lead Free

Field of Applications

- » Aeration basins
- » Swimming pools
- » Pipes for hand pumps
- » Saltwater lines
- » Sugar & paper industries, Industrial process lines
- » Aggressive / corrosive fluid transportation
- » Coal washing and ash handling



Standard & Specifications

SCH 40: As per ASTM D1785

SDR 26: As per ASTM D2241

Available Sizes (Length 3/6 Mtr)

SDR 40: 100 mm (4") & 150 mm (6") As per ASTM D1785

SDR 26: 80 mm (3") & 100 mm (4") As per ASTM D2241



Pipe Clamps

Size Range : 4" & 6"

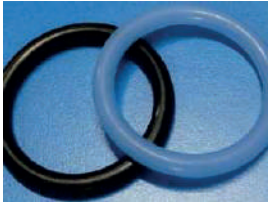
Material : Stainless Steel

Grades : SS304, SS304L, SS316, SS316L

Drilling Hole : M12

Thickness : 2 MM

Moulded and Extruded Rubber Product



Viton / Silicone
'O' Ring



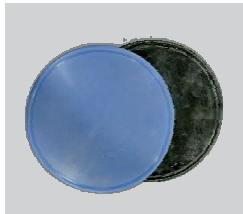
Braided Tubes
/ Hoses



Hose
Fittings



Silicone
Tubings



Disc Diffusers
EPDM / Silicone



Moulded Rubber
O-Rings



Rubber
Bands



Hose
Pipes



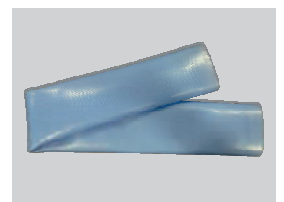
Silicone Transparent
Flexible Tube



Flexible Silicone
Rubber Tube



Extruded Rubber
Products



Tubular Diffuser
Membranes EPDM /
Silicone



Nylon
Tubings



Bellows & Molded
Rubber Products



All Molded
Rubber Products



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Sureflo Techcon Pvt. Ltd.

Corporate Office

📍 A -101 New India Chambers, Cross road
'A', MIDC Area, Andheri East, Mumbai,
India-400093

Manufacturing Unit

📍 Plot No A-4 Kundaim Industrial
Estate, IDC, Goa, India - 403115

Email: info@sureflo.in | **Website:** www.sureflo.in | **Phone No:** +91 22 41200915/16/17