



Breakthrough Technologies for Textile Wastewater Treatment

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Industrial Wastewater Treatment

The availability of water, and regulatory compliance of treated wastewater within norms, are two of the major challenges associated with water intensive manufacturing industries. As an extremely water intensive industry, the textile industry is strongly impacted.

We understand your needs!

The water challenge can be addressed optimally by an expert wastewater solution provider who not only understands textile manufacturing, but also has expertise in wastewater treatment, recycling, zero liquid discharge and sludge management.

A.T.E. HUBER Envirotech is a joint venture between A.T.E., India, and HUBER SE, Germany, and offers innovative wastewater treatment solutions. A.T.E. has a formidable experience of over 80 years in textile engineering, both in conventional and technical textiles, and offers end-to-end solutions.

HUBER SE is a global leader in the field of water, wastewater and sludge treatment providing solutions to global water problems. HUBER has over 180 years of experience and more than 40,000 installations spread across 60 countries. HUBER offers breakthrough technologies in wastewater management.

A.T.E. HUBER Envirotech (AHET) is one of only a handful of suppliers worldwide who supply a complete range of technology solutions for textile as well as other industrial wastewater treatment needs, encompassing recycling, zero liquid discharge, and complete sludge management solutions as well.

With our process-driven approach and a highly experienced in-house team of engineers and professionals, AHET caters to textile industrial sectors through a comprehensive range of technologies and equipment.

Our philosophy is: convert waste to wealth. This is applicable for both wastewater as well as sludge. Be it generating biogas from wastewater, recycling precious clean water from wastewater, or recovering energy and nutrient potential residue from bio-sludge, we do everything to optimise resources.

Our team who is specialised in this field will be pleased to support you for improving your current ERP, or for your upcoming project.

Let us work together to save water and reduce pollution!



AAA®

AAA® technology is a highly successful innovation from A.T.E. that enhances biological treatment efficiency, reduces colour and minimizes sludge generation for textile industry wastewaters. AAA® technology reduces chemical consumption and sludge generation by almost 70% compared to the conventional treatment process and ensures consistent treated effluent.

- Dissolved Air Flotation (DAF) as a primary treatment to eliminate floating impurities (fibres) with low chemical consumption and sludge generation
- Two-stage biological process reduces sludge by almost 70%, COD and colour by 85%, and plant footprint by 30-35%
- Produces methane-rich biogas, which can be used as fuel
- Reduces overall power consumption by almost 25%
- Provides consistent quality of treated wastewater
- Option of remote monitoring



SUFRO®

The SUFRO® system comprises high quality submerged ultrafiltration (UF) membrane laminates with 38 nm pore size followed by a reverse osmosis (RO) plant. This technology offers huge benefits in terms of savings in chemicals, balance of equipment, backwash water requirements, and space.

- A unique system that protects downstream RO membranes as well as upstream biological treatment
- Can withstand high inlet suspended solids load upto 1000 ppm
- Eliminates sand filter, carbon filter, and UF
- Reduces backwash water and consumption of cleaning chemicals
- 50% smaller footprint compared to conventional UF
- Easy to operate and control
- Plug and play
- Robustly engineered RO recycle systems offers maximum recovery and enhanced membrane life
- Option of remote monitoring



Aerobic MBR

- A compact aerobic bio-reactor design
- High quality treated effluent
- Simple and modular design for quick and easy installation
- Redundant components for high reliability
- Single-track system with minimum pumps and blowers and simple control
- Low operation and maintenance cost
- Membrane configuration not affected by fluff and fibre
- Ultra filtration membranes that retain all particles, bacteria and germs
- Option of remote monitoring



Multi-stage RO recycling plant

- Fully automated PLC-based RO recycling plant
- Four-way control loop of operation that minimises possibility of operator errors
- Consistent performance
- Minimum operator intervention
- Compact design
- Enhanced membrane life
- Low operating cost
- Option of remote monitoring



Multi-effect evaporator and dryers

- Fully automated PLC-based multi-effect evaporator and dryers
- High level of process automation
- Consistent performance
- Minimum operator interventions
- Option of remote monitoring

Packaged ETP

The treatment process comprises mechanized screening, anaerobic biodegradation and aerobic MBR. The combination of anaerobic and aerobic processes result in very good colour and COD reduction in the treated effluent.

- Compact FRP tank design
 - 40% less space required
 - Virtually no civil work required
- Modular and wide capacity range
 - 10 m³/d to 150 m³/d
 - Easy and quick installation
 - Installation underground/above ground possible
- Low foot print, multi-storey design is possible
 - Low chemical consumption
 - Low sludge generation
 - Low power consumption
 - Option of remote monitoring



Packaged STP

The treatment process comprises steps for sedimentation, anaerobic-aerobic biodegradation and disinfection – all combined in a single FRP tank. The combination of anaerobic-aerobic biological system results in the removal of high BOD and nitrogen in the treated stream. The air pumps used for aeration employ perfectly balanced mixing.

- 2-stage anaerobic-aerobic treatment process
- Compact, single FRP tank design
- Underground or over ground installation
- Modular construction
- Low operating cost
- Option of remote monitoring



Anaerobic MBR

Single-stage treatment for low strength effluents from textile processes
e.g. denim washing etc

- A compact anaerobic bioreactor design
- Low foot print
- Low power consumption
- Low chemical consumption
- Very low sludge generation
- Option of remote monitoring



Sludge Treatment

Around 15 years ago, India embarked on its journey towards Zero Liquid Discharge (ZLD). Though becoming fully ZLD-compliant seemed far-fetched in those days, today India has set an example for the world by successfully implementing ZLD projects in many states.

A major factor of concern, however, is the disposal of sludge. Today, technology has moved from physio-chemical treatment to biological treatment, which has cut down sludge generation substantially. However, the quantity of sludge generated is still huge, and it is mandatory to send the dewatered sludge to government allocated landfill sites only.

The rate for sludge disposal has increased multi-fold from Rs 1/- per kg to Rs 8/- per kg in the past 7-8 years. In some regions it is as high as Rs 16/- per kg. This upward trend is bound to continue in the coming years as well. This makes it all the more important for the industry to produce as little sludge as possible.

The sludge produced in the ETPs comprises of 20% solids + 80% water. Thus, obviously, for the transportation of the sludge, the industry also pays for the weight of water present in the sludge.

It is, therefore, important to achieve maximum dryness of sludge at the lowest cost so as to reduce the weight of the sludge and thus reduce the disposal cost. With conventional techniques, achieving even 20% dryness is difficult, and the situation only worsens during the monsoon.

The textile industry needs scientifically designed sludge management solutions. AHET's wastewater treatment solutions ensures reducing the sludge generation in the wastewater. Additionally, most of the sludge generated is organic in nature which is eco-friendly.

In this section we now discuss the technologies offered by AHET to reduce the weight and volume of the sludge, thereby helping to reduce disposal cost.

Further, reducing the water content of the organic sludge also increases its thermal value. With the permission of local authorities, industries may be able to utilize the dried sludge as a supplement to other fuels for generating energy.

Mechanical Sludge Treatment

HUBER Disc Thickener S-DISC

- Simple operating principle
- Minimum operator intervention
- High operating reliability
- Compact and closed design
- Accessible for full inspection
- Minimised wash water demand
- Wear-resistant stainless steel parts
- Noiseless operation
- Specific power consumption $<0.02 \text{ kWh/m}^3$
- Hundreds of installations worldwide



HUBER Rotary Screw Thickener S-DRUM

- High solids handling capacity
- Minimum operator intervention
- High operating reliability
- Compact and closed design to eliminate odours
- Wear-resistant stainless steel parts
- Low wash water demand
- Specific power consumption $<0.02 \text{ kWh/m}^3$
- Hundreds of installations worldwide



HUBER Screw Press Q-PRESS®

- High dewatering performance
- Minimum operator intervention
- High operating reliability
- Compact and closed design to eliminate odours
- Specific power consumption of 0.02-0.04 kWh/kg of dry solids
- Hundreds of installations worldwide
- Option of mobile units



Solar Active Dryer

The HUBER Solar Active Dryer is a simple, natural and accelerated sludge drying system. The specially designed turner helps sludge spreading, granulation and transport in a greenhouse construction.

- Continuous sludge feeding possible, even during monsoon
- Suitable even for small sludge volumes from 1,000 tons per annum
- Sturdy design, low energy consumption of 0.015 kWh/kg of sludge
- True backmixing of sludge for a perfect drying and granulation
- Modular design
- Fully automatic operation (including feeding and withdrawal system which is optional)
- Virtually operator-less operation
- Option of remote monitoring
- Optional use of exhaust heat to support solar drying





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