SUPREEM TUBERS

RECYCLE WASTE

*Specialist in Environmental solutions & Waste management*

**BACKGROUND OF COMPANY-**

Founded a decade ago, is a specialist waste treatment company with its management having 50 Years of strong knowledge, expertise and experience in Waste Management, Recycling and reuse of both solid waste and liquid wastewater (Zero liquid) having its Domain in GGC regions.

With our sustainable solution and unique expertise, we help to overcome important challenges of waste management, waste treatment, recycling and reuse. Also waste water treatment and recycling, while ensuring sustainable resource savings. With our designed range of solid waste recycling/reuse & zero liquid technologies. We process the waste into sustainable energy while meeting the quality standards and discharge, compliance of the government regulatory standards.

**OBJECTIVES-**

- Engage employees in creating a culture of compliance and ethics where their daily words and actions reflect our Fundamental Commitments and Core Values.
- Encourage employees to SPEAK UP by sharing ideas, asking questions and reporting any issues concerns or violations without the fear of retaliation.
- Educate employees on how to comply with policies and procedures and applicable external laws, rules and regulations and why it's important to do so.
- Ensure that employees at all levels of the Company proactively comply with policies and procedures and applicable external laws, rules and regulations

**WASTE TREATMENT-**

The wastewater which is unloaded in the respective GRP tanks is checked for the basic water characteristics viz. TDS/pH/COD/TSS.

We have wastewater storage tanks classified as: PH neutralizer tank/TDS balancing tank/COD balancing tank/Heavy metals balancing tank.

The High and low PH meter streams are neutralized from neutralization tanks and sent to filter press with the required (flocculent/coagulant/de-emulsifier) dosing's are added.

It passes through various stages of aeration, clarification, ultra-filtration and further process downstream.

**WASTE TREATMENT-**

**Solution Plant Engineering**

Our designed wastewater treatment systems help to achieve a cost-effective process with high quality effluent. Our core expertise is Sustainability strategy, Waste reduction and zero liquid discharge.

| Typical Treatment Result | |
|---|---|
| COD Reduction | > 90 % |
| TSS Reduction | > 99 % |
| Sustainable Energy | > 90 % |
| TDS Reduction | > 90 % |
| Metal Removal | > 99 % |

| Typical Treatment Result | |
|---|---|
| SS Reduction | > 90 % |
| PH NEUTRALIZATION | > 99 % |
| Total Hardness Reduction | > 90 % |
| Metals Removal | > 90 % |
| Ammonia Removal | > 99 % |

**Chemicals Supplies –** Eco-Friendly, Membrane cleaning Chemicals, and wastewater treatment chemicals for wastewater facilities.

**After Sale Services:**

Start-up, Commissioning, Training/Spare-parts

Consumables / Preventive & Corrective Maintenance

Annual Maintenance Contracts.

**The Company:**

We are managed by dedicated experts well versed in all aspects of product techniques related to water treatment and equipment`s. The Company is supported by a sales team of highly qualified Engineers and Technicians to provide best quality products with guarantee of back-up services. It holds sole agencies of numerous internationally recognized manufacturers, and an extensive inventory of their products are always available ex-stock.

- Engineering and management program include -
- Process Engineering & Design
- Equipment Procurement
- Project Management
- After sales & service

**Our reputed factory facility for fabrication of RO plant has the following facilities.**

- Sand blasting system
- Powdered coating system for skid
- Orbital welding facility for Stainless Steel pipe
- Pressure & leakage testing procedure.
- PLC programming for control panels
- In house chemical cleaning and membrane testing system
- Separate cold storage room for membrane preservation.
- Using sophisticated machines for cutting, threading, drilling, power press, light Machine and other equipment's.

## Reverse Osmosis Plant for following –

- Residential water purification system
- Portable Sea water system
- Commercial scale purified water system (Brackish water)
- Commercial scale purified water system (Sea water)
- Water used for kidney dialysis unit.
- Water used for beverage manufacturing.
- Bottled water.
- Water used for Boiler, Chiller feed.


## Water Filtration System Division – STCL

Designs, install, testing, commissioning and maintenance of Water Filtration systems –

## FRP Tank Division

- We are the only company in GCC, which manufactures FRP tanks for water treatment plants
- Manufactured with raw materials that have ISO Accreditation. Manufactured in accordance with raw material technical guidelines. Lamination schedule determined according to design loads.
- **Testing**
  BARCOL Lamination cure test. High voltage HOLIDAY joint test. Internal lamination surface inspection for voids or wicking.
- **Warranty**
  All workmanship and raw materials are covered by a 365-day warranty or as per manufacturers raw material warranties.
- **Subject to terms & conditions**
  SLUDGE DISPOSAL TANKS LAMELLA FLOW DECANTERS CLARIFIER TANKS SEDIMENTATION 'V' NOTCH TANKS

**See Below Pictures for References –**



## CONTROL PANEL

## Designs and Fabricates Control Panel and Accessories


## Swimming Pools Division –

- We handle Swimming Pool Filters, Pumps, Fittings, Brushes. Nets, and Stocks it.
- We have the largest stock of Calcium hypochlorite and other chlorine-based chemicals like TICA, SDIC, and others.
- Being the sole agent for GCC, we are the shopping center for swimming pool products, systems & maintenance in GCC neighboring and African countries.
- Effluent & Sewage Treatment Division, undertake the projects on Industrial Effluent and Sewage Treatment. Specialty Chemical Division handles Caustic Soda, Soda Ash, Solvents (Methanol, Toluene). Diatomaceous Earth Powder Boiler & Chilled water & other chemicals in the GCC REGION




- **Maintenance**
  Undertakes all types of maintenance of swimming pool, water purification system (such as Filters, Softeners, Reverse Osmosis Plants, DM plants), Disinfection of domestic water systems, de scaling of the boilers and heat exchangers

- **Tank Cleaning**
  Undertakes disinfection and sterilization of building overhead and underground tanks as per local municipality norms and issue certificate

- **Workshop Facilities**
  Service Centre in Jubail is equipped with the latest, most up to date plant and equipment and is managed by professionals with a wealth of experience.

## SERVICE

## FEASIBILITY STUDY

We also under studies based on Joint Ventures and partnership as we strongly believe such consultancy business models by workingtogether create successful partnerships


## TENDER PREPARATION EVALUATION

- With our technical panel of experts, we prepare & evaluate public and private tenders.
- We help to develop and write tender bid
- We examine the tender documents including its details, preparation, drafting and submission.
- We help to design tender evaluation criteria that will make for an effective bid evaluation and supplier selection.
- We make it mandatory to include site visit in the tender document.
- We help client to award contract to the right supplier.
- We also undertake contract supervision on award of contract.

## TECHNICAL COMMERCIAL PROPOSAL

We undertake detailed technical commercial proposals giving insight into latest trends & Green technology developments

## DESIGN ENGINEERING

We carry out detailed design and engineering of projects related to process, mechanical, electrical and instrumentation

**PROJECT SUPPORT** - With our experienced project site specialists, we undertake supervision of commissioning, operation & maintenance, annual maintenance contracts of projects.

- Site planning and scheduling of works
- Checking and finalization of available resources and civil related works
- Installation procedure of various equipment`s
- Pre-commissioning checks
- Commissioning
- Maintaining logs
- Water analysis
- Finalizing routine and mandatory maintenance schedules
- Spares and Consumables inventory records
- Optimization of plant
- Trouble Shooting

## PROJECT MANAGEMENT CONSULTANCY

We work hand-in-hand to implement turnkey projects with full project management. Some of these are:

- Project Initiation
- Feasibility study
- Detailed Engineering design – Scope of Work (SOW)
- Project planning
- Green Procurement management
- Operations
- Testing and commissioning
- Inspection
- Handover
- Maintenance
- Annual Audit
- Onsite Training & demonstration

## WASTE MANAGEMENT & RECYCLING –

We are aiming for a sustainable environment by minimizing the wastage of resources. We provide consultancy for waste management to reduce waste.

In line with the government direction, we are promoting green waste management technique in Life cycle assessment of existingtreatment plants or new to build plants.

## INSPECTION & AUDIT

We undertake inspection & audits based on international and national requirements and legislation.

**1) Water inspection & audit service – Volume vs. Cost**

- Water Reuse
- Water Reduction
- Conservation
- Preparation of a waste reduction work plan with quarterly / annual review

**2) Energy inspection & audit service – Usage vs. Cost**

- Lighting
- Appliance

**3) Renewal Energy Consultancy**

- We are one of the Approved Consultant of the rapidly growing Renewable Energy. With a team of certified professionals and necessary know-how, we are able to provide the comprehensive scope of work.

# PROJECT REFERENCES

## 150m$^3$/Day Waste Water Treatment Plant for Powder Coating & Extrusion






***SUPREEM TUBERS CO LTD, Al-Jubail, KSA***

## REVERSE OSMOSIS SYSTEM

# *Standards For Quality Control -*

Supreem Tubers Co Ltd (STCL) is ISO 9001:2008 accredited for its Quality Management systems and standards. Recognizing the company's ability to engineer, manufacture and supply water refining systems that meet client's specific requirements. We only use high quality components sourced from Europe and Asia.

Our Equipment are specifically sourced from leading manufacturers, thereby enabling us to meet stringent quality and HSE standards that our clients in the construction, offshore, oil & gas environments demand. All employees undergo extensive training and orientation relevant to their roles in order to effectively deliver quality products and services.

The high quality and reliability of our systems have earned Green Planet an extensive list of clients in various market segments and geographies. These standards have enabled us to maintain customer satisfaction while building strong customer loyalty.

**PRODUCTION CAPACITY**

We have the production capacity of fabricating 4 – 5 (Sea water/Brackish Water) RO plants of 20000-30000m3/day.

We also have a capacity to build 3-4 STP (Sewage Treatment Plants) of 5000m3/day. With due consideration of prevailing market conditions, we are constantly researching, developing and implementing innovative technologies & approaches that will enable us to enhance recovery and ensure improved production efficiency.

PRODUCT DATA SHEET

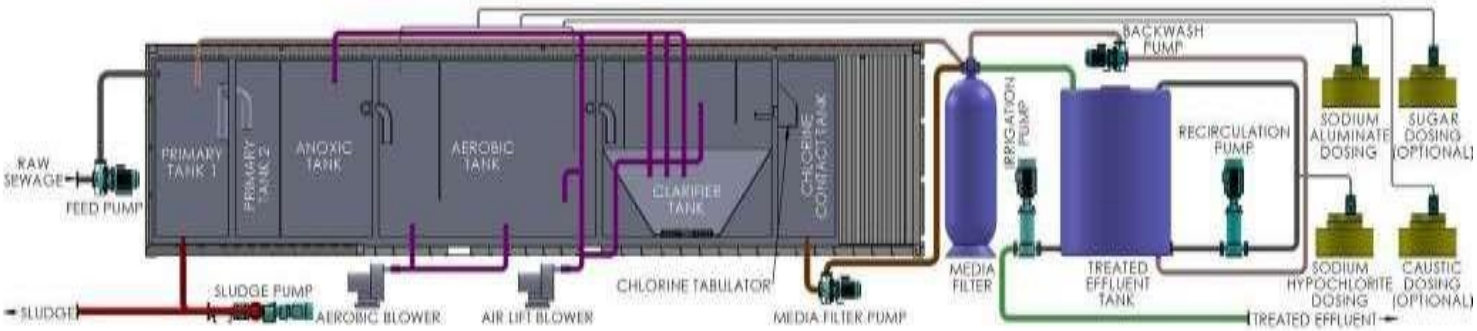
# Submerged Aerated Filter (SAF)

**water | wastewater | treatment | recycling**

## OVERVIEW :

Submerged Aerated Filter (SAF) waste water treatment plants are designed to treat domestic strength sewage, to achieve Class C treated effluent, suitable for reuse in “risk category low” applications or for disposal via spray field. With the addition of the optional Tertiary Filtration & Sterilization module, Class A treated effluent, suitable for reuse in “risk category medium” applications, can be achieved.

The treatment process includes influent screening (where required), biological degradation (aerobic/anaerobic treatment), clarification and effluent sterilization (chlorination).The Class A Filtration & Sterilization process includes multimedia filtration followed by secondary chlorination via tank recirculation and residual trim dosing. Additional treatment steps for nutrient removal (T-N & T-P) and sludge de-watering systems may be added as required to suit influent quality and/or treated effluent quality requirements. The plants are containerised systems for easy deployment to remote locations



# STANDARD SPECIFICATIONS:

| Parameter | Units | SAF-15 | SAF-35 | SAF-50 | SAF-75 | SAF-100 | SAF-150 | SAF-200 |
|---|---|---|---|---|---|---|---|---|
| Treatment Capacity | $m^3$/day | 15 | 35 | 50 | 75 | 100 | 150 | 200 |
| Sludge Production (WAS) | $m^3$/day | 0.36 | 0.84 | 1.2 | 1.8 | 2.4 | 3.6 | 4.8 |
| Sludge Tank Size | $m^3$ | N/A | N/A | N/A | 9.9 | 22.5 | 32 | 45 |
| WAS MLSS | mg/L | 2000~3000 | | | | | | |
| Dewatered Sludge (optional) | % solids | 15~20% | | | | | | |
| Ambient Design Temperature | °C | 5 ~ 45 | | | | | | |
| Power Supply | - | AC 380~450 V, 3 Phase, 50/60 Hz | | | | | | |
| Power Consumption | kW | 4 | 6.5 | 9.5 | 14 | 18.5 | 28 | 37 |
| No. Containers | - | 1 x 20' | 1 x 40' | 1 x 40' | 2 x 40' | 2 x 40' | 3 x 40' | 4 x 40' |

| Characteristics | Units | Influent | Class C Effluent | Class A Effluent |
|---|---|---|---|---|
| Temperature | °C | 25~30 | - | |
| pH | pH units | 6.5~8.5 | 6.5~8.5 | |
| BOD | mg/L | 150~500 | <20 | |
| TSS | mg/L | 150~400 | <30 | <5 |
| T-N | mg/L | <50 | <40 (lower T-N option available) | |
| T-P | mg/L | <15 | <10 (lower T-P option available) | |
| TDS | mg/L | <1,000 | - | |
| Turbidity | NTU | - | - | <5 |
| E.Coli | cfu/100 mL | - | <1,000 | <10 |
| Free Chlorine | mg/L | - | 0.2~2 | |

# STANDARD INCLUSIONS + OPTIONS

✓= Standard Supply, o = Optional Supply, - = Not Available

| Equipment | | SAF-15 | SAF-35 | SAF-50 | SAF-75 | SAF-100 | SAF-150 | SAF-200 |
|---|---|---|---|---|---|---|---|---|
| Feed Pump | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Inlet Screen | | o | o | o | ✓ | ✓ | ✓ | ✓ |
| Internal Primary Tanks with Sludge Pump | | ✓ | ✓ | ✓ | – | – | – | – |
| External Sludge Tank | | – | – | – | ✓ | ✓ | ✓ | ✓ |
| Aeration & Air Lift Pump Blowers | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Anoxic Tank with Mixer | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Aerobic Tank with Submerged Media, Diffusers & Air Lift Recycle | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Chemical Dosing – Coagulation | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Clarifier Tank | with RAS Air Lift Recycle | ✓ | ✓ | ✓ | – | – | – | – |
| | with RAS/WAS Pump | – | – | – | ✓ | ✓ | ✓ | ✓ |
| Chlorine Contact Tank with Tablet Chlorinator | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| PLC Control System with HMI | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Containerized system, c/w Caged Access Ladder, Elevated Walkway with Hand Rails and Lights | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Class A Tertiary Filtration & Sterilization | Multimedia Filter with Feed/ Backwash Pump | o | o | o | o | o | o | o |
| | Tank Recirculation with Residual Trim Hypo Dosing | o | o | o | o | o | o | o |
| Chemical Dosing - enhanced T-N / T-P removal | | o | o | o | o | o | o | o |
| Sludge Dewatering System (15~20% solids) | | o | o | o | o | o | o | o |
| Premium Instrumentation Package | | o | o | o | o | ✓ | ✓ | ✓ |

| Instrumentation | | Standard Package | Premium Package |
|---|---|---|---|
| Level Sensors | | ✓ | ✓ |
| Pressure Gauges | | ✓ | ✓ |
| Air Flow Indicators | | ✓ | ✓ |
| Magnetic Flow Transmitter | | ✓ | ✓ |
| Flow Switches | | - | ✓ |
| Anoxic Tank ORP Analyser | | - | ✓ |
| Aerobic Tank pH Transmitter | | - | ✓ |
| Aerobic Tank Dissolved Oxygen Analyser | | - | ✓ |
| Remote Monitoring & Control Capabilities | | - | ✓ |
| Class A Only | Media Filter Differential Pressure Sensor | ✓ | ✓ |
| Class A Only | Effluent Chlorine Analyser | ✓ | ✓ |
| Class A Only | Effluent Turbidity Analyser | ✓ | ✓ |
| Class A Only | Effluent pH Analyser | ✓ | ✓ |
| Class A Only | Recirculation Pump Pressure Switch | ✓ | ✓ |

## MODEL SELECTION

**0015** 15 m³/day
**0035** 35 m³/day
**0050** 50 m³/day
**0075** 75 m³/day
**0100** 100 m³/day
**0150** 150 m³/day
**0200** 200 m³/day
**XXXX** Custom treatment capacity

- **C** Treatment to Class C, standard supply
- **A** Treatment to Class A with Tertiary Filtration & Sterilization
  - **X** Chemical Dosing Systems, standard supply
  - **C** Chemical Dosing Systems, enhanced T-N / T-P removal
    - **X** Standard Instrument Package
    - **P** Premium Instrumentation Package, c/w Remote Monitoring
    - **C** Custom Supply
      - **X** Sludge dewatering - Without
      - **S** Sludge dewatering - With

## PRODUCT DATA SHEET

# DAF Clarification

**water | wastewater | treatment | recycling**

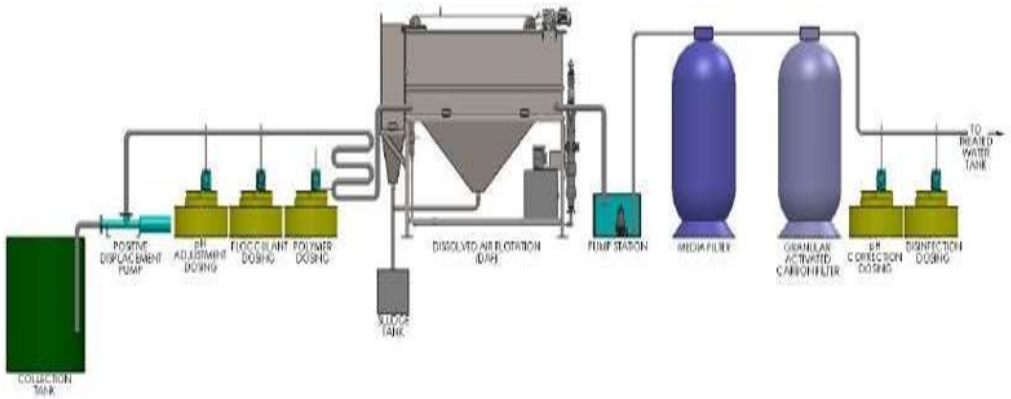
## OVERVIEW:

The Dissolved Air Flotation (DAF) system is a superior counter current system designed to achieve maximum treatment efficiency in a compact footprint. It is able to remove a variety of contaminants to meet trade waste or reuse requirements. Each system is sized based on the hydraulic loading rate, Total Suspended Solids (TSS) and Fats, Oil and Greases (FOG) levels. The surface loading rate that can be applied is dependent on each application. If any doubt, please contact us for clarification of sizing.

## STANDARD PROCESS:

The DAF separates the suspended solids and lighter liquid contaminants (e.g. FOG and hydrocarbons) from the water by moving them to the surface of the DAF vessel and then scraping them off the surface. A pressurized stream of air- saturated water is mixed with the flocculated water and with the release of pressure, a cloud of very fine air bubbles carries the suspended solids and lighter liquids to the tank surface. Clean water overflows from the DAF tank, via an under/over-weir to sewer or to the next stage of the treatment process. The overflow level is adjustable and controls the level in the DAF flotation section. The sludge on the surface of the DAF is scraped into a sludge hopper by a mechanical scraper. The DAF system is automated via a programmable logic controller (PLC) mounted within a control cabinet on the system.

**ADDITIONAL FLOW RATES AND CUSTOMISED SOLUTIONS ARE AVAILABLE. JUST ASK US.**



## STANDARD SPECIFICATIONS

| Parameter | Units | DAF 1.0 | DAF 1.5 | DAF 3.5 | DAF 10 | DAF 20 | DAF50 | DAF100 | DAF200 |
|---|---|---|---|---|---|---|---|---|---|
| DAF Flow Rate | m³/hr | 1.0 | 1.5 | 3.5 | 10 | 20 | 50 | 100 | 200 |
| Total Inlet Solids | mg/L | 10,000 | | | | | | | |
| FOG Removal | % | 85~95 (Application Dependent) | | | | | | | |
| TSS Removal | % | 70~99 (Application Dependent) | | | | | | | |
| COD Removal | % | 20~80 (Application Dependent) | | | | | | | |
| BOD Removal | % | 20~80 (Application Dependent) | | | | | | | |
| Power Consumption | kW | 2 | 3 | 4 | 7 | 12 | 25 | 44 | 84 |
| Footprint | m | 2.2 x 2.0 | 2.2 x 2.0 | 3.0 x 2.5 | 4.0 x 3.0 | 4.0 x 3.0 | 6.0 x 5.0 | 9.0 x 5.0 | 10.0 x 6.0 |

## STANDARD INCLUSIONS + OPTIONS

✓= Standard Supply, o = Optional Supply, – = Not Available

| Equipment | | DAF1.0 | DAF1.5 | DAF3.5 | DAF10 | DAF20 | DAF50 | DAF100 | DAF200 |
|---|---|---|---|---|---|---|---|---|---|
| Skid Mounted Plant & Equipment | | ✓ | ✓ | ✓ | ✓ | ✓ | – | – | – |
| Feed Pump | Standard | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Submersible | o | o | o | o | o | o | o | o |
| Pre-Treatment | Flocculent Dosing | o | o | o | o | o | o | o | o |
| | Polymer Dosing | o | o | o | o | o | o | o | o |
| | pH Adjustment | o | o | o | o | o | o | o | o |
| PLC Control System with HMI | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| On Board Air Compressor | | o | o | o | o | o | o | o | o |
| Treated Water Recycling for Saturator | | o | o | o | o | o | o | o | o |
| Saturator Feed - Potable Water Top Up | | o | o | o | o | o | o | o | o |
| Flow Based Chemical Dosing | | o | o | o | o | o | o | o | o |
| Containerised System, c/w A/C & Lights | | o | o | o | o | – | – | – | – |
| Container Insulation (walls & ceiling) | | o | o | o | o | – | – | – | – |
| Container Non-slip Floor Coverings | | o | o | o | o | – | – | – | – |
| Container Side Access Door | | o | o | o | o | – | – | – | – |
| Additional Pre DAF Treatment | | o | o | o | o | o | o | o | o |
| Additional Post DAF Treatment | | o | o | o | o | o | o | o | o |
| Premium Instrument Package | | o | o | o | o | o | o | o | o |
| Sludge Pump | | o | o | o | o | o | o | o | o |

| Instrumentation | Standard Package | Premium Package |
|---|---|---|
| Pressure Gauges | ✓ | ✓ |

| | | |
|---|---|---|
| pH Transmitter (4-20mA) | ✓ | ✓ |
| Pressure Reducing Valve | ✓ | ✓ |
| Flow Switch | - | ✓ |
| Flow Transmitter (4-20mA) | - | ✓ |
| Sludge Hopper Level | - | ✓ |
| Remote Monitoring & Control Capabilities | - | ✓ |

## MODEL SELECTION

**01.0** 1.0 m³/hr flow rate
**01.5** 1.5 m3/hr flow rate
**03.5** 3.5 m3/hr flow rate
**010** 10 m3/hr flow rate **020**
20 m3/hr flow rate **050** 50
m3/hr flow rate
**100** 100 m3/hr flowrate
**200** 200 m3/hr flowrate
**XXX** Custom flow rate
- **XX** Skid mounted
- **CX** Containerised - standard
- **CF** Containerised - with floor coatings
- **CP** Containerised - with floor coatings & insulation
  - **X** Standard feed pump
  - **S** Submersible feed pump
    - **X** Pre DAF treatment - without
    - **C** Pre DAF treatment - custom
      - **X** Post DAF treatment - without
      - **C** Post DAF treatment - custom
        - **X** Standard instrument package
        - **P** Premium instrument package, c/w remote monitoring
        - **C** Custom instrument package
          - **Sludge pump**
          - **X** Without
          - **C** Custom

## PRODUCT DATA SHEET

# Membrane Bioreactor (MBR) Sewage Treatment Plant

**water | wastewater | treatment | recycling**

## OVERVIEW

Membrane Bioreactor (MBR) wastewater treatment plants are designed to treat domestic strength sewage, to achieve high quality (Class A+) treated effluent suitable for reuse in non-potable (risk category high) applications.

The standard treatment process involves influent screening, biological degradation (aerobic/anaerobic treatment), Ultrafiltration (UF), with automated chemical cleaning system, and

effluent sterilization (chlorination). Additional treatment steps for nutrient removal (T-N & T-P), secondary effluent sterilization (UV), and sludge de-watering systems may be added as required to suit influent quality and/or treated effluent quality requirements. The MBR plants are containerized systems for easy deployment to remote locations. ADDITIONAL FLOW RATES AND CUSTOMISED SOLUTIONS ARE AVAILABLE. JUST ASK US.

## STANDARD SPECIFICATIONS:

| Parameter | Units | MBR-50 | MBR-100 | MBR-150 | MBR-200 | MBR-300 | MBR-450 | MBR-600 |
|---|---|---|---|---|---|---|---|---|
| Treatment Capacity | $m^3$/day | 50 | 100 | 150 | 200 | 300 | 450 | 600 |
| Sludge Production (WAS) | $m^3$/day | 1.5 | 3 | 4.5 | 6 | 7.5 | 9 | 10.5 |
| WAS MLSS | mg/L | 8,000~10,000 | | | | | | |
| Dewatered Sludge (optional) | % solids | 15~20% | | | | | | |
| Ambient Design Temperature | °C | 5~45 (-15~50 for insulated system) | | | | | | |
| Power Supply | - | AC 380~450 V, 3 Phase, 50/60 Hz | | | | | | |
| Power Consumption | kW | 15 | 30 | 40 | 55 | 80 | 120 | 160 |
| No. Containers | - | 1 x 20' | 1 x 40' | 2 x 40' | 2 x 40' | 3 x 40' | 4 x 40' | 5 x 40' |

| Characteristics | Units | Influent | Effluent |
|---|---|---|---|
| Temperature | °C | 25~30 | - |
| pH | pH units | 6.5~8.5 | 6.5~8.5 |
| BOD | mg/L | 150~500 | <10 |
| TSS | mg/L | 150~400 | <10 |
| T-N | mg/L | <50 | <40 (lower T-N available on request) |
| T-P | mg/L | <15 | <10 (lower T-P available on request) |
| TDS | mg/L | <1,000 | - |
| Turbidity | NTU | - | <2 |
| E. coli | cfu/100 mL | - | <1 |
| Free Chlorine | mg/L | - | 0.2~2 |
| Viruses | % removal | - | 99.999 |

## STANDARD INCLUSIONS + OPTIONS:

✓= Standard Supply, o = Optional Supply, - = Not Available

| Equipment | | MBR-50 | MBR-100 | MBR-150 | MBR-200 | MBR-300 | MBR-450 | MBR-600 |
|---|---|---|---|---|---|---|---|---|
| MBR Feed Pump | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Inlet screen | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Anoxic Tank with Mixer | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Aerobic Tank with Blower & Diffusers | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| RAS/WAS Pump | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| UF Membranes with Feed & Permeate Pumps | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| UF Backwash & Chemical Cleaning System | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Effluent Sterilisation | Flow Paced Hypo Dosing | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Hypo Dosing with Tank Recirculation & Residual Trim | o | o | o | o | o | o | o |
| | UV Sterilizer | o | o | o | o | o | o | o |
| PLC Control System with HMI | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Containerised system, c/w A/C & Lights | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| UF Container Insulation (walls & ceiling) | | o | o | o | o | o | o | o |
| UF Container non-slip floor coverings | | o | o | o | o | o | o | o |
| UF Container Side Access Door | | o | o | ✓ | ✓ | ✓ | ✓ | ✓ |
| Influent Dosing (enhanced T-N / T-P removal) | Sodium Aluminate | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Caustic | o | o | o | o | o | o | o |
| | Sucrose | o | o | o | o | o | o | o |
| Sludge Dewatering System (15~20% solids) | | o | o | o | o | o | o | o |
| Premium Instrumentation Package | | o | o | ✓ | ✓ | ✓ | ✓ | ✓ |

| Instrumentation | Standard Package | Premium Package |
|---|---|---|

| | | |
|---|---|---|
| Level Sensors | ✓ | ✓ |
| Pressure Gauges | ✓ | ✓ |
| Pressure Transmitters (4-20 mA) | ✓ | ✓ |
| Magnetic Flow Transmitters (4-20 mA) | ✓ | ✓ |
| Anoxic Tank ORP Analyser | - | ✓ |
| Aerobic Tank Dissolved Oxygen Analyser | - | ✓ |
| Effluent Chlorine Analyser | - | ✓ |
| Effluent Turbidity Analyser | - | ✓ |
| Effluent pH Analyser | - | ✓ |
| Remote Monitoring & Control Capabilities | - | ✓ |

## MODEL SELECTION

**0050** 50 m³/day
**0100** 100 m³/day
**0150** 150 m³/day
**0200** 200 m³/day
**0300** 300 m³/day
**0450** 450 m³/day
**0600** 600 m³/day

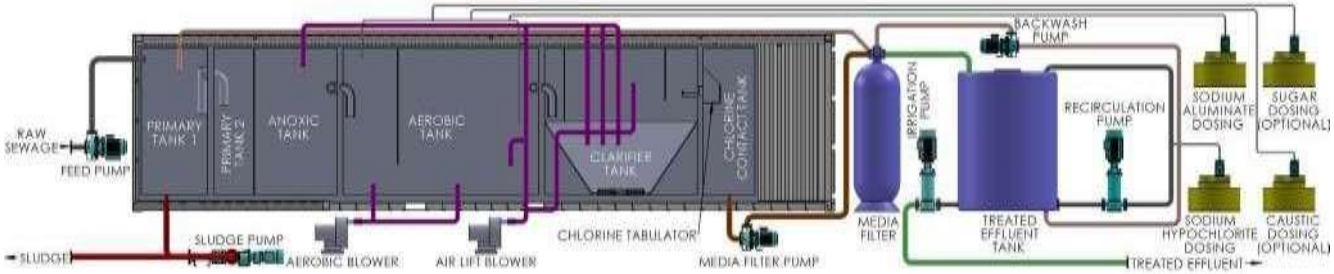
- **X** Containerised Plant, standard supply
- **F** Containerised Plant with floor coatings
- **P** Containerised Plant with floor coatings & insulation
  - **X** Effluent Sterilization - Flow paced hypo dosing, standard supply
  - **R** Effluent Sterilization - Hypo dosing with tank recirculation & residual trim
  - **U** Effluent Sterilization - UV
  - **D** Effluent Sterilization - UV + hypo dosing with tank recirculation & residual trim
    - **X** Influent Dosing Systems - Standard supply
    - **C** Influent Dosing Systems - Custom (specify caustic/sodium aluminate/sucrose)
      - **X** Standard instrument package
      - **P** Premium instrumentation package, c/w remote monitoring
      - **C** Custom supply
        - **X** Sludge dewatering - Without
        - **S** Sludge dewatering - With

# PRODUCT DATA SHEET

## Moving Bed Bioreactor (MBBR)

**water | wastewater | treatment | recycling**

**OVERVIEW:** Moving Bed Bioreactor (MBBR) waste water treatment plants are designed to treat domestic strengthsewage, to achieve Class C treated effluent, suitable for reuse in “risk category low” applications or for disposal via spray field. With the addition of the optional Tertiary Filtration & Sterilization module, Class A treated effluent, suitable for reuse in “risk category medium” applications, can be achieved.



The treatment process includes influent screening (where required), biological degradation (aerobic/anaerobic treatment), clarification and effluent sterilization (chlorination). The Class-A Filtration & Sterilization process includes multimedia filtration followed by secondary chlorination via tank recirculation and residual trim dosing. Additional treatment steps for nutrient removal (T-N & T-P) and sludge de-watering systems may be added as required to suit influent quality and/or treated effluent quality requirements. The MBBR plants are containerised systems for easy deployment to remote locations.

## STANDARD SPECIFICATIONS

| Parameter | Units | MBBR-15 | MBBR-35 | MBBR-50 | MBBR-75 | MBBR-100 | MBBR-150 | MBBR-200 |
|---|---|---|---|---|---|---|---|---|
| Treatment Capacity | $m^3$/day | 15 | 35 | 50 | 75 | 100 | 150 | 200 |
| Sludge Production (WAS) | $m^3$/day | 0.36 | 0.84 | 1.2 | 1.8 | 2.4 | 3.6 | 4.8 |
| Sludge Tank Size | $m^3$ | N/A | N/A | N/A | 9.9 | 22.5 | 32 | 45 |
| WAS MLSS | mg/L | 2000~3000 | | | | | | |
| Dewatered Sludge (optional) | % solids | 15~20% | | | | | | |
| Ambient Design Temperature | °C | 5 ~ 45 | | | | | | |
| Power Supply | - | AC 380~450 V, 3 Phase, 50/60 Hz | | | | | | |
| Power Consumption | kW | 4 | 6.5 | 9.5 | 14 | 18.5 | 28 | 37 |
| No. Containers | - | 1 x 20' | 1 x 40' | 1 x 40' | 2 x 40' | 2 x 40' | 3 x 40' | 4 x 40' |

| Characteristics | Units | Influent | Class C Effluent | Class A Effluent |
|---|---|---|---|---|
| Temperature | °C | 25~30 | - | |
| pH | pH units | 6.5~8.5 | 6.5~8.5 | |
| BOD | mg/L | 150~500 | <20 | |
| TSS | mg/L | 150~400 | <30 | <5 |
| T-N | mg/L | <50 | <40 (lower T-N option available) | |
| T-P | mg/L | <15 | <10 (lower T-P option available) | |
| TDS | mg/L | <1,000 | - | |
| Turbidity | NTU | - | - | <5 |
| E.Coli | cfu/100 mL | - | <1,000 | <10 |
| Free Chlorine | mg/L | - | 0.2~2 | |

### STANDARD INCLUSIONS + OPTIONS

| Equipment | | MBBR-15 | MBBR-35 | MBBR-50 | MBBR-75 | MBBR-100 | MBBR-150 | MBBR-200 |
|---|---|---|---|---|---|---|---|---|
| Feed Pump | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Inlet Screen | | o | o | o | ✓ | ✓ | ✓ | ✓ |
| Internal Primary Tanks with Sludge Pump | | ✓ | ✓ | ✓ | – | – | – | – |
| External Sludge Tank | | – | – | – | ✓ | ✓ | ✓ | ✓ |
| Aeration & Air Lift Pump Blowers | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Anoxic Tank with Mixer | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Aerobic Tank with Submerged Media, Diffusers & Air Lift Recycle | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Chemical Dosing – Coagulation | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Clarifier Tank | with RAS Air Lift Recycle | ✓ | ✓ | ✓ | – | – | – | – |
| | with RAS/WAS Pump | – | – | – | ✓ | ✓ | ✓ | ✓ |
| Chlorine Contact Tank with Tablet Chlorinator | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| PLC Control System with HMI | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Containerized system, c/w Caged Access Ladder, Elevated Walkway with Hand Rails and Lights | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Class A Tertiary Filtration & Sterilization | Multimedia Filter with Feed/ Backwash Pump | o | o | o | o | o | o | o |
| | Tank Recirculation with Re-sidual Trim Hypo Dosing | o | o | o | o | o | o | o |
| Chemical Dosing - enhanced T-N / T-P removal | | o | o | o | o | o | o | o |
| Sludge Dewatering System (15~20% solids) | | o | o | o | o | o | o | o |
| Premium Instrumentation Package | | o | o | o | o | ✓ | ✓ | ✓ |

| Instrumentation | Standard Package | Premium Package |
|---|---|---|
| Level Sensors | ✓ | ✓ |

| | | | |
|---|---|---|---|
| Pressure Gauges | | ✓ | ✓ |
| Air Flow Indicators | | ✓ | ✓ |
| Magnetic Flow Transmitter | | ✓ | ✓ |
| Flow Switches | | – | ✓ |
| Anoxic Tank ORP Analyzer | | – | ✓ |
| Aerobic Tank pH Transmitter | | – | ✓ |
| Aerobic Tank Dissolved Oxygen Analyzer | | – | ✓ |
| Remote Monitoring & Control Capabilities | | – | ✓ |
| Class A Only | Media Filter Differential Pressure Sensor | ✓ | ✓ |
| Class A Only | Effluent Chlorine Analyzer | ✓ | ✓ |
| Class A Only | Effluent Turbidity Analyzer | ✓ | ✓ |
| Class A Only | Effluent pH Analyzer | ✓ | ✓ |
| Class A Only | Recirculation Pump Pressure Switch | ✓ | ✓ |

# MODEL SELECTION

**0015** 15 $m^3$/day
**0035** 35 $m^3$/day
**0050** 50 $m^3$/day
**0075** 75 $m^3$/day
**0100** 100 $m^3$/day
**0150** 150 $m^3$/day
**0200** 200 $m^3$/day
**XXXX** Custom treatment capacity

- **C** Treatment to Class C, standard supply
- **A** Treatment to Class A with Tertiary Filtration & Sterilization
  - **X** Chemical Dosing Systems, standard supply
  - **C** Chemical Dosing Systems, enhanced T-N / T-P removal
    - **X** Standard Instrument Package
    - **P** Premium Instrumentation Package, c/w Remote Monitoring
    - **C** Custom Supply
      - **X** Sludge dewatering - Without
      - **S** Sludge dewatering - With

# RO

# CATALOGUE

## Industrial RO Plant

**ADVANTAGES**

- The most economical &efficient method of dissolved solids removal.
- Easy to startup and uses very little space on solids in feed water.
- Can handle fluctuations of total dissolved solids removal.
- Easy availability of spares and service.
- Short delivery periods.

**APPLICATION**

- Hygienic drinking water hotels ,restaurants, hospitals and residences.
- Mineral water plants.
- High purity water for hospital for use in dialysis units.
- As a retrofit to demineralisations plants in industries to reduce regeneration chemicals.

**SPECIFICATIONS**

- Cartridge pre-filter for FRP pressure vessels.
- Spiral wound membrane elements of polyamide type.
- Multistage pump made of 316 stainless steel.
- TEFC pump motor.
- 316 stainless steel high pressure piping.
- Low feed pressure switch for pump protection.
- Motor starter with disconnect switch.
- Motor contractor with thermal overload protection.
- Sample valves for feed, product and concentrate.
- Concentrate check valve.
- Product check valve.
- Automatic feed shut-off valve.
- Cleaning connections.
- Full control panel instrumentation.
- Pump discharge pressure indicator.
- Feed and concentrate flow meters.
- Conductivity meter.
- Power on light.
- Fault alarm.
- Post shutdown system flush.

## SPECIALITY CHEMICAL's - STCL

### HVAC CLEANING

FIN707- Non-acid coil cleaner and brightener FINKLENZ24- Rinse free spray on coil cleaner DESC999- Inhibited acidic cleaner for de-scaling DISIN 3 IN 1-Broad spectrum bacticide and fungicide

### DE-GREASERS

CLEAN909-non-silicated heavy duty cleaner and de-greaser NEUTRACLEAN00l- Neutral pH cleaner and de-greaser LC007- Heavy duty water soluble solvent de-greaser

### SOLVENT DE-GREASERS

ELEC74/ELEC74SP-Solvent de-greasers

SOLVOCLEAN- Special purpose solvent de-greaser

### DISINFECTANT CLEANERS

DISIN3INl - Broad spectrum QUAT based bacticide/ fungicide/Virucide

MICROSANITZ - Heavy duty dis-infectant cleaner

### PERSONAL CARE

SW2INl - Lanolin based heavy duty skin cleaner

SAFEHANDS - Hand wash fortified with aloe-vera

### OTHER PRODUCTS

METACLEAN797-Metal conditioning compound RUSTBReK18-Penetrant/ Nut and bolt loosener MOISTFREE75-De-moisturiser for electrics

### DRAIN MAINTENANCE

THERMODRAN - Heavy Duty drain block remover

OXYDRAIN - Thermo-chemical drain cleaner

ZYMESS23 - Enzyme based waste/ grease digester and cleaner

## STCL WATER TREATMENT

Extensive R & D and on-site testing has yielded state-of-the art treatment programs for cooling water systems, chilled water systems and Boiler water systems. Our programs are very comprehensive in nature and involves exhaustive study of the system, periodical monitoring and a totally acid free treatment program. The products used are multi-purpose in nature thereby reducing inventory. The dosage can be automated, or our service personnel take care of the same by periodical testing and dosing. Before start of program, water samples are tested in our state-of

-the-art lab for various parameters and then the treatment program is derived. The treatment includes stabilizing the existing system and then providing the maintenance.

COOLING TOWER WATER TREATMENT

ORG: All polymer scale and corrosion inhibitor

ALGICIDE: Non-Oxidizing Biocide

ALGICIDE EXTRA: Oxidizing Biocide

BIOSH25: Broad spectrum Non-Oxidizing Biocide BIOCONC74: Heavy duty non oxidizing Biocide DISBROM25: Heavy duty oxidizing Biocide

CHILLED WATER TREATMENT (CLOSED LOOP RE-CIRCULATING SYSTEMS)

SAFECHILL: Scale and Corrosion Inhibitor

BIOCHILL: Broad spectrum biocide for closed loop systems with anti-freeze

BOILER WATER TREATMENT

INHIBIT - Scale and Corrosion inhibitor for boilers and hot water systems

SCAV - Oxygen scavenger for boilers and hot water systems

PH+EXTRA - pH booster for closed loop re-circulating systems

## STCL - EFFLUENT TREATMENT

Effluent water treatment is the fast-growing field, and we have made tremendous inroads with the help of relentless R & D and field trials.

Our products have proved to be the best in the category. The procedure involves water sample collection, lab trials and final extrapolation to suit the real time operations

The products featured are

CG - Specially formulated coagulant

ABR 40 - Effective and economical flocculent

RC - New generation DE colorant

ZYMESS23-S - New generation and very effective MLSS developer Other special purpose products are

SUPREEM TUBERS

RECYCLE WASTE

*Specialist in Environmental solutions & Waste management*

**Effluent** water treatment is the fast-growing field and we have made tremendous inroads with the help of relentless R & D and field trials. Our products have proved to be the best in the category. The procedure involves water sample collection, lab trials and final extrapolation to suit the real time operations

The products featured are

CG - Specially formulated coagulant
ABR 40 - Effective and economical flocculent
RC - New generation DE colorant
**ZYMESS23-S** - New generation and very effective MLSS developer

Other special purpose products are

REDSILC 26 - Instant Silica remover
REDFER - Instant Iron remover
&
SOFT 23 - Hardness remover for water treatment

PATENTED

## WASTE TREATMENT MACHINERY –

We have been participating in the construction of waste treatment facilities for about 14 years. We have got several international and national projects behind us.

Our project experience has allowed us to design our own machines and produce complete automatic technology.

**How does the waste sorting line work?**

Municipal solid waste is discharged directly into the receiving hopper by the collection truck, through pre-sorting and bag opening processing, using various filtering devices such as stick filters, ballistic sorters, star filters and waste vibrating sorters, the waste is separated into streams of different sizes, and then uses magnetic separation systems, eddy current separation systems, air separation systems, optical sorting systems to separate plastics, paper, metals and other recyclable materials.

Wet waste is sorted by the system and discharged through a separate channel. The separation rate is 95-98% efficient.

Dry waste is further sorted, during which the following materials are separated

- Steel
- Aluminium
- Copper
- Plastic
- Paper
- Glass
- Other inert materials

These are deposited in separate sections.

Plastic can also be further sorted by colour if a suitable adapter is ordered, which facilitates recycling. Plastic and paper can be foil wrapped or, if required, press-contained.

The sorting system works fully automatically without manual work.

Human resources are only required to remove the sorted materials and to monitor the system at the control centre.

The sorted materials can be further sorted and packaged according to additional processing needs using adapters that can be purchased separately for the system.

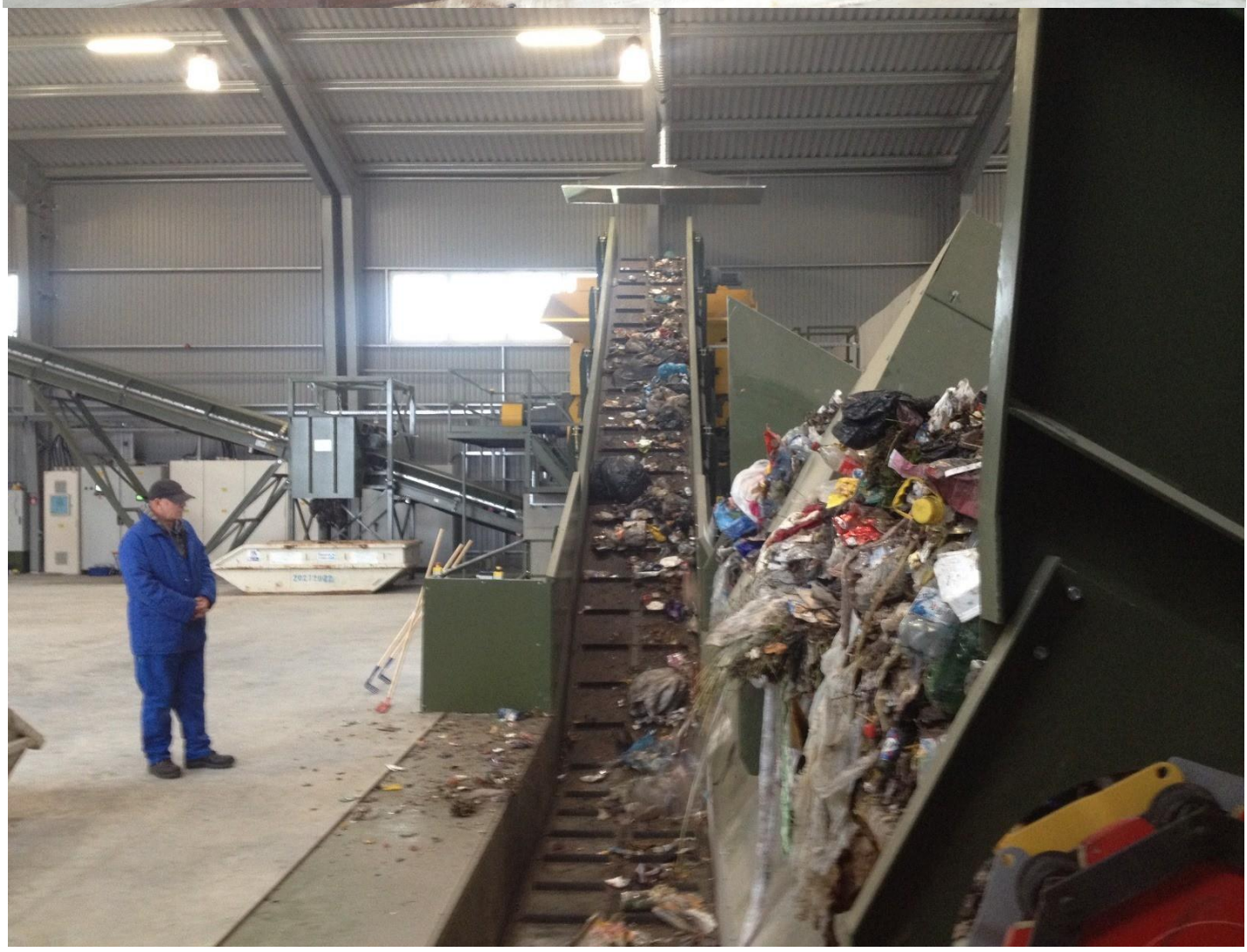
For example,

- Colour sorting of plastics
- Plastic film baling
- Press containerization

*The technology is built with today's most advanced control technology.*

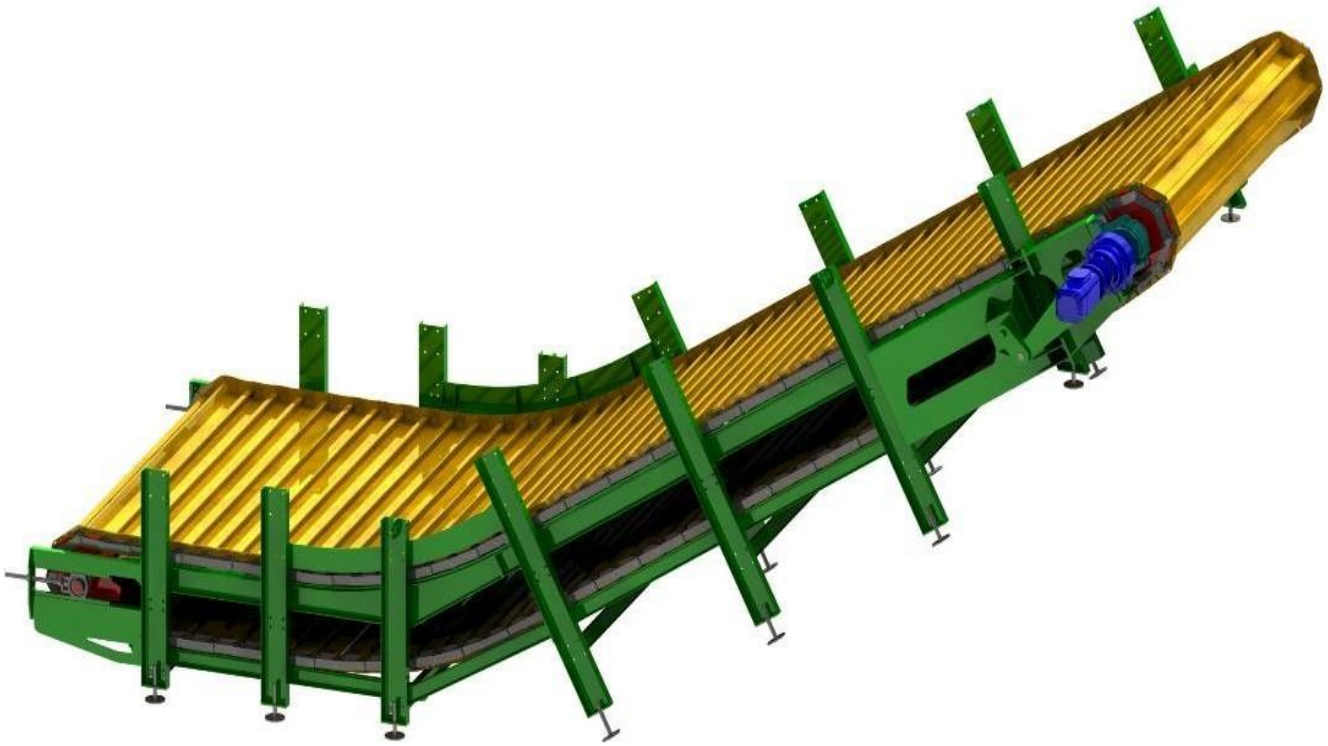
The annual capacity is 145,000 tons in 330 working days.

**The photos below show the system –**




XR2000


UNTHA



# OUR CLIENTS AND VENDORS

| | | | |
|---|---|---|---|
| JANA | JOMEL | Saudi Aramco | sabic |
| Sipchem | sahara petrochemicals | MA'ADEN | Petro Rabigh |
| SAIPEM | الزامل للصناعة | satorp | Saudi Electricity company |
| AYTB | ANAREEB | المدينة | SENDAN |
| Aminat | FARABI | STD | TASNEE |
| Ellicott DREDGES | DESCON OLAYAN | Air Liquide | YÜKSEL |

# Thank You

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