

# meriro



*Commitment to a  
Cleaner Environment*



*Packaged Extended Aeration Sewage Treatment Plants*

*DA and SA Series*



Metito packaged extended aeration plants are designed to purify domestic sewage to the standards recommended by the U.S. Environmental Protection Agency and the U.K. Department of the Environment.

The extended aeration process operates without the requirement for primary treatment producing a more economical solution, sludge stabilization and elimination of odor.

The plants can also produce a fully nitrified effluent and sludge of adequate stability for land disposal.

Metito extended aeration plants are suitable for use in applications where the effluent is discharged to:

- soakaway
- reef or valley
- watercourse

or used for:

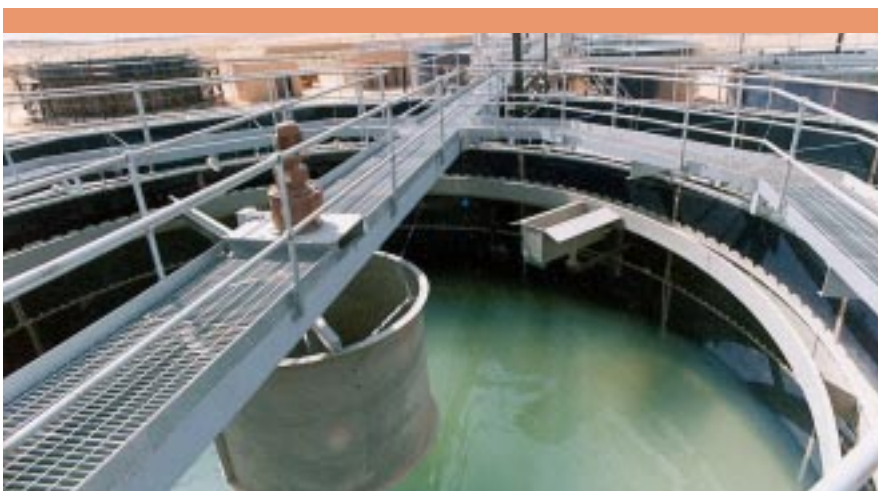
- site compaction
- dust suppression
- flood irrigation.

Metito standard range of extended aeration plants accept average sewage flows from 50 m<sup>3</sup>/day to 1,000 m<sup>3</sup>/day. Greater flows can be accepted by using standard units in parallel or with a Metito custom designed system.



Additionally, if the suspended solids concentration is reduced by filtration it is suitable to supply spray irrigation systems. In all

cases the effluent is recommended to be disinfected with either chlorine or hypochlorite.



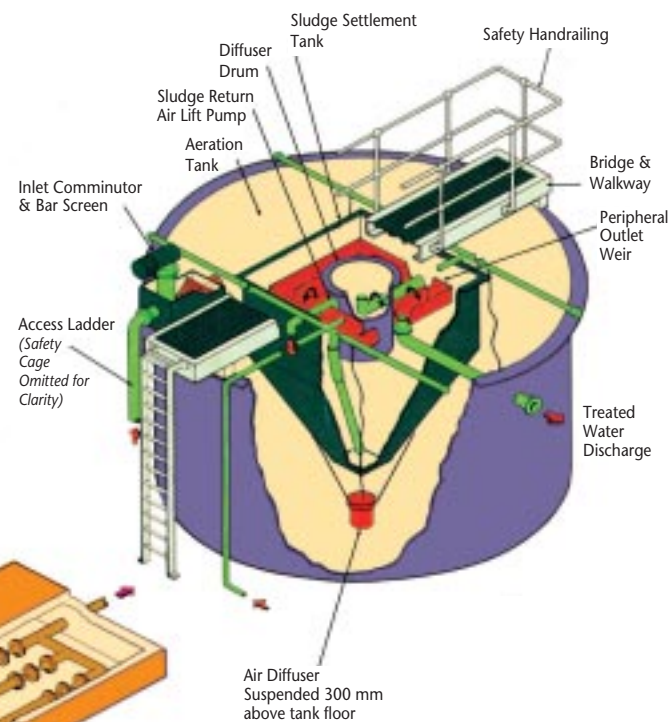
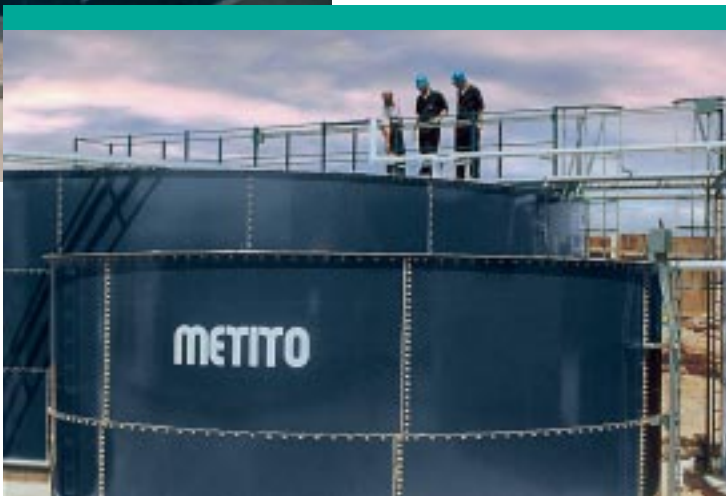
Greater purification can be produced by the addition of appropriate tertiary treatments. Metito can supply equipment to produce water of suitable quality for secondary domestic or industrial purposes.

Drinking water quality or high purity process water can be produced with additional Metito processes.



purifying microorganisms, known as Activated Sludge. The micro-organisms remove the organic material from the sewage, utilize this as a food source and are provided with a plentiful supply of dissolved oxygen for respiration by the aeration system.

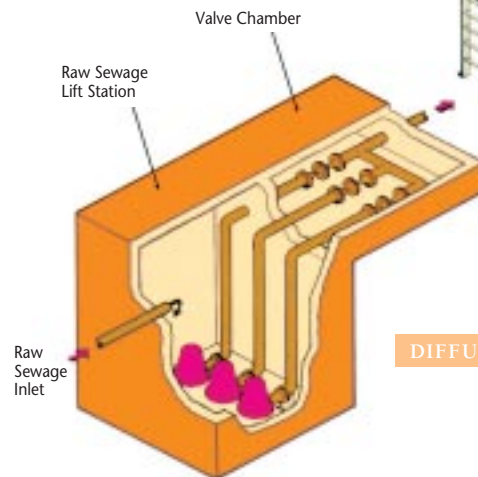
Aeration is effected by a surface aerator (mechanical agitation) or diffused air (air injection through diffusers). The purification is completed within the aeration tank and the activated sludge separated from the effluent in the settlement tank. The settled sludge is returned to the aeration tank to treat more sewage and a proportion is diverted to the sludge disposal system.



**DIFFUSED AIR SEWAGE TREATMENT PLANT**

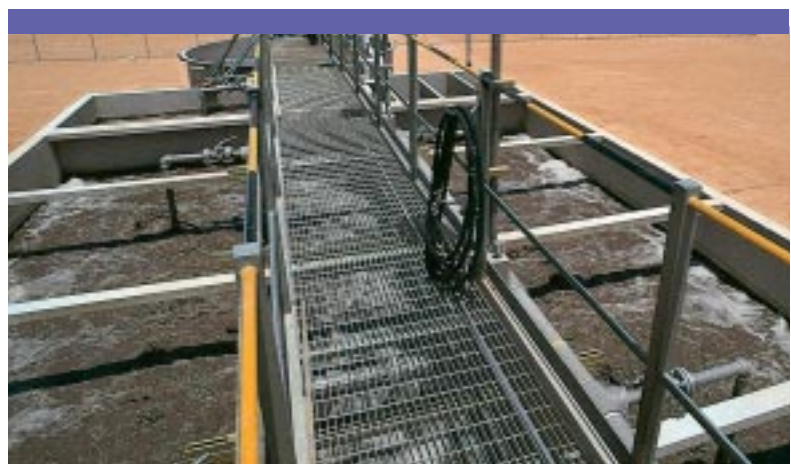
**Purification Processes**

**Preliminary Treatment** - Normally the domestic sewage arrives at the plant via an underground sewer and discharges into a raw sewage lift station. Submersible pumps deliver the sewage to the treatment plant via a comminutor (if necessary) which shreds fibrous materials and pieces of wood and plastics. The comminutor is equipped with a stand-by screen for use if the comminutor is removed for maintenance.



Metito recommends the addition of a sand and grit removal process for applications where rainwater is drained to the sewer.

**Biological Treatment** - The sewage enters the aeration tank where it is mixed with a high concentration of





Treatment effluent overflows via a weir in the settlement tank and passes to the point of discharge or to further treatment, as required.

Aerator powers and air flows stated in the tables refer to only the stated BOD loads, domestic sewage and locations at or near sea level. Applications differing from these conditions may require recalculation.



#### SURFACE AERATION SYSTEMS

Model No.	SA50	SA75	SA100	SA150	SA200	SA250	SA300	SA350	SA400	SA450	SA500	SA600
Equivalent population	200	300	400	600	800	1000	1200	1400	1600	1800	2000	2400
Average flow (m <sup>3</sup> /d)	50	75	100	150	200	250	300	350	400	450	500	600
Peak flow (m <sup>3</sup> /h)	7	10	13	19	25	32	38	44	50	57	62	75
BOD <sub>5</sub> load (kg/d)	13	20	26	40	52	66	79	92	104	117	130	157
Aeration volume (m <sup>3</sup> )	56	81	110	182	224	271	322	379	439	439	504	649
Aerator power (kW)	2	4	4	7	7	11	11	15	15	18	22	22
Settlement Area (m <sup>2</sup> )	9	9	14	20	28	28	37	37	46	46	57	69
Site length (m)	15	15	16	18	21	22	23	24	26	26	27	30
Site width (m)	9	9	10	12	13	14	14	15	16	16	17	19

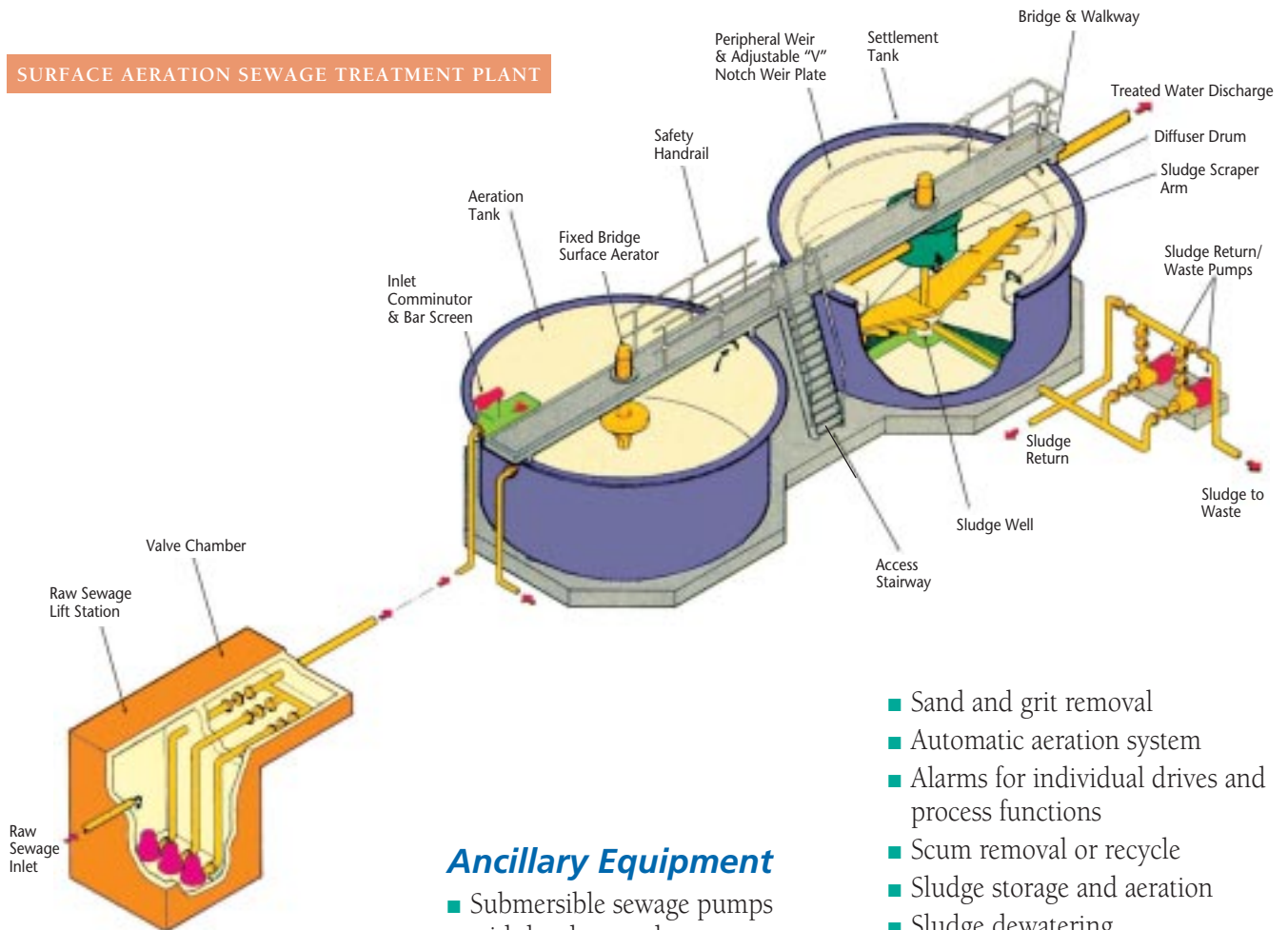


Other Metito designs are available for sewage treatment plants suitable for producing treated effluents of any quality and for any reuse purpose or disposal conditions.

#### DIFFUSED AIR SYSTEMS

Model No.	DA50	DA75	DA100	DA150	DA200	DA250	DA300	DA350	DA400	DA450	DA500	DA600
Equivalent population	200	300	400	600	800	1000	1200	1400	1600	1800	2000	2400
Average flow (m <sup>3</sup> /d)	50	75	100	150	200	250	300	350	400	450	500	600
Peak flow (m <sup>3</sup> /h)	7	10	13	19	25	32	38	44	50	57	62	75
BOD <sub>5</sub> load (kg/d)	13	20	26	40	52	66	79	92	104	117	130	157
Aeration volume (m <sup>3</sup> )	45	96	96	197	197	281	338	369	401	476	512	640
Aerator power (kW)	150	170	210	300	400	480	550	660	700	800	900	1000
Settlement Area (m <sup>2</sup> )	5	10	10	21	21	32	32	36	46	46	57	69
Site length (m)	12	14	14	16	16	18	20	22	23	24	25	26
Site width (m)	8	10	10	12	12	14	15	17	18	19	20	21

## SURFACE AERATION SEWAGE TREATMENT PLANT



### Specifications

- Aeration tank in glass-coated steel panels
- Settlement tank located in center of aeration tank comprises 1, 2 or 3 epoxy coated steel hoppers or glass-coated steel tank with scraper\*
- Separate glass-coated steel settlement tank with scraper+
- Diffused air tanks and surface aeration settlement tanks have access bridge and ladders
- Surface aerators mounted on steel structure or floats with anchorage cables+
- Suspended diffusers and two Rootes type air blowers\*
- Integral pipework and wiring
- Motor control panel

\* Diffused Air Option

+ Surface Aeration Option

### Ancillary Equipment

- Submersible sewage pumps with level controls
- Comminutor
- Screen
- Weir box (on smaller plants)

### Options - Accessories

- Comminutor and screen at sewer discharge for shallow sewers
- Mechanically raked screen instead of comminutor

- Sand and grit removal
- Automatic aeration system
- Alarms for individual drives and process functions
- Scum removal or recycle
- Sludge storage and aeration
- Sludge dewatering
- Nitrate removal
- Phosphate removal
- Effluent disinfection
- Tertiary treatments
- Treated effluent pumps
- Sludge disposal pumps
- Instrumentation for flow, pressure, pH, dissolved O<sub>2</sub>
- Fixed or portable analytical equipment, COD, BOD, SS, etc.





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Cleaner  
Environment

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## METITO WORLDWIDE LOCATIONS

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Lebanon ▮ Tehran, Iran ▮ Sharjah, United Arab Emirates ▮ Abu Dhabi, United Arab  
Emirates ▮ Cairo, Egypt ▮ Baghdad, Iraq ▮ Tripoli, Libya ▮ Tunis, Tunisia ▮  
Mumbai, India ▮ Kuala Lumpur, Malaysia ▮ Amman, Jordan ▮ Tokyo, Japan ▮  
Seoul, S. Korea

