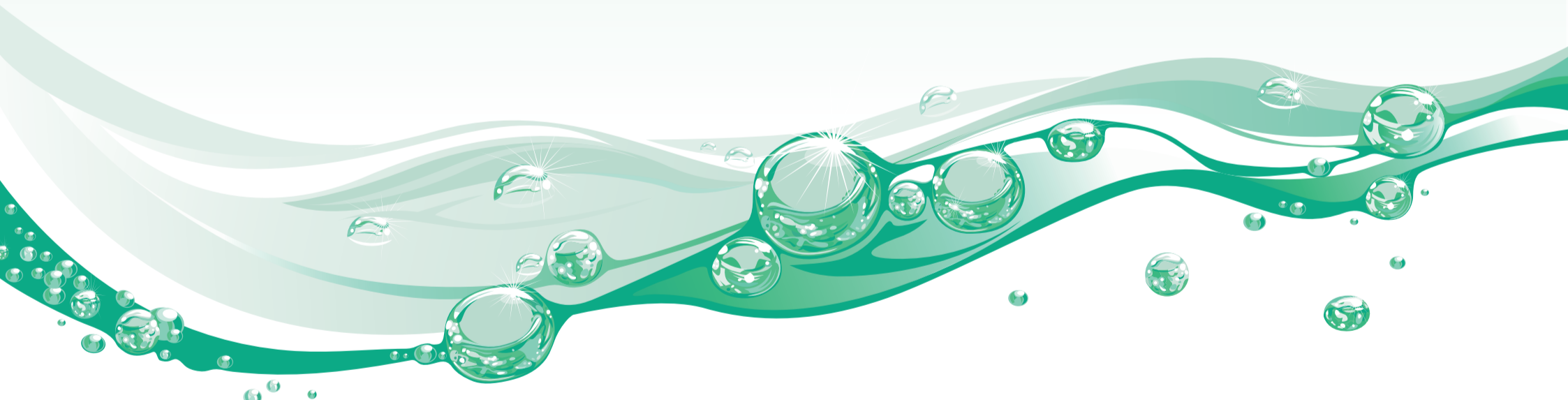




## MODULAR SEWAGE TREATMENT PLANTS



Focused on future demands. Clearly.



As a product development by Amitek, a company specialising internationally in water, waste-water and effluent purifying systems, the Ampac has been designed specifically for sewage treatment. Backed by its network and design and management know-how, Amitek is geared to supply world-class, innovative solutions to customers throughout sub-Saharan Africa and on Indian Ocean Islands.

### THE AMITEK AMPAC SOLUTION

Ampac Modular Sewage Treatment Plants are compact, configurable, modular waste-water treatment units.

**Effective** Because of their modular design and treatment process, Ampac plants can effectively treat, on an ongoing basis, effluent generated by between 10 and 500 people.

**Versatile** Although modular, each Ampac design and installation is site-specific in accordance with individual customer requirements. Its modular and configurable design allows it to be integrated into the most sensitive and trying locations.

**Durable** Ampac plants are manufactured off-site in UV-resistant GRP glass-fibre modules and will last for at least 25 years.

**Simple** Plants are assembled on-site, installed below or above ground level and commissioned quickly and easily. Ampac eliminates the need for large civil construction works and on-site labour. The Ampac Compact – a smaller model – does not require on-site assembly at all. It is constructed off-site and delivered as a built-up unit for quick and easy installation and commissioning.

### AMPAC IN ACTION

Ampac units are ideal as plants for the treatment of domestic sewage in the event of projects that do not have a formal municipal sewer connection. Compact, simple and robust, Ampac plants use the highly efficient submerged aeration media method to purify effluent through various interlinked stages. This provides optimised nitrification and a treated effluent quality that meets the requirements of the Department of Water Affairs (DWA) for the release of such treated effluent back into the environment under the General Limit Values, in terms of Section 39 of the National Water Act.

Designed and constructed to provide the most practical solution:

- The design is based on sound, tried and tested technologies.
- Ampac plants are single compact units with no tanks and gaps to gather dirt or rubbish.
- Plants are easy to pack into shipping containers for assembly anywhere, even at remote sites.
- An easy-to-clean solids strainer allows easy removal of plastic bags, cloths, etc.
- Proper aeration is provided by robust noxon fine-bubble spargers and side-channel blowers.
- A duty and standby blower ensures continuous safe operation by ensuring adequate oxygen and returning sludge.
- There are no pumps between chambers that can cause blockages and stoppages.
- The ingenious design makes plant overflows impossible.
- Irregular flows into the plant will not upset its functioning.
- Ampac is easy to de-sludge and maintain.
- Flow meters constantly measure flow-through.

### THE AMPAC TREATMENT PROCESS

Ampac uses the tried and tested “Submerged Aeration Media” (SAM) method for treatment. This method comprises seven sequential treatment steps and involves:

- solids removal by either a solids collection basket or a screening grid, depending on the model
- an anaerobic settler, followed by
- an anoxic settler and
- an aeration chamber into which air is blown to supply the required volume of oxygen. Special media sheets are suspended above the air spargers for the growth and retention of aerobic bacteria to continue the digestion of organic material in the effluent
- the settler, in which micro-organisms and any remaining inorganic material is settled out and returned to the primary anaerobic settler by a unique efficient venturi method
- an extended anoxic chamber after the settler that assists in the removal of nitrates
- a disinfection chamber that uses either chlorine, ozone or ultra-violet light to destroy any remaining micro-organisms or pathogens.

### CIVIL CONSTRUCTION AND HOUSING OF AMPAC UNITS

All the inter-leading chambers of Ampac units are housed in an Amtank that is constructed in UV- and moisture-resistant GRP glass-fibre panels that are hot-press moulded and comply with BS 7491 part 3. Units are manufactured off-site and assembled on-site, using approved hot-dip galvanised steel parts on the outside and stainless steel fasteners on the inside, and sealed internally with a Plexus epoxy specifically designed for use in sewage treatment plants. The structure is supported and stabilised internally by means of chamber partitions, a series of connecting tensile stainless steel rods and attachments and PVC vertical support columns. Furthermore, Ampac units are assembled on a smooth, level concrete slab, making it easy and quick to install them on site.

### PERFORMANCE REQUIREMENTS STANDARDS

Ampac treats sewage to the discharge standards as required by the Department of Water Affairs and determined by legislation, i.e.:

	General Limit Standard (GLS)	Special Limit Standard (SLS)*
Suspended solids	< 25 ppm	< 10 ppm
of COD	< 75 ppm	< 30 ppm

\* Complying with Special Limit Standard involves additional treatment steps that can be added to the standard Ampac process.



## FEATURES AND BENEFITS

FEATURES:	BENEFITS:
No large moving parts	Easy and economical to maintain
Compact design	Requires very little space
Minimal civil works required	Can be installed in remote areas, difficult to access
Totally enclosed	No unpleasant odours
	No foreign material can access the unit
Delivered to site in knock-down format	Easy to assemble
	Easy and economical to transport
Discharge meets DWA requirements	Can be installed anywhere
	Discharges directly into the environment
Very little maintenance required	Economical to maintain, no dedicated operator required.
Very low power requirement	Economical to run
Aesthetic appearance	Can be installed close to high-traffic areas
Can be installed above ground level	No rock excavation required
	Suitable for areas with a high water table
	Very little site preparation required
Can be installed below ground level	Out of sight
	Can be installed close to high-traffic areas
	Space above the unit can be utilised
	Sewage can gravity-feed into the unit
Modular design for 10 to 500 people	Can be easily sized
	Can be expanded as requirements grow
Uses proven technology	No risk of inadequate performance

## TYPICAL APPLICATIONS

- Retail shopping centres • Construction sites • Mines
- Remote hospitals and clinics • Housing estates
- Guest houses • Golf estates • Resorts • Lodges • Hotels
- Caravan parks • Police stations • Schools

## SERVICE WHERE AND WHEN YOU NEED IT

Once installed and commissioned, Ampac Modular Sewage Treatment Plants can be managed fully by the Amitek operation – established in 1994 and reaching across sub-Saharan Africa and as far as Indian Ocean Islands. Amitek has supplied, installed and commissioned water treatment and waste-water treatment plants in South Africa, Namibia, Lesotho, Botswana, Angola, Zambia, Kenya, Senegal, as well as on the Seychelles.

Amitek is a member of the Water Institute of SA (WISA) and a founder member of SEWPACKSA, a self-regulatory body of suppliers of small waste-water treatment works under the auspices of WISA.



Submit your Ampac requirements to Amitek and be assured of clear-cut solutions!



## THE AMPAC UNIT RANGE

This table shows the standard range of Ampac units. Units outside of the standard range can be supplied on request.

Ampac model	Treatment volume	Organic load	Population equivalent	Length	Width	Depth	Power Required
	M3 per day	g per day	200lts/pax/day	mm	mm	mm	kW
10	10	3 000	50	4 000	4 000	2 000	2.2
15	15	4 500	75	8 000	3 000	2 000	2.2
20	20	6 000	100	8 000	4 000	2 000	2.2
25	25	7 500	125	8 000	5 000	2 000	2.2
30	30	9 000	150	8 000	6 000	2 000	4.0
40	40	12 000	200	8 000	8 000	2 000	4.0
50	50	15 000	250	12 000	7 000	2 000	4.0
60	60	18 000	300	12 000	8 000	2 000	4.0
70	70	21 000	350	12 000	9 000	2 000	4.0
80	80	24 000	400	16 000	8 000	2 000	5.5
90	90	27 000	450	16 000	9 000	2 000	5.5
100	100	30 000	500	16 000	10 000	2 000	5.5

## MAKE CONTACT

Contact details for all your requirements regarding Ampac Modular Sewage Treatment Package Plants:

### Northern region of South Africa

Amitek Manufacturing & Distribution (Pty) Ltd., P.O. Box 2405, Pinetown 2123

At your service: Jacques van Brakel

E-mail: [info@amitek.co.za](mailto:info@amitek.co.za) Tel.: 011 791 7513, Fax: 011 791 6505

Website: [www.amitek.co.za](http://www.amitek.co.za)

### Southern region of South Africa

Amitek Western Cape (Pty) Ltd., P.O. Box 457, Simon's Town 7995

At your service: John Eyre

E-mail: [john@amitek.co.za](mailto:john@amitek.co.za) Tel./Fax: 021 785 5650

Website: [www.amitek.co.za](http://www.amitek.co.za)

### Botswana

Multi Waste

At your service: Andrew Davies

E-mail: [andrew@work.co.bw](mailto:andrew@work.co.bw)

Cell: 00 267 726 89069, Tel.: 00 267 393 2632, Fax: 00 267 395 1002

Website: [www.amitek.co.za](http://www.amitek.co.za)



## Amitek product range



Focused on future demands. Clearly.

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