

On-site Effluent Treatment National Testing Programme (OSET NTP)

PERFORMANCE CERTIFICATE

**AdvanTex® AX-20 Mode 3 On-site Domestic Wastewater Treatment System,
OSET NTP Trial 5, 2009/2010**

System Tested

AdvanTex® AX-20 Mode 3 recirculating textile packed bed reactor treatment unit. Rated design capacity 2,000 litres/day. Total liquid volume 7,200 litres (primary treatment 4,000 litres; aeration treatment textile surface area 5,019 m²; recirculation 2,000 litres; pump chamber 1,200 litres). Emergency storage 2,000 litres. No tertiary treatment (such as UV disinfection) is incorporated. Testing was undertaken November 2009 to August 2010

Test Flow Rate

The **AdvanTex® AX-20 Mode 3** was tested at a flow rate of 1,000 litres/day (equivalent to servicing a 3-bedroom 5 to 6 person household) over an 8 month (35 week) period followed by a 5 week high load effects period involving 5 days at 2,000 litres per day then 1,000 litres/day over the following 4 weeks.

Testing and Evaluation Procedures

A total of 16 treated effluent samples of organic matter (BOD₅), suspended solids (TSS), total nitrogen (TN) and ammonia nitrogen (NH₄-N) at generally six day intervals during weeks 23 through 40 were benchmarked and rated on their median values. In addition, the energy used by the treatment and effluent pumping system was assessed on the mean of consumption levels over the 16 sample days, weeks 23 to 35.

Meeting AS/NZS 1547:2000 Secondary Effluent Quality Requirements

These requirements are that 90% of all test samples must achieve a BOD₅ of ≤ 20 g/m³ and TSS of ≤ 30 g/m³ with no one result for BOD₅ being >30 g/m³ nor no one result for TSS being >45 g/m³. The **AdvanTex® AX-20 Mode 3** already holds a performance certificate issued on 9 April 2010 under Trial 3 (2007/2008) which states that the system **achieved** a performance level of **100%** for both BOD₅ and TSS.

Benchmark Ratings

The **AdvanTex® AX-20 Mode 3** system **achieved** the following effluent quality ratings:

Indicator Parameters	Median	Std Dev.	Rating	Rating System				
				A+	A	B	C	D
BOD₅ (g/m³)	2.0	0.7	A+	<5	<10	<20	<30	≥30
TSS (g/m³)	2.5	4.1	A+	<5	<10	<20	<30	≥30
Total nitrogen (g/m³)	12.3	1.3	A	<5	<15	<25	<30	≥30
NH₄-Nitrogen (g/m³)	0.6	0.21	A+	<1	<5	<10	<20	≥20
Energy (kWh/d) (mean)	0.92	--	A	0	<1	<2	<5	≥5

This Performance Certificate is specific to the **AdvanTex® AX-20 Mode 3** as specified above when operated at a flow rate of 1,000 litres/day, and is valid for 5 years from the date below. The Trial 3 Performance Certificate of 9 April 2010 includes effluent quality ratings for TP (total phosphorus) and FC (faecal coliforms).

For the full OSET NTP Trial 5 report on the performance of the **AdvanTex® AX-20 Mode 3** system contact Innoflow Technologies Ltd at Dairy Flat, Auckland, on 0800innoflow.

Authorised By:

Ian Gunn, Technical Manager, OSET NTP
22 March 2011