

THE WESTERN TP IN MELBOURNE SELECTS HIGH EFFICIENCY AEROSTRIP® DIFFUSERS

CASE STUDY



OVERVIEW

Melbourne Water’s Western Treatment Plant (WTP) has been recently been upgraded to include a new 140 ML/d process train.

The upgrade was carried out by CPB-UGL JV and employs an advanced biological nitrogen removal process to minimise oxygen consumption and energy demand. As part of the drive to reduce energy usage Hydroflux was awarded the supply of the membrane diffuser package which included over 1700 x Q4 AEROSTRIP® Diffusers within four tanks.

THE OUTCOME

A clean water test was conducted at the AEROSTRIP® Test Facility located in Vienna and independently verified.

A summary of the performance is as follows:

Item	Value
Plant Capacity	140 ML/d
Number of Diffusers	1700
Floor Density (%)	11.5
Immersion Depth (m)	5.32
Air Flux (Nm ³ /hm ²)	38.6
SOTE (%)	38.58
SSOTE (%)	7.25

ABOUT AEROSTRIP®

AEROSTRIP® Diffusers use a unique polyurethane membrane that produce a 1mm bubble size, which maximises oxygen mass transfer and leads to reductions in air demand had other conventional type diffusers been used.

Typical energy savings range from 30 – 45% against tube and disc type diffusers.

The unique proprietary polyurethane blend has no plasticisers or fillers which is typical in EPDM diffusers which become brittle within a few years of being put into service. Plus the elastic strength of the AEROSTRIP® membrane is far greater than silicon.

Installations across Australia dating back from 2008 prove the long-term benefit of AEROSTRIP® Diffusers in terms of longevity and performance.

This matches the European and US experience where AEROSTRIP® are achieving a life greater than 12 years.

The WTP in Melbourne is the second largest AEROSTRIP® installation in Australia, with Woodman Pt WWTP being the largest at 180 ML/d.

