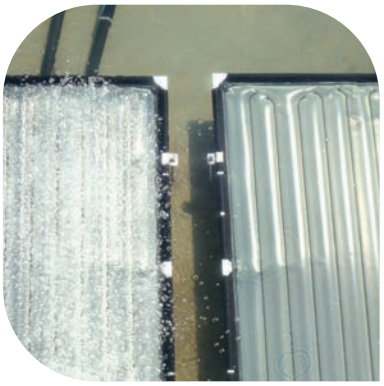
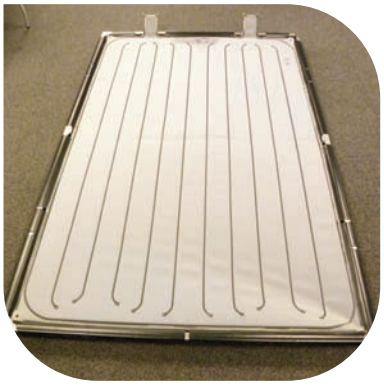
Parkson™
Treating Water Right





HiOx® UltraFlex

Aeration System

- Low energy cost
- Easy operation and maintenance
- Low installation cost
- Guaranteed performance

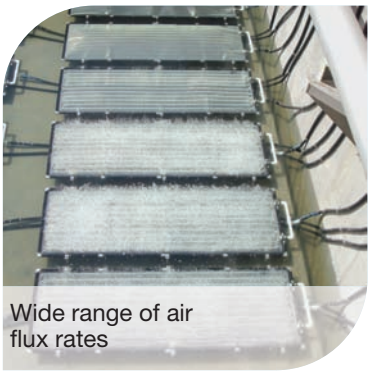
Breakthrough in diffused aeration

The most energy intensive operation in an activated sludge treatment plant is aeration. 50% to 75% of a plant's total energy costs are associated with mixing and aerating in the secondary process. Parkson's newest generation of its HiOx® platform, the UltraFlex Aeration System, represents a breakthrough in aeration technology through the application of basic aeration principles.

Wide range of floor coverage

Low Energy Costs

The HiOx® UltraFlex Aeration panel, with its 1 mm ultra-fine bubbles, achieves very high SOTE (standard oxygen transfer efficiency). The high density basin floor coverage, thanks to rectangular panels versus the more commonly used discs, only helps to enhance a basin's aeration performance. With the additional membrane area, the HiOx® Aeration panels operate at a lower air flux rate than traditional diffused air systems. Lower air flux rates mean excellent efficiency, significantly lower air requirements, and therefore lower energy costs.

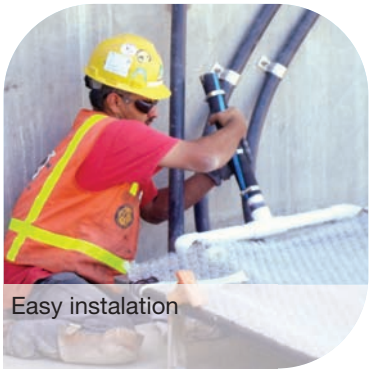


Wide range of air flux rates

Easy Operation and Maintenance

Simple air flexing keeps the HiOx® UltraFlex membrane panels clean and operating at peak efficiency for years. Each small group of panels (generally one or two) is typically supplied with an individual air feed system designed to allow maximum flexibility in operation and maintenance. Operators can fine-tune the air distribution in the aeration basins to best match the plant's specific and/ or changing needs. Individual panels can be isolated from the system and repaired during regular scheduled maintenance.

HiOx® panels could operate in a wide range of air flux rates from 0.5 to 3 SCFM/ft^2, and can handle variable loads. The high strength polyurethane membrane provides longer useful membrane life than other fine bubble diffusers.



Easy instalation

Lightweight and easy to handle

Lowest Installed Costs

The HiOx® UltraFlex Aeration System requires a small fraction of the number of diffusers typically required for fine bubble systems. Fewer diffusers correspond into less piping. One HiOx® panel is equivalent to 60 of the 9" disc diffusers. It takes less than 4 man-hours to completely install one HiOx® panel, which is only half the time when compared to installing 60 disc diffusers. In a new plant, smaller blowers and reduced air piping provide significant savings. For plants already using traditional fine bubble diffusers, it is generally easy to add significant treatment capacity simply by switching to HiOx® UltraFlex panels without the need of additional basins.

HiOx® System Options

Controls can be as simple or as sophisticated as required to ensure the HiOx® UltraFlex panel system delivers the exact amount of oxygen for the most efficient operation. The system can also be designed for expansion. In a new installation, fewer panels may be required initially while maintaining the option to add HiOx® panels as the need increases. The HiOx® panels are available in variable lengths from 6' to 12' in 1 foot increments to accommodate tight tank dimension scenarios.

HiOx® provides the capability of a lift-out system where it is not possible to drain the basins during retrofits. This provides the flexibility in retrofitting applications where redundant basins are not available.

Key Points

Power Savings

- 1mm ultra-fine bubbles
- 200% more oxygen transfer surface area than disc diffusers
- Up to 30% higher SOTE than conventional fine bubble diffuser
- Wide range of flux rates
- High floor coverage; up to 60%

Lowest Installation Cost

- Lightweight units
- Minimal piping
- Half the installation cost compared to disc diffusers

Easy Operation & Maintenance

- Individual air feed
- Simple air flexing
- Easy membrane replacement (1-1.5 man-hours per panel)
- 8-12 years membrane life

Guaranteed Performance

- Independent ASCE testing
- Every panel tested before shipment
- Parkson Experience

HiOx® offers two types of panels for two different markets:

Where capital cost is a major driver: BOD panel

- Low Capital Cost
- Low Floor Coverage
- Lower Efficiency
- High Flux Rates
- Equal HP to discs

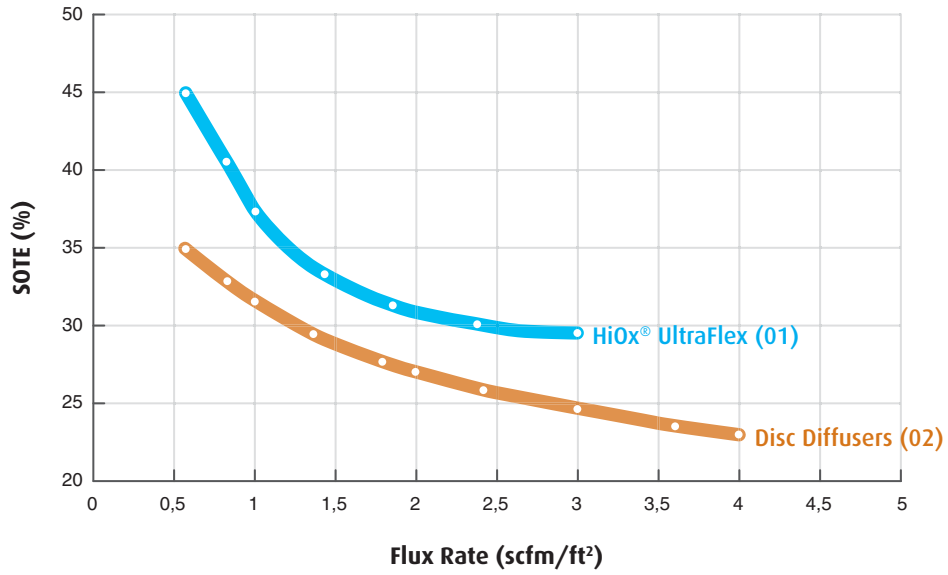
Where energy savings is a major driver: N panel

- High Capital Cost
- High Floor Coverage
- High Efficiency
- Low Flux Rates
- Low HP

Guaranteed Performance

HiOx® panels have operated successfully since 1990 and are backed by one of the most respected names in the industry – Parkson Corporation. The latest model incorporates the best features of the long-standing HiOx® design as well as numerous new features for ease of installation, maintenance and enhanced performance. The performance of HiOx® panels has been evaluated per ASCE's "Measurement of Oxygen Transfer in Clean Water" testing. Every panel is tested for even air distribution before shipments to the jobsite.

SOTE vs. Flux Rate- HiOx® & 9″ Discs
Typical System Designs @ SWD = 15′



Note:

- (1) Typical HiOx® Performance (~ 45 - 55% Floor Coverage)
- (2) Typical 9" Disc Performance (~ 15 - 20% Floor Coverage)

Applications

- Conventional activated sludge
- BNR Systems
- Nitrification-Denitrification
- SBR
- MBR Systems
- Industrial

Specifications

Standard Models	Estimated Weight	Air flowrate range for N panel (SCFM)	Air flowrate range for BOD panel (SCFM)	Effective membrane area (ft²)
4' x 12'	65.00 lbs.	19 to 58	58 to 116	38.71
4' x 6'	33.00 lbs.	10 to 29	29 to 58	19.39

Parkson™
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