



Engineering progress  
Enhancing lives

## **RAUBIOXON PLUS & RAUBIOFLEX**

Advanced aerator systems



# REHAU aerator systems

REHAU's fine bubble aerator systems represent the finest in German engineering and production technology. Each product is designed, manufactured, and tested to REHAU's superior standards of quality and certified to ISO9001 quality and ISO14001 (environmental) standards.

**Patented  
technology**

#### **Comprehensive fine bubble aerator program consisting of:**

- Pipe and disc aerators with the patented 'Saddle Lock' connection system suitable for all major air distribution pipe dimensions
- Choice of silicone and EPDM fine bubble membranes
- Air distribution pipe work
- Complemented by our comprehensive design and technical application support.



**German  
Quality**



# Systems overview



## RAUBIOXON PLUS (Silicone)

REHAU's innovative RAUBIOXON silicone membrane has consistently delivered superior performance with regard to resistance to fouling and better long-term oxygen transfer rate. The RAUBIOXON silicone membrane is a homogenous inert material that does not require any plasticiser for flexibility, meaning that it maintains its physical properties for the entire service life and fouls at a much lower rate than traditional technologies.

The result is longer service life + reduced back-pressure build up = lower power consumption + reduced maintenance costs + higher long term oxygen transfer rates.



High temperature resistance  
of up to **120°C**



High tear strength of  
**45 N/mm** (acc. to ASTM D624B)



## RAUBIOFLEX (EPDM)

RAUBIOFLEX is a high quality EPDM membrane system with excellent oxygen transfer rates designed to meet most project capital budgets.



High temperature resistance  
of up to **80°C**



Tear strength of  
**18 N/mm** (acc. to DIN 53507A)



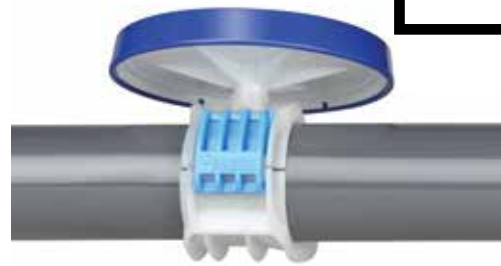
# Quick saddle lock connection

REHAU has developed the pipe and disc saddle lock connection to speed up installation:

- Snap-on fastener for fast installation and removal when required
- No risk of loosening of aerator
- No tool required



Pipe saddle



Disc saddle

**Patented saddle lock connection**

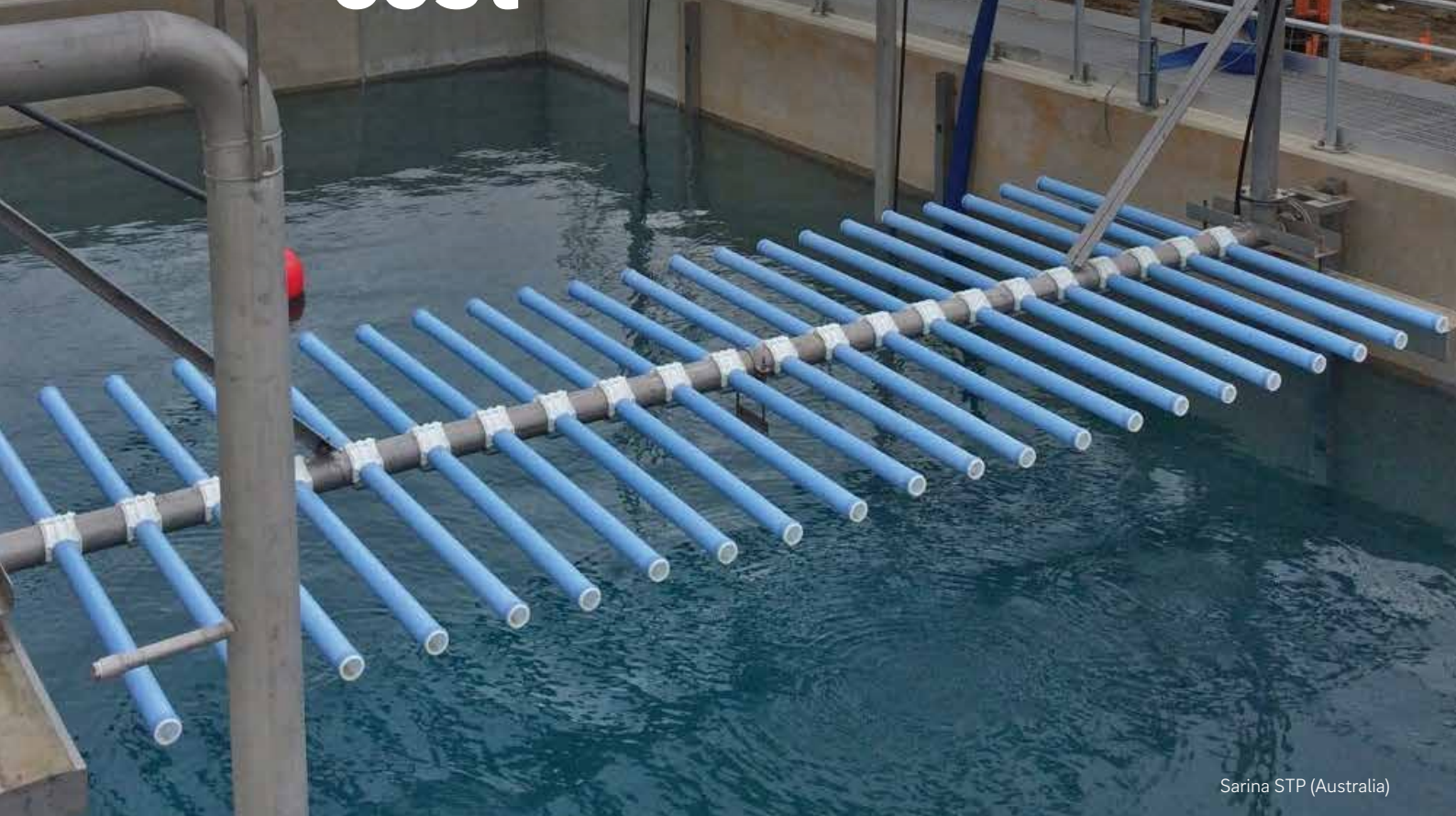
## HOW IT WORKS



Patented saddle lock connection means effortless and fast installation of REHAU pipe aerators. With the two-step saddle lock connection, installation time is reduced from 60 man-hours to 8 man-hours for a typical medium-size sewage treatment plant using pipe aerators with threaded connection system.



# Lower maintenance cost



Sarina STP (Australia)

## Cost-effective from start to finish

RAUBIOXON PLUS silicone membranes do not contain plasticiser and hence the perfect choice by any measure of performance. REHAU formulated RAU-SIK silicone membranes which deliver up to 50% savings in maintenance costs over their long service life.

Our silicone aerators help you save in multiple ways:

### Longer service life

up to 200% compared to EPDM aerator

### Lower maintenance cost

up to 50% saving

### Lower installation cost

up to 80% saving



# Lower power consumption cost

Energy Efficiency

## Engineering solutions for energy savings

The RAUBIOXON PLUS advanced silicone membrane is homogeneous (i.e. contains no plasticisers) and inert. The result is superior resistance to membrane fouling and changes to its physical characteristics caused by hardening or shrinkage.

Measured by a reduced build up of diffuser backpressure the silicone membrane has proven to outperform traditional materials (such as ceramic and/or EPDM). Considering the ideal isentropic compressor formula we can see that every 1kPa increase will equal 2-3% increase in blower power consumption.

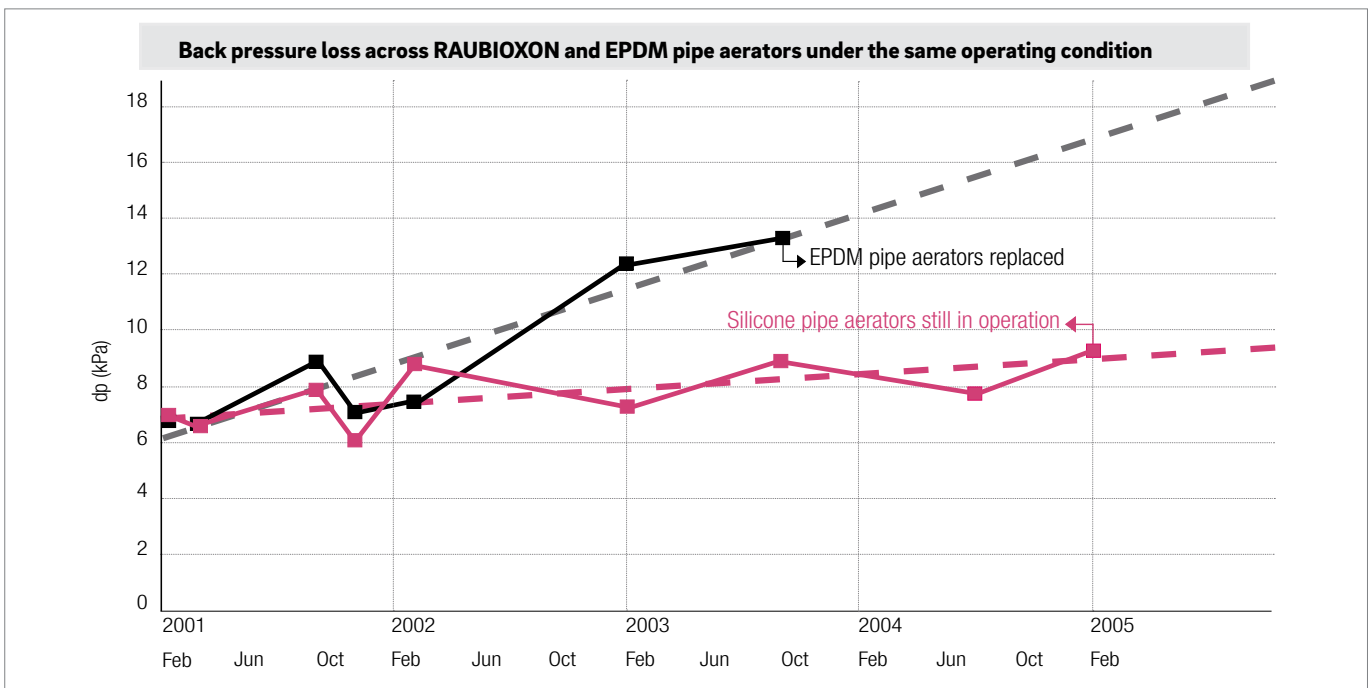


### High oxygen yield

The perforated and elastic silicone membranes provide high oxygen yields, resulting in fewer aerators needed for the same amount of oxygenation (varies from 5% to 10%).

### West Hornsby STP Pipe Aerator Trial:

The chart below shows that after three years, the RAUBIOXON PLUS pipe aerators were operating at a pressure loss of 5kPa less than the EPDM diffusers, which equates to more than 10% reduction in blower power consumption (using the ideal isentropic compressor equation)\*\*.



Today, the RAUBIOXON PLUS aerator system is still running efficiently.

\*\* Note: Testing and data collation were conducted by an independent contractor under the supervision of Sydney Water Corporation.

# Project references

## Municipal (Sewage Treatment)

- Aeration tank
- Aerobic digester
- Sludge holding tank
- Equalisation tank



Tamworth STP (Australia)



Guangxi Yulin STP (China)



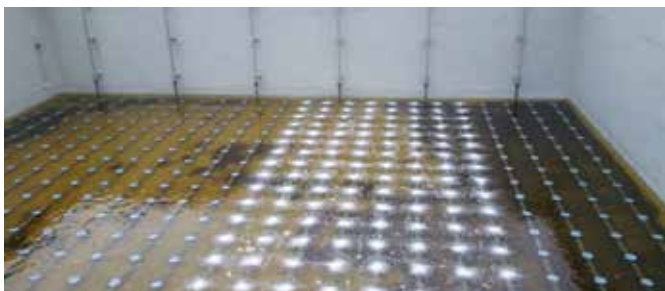
Shah Alam STP (Malaysia)



Sarina STP (Australia)

## Industrial (Wastewater Treatment)

- Milk processing
- Leather processing
- Starch production
- Paper and pulp
- Food & Beverage
- Pharmaceutical production
- Fish Processing
- Meat Processing
- Steel manufacturing
- Electronics
- Petrochemical
- Oil Refinery
- Textile manufacturing
- Sugar
- Dairy
- Palm Oil



KID Palm Oil WWTP (Indonesia)



EJIP WWTP (Indonesia)



Namviet Fish Processing WWTP (Vietnam)



SATS WWTP (Singapore)

# Product range - RAUBIOXON PLUS

## Pipe aerator



Article No.	Membrane ID (mm)	Air Distribution Pipe OD (mm)	Effective Length (mm)	Air Flow Range (Nm <sup>3</sup> /h)	*Max Airflow (Nm <sup>3</sup> /h)
<b>RAUBIOXON DUO PIPE AERATORS WITH SADDLE LOCK CONNECTION</b>					
403786-600	Ø64	Ø88.9	1000	2 - 12	24
401487-600	Ø64	Ø88.9	1500	3 - 18	36
414185-600	Ø64	Ø88.9	2000	4 - 24	48
417225-600	Ø64	Ø90	1000	2 - 12	24
401503-600	Ø64	Ø90	1500	3 - 18	36
413462-600	Ø64	Ø90	2000	4 - 24	48
401508-600	Ø64	Ø110	1000	2 - 12	24
401524-600	Ø64	Ø110	1500	3 - 18	36
413522-600	Ø64	Ø110	2000	4 - 24	48
401547-600	Ø64	Ø114.3	1000	2 - 12	24
417203-600	Ø64	Ø114.3	1500	3 - 18	36
417203-600	Ø64	Ø114.3	2000	4 - 24	48
401645-600	Ø92	Ø110	1000	3 - 19	38
401646-600	Ø92	Ø110	1500	4.5 - 28.5	57
417205-600	Ø92	Ø110	2000	6 - 38	76
400618-600	Ø92	Ø114.3	1000	3 - 19	38
417197-600	Ø92	Ø114.3	1500	4.5 - 28.5	57
417198-600	Ø92	Ø114.3	2000	6 - 38	76
406048-600	**Ø92-L	Ø114.3	2000	6 - 38	76
404716-600	**Ø92-L	Ø168.3	2000	6 - 38	76
404721-600	**Ø92-L	Ø219.1	2000	6 - 38	76
<b>RAUBIOXON STD PIPE AERATORS WITH THREADED ROD CONNECTION</b>					
208754-600	Ø64	Ø90, Ø110, Ø140, Ø160	500	1 - 6	12
208755-600	Ø64	Ø90, Ø110, Ø140, Ø160	750	1.5 - 9	18
208759-600	Ø64	Ø90, Ø110, Ø140, Ø160	1000	2 - 12	24
<b>RAUBIOXON STD PIPE AERATORS WITH 1¼" THREAD</b>					
215676-600	Ø64	Ø88.9, Ø90, Ø110, Ø114.3	500	1 - 6	12
209549-600	Ø64	Ø88.9, Ø90, Ø110, Ø114.3	750	1.5 - 9	18
402364-600	Ø64	Ø88.9, Ø90, Ø110, Ø114.3	1000	2 - 12	24

\* antimicrobial (AG) version available on request

\*Max airflow is used only during maintenance with a duration limit of 10 minutes per day.

\*\*Ø92-L: Low aerator back pressure model.



# Disc aerator

Article No.	Diameter (mm)	Air Distribution Pipe OD (mm)	Wall Thickness (mm)	Air Flow Range (Nm <sup>3</sup> /h)	*Max Airflow (Nm <sup>3</sup> /h)
<b>RAUBIOXON DISC AERATORS</b>					
411335-600	DN200	Ø88.9, Ø90, Ø110, Ø114.3	-	0.5 - 5	10
415215-600	DN225	Ø88.9, Ø90, Ø110, Ø114.3	-	1 - 7	14
411345-600	DN300	Ø88.9, Ø90, Ø110, Ø114.3	-	1.5 - 11	22
<b>RAUBIOXON DISC AERATORS WITH CHECK VALVE</b>					
411355-600	DN200	Ø88.9, Ø90, Ø110, Ø114.3	-	0.5 - 5	10
415235-600	DN225	Ø88.9, Ø90, Ø110, Ø114.3	-	1 - 7	14
411365-600	DN300	Ø88.9, Ø90, Ø110, Ø114.3	-	1.5 - 11	22
<b>DISC SADDLE</b>					
417081-006	DN200, DN225, DN300	Ø88.9	-	-	-
417003-006	DN200, DN225, DN300	Ø90	-	-	-
417005-006	DN200, DN225, DN300	Ø110	-	-	-
417111-006	DN200, DN225, DN300	Ø114.3	-	-	-
<b>DISC WEDGE SADDLE</b>					
407098-001	DN200, DN225, DN300	Ø60.3	-	-	-
404712-001	DN200, DN225, DN300	Ø63	-	-	-
404713-001	DN200, DN225, DN300	Ø90	-	-	-
<b>GROMMET</b>					
351628-001	DN200, DN225, DN300	Ø88.9 / Ø90	3.9 ... 4.4	-	-
351629-001	DN200, DN225, DN300	Ø88.9 / Ø90	6.4 ... 6.9	-	-
351087-001	DN200, DN225, DN300	Ø110 / Ø114.3	4.2 ... 4.7	-	-
351086-001	DN200, DN225, DN300	Ø110 / Ø114.3	6.5 ... 7.0	-	-



\*Max airflow is used only during maintenance with a duration limit of 10 minutes per day.

# Product range - RAUBIOFLEX

## Pipe aerator



Article No.	Membrane ID (mm)	Air Distribution Pipe OD (mm)	Effective Length (mm)	Air Flow Range (Nm <sup>3</sup> /h)	*Max Airflow (Nm <sup>3</sup> /h)
<b>RAUBIOFLEX DUO PIPE AERATORS WITH SADDLE LOCK CONNECTION</b>					
401665-600	Ø64	Ø88.9	1000	2 - 12	24
401666-600	Ø64	Ø88.9	1500	3 - 18	36
401667-600	Ø64	Ø88.9	2000	4 - 24	48
401678-600	Ø64	Ø90	1000	2 - 12	24
401679-600	Ø64	Ø90	1500	3 - 18	36
401681-600	Ø64	Ø90	2000	4 - 24	48
401686-600	Ø64	Ø110	1000	2 - 12	24
401687-600	Ø64	Ø110	1500	3 - 18	36
401688-600	Ø64	Ø110	2000	4 - 24	48
401697-600	Ø64	Ø114.3	1000	2 - 12	24
401698-600	Ø64	Ø114.3	1500	3 - 18	36
401699-600	Ø64	Ø114.3	2000	4 - 24	48
on request	Ø92	Ø110	1000	3 - 19	38
on request	Ø92	Ø110	1500	4.5 - 28.5	57
404595-600	Ø92	Ø110	2000	6 - 38	76
on request	Ø92	Ø114.3	1000	3 - 19	38
on request	Ø92	Ø114.3	1500	4.5 - 28.5	57
404593-600	Ø92	Ø114.3	2000	6 - 38	76
406049-600	**Ø92-L	Ø114.3	2000	6 - 38	76
404722-600	**Ø92-L	Ø168.3	2000	6 - 38	76
404723-600	**Ø92-L	Ø219.1	2000	6 - 38	76
<b>RAUBIOFLEX STD PIPE AERATORS WITH THREADED ROD CONNECTION</b>					
401447-600	Ø64	Ø90, Ø110, Ø140, Ø160	500	1 - 6	12
404586-600	Ø64	Ø90, Ø110, Ø140, Ø160	750	1.5 - 9	18
401453-600	Ø64	Ø90, Ø110, Ø140, Ø160	1000	2 - 12	24
<b>RAUBIOFLEX STD PIPE AERATORS WITH 1/4" THREAD</b>					
401457-600	Ø64	Ø88.9, Ø90, Ø110, Ø114.3	500	1 - 6	12
403458-600	Ø64	Ø88.9, Ø90, Ø110, Ø114.3	750	1.5 - 9	18
401463-600	Ø64	Ø88.9, Ø90, Ø110, Ø114.3	1000	2 - 12	24
<b>RAUBIOFLEX STD PIPE AERATOR WITH 3/4" THREAD</b>					
404731-600	Ø64	Ø88.9, Ø90, Ø110, Ø114.3	500	1 - 15	24

\*Max airflow is used only during maintenance with a duration limit of 10 minutes per day.  
 \*\*Ø92-L: Low aerator back pressure model.

# Disc aerator

Article No.	Diameter (mm)	Air Distribution Pipe OD (mm)	Wall Thickness (mm)	Air Flow Range (Nm <sup>3</sup> /h)	*Max Airflow (Nm <sup>3</sup> /h)
<b>RAUBIOFLEX DISC AERATORS</b>					
860389-600	DN200	Ø88.9, Ø90, Ø110, Ø114.3	-	0.5 - 5	10
800394-600	DN225	Ø88.9, Ø90, Ø110, Ø114.3	-	1 - 7	14
800517-600	DN300	Ø88.9, Ø90, Ø110, Ø114.3	-	1.5 - 11	22
<b>RAUBIOFLEX DISC AERATORS WITH CHECK VALVE</b>					
800397-600	DN200	Ø88.9, Ø90, Ø110, Ø114.3	-	0.5 - 5	10
800396-600	DN225	Ø88.9, Ø90, Ø110, Ø114.3	-	1 - 7	14
800519-600	DN300	Ø88.9, Ø90, Ø110, Ø114.3	-	1.5 - 11	22
<b>DISC SADDLE</b>					
417081-006	DN200, DN225, DN300	Ø88.9	-	-	-
417003-006	DN200, DN225, DN300	Ø90	-	-	-
417005-006	DN200, DN225, DN300	Ø110	-	-	-
417111-006	DN200, DN225, DN300	Ø114.3	-	-	-
<b>DISC WEDGE SADDLE</b>					
407098-001	DN200, DN225, DN300	Ø60.3	-	-	-
404712-001	DN200, DN225, DN300	Ø63	-	-	-
404713-001	DN200, DN225, DN300	Ø90	-	-	-
<b>GROMMET</b>					
351628-001	DN200, DN225, DN300	Ø88.9 / Ø90	3.9 ... 4.4	-	-
351629-001	DN200, DN225, DN300	Ø88.9 / Ø90	6.4 ... 6.9	-	-
351087-001	DN200, DN225, DN300	Ø110 / Ø114.3	4.2 ... 4.7	-	-
351086-001	DN200, DN225, DN300	Ø110 / Ø114.3	6.5 ... 7.0	-	-



\*Max airflow is used only during maintenance with a duration limit of 10 minutes per day.

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Our warranty assumes consistent quality of our products in accordance with our specification and in accordance with our general conditions of sale.

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