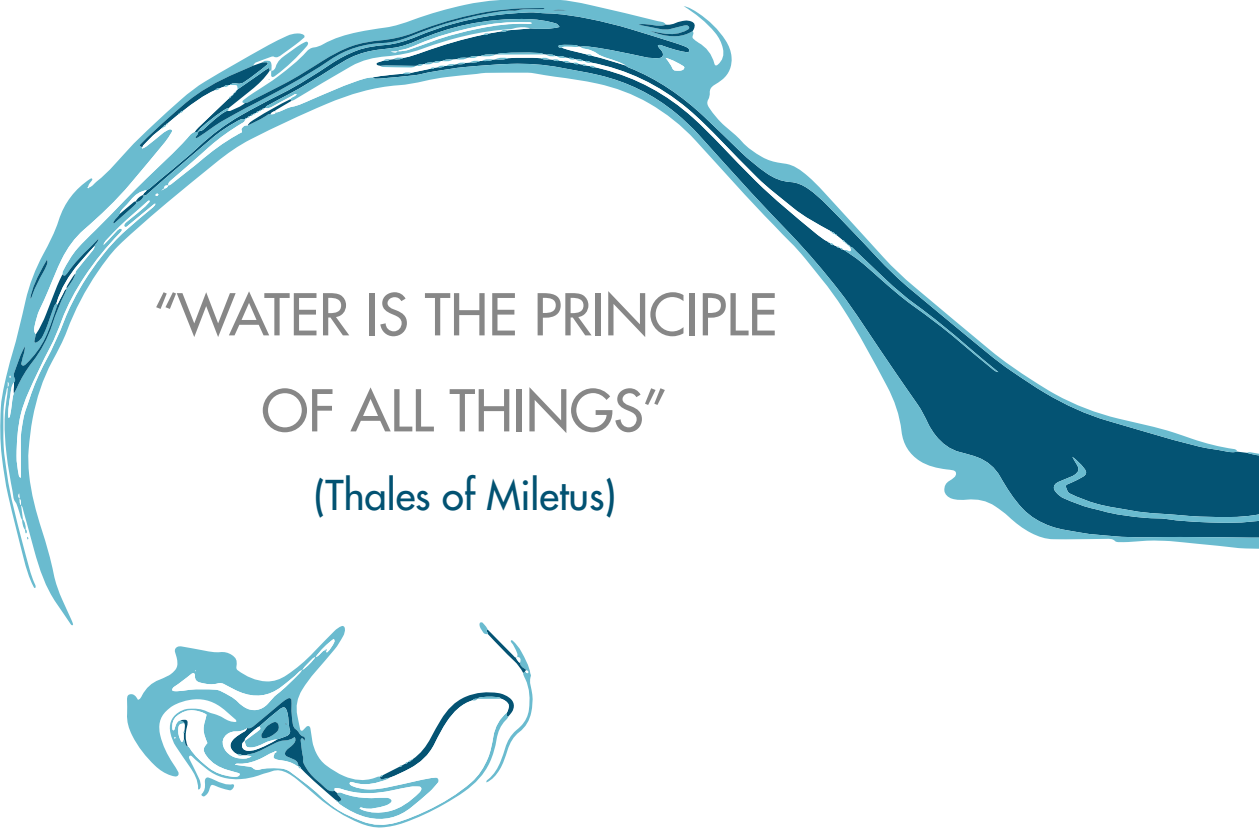




“WATER IS THE PRINCIPLE
OF ALL THINGS”
(Thales of Miletus)



Who we are

WTE, since its establishment in 1997, is a company specialized as supplier of aeration systems for waste water treatment.

The founders, as well as the team of WTE, are experienced and motivated engineers. The mission of the company is to provide not only standard solutions, but a customized product, following customers from the engineering to the installation.

This approach helped the company to grow in national and international market.

A little about our products

Diffusers are entirely manufactured in Italy with proprietary moulds. We follow the production of our diffusers starting from the design, to the realization of the moulds, up to the production, with the result of providing an high performance and safe product in every field of use.

All the components of the piping have been developed and manufactured to be applied in every kind of aeration systems: from aerobic digesters to aerated grit chambers, from channel tanks to SBR and from civil waste to industrial ones.

Our flexibility permits us to find the "way" together with the customer and provide a customized solution for each different application.

Diffuser's membrane.... which material?

Different types of sewage require different membranes' materials. We can supply our diffusers with membrane in peroxic cured EPDM, EPDM PTFE coated, Silicone, and polyurethane.

EPDM

- EPDM is successfully used in most municipal and many industrial applications.
- Excellent physical characteristics, including weathering and aging, ozone resistance.
- Low plasticizer content (<10%) with reduced mem-

- branes shrinking thanks to the curing method;
- Poor performance in the presence of aliphatic or aromatic solvent or hydrocarbon oils.
- Temperature range -60 °C to 115 °C

PTFE coated EPDM

- Combine the mechanical performance of EPDM, with the protection to chemical aggression and salt sedimentation offered by PTFE;
- Reduce the fouling of the membrane;
- Decrease the necessity of maintenance;
- Temperature range -60 °C to 115 °C

Silicone

- Very resistant to heat, ozone, and to strong bases;
- Susceptible to degradation by solvents, oils and concentrated acids;
- Poor mechanical characteristic compared to EPDM;
- Temperature range is -65 °C to 200 °C;

Polyurethane (PU)

- Typically used when waste water with concentration of hydrocarbon and aromatic solvents;
- Applied in industrial wastes such as paper manufacturing and food processing;
- Concentrated acids, ketones, esters, can damage PU;
- Temperature range is -45 °C to 70 °C. trati, chetoni, ester, ecc.;
- Range di utilizzo da -45 °C a 70 °C.



u-PVC, PP-h, AISI 304/316.... which material?

WTE usually offers the complete aeration system: diffusers and piping.

Plastic or metallic pipes can be chosen based on the submergence, air heat or type of the system (fixed or retrievable).

The air temperature increases about 10°C per m of water column of compressed air. In deep basin and with critical climatic conditions, the temperature can reach values not compatible with some type of material.

The temperature application limit considered on the pipe wall are the following:

- u-PVC max. 70 °C
- PP-h max. 100 °C
- Stainless steel AISI304L or 316L > 100 °C

A wrong choice of material can lead to high capital costs or, in the worst case, to the collapse of your aeration system.

Fixed or retractable system...which is the best choice?

This choice has a relevant impact on the cost of your aeration network; it's important to focus on the main differences between these two systems.

In the plant with a single aeration tank or if the process cannot be interrupted for service and maintenance, it is almost a must to provide a retrievable system.

This type of system allows to perform the maintenance without shutting down the process or dewatering the tank.

The need to lift the skids of the aeration system without emptying the tank, requires the use of materials with high mechanical strength, such as stainless steel.

The system costs increase due to the higher cost of the stainless steel compared to u-PVC or PP-h.

A retractable aeration system is preferred in plants with specific needs as described above, or in plants with few diffusers installed or where the simple maintenance has high priority.

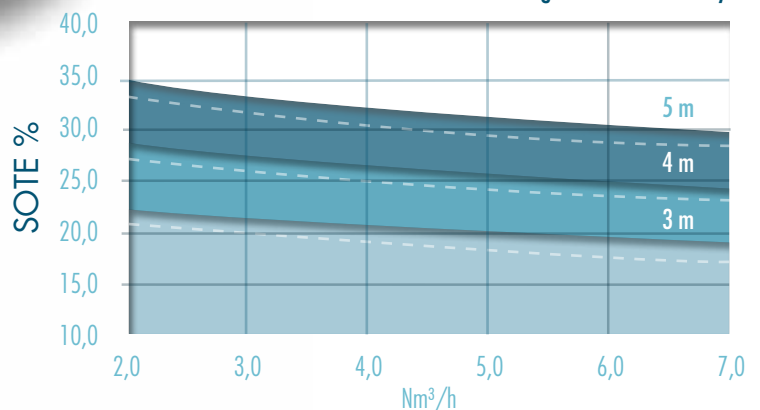


AirTech

9" 9" fine
bubbles disc
diffuser
with EPDM
membrane



Variable according to diffusers density



Dimensions

Code	04061-04071-04077
Outer diameter [mm]	270
Threaded connection	3/4" NPT
Weight [Kg]	0,72

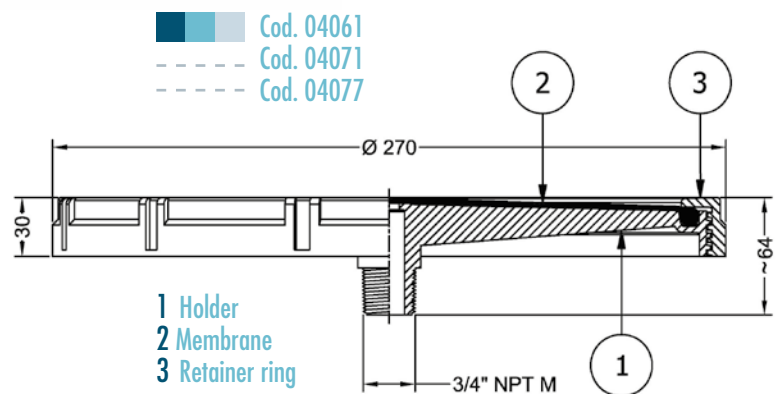
Performance

Code	04061	04071-04077*
Minimum airflow [Nm³/h]	1,0	1,5
Nominal airflow [Nm³/h]	3,5	5,5
Maximum airflow [Nm³/h]	7,0	11,0
Design airflow range [Nm³/h]	2,0-4,0	4,5-6,5
* Head losses [cm w.c.]	35,0	28,0

* Head losses are calculated at nominal airflow and 4m submergence

Materials

Code	04061-04071-04077
Membrane	EPDM Perox
Holder	PPGF 30%
Retainer ring	PPGF 30%



Membrana

Code	04061	04071	04077*
Number of slits	>6.500	>4.000	>2.200
Perforation [mm]	1,0-1,0	1,5-1,5	2,0-2,5
Active surface [m²]	0,0381	0,0381	0,0381
Average thickness [mm]	2,2	2,2	2,2
Tensile strength [Kg/cm²]	>140	>140	>140
Elongation at break [%]	600	600	600
Hardness [Shore A]	60	60	60
Plasticizer content [%]	< 10	< 10	< 10

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
Tollerances on the thickness $\pm 0,2$ mm
Tensile strenght according to ISO 37 type 1
Elongation at break ISO 37 type 1

Data subject to change without notice

*Minimum order quantity of 528 units.

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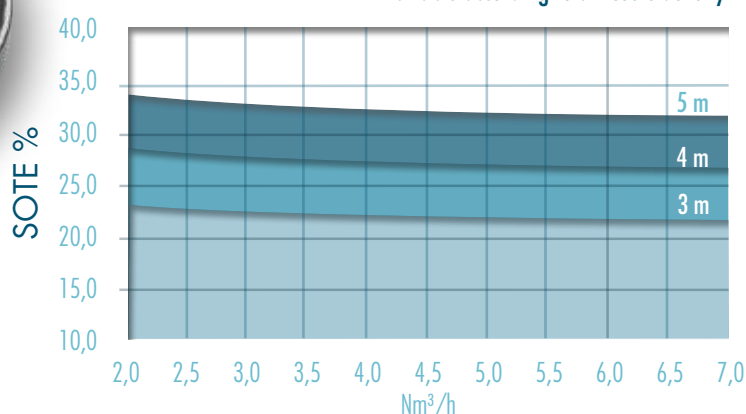
45% of
Less plastic
compared to
Diffuser 9"
standard

AirTech

9" SL 9" fine bubbles
disc diffuser
with EPDM
membrane
and integrated
ring nut



Variable according to diffusers density



Dimensions

Code	04059
Outer diameter [mm]	257
Threaded connection	3/4" NPT
Weight [Kg]	0,43

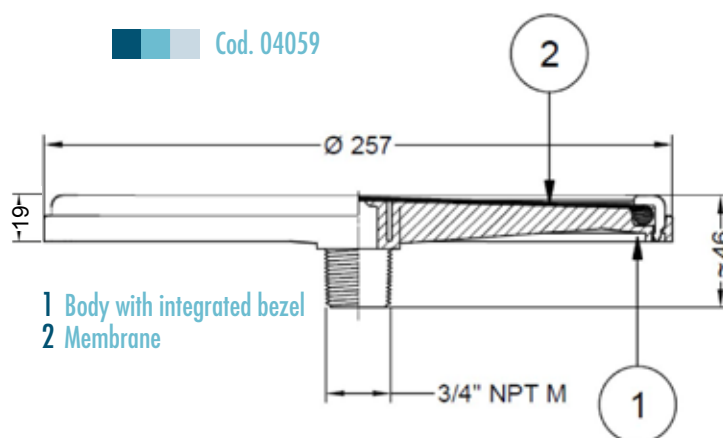
Performance

Code	04059
Minimum airflow [Nm³/h]	1,0
Nominal airflow [Nm³/h]	3,5
Maximum airflow [Nm³/h]	7,0
Design airflow range [Nm³/h]	2,0-4,0
* Head losses [cm w.c.]	39,0

* Head losses are calculated at nominal airflow and 4m submergence

Materials

Code	04059
Membrane	EPDM
Holder	PPGF 30%



Membrane

Code	04059
Number of slits	>5.000
Perforation [mm]	1,0-1,5
Active surface [m²]	0,0381
Average thickness [mm]	2,2
Tensile strength [Kg/cm²]	>126
Elongation at break [%]	540
Hardness [Shore A]	60
Plasticizer content [%]	< 15

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
Tolerances on the thickness $\pm 0,2$ mm
Tensile strenght according to ISO 37 type 1
Elongation at break ISO 37 type 1

Data subject to change without notice

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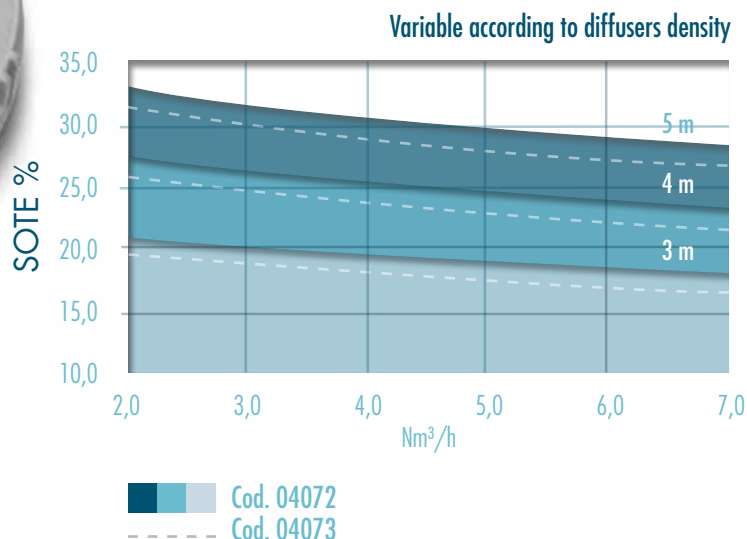


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AirTech 9"



9" fine/medium bubbles
disc diffuser with
silicone membrane



Dimensions

Code	04072	04073
Outer diameter [mm]	270	270
Threaded connection	3/4" NPT	3/4" NPT
Weight [Kg]	0,72	0,72

Performance

Code	04072	04073
Minimum airflow [Nm³/h]	1,5	2,0
Nominal airflow [Nm³/h]	5,5	5,5
Maximum airflow [Nm³/h]	11,0	11,0
Design airflow range [Nm³/h]	4,5-6,5	4,5-6,5
* Head losses [cm w.c.]	24,0	26,0

* Head losses are calculated at nominal airflow and 4m submergence

Materials

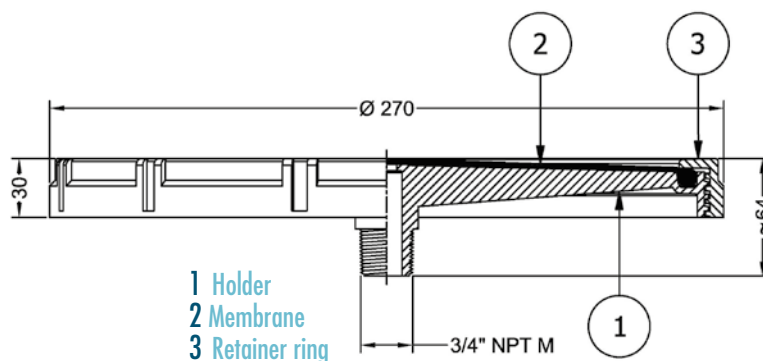
Code	04072	04073
Membrane	Silicone	Silicone
Holder	PPGF 30%	PPGF 30%
Retainer ring	PPGF 30%	PPGF 30%

Membrane

Code	04072	04073
Number of slits	>4.000	>2.200
Perforation [mm]	1,5-1,5	2,0-2,5
Active surface [m²]	0,0381	0,0381
Average thickness [mm]	2,2	2,2
Tensile strength [Kg/cm²]	>88	>88
Elongation at break [%]	450	450
Hardness [Shore A]	70	70

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
 Tollerances on the thickness $\pm 0,2$ mm
 Tensile strenght according to ISO 37 type 1
 Elongation at break ISO 37 type 1



Data subject to change without notice

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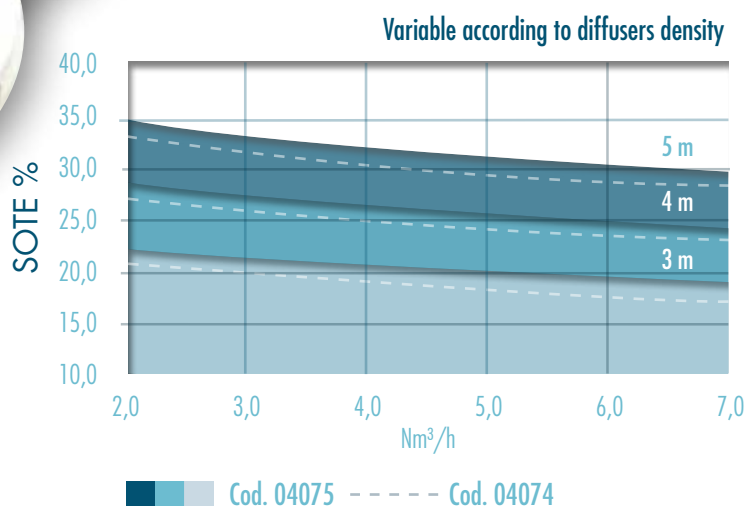


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AirTech 9"

9" medium bubbles
disc diffuser with
EPDM+PTFE membrane



Dimensions

Code	04075	04074
Outer diameter [mm]	270	270
Threaded connection	3/4" NPT	3/4" NPT
Weight [Kg]	0,72	0,72

Performance

Codice	04075	04074
Portata aria minima [Nm³/h]	1,0	2,0
Portata aria nominale [Nm³/h]	3,5	5,5
Portata aria massima [Nm³/h]	7,0	11,0
Portate aria suggerite [Nm³/h]	2,0-4,0	4,5-6,5
* Perdite di carico [cm c.a.]	42,0	33,0

* Head losses are calculated at nominal airflow and 4m submergence

Materials

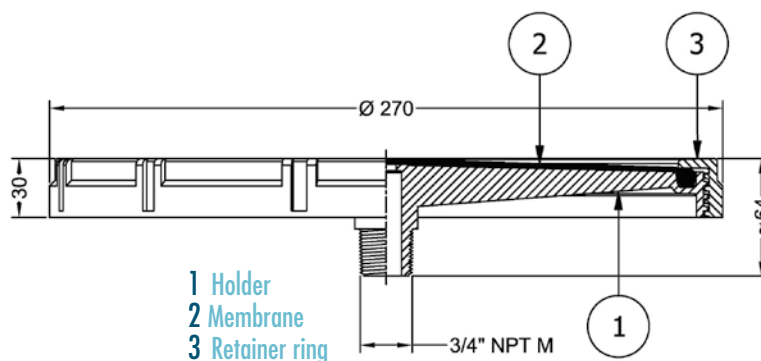
Code	04074	04075
Membrane	PDM Perox+PTFE	PDM Perox+PTFE
Holder	PPGF 30%	PPGF 30%
Retainer ring	PPGF 30%	PPGF 30%

Membrane

Code	04075	04074*
Number of slits	>6.500	>2.200
Perforation [mm]	1,0-1,0	2,0-2,5
Active surface [m²]	0,0381	0,0381
Average thickness [mm]	2,3	2,3
Tensile strength [Kg/cm²]	>140	>140
Elongation at break [%]	600	600
Hardness [Shore A]	60	60
Plasticizer content [%]	<10	<10

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
Tollerances on the thickness $\pm 0,2$ mm
Tensile strenght according to ISO 37 type 1
Elongation at break ISO 37 type 1



*Minimum order quantity of 528 units.

Data subject to change without notice

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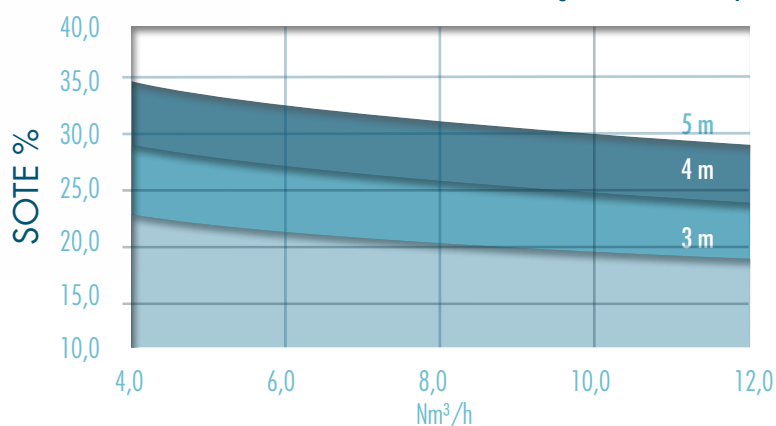
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AirTech 12"

12" fine bubbles
disc diffuser with EPDM/
EPDM+PTFE membrane



Variable according to diffusers density



Dimensions

Code	04037-04038
Outer diameter [mm]	344
Threaded connection	3/4" NPT
Weight [Kg]	1,03

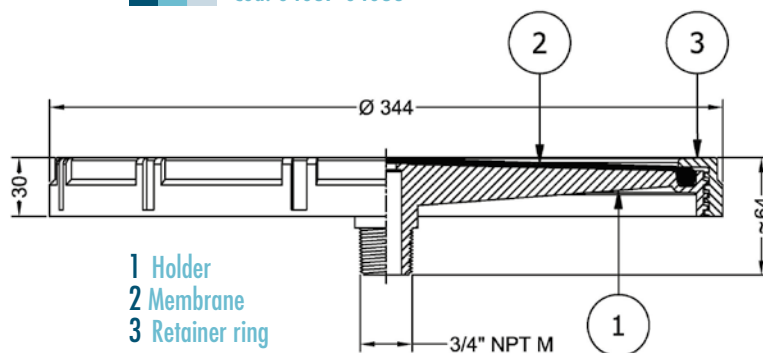
Performance

Code	04037	04038
Minimum airflow [Nm³/h]	2,0	2,0
Nominal airflow [Nm³/h]	8,0	8,0
Maximum airflow [Nm³/h]	16,0	16,0
Design airflow range [Nm³/h]	3,0-13,0	3,0-13,0
* Head losses [cm w.c.]	36,0	43,0

* Head losses are calculated at nominal airflow and 4m submergence

Materials

Code	04037	04038
Membrane	EPDM Perox	EPDM Perox+PTFE
Holder	PPGF 30%	PPGF 30%
Retainer ring	PPGF 30%	PPGF 30%



Membrane

Code	04037	04038
Number of slits	>5.200	>5.200
Perforation [mm]	1,2-2,0	1,2-2,0
Active surface [m²]	0,064	0,064
Average thickness [mm]	2,2	2,3
Tensile strength [Kg/cm²]	>140	>140
Elongation at break [%]	600	600
Hardness [Shore A]	60	60
Plasticizer content [%]	< 10	< 10

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
Tollerances on the thickness $\pm 0,2$ mm
Tensile strenght according to ISO 37 type 1
Elongation at break ISO 37 type 1

Data subject to change without notice

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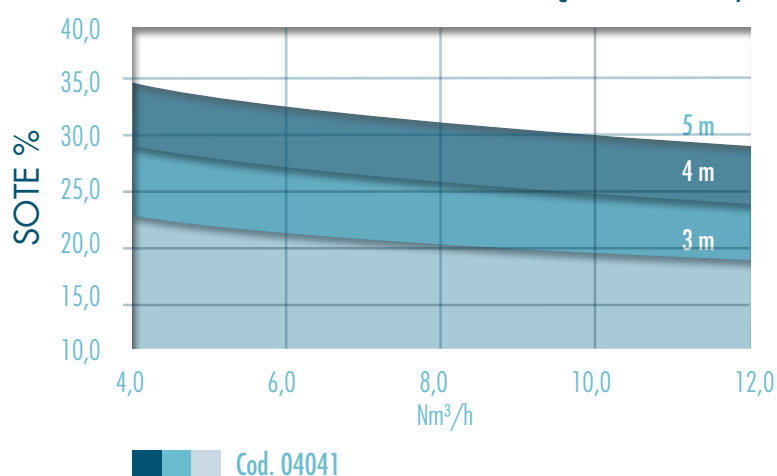
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AirTech 1 2"

12" fine bubbles disc
diffuser with EPDM+GCW
membrane



Variable according to diffusers density



Dimensions

Code	04041
Outer diameter [mm]	344
Threaded connection	3/4" NPT
Weight [Kg]	1,03

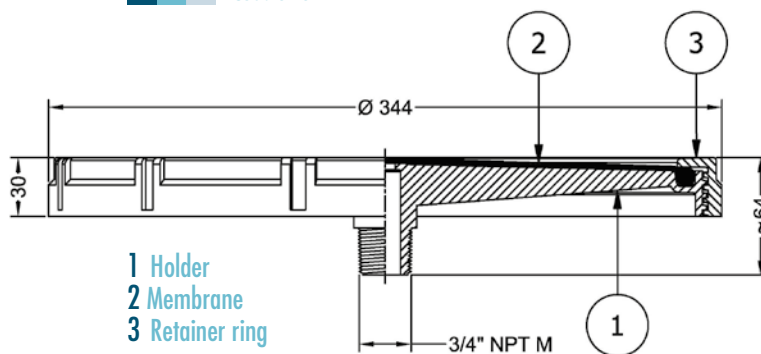
Performance

Code	04041
Minimum airflow [Nm³/h]	2,0
Nominal airflow [Nm³/h]	8,0
Maximum airflow [Nm³/h]	16,0
Design airflow range [Nm³/h]	3,0-13,0
* Head losses [cm w.c.]	43,0

* Head losses are calculated at nominal airflow and 4m submergence

Materials

Code	04041
Membrane	EPDM+GCW
Holder	PPGF 30%
Retainer ring	PPGF 30%



Membrane

Code	04041
Number of slits	>5.200
Perforation [mm]	1,2-2,0
Active surface [m²]	0,064
Average thickness [mm]	2,3
Tensile strength [Kg/cm²]	>140
Elongation at break [%]	600
Hardness [Shore A]	60
Plasticizer content [%]	< 10

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
Tolerances on the thickness $\pm 0,2$ mm
Tensile strenght according to ISO 37 type 1
Elongation at break ISO 37 type 1

Data subject to change without notice

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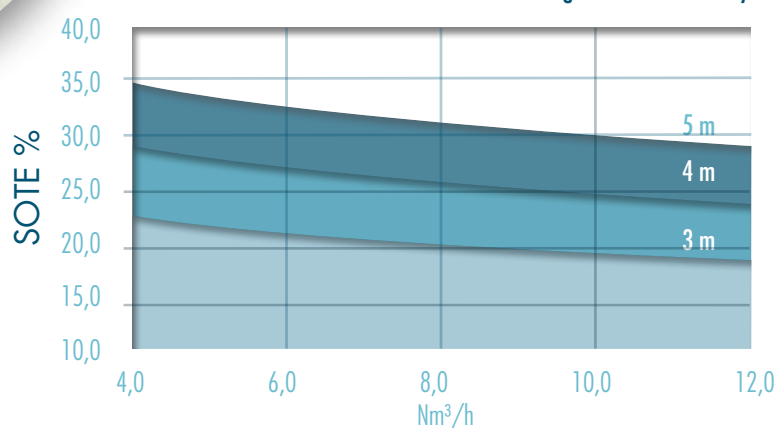
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AirTech 12"

12" fine bubbles
disc diffuser with
silicone membrane



Variable according to diffusers density



Dimensions

Code	04039
Outer diameter [mm]	344
Threaded connection	3/4" NPT
Weight [Kg]	1,03

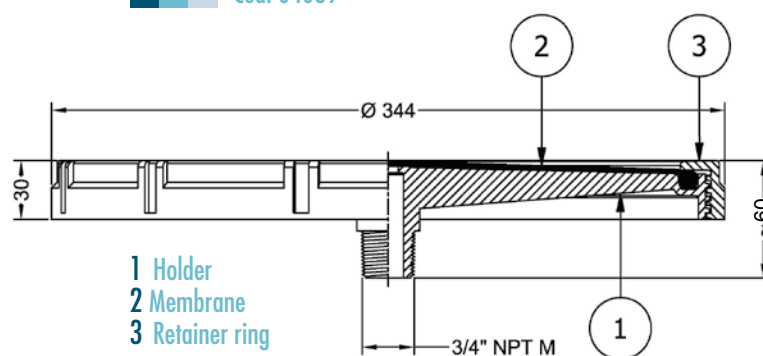
Performance

Code	04039
Minimum airflow [Nm³/h]	2,0
Nominal airflow [Nm³/h]	8,0
Maximum airflow [Nm³/h]	16,0
Design airflow range [Nm³/h]	3,0-13,0
* Head losses [cm w.c.]	36,0

* Head losses are calculated at nominal airflow and 4m submergence

Materials

Code	04039
Membrane	Silicone
Holder	PPGF 30%
Retainer ring	PPGF 30%



Membrane

Code	04039
Number of slits	>5.200
Perforation [mm]	1,2-2,0
Active surface [m²]	0,064
Average thickness [mm]	2,2
Tensile strength [Kg/cm²]	>88
Elongation at break [%]	450
Hardness [Shore A]	70

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
Tolerances on the thickness $\pm 0,2$ mm
Tensile strenght according to ISO 37 type 1
Elongation at break ISO 37 type 1

Data subject to change without notice

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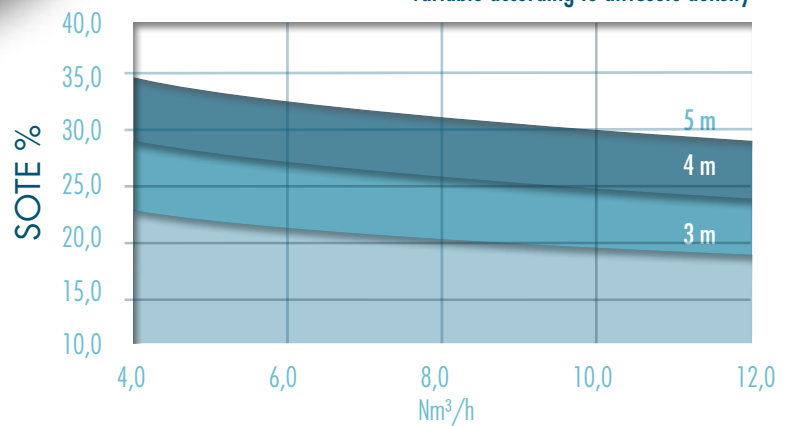
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AirTech 1 2" SL



12" fine bubbles
disc diffuser
with EPDM membrane
and integrated
ring nut

Variable according to diffusers density



Cod. 04040

Dimensions

Code	04040
Outer diameter [mm]	332
Threaded connection	3/4" NPT
Weight [Kg]	0,66

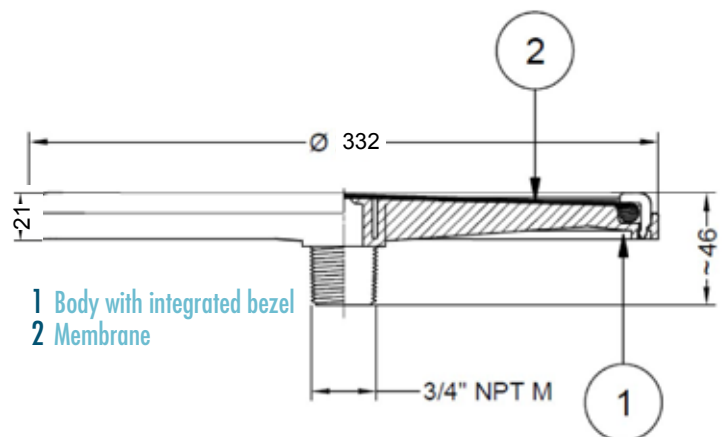
Performance

Code	04040
Minimum airflow [Nm³/h]	1,0
Nominal airflow [Nm³/h]	8,0
Maximum airflow [Nm³/h]	16,0
Design airflow range [Nm³/h]	2,0-13,0
* Head losses [cm w.c.]	40,0

* Head losses are calculated at nominal airflow and 4m submergence

Materials

Code	04040
Membrane	EPDM
Holder	PPGF 30%



Membrana

Code	04040
Number of slits	>5.200
Perforation [mm]	1,2-2,0
Active surface [m²]	0,064
Average thickness [mm]	2,2
Tensile strength [Kg/cm²]	>126
Elongation at break [%]	540
Hardness [Shore A]	60
Plasticizer content [%]	< 15

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
Tollerances on the thickness $\pm 0,2$ mm
Tensile strenght according to ISO 37 type 1
Elongation at break ISO 37 type 1

Data subject to change without notice

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AirTech

5" coarse bubbles
diffuser with
EPDM membrane

Recommended for use with continuous aeration



Dimensions

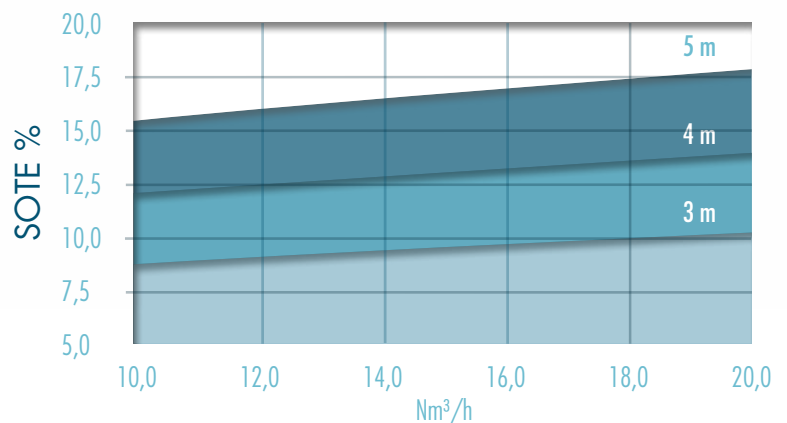
Code	04032
Outer diameter [mm]	127
Threaded connection	3/4" NPT
Weight [Kg]	0,09

Performance

Code	04032
Minimum airflow [Nm ³ /h]	2,0
Nominal airflow [Nm ³ /h]	15,0
Maximum airflow [Nm ³ /h]	30,0
Design airflow range [Nm ³ /h]	10,0-20,0
* Head losses [cm w.c.]	12,4

* Head losses are calculated at nominal airflow and 4m submergence

Variable according to diffusers density



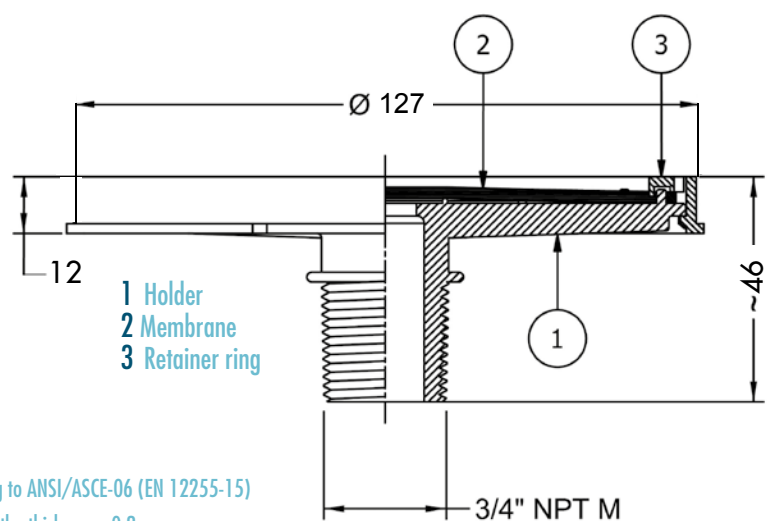
Materials

Code	04032
Membrane	EPDM Perox
Holder	ABS
Retainer ring	ABS

Membrane

Code	04032
Number of slits	12xØ6
Perforation [mm]	Ø 6
Active surface [m ²]	—
Average thickness [mm]	2,30
Tensile strength [Kg/cm ²]	>140
Elongation at break [%]	600
Hardness [Shore A]	60
Plasticizer content [%]	<10

Cod. 04032



NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)

Tollerances on the thickness $\pm 0,2$ mm

Tensile strenght according to ISO 37 type 1

Elongation at break ISO 37 type 1

Data subject to change without notice

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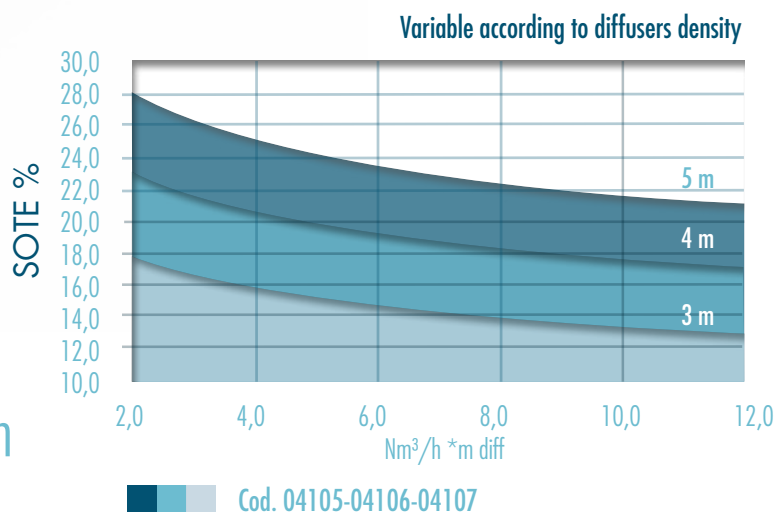
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AirTech

TF63



2" fine bubbles
tubular diffuser with EPDM
membrane - threaded connection



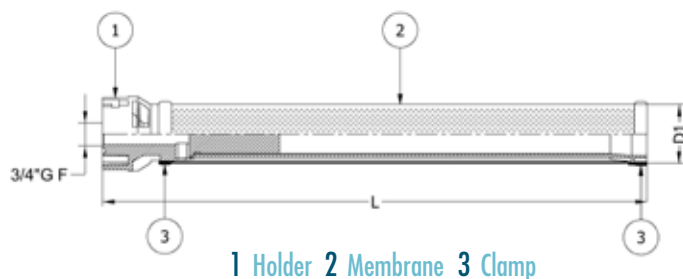
Dimensions

Code	04105	04106	04107
D 1 [mm]	63 (2")	63 (2")	63 (2")
Total length [mm]	626	876	1.126
Perforated length [mm]	500	750	1.000
Threaded connection	ISO 3/4"G	ISO 3/4"G	ISO 3/4"G
Weight [Kg]	0,98	1,24	1,55

Performance

Code	04105	04106	04107
Minimum airflow [Nm³/h]	1,0	1,5	2,0
Nominal airflow [Nm³/h]	4,0	6,0	8,0
Maximum airflow [Nm³/h]	10,0	15,0	20,0
Design airflow range [Nm³/h]	2,0-6,0	3,0-9,0	4,0-12,0
* Head losses [cm w.c.]	54,0	54,0	54,0

* Head losses are calculated at nominal airflow and 4m submergence



Materials

Code	04105-04106-04107
Membrane	EPDM
Holder	PP
Header	PPGF 30%
Clamp	A4

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
Tollerances on the thickness $\pm 0,2$ mm. Tensile strenght
according to ISO 37 type 1. Elongation at break ISO 37 type 1.

Membrane

Code	04105	04106	04107
Number of slits	12.000	18.000	24.000
Perforation [mm]	1,25-2,25	1,25-2,25	1,25-2,25
Active surface [m²]	0,09	0,135	0,180
Average thickness [mm]	1,9	1,9	1,9
Tensile strength [Kg/cm²]	>60	>60	>60
Elongation at break [%]	400	400	400
Hardness [Shore A]	40	40	40
Plasticizer content [%]	35	35	35

Data subject to change without notice

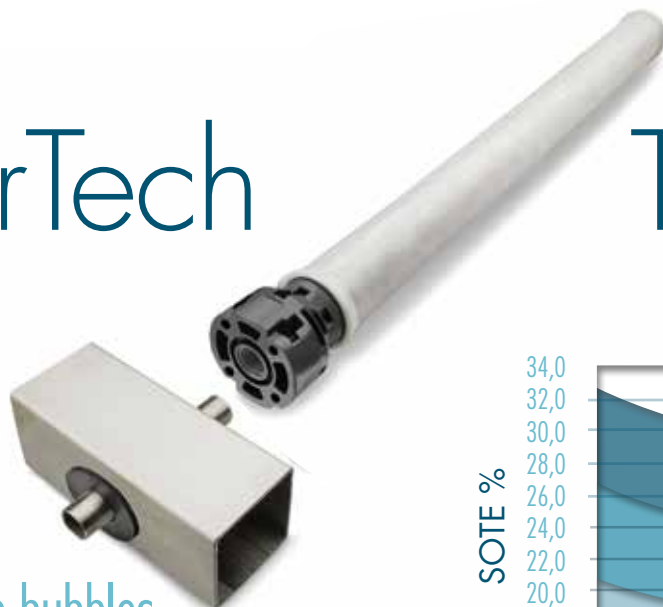
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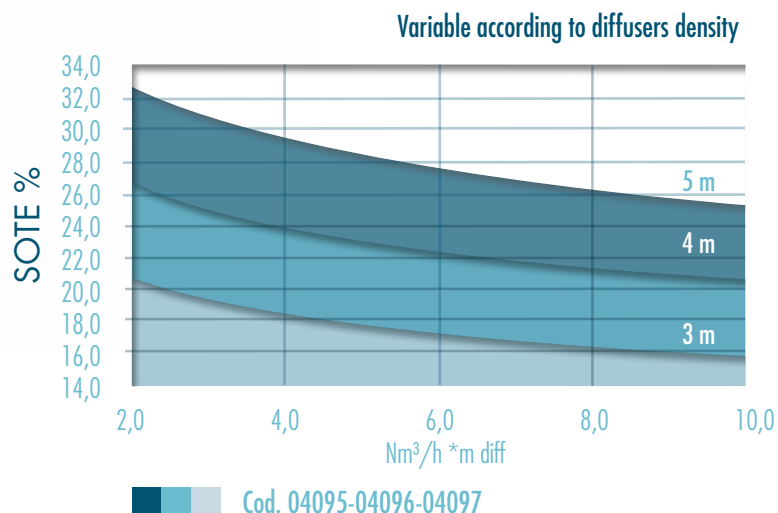
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AirTech

TF63



2" fine bubbles
tubular diffuser with silicone
membrane - threaded connection



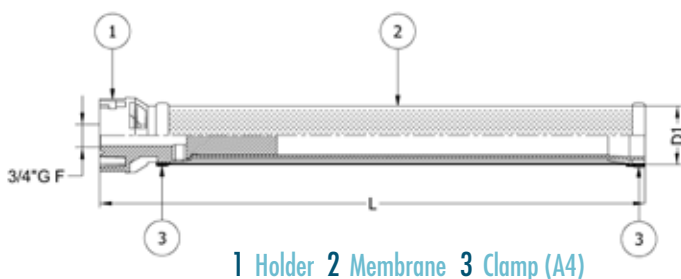
Dimensions

Code	04095	04096	04097
D 1 [mm]	63 (2")	63 (2")	63 (2")
Total length [mm]	626	876	1.126
Perforated length [mm]	500	750	1.000
Threaded connection	ISO 3/4"G	ISO 3/4"G	ISO 3/4"G
Weight [Kg]	0,93	1,15	1,41

Performance

Code	04095	04096	04097
Minimum airflow [Nm³/h]	1,0	1,5	2,0
Nominal airflow [Nm³/h]	4,0	6,0	8,0
Maximum airflow [Nm³/h]	8,0	12,0	16,0
Design airflow range [Nm³/h]	2,0-5,0	4,0-8,0	6,0-10,0
* Head losses [cm w.c.]	38,0	38,0	38,0

* Head losses are calculated at nominal airflow and 4m submergence



1 Holder 2 Membrane 3 Clamp (A4)

Materiali

Code	04095-04096-04097
Membrane	Silicone
Holder	PP
Header	PPGF 30%
Clamp	A4

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)
Tollerances on the thickness $\pm 0,2$ mm. Tensile strenght
according to ISO 37 type 1. Elongation at break ISO 37 type 1.

Membrane

Code	04095	04096	04097
Number of slits	7.500	11.250	15.000
Perforation [mm]	1,0-3,0	1,0-3,0	1,0-3,0
Active surface [m²]	0,09	0,135	0,180
Average thickness [mm]	1,5	1,5	1,5
Tensile strength [Kg/cm²]	>90	>90	>90
Elongation at break [%]	600	600	600
Hardness [Shore A]	60	60	60
Plasticizer content [%]	0	0	0

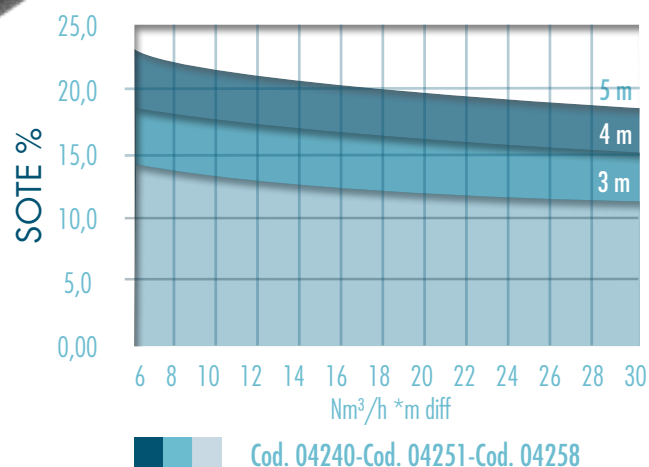
Data subject to change without notice

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AirTech TF90



3" fine bubble
tubular diffuser with EPDM
membrane - threaded
connection

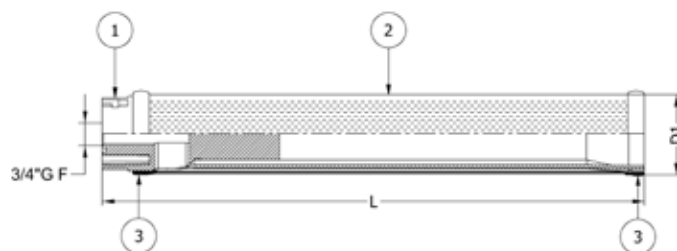
Dimensions

Code	04240	04251	04258
D 1 [mm]	90 (3")	90 (3")	90 (3")
Total length [mm]	607	857	1.067
Perforated length [mm]	500	750	1.000
Threaded connection	ISO 3/4"G	ISO 3/4"G	ISO 3/4"G
Weight [Kg]	1,35	1,73	2,29

Performance

Code	04240	04251	04258
Minimum airflow [Nm³/h]	2,0	2,5	2,5
Nominal airflow [Nm³/h]	5,0	7,5	10,0
Maximum airflow [Nm³/h]	15,0	25,0	30,0
Design airflow range [Nm³/h]	3,0-10,0	4,0-15,0	5,0-20,0
* Head losses [cm w.c.]	36	36	36

* Head losses are calculated at nominal airflow and 4m submergence



1 Holder 2 Membrane 3 Clamp

Materials

Code	04240-04251-04258
Membrane	EPDM
Holder	PP
Header	PPGF 30%
Clamp	A4

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)

Tollerances on the thickness $\pm 0,2$ mm

Tensile strenght according to ISO 37 type 1

Elongation at break ISO 37 type 1

End support is suggested in case
of installation with mixers

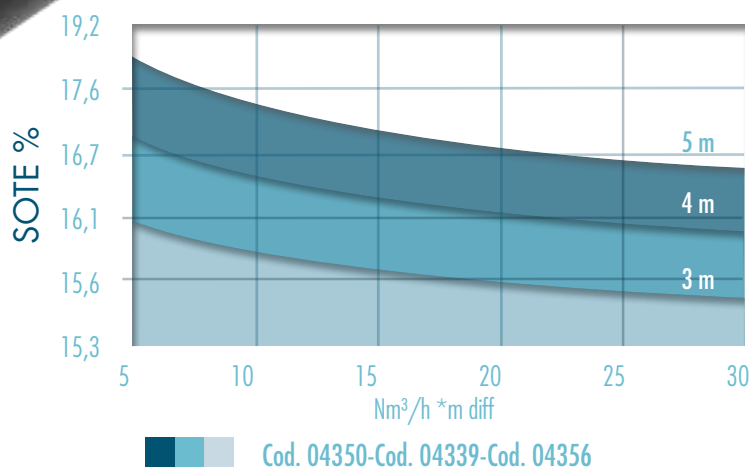
Membrane

Code	04240	04251	04258
Number of slits	14.300	21.400	28.600
Perforation [mm]	1,0-1,5	1,0-1,5	1,0-1,5
Active surface [m²]	0,120	0,180	0,240
Average thickness [mm]	1,9	1,9	1,9
Tensile strength [Kg/cm²]	>60	>60	>60
Elongation at break [%]	400	400	400
Hardness [Shore A]	40	40	40
Plasticizer content [%]	35	35	35

Data subject to change without notice

AirTech

TF90



3" medium bubble
tubular diffuser with EPDM
membrane - threaded
connection

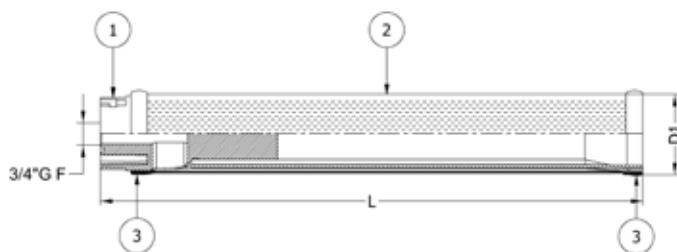
Dimensions

Code	04339	04350	04356
D 1 [mm]	90 (3")	90 (3")	90 (3")
Total length [mm]	607	857	1.107
Perforated length [mm]	500	750	1.000
Threaded connection	ISO 3/4"G	ISO 3/4"G	ISO 3/4"G
Weight [Kg]	1,35	1,73	2,29

Performance

Code	04339	04350	04356
Minimum airflow [Nm^3/h]	2,0	2,0	2,0
Nominal airflow [Nm^3/h]	7,5	10,0	15,0
Maximum airflow [Nm^3/h]	20,0	30,0	45,0
Design airflow range [Nm^3/h]	6,0-15,0	8,0-20,0	12-30,0
* Head losses [cm w.c.]	28	28	28

* Head losses are calculated at nominal airflow and 4m submergence



1 Holder 2 Membrane 3 Clamp

Materials

Code	04339-04350-04356
Membrane	EPDM
Holder	PP
Header	PPGF 30%
Clamp	A4

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)

Tollerances on the thickness $\pm 0,2 \text{ mm}$

Tensile strenght according to ISO 37 type 1

Elongation at break ISO 37 type 1

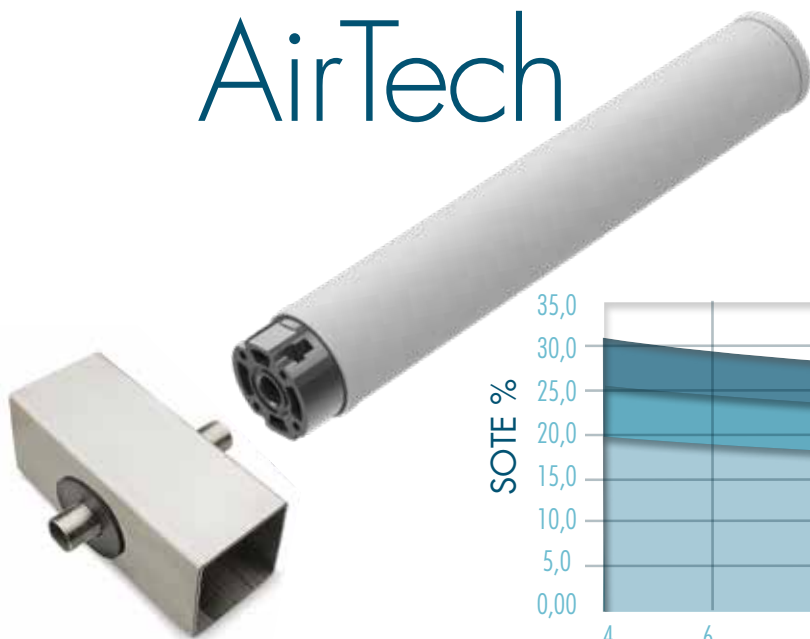
End support is suggested in case of installation with mixers

Membrane

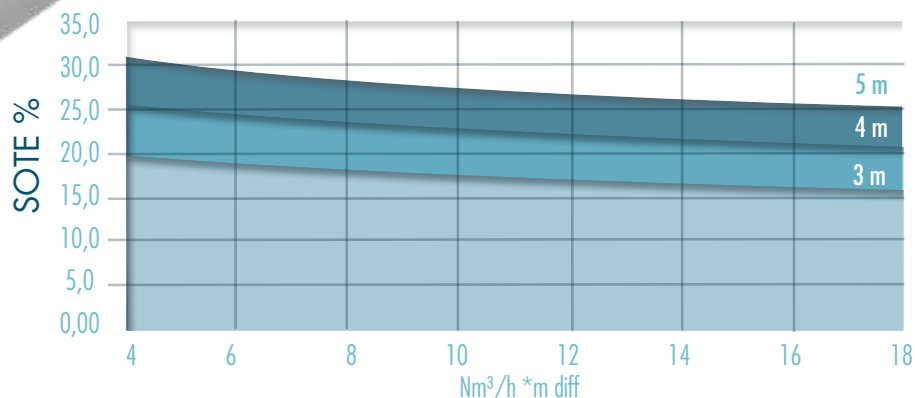
Code	04339	04350	04356
Number of slits	10.500	15.500	21.000
Perforation [mm]	2,0-2,0	2,0-2,0	2,0-2,0
Active surface [m^2]	0,120	0,180	0,240
Average thickness [mm]	1,9	1,9	1,9
Tensile strength [Kg/cm^2]	>60	>60	>60
Elongation at break [%]	400	400	400
Hardness [Shore A]	40	40	40
Plasticizer content [%]	35	35	35

Data subject to change without notice

AirTech TF90



Variable according to diffusers density



Cod.04320-Cod. 04321-Cod. 04322

3" fine bubbles tubular diffuser with silicone membrane threaded connection

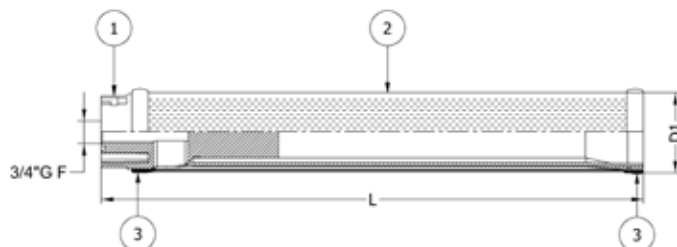
Performance

Code		04320	04321	04322
Minimum airflow	[Nm³/h]	2,0	2,5	2,5
Nominal airflow	[Nm³/h]	5,0	7,5	10,0
Maximum airflow	[Nm³/h]	14,0	21,0	28,0
Design airflow range	[Nm³/h]	2,0-9,0	3,0-14,0	4,0-18,0
* Head losses [cm w.c.]		46	46	46

* Head losses are calculated at nominal airflow and 4m submergence

Dimensions

Code	04320	04321	04322
D 1 [mm]	90 (3")	90 (3")	90 (3")
Total length [mm]	607	857	1.107
Perforated length [mm]	500	750	1.000
Threaded connection	ISO 3/4"G	ISO 3/4"G	ISO 3/4"G
Weight [Kg]	1,28	1,65	2,09



1 Holder 2 Membrane 3 Retainer ring

Materials

Code	04320-04321-04322
Membrane	Silicone
Holder	PP
Header	PPGF 30%
Clamp	A4

Membrana

Code	04320	04321	04322
Number of slits	6.125	9.200	12.250
Perforation [mm]	1,0-3,0	1,0-3,0	1,0-3,0
Active surface [m²]	0,098	0,147	0,196
Average thickness [mm]	1,5	1,5	1,5
Tensile strength [Kg/cm²]	>90	>90	>90
Elongation at break [%]	600	600	600
Hardness [Shore A]	60	60	60

NOTES

SOTE according to ANSI/ASCE-06 (EN 12255-15)

Tollerances on the thickness $\pm 0,2$ mm

Tensile strenght according to ISO 37 type 1

Elongation at break ISO 37 type 1

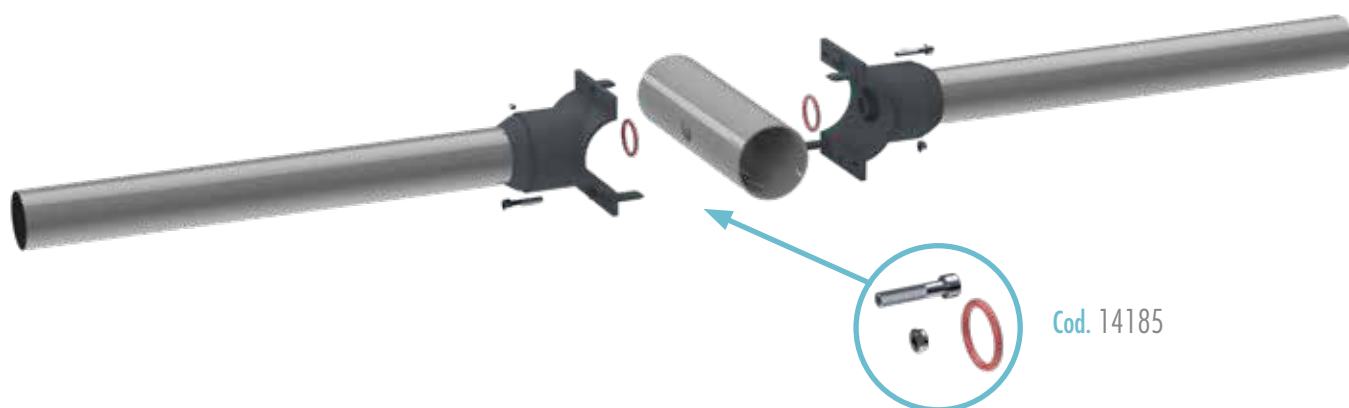
End support is suggested in case of installation with mixers

Data subject to change without notice

AirTech

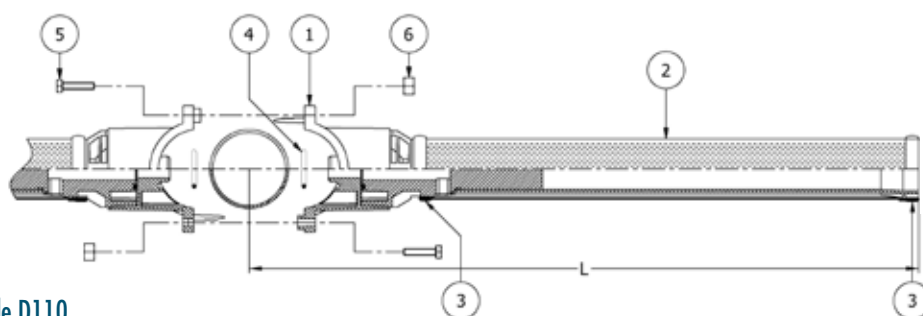
TS63/ TS90

The TF 63/90 tubular diffuser can be supplied with a saddle adapter for use on D90 and D110 pipes, together with the kit code 14185, which includes bolt and OR.



TS63/TS90

- 1 Tubular diffuser
- 2 Kit 14185



Saddle D90 Saddle D110
L (mm)

TS63/500	695	705
TS63/750	945	955
TS63/1000	1195	1205
TS90/500	676	686
TS90/750	926	936
TS90/1000	1176	1186

Tolerance: ± 10 mm

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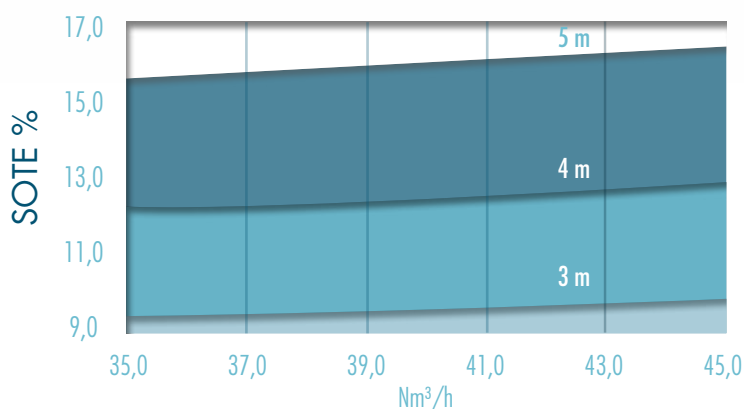
AirMax



AISI 316 coarse bubble tubular diffuser

Dimensions

Code	04100	04102
H1 [mm]	50	50
H2 [mm]	100	100
Total length (L) [mm]	606	606
Threaded connection	ISO 3/4"G M	ISO 3/4"G F
Weight [Kg]	1,33	1,39



Performance

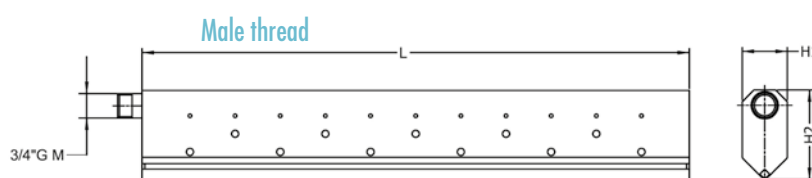
Code	04100-04102
Minimum airflow [Nm³/h]	7,0
Nominal airflow [Nm³/h]	40,0
Maximum airflow [Nm³/h]	80,0
Design airflow range [Nm³/h]	35,0-45,0

* Head losses [cm w.c.]

9,5

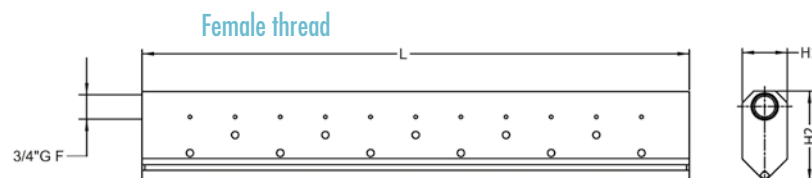
* Head losses are calculated at nominal airflow and 4m submergence

Cod. 04100-04102



Materials

Code	04100-04102
Body	AISI 316L



Diffuser

Code	04100-04102
Number of upper holes	22
Diameter of upper holes [mm]	4,0
Number of lower holes [mm]	22
Diameter of lower holes [mm]	8,0

NOTES

SOTE according to EN 12255-15

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Accessories for the aeration system

Our main product is the diffused aeration system with u-PVC pipes; for this reason, we studied and realized a complete set of accessories that will make easier and cheap the installation of your WTE system



CLAMP SADDLES

Designed to settle on plastic and stainless-steel pipes, are manufactured with an innovative locking system with one bolt to reduce the mounting time.

All clamps are in strong polypropylene reinforced with 30% of fibre glass (PPGF30%) with bolt in A4.

Threaded connection is $\frac{3}{4}$ " NPT F

They are available in the following sizes:

CLAMP SADDLES FOR PLASTIC PIPES

Code	Plastic pipe Ø
13898	63 mm
13901	75 mm
13903	90 mm

CLAMP SADDLES FOR STAINLESS STEEL PIPES

Code	SS pipe Ø	Inches	DN
13899	60,3 mm	2"	50
13905	76,1 mm	2 ½"	65
13904	88,9 mm	3"	80

For the D110, our standard for lateral pipes, we can supply three different type of connections:

- EVC patch, for an easy and quick installation. It doesn't require glue or special tools;
- Quick connection saddle. Made in ABS fibre glass reinforced 30%, this innovative saddle doesn't require any bolt. The saddle is quick to install, cheap and has the possibility to be easily replaced in case of failure;
- PVC saddle to be glued on the pipe. It guarantees a safe and strong seal.

All these connections can be used on the same pipe since they keep the diffuser at the same level from the centerline of the pipe.

CLAMP SADDLES

D63: Cod. 13898
D60,3: Cod. 13899



D75: Cod. 13901
D76,1: Cod. 13905



D90: Cod. 13903
D88,9: Cod. 13904



PVC SADDLE TO BE GLUED

D90: Cod. 03210
D110: Cod. 03211



PATCH IN EVC

D90: Cod. 03199
D110: Cod. 03200



DISC DIFFUSER BALL VALVE

Cod. 13500



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PIPE CONNECTIONS

Specifically designed for bottom aeration systems where air pressure is typically below 10 m water column. Quicker to install than standard flanges due to the single bolt connection and safer than a slotted band joint.

The 2 stubs are in ABS while the clamp is in PPGF30% with bolts in A4

PIPE CONNECTION

Code	Description
10008	Pipe connection for D110 PVC pipes
10071	Pipe connection for D90 PVC pipes
10072	Pipe connection for D110 with D90 PVC pipe

END CONNECTION

Code	Description
10007	End connection for D110 PVC pipe
10070	End connection for D90 PVC pipe

CLAMP

Code	Description
13235	Kit including clamp, bolt and gasket

PIPE CONNECTION

END CONNECTION

CLAMP

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PIPE SUPPORTS

PPGF30 SUPPORTS

Manifolds and laterals supports are available in different materials and sizes, adapting to the specific requirements of each aeration system. For plastic pipes (uPVC and PPh) with diameters D90 and D110, supports are available in PPGF30, AISI304L and AISI316L, while for pipes with diameters above D110 or for stainless steel pipe systems, only holders in AISI 304L and AISI 316L are provided.

A distinctive advantage of PPGF30 supports is their height adjustment capability with the pipe mounted on the support. All steel brackets up to D110/114.3 require only one anchor bolt, which facilitates assembly on site. The brackets allow tube adjustment from 150 to 290 mm. For higher adjustment heights, please consult WTE.



PPGF30 PIPE SUPPORTS

Code	Description
10334	Support D90 H220 - PPGF30 with mechanical anchor bolt M10x105 - AISI 316L
10335	Support D110 H220 - PPGF30 with mechanical anchor bolt M10x105 - AISI 316L
10336	Support D90 H290 - PPGF30 with mechanical anchor bolt M10x105 - AISI 316L
10337	Support D110 H290 - PPGF30 with mechanical anchor bolt M10x105 - AISI 316L

STAINLESS STEEL PIPE SUPPORTS AISI 304L/316L

WTE plastic pipe supports are designed to allow the pipes to slide after thermal changes (type BFS supports). For stainless steel grids or where a section of pipe needs to be rigid near an expansion joint, BFR rigid supports are available.



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AIRTECH CLEANER

The AirTech Cleaner cleaning system is designed for aeration systems. It consists of a trolley, ultrasonic nozzle, dosing pump and compressor. The ultrasonic nozzle produces a fine mist to clean diffuser membranes without the need to empty or remove them. The DMX series dosing pump is characterised by its efficiency and adjustability.

KEY SPECIFICATIONS OF THE AIRTECH CLEANER INCLUDE

Maximum working pressure: 10 bar
Pump body: PVC
Ball valve: Glass
Seal: FKM
Pump delivery: 6 / 12 mm hose

The AirTech Cleaner is recommended for use with acetic, formic or orthophosphoric acid. Regular cleaning will reduce load losses and energy consumption associated with oxidative processes. Contact WTE for guidelines on dealing with increased load losses and the need for immediate cleaning intervention to maintain optimum operating conditions.

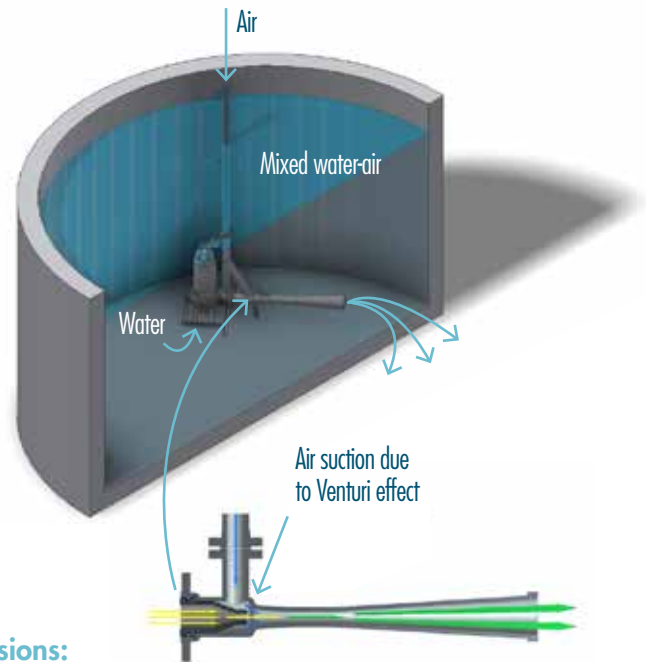


AEROJET

Made by a stainless steel ejector (AISI 304L or AISI 316L) coupled with a submersible Grundfos wastewater pump, the AeroJet is a flexible device for mixing and aerating the treatment tanks. The liquid, thanks to a centrifugal pump, is guided inside the ejector. There, a calibrated nozzle reduces the free passage by increasing the velocity of the fluid and creating a vacuum with consequent suction of air from the airfeed pipe (Venturi effect).

The air and the liquid are thus mixed, generating a jet coming out of the ejector, which ensures a proper oxygenation and suspension of the solids.

The general operating principle is shown in the figure above.



The AeroJet are available in a wide range, in the following versions:

- Free-standing version;
- Auto-coupling version for installation in closed tank;
- Auto-coupling version for installation in open tank.

These devices do not use silencers because the noise level measured at 1 m from the aerator is equal to 71 dB.

APPLICATIONS

AeroJet are designed to mix and aerate in a wide range of situations:

- Biological tanks of civil/industrial WWTP;
- Stabilization and equalization tanks in industrial plants with high pH fluctuation;
- Aerobic sludge digestion tanks;
- Fish farms;
- Applications where the process has fluctuation in the organic load (and so in the oxygen demand).

AeroJet is a practical solution to mix and aerate a sewage avoiding odor problems or to supply oxygen to biological processes in small / medium size plants, both civil and industrial.

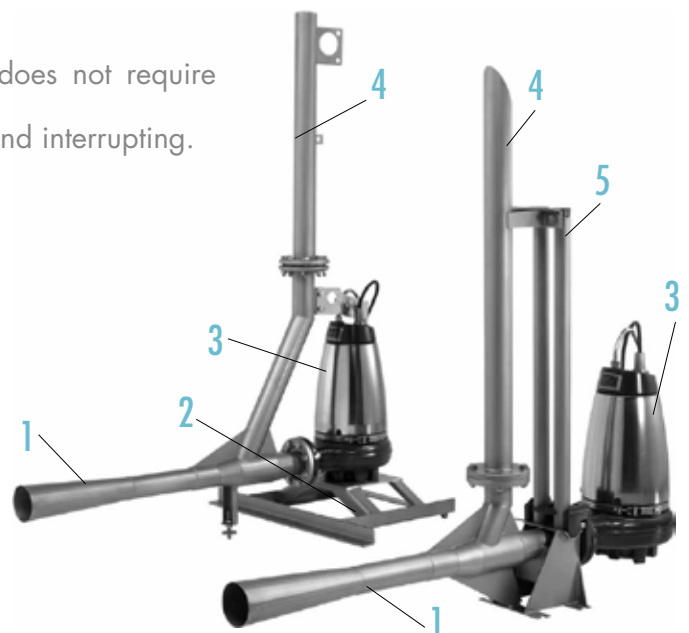
AeroJet is easy to install, use and maintain, as it does not require blowers, air distribution pipes or control valves.

It can be positioned even without emptying the tank and interrupting.



Pos. Description

- 1 Ejector (in AISI 304L o 316L)
- 2 Base (standard version in galvanised steel)
- 3 Pump (Grundfos)
- 4 Airfeed pipe
- 5 Guide kit (not included)



OPERATING RANGE AND MATERIALS

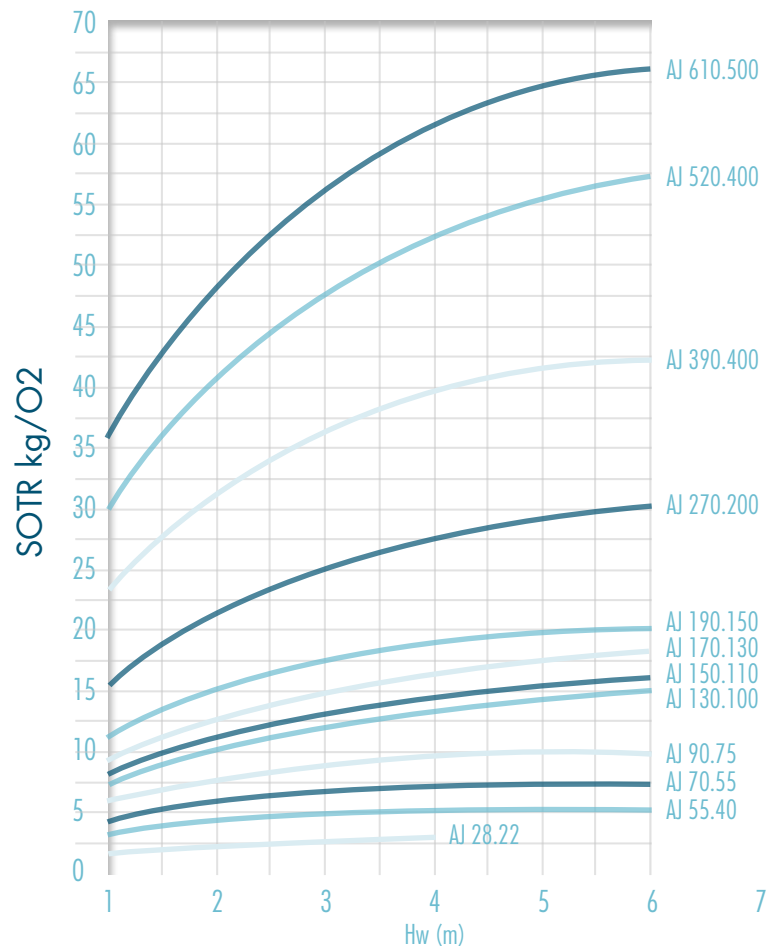
Sewage temperature	0-40°C
Ph	Between 4 and 10
Water depth	Air suction between 4 e 6 m depending on the model
Solid content	Max. 3%
Density	Max 1100 Kg/m ³
Performance	Min. 2.2 kW (SOR 2.8 KgO ₂ /h) Max. 50 kW (SOR 61 KgO ₂ /h)
Materials	Ejector AISI 304L (316L) Airfeed pipe AISI 304L (316L) Base (for the free-standing version) galvanised steel

PRODUCT RANGE

Model	SOTR	Ø airfeed pipe	Ø Outlet	Nominal power P2	N° ejectors	Grundfos pump model
AJ.28.22	3,1 Kg O ₂ /h	DN80	DN80	1,9 kW	1	SL1.80.80.22.4
AJ.55.40	5,3 Kg O ₂ /h	DN80	DN100	3,8 kW	1	SL1.80.100.40.4
AJ.70.55	7,1 Kg O ₂ /h	DN80	DN100	5,0 kW	1	SE1.80.100.55.4
AJ.90.75	9,7 Kg O ₂ /h	DN80	DN100	6,8 kW	1	SL1.80.100.75.4
AJ.130.100	13,4 Kg O ₂ /h	DN100	DN150	9,2 kW	1	SL1.85.150.100.4
AJ.150.110	14,5 Kg O ₂ /h	DN100	DN150	10,1 kW	1	SL1.85.150.110.4
AJ.170.130	16,4 Kg O ₂ /h	DN150	DN150	11,9 kW	1	SL1.85.150.130.4
AJ.190.150	19,0 Kg O ₂ /h	DN100	DN150	14,3 kW	1	SL1.85.150.150.4
AJ.270.200	27,5 Kg O ₂ /h	DN150	DN200	18,6 kW	2	SL1.110.200.200.4
AJ.390.400	39,4 Kg O ₂ /h	DN150	DN200	30,5 kW	2	S2.100.200.400.4
AJ.520.400	52,0 Kg O ₂ /h	DN150	DN200	38,5 kW	3	S2.100.200.400.4
AJ.610.500	61,4 Kg O ₂ /h	DN 200	DN200	47,3 kW	3	S2.100.200.500.4

I dati sono riferiti a 4 m di battente con pompa in versione 50Hz (disponibile anche la versione a 60 Hz)

PERFORMANCE AEROJET 50 HZ



Data subject to change without notice

RAINJET

Made by a stainless steel ejector (AISI 304L or AISI316L), coupled with a submersible Grundfos wastewater pump, the RainJet is specifically studied for cleaning and aeration of retention basins.

These family of products is mainly used in 2 cases:

- **Storm water tanks:** their main purpose is to collect all the run-off water with a high content of pollutants formed because of a meteoric event.
- **Storage tanks:** used during peak periods of the treatment system, they work as "storage" volume, until the plant is able to receive and subsequently treat them.

In both situations, the tanks are "normally" empty, up to the occurrence of an event that fills them (rain or load peaks). After each emptying, there is an accumulation of sand and debris which, in a medium period, significantly reduce the tank volume.

WTE has studied RainJet to solve the issues of mixing the liquid and the cleaning the tank bottom once drained the basin.

2 types of RainJet are available:

1. **RainJet water/air (W/A):** join the mixing power to the capability to provide air to the sewage (by Venturi effect), minimizing odours if detention times of organic material are long. The presence of air mixed with water also allows a particularly long jet, ideal when the cleaning of the bottom is required (typical ratio between the length and width of the tank 3:1)
2. **RainJet water/water (W/W):** they provide a high mixing power that guarantee the suspension of solids even in large basins. (typical ratio between length and width of the tank 2: 1)



OPERATING RANGE AND MATERIALS

	Rainjet W/A	Rainjet W/W
Sewage temperature	0-40°C	
pH	Between 4 and 10	
Water depth	Suction of air is guaranteed up to 3 m of water level	-
Solid content	Max. 3%	
Density	Max 1.100 Kg/m3	
Materials	Ejector AISI 304L (316L) Airfeed pipe AISI 304L (316L)	Ejector AISI 304L (316L)
Ratio length/width of the tank	3:1	2:1
Max mixable volume	<1.000 m3	<1.500 m3
Mixing power	0-1.500 N	
Suggested detention time	Up to 3 days	Up to 1 day

RAINJET W/A

The Rainjet is equipped with the innovative two-stage ejector which guarantee higher mixing power than a single-stage unit.

Made for continuous service, they are entirely made of stainless steel (AISI 304L or AISI 316L).

The 2 " airfeed pipe is connected to the ejector by means of an ISO G threaded connection.

HOW THE RAINJET W/A WORKS

First phase

For simplicity, we will take into consideration rectangular tanks with a slight slope towards the ejector, which is the most common layout and we consider the tank filled with liquid.

The RainJet W/A generates a jet that affects the entire basin; the air sucked by the ejector by Venturi effect facilitates the suspension of solids. During this phase the walls of the basin and the bottom are cleaned, apart from the corners on the opposite of the ejector.

Second phase

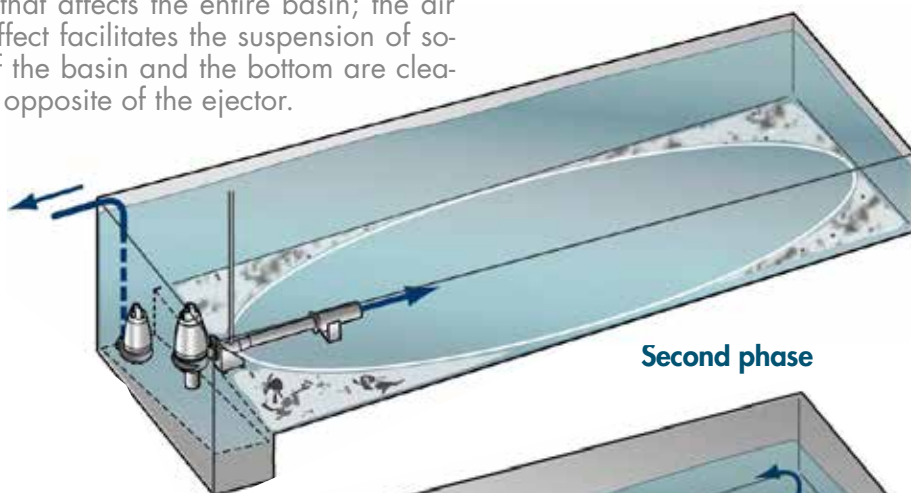
During the drainage, the mixing action becomes more and more effective as the volume in the tanks reduces.

Water-air jet coming from the ejector slide on the water surface, increasing its length reaching all the sedimented deposits in the corners.

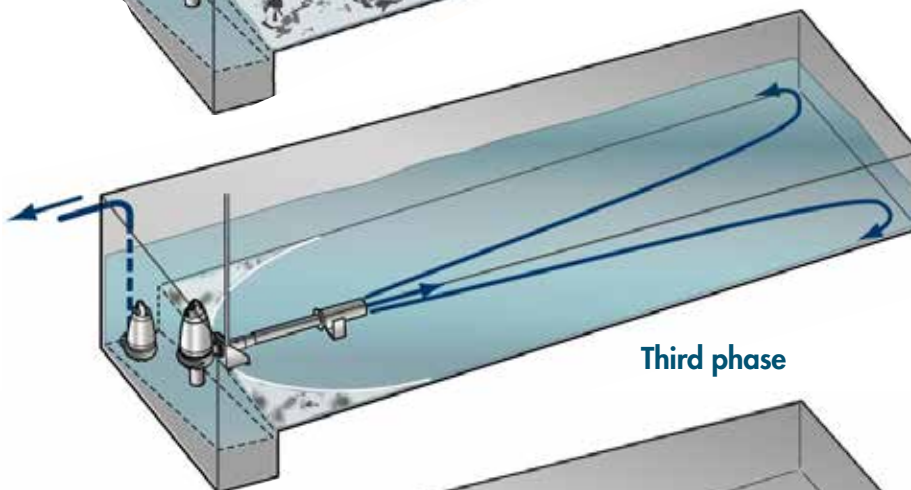
Third phase

When the liquid's level decrease further and the majority of the Rainjet is out of water, it starts the third phase. The length of the jet decreases, the area of interest of the jet is the center of the basin. The stream stretches, generating a back flow from the center of the basin, gathering the solids in the proximity of the RainJet

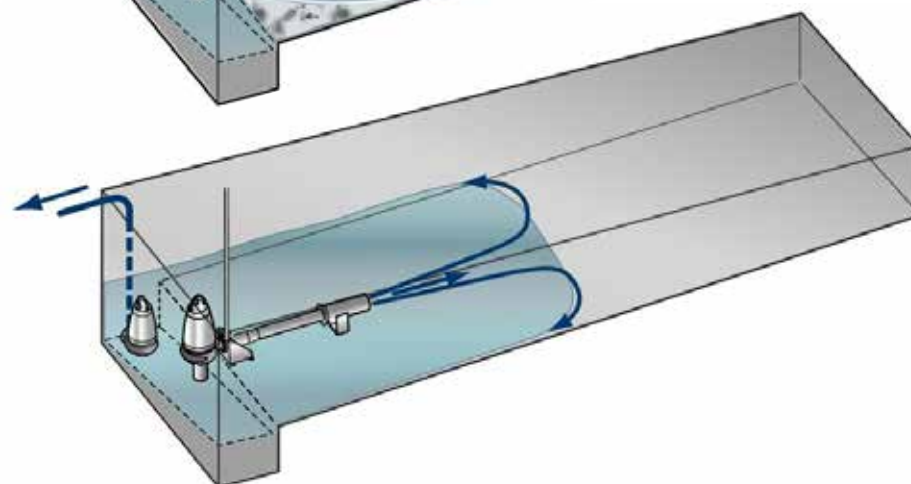
First phase



Second phase



Third phase



RAINJET W/W

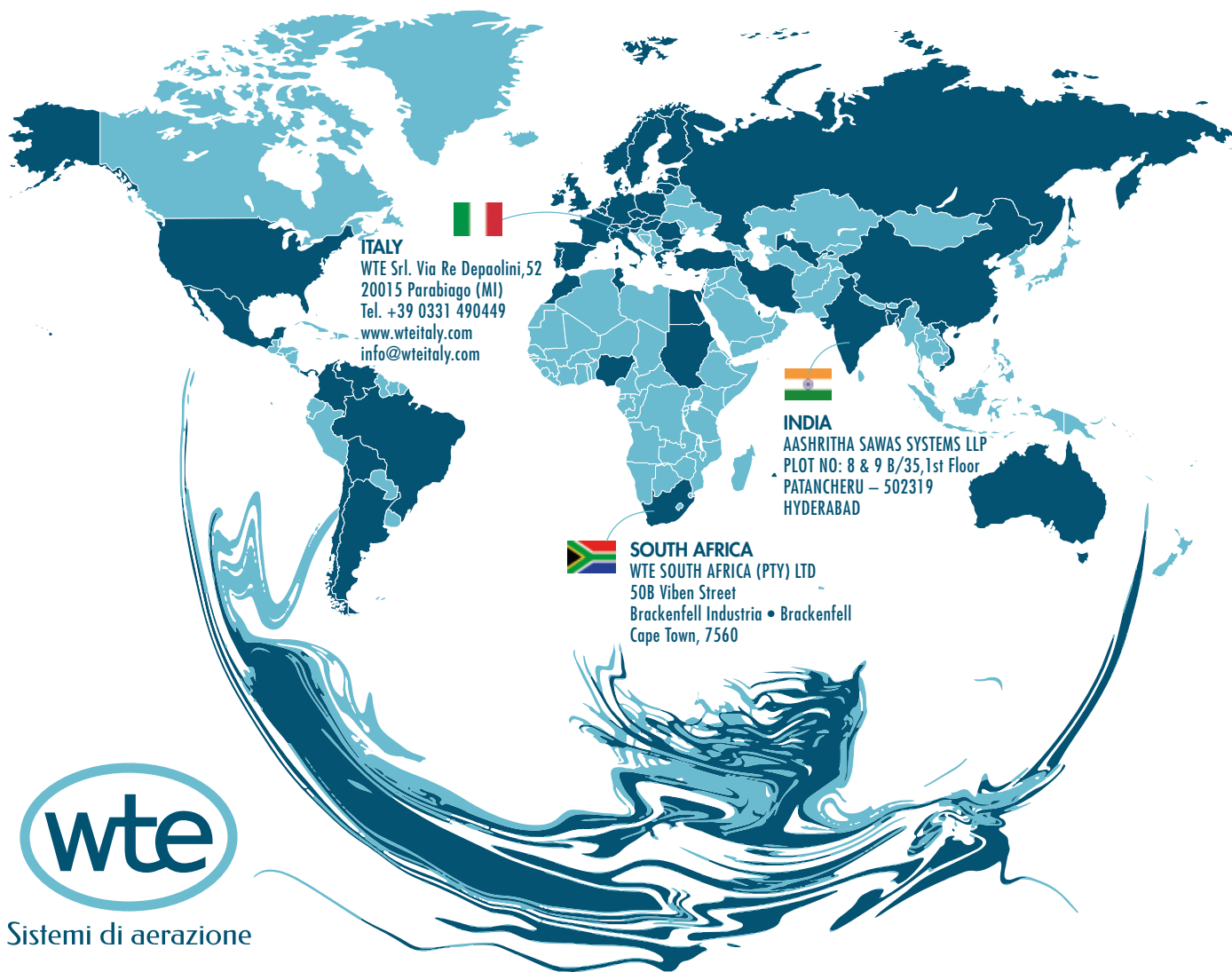
It is a water-water ejector with a high mixing capacity, designed for mixing and cleaning storm water tanks.

It can be used when the drainage networks are separated and it is not possible for sewage with high organic contents to enter the tank or more generally when short retention times are foreseen.

The ejector does not take in air and for this reason requires pumps with lower performance for the same volume mixed.

The ejector and all accessories are made entirely of stainless steel (AISI 304L or AISI 316L).





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