Pure & Simple.

Our durable biological wastewater and gas treatment solutions simplify purification.

Prysmian NSW

A Brand of Prysmian Group

POLY-NET®
ENVIRONMENTAL


Our sewage treatment technology
sets the standard worldwide.

Our durable biological wastewater and gas treatment solutions simplify purification.

With over 40 years of environmental technology experience, NSW produces extremely durable solutions for biological water and gas treatment. SESSIL® and BIO-NET® set the standards as easy-to-handle and long-lived support media for biomass in municipal and industrial wastewater treatment plants. Effective & efficient high-end German engineering – pure and simple.

WHAT WE OFFER

We provide the whole world with state-of-the-art, custom-made, components for the biological treatment of municipal and industrial sewage. SESSIL and BIO-NET are vertically structured, three-dimensional through-flow biomass support media that ensure optimal sludge removal and maximum protection against blockage. In addition, they provide an excellent supply of oxygen to the biomass used in sewage treatment plants.

SESSIL and BIO-NET are found in municipal and industrial wastewater treatment plants that are based on the principle of a trickling filter system. BIO-NET is also used in rotating biological contactors and submerged fixed-bed systems.

SESSIL®

The SESSIL solution consists of film strips made of UV-resistant polyethylene suspended inside the trickling filters from low to high rated systems. The strips are tear-resistant and possess a high tensile strength. Plastic strands of polyester filament embedded in the strips increase stability, ensure uniform length and make SESSIL extremely rip-resistant and durable.

The strips are also provided with a special tension member to handle the loads, while the ripple in the film strips effectively prevents blocking.

The protection against performance degradation, compared to support materials having other structures, is much better as well.

APPLICATIONS

- Precleaning in high-capacity systems
- Complete biological cleaning
- Nitrification
- Denitrification
- Anaerobic reactors

MAIN FEATURES

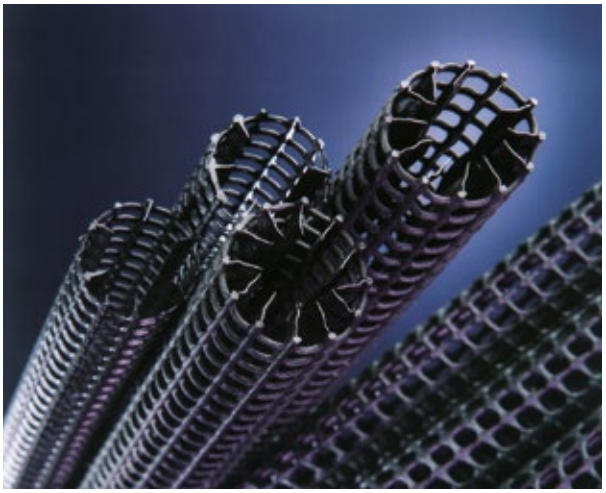
- Individually adaptable growth surfaces from 100 to 250 m^2/m^3 for microorganism growth
- Lightweight and compact making it simple and cost-effective to transport
- Can withstand high static loading allowing implementation of large packing heights
- Can be inspected at ground level and over the entire packing height
- Vertical structure providing optimal sludge discharge
- Great protection against performance degradation
- Low installation weight – simple on-site assembly
- Provides complete three-dimensional flow
- Maximum immunity against clogging
- Minimal dead weight

TECHNICAL DATA

- Width of one film strip is approx. 30 mm
- Width of one SESSIL unit consisting of 50 film strips is approx. 700 mm
- Length of the strips can be adjusted individually
- Strips for up to 900 m^3 of trickling filter volume can be transported in a 40 ft container.

BIO-NET®

BIO-NET is made of UV-resistant polyethylene (PE-HD), and consists of grid tubes welded together in a lattice to create sturdy and stable block units. The inside of each tube has vertical fins. They are predominantly used as support material for biological wastewater treatment and can withstand considerable static loads. The grid structure that allows three-dimensional flow provides uniform wastewater distribution and optimal oxygen supply to the biomass.



MAIN FEATURES

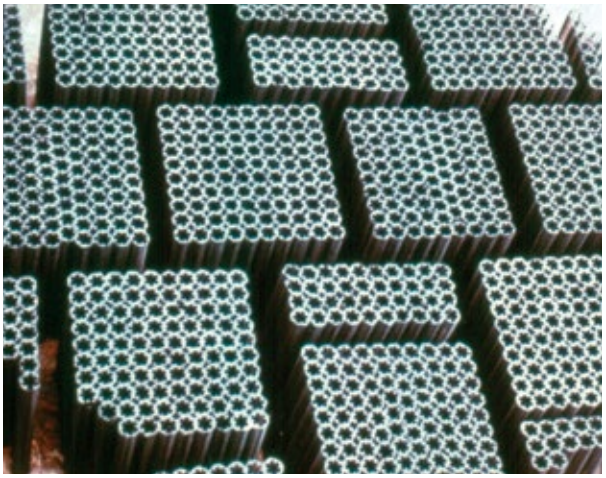
- Available in four growth surface area sizes (100, 150, 200 and 250 m^2/m^3)
- Provides uniform wastewater distribution and optimal oxygen supply
- Vertical structure allows optimal removal of sludge
- Completely three-dimensional flow
- High mechanical load capacity
- Low hydraulic pressure loss
- Blocks strong enough to be walked on
- Heavier and lighter versions available depending on the static load

APPLICATIONS

- Submerged fixed-bed systems
- Trickling filters
- Rotating biological contactor systems
- Mass transfer processes
- Exhaust air purification

TECHNICAL DATA				
BIO-NET®	Specific surface	Applications	Cavity percentage	Weight
BIO-NET® 100	100 m^2/m^3	Preliminary purification	97 %	32 kg/m^3
BIO-NET® 150	150 m^2/m^3	Complete purification	96 %	40 kg/m^3
BIO-NET® 200	200 m^2/m^3	Nitrification	95 %	49 kg/m^3
BIO-NET® 250	250 m^2/m^3	Nitrification	92 %	79 kg/m^3

Standard block sizes (L × W × H) in mm: 500 × 500 × 600 and 500 × 500 × 900.
Sizes according to customer requirements and application are possible.

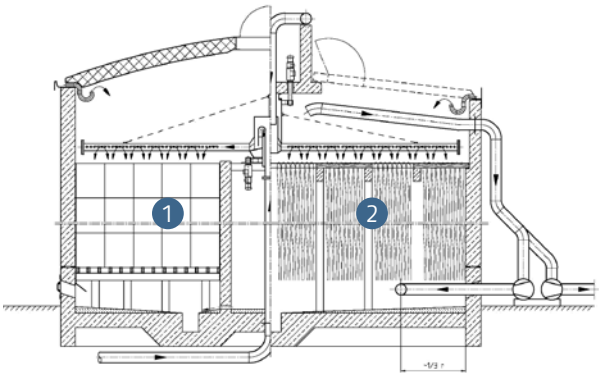


TRICKLING FILTERS AND ROTATING BIOLOGICAL CONTACTORS

SESSIL supports trickling filter whereas BIO-NET supports both trickling filter and rotating biological contactors. Both materials are suitable for municipal and industrial sewage treatment, and their minimal excess sludge production ensures low sludge disposal costs.

As the biomass is attached to the support media it is not sensitive to washout by hydraulic shock loading. Both systems are highly energy efficient and require only minimal process control instrumentation.

Regarding trickling filter, an adequate supply of oxygen to the biomass is achieved by using open tanks or, alternatively, forced aeration in closed tanks. For BIO-NET a support grid on the tank floor is required. SESSIL strips are suspended from an overhead support grid.



1. Position of BIO-NET in a trickling filter structure.
2. Position of SESSIL in a trickling filter structure.

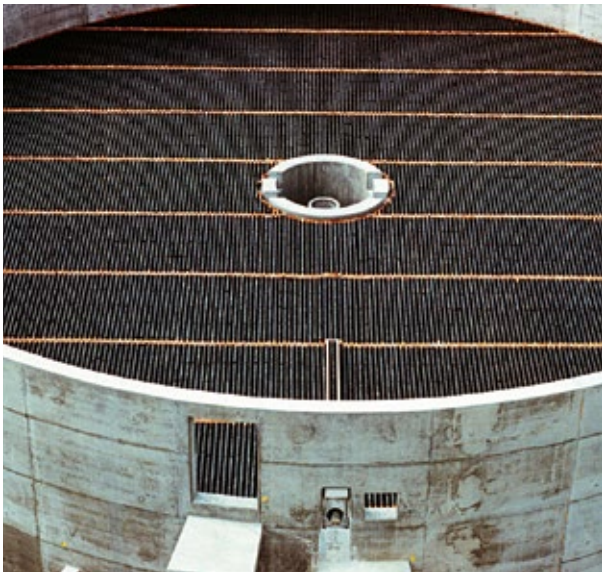
MAIN FEATURES

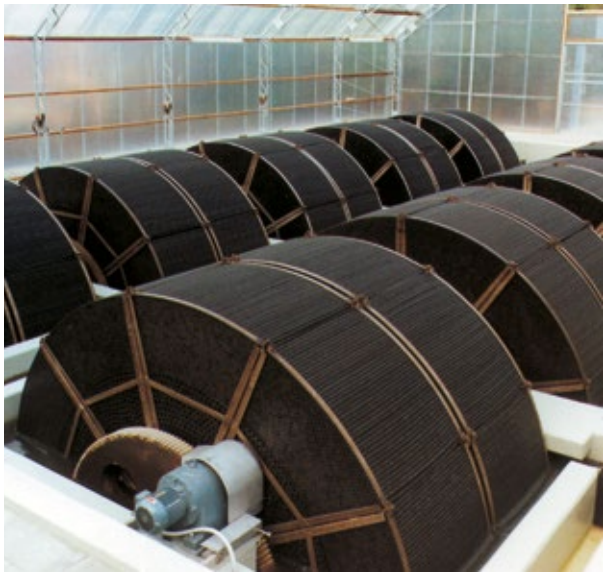
Trickling filters

- Can be used with either SESSIL or BIO-NET as support media
- Design loading to DIN regulations
- Cost-effective overhaul of existing trickling filter systems

Rotating biological contactors

- Utilization of BIO-NET as support media
- The system's load-bearing parts are mechanically safe
- Radial arrangement of the support media around a rigid axis
- Automatic oxygen saturation via rotational movement
- Prefabricated elements permit rapid assembly





SUBMERGED FIXED BEDS

BIO-NET offers unique advantages in submerged fixed beds – a filtration technology also used for municipal and industrial sewage treatment. Sludge production is minimal, and thus sludge disposal costs are exceptionally low.

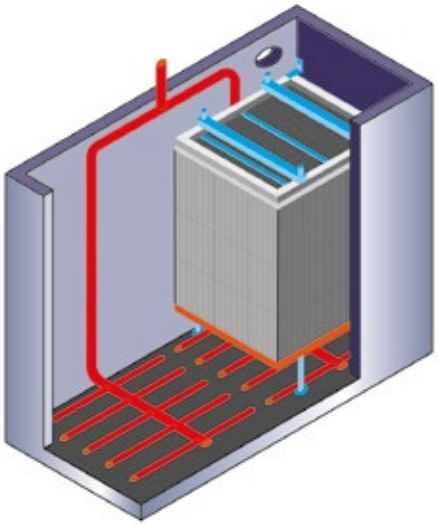
The elimination of difficult-to-degrade sewage constituents is greatly simplified since the biomass is attached to the support media.

A fixed bed unit comprises a support grid, buoyancy restrainer and the support media.

MAIN FEATURES

- Oxygen supply to the biomass via aerators located underneath the support media
- Fixed bed units can be adapted to suit the tank's geometry
- Cascade-style arrangement with one or more tanks in series in which the support media are installed permanently
- Prefabricated elements ensure rapid assembly
- Compact, space-saving design

A cage-type fixed bed unit with integrated aerators. The unit can be lifted out of the tank by crane.



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Linking the Future

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