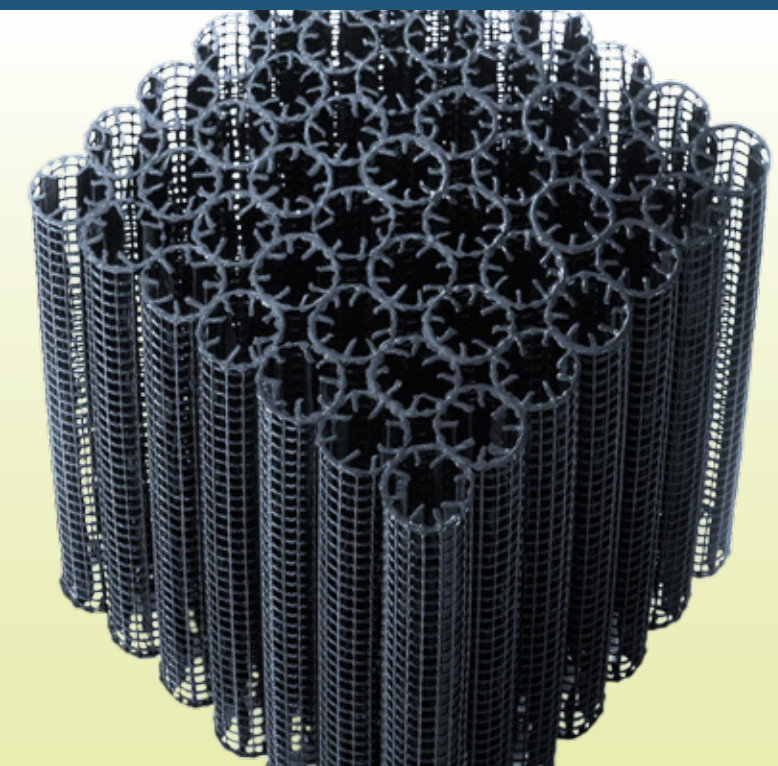
NSW
a **General Cable** company

BIO-NET® / SESSIL®

Separate · Purify · Preserve



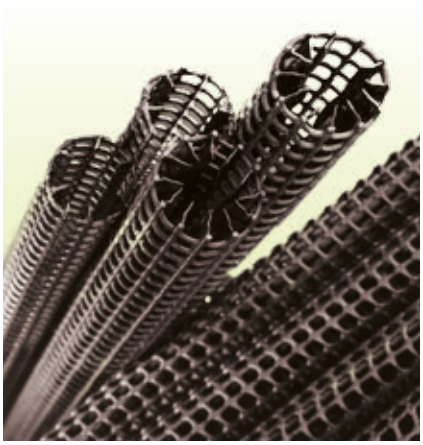
NSW BIOMASS SUPPORT MEDIA

SESSIL® and BIO-NET®

NSW – for years a leader in the field of fixed-film sewage treatment technology – offers custom-made components for the biological treatment of municipal and industrial sewage. **SESSIL®** and **BIO-NET®** are vertically structured, three-dimensional throughflow biomass support media that ensure optimal sludge removal and maximum protection against blockage and provide an excellent supply of oxygen to the biomass used in sewage treatment plants.

SESSIL®

- Tear- and stretch-proof strips of ultraviolet resistant polyethylene film
- Individually adaptable growth surfaces from 100 to 250 m^2/m^3
- Minimal dead weight
- Simple on-site assembly
- Low transport volume



BIO-NET®

- Polyethylene grid tubes thermally welded together to form sturdy, stable blocks
- Four growth surface area sizes (100, 150, 200 and 250 m^2/m^3) available
- High mechanical load capacity
- Blocks strong enough to be walked on

SESSIL® (left) is a support medium with load-bearing extruded plastic reinforcing threads and is suspended inside the trickling filter.

SESSIL® strips for up to 900 m^3 of trickling filter volume can be transported in a 40 ft container.

Like SESSIL®, BIO-NET® (right) three-dimensional flow-through blocks made of grid tubes welded into a network structure provide a large surface area for microorganism growth.

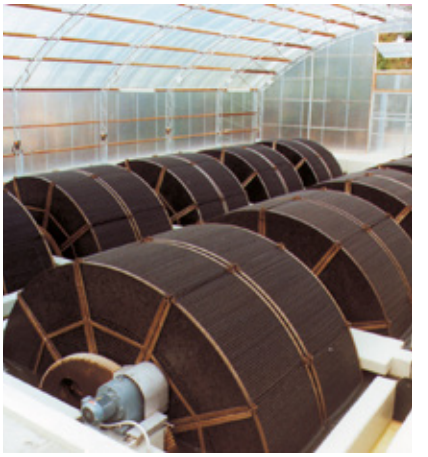
TECHNOLOGIES AND COMPONENTS

Trickling Filters and Rotating Biological Contactors

SESSIL® and **BIO-NET®** can be used to assist trickling filter and rotating biological contactor plants. 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 susceptible to washout by hydraulic shock loading. Both systems are energy efficient and require only minimal process control instrumentation.

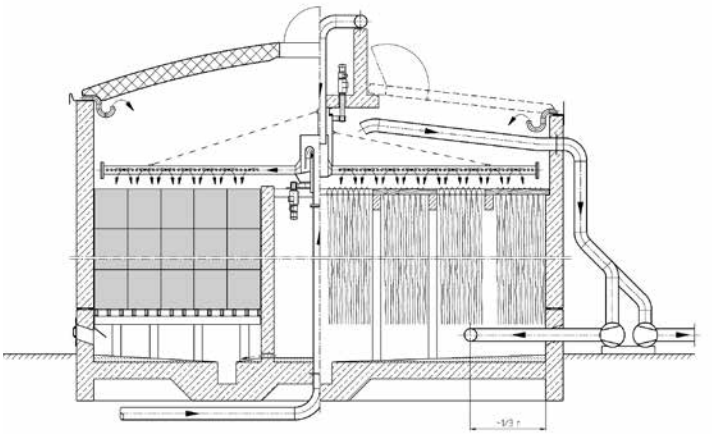
Trickling Filters

- 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



Position of the support media BIO-NET® (left) and SESSIL® (right) in a trickling filter structure.

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.

SESSIL®

Biomass support media with special tension members

SESSIL® is designed for use in biological wastewater treatment systems. It consists of film strips made of UV resistant polyethylene. The strips are tear-resistant and possess a high tensile strength. They are also provided with a special tension member to handle the loads. The ripple in the film strips effectively prevents blocking.

Technical data

- Width of one film strip: approx. 30 mm
- Width of one SESSIL® unit consisting of 50 film strips: approx. 700 mm
- Length of the strips: can be adjusted individually

Possible applications:

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

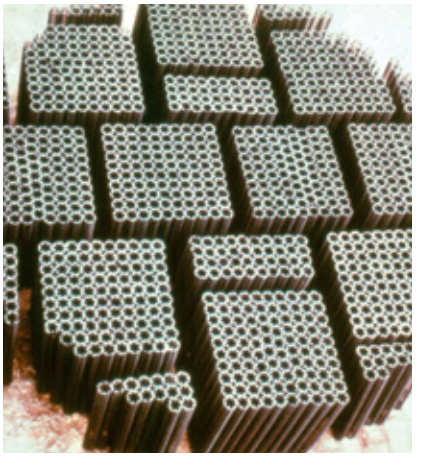
Advantages

- Individually adjustable specific growth surface ranging from 100 to 250 m^2/m^3
- Can withstand high static loading allowing implementation of large packing heights
- Very low transport volume
- Low installation weight
- Simple on-site assembly
- Can be inspected at ground level and over the entire packing height
- Provides complete three-dimensional flow
- Vertical structure providing optimal sludge discharge
- Maximum immunity against clogging

BIO-NET®

Support structure material in block units

BIO-NET®, designed for use in biological wastewater treatment systems, consists of block units made of UV-resistant polyethylene (PE-HD). Each block consists of grid tubes welded together in a lattice. The inside of each tube has vertical fins.



Applications

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

Advantages

- Completely three-dimensional flow
- Vertical structure allowing optimal removal of sludge
- Optimal oxygen supply
- Low hydraulic pressure loss
- Heavier and lighter versions available depending on the static load

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

TECHNOLOGIES AND COMPONENTS

Submerged Fixed Beds

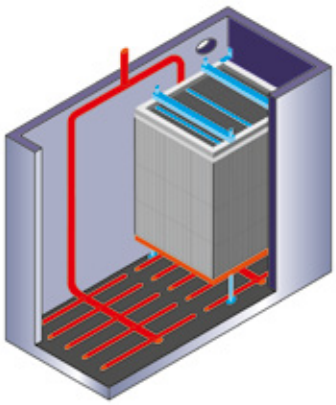
BIO-NET® offers unique advantages in submerged fixed beds – a filtration technology also used for municipal and industrial sewage treatment. Sludge production is minimal, and thus sludge disposal costs are exceptionally low. The elimination of difficult-to-degrade sewage constituents is greatly simplified since the biomass is attached to the support media.

- 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.

A fixed bed unit comprises a support grid, buoyancy restrainer and the support media. The unit's aerators are located underneath the support media.

NSW offers a variety of support grid buoyancy restrainer options.



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MANAGEMENT SYSTEM CERTIFICATION
DNV·GL
ISO 9001 = ISO 14001
OHSAS 18001

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