



BIOCLEAN | Biofilter for organic and biological odors treatment

Biofilter for biological degradation of organic and inorganic substances in air

What is biofiltration of air?

The problem of emissions of unpleasant smells and other potentially toxic gases and pollutants is becoming more important. Among the possible plants able to reduce these emissions, biofilters are the most interesting ones. They base their operating principle on the biological degradation of the compounds contained in the effluent.

Biofiltration: how does it work?

Biofilters contain a mass of organic material (peat, compost, heather, bark or their mixtures) whose thickness is normally 1.0 - 1.5 m. In this substrate we select and develop a bacterial microflora able to degrade the molecules of the polluting compounds (organic and inorganic) contained in the air to be treated. In the biofilter therefore, pollutants are metabolized by bacteria that live in the bed. In detail, the air to be treated is collected by the environment to be treated and sent to the scrubber that remove coarse particle. The scrubber also deals with humidification required for the development of the bacterial flora. The treated air comes out from the top of the scrubber and is sent inside the BIOCLEAN where there is the contact between the pollutants and bacteria that metabolize and turn them into odorless compounds (water and carbon dioxide).



In order to obtain a good functionality of the biofilter, is essential to create an habitat that is adequate for the development of the microflora. In particular:

- as regards the airflow to be treated, the specific loads typically recommended for the most common pollutants range from 80 to 100 m³/h per m³ of filtering material;
- it's important to guarantee an optimal level of humidity and an appropriate temperature in order to ensure the proliferation of the bacterial flora;
- (between 50% and 80%) in the filtering material. This important condition is maintained using an initial humidification on the inlet of the biofilter through a humidification scrubber and implementing an automatic spraying system over the biofilter.

The last factor is very important because micro-organism are able to adsorb nutrients from the aqueous phase only. An insufficient quantity of water causes the drying of the material and the loss of biological activity. For this reason, humidification plays a key role and takes place by implementing an automatic spraying system over the biofilter.

Strengths of the BIOCLEAR filter

The BIOCLEAR filter:

- has the advantage of a reduced cost since it does not need high energy expenditure;
- doesn't have regeneration costs;
- doesn't require the use of chemical reagents;
- is made of anti-corrosion materials to prevent damage related to the corrosiveness of leachate that forms at the bottom of the filter and due to humidity;
- can treat different types of pollutants with high performance of abatement;
- high flexibility in the installation and dismantling of support materials;
- the filter material lasts from 5 to 7 years and can be made with different mixtures depending on the needs of the customer;
- can be coated for a best weather resistance.

BIOCLEAN filter: standard equipment

- supporting grating with flow rates of 2-3 t/m²;
- automatic spraying system;
- water drain;
- U-tube manometer for the continuous observation of pressure drop in filter area.

BIOCLEAN filter: maintenance service

Tecnosida[®] is a perfect partner for planning and execution of ordinary and extraordinary maintenance services required to :

- Verify biofilter's proper functioning
- Keep high filtration efficiency
- Reduce economic and energetic wastes
- Comply with safety and environmental rules and regulations

Contact us for more information