

■ CLEAN AIR

Cost-effective solutions for
Air Pollution Control

Safe, clean, efficient:
Technology by Tholander.

A new dimension in Air Pollution Control



■ We will use our technical expertise, highly efficient methods and state-of-the-art systems to find a solution for your specific waste air problems.

We will accompany you as a competent partner from the planning phase to startup. Our project management means we can guarantee cost-efficient implementation of high-quality system engineering. Our specially trained service team will provide support for your Air Pollution Control plant.

Whether you require a biofilter, a cross-flow scrubber, a counter-current scrubber, a bioscrubber, a bio-oxidation plant or an activated carbon filter, Tholander will develop the best solution for your needs. Cost-effective and efficient.

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Individual solutions tailored to your needs

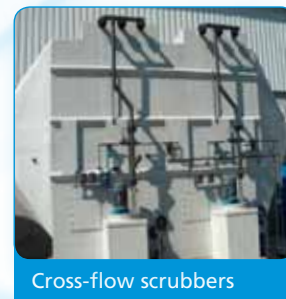
From waste air analyses to design, production and integration of your system – Tholander can offer you the right solution perfectly coordinated to your individual requirements.

We can offer you solutions for:

- Odours
- Inorganic acids
- Organic acids
- Solvents
- Toxic substances
- Dust
- Organic sulphur compounds
- Hydrogen sulphide
- Aerosols
- Ammonia
- Various combinations of noxious substances

Tholander system technology stands for the highest quality:

- High efficiency
- Low operating costs
- Durable and flexible
- Corrosion-resistant
- High availability
- Expandable
- Short construction time
- Low maintenance
- Can be combined with various technologies
- Turnkey installation



Benefit from our experience of numerous application areas:

- Waste water treatment plants
- Food production
- Cigarette production
- Anaerobic waste water treatment
- Composting
- Leather production
- Recycling of waste materials
- Printed circuit board production
- Sewage sludge drying
- Biogas production
- Chemical industry

Contact us today. We can offer you suitable solutions for even the most specialized requirements.

Find out more:
www.tholander.de

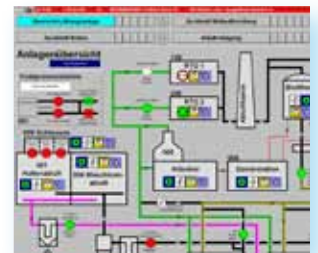
Five steps to pure air

As a leading manufacturer of Air Pollution Control plants, we can offer you turnkey solutions for your waste air problems. We will provide informed advice, determine the required design criteria and demonstrate the performance capabilities of our systems to you using our mobile pilot systems. Our experienced engineers will work out concepts that are tailored to your special requirements.

Waste air purification with individual solutions

Tholander Environmental Engineering stands for far more than just plant construction.

We offer solutions that are tailored to your specific problems and can accompany you throughout the entire project as a competent partner.



Your task



Preplanning/
approval



Piloting/
concept



Trust Tholander

Our experience enables us to offer you innovative waste air engineering solutions. Invest in your future through us so you can breathe easily again.

Safe, clean, efficient:
Technology by Tholander.

We can handle your waste air problems before they even arise.

Profit from...

- Our many years of experience in keeping the ambient air clean
- Our information about potential pollution by noxious substances – and how to prevent these at the planning stage
- Expert support in working out approval documents

We use knowledge from pilot tests as a basis for working out optimal layouts for full-scale plants.

Our long-term experience in process management, ventilation, waste air analysis and purification, mean key benefits for you:

- Optimal return on your investment
- Plant operating costs and maintenance reduced to a minimum



Implementation/
startup

Measurements

Service/
support

- We produce and install new Air Pollution Control plants in accordance with the highest standards of safety and quality
- We will take on all the necessary coordination and assembly tasks associated with the construction of a new Air Pollution Control plant for you
- We can take care of all the required services on request – as a general contractor or as part of a design contract

We can also make measurements of existing plants:

- Odour measurements (Olfactometry)
- Total Organic Carbon measurements
- Analyses of individual substances
- Volumetric flow measurements
- Waste air temperature measurements
- Humidity measurements
- Particle measurements

Our competent service team provides global support and service:

- Supplying you with all the necessary spare and wear parts
- We can offer you regular inspection, maintenance and repair of your plant
- Please use our service hotline for any questions your company may have

Tholander system solutions at a glance



This page lists our most important Air Pollution Control plants at a glance. Our specialists will be happy to provide you with an individual consultation any time.

For further information, see: www.tholander.de

Counter-current scrubbers

Cost-effective solutions for single-substance problems. Waste air is conducted from the bottom to the top in counterflow to the scrubbing fluid trickling down, through a random packed bed reactor before leaving the scrubber at the top. Cleaning performance of > 99% are attained with this process.



Application:
Microelectronics, chemical industry, metal processing, food industry, composting, sewage plants, mechanical-biological waste treatment

Cross-flow scrubbers

Waste air flows horizontally through the bed of filling material and encounters scrubbing fluid trickling down from above in a cross flow. Depending on the application, either a chemically oxidative or biological operation is possible. The compact construction enables multi-stage cleaning in the same housing.



Application:
Sewage plants, sludge drying, rubber industry, collagen manufacturing, chemical industry

Biofilters

In the biofilter, noxious and odorous substances are decomposed by microorganisms into non-toxic, odourless compounds. Tholander's state-of-the-art biofilters are filled with an organic filter material which, due to its loose, air-permeable structure, ensures economical operation over long periods of time. The biofilter shows its greatest potential when it comes to removing odours and fine cleaning of pretreated waste air.



Application:
Compost plants, mechanical-biological waste treatment, leather manufacturing, tobacco processing, fermentation, decomposition of solvents (VOC), breweries, food production, waste water treatment

Multi-venturi scrubbers

Increasingly, emissions from wet processes containing dust are becoming sources of waste air. These need to be treated before they can be released into the atmosphere. Waste air is conducted through easy-to-clean separation elements to increase relative speed between the gas and water phases.



Application:
Drying processes, chemical industry, food industry, tobacco processing

Tholander - helping the world breathe easily again

More than 1,000 references from a wide range of application areas around the globe are testimony to the trust our satisfied customers have in us. Every hour, we clean more than 5 million m³ of waste air worldwide.



Further information:
www.tholander.de

■ Biotrickling filters

High concentrations of hydrogen sulphide are biologically decomposed in Biotrickling filters without any need for consumption of large quantities of chemicals. Treatment of gases with up to 6,000ppm H₂S is possible.



Application:
Desulphurization of biogases, anaerobic waste water treatment, fermentation gases

■ Activated carbon filters

Activated carbon filters have a wide range of applications. They are used both as stand-alone units and as polishing filters in addition to other waste air treatment systems.



Application:
Pump stations, pharmaceutical production, mechanical-biological waste treatment, decomposition of solvents (VOC)

System solutions for Air Pollution Control plants

- Consultation
- Analysis/concept
- Design and delivery
- Installation
- Hardware and software planning
- Maintenance and repairs
- Project management

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For more information see:
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Environmental Engineering

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