OekoSolve

Environment. Energy.

OekoTube – the micro-dust filter for your wood and coal fire.

The OekoTube is an electrostatic filter which substantially reduces your micro-dust soot emissions from small wood-fired stoves like open fireplaces, free standing wood stoves, pellet stoves and coal fires.

The micro-dust filter OekoTube is suitable for all wood fires with a capacity below 40 kW and is mounted on top of the chimney. According to laboratory tests for wood fired heating facilities, the OekoTube has an officially tested efficiency of 95 % and therefore meets all the requirements of the Official Swiss Air Pollution Control Ordinance (CAO/LRV).

The OekoTube micro-dust filter can easily be fitted to both new and existing wood-heating and burning systems. No structural changes are necessary inside an existing building, because the micro-dust filter is mounted outside, on top of the chimney.

OekoTube facts

- Suitable for all small wood fire facilities like open fireplaces, free standing wood stoves, coal fires, central heating systems fuelled with wood logs, shavings or wood chips below the capacity of 40 kW
- Proven and officially tested efficiency of 95 % of particulate matter
- Massively increased air quality
- Can easily be fitted on any kind of chimneys (steel or brick)
- Automatically functions and regulates
- No alterations on existing chimneys
- Easy cleaning by the chimney sweeper
- Robust, sturdy and built to last long
- Available in New Zealand through the official agency EnviroSolve Ltd for New Zealand and Australia – Dr Rene Haeberli

Requirements for the installation of the OekoTube micro-dust filter

- A minimum of two metres vertically downward length from the top of the chimney
- Availability of a direct power supply (230 V AC)

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Wood as an energy source and micro-dust. After hydroelectricity, wood is the second most important energy source in Switzerland. The use of wood as an energy source for heating purposes is CO_2-neutral and promotes the added value chain within the regional economy. Unfortunately, burning wood is releasing hazardous microscopic dust into the atmosphere.

For several years the micro-dust emissions created by wood fires has been a daily topic of conversation, especially during winter months. During inverted atmospheric conditions (a stable warm layer of air above a cold ground layer), the legal limits of fine particulate matter in the air are regularly and massively exceeded. Scientific studies show that these micro-particles (especially smaller than 1 micron in diameter) are a serious health hazard. These micro-particles are passing through your respiratory track into the alveoli of the lungs and then enter the bloodstream. Therefore not only the lungs but also other organs can be affected by these micro-particles. Coughing, bronchitis, asthma, cardio-vascular diseases and sometimes even lung cancer could be severe health consequences.

Installing an OekoTube on chimneys is an active and effective contribution to local and global air quality. The micro filter is ecologically and economically beneficial because older heating systems can be used longer and are more environmentally friendly.

Installation und operation. The OekoTube is fitted between the cover and the top of the chimney. The height of the chimney will be increased by 25 cm due to the installation of the so-called divider. The flue draft will not be affected by this alteration. In order to install the electrode there has to be a minimum vertically downward length from the top of the chimney of two metres. There is also a direct power supply of 230 VAC needed nearby to operate the electrode.

When the fire is lit, the OekoTube automatically turns on and it switches to a standby mode after the fire has gone out. Less than 30 W of electrical power is needed for the operation of the OekoTube. During the operation the micro-dust particles are collected on the inside wall of the chimney and clog together into coarse flakes, which are not hazardous or dangerous to the environment.

Operation principle

The OekoTube filter functions on the electrostatic principle. The operational principle of the OekoTube is schematically illustrated in the following pictures.

01 The micro-dust particles are flowing with the used air through the air channel of the OekoTube filter

02 The high voltage electrode is releasing electrons into the chimney space containing the micro-dust particles.

03 Due to the electrostatic force the electrons move towards the chimney wall. During this process the micro-dust will get electrostatic polarized and are also moving towards the chimney wall.

04 The micro-dust particles are collected on the inside wall of the chimney and clog together into coarse flakes. This particulate matter will be removed by the chimney sweeper at the annual chimney inspection.

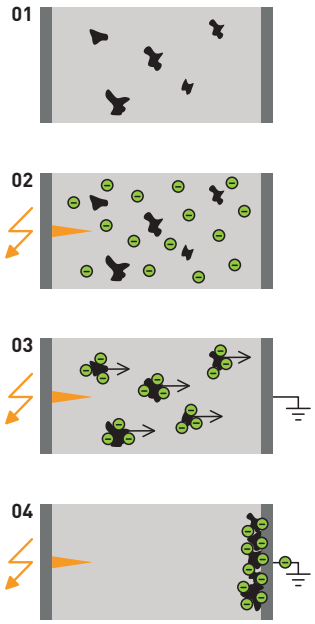
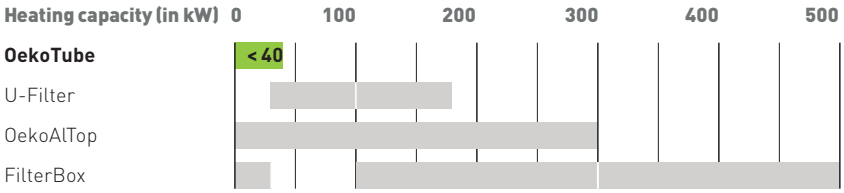


Diagram of all OekoSolve micro-dust filters on offer



Easy cleaning. The OekoTube filter will be easily cleaned by a professional chimney sweeper at your annual chimney inspection. The coarse flakes of fine particulate matter will be removed with a common chimney broom. The chimney sweeper can clean the chimney from the top or from underneath, without removing the electrode of the OekoTube.

Agencies and sales. The OekoTube is available from the official agency EnviroSolve Ltd for New Zealand and Australia – Dr Rene Haeberli. Please check out our website www.envirosolve.co.nz for more info.

Your micro-dust soot emission