

Particle pollution at your workplace

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Pollution sources

In workplaces, pollution with health-hazardous particles is generated through combustion and typically comes from three sources:

- 1) Work and production processes.
- 2) Candles, oil lamps, etc.
- 3) Pollution from outdoor air.

Particle pollution must not be confused with dust (larger particles), which typically originate from skin cells, pollen or dust from the building itself, wear and tear on equipment, etc. Combustion particles have a high content of soot and tar substances and are smaller than dust particles. Therefore, they enter deeper into the lungs and all the way into the bloodstream.

Particle pollution increases the risk of cancer, cardiovascular diseases, and serious respiratory disorders such as asthma, bronchitis, chronic bronchitis, etc. Particle pollution can quickly disperse throughout the building. Therefore, it is important to always keep doors closed to the room where the pollution is generated e.g., production areas with combustion processes, areas with running diesel vehicles, the canteen, etc.

People with respiratory disorders are particularly sensitive to particle pollution.

If employees are often exposed to high concentrations of particles, a chemical risk assessment must be made in addition to the workplace risk assessment, as particle pollution is considered carcinogenic.

If you suspect particle pollution in the workplace, then you should carry out an investigation - if there is pollution, what are the sources of the pollution, and which solutions can effectively reduce the pollution. We are happy to help. Contact the head of secretariat, Kaare Press-Kristensen: kaare@godtindeklima.nu / tel. 22 81 10 27.

1) Work and production processes

The work and production processes that pollute the indoor air is company dependent. It can be all kinds of processes, from cooking in kitchens to industrial combustion processes.

In general, the most important thing is to avoid combustion processes. This can often be achieved through a change in behaviour (switch off machines/equipment that are not in use) and by using cleaner technology, if possible, e.g., by replacing diesel vehicles with electric vehicles in production areas.

If pollution cannot be avoided, it is most important to conduct polluting processes outdoors or in facilities with very good ventilation and extraction. Finally, personal protective equipment may be necessary.

2) Candles, oil lamps, etc.

Candles, oil lamps, etc. generate high indoor air pollution, which can pose a particular problem in restaurants and other places where live fire is used for creating a cozy atmosphere. The level of contamination is high regardless of whether the candles are made from real candle wax or from other materials.

The solution is to replace candles, etc. with realistic battery driven candles or other cozy electric lighting. If you cannot stop using candles, use as few candles as possible.

3) Pollution from outdoor air

Pollution from road traffic, bonfires, chimneys, flues, diesel trains, cruise ships, etc. in workplaces can significantly pollute the indoor environment when windows and doors are open, or if the workplace has mechanical ventilation that sucks the pollution inside. Newer windows and doors are usually sealed and keep pollution out when closed.

Keep windows and doors closed if you smell smoke, diesel, or other types of pollution outside. If the windows are not tight, replace the windows or buy and install sealing strips from a hardware store.

If the workplace has mechanical ventilation, replace the filter with a better filter (HEPA or EPA filters) if technically possible. Note that the filters must be changed regularly and do not remove contamination with gaseous chemicals.

If the pollution originates from neighbouring businesses, talk to them about finding a good solution. If this does not help, or if the air in the intake from the ventilation smells like smoke, diesel oil, slurry, etc., contact the municipality.

Have measurements made

We can help with measurements and assessments of the indoor environment, and solution options to get a better indoor environment. Contact the Head of secretariat Kaare Press-Kristensen: kaare@godtindeklima.nu / tel. (+45) 22 81 10 27.

More on indoor air pollution and solutions:

www.healthyindoorenvironment.org