

10 Golden Rules for Dust Control

Rule 9: Keep work clothes clean

Contact with dusty substances frequently cannot be avoided, particularly in maintenance, servicing and repair work. As a protective measure, at least the wearing of tight work clothes is specified. The clothing gets dirty in the process and for this reason is to be regularly cleaned or to be kept clean.

Regularly change and clean work clothes

Employees who are exposed to a high level of dirt or dust, inherently feel the need to clean their dusty work clothes. The company wants to prevent canteens, coffee rooms, changing rooms, WCs, the foreman's office, the control room etc. from being contaminated. **Privately cleaning dust-contaminated work clothes is inappropriate and for this reason to be avoided if possible. For the company, a contract with a laundry service is an appropriate solution!** In this case, it is important that the care instructions of the clothing manufacturer are passed on to the laundry service. There are also service companies which do not only wash work clothes but also hire them out. This solves many logistical problems for the company. **The transportation of contaminated work clothes for cleaning should take place in closed vessels.**

Keep work clothes separately from street clothes in closed cupboards

The effect of dust on the respiratory system depends on the dose, i.e. on the concentration in the breathable air and the time during which the dust is inhaled. As a result of the carrying off clothes charged with dust into the private domain and the associated additional exposure, the risk to health increases. **These avoidable risks can be counteracted by organising a strict separation between work clothes and private clothes including shoes.** In the simplest case lockers are used which are divided off by an internal partition. In one half of the cupboard the contaminated clothes are stored and in the other the clean clothes. **The basic principles of hygiene already prohibit the contact of contaminated work clothes with clean ones.**

In the event of very high level contamination or for activities with toxic dusts it is necessary to establish so-called black-white areas (i.e. separation of contaminated and non-contaminated areas). In the black area the contaminated clothes are stored and taken in for cleaning. In the black area, ideally showering facilities are provided. **The system is only effective if the affected employees use the shower to physically clean themselves.** In the connected white area the clean work clothes or the street clothes are put on. In this way, mixing the work and street clothing and the associated contamination can be avoided.

Do not shake out dust-contaminated work clothes or blow off dust with pressurised air

Cleaning of the work clothes may only take place by washing. **Shaking out or blowing off the dust with pressurised air is not permitted. The consistently discovered pressurised air hose for blowing off the dust is prohibited because as a result the dust ingrained in the work clothes is swirled up into the air and then subsequently reaches**

the breathable air. In addition there is a risk of injury based on the energy of the pressurised air jet.



Fig. 1: Prohibited blowing off of dust using pressurised air

An effective and safe blowing off of dust of the entire work clothes from the shoulder to the shoes can be achieved by using an air-shower cabin. In this process, the entire clothing is blasted in a closed cabin within a few seconds. The dust-containing air is extracted and filtered across the floor area of the cabin. The purified return air is then evenly distributed in the ceiling area of the air-shower enclosure and flows in a laminar manner downwards past the person being cleaned. The person can have the dust blown off from the top to the bot-

tom. The blast nozzles are tilted downwards so that the blown off dust is immediately collected and removed downwards. The nozzles are also covered with a perforated plate in such a way that there is a safety clearance between the nozzle outlet and the perforated plate. A risk of injury from the jet of pressurised air thus does not exist. The ventilator for the recirculating air is immediately started upon opening the door so that the recirculating air flows during the entire blasting procedure.

For cleaning the soles of the shoes robust strips are mounted underneath the steel grating. For cleaning the uppers of the shoes there is a cleaning brush which is flushed with pressurised air.

The use of such an air-shower cabin facilitates a good and safe blowing off of dust of the entire work clothes. The swirling up of dust in the respiratory range of the person is avoided as a result of simultaneous downwards extraction. The air-shower cabin can be used several times during working hours without difficulty. The cabin can be set up both in the building and in outside areas.

Order and cleanliness in the workplace starts and ends with clean work clothes. In the planning and construction of new systems installations, attention must be paid that the media necessary for personal hygiene and cleaning such as water, detergents or electrical energy are made available in the correct location. Likewise, discharge flow pipes and the possibility of recycling the cleaning agents must be available.

After all, the employees represent the company with their external appearance. It should therefore be a matter of course to provide employees with clean work clothes, to maintain these in a sound condition and to regularly clean them.