

10 Golden Rules for Dust Control

Rule 8: Regularly clean workplaces

A significant portion of dust exposure at the workplace does not directly result from machines and processes but from material that deposits on floors, machines and systems and is swirled up into the air again. For this reason workplaces are to be regularly cleaned.

Avoid the release and swirling up of dust

Cleaning has to take place in a manner producing as little dust as possible. **Coarse and in-grained material is picked up by means of scrapers and shovels. If possible cleaning should be wet or damp.** For this purpose, smooth walls and floors are necessary. Wooden floors or even carpeting are entirely unsuitable in these areas. As an alternative to soft floor coverings, for example rubber mats are now available. They are ergonomic, noise-absorbing, insulating against the cold and slip-resistant. Textile materials such as curtains or lampshades are dust collectors in these work areas and are therefore to be removed and replaced by smooth materials that can be cleaned wet. For easy cleaning of the walls these must also be as smooth as possible and provided with a water-resistant coating of paint. The rougher the surfaces of the walls, machines and floors, the more dust settles on them and the harder they can be cleaned.

To facilitate easy cleaning, the production systems are to be designed in such a way that all areas are easily accessible. So-called "dirt corners" are to be taken into account and avoided as early as at the planning stage or when modifying the system technology. Particularly inspection openings and other system access points such as on filters, are to be designed in such a way that easier access, also when using corresponding aids and equipment, is possible.

No dry sweeping using a broom!

Dry sweeping using a broom is not permitted. A lot of wastes from production and processes occur in a damp state. As long as the waste is still moist, brooms and shovels can be regarded as suitable aids. However, the material frequently dries within a short time so that when picking up the material with brooms and shovels, dust would be produced. **Therefore in any case pick up damp material whilst still in the damp state before it can create dust. As a simple alternative, damp mopping or spraying with water is a good choice.**

Do not blow off dust deposits!

Blowing off dust deposits with pressurised air is strictly not permitted. When blowing off dust with pressurised air, the dust particles are swirled up into the air. Particles that have once been swirled up take several hours before they resettle on the floor or other surfaces. The small particles are so fine that they are virtually invisible to the naked human eye. They thus elude our perception. However, particularly these small particles pass the larynx and bronchia and in this way reach the lungs. The finest particles ($d < 2.5 \mu\text{m}$) even reach the pulmonary alveoli. **For this reason this fine dust is particularly hazardous to health.** Deposits of dust are to be disposed of with moist or wet methods or suction methods using suitable vacuum cleaners or dedusters.

Use suitable industrial vacuum cleaners

Equipment to capture, separate and precipitate dusts must correspond to the state of the art. For the first commissioning, evidence of adequate efficiency is to be produced. The equipment is to be checked for operability, maintained and if necessary serviced at least annually. The checks are to be documented. Mobile or portable industrial vacuum cleaners are recommended for cleaning walls, floors, machines and installations, particularly in tight or difficult to access work areas. For larger surfaces and for cleaning traffic routes, brushing vacuum cleaners are to be used.

Dust-eliminating equipments must be tested and classified according to the European standard EN 60335-2-69 Annex AA. Industrial vacuum cleaners, dedusters and brushing vacuum cleaners are divided into three dust categories according to this standard. The current table of the classification of dust-eliminating machines can be downloaded at www.dguv.de/ifa/de/prg/staubklassen/staubkl.pdf. Mobile dust-eliminating equipment which have a test certificate according to this standard can be operated with recirculated air. **For this purpose, they should at least correspond to the dust category "M" (e.g. lead dust or mineral dust).** For carcinogenic dusts the use of dust-eliminating equipments of the category "H" is prescribed according to this standard.

The selection of the suitable vacuum cleaner has to take place within the scope of specifying protective measures in the risk assessment. For the selection of measures the employer can take over a risk assessment which has been supplied to him by the manufacturer, provided that he carries out his activities according to the details and specifications made there. As a criteria for the selection of an effective system (equipment and deduster), good handling is also to be observed. **A good vacuum cleaner has a filter cleaning with automatic vibration, filter bags with low-dust disposal and simple operation and locking devices which prevent the cleaner being operated incorrectly (e.g. if no filter bag is inserted or the filter is overloaded).** Only accessories (collection bag, filter medium) that are recommended by the manufacturer and which are adjusted to the type of machine according to the details in the operating instructions may be used.