

GOOD PRACTICES FOR LOCAL EXHAUST VENTILATION

This sheet provides general advice on the points to cover in contracts to design, install and commission new local exhaust ventilation equipment to control airborne contaminants. This task guidance sheet should be read in conjunction with the task guidance sheets entitled “Design of ducting”, “Design of dust extraction units” and “General ventilation”.

ACCESS

Restrict access to the work area to authorised personnel only.

DESIGN AND EQUIPMENT

- Use a reputable supplier of off-the-shelf Local exhaust ventilation. Contact only qualified engineers to quote for the work.
- The designer needs to know what the contaminant is and how it is produced. Contaminants leading to possible dust explosion should have special attention.
- The design must have the following elements: a hood, enclosure or other inlet to collect and contain the contaminant; ducts to remove the contaminant away from the source; a filter or other air cleaning device, normally placed between the hood and the fan; a fan or other air mover to provide the airflow; more ducting to discharge the cleaned air outside out or in the workplace.
- Apply local exhaust ventilation at the source of generation to capture the dust.
- Enclose the dust source as much as possible to help prevent it spreading.
- Local exhaust ventilation should be connected to a suitable dust extraction unit (e.g. a bag filter/cyclone).
- **Don't allow workers to get between the source of exposure and the local exhaust ventilation, otherwise they will be directly in the path of the contaminated air flow.**
- Where possible, site the work area away from doors, windows and walkways to stop draughts interfering with the local exhaust ventilation and spreading the dust.



- Have a clean air supply coming into the work area to replace extracted air.
- **Keep ducts short and simple and avoid long sections of flexible duct.**
- Provide an easy way of checking the local exhaust ventilation is working e.g. manometer, pressure gauge or tell-tale.
- Discharge extracted air to a safe place away from doors, windows and air inlets. However, if necessary, clean, filtered air can be re-circulated into the workroom, provided systems are in place to check the effectiveness of the filter. Quantities of recirculated air should be in compliance with existing standards and regulations.
- Beware that the performance of a system can be adversely affected if changes are made to it (e.g. by extending ducts, adding new branches). Refer to a reputable supplier for advice.

The design and specification of ventilation systems may need to be approved under national regulations.

GUIDANCE FOR EMPLOYERS ON CONTROLLING EXPOSURE TO RCS IN THE WORKPLACE

MAINTENANCE

- Maintain the local exhaust ventilation as advised by the supplier/installer in efficient working order and in good repair. Noisy and vibrating fans can indicate a problem.
- Replace consumables (filters etc.) in accordance with the manufacturer's recommendations.
- Never modify any part of the system. If you do so, check with the supplier and see that the system maintains its CE label.

EXAMINATION AND TESTING

- You must receive instructions for use and a diagram of the new system. You must receive a commissioning report that shows the airflows at all inlets, air speeds in the ducts, the pressure drop across the cleaner or filter.
- Obtain information on the design performance of the local exhaust ventilation from the supplier. Keep this information to compare with future test results.
- Visually check the local exhaust ventilation and visible ducting at least once per week for signs of damage. If it is in constant use, check it more frequently. If used infrequently, then check it before each use.
- Have the local exhaust ventilation examined and tested against its performance standard in compliance with local legal requirements, at a frequency which meets with manufacturers' recommendations and which complies with the outcome of a risk assessment.
- Keep records of inspections for a suitable period of time which complies with national laws (minimum five years).
- Put in place measures to control the risk of bacterial growth within water sources used across site, focusing most on systems where water droplets will be generated.

CLEANING AND HOUSEKEEPING

- Clean work area daily.
- Deal with spills immediately.
- **DO NOT clean up with a dry brush or using compressed air.**
- Use vacuum or wet cleaning methods.

TRAINING

- Give your employees information on the health effects associated with respirable crystalline silica dust.
- Provide employees with training on: dust exposure prevention; checking controls are working and using them; when and how to use any respiratory protective equipment provided and what to do if something goes wrong. Refer to task guidance sheet **2.3.4** and part 1 of the Good Practice Guide.

SUPERVISION

- Have a system to check that control measures are in place and that they are being followed. Refer to task guidance sheet **2.3.3**.
- Follow instructions in the manufacturer's manual.
- Employers should make sure that employees have all the means to perform the checklist given on the following page.



PERSONAL PROTECTIVE EQUIPMENT

- Refer to task guidance sheet **2.1.15** dedicated to Personal Protective Equipment.
- Risk assessment must be carried out to determine whether existing controls are adequate. If necessary, respiratory protective equipment (with the appropriate protection factor) should be provided and worn.
- Provide storage facilities to keep personal protective equipment clean when not in use.
- Replace respiratory protective equipment at intervals recommended by its suppliers.

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EMPLOYEE CHECKLIST

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| <input type="checkbox"/> Make sure the local exhaust ventilation is switched on and is working. | <input type="checkbox"/> If you think there is a problem with your dust control equipment, ensure additional control measures are taken to reduce exposure to respirable crystalline silica dust while the problem persists. | <input type="checkbox"/> Don't position yourself between the source of exposure and the local exhaust ventilation. If you cannot avoid this, discuss how to overcome the problem with your supervisor. | <input type="checkbox"/> Use, maintain and store any respiratory protective equipment provided in accordance with instructions. |
| <input type="checkbox"/> Make sure it is working properly and check the manometer, pressure gauge or telltale. | <input type="checkbox"/> Make sure that paper bags and other waste are not drawn into the local exhaust ventilation. | <input type="checkbox"/> Clear up spills straight away. | <input type="checkbox"/> Check and implement measures to control the risk of bacterial growth within water sources used across site, focusing most on systems where water droplets will be generated. |
| <input type="checkbox"/> Look for signs of damage, wear or poor operation of any equipment used. If you find any problems, tell your supervisor. | | <input type="checkbox"/> Clean up using vacuum or wet cleaning methods. | |

This guidance sheet is aimed at employers to help them comply with the requirements of workplace health and safety legislation, by controlling exposure to respirable crystalline silica. Specifically, this sheet provides advice on dust control during the design and use of local exhaust ventilation in the workplace.

Following the key points of this task guidance sheet will help reduce exposure.

Depending on the specific circumstances of each case, it may not be necessary to apply all of the control measures identified in this sheet in order to minimise exposure

to respirable crystalline silica. i.e. to apply appropriate protection and prevention measures. This document should also be made available to persons who may be exposed to respirable crystalline silica in the workplace, in order that they may make the best use of the control measures which are implemented.

This sheet forms part of the Good Practices Guide on silica dust prevention, which is aimed specifically at the control of personal exposure to respirable crystalline silica dust in the workplace.