

GOOD PRACTICES FOR DUST MONITORING

This sheet provides advice on how to implement dust monitoring in order to assess personal exposure levels to respirable crystalline silica dust.

ACCESS

Restrict access to the work area to authorised personnel only.

DESIGN AND EQUIPMENT

Both personal and static measurements can be used jointly as they are complementary. It is up to the experts designated by the employers and the employees' representatives to opt for the more adequate solutions, while respecting the national and European provisions.

The following general requirements (taken from the European Standards EN 689 and EN 1232) should be followed:

- Define a monitoring strategy: choose appropriate sampling equipment, define the job functions to be monitored, identify the appropriate personnel who will carry out the sampling and analysis, plan the dates of the measurement campaign.
- Use sampling equipment that conforms to European Standard EN 481. Use a recognised analytical technique to measure respirable crystalline silica: X-ray diffraction or infrared spectroscopy.
- The persons carrying out the sampling and analysis must be appropriately trained and experienced.
- In the case of crystalline silica, it is the respirable dust fraction that is of concern for its health effects. Therefore the respirable dust fraction should be collected.
- In the case of personal sampling, the sampling equipment must be worn by the worker and the sampling head must be positioned in the worker's breathing zone (less than 30cm from the mouth and nose area).
- Sampling duration should be as close as possible to a full working shift in order to ensure that samples are representative.
- Collect sufficient number of samples per campaign for each job function in order to get a follow up of each worker. Take into account variation of work activities on different days e.g. cleaning work is often done on Fridays.
- Inform the workers that dust monitoring will be undertaken and the reasons for it. This will help to ensure full co-operation. Inform them of the results of the dust monitoring.

- Record information during the sampling, including: date, job function, worker's name, shift length, sample flow rate and duration, work activities and working practices, weather conditions, personal protective equipment worn, comments on dust control measures, production process, tonnage rate etc.
- Check the correct operation of the sampling equipment (including the flow rate) at regular intervals during the shift and keep records of these checks.

Keep full documentation on the dust monitoring campaigns and adopt a quality system as described above.



MAINTENANCE

- Ensure dust sampling equipment is maintained and serviced/calibrated as advised by the supplier/installer in efficient working order and in good repair.
- Keep the sampling equipment clean to prevent contamination of future samples.
- It may be necessary to disassemble sampling heads in order to clean them properly.
- If cleaning sampling heads using wet cleaning methods, ensure that they are allowed to dry out fully before re-use.
- Replace consumables (batteries etc.) in accordance with the manufacturer's recommendations

EXAMINATION AND TESTING

- Visually check the sampling equipment before and after each use for signs of damage.
- Have the sampling equipment serviced regularly, in accordance with manufacturers' recommendations.
- 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.

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**.
- Employers should make sure that employees have all the means to perform the checklist given below.



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.
- Personnel conducting sampling work should set a good example by wearing respiratory protective equipment in the required areas.
- Provide storage facilities to keep personal protective equipment clean when not in use.
- Replace respiratory protective equipment at intervals recommended by its suppliers.

EMPLOYEE CHECKLIST

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| <input type="checkbox"/> Look for signs of damage, wear or poor operation of any equipment used. If you find any problems, do not use the sampling equipment. | <input type="checkbox"/> Ensure that sampling pumps are fully re-charged prior to commencing each shift's sampling work. | <input type="checkbox"/> Regularly check the correct operation of the sampling equipment during the shift. Where possible, check that the sampling flow rate is still correct and adjust if necessary. |
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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 good practice advice on personal dust exposure monitoring. It describes the key points you need to consider when establishing a dust monitoring programme.

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.