GUIDANCE FOR EMPLOYERS ON CONTROLLING EXPOSURE TO RCS IN THE WORKPLACE

GOOD PRACTICES FOR HANDLING AND TRANSPORT SYSTEMS

This relates to the different mechanical and pneumatic handling and transport systems for internal movement of crystalline silica containing products, particularly those which are dry.

ACCESS

Restrict access to the work area to authorised personnel only.

DESIGN AND EQUIPMENT

- Ensure that charging equipment is fit for purpose and well maintained.
- It is preferable to use enclosed handling systems when transporting crystalline silica.
- Wetting of dry materials may be an alternative to full enclosure.
- **Pneumatic systems** should be supplied by specialised contractor and special care should be given to the abrasive nature of the crystalline silica.
- For horizontal transport in **pneumatic systems**, pipes should be angled downwards and have large radius bends where possible to prevent settling in the pipes and causing a blockage in the event system pressure is lost.
- The pipe work in **pneumatic systems** should be designed to minimise unnecessary obstacles as well as the number of directional changes. Pipe connections should be properly sealed.

- For **screw conveyors**, the design has to take the abrasive properties of crystalline silica into consideration.
- **Conveyor belts** should be equipped with cleaning devices. The non-driven pulley should be equipped with a rotation indicator with alarming system.
- **Loading and unloading points of conveyor belts** should be enclosed when handling dry material. Side seals will prevent spillage. If required filtered vents should be fitted.
- **Bucket elevators** are suitable for vertical transport, provided they are fully enclosed. It is suggested to equip bucket elevators with plug indicators.
- **Vibratory feeders** are suitable for horizontal transport of crystalline silica. In case of dry material it is required to have a fully enclosed system.
- Special attention should be drawn to the design and construction of appropriate **access platforms** to maintenance intensive parts (motors, gear boxes, bearings, belt cleaners, etc.).

MAINTENANCE

- Ensure that the equipment is maintained, as advised by the supplier, in efficient working order and in good repair.
- Select machinery with easy access for maintenance.
- Check conveyor belt cleaning devices on a daily basis and adjust if required.
- Major damages on conveyor belts should be repaired urgently.
- On a regular basis, inspect and replace wear parts (belt cleaning devices, bearings, seals etc.) in accordance with the manufacturer's recommendations, in order to reduce potential leaks to a minimum.

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EXAMINATION AND TESTING

- Visually check the equipment at least once per week for signs of damage or, if it is in constant use, check it more frequently. If used infrequently, then check it before each use.
- 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

- In order to prevent dust accumulation, clean the workplace on a regular basis.
- Deal immediately with spills. When dealing with bulk spillages of fine, dry, dusty materials, ensure that cleaning work is undertaken following a written safe working instruction and using the information in this sheet.
- Use vacuum or wet cleaning methods.
- **DO NOT clean up with a dry brush or using compressed air.**

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 could be carried out to determine whether existing controls are appropriate. If necessary, respiratory protective equipment should be provided and worn.
- If personal protective equipments are required, provide storage facilities to keep them clean when not in use.
- If respiratory protective equipments are used, they are to be replaced at intervals recommended by its suppliers.

EMPLOYEE CHECKLIST

- ☐ Make sure the room is well ventilated and any dust extraction system is switched on and is working.
- ☐ Verify proper function of belt cleaning devices. If you notice any anomaly, inform your supervisor.
- ☐ Immediately cleaning up bulk spillages of fine, dry dusty materials by using vacuum or wet cleaning methods. Ensure that you work in accordance with your Company's written safe working instruction.
- ☐ Inform your supervisor immediately in case of leakage.
- ☐ Use maintain and store any person protective equipment provided in accordance with instructions.
- ☐ Check and implement the measures of controlling the risk of bacterial growth within water sources used across site, focusing most on systems where water droplets will be generated.

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 transport systems.

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.