GOOD PRACTICES FOR GLASS FURNACE BATCH CHARGING – CONTAINER GLASS

This activity relates to the charging of glass making raw materials, which contain crystalline silica, to the glass melting furnace.

This guidance sheet is to be read in conjunction with the sheet entitled Cleaning of surfaces and installations **(2.1.1)**.

ACCESS

Restrict access to the work area to authorised personnel only.

DESIGN AND EQUIPMENT

- The extent to which the batch charging equipment can be sealed against the egress of airborne dust is limited by its' operational characteristics and the need to work in harsh temperature conditions. Other design and operational features can reduce the release of dust.
- Stream feed of materials into the batch charger from the furnace batch hopper will:
  - Prevent the blow back of dust into the atmosphere as a result of the furnace atmosphere being held at a positive pressure.
  - Prevent dust being created by materials falling from a height into the charger.
- If delivery equipment linking the furnace batch hopper to the batch charger is used instead of flood feed, then the charger hopper should be fitted with level detection/control to prevent it emptying and allowing blow back of dust into the atmosphere.
- If delivery equipment linking the furnace batch hopper to the batch charger is used instead of flood feed, then it should be sealed against the release of dust where possible.
- In the glass industry the use of moist batch (typically 1-3% moisture content) is the normal practice, which aids dust suppression.
- If dry batch is used then it is recommended that some form of dust extraction or dust suppression should be fitted.
- Furnace hopper to be equipped with level detection to avoid over filling.

MAINTENANCE

- Maintain any dust seals fitted to equipment.
- Maintain charging system to prevent any batch spillages.
- Maintain any level detection equipment that is fitted.
- If a dust extraction system is fitted it must be maintained in accordance with the manufacturers' instructions.

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EXAMINATION AND TESTING

- A competent person should test the performance of dust extraction systems at least annually.
- The batch charging system should be inspected for faults or signs of wear that could cause batch spillages once per week or if it is in constant use, 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

- Clean the batch charger and the surrounding area on a regular basis.
- **DO NOT clean using compressed air.**
- If practicable, use a vacuum or wet cleaning measures.
- Develop written safe working procedures for dealing with large spillages of dusty materials.

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.
- Appropriate respiratory protective equipment must be provided when carrying out cleaning and if necessary maintenance procedures.
- Provide storage facilities to keep personal protective equipment clean when not in use and replace as required by manufacturers' instructions.
- Risk assessment must be carried out to determine whether existing controls are adequate.

EMPLOYEE CHECKLIST

- ☐ Make sure the equipment is working properly.
- ☐ Look for signs of wear that can lead to batch spillage.
- ☐ If fitted make sure all dust extraction systems are working correctly.
- ☐ Dust clouds may suggest a problem with the system. Investigate them immediately.
- ☐ If you think there is a problem with the plant or with your dust control equipment, ensure additional control measures are taken to reduce exposure to respirable crystalline silica dust while the problem persists.
- ☐ Clear up spills straight away. Use vacuum or wet cleaning methods. Dispose of spills safely
- ☐ Use, maintain and store any respiratory 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 dust control during the charging of glass making raw materials to the furnace.

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.