

GOOD PRACTICES FOR PREPARING SAND IN FOUNDRIES

This activity covers sand preparation in foundries.

ACCESS

Restrict access to the work area to authorised personnel only.



DESIGN AND EQUIPMENT

- Stop dust spreading. If possible, segregate the sand plant from other operations.
- Enclose the sand plant as much as possible. Use flexible strips at the openings.
- You need an air speed typically between 1 and 1.5 metres per second into the sand plant enclosure. Refer to task guidance sheet **2.1.13** Local Exhaust Ventilation.
- Always confirm that the extraction is turned on and working at the start of work. Check the gauge.
- Discharge cleaned, extracted air to a safe place outside the building, away from doors, windows and air inlets.
- Have a supply of clean air coming into the workroom to replace extracted air.
- If you use a skid-steer loader ('bobcat') with the sand plant, respiratory protection can impair sight lines. Enclose the cab and supply filtered air. Change filters as advised by the supplier. Make sure the driver keeps the windows closed.
- Consult a qualified ventilation engineer to design new control.



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MAINTENANCE

- Follow instructions in maintenance manuals.
- Keep equipment in effective and efficient working order.
- Repair faulty extraction systems immediately. Meanwhile, wear respiratory protective equipment (RPE).
- Sand is very abrasive and plant wears out quickly. Plan regular maintenance.

EXAMINATION AND TESTING

- Look daily for signs of damage to the ducting, fan and air filter. Noisy or vibrating fans can indicate a problem. Repair damage immediately.
- At least once a week, check that the extraction system and gauge work properly.
- You need to know the manufacturer's performance specification to know if extraction is working properly.
- If this information isn't available, hire an engineer competent in ventilation techniques to determine its performance.
- The engineer's report must show the target air speeds.
- Keep this information in your testing logbook.
- Get an engineer competent in ventilation techniques to examine the system thoroughly and test its performance at least once every 12 months or obey the national regulations.
- Keep records of inspections for a suitable period of time which complies with national laws (minimum five years).
- Review records to see if there are failure patterns that make planning maintenance easier.
- Consider risk assessment to decide the need for RPE and to make sure the controls are working well.
- 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

- Every day, clear up accumulations of dirt in areas where people work all the time.
- Clean general workrooms once a week to stop dust being stirred up and to reduce slips.
- Use a vacuum cleaner fitted with a filter to clear up fine dust.
- **Don't clean up with a brush or with compressed air.**
- Shovel large spills carefully to avoid stirring up dust.

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.
- Ask your safety-clothing supplier to help you get the right PPE.
- Respiratory protective equipment (RPE) may be needed for work near the sand plant.
- RPE is needed for maintenance and cleaning.
- Use airline or powered filtering RPE for entry into the sand plant to clear blockages etc.
- Use a P3 standard of RPE (Assigned Protection Factor 20) or equivalent standard. Consult your supplier for advice.
- Replace RPE filters as recommended by your supplier.
- Provide storage facilities to keep personal protective equipment clean when not in use.
- Protective gloves are needed for maintenance and cleaning.
- **Never allow compressed air use for removing dust from clothing.**
- **Workers must not take their coveralls home for washing. Use a contract laundry.**

EMPLOYEE CHECKLIST

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| <input type="checkbox"/> Make sure the room is well ventilated and any dust extraction system 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"/> Do not interfere with ventilation systems – they are provided to protect your working environment. | <input type="checkbox"/> Check and implement the 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. | |
| | | <input type="checkbox"/> Use, maintain and store any respiratory protective equipment provided in accordance with instructions. | |

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 sand preparation in foundries.

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.