

# OSHA'S Silica Standards and How It Affects Your Operation

While we have covered this topic recently, the ACPA Safety Task Group believes that it is important to review the potential impacts of Silica Exposure to our member companies. Over the last 2 years, OSHA has increased their inspections of our concrete pipe plants as part of their special emphasis program that targets our industry. They have especially focused their inspection efforts on silica and related safety requirements.

## WHY HAVE WE BEEN TARGETED?

Concrete pipe producers are grouped in the Standard Industrial Classification (SIC) 3272 along with ready mix, precast, block and various other concrete production industries. OSHA has designated SIC 3272 as a Special Emphasis Program (SEP) for silica exposure. A SEP increases the likelihood of an OSHA inspection. It is not necessary to be fearful of an inspection. Preparing and being pro-active is prudent action for our employee's sake. The following information is designed to assist you in understanding what OSHA is looking for, and how they might proceed in looking for Silica exposure at your plant.

OSHA standard 29 CFR 1910.1000 Table Z-3 requires that we take steps and action and the following are some bullet points and discussions to make you aware and to help point you toward compliance:

- Silica is found in cement and a variety of aggregates including sands and quartz rock.
- High and/or prolonged exposure to respirable silica can cause respiratory diseases such as Silicosis. There is no cure for silicosis.
- Silica that is small enough in size (<10 microns, less than the diameter of human hair) is respirable silica and can deposit in the lungs causing inflammatory reactions resulting in scarring of the lung tissue preventing oxygen transfusion to the blood stream.

- Respirable silica is hazardous when it becomes airborne and inhaled by employees.
- Typically symptoms of silicosis are not present for 10 - 20 years.
- Major sources of respirable silica hazards found in our plants are:
  - Leaking cement silos and batchers,
  - Grinding or cutting concrete,
  - Yard and road dust in the plant area,
  - Clean-up efforts – sweeping concrete debris and dust, using an air hose to blow dust, wiping down cores and forms, etc.,
  - Leaking cement supply lines on cement tankers, and
  - Other fugitive emissions.

If you experience an OSHA silica SEP inspection you can expect the following records and documentation to be requested by the Compliance Officer:

- Material safety data sheets (MSDS) on your cement, aggregates and finished products (looking for reportable silica content),
- Employee personal exposure monitoring records for silica and dust,
- Notifications to employees on the results of monitoring.
- Silica training records (HAZCOM),
- Respiratory protection program,
- Respiratory training records,
- Respirator fit testing documentation,
- Respirator employee medical clearance records, and
- Three to five years of OSHA 300/200 logs.

After the records and documentation review has been completed, the Compliance Officer will typically conduct a plant walk-through inspection to confirm results, interview employees and to look for potential exposures. Citations for failure to provide the above items can result in *Serious* citations with penalties. Being proactive now versus reactive later is

much cheaper and also benefits our employees.

The Compliance officer will make a decision whether to conduct dust and silica sampling on a select number of employees. If possible, staffed with appropriate safety professionals and equipped with sampling equipment; advise the Compliance Officer that you desire to take side-by-side sampling. This allows you to compare results. If you do not have the in-house capability to conduct side-by-side sampling, you should pre-arrange with a consultant to assist with this. Failure to conduct comparison sampling results in living with OSHA's results.

## The following are steps that you should consider taking now:

- Ensure that you have an MSDS for all of your materials.
- Perform personal exposure monitoring on employees that you feel are most likely to be exposed to dust. Silica is located in the dust. If you do not have the safety or industrial hygiene professionals on staff, then contact your insurance carrier and ask for industrial hygiene assistance from them. If they cannot help, then search in your area for safety consultants that conduct the monitoring for you.
- Review results of the monitoring. Do any employees or job tasks show non-compliance (greater than the permissible exposure level) or action level (80% of the PEL) of silica exposure?
- Review the procedures and job tasks that show overexposure. Can modifications or re-engineering be completed that will eliminate or reduce the exposure? Removal of the hazard versus protection from is always priority. Can you plug the leaks, utilize water trucks or other dust binders, use water hoses to clean floors instead of dry sweeping, etc?
- If the exposure cannot be eliminated then pro-

tection via respiratory protection must be considered.

- In order to use a respirator (even the disposable filtering face piece type) the employee must first be approved to do so by a Professional Medical Provider. The doctor will use a questionnaire to review the employee's medical history. The doctor will likely require a pulmonary function test (PFT) and a chest x-ray to ensure the employee is medically fit to wear a respirator. Be prepared, a percentage of employees will not pass this medical clearance and will not be allowed to wear a respirator.

For post medical clearance, the employees must be fit tested and trained in order to determine that the selected respirator actually fits and provides the protection needed and that the employees know how to wear and use it properly.

- The fit testing is performed by a trained person, usually the safety professional. A non-toxic irritant chemical is placed in the employees breathing zone. An irritating result informs us that the seal on the respirator is not sufficient and that silica could still enter the lungs through the leak.
- After the employee passes the fit test, training in selection, use, hygiene, limitations and disposal is given by the employer.

The above procedures are required and must be continual. Constant review, monitoring, repairs, upgrades, and training are necessary to stay in compliance and to prevent the undo adverse health effects of our employees.

As discussed above, OSHA has been required to review and inspect facilities that have a SIC of 3272. If you have not prepared and ensured that you are in compliance then this is the time to do so. Request assistance from your safety staff, insurance carrier or even OSHA's consultation branch.