Cement and Concrete

This safety talk is designed for discussion leaders to use in preparing safety meetings. Set a specific time and date for your safety meeting. Publicize your meeting so everyone involved will be sure to attend.

Review this safety talk before the meeting and become familiar with its content. Make notes about the points made in this talk that pertain to your workplace. You should be able to present the material in your own words and lead the discussion without reading it. Collect whatever materials and props you will need ahead of time. Try to use equipment in your workplace to demonstrate your points.

BEGINNING THE MEETING

Give the safety talk in your own words. Use the printed talk merely as a guide. The purpose of a safety meeting is to initiate discussion of safety problems and provide solutions to those problems. Encourage employees to discuss hazards or potential hazards they encounter on the job. Ask them to suggest ways to improve safety in their area.

Don't let the meeting turn into a gripe session about unrelated topics. As discussion leader, it's your job to make sure the topic is safety. Discussing other topics wastes time and can ruin the effectiveness of your safety meeting. At the end of the meeting, ask employees to sign a sheet on the back of this talk as a record that they attended the safety meeting. Keep this talk on file for your records.

GENERAL DISCUSSION

Cement and concrete are so common on a construction site that you probably don't think much about them. They're just part of the job. But did you know that cement and concrete dust can cause lung damage? Did you know that you can get an allergic reaction from skin contact with cement? Without protection, cement and concrete can be bad news. You or a crew member may want to add a personal story about cement or concrete hazards.

Next, discuss with the crew where cement and concrete work will be done at this particular job site:

Ask the Crew these Questions:

After each question, give the crew time to suggest possible answers. Use the information following each question to add points that no one mentions.

1. What's in cement that can be harmful?

- Different cements have different ingredients. Many of them contain substances that can be hazardous, like silica, lime, gypsum, nickel, cobalt, and chromium compounds.

2. What illnesses can you get if you breathe too much cement dust?

- Chronic bronchitis.
- Silicosis— from the crystalline silica (quartz) used in many cements.
- Cancer— from the small amounts of chromium compounds found in some cements. (Scientists are still debating whether the silica in cement dust may also cause cancer.)

3. What are the symptoms of silicosis?

- Acute silicosis can occur after a few weeks of very high exposure (for example, in sandblasters). Symptoms are shortness of breath, coughing, fever, and weight loss.
- Chronic silicosis is rarely seen in workers with less than ten years of exposure. It permanently damages your lungs.
- Silicosis also increases your chance of getting tuberculosis.

4. Is it dangerous if you get cement dust or wet cement on your skin?

- Yes. Getting cement dust or wet cement on your skin can cause burns, rashes, and other kinds of skin irritation. Lime, found in most cements, is often the cause.
- Some workers slowly become allergic to cement if they have skin contact with it over a long period of time.
- Cement dust and wet cement can also irritate your eyes.

5. How can you find out the ingredients in the particular cement you're using?

- If you can, get a bag and check the label. You may find a list of ingredients, a safety warning, or both.
- Read the Material Safety Data Sheet (MSDS) for the product. MSDSs are required by law. They'll tell you the ingredients and possible health hazards. Everyone working on the site has a right to see MSDSs.

- When you work with cement you often use other chemicals too—form oils, curing agents, bond breakers, and retardants. Remember to check their MSDSs .

On this job, you can get MSDSs from -

Give the name and location of the person to see:

_____

_____

Let's look at some MSDSs for cement products we use on this job.

Show the crew the sample MSDSs you brought to the meeting. Explain them briefly.

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(MSDSs are covered in more detail during basic Hazard Communication training, which everyone on the crew should already have completed.)

6. What about concrete? Can concrete dust also harm you?

- Yes. When concrete is cut, drilled, or broken up, the dust has all the same hazards as the dust from new cement. The only difference is that, since it isn't a new product, there will be no label or MSDS to check. So play it safe.

7. How can you protect yourself from breathing cement and concrete dust?

- Stay out of dusty areas if you can.
- Wet down the work to keep dust out of the air.
- Use power tools with HEPA filters when you're cutting or drilling concrete.
- Use a special HEPA vacuum to clean up dust, not dry sweeping.
- Wear a respirator with HEPA cartridges if there's a lot of dust in the air. (Respirators are covered in more detail in a separate Training Guide.)

On this job, the precautions we will be taking are:

_____

8. What are some things you can do to protect your skin and eyes from cement?

- Don't get wet or dry cement on your skin or in your eyes. If you do, immediately wash it off with a lot of water.
- Wear goggles, or safety glasses with side shields, to protect yourself from splashes.
- Wear boots and other protective clothing if necessary.
- Wear gloves. Use a type which is impermeable— the cement can't get through them. Leather or cloth work gloves won't protect you.
- The company is required to supply the personal protective equipment (PPE) you need and train you in its use. (PPE is covered in more detail in a separate Training Guide.)

On this job, the protective equipment you'll need is:

_____

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OSHA REGULATIONS

Most of the safety measures we've talked about are required by OSHA. We have to take these precautions it's the law. For example, OSHA says we must make sure no one on the site is exposed to more than 10 milligrams of cement dust per cubic meter of air, averaged over an 8-hour shift. This is called the permissible exposure limit (PEL) for cement dust. But there are lower limits if the dust is very fine and easy to breathe deep into the lungs. The limit is also lower if the dust contains toxic substances like chromium.

COMPANY RULES

(Only if applicable.) Besides the OSHA regulations, we have some additional company rules to prevent back injuries. Discuss company rules:

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Comments from the Crew:

Ask: Do you have any other concerns about cement or concrete? Do you see any problems on our job? (Let the steward answer first, if there is one.) What about other jobs you've worked on? Have you had any experience with cement or concrete that might help us work safer on this job?

GENERAL SAFETY REVIEW

This is a time to review all safety concerns, not just today's topic. Keep your notes on this page before, during and after the safety meeting.

Are you aware of any safety hazards from any other crews? Point out any hazards other crews are creating that this crew should know about. Tell the crew what you intend to do about those hazards.

Do we have any other safety business? Discuss any past issues or problems. Report any progress of investigations and action taken.

Have there been any accidents, near misses or complaints? Discuss any accidents, near misses, and complaints that have happened since the last safety meeting. Also recognize the safety contributions made by members of the crew.

Please remember, we want to hear from you about any health and safety issues that come up. If we don't know about problems, we can't take action to fix them.

ENDING THE MEETING

Circulate Sign-Off Form.

Assign one or more crew member(s) to help with next safety meeting.

Refer action items for follow-up.

Do you have any Safety Recommendations?

_____

_____

Do you have any Job Specific Topics you would like us to discuss?

_____

_____

Have you reviewed the M.S.D.S Sheet for this safety topic?

Yes____ No____ N/A___

COMMENTS

_____

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_____

SAFETY TALKS REVIEW

Hazard Identification and Air Monitoring:

1. The company has a written Safety and Health Program that meets all OSHA requirements. It includes identification of hazards on the site related to cement and concrete, as well as regular inspections, accident investigation, and correction of hazardous conditions.
2. Air monitoring has been done in work areas where exposure to dust may exceed the OSHA permissible exposure limit (PEL).
    - If using a new cement product, check the MSDS for the PEL.
    - If working with existing concrete, the PEL is 10 mg/m³ for total dust, and 5 mg/m³ for respirable dust.
3. Workers have been informed of the results of air monitoring performed on themselves, in their work area, and/or for their trade.
4. If air monitoring found any exposure exceeding the PEL, engineering, administrative, and work practice changes are used to reduce exposure where possible. Personal protective equipment is used only if other measures are insufficient. (Examples: stop work practices that generate dust; use water to suppress dust.)

Hazard Communication and Training:

1. The company has a written Hazard Communication Program.
2. Everyone potentially exposed to cement or related products has received specific training in health effects, safe use, minimizing exposure, personal protective equipment, proper disposal, and emergency procedures.
3. All product containers are properly labeled.
4. Personnel working in adjoining areas of the job site, including subcontractors, are aware of the work and the hazards.
5. Workers know where to find MSDSs and how to understand them.
6. Material Safety Data Sheets (MSDSs) are available on the site for all cement and related products used.
7. All workers have received basic Hazard Communication training.

Work Practices:

1. No dry cutting of concrete is done.
2. No dry sweeping of cement dust is done.
3. Workers dispensing flammable chemicals such as curing agents, bond breakers, and retardants use proper grounding and bonding procedures.
4. Workers using epoxy sealants and bonding agents take care to keep them off their skin.

Personal Protective Equipment:

1. If necessary, personal protective equipment (PPE) is provided by the company and worn by workers to prevent exposure to cement dust, wet cement, form oils, curing compounds, bond breakers, retarders, sealers, and other hazardous chemicals.
2. The types of PPE used are appropriate for the work and give adequate protection.
3. Respirators with HEPA cartridges are worn when dust levels may be above the OSHA permissible exposure limit (PEL).

Are respirators required when working with adhesives or resins on this site?

Yes____ No____

Type of respirator:_____

Available at:_____

1. Respirators are properly stored and maintained.
2. The proper types of respirators and cartridges for the work are used.
3. Respirators, cartridges, and replacement parts have been approved by the Mine Safety and Health Administration (MSHA) or the National Institute for Occupational Safety and Health (NIOSH).
4. Workers who wear respirators have been medically evaluated, fit-tested, and trained.
5. If respirators are used on the site, the company has a written Respiratory Protection Program.
6. Impermeable gloves of the correct type are worn if necessary to prevent skin contact with cement, concrete, and related substances, except where gloves might become caught in moving parts or machinery. (To determine the appropriate glove for the substance, consult the MSDS for the product, or contact the glove supplier or manufacturer.)
7. Full protective clothing (coveralls, etc.) is used to minimize skin contact where necessary.

8. Workers use chemical goggles (or equivalent eye and face protection) where there is risk of splashing or spraying into eyes. Eye and face protection meets the requirements of American National Standards Institute, American National Standard Practice for Occupational and Educational Eye and Face Protection.
9. Workers always wear goggles or other face and eye protection when using form oils, curing agents, bond breakers, and retardants.