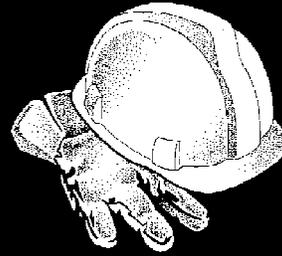


TRAINING GUIDE

CEMENT & CONCRETE



1994

Before you begin the meeting...

- Does this topic relate to the work the crew is doing? If not, choose another topic.*
- Has the crew completed basic Hazard Communication training? It will help them understand this topic.*
- Did you read this Training Guide and fill in the blanks where the  appears? (To find the information you need, look over the Safety Walkaround Checklist for this topic.)*
- Did you bring Material Safety Data Sheets (MSDSs) for some cement products used on the site?*

Begin: 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.

(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 are 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: _____



CAL/OSHA REGULATIONS

Explain: Most of the safety measures we've talked about are required by Cal/OSHA. We have to take these precautions—it's the law. For example, Cal/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. I have a Checklist of the Cal/OSHA regulations on cement and concrete. If you'd like to know more, see me after the meeting.

COMPANY RULES

(Only if applicable.) Besides the Cal/OSHA regulations, we have some additional company rules about cement and concrete.

Discuss company rules: _____



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 DISCUSSION

This is a time to discuss 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 hazards from 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 old business? *Discuss past issues/problems. Report progress of investigations and action taken.*

Any new business? Any accidents/near misses/complaints? *Discuss 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.

To complete the training session:

- Circulate Sign-Off Form.*
- Assign one or more crew member(s) to help with next safety meeting.*
- Refer action items for follow-up. (Use the sample **Hazard Report Form** in the Reference Section of this binder, or your company's own form.)*

