



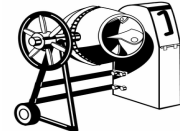
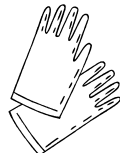
Company Name: _____ Job Site Location: _____

Date: _____ Start Time: _____ Finish Time: _____ Foreman/Supervisor: _____

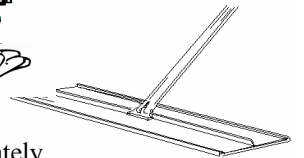
Topic 352: Chemical Hazards of Cement and Cement Burns

Introduction: Fresh or “green” concrete or cement products are caustic while still in a plastic state. Having an average pH of 12.5, fresh concrete can cause severe third-degree burns. Cement burns occur when skin comes in direct contact with concrete or contact with concrete through permeable clothing for extended periods causing extremely painful and disfiguring burns. These burns usually occur as a result of permeable clothing capturing and holding caustic cement paste in place against the skin for extended periods. The cement will slowly penetrate and burn the skin. Burns may occur so slowly that the pain is often not felt for hours and is not severe until days later. Cement dust also contains silicates which cause silicosis, a chronic disabling disease caused by the inhalation of crystalline silica particles. Following are guidelines to prevent cement burns and silicosis:

- **Employers must ensure** that personnel are properly trained and aware of the hazards of working with cement. Measures to prevent or eliminate these hazards should be part of the company safety policy.
- **Proper personal protective equipment (PPE)** must be available to, and used by, personnel who work with or around cement products. PPE should include:
 - * Eye protection to prevent splash hazards to eyes
 - * Waterproof gloves
 - * Long sleeve shirts
 - * Sturdy pants
 - * Waterproof boots
 - * Respiratory protection for workers who work with dry cement, or cleaning dry concrete from truck drums, mixers, bins, etc.



- **Avoid contact** with wet cement. If skin contact with concrete occurs, or cement gets on permeable (non-waterproof) clothing, wash with clean water as soon as possible.
- **Waterproof aprons** may be worn to prevent cement from penetrating clothing.
- **Wash regularly** when working concrete. Keep a clean water supply available on the job for washing. Do not contaminate the water used for washing with cement.
- **If washing immediately** is not possible, barrier creams may be used on exposed skin to protect against cement burns until washing is possible.
- **Wear clothing** such as coveralls which may be removed at the end of work.
- **In case of** eye contact, flush with plenty of water for at least 15 minutes. Seek medical attention immediately.
- **Do not** chip or bust up concrete, work around a batch plant, or work anywhere cement dust may be present without proper respiratory protection. Check the MSDS for proper protection against cement dust.
- **Seek immediate** medical attention if you have persistent or severe discomfort from working with concrete or cement products.



NOTE: Common derivatives of chemical admixtures to portland cement are: ethanolamine, diethanolamine, formaldehyde, K-naphthalene sulfonate, and benzene sulfonic acid. All of these chemicals are listed by OSHA as hazardous or toxic substances, but only trace amounts of these chemicals exist within cement products and the levels contained are within the acceptable safety levels for exposure. However, these chemicals may contribute to skin irritation, and possibly to sensitizing workers to the effects of exposure to Portland cement products.

Conclusion: Always practice good hygiene, especially when working with cement products. Use the appropriate PPE required for working with cement products.

Work Site Review

Work-Site Hazards and Safety Suggestions: _____

Personnel Safety Violations: _____

Material Safety Data Sheets Reviewed: _____ (Name of Chemical)

Employee Signatures: _____
(My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)

Foreman/Supervisor's Signature: _____
These guidelines do not supercede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.