

Environmental, Health & Safety News

Preventing Skin Problems from Working with Portland Cement

By U.S. Department of Labor OSHA, Edwin G. Foulke, Jr., Assistant Secretary

GOOD INFORMATION FOR US AND FOR OUR CUSTOMERS

Portland cement is a generic term used to describe a variety of building materials valued for their strong adhesive properties when mixed with water. Those who work with portland cement are at risk of developing skin problems, ranging from mild and brief to severe and chronic. Wet portland cement can damage the skin because it is caustic, abrasive, and absorbs moisture. Portland cement also contains trace amounts of hexavalent chromium [Cr(VI)], a toxin harmful to the skin. Dry portland cement is less hazardous to the skin because it is not as caustic as wet cement.

Who is at risk

Any individual who has skin contact with wet portland cement has the potential to develop cement-related skin problems. There are many different tasks that involve the use of portland cement.

Skin problems caused by exposure to portland cement

Wet portland cement can cause caustic burns, sometimes referred to as cement burns. Those exposed cannot rely on pain or discomfort to alert them to cement burns because cement burns may not cause immediate pain or discomfort. By the time the individual becomes aware of a cement burn, much damage may have already been done. Cement burns can get worse even after skin contact with cement has ended. Anyone experiencing a cement burn is advised to see a health care professional immediately.

Skin contact with wet portland cement can also cause inflammation of the skin, referred to as dermatitis. Signs and symptoms of dermatitis can include itching, redness, swelling, blisters, scaling, and other changes in the normal condition of the skin. Contact with wet portland cement can cause a non-allergic form of dermatitis (called irritant contact dermatitis) which is related to the caustic, abrasive, and drying properties of portland cement.

In addition, Cr(VI) can cause an allergic form of dermatitis (allergic contact dermatitis, or ACD) in sensitized individuals who work with wet portland cement. When an individual is sensitized, that person's immune system overreacts to small amounts of Cr(VI), which can lead to severe inflammatory reactions upon subsequent exposures. Sensitization may result from a single Cr(VI) exposure, from repeated exposures over the course of months or years, or it may not occur at all. After an individual becomes sensitized, brief skin contact with very small amounts of Cr(VI) can trigger ACD.

SEE A HEALTH CARE PROFESSIONAL IF YOU WORK WITH WET PORTLAND CEMENT AND HAVE SKIN PROBLEMS!!

Preventing cement-related skin problems

The best way to prevent cement-related skin problems is to minimize skin contact with wet portland cement. Compliance with OSHA's requirements for provision of PPE, washing facilities, hazard communication and safety training, along with the good skin hygiene and work practices listed below, will protect against hazardous contact with wet cement.

Good Practices for Glove Selection and Use

Proper gloves for individuals who may come into contact with wet portland cement are recommended. Butyl or nitrile gloves (rather than cotton or leather gloves) are frequently recommended for caustic materials such as portland cement.



Wash your hands before putting on gloves. Wash your hands every time that you remove your gloves.

Dry your hands with a clean cloth or paper towel before putting on gloves. Protect your arms and hands by wearing a long sleeve shirt with the sleeves duct-taped to your gloves to prevent wet cement from getting inside the gloves.

Clean reusable gloves after use. Before removing gloves, clean the outside by rinsing or wiping off any wet cement. Follow the manufacturer's instructions for glove cleaning. Place clean and dry gloves in a plastic storage bag and store them in a cool, dry place away from tools.

Throw out grossly contaminated or worn-out gloves.

Keep the inside of gloves clean and dry.

Do not use barrier creams or "invisible gloves." These products are not effective in protecting the skin from portland cement hazards.

Good Practices for Use of Boots and Other Protective Clothing and Equipment

Wear waterproof boots when necessary to prevent wet cement from coming into contact with your skin. It is as important to protect your legs, ankles, and feet from skin contact with wet cement as it is to protect your hands.

Boots need to be high enough to prevent wet cement from getting inside. Tuck pants inside and wrap duct tape around the top of the boots to prevent wet cement from entering.

Select boots that are sturdy, strong enough to resist punctures and tears, and slip resistant.

Change protective boots if they become ineffective or contaminated on the inside with wet cement while in use.

Change out of any work clothes that become contaminated with wet cement and keep contaminated work clothes separate from your street clothes.

When kneeling on wet cement use waterproof kneepads or dry kneeboards to prevent the knees from coming into contact with the cement.

Wear proper eye protection when working with portland cement.

Good Practices for Skin Care

Wash areas of the skin that come into contact with wet cement in clean, cool water. Use a pH-neutral or slightly acidic soap.

Consider using a mildly acidic solution such as diluted vinegar or a buffering solution to neutralize caustic residues of cement on the skin.

Do not wash with abrasives or waterless hand cleaners, such as alcohol-based gels or citrus cleaners.

Avoid wearing watches and rings at work since wet cement can collect under such items.

Do not use lanolin, petroleum jelly, or other skin softening products. These substances can seal cement residue to the skin, increase the skin's ability to absorb contaminants, and irritate the skin. Skin softening products also should not be used to treat cement burns.

Words of Wisdom:

"We are continually faced by great opportunities brilliantly disguised as insoluble problems."

--**Lee Iacocca**,
American Industrialist

