

Cement may cause skin problems when you work with it because it is:

- alkaline or caustic
- hygroscopic
- abrasive

The pH of wet cement is 12 to 13 (see below) so it is alkaline. It is hygroscopic so it draws moisture from skin. It is also abrasive so its sharp particles scrape and cut skin.

Four main kinds of skin problems are caused by contact with cement.

**Dry skin** may include irritation, scaling, itchiness, burning and redness.

**Irritant contact dermatitis (ICD)** can be acute or chronic. Symptoms include stinging, pain, itching, blisters, dead skin, scabs, scaling, fissures, redness, swelling, lumps, rash and watery discharge.

**Allergic contact dermatitis (ACD)** includes many of the same symptoms as ICD.

Hexavalent chromium in cement is a primary cause. ACD is difficult to cure and may persist for years.

**Cement burns** produce blisters, dead or hardened skin and black or green skin. If you think you have cement burn, go straight to the emergency room. By the time you feel the burn, much damage is already done. A cement burn continues to worsen after you rinse off the cement.

## What is pH?

pH tells us about the acidity or alkalinity of a material. Pure water has a pH of 7. pH 7 is considered pH-neutral.

The pH scale is like the Richter scale for earthquakes. Each number is many times greater/smaller than the previous number.

ACID	The pH scale		ALKALI
1	4.5 5.5 Normal skin	7 Pure Water	14 Cement

For every whole number, the pH changes 10-fold. The pH of wet cement is up to one billion times higher than the pH of skin. Wet cement makes skin more alkaline and defenseless against chemicals, causing it to absorb more hexavalent chromium. Skin damage may allow bacterial growth, causing infections that worsen problems.

Control surface skin pH by preventing contact with cement. Consider buffering or neutralizing any residue on the skin.

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## The safe use of cement

Cement • Concrete • Mortar • Plaster



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## Best practices

When working with cement, skin protection requires more than just the wearing of gloves. There are many protective measures that are recommended by experts to keep your skin safe from the harmful effects of handling cement. It may not be practical to follow all these recommendations at once, but you should follow as many as possible starting with the basics.

Wash with pH-neutral or slightly acidic soap, it helps to normalize your skin's pH. Check the labels on available soaps or your pharmacist can recommend one.



Wash before putting on gloves and each time you remove them. Consider trying a spray-on buffer or neutraliser.

Don't wear jewellery at work. It can trap cement against your skin.



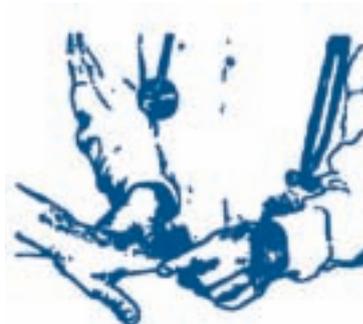
Change out of work clothes at work. Take work clothes home in a separate container like a trash bag.

Wash work clothes separately to protect your family or your roommates.



Avoid lanolin, petroleum jelly and other skin softening products at work. These substances can seal cement residue against your skin. Apply such products only in clean environments.

Consult a doctor for any persistent skin problem, even a minor one. In chrome-allergy dermatitis, early diagnosis and treatment makes the difference in preventing chronic disease. Tell the doctor that you work with cement.



Choose the right gloves. Butyl gloves or cotton gloves dipped in butyl/rubber coating provides the best protection. Don't forget to clean your gloves daily. When gloves become too contaminated, throw them away and get new ones.

## How to remove gloves



Before removing gloves, always clean off the outsides. Follow the manufacturer's instructions.



To remove gloves, loosen them on both hands.



Remove the first glove only to the fingers. The cuff will remain over the palm.



Now, grabbing the second glove with the first, remove the second glove.



Try to handle gloves by the inside only. Don't touch the outsides. Keep gloves in a bag until the next use.

**The safe use of cement**