

December 2, 2010

DIRECTIVE: JOB CORPS INFORMATION NOTICE NO. 10-43
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TO: ALL JOB CORPS NATIONAL OFFICE STAFF
 ALL JOB CORPS REGIONAL OFFICE STAFF
 ALL JOB CORPS CENTER DIRECTORS
 ALL JOB CORPS CENTER OPERATORS
 ALL NATIONAL TRAINING AND SUPPORT CONTRACTORS
 ALL OUTREACH, ADMISSIONS, AND CTS CONTRACTORS

FROM: EDNA PRIMROSE
 National Director
 Office of Job Corps

SUBJECT: Preventing Chemical Burns and Other Skin Problems From Working With
 Portland Cement

1. Purpose. To inform Job Corps centers about (1) skin problems related to working with Portland cement, and (2) the requirements for recordkeeping, sanitation, hazard communications, and proper selection and use of personal protective equipment (PPE) to prevent injuries.
2. Background. The National Office of Job Corps was recently made aware of chemical burns experienced by cement masonry and plastering students while working with Portland cement. An accident review was conducted, which determined that the students were issued protective gloves that were not appropriate for use with Portland cement. Further, the students were misinformed about the proper technique for neutralizing caustic residues of cement.

According to the Center for Construction Research and Training (CPWR), more than 25% of all reported work-related skin problems worldwide are due to exposure to Portland cement. Portland cement is a generic term used to describe a variety of building materials valued for their strength and adhesive properties, when mixed with water. Portland cement is a type of cement used in virtually all concrete. It is abrasive, and highly alkaline (caustic) when wet; absorbs moisture from skin; and usually contains sensitizing chemicals and metals such as hexavalent chromium (Cr (VI)). Portland cement can remain on the skin for several hours before a chemical burn is noticed.

Skin problems commonly associated with exposure to Portland cement include:

- a. Dry skin or mild irritant contact dermatitis (ICD). Symptoms include scaling, itchiness, burning, and redness.

- b. Irritant contact dermatitis (ICD). Conditions can be acute or chronic. Acute symptoms include stinging, pain, itching, blisters, dead skin, scabs, scaling, fissures, redness, swelling, bumps, and clear discharge. Some irritation may lead to infection.
- c. Allergic contact dermatitis (ACD). This is an immune system response similar to other allergies, but it involves the skin. ACD includes ICD symptoms. ACD is hard to cure and may last a lifetime. Exposure to cement can lead directly to ACD, usually without warning.
- d. Caustic burns (cement burns). These are alkali burns and should be treated by a physician immediately. Cement burns produce blisters, dead or hardened skin, or black or green skin similar to other burns. However, by the time a chemical burn has been discovered, extensive skin damage has been done and further damage is difficult to stop. Chemical burns can lead to allergic dermatitis.

In addition to skin problems, exposure to Portland cement can result in minor eye, nose, and throat irritation. Repeated exposures can lead to occupational asthma, silicosis, lung cancer due to inhalation of cement dust, and chemical burns to the eyes.

3. Preventing Skin-Related Injuries. According to the Occupational Safety and Health Administration (OSHA) publication “Preventing Skin Problems from Working with Portland Cement,” employers, including Job Corps centers, are **required** to take the following steps to protect students and staff from hazards associated with Portland cement:

- a. Provide personal protective equipment (PPE) in accordance with 29 Code of Federal Regulations 1926 Subpart E (29 CFR 1926 Subpart E) for construction and 29 CFR 1910 Subpart I for general industry. The PPE provided shall include boots and gloves, as necessary and appropriate, for use with caustic materials such as wet cement. The PPE shall be used and maintained in a sanitary and reliable condition to protect students and staff from injury. Adequate supplies must be maintained to facilitate exchange of PPE if it cannot be cleaned, becomes ineffective, or becomes contaminated on the inside with Portland cement.
- b. Provide hygiene facilities available to individuals exposed to Portland cement in accordance with 29 CFR 1926.51 for construction and 29 CFR 1910.141 for general industry. Hygiene facilities must provide clean water, non-alkaline soap, and clean towels. A bucket of water for washing hands will not suffice. Hygiene facilities must be readily accessible and adequate for the number of individuals in the work or training area.
- c. Provide material safety data sheets (MSDSs) and warning labels in accordance with 29 CFR 1926.59 for construction and 29 CFR 1910.1200 for general industry. Training and information shall be provided to individuals who may be exposed to Portland cement. Training must address:

- (1) the hazards associated with exposure to Portland cement, including exposure to hexavalent chromium (Cr(VI)), sensitizing chemicals, and crystalline silica;
 - (2) methods to prevent exposure including selection, proper use, and maintenance of PPE, and the importance of proper hygiene practices; and
 - (3) access to MSDS, hygiene facilities, PPE, and first aid.
- d. Inform students and staff how to report work-related injuries and illnesses, and report all new cases of work-related injury and illness, including Portland cement-related chemical burns and dermatitis.
- e. Maintain permissible exposure limits (PEL) for dry Portland cement to 15 milligrams per cubic meter (15 mg/m³) of air for total dust and 5 mg/m³ for respirable dust in accordance with 29 CFR 1926.55 for construction and 29 CFR 1910.1000 for general industry. According to OSHA, by maintaining the PEL for Portland cement, it is anticipated that the PEL of 5.0 µg/m³ for Cr (VI) will also be met.
4. Action. Job Corps center operators, center directors, safety officers, and all applicable career technical training (CTT) instructors for bricklaying, carpentry, cement masonry, concrete and terrazzo, construction-craft laborer, tile setting, and plastering shall take the following actions:
- a. Job Corps center safety officers and CTT instructors shall evaluate the PPE provided to students in the above-listed trades in accordance with Job Corps Policy and Requirements Handbook (PRH) Chapter 5, Section 5.20, R1.
 - b. Safety officers and CTT instructors shall ensure that students in the above-listed trades participating in work-based learning activities are provided with the appropriate PPE in accordance with PRH Chapter 3, Section 3.8, R5.
 - c. Safety officers and CTT instructors are encouraged to review the following publications to ensure that PPE selected for use on center is appropriate for all activities involving the use of Portland cement and provides the required level of protection for specific tasks:
 - (1) OSHA Publication 3151-12R 2003, Personal Protective Equipment (Attachment A)
 - (2) OSHA Publication 3221-12N 2004, Worker Safety Series—Concrete Manufacturing (Attachment B)
 - (3) Center for Construction Research and Training (CPWR) Publication, An Employer’s Guide to Skin Protection, available at <http://www.elcosh.org/en/document/465/d000457/an-employers-guide-to->

[skin-protection.html](#)

- d. All Portland cement-related injuries shall be documented through the Significant Incident Reporting (SIR) system and the Department of Labor (DOL) Safety and Health Information Management System (SHIMS). An investigation shall be conducted by the safety officer. Supplemental SIRs shall include the investigation results and corrective actions implemented to prevent future occurrences.
- e. Safety officers shall monitor center and off-center training activities involving the use of Portland cement to ensure that OSHA and industry-accepted safe work practices are followed. Centers are strongly encouraged to suspend all training activities, including those involving Portland cement, when hazardous conditions are observed or identified until those conditions are effectively abated.

Addressees are to ensure this Information Notice is distributed to all appropriate staff.

5. Expiration Date. Until superseded.

6. Inquiries. Direct all inquiries to Dennis Johnson at (202) 693-2876 or johnson.dennis@dol.gov, Curtis Massey at (202) 693-3096 or massey.curtis@dol.gov, Kelley Baker at (202) 693-3089 or baker.kelley@dol.gov, or Heather Edmonds at (202) 693-3774 or edmonds.heather@dol.gov.

Attachments

A – OSHA Publication 3151-12R 2003, Personal Protective Equipment

B – OSHA Publication 3221-12N 2004, Worker Safety Series—Concrete Manufacturing