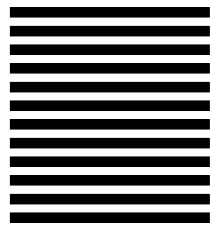



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**Clifton R. Lacy, M.D.**  
*Commissioner*

## POLICY ON BUILDING RENOVATION

**Public Employees Occupational Safety and Health Program**

**James E. McGreevey**  
*Governor*



**Albert G. Kroll**  
*Commissioner*

**Revised March 1997**

This educational bulletin contains information on potential renovation health hazards and how to minimize or avoid such hazards. Topics include: roof renovation, painting, construction and demolition work, lead abatement, asbestos and carpeting.

**ROOF RENOVATION, PAINTING,  
CONSTRUCTION AND DEMOLITION**

The Public Employees Occupational Safety and Health (PEOSH) Program has received numerous complaints from building occupants who have stated that they experienced health symptoms from renovation activity. Health effects associated with vapors and dusts generated by these activities include eye irritation, upper respiratory irritation, nausea, dizziness, lightheadedness, headache and irritability.

**Roof Renovation:** Several different types of roofing applications are available. While older methods include applying coal-tar pitch and asphalt, newer roofing technologies use rubber or other synthetic membranes as roofing materials. Each type of roofing application should be evaluated for the potential for releasing chemical contaminants.

Studies by the National Institute for Occupational Safety and Health (NIOSH) have documented that health problems can occur from exposure to coal-tar pitch products during roofing operations. Roof removal operations may release coal-tar pitch dust that contains polynuclear aromatic hydrocarbons (PAHs).

Rubber or synthetic membrane applications use organic solvents in adhesives, primers, sealants and hardening agents. During the applications of polyurethane roofing, methylene-bisphenyl-isocyanate and organic solvent vapors may be released which can cause adverse health symptoms.

**Painting:** Painting may introduce many chemicals into the indoor environment. In addition to paints, other products such as strippers, primers, and thinners may also be used. The solvents and additives found in paints, strippers, primers, and thinners may cause indoor air quality problems, due to the evaporation and aerosolization of the

solvents and additives found during and after application.

Paints are usually described by the solvent systems utilized in their formulations. The two common types of paints are:

- \* alkyd—hydrocarbon solvent based and usually a higher volatile organic compound (VOC) content
- \* latex—water based and usually a lower VOC content.

The amount of VOCs present in paints and released into the indoor environment may contribute to indoor air quality problems during painting operations. Paint manufacturers have formulated paints that have lower VOCs, but these paints tend to be thicker and more difficult to apply. Some companies are producing paints from “natural” products. These paints are not considered to be hazard free, but they are developed from substances which are less harmful.

**Construction and Demolition Work:** Construction and demolition work usually creates nuisance dust. The greatest amount of dust may be generated during sweeping. If good housekeeping practices are not used, this may lead to excessive dust in the work area, which may cause adverse health effects for building occupants.

**What can be done to reduce potential health hazards?**

The PEOSH Indoor Air Quality Standard contains requirements for building renovation. The regulation requires renovation or new construction that results in the diffusion of dust, stone, and other small particles, toxic gases or other harmful substances in quantities hazardous to health, be safeguarded by local ventilation or other protective devices to ensure the safety of employees.

Renovation areas in occupied buildings must be isolated and dust and debris must be confined to the renovation or construction area. Examples of isolation measures may include:

- ▶ sealing off the work area;
- ▶ shutting down ventilation system and sealing the supply and return grilles;
- ▶ maintaining the work area under negative pressure in relation to adjacent areas;
- ▶ practicing good housekeeping in the work area.

Before using paints, adhesives, sealants, solvents, or installing insulation, particle board, plywood, floor coverings, carpet backing, textiles, or other materials, the employer must check product labels or obtain information from the manufacturers of those products on whether or not they contain volatile organic compounds such as solvents, formaldehyde, or isocyanates that could be emitted during regular use. This information must be used to select products and to determine necessary measures to be taken.

The employer must notify employees at least 24 hours in advance, or promptly in emergency situations, of work to be performed on the building that may introduce air contaminants into the work area.

Although not part of the regulation, the following actions may be necessary:

- ▶ employees should be relocated if they are sensitized to products or materials being used in renovation or construction;
- ▶ employees should be informed of the location and how to obtain material safety data sheets (MSDS) and New Jersey Right to Know Hazardous Substance Fact Sheets (HSFS) for products being used during construction and renovation. The MSDS can be obtained from the contractor or the manufacturer of the product. The HSFS can be obtained by contacting the New Jersey Department of Health and Senior Services, Right to Know Program, at (609) 984-2202;
- ▶ the name of the individual(s) who is responsible for building related issues.

In addition, if the above control measures are not adequate, then work may need to be performed when the building is not occupied.

*For more information on the PEOSH Indoor Air Quality standard (N.J.A.C. 12:100-13), obtain the PEOSH information bulletin **PEOSH Indoor Air Quality Standard***

### LEAD ABATEMENT

As a general rule, buildings built before 1978 may contain lead-based paint. Lead can damage a number of systems in the body. Lead exposures occur when lead-based paint is removed from surfaces during building renovation and demolition. Building occupants may get lead poisoning by breathing in airborne lead dust or fumes or accidentally eating lead dust.

*For more information on this subject, obtain the PEOSH information bulletin on **Facts About Lead Paint Hazards for Public Employees**.*

### ASBESTOS ABATEMENT

Asbestos can be found in installed products such as shingles, floor tiles, cement pipe and sheet, roofing felts, insulation, ceiling tile, fire-resistant drywall, and acoustical products. Very few asbestos-containing products are currently being installed. Consequently, most worker

exposures occur during the removal of asbestos and the renovation and maintenance of buildings and structures containing asbestos.

Asbestos fibers enter the body by being breathed in or by being swallowed and can become lodged in the respiratory or digestive systems. Exposure to asbestos can cause many disabling or fatal diseases, such as asbestosis and mesothelioma, that take years to develop.

*For more information on this subject, obtain the PEOSH information bulletins on **PEOSH Asbestos Standard 29 CFR 1910.1001** and **PEOSH Asbestos Standard for Construction 29 CFR 1926.1101**.*

### CARPETING

The PEOSH Program has received numerous complaints from building occupants who have stated that they have experienced health symptoms related to the installation or maintenance of carpeting. Carpeting, and the adhesives used to glue it down, may contain many chemicals, some of which may cause adverse health effects. These chemicals can be found in carpet fiber bonding materials, backing glues, solvents, anti-static and anti-stain treatments, fire retardants, pesticides and fungicides. Most commercial carpeting comes with a styrene-butadiene latex rubber backing. Commercial carpeting is used wall-to-wall and is glued rather than tacked down so that it doesn't move when heavy office furniture and file cabinets are moved.

Carpeting may be shipped from the factory in plastic-covered rolls. When it is unrolled for installation, certain chemicals (called volatile and semi-volatile chemicals) may be released into the air. These chemicals may continue to off-gas from days to several months. Potential adverse health effects depend on the type of carpeting installed, how much adhesive is used, and how much fresh air is being circulated in the building by the ventilation system. Health complaints have also been associated with cleaning products used to shampoo carpets, mold growth on carpets, and allergic reactions to mites and their dander in carpeting.

#### *What can be done to reduce potential health hazards?*

- ▶ limit the use of carpeting in the workplace;
- ▶ never use carpeting where persistent moisture may be present;
- ▶ before carpeting is installed, make certain that it is aired out;
- ▶ when removing old carpeting, first vacuum it thoroughly;
- ▶ relocate workers during installation;
- ▶ isolate and ventilate the work area;
- ▶ keep the carpet clean and dry;
- ▶ use the least volatile adhesive.

**To obtain more information, contact the Public Employees Occupational Safety and Health (PEOSH) Program at (609) 984-1863 or visit our website at [www.state.nj.us/health/eoh/peoshweb/](http://www.state.nj.us/health/eoh/peoshweb/).**

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