

A Survey of Industrial Hygiene in the Building Industry

Industrial hygiene issues in construction

Barbara Epstien, John Meeker, Pam Susi, C. Jason McInnis and James Platner, in The Occupational Environment: Its Evaluation, Control, and Management, 3rd Ed. 2011.

Overview

Construction presents unusual challenges to good industrial hygiene. While exposure to hazards like welding fumes, solvent vapors, noise, and poor ergonomic design of tools and work processes are also familiar in general industry, the construction worker is seldom tied to a single task or workplace. Every construction site is unique, and a worker's exposures to hazards are intermittent and highly variable. The authors prepared a survey of industrial hygiene issues in construction for the third edition of the American Industrial Hygiene Association's standard reference text, *The Occupational Environment: Its Evaluation, Control and Management* (aka "The White Book").

Key Findings

- Construction worker exposure to hazards is often intermittent and highly variable, making it more difficult to accurately characterize exposure levels than in general industry.
- Tasks that often expose construction workers to inhalation hazards include welding, abrasive blasting, cutting brick or concrete, grinding masonry, installing or applying insulation, and preparing or removing paints and adhesives. Among the hazardous substances generated are welding fumes, airborne crystalline silica, asbestos, solvents, and fiberglass.
- Construction workers demonstrate a high prevalence of work-related musculoskeletal disorders (WMSDs) attributable to repetitive motion, heavy lifting, and the large quantity of work performed at floor level or overhead.
- Because of the intermittent and variable nature of hazard exposures in construction, the industrial hygienist must rely on task-based assessments and time-weighted averages to determine workers' exposure levels.
- As in general industry, sound occupational health practice calls for adherence to the "hierarchy of controls." Eliminating hazards by substituting dangerous substances or tasks or engineering the hazards out of the workplace is preferred to reliance on Personal Protective Equipment (PPE).

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