

# Safety Cop



## Don't Overlook Basic Indoor Air Quality

Both acute and chronic respiratory problems can result from exposure to airborne contaminants, pathogens and toxins from sources as varied as poor ventilation, volatile chemicals and silica dust. Oxygen-deficient atmospheres also are respiratory hazards.

Employers who take precautions against hazardous substances (WCA October, November, December 2004) may overlook basic indoor air quality. Sometimes this is due to lack of control over air-handling systems; often it results from poorly placed ductwork, or changes to floor plans or workspaces. Proper ventilation is especially necessary in today's tightly sealed office buildings, where tenants often cannot open windows.

In any workplace, dust, carbon dioxide, cleaning chemicals, pesticides and office equipment fumes may build up without proper ventilation. Circulating and exhausting indoor air, and introducing fresh, conditioned outdoor air is essential to remove pollutants. Proper temperature is also important: air-handling systems should be maintained to provide good airflow and efficient heating/cooling in all work areas (see sidebar).

## Hazardous Atmospheres

Workplaces that produce irritating or toxic fumes and dust require special venting equipment and procedures. Central vacuum collection systems, or equipment-installed systems, can capture dust, fumes and powders from various processes. Air-handling systems may be equipped with high-efficiency particulate air (HEPA) filters, activated carbon filters, or a combination of these two. It's important that these systems meet environmental regulations and do not discharge their collections in violation of federal and local laws.

Although engineering controls are the preferred methods of worker protection, some processes require the use of respirators. These masks fall into three categories: air-purifying, air-supplied and self-contained breathing. Air-purifying use paper,

cloth or chemical filters to remove particulate and some chemical-mist contaminants. They are not effective, however, where there is insufficient breathable air. Use air-supplied or self-contained units in those situations.

## Carbon Monoxide (CO)

The indoor contaminant most often encountered in colder weather is carbon monoxide. CO is very dangerous because there are no detectable warnings: it is colorless, odorless, tasteless and non-irritating.

Industrial CO exposure arises from burning fossil fuels (oil, gas, propane, kerosene, wood, coal, etc.), and indoor use of gasoline-powered compressors, generators, power washers and other tools. Exhaust from loading docks and fork lifts, garages and improperly vented automobile repair shops are other major sources of exposure. Firefighters are especially prone to exposure.

Current OSHA maximum permissible workplace CO exposure levels are 50 parts per million (ppm) for a time-weighted average eight-hour shift. OSHA allows some industries higher exposure levels for shorter periods, up to a maximum of 200 ppm for ship unloading (roll-on/roll-off longshore operations).

It's important that all workers know the symptoms of CO poisoning: headache, nausea, vomiting, fatigue, drowsiness, confusion and rapid heart rate. If symptoms arise, move exposed workers to fresh air, and then get help.

## New CO Law for New York

New York City's Local Law 7 of 2004 mandates the installation of carbon monoxide detectors within 15 feet of all sleeping areas. The law covers residences as well as hotels, motels, boarding houses, dormitories, rectories, convents and group homes. A guest in a Kingman, Arizona, motel died from CO poisoning. Her room was located above a boiler room that had a CO leak. Staff in residential buildings should become familiar with detector maintenance and operation, including any necessary periodic testing and battery and sensor replacement. (Do not use home CO alarms for industrial monitoring.)

## Safety & Risk Management

