



# **TEAMSTERS** **Safety & Health FACTS**

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## **INDOOR AIR QUALITY IN OFFICE SETTINGS**

No matter where you work air contaminants can affect your life. Dusts, mists, vapors, fumes, and gases are air contaminants that can be found in almost every workplace. Ventilation systems and other control measures are used to combat these contaminants.

While the Federal government has developed standards for many of the contaminants faced by industrial workers, it has not established any standards dealing with the level of contaminants found in office settings. Many contaminants, such as carbon dioxide and formaldehyde, are found in both industrial settings and office buildings. The OSHA designated Permissible Exposure Limits (PEL's) for these compounds were meant to protect industrial workers. Levels considered "safe" in industrial settings might still cause some adverse health effects on office workers. The levels found in office buildings usually are not high enough to exceed the PEL's for the substances, but the combined effects of these contaminants can cause symptoms.

OSHA has been working on a standard to address indoor air quality however, there have been some setbacks. At this time there is no standard. Without a standard describing requirements, it can be very difficult to convince employers to correct perceived problems associated with office building air quality.

### **General Ventilation:**

Buildings are being built almost air tight to reduce the cost of heating and cooling the air. If less air slips into and out of the building through cracks and gaps in the structure, then less air needs to be conditioned to maintain the internal environment, i.e. temperature and humidity. Another cost-savings step is to recirculate up to 90% of the indoor air. This can save a large amount of money yearly since the recirculated air does not have to be conditioned. A direct result of tighter buildings is increased concentration of contaminants within the building.

Building materials, office furniture and office equipment can release chemicals that may build up during the course of a workday. Ozone is produced by office equipment such as photocopiers and laser printers, and formaldehyde and other compounds are off-gassed (released) from furniture and carpeting.

Cleaning supplies and the outside air intakes are very often other sources of chemical contamination in office buildings. If cleaning compounds are used routinely in the building then the chemicals from these compounds might become concentrated in the building. Other contaminants can come from outside the building. Outside contaminants can be brought into the building with 'fresh' make up air if the outside air intakes are poorly located such as near a loading dock with idling trucks.

There can be biological contamination in these "tight" buildings as well. If there is standing water, animal infestations, or poorly maintained air-conditioning equipment, then the building might have a biocontamination problem. Mold and fungi can grow rapidly in damp, dark areas and when they do, many people experience allergic responses (sneezing, coughing, and fatigue, etc.).

Inadequate supplies of fresh air allow pollutants to build up. Inadequate maintenance on the ventilation system and in the building can result in biological contamination. These can all lead to building related illnesses (BRI). To determine if an illness is related to the air in a building, take notice of the symptoms. If the symptoms disappear after leaving work, reappear after returning to work and there is a definitive change when away for extended periods of time, then there is a strong likelihood that the illness is related to the building's air quality.

## **What To Do:**

If you have concerns about your air quality, there are some steps you can take:

- ♦ Examine the visible parts of the ventilation system: Look at the system and observe how clean it looks since obvious signs of buildup are clear indicators of problems with maintenance.
- ♦ Determine if others are having the same problems: Do their symptoms go away when they leave work, and reappear when they return to work?
- ♦ Determine if the problem occurs only at certain times of day and in certain areas of the building. This will help determine if it is related to a particular job that is performed in the building or if it is a contaminant continuously released from its source, such as a biological contaminant.
- ♦ If you work in an office setting, examine the ventilation system intake vents where the fresh air used as makeup air is obtained. Determine whether the vents are clean and free of contamination such as bird droppings and obvious signs of mold and fungus. Observe the location in relation to sources of contaminants: is the inlet near a loading dock or close to an exhaust vent from a local ventilation system?

## **Professionals:**

Following are a list of professionals who are trained to solve ventilation system problems.

- ♦ Industrial hygienists are employed in the IBT Safety and Health Department and are specially trained to anticipate, recognize, evaluate and control personal exposures to chemicals and harmful contaminants.
- ♦ System design engineers are professionals who design and modify ventilation systems for both industrial and office settings. It is important that the design engineer know what the system will be used for and how much of a demand will be placed on the system in order to design it properly.
- ♦ American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), a professional group, establishes recommended ventilation rates and other guidelines.
- ♦ The National Institute for Occupational Safety and Health (NIOSH) is a government agency that is responsible for performing research on occupational safety and health issues. NIOSH has published documents discussing indoor air quality issues and even performs evaluations of indoor air quality problems.

For more information on the indoor environment please refer to the IBT Safety and Health Department Fact Sheet entitled "Industrial Ventilation".