Indoor Air Quality



Key Takeaways:

– Learning the term “indoor air quality” and recognizing the consequences of indoor air contamination.
– Understanding the causes and sources of the major indoor air contaminants.
– Realizing the health effects and major risks of indoor air contamination.
– Comprehending what controls help maintain good indoor air quality.

Course Description

The World Health Organization (WHO) estimate around 30% of all commercial buildings have significant indoor air quality problems.

Millions of workers face an unnecessary health threat because of indoor air contaminants in the workplace everyday. Annually there are thousands of diseases and deaths linked to this occupational hazard.

Concerns about indoor air quality relate to the existence of undesirable and sometimes harmful indoor airborne contaminants, in addition to other air qualities that adversely impact the comfort and health of building occupants.

Typically, indoor air contamination is caused by an accumulation of contaminants originating from sources both inside and outside the building. Air contaminants can be produced from a single source or several sources over a wide area, and can be generated periodically or continuously. When contaminant sources are not controlled, indoor air quality problems can occur.

Common contaminants that originate outside include airborne chemical vapors, gases and dusts, bacteria, fungi, pollen, dust, soil gas, and moisture.

An example of a common contaminants sources is emissions from nearby indoor and outdoor industrial, commercial, and farming operations. Other examples include climate conditions and standing water that promotes excess microbial growth, as well as exhaust from vehicles on nearby roads, in parking lots, or in garages.

Contaminant controls at their source or point of entry is the most effective way of maintaining good indoor air quality. An example for employers to improve air quality is through adequate ventilation.

Tasks like painting, renovation, and pesticide use should be scheduled for when the building is unoccupied to minimize workforce exposure and allow sufficient time for indoor air quality to recover employees return to work.

If possible, enclosure and local exhaust ventilation should be in place to capture and remove contaminants generated by specific work processes. Everywhere these contaminants are produced, air should be discharged directly outside instead of being re-circulated or allowed to mix with room air.

Limit volatile solvent and product use which produces odors to specifically designed rooms, preferably with local exhaust ventilation. Also, this applies to all equipment generating excessive heat or producing odors. As much as possible, minimize the generation of dust or aerosols in the work area.

Isolate everywhere undergoing renovation, asbestos removal, painting, carpet laying, and pesticide application from occupied areas – keep everyone out of and away from these situations which are known for poor air quality. When possible, get these tasks to be performed during evenings and weekends. All residue must be cleaned up and ventilation must be turned on all the time, even during weekends and other periods. Prior to occupancy, contaminant concentrations should be eliminated.

Maintaining good housekeeping in work and break areas is another way to improve indoor air quality. Immediately clean up spills and dispose of garbage and old food in covered receptacles. As well, you can control dust, pollen, and other allergens by having the carpeting in the office and work areas vacuumed and cleaned frequently, in addition to filtering circulated air.

It may seem like common sense but reducing contamination of the air supply with cigarette smoke is sometime difficult to accomplish because of personnel issues related to smoking. Some ideas to accomplish this include banning smoking or restricting smoking to designated areas which discharge directly outside rather than recirculating it.

In the case that the problem is created by a more complex situation, such as inadequate ventilation or excessive mold, then the problem may require a more detailed investigation by facilities engineers, industrial hygienists, or outside medical consultants.