



U.S. Environmental Protection Agency

Indoor Air

[Recent Additions](#) | [Contact Us](#) | [Print Version](#) Search:

[EPA Home](#) > [Air](#) > [Indoor Air](#) > [Glossary of Terms](#)

[Advanced Search](#)

An Introduction
to
Indoor Air
Quality

Frequently Asked
Questions

Glossary of
Terms

IAQ Publications

IAQ Hotlines

Recursos en
Español

IAQ Links

Public Service
Announcements

Asthma and
Indoors

Radon

Secondhand
Smoke/
Smoke-free
Homes

Mold Resources

I-BEAM Program

IAQ in Homes

IAQ in Schools

IAQ in Large
Buildings

About Homeland
Security

Cleveland Air
Toxics
Pilot Project

An Introduction
to

Indoor Air
Quality

Frequently Asked
Questions

Glossary of
Terms

IAQ Publications

IAQ Hotlines

Recursos en

Glossary of Terms

Terms not defined herein should have their ordinary meaning within the context of their use. Ordinary meaning is as defined in "Webster's Ninth New Collegiate Dictionary."

ACID AEROSOL: Acidic liquid or solid particles that are small enough to become airborne. High concentrations of acid aerosols can be irritating to the lungs and have been associated with some respiratory diseases, such as asthma.

ACTION LEVEL: A term used to identify the level of indoor radon at which remedial action is recommended. (EPA's current action level is 4 pCi/L.)

ACTION PACKET: In reference to the IAQ Tools for Schools Kit - contains three components - an introductory memo, *IAQ Background*, and IAQ Checklist - to assist school personnel to implement an effective yet simple IAQ program in their school.

AHU: See "Air Handling Unit."

AIR CLEANING: An IAQ control strategy to remove various airborne particulates and/or gases from the air. The three types of air cleaning most commonly used are particulate filtration, electrostatic precipitation, and gas sorption.

AIR EXCHANGE RATE: The rate at which outside air replaces indoor air in a space. Expressed in one of two ways: the number of changes of outside air per unit of time air changes per hour (ACH); or the rate at which a volume of outside air enters per unit of time - cubic feet per minute (cfm).

AIR HANDLING UNIT (AHU): For purposes of this document refers to equipment that includes a blower or fan, heating and/or cooling coils, and related equipment such as controls, condensate drain pans, and air filters. Does not include ductwork, registers or grilles, or boilers and chillers.

AIR PASSAGES: Openings through or within walls, through floors and ceilings, and around chimney flues and plumbing chases, that permit air to move out of the conditioned spaces of the building.

ANIMAL DANDER: Tiny scales of animal skin.

ALLERGEN: A substance capable of causing an allergic reaction because of an individual's sensitivity to that substance.

ALLERGIC RHINITIS: Inflammation of the mucous membranes in the nose that is caused by an allergic reaction.

ANTIMICROBIAL: Agent that kills microbial growth. See "disinfectant," "sanitizer," and "sterilizer."

Español IAQ Links Public Service Announcements Asthma and Indoors Radon Secondhand Smoke/Smoke-free Homes Mold Resources I-BEAM Program IAQ in Homes IAQ in Schools IAQ in Large Buildings Cleveland Air Toxics Pilot Project	BIOLOGICAL CONTAMINANTS: Agents derived from, or that are, living organisms (e.g., viruses, bacteria, fungi, and mammal and bird antigens) that can be inhaled and can cause many types of health effects including allergic reactions, respiratory disorders, hypersensitivity diseases, and infectious diseases. Also referred to as "microbiologicals" or "microbials." BREATHING ZONE: Area of a room in which occupants breathe as they stand, sit, or lie down. BUILDING ENVELOPE: Elements of the building, including all external building materials, windows, and walls, that enclose the internal space. BUILDING-RELATED ILLNESS (BRI): Diagnosable illness whose symptoms can be identified and whose cause can be directly attributed to airborne building pollutants (e.g., Legionnaire's disease, hypersensitivity pneumonitis). Also: A discrete, identifiable disease or illness that can be traced to a specific pollutant or source within a building. (Contrast with "Sick building syndrome"). CEILING PLENUM: Space below the flooring and above the suspended ceiling that accommodates the mechanical and electrical equipment and that is used as part of the air distribution system. The space is kept under negative pressure.
---	--

CENTRAL AIR HANDLING UNIT (Central AHU): This is the same as an Air Handling Unit, but serves more than one area.

CFM. Cubic feet per minute. The amount of air, in cubic feet, that flows through a given space in one minute. 1 CFM equals approximately 2 liters per second (l/s).

CHEMICAL SENSITIZATION: Evidence suggests that some people may develop health problems characterized by effects such as dizziness, eye and throat irritation, chest tightness, and nasal congestion that appear whenever they are exposed to certain chemicals. People may react to even trace amounts of chemicals to which they have become "sensitized."

CO: Carbon monoxide.

CO₂: Carbon dioxide.

COMBINATION FOUNDATIONS: Buildings constructed with more than one foundation type; e.g., basement/crawlspace or basement/slab-on-grade.

COMMISSIONING: Start-up of a building that includes testing and adjusting HVAC, electrical, plumbing, and other systems to assure proper functioning and adherence to design criteria. Commissioning also includes the instruction of building representatives in the use of the building systems.

CONDITIONED AIR: Air that has been heated, cooled, humidified, or dehumidified to maintain an interior space within the "comfort zone." (Sometimes referred to as "tempered" air.)

CONSTANT AIR VOLUME SYSTEMS: Air handling system that provides a constant air flow while varying the temperature to meet heating and cooling needs.

DAMPERS: Controls that vary airflow through an air outlet, inlet, or duct. A damper position may be immovable, manually adjustable or part of an automated control system.

DIFFUSERS AND GRILLES: Components of the ventilation system that distribute and return air to promote air circulation in the occupied space. As used in this document, supply air enters a space through a diffuser or vent and return air leaves a space through a grille.

DISINFECTANTS: One of three groups of antimicrobials registered by EPA for public health uses. EPA considers an antimicrobial to be a disinfectant when it destroys or irreversibly inactivates infectious or other undesirable organisms, but not necessarily their spores. EPA registers three types of disinfectant products based upon submitted efficacy data: limited, general or broad spectrum, and hospital disinfectant.

DRAIN TILE LOOP: A continuous length of drain tile or perforated pipe extending around all or part of the internal or external perimeter of a basement or crawlspace footing.

DRAIN TRAP: A dip in the drain pipe of sinks, toilets, floor drains, etc., which is designed to stay filled with water, thereby preventing sewer gases from escaping into the room.

ENVIRONMENTAL AGENTS: Conditions other than indoor air contaminants that cause stress, comfort, and/or health problems (e.g., humidity extremes, drafts, lack of air circulation, noise, and over-crowding).

ENVIRONMENTAL TOBACCO SMOKE (ETS): Mixture of smoke from the burning end of a cigarette, pipe, or cigar and smoke exhaled by the smoker (also secondhand smoke (SHS) or passive smoking).

ERGONOMICS: Applied science that investigates the impact of people's physical environment on their health and comfort (e.g., determining the proper chair height for computer operators).

EXHAUST VENTILATION: Mechanical removal of air from a portion of a building (e.g., piece of equipment, room, or general area).

FLOW HOOD: Device that easily measures airflow quantity, typically up to 2,500 cfm.

FUNGI: Any of a group of parasitic lower plants that lack chlorophyll, including molds and mildews.

GAS SORPTION: Devices used to reduce levels of airborne gaseous compounds by passing the air through materials that extract the gases. The performance of solid sorbents is dependent on the airflow rate, concentration of the pollutants, presence of other gases or vapors, and other factors.

GOVERNMENTAL: In the case of building codes, these are the State or local organizations/agencies responsible for building code enforcement.

HEPA: High efficiency particulate arrestance (filters).

HUMIDIFIER FEVER: A respiratory illness caused by exposure to toxins from microorganisms found in wet or moist areas in humidifiers and air conditioners. Also called air conditioner or ventilation fever.

HVAC: Heating, ventilation, and air-conditioning system.

HYPERSENSITIVITY DISEASES: Diseases characterized by allergic responses to

pollutants. The hypersensitivity diseases most clearly associated with indoor air quality are asthma, rhinitis, and hypersensitivity pneumonitis. Hypersensitivity pneumonitis is a rare but serious disease that involves progressive lung damage as long as there is exposure to the causative agent.

HYPERSENSITIVITY PNEUMONITIS: A group of respiratory diseases that cause inflammation of the lung (specifically granulomatous cells). Most forms of hypersensitivity pneumonitis are caused by the inhalation of organic dusts, including molds.

IAQ: Indoor air quality.

IAQ BACKGROUNDER: A component of the *IAQ Tools for Schools* Kit that provides a general introduction to IAQ issues, as well as IAQ program implementation information.

IAQ COORDINATOR: An individual at the school and/or school district level who provides leadership and coordination of IAQ activities.

IAQ CHECKLIST: A component of the *IAQ Tools for Schools* Kit containing information and suggested easy-to-do activities for school staff to improve or maintain good indoor air quality. Each Activity Guide focuses on topic areas and actions that are targeted to particular school staff (e.g., Teacher's Checklist, Administrative Staff Checklist, Health Officer's Checklist, Ventilation Checklist, Building Maintenance Checklist, Food Service Checklist, Waste Management Checklist, Renovation and Repair Checklist and Walkthrough Checklist) or specific building functions (e.g., HVAC system, roofing, renovation, etc.). The Checklists are to be completed by the staff and returned to the IAQ Coordinator as a record of activities completed and assistance as requested.

IAQ MANAGEMENT PLAN: A component of the IAQ Tools for Schools Kit, specifically, a set of flexible and specific steps for preventing and resolving IAQ problems.

IAQ TEAM: People who have a direct impact on IAQ in the schools (school staff, administrators, school board members, students and parents) and who implement the IAQ Action Packets.

IPM: Integrated pest management.

INDICATOR COMPOUNDS: Chemical compounds, such as carbon dioxide, whose presence at certain concentrations may be used to estimate certain building conditions (e.g., airflow, presence of sources).

INDOOR AIR POLLUTANT: Particles and dust, fibers, mists, bioaerosols, and gases or vapors.

MAKE-UP AIR: See "Outdoor Air Supply."

MAP OF RADON ZONES: A U.S. EPA publication depicting areas of differing radon potential in both map form and in state specific booklets.

MCS: See "Multiple Chemical Sensitivity."

MECHANICALLY VENTILATED CRAWLSPACE SYSTEM: A system designed to increase ventilation within a crawlspace, achieve higher air pressure in the crawlspace relative to air pressure in the soil beneath the crawlspace or achieve lower air

relative to air pressure in the soil beneath the structure, or otherwise lower air pressure in the crawlspace relative to air pressure in the living spaces, by use of a fan.

MICROBIOLOGICALS: See "Biological Contaminants."

MODEL BUILDING CODES: The building codes published by the 4 Model Code Organizations and commonly adopted by state or other jurisdictions to control local construction activity.

MODEL CODE ORGANIZATIONS: Includes the following agencies and the model building codes they promulgate:

- Building Officials and Code Administrators International, Inc. (BOCA National Building Code/1993 and BOCA National Mechanical Code/1993);
- International Conference of Building Officials (Uniform Building Code/1991 and Uniform Mechanical Code/1991);
- Southern Building Code Congress, International, Inc. (Standard Building Code/1991 and Standard Mechanical Code/1991);
- Council of American Building Officials (CABO One- and Two-Family Dwelling Code/1992 and CABO Model Energy Code/1993).

MULTIPLE CHEMICAL SENSITIVITY (MCS): A condition in which a person reports sensitivity or intolerance (as distinct from "allergic") to a number of chemicals and other irritants at very low concentrations. There are different views among medical professionals about the existence, causes, diagnosis, and treatment of this condition.

NEGATIVE PRESSURE: Condition that exists when less air is supplied to a space than is exhausted from the space, so the air pressure within that space is less than that in surrounding areas. Under this condition, if an opening exists, air will flow from surrounding areas into the negatively pressurized space.

ORGANIC COMPOUNDS: Chemicals that contain carbon. Volatile organic compounds vaporize at room temperature and pressure. They are found in many indoor sources, including many common household products and building materials.

OUTDOOR AIR SUPPLY: Air brought into a building from the outdoors (often through the ventilation system) that has not been previously circulated through the system. Also known as "Make-Up Air."

PELs: Permissible Exposure Limits (standards set by the Occupational, Safety and Health Administration - OSHA).

PICOCURIE (pCi): A unit for measuring radioactivity, often expressed as picocuries per liter (pCi/L) of air.

PLENUM: Air compartment connected to a duct or ducts.

PM: Preventive Maintenance.

POLLUTANT PATHWAYS: Avenues for distribution of pollutants in a building. HVAC systems are the primary pathways in most buildings; however all building components interact to affect how air movement distributes pollutants. Also - a term used in the *IAQ Tools for Schools: IAQ Coordinator's Guide*.

POSITIVE PRESSURE: Condition that exists when more air is supplied to a space than is exhausted, so the air pressure within that space is greater than that in surrounding areas. Under this condition, if an opening exists, air will flow from the positively pressurized space into surrounding areas.

positively pressurized space into surrounding areas.

PPM: Parts per million.

PRESSED WOOD PRODUCTS: A group of materials used in building and furniture construction that are made from wood veneers, particles, or fibers bonded together with an adhesive under heat and pressure.

PRESSURE, STATIC: In flowing air, the total pressure minus velocity pressure. The portion of the pressure that pushes equally in all directions.

PRESSURE, TOTAL: In flowing air, the sum of the static pressure and the velocity pressure.

PRESSURE, VELOCITY: In flowing air, the pressure due to the velocity and density of the air.

PREVENTIVE MAINTENANCE: Regular and systematic inspection, cleaning, and replacement of worn parts, materials, and systems. Preventive maintenance helps to prevent parts, material, and systems failure by ensuring that parts, materials and systems are in good working order.

PSYCHOGENIC ILLNESS: This syndrome has been defined as a group of symptoms that develop in an individual (or a group of individuals in the same indoor environment) who are under some type of physical or emotional stress. This does not mean that individuals have a psychiatric disorder or that they are imagining symptoms.

PSYCHOSOCIAL FACTORS: Psychological, organizational, and personal stressors that could produce symptoms similar to those caused by poor indoor air quality.

RADIANT HEAT TRANSFER: Radiant heat transfer occurs when there is a large difference between the temperatures of two surfaces that are exposed to each other, but are not touching.

RADON (Rn) AND RADON DECAY PRODUCTS: Radon is a radioactive gas formed in the decay of uranium. The radon decay products (also called radon daughters or progeny) can be breathed into the lung where they continue to release radiation as they further decay.

RE-ENTRAINMENT: Situation that occurs when the air being exhausted from a building is immediately brought back into the system through the air intake and other openings in the building envelope.

RE-ENTRY: Situation that occurs when the air being exhausted from a building is immediately brought back into the system through the air intake and other openings in the building envelope.

RELs: Recommended Exposure Limits (recommendations made by the National Institute for Occupational Safety and Health (NIOSH)).

SANITIZER: One of three groups of anti-microbials registered by EPA for public health uses. EPA considers an anti-microbial to be a sanitizer when it reduces but does not necessarily eliminate all the microorganisms on a treated surface. To be a registered sanitizer, the test results for a product must show a reduction of at least 99.9% in the number of each test microorganism over the parallel control.

SHORT-CIRCUITING: Situation that occurs when the supply air flows to return or

exhaust grilles before entering the breathing zone (area of a room where people are). To avoid short-circuiting, the supply air must be delivered at a temperature and velocity that results in mixing throughout the space.

SICK BUILDING SYNDROME (SBS): Term that refers to a set of symptoms that affect some number of building occupants during the time they spend in the building and diminish or go away during periods when they leave the building. Cannot be traced to specific pollutants or sources within the building. (Contrast with "Building related illness").

SOIL GAS: The gas present in soil which may contain radon.

SOIL-GAS-RETARDER: A continuous membrane or other comparable material used to retard the flow of soil gases into a building.

SOURCES: Sources of indoor air pollutants. Indoor air pollutants can originate within the building or be drawn in from outdoors. Common sources include people, room furnishings such as carpeting, photocopiers, art supplies, etc.

STACK EFFECT: The overall upward movement of air inside a building that results from heated air rising and escaping through openings in the building super structure, thus causing an indoor pressure level lower than that in the soil gas beneath or surrounding the building foundation.

STATIC PRESSURE: Condition that exists when an equal amount of air is supplied to and exhausted from a space. At static pressure, equilibrium has been reached.

STERILIZER: One of three groups of anti-microbials registered by EPA for public health uses. EPA considers an anti-microbial to be a sterilizer when it destroys or eliminates all forms of bacteria, fungi, viruses, and their spores. Because spores are considered the most difficult form of a microorganism to destroy, EPA considers the term sporicide to be synonymous with "sterilizer."

SUB-SLAB DEPRESSURIZATION SYSTEM (ACTIVE): A system designed to achieve lower sub-slab air pressure relative to indoor air pressure by use of a fan-powered vent drawing air from beneath the slab.

SUB-SLAB DEPRESSURIZATION SYSTEM (PASSIVE): A system designed to achieve lower sub-slab air pressure relative to indoor air pressure by use of a vent pipe routed through the conditioned space of a building and connecting the sub-slab area with outdoor air, thereby relying solely on the convective flow of air upward in the vent to draw air from beneath the slab.

SUB-MEMBRANE DEPRESSURIZATION SYSTEM: A system designed to achieve lower sub-membrane air pressure relative to crawlspace air pressure by use of a fan-powered vent drawing air from under the soil-gas-retarder membrane.

TRACER GASES: Compounds, such as sulfur hexafluoride, which are used to identify suspected pollutant pathways and to quantify ventilation rates. Trace gases may be detected qualitatively by their odor or quantitatively by air monitoring equipment.

TLVs - Threshold Limit Values (guidelines recommended by the American Conference of Governmental Industrial Hygienists).

TVOCs. Total volatile organic compounds. See "Volatile Organic Compounds (VOCs)"

UNIT VENTILATOR: A fan-coil unit package device for applications in which the use

of outdoor- and return-air mixing is intended to satisfy tempering requirements and ventilation needs.

VARIABLE AIR VOLUME SYSTEM (VAV): Air handling system that conditions the air to constant temperature and varies the outside airflow to ensure thermal comfort.

VENTILATION AIR: Defined as the total air, which is a combination of the air brought inside from outdoors and the air that is being re-circulated within the building. Sometimes, however, used in reference only to the air brought into the system from the outdoors; this document defines this air as "outdoor air ventilation."

VENTILATION RATE: The rate at which indoor air enters and leaves a building. Expressed in one of two ways: the number of changes of outdoor air per unit of time (air changes per hour, or "ach") or the rate at which a volume of outdoor air enters per unit of time (cubic feet per minute, or "cfm").

VOLATILE ORGANIC COMPOUNDS (VOCs): Compounds that vaporize (become a gas) at room temperature. Common sources which may emit VOCs into indoor air include housekeeping and maintenance products, and building and furnishing materials. In sufficient quantities, VOCs can cause eye, nose, and throat irritations, headaches, dizziness, visual disorders, memory impairment; some are known to cause cancer in animals; some are suspected of causing, or are known to cause, cancer in humans. At present, not much is known about what health effects occur at the levels of VOCs typically found in public and commercial buildings.

ZONE: The occupied space or group of spaces within a building which has its heating or cooling controlled by a single thermostat.



[State Radon and IAQ Coordinators List](#) | [Regional IAQ and Radon Coordinators](#) | [Regional Training Centers](#)

[EPA Home](#) | [Privacy and Security Notice](#) | [Contact Us](#)

Last updated on Monday, April 8th, 2002
URL: <http://www.epa.gov/iaq/glossary.html>