

HVAC Fundamentals

HVAC Systems

Purpose

Heating, Ventilating, and Air Conditioning (HVAC) systems are designed to provide and control:


- Temperature (heat intensity)
- Enthalpy (heat quantity in the air)
- Humidity (relative, dew point)
- Pressure (atmospheric, building pressurization)
- Air Motion (mechanical, fans, diffusers)
- Ventilation (air freshness, oxygen content)
- Air Quality (pollution, contaminant, odors)

Indoor Air Quality (IAQ)



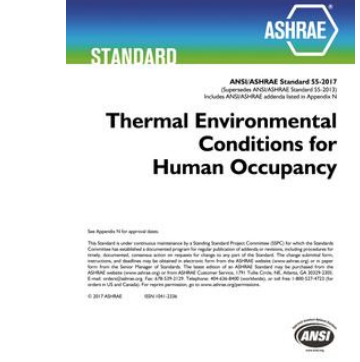
- Refers to the air quality within and around buildings and structures, especially as it relates to the health and comfort of building occupants.
- Directly affects occupant health, comfort, and productivity.

American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)

ASHRAE Standard 62.1 Ventilation for Acceptable Indoor Air Quality

	<p>Purpose: The purpose of this standard is to specify minimum ventilation rates and other measures intended to provide indoor air quality that is acceptable to human occupants and that minimizes adverse health effects.</p> <p><i>acceptable indoor air quality:</i> air in which there are no known contaminants at harmful concentrations as determined by cognizant authorities and with which a substantial majority (80% or more) of the people exposed do not express dissatisfaction.</p>
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Other ASHRAE Standards Commonly Used for HVAC Design

		
<p>ASHRAE Standard 62.2 Ventilation for Acceptable Indoor Air Quality in Low-Rise Residential Buildings</p>	<p>ASHRAE Standard 52.2 Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size</p>	<p>ASHRAE Standard 55 Thermal Environmental Conditions for Human Occupancy</p>