

Basics of Ventilation: Why it Does Not Effectively Protect Nonsmokers from Secondhand Smoke

“Exposures of nonsmokers to secondhand smoke cannot be controlled by air cleaning or mechanical air-exchange” (U. S. Surgeon General Report, 2006, chapter 10, section 10)

Ventilation Systems and/or Smoking Rooms

These are ineffective and costly. **There is no safe level of exposure to secondhand smoke**, and there is no ventilation system that will prevent secondhand smoke from permeating nonsmoking areas. Ventilation sometimes removes odor and larger air particles, but cannot remove the harmful constituents of secondhand smoke. Smoking rooms offer no protection for employees who work in those areas, putting those employees at risk.

A "smoking room" exemption may even worsen an employee's health by concentrating all the smoking into one place. Even if no employee is required to work in a separately ventilated smoking room, the people who clean the room will be exposed to the secondhand smoke. Ventilation and/or HEPA filters **cannot** control the health effects from secondhand smoke.

“To achieve [the minimum] risk would require in excess of one hundred thousand cubic feet per minute per occupant (50,000 litres per second per occupant), which would need tornado-like levels of airflow to achieve.”ⁱ

Ventilation Does Not Effectively Protect Nonsmokers from Secondhand Smoke

- Establishing a smoke-free environment is the only effective way to protect nonsmokers from secondhand smoke.ⁱⁱ
- There is no risk-free level of exposure to secondhand smoke. Even low levels of exposure can harm nonsmokers' health.ⁱⁱ
- Separating smokers from nonsmokers, cleaning the air, and ventilating buildings cannot eliminate secondhand smoke exposure.ⁱⁱ
- Conventional air cleaning systems can remove large particles, but not the smaller particles or the gases found in secondhand smoke.ⁱⁱ
- Current heating, ventilating, and air conditioning systems alone cannot control secondhand smoke exposure. These systems can distribute secondhand smoke throughout a building.ⁱⁱ
- The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), the preeminent U.S. standard-setting body on ventilation issues, has concluded that ventilation systems cannot remove secondhand smoke from indoor environments.ⁱⁱⁱ
- Even separately enclosed, separately exhausted, negative-pressure smoking rooms cannot keep secondhand smoke from spilling into adjacent areas. In practice, employees are often required to enter such rooms in order to perform their job duties. Employees and patrons in such rooms are likely to be exposed to especially high levels of secondhand smoke.ⁱⁱ

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), concludes that:

- It is the consensus of the medical community and its cognizant authorities that Environmental Tobacco Smoke (ETS) is a health risk, causing lung cancer and heart disease in adults, and exacerbation of asthma, lower respiratory illnesses and other adverse effects on the respiratory health of children.
- At present, the only means of effectively eliminating health risk associated with indoor exposure is to ban smoking activity.
- Although complete separation and isolation of smoking rooms can control ETS exposure in non-smoking spaces in the same building, adverse health effects for the occupants of the smoking room cannot be controlled by ventilation.
- No other engineering approaches, including current and advanced dilution ventilation or air cleaning technologies, have been demonstrated or should be relied upon to control health risks from ETS exposure in spaces where smoking occurs. Some engineering measures may reduce that exposure and the corresponding risk to some degree while also addressing to some extent the comfort issues of odor and some forms of irritation.
- An increasing number of local and national governments, as well as many private building owners, are adopting and implementing bans on indoor smoking.
- At a minimum, ASHRAE members must abide by local regulations and building codes and stay aware of changes in areas where they practice, and should educate and inform their clients of the substantial limitations and the available benefits of engineering controls.
- Because of ASHRAE's mission to act for the benefit of the public, it encourages elimination of smoking in the indoor environment as the optimal way to minimize ETS exposure.

See link below for details from American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE):

http://www.ashrae.org/content/ASHRAE/ASHRAE/ArticleAltFormat/20058211239_347.pdf

ⁱ (James Repace, Fact Sheet on Secondhand Smoke, 1999) <http://repace.com/SHSFactsheet.pdf>

ⁱⁱ U.S. Department of Health and Human Services. [The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General](#). Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2006 [cited 2006 Oct 23]. Available from: http://www.cdc.gov/tobacco/data_statistics/sgr/sgr_2006/index.htm

ⁱⁱⁱ American Society of Heating, Refrigerating and Air-Conditioning Engineers. Environmental Tobacco Smoke: Position Document. Atlanta, Georgia: 2005 [cited 2006 Oct 23].

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