

014219S04 -Technical and Performance Standards: Fume Hood Systems

General: Fume hood systems shall be designed to protect laboratory workers and to ensure that hazardous chemical vapors originating from laboratory operations shall not be recirculated. The use of variable air volume systems is preferred. Additional requirements include:

- Designed to provide 100 linear feet per minute face velocity at a height of twelve inches.
- Maintain a set point within five percent of one second of any change in fume hood sash position, or changes in the exhaust and/or supply systems; except in those cases where the existing building's HVAC systems are not capable of complying with this requirement.
- Provide flow detectors/alarms.

Fume Hood Location:

- Fume hoods must not be located adjacent to a single means of access to an exit or in high traffic areas.
- Locate away from doors, away from operable windows, and in general located to minimize cross drafts and air disruption.
- The supply air diffusers air jet velocity shall be less than half (preferably less than one third) of capture velocity of the exhaust hood.

Fume Hood Exhaust:

- Fume hood exhaust discharges must be designed to minimize air re-entry, taking into account aesthetic appearance, and minimizing exposures to maintenance workers.
- Locate fans on roof or in a separate room (penthouse) that is maintained at a negative pressure to the rest of the building and is well ventilated.
- A motion/light sensor may be utilized to lower exhaust rate to 60 linear feet per minute when fume hood is not in use.
- Exhaust system must be constructed entirely of non-combustible materials; have all joints and connections sealed; and should use materials resistant to acids, bases, solvents and corrosive gases.

Sound Levels:

- Fume hood exhaust systems must be designed to minimize sound level problems.
- Designed to keep noise levels less than 68 db(A) one foot in front of hood face with hoods running.

Perchloric Acid Hoods:

If perchloric acid is to be used above ambient temperature, separate, specifically designed hoods, must be provided which include a washdown system attached to a separate exhaust system.

Recirculating Fume Hoods:

Ductless hoods which filter air (through HEPA or charcoal filters) then discharge the filtered air back into the laboratory may not be used without approval of the director of Hazardous Materials Management and Occupational Health and Safety.

Air Cleaning Devices:

Air cleaning devices are not generally required for laboratory fume hoods, and may not be used without approval of the directors of Hazardous Materials Management and Occupational Health & Safety departments.

Energy Efficiency:

See guidelines and standards related to HVAC.

Approved by UK Design Guidelines & Technical Standards Committee June 18, 1998.