

Sector: Commercial

Category/Practice: IEQ / Building Flush-Out

Proposed GB practice

Description

After all interior finishes are installed, the building must be flushed out with outside air for 14 days with either continuous ventilation or aggregate intermittent ventilation equivalent to 14 days as specified in the amended 2009 *International Building Code* (IBC). Occupancy is allowed one day after start of the flush-out.

Applicability

New construction: Applies

Additions: Applies if the addition can be isolated from the rest of building.

Alterations: No

Intent

Improve the indoor air quality by removing air contaminants that are caused by the construction process, construction materials, and interior design elements such as adhesives, carpeting, and paints.

Benefits and Costs

Triple Bottom Line Benefits

People: Improved health and productivity of occupants

Economic: Flush-out period will result in greater energy costs. However, there can be economic benefit gained over long term as a result of improved health and productivity.

Environment: Greater energy costs from flush-out result in environmental impact.

Costs Passed to Owner

Costs include setup and monitoring (estimated at \$500 - \$1,500 per building to program and turn on/off flush) and energy to supply the air as well as to heat or cool the outside air to maintain safe indoor air temperatures. These latter energy costs vary depending on the season:

- Summer energy cost: ~\$0.005/sf
- Winter energy cost: ~\$0.012/sf
- Spring/Fall energy cost: ~0.008/sf

Implementation

Availability of products and/or services

Readily available.

Practicality

No significant obstacles. Potential obstacle would arise if HVAC system is not able to supply outside air at rate of 0.30 fm per square foot.

Certification Issues

Any qualified HVAC technician could perform this procedure.

Training needs

Limited.

Enforcement Procedures

Permit application/plan review: Applicant to submit specifics on compliance plan.

Field inspection: None; flush-out reports to be provided prior to approval.

Certificate of Occupancy: Nothing additional.

Support Materials Needs

City to develop materials detailing how to perform flush-out and compliance verification.

Training Needs – Industry

Minimal

Training Needs – Staff

Minimal

Background**Current practice**

Not a current practice.

Context

US EPA reports that Americans spend an average of 90% of their time indoors, where pollutant levels may run 2 to 5 times higher than outdoor levels (USEPA, 2001). Sources of pollutants include construction activity, interior materials, and furniture. The intent of this measure is to create a high air exchange rate as the building is being occupied in order to remove as many VOCs as possible during the time that out-gassing is the highest.

Related GB practices

Activities designed to improve indoor environmental quality such as: improving air handling access and ability to clean and maintain equipment; eliminating use of fibrous insulating materials in air plenums; protecting ducts from contamination during construction; and minimizing VOCs in adhesives, paints, etc.

Known objections

- none

Sources:

US Environmental Protection Agency. “Healthy Buildings, Healthy People: A Vision for the 21st Century”, 2001. <http://www.epa.gov/iaq/hbhp/hbhptoc.html> .