



**DALHOUSIE
UNIVERSITY**
Inspiring Minds

**Annual Fume Hood
Inspection**

Policy Sponsor:
Vice President Finance and
Administration

Signature:

Approval Date:

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Responsible Unit:
Director EHS

Signature:

Revisions:

Initial issue

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- A. **Background & Purpose:** This policy outlines the requirement for annual inspections of laboratory fume hoods.
- B. **Application:** Applies to all Dalhousie University operations.
- C. **Definitions:**
- a. **EHS:** Environmental Health and Safety
 - b. **Fume Hood:** A fume hood is a boxlike structure enclosing a source of potential air contamination, with one open or partially open side, into which air is moved for the purpose of containing and exhausting air contaminants, generally used for bench-scale operations but not necessarily involving the use of a bench or table. (ANSI/ASHRAE 110-1995)
 - c. **Face Velocity:** Speed of air entering the fume hood through the sash opening, and measured in the plane of the sash.
 - d. **Plane of the Sash:** The imaginary vertical plane from the midpoint of the sash frame depth at the bottom of the sash to the point of contact on the airfoil sill.
- D. **Policy Statement:** It is a requirement to inspect and verify the face velocity air flow in laboratory chemical fume hoods annually to ensure user protection
- E. **Administrative Structure:** The Vice President Finance and Administration is the sponsor of the policy, with responsibility for implementation being provided through the EHS office.
- This policy was written in conjunction with appropriate stakeholders and reviewed by the University EHS committee.
- F. **Procedures:** On an annual basis the EHS office will arrange / complete a general inspection and perform a verification of average face velocity air flow in chemical fume hoods throughout the University.

General Inspection of Hood

An external fume hood inspection shall be performed evaluating the following:

- a. Presence of excessive storage of any materials inside the fume hood;
- b. Presence of material or equipment stored within 6 inches of the sash as this could impede movement of air or cause turbulence in the air flow;
- c. Physical damage to the fume hood;
- d. Evidence of user modification, such as equipment or shelves mounted to the interior walls sides.
- e. The ability of the sash to open, close, and stay in a stationary position; and
- f. Proper function of the fume hood flow indicator and alarm, if present.

If the fume hood does not pass this inspection, the laboratory manager/ supervisor and department administration will be advised and requested to correct any deficiencies before the average face velocity check will be performed.

Average face velocity determination

Average face velocity will be determined by measuring air velocity at evenly distributed points in the plane of the sash face in the following manner:

- a. **For vertical rising sashes;** the sash is placed at a 12 inch opening, unless otherwise approved by the EHS office. The plane of the hood face is divided into three sections equal in area and the face velocity is measured for 20 second intervals in each section (Figure 1). The hood face velocity is the average velocity of these measurements.

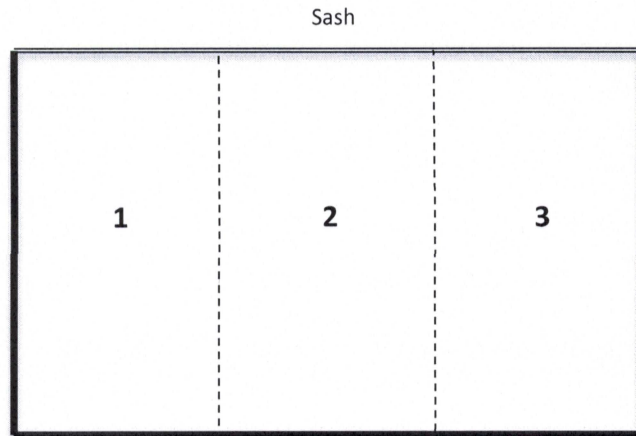


Figure 1: Opening of a fume hood with a vertical sash is divided into 3 sections. Numbers 1-3 indicate the areas in which face velocity measurements should be taken.

- b. **For horizontal sliding sashes;** the sashes are positioned in a typical work configuration with one or two in the center and with 6 inch openings on the sides (12 inch total opening) unless otherwise approved by the EHS office. Each opening is divided into two sections equal in area and the face velocity is measured for 20 second intervals within each section (Figure 2). The hood face velocity is the average velocity of these measurements.

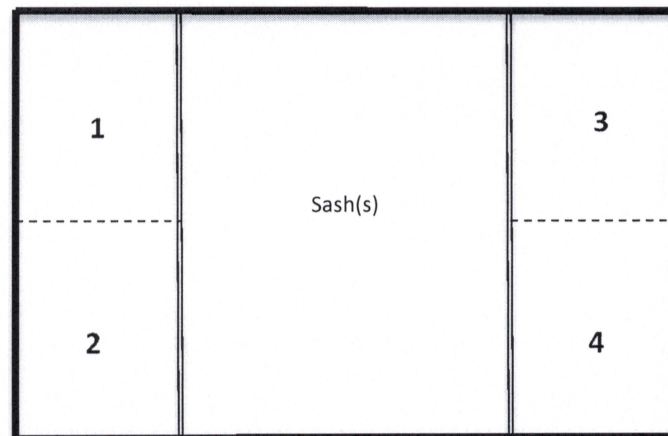


Figure 2: Openings of a fume hood with a horizontal sash are divided into 4 sections. Numbers 1-4 indicate the areas in which face velocity measurements should be taken.

- c. Dalhousie University requires the average face velocity at each of the above specified verification points to be between 0.4 m/sec (80 ft. /min) – 0.6 m/sec (120 ft. /min) as per Canadian Standards Association (CSA) Standard Z316.5 (Fume Hoods and Associated Exhaust Systems). Exceptions are allowable for High Performance Fume Hoods that are designed, manufactured and tested to operate safely at 0.25 m/sec (60 ft/min).
- d. Based on user requirements the EHS Office may approve fume hoods to be tested to a sash height greater than 12 inches. Signs will be placed on the fume hoods to indicate this change.
- e. Upon successful verification, a sticker will be placed on the front of the hood including the test date and initials of the inspector.
- f. If fume hood does not pass this inspection, the EHS office will prominently post a “do not use” sign (Appendix 1) printed on red paper and will advise the laboratory manager/supervisor or department administration of the failure and request that they contact Facilities Management to repair or make proper adjustments to the fume hood. Upon completion of the repair a re-verification shall be requested by the laboratory manager/supervisor.
- g. No further work shall be performed in the fume hood until successfully repaired.
- h. The “do not use” sign shall ONLY be removed by the EHS office once the fume hood has been successfully re-verified.
- i. Instruments used to perform the verification shall show evidence of current calibration.

G. Appendix 1



Environmental Health and Safety Office

Name: _____ Date: _____

Signature _____

ATTENTION
DO NOT USE THIS FUME HOOD

This fume hood did NOT pass inspection and should not be used.

Reason for failure: _____

For service or repair, contact your departmental / faculty administrator.

For EHS concerns, contact the Dalhousie EHS office @ (902) 494-2495.