



## Laboratory Hood Evaluation Procedure

### 1. PURPOSE AND SCOPE

1.1. This procedure describes methods for the evaluation, notification and repair of laboratory hoods (fume hoods) at the University of Notre Dame.

### 2. RESPONSIBILITIES

2.1. Principal Investigators (PI) shall develop a process to ensure that Lab personnel reporting to the PI:

- 2.1.1. Use only the laboratory hoods that have been approved for use by Risk Management and Safety (RM&S).
- 2.1.2. Notify RM&S or Notre Dame Utilities and Maintenance when a situation arises affecting the proper functioning of a hood.

2.2. Risk Management and Safety (RM&S) shall:

- 2.2.1. Maintain an inventory of laboratory hoods requiring inspection.
- 2.2.2. Evaluate all laboratory hoods at least annually.
- 2.2.3. Evaluate radioactive and hoods in labs approved to use radioactive material semi-annually.
- 2.2.4. Communicate to affected lab personnel if a hood is not functioning within the parameters described in Section 3.
- 2.2.5. Provide the appropriate Utilities and Maintenance personnel information on the results of the annual tests so corrective action can be taken.

2.3. Utilities and Maintenance shall:

- 2.3.1. Correct malfunctioning hoods as soon as practical following report from RM&S or contact for lab personnel.
- 2.3.2. Contact RM&S after corrective action is taken.

### 3. LABORATORY HOOD EVALUATION PROCESS

3.1 Evaluate hood with the Alnor ATM 410, Alnor Velometer Jr., or equivalent instrument. The instrument shall have verification of calibration within the manufacturer's recommendations.

#### 3.2 Vertical Sash Hoods

- 3.2.1 Open hood to 18 inches.
- 3.2.2 Take readings at six equidistant points across hood face.
- 3.2.3 Record readings on field datasheet (Appendix C). Information on the data sheet shall include date, time, name of individual conducting the test, any hood obstructions, results for each data point, and average hood face velocity.

- 3.2.4 If the average face velocity is between 72-132 feet per minute (fpm) affix a Test Result Sticker (Appendix A) on the left side of the hood. This range includes a +/- 10% margin of error. Enter average fpm, date, staff initials, and due date (one year from this test) on sticker.
- If any one of the six sections measures below 60 fpm due to an obstruction, inform lab personnel that the obstruction must be moved if possible.
  - If there is not an obstruction and any of the sections measures less than 60 fpm, RM&S shall submit a work order to Utilities and Maintenance.
- 3.2.5 If the average face velocity is at or below 60 fpm or greater than 150 fpm, RM&S shall:
- Affix a "Do Not Use" sign (Appendix B) on the front of the hood. If there are multiple sashes place a sign on each sash.
  - Inform the lab personnel that RM&S recommends the hood not be used and provide the reasons.
  - Contact Utilities and Maintenance and inform them of the hood status.
  - Enter a work request to have the hood repaired.
- 3.2.6 If the average face velocity is between 61-71 fpm RM&S shall:
- Inform the lab personnel that that the face velocity average is below the recommended values and that if possible the hood should not be used until adjustments can be made.
  - Enter a work request to have the hood repaired.
- 3.2.7 If the average face velocity is greater than 132 fpm but less than 150 fpm RM&S shall perform a smoke test.
- If smoke flows out of the hood follow the procedure listed in 3.2.5.
  - If smoke is drawn in, follow the procedure listed in 3.2.6.
- 3.2.8 Enter evaluation information in tracking database (Appendix D). Include building, room number, date of evaluation, average face velocity, and inspector's name.
- 3.2.9 Forward information regarding hoods that are out of compliance to Utilities and Maintenance.
- 3.2.10 Conduct a follow-up evaluation on hoods out of range after Utilities and Maintenance reports repairs have been completed.

### 3.3 Horizontal Sash/Walk-in Hoods

- 3.3.1 If hood has windows that may be opened both horizontally and vertically close all horizontal windows and open vertical window to 18 inches, then follow procedures listed in Sections 3.1 and 3.2.
  - 3.3.2 If window can only be opened horizontally, open from either left or right side then follow procedures listed in Sections 3.1 and 3.2.
  - 3.3.3 Walk in hoods shall be evaluated at an 18 inch opening following procedures listed in 3.1 and 3.2 with the exception of using the sticker in Appendix A if the hood is compliant.
- 3.4 Hoods used for radioactive material work
- 3.4.1 Laboratory hoods approved for radioactive material work shall be evaluated every six months in accordance with Notre Dame's Nuclear Regulatory Commission Broad Scope License. The hoods must draw a minimum of **100 fpm** at a face opening of **12 inches**.
  - 3.4.2 Open hood to 12 inches.
  - 3.4.3 Evaluate hoods using procedures listed in 3.1 and 3.2.
  - 3.4.4 If the hood draws at least 100 fpm, affix Test Result Sticker (Appendix A) on left side of hood.
  - 3.4.5 If the hood fails to meet the criteria of the NRC License, affix "Do Not Use" (Appendix B) sign on sash, and follow procedures listed in 3.2.5.
- 3.5 Vertical Sash Hoods required to be used with sash greater than 18"
- 3.5.1 Labs desiring to use hoods in a full-open position (>18") shall request RM&S to test the hood with the sash at that height prior to using the hood at a height >18".
  - 3.5.2 RM&S personnel shall evaluate the hood with the sash in full-open position or at the height the lab requires it. RM&S shall test the hood at the desired height and follow the procedures outlined in 3.2.
4. RECORD KEEPING
- 4.1 Face velocity records shall be maintained by RM&S for not less than three (3) years following the evaluation.
  - 4.2 Calibration records of the velometer shall be maintained by RM&S for not less than three years following the calibration.



### Revision History Table

History	Effective Date
3.2.4 – Added 10% adjustment for error in measurement per ANSI. Changed first bullet to 60 fpm from 80 fpm. 3.2.5 – Changed 80 fpm to 60 fpm. Added actions required by RM&S when face velocity is at or below 60 fpm or greater than 150 fpm. 3.2.6 – Added to include RM&S actions if face velocity average is 61-71 fpm. 3.2.7 – Changed the requirement when a smoke test is required to 132 fpm and below 150 fpm. 3.4.4 – Deleted “and enter information as listed in 3.2.4.” 3.4.5 – Changed “3.2.8 and 3.2.9” to 3.2.5. Appendix B – Modified wording.	August 2015
Throughout – wording clarifications	September 2015
Updated footer to align with new format	July 2017

## Appendix A Lab Hood Evaluation Sticker

0.0	41-500	100.0	100.0	SECURITY	APPROVED	PHASE
0.5	41-550	100.0	100.0	SECURITY	APPROVED	PHASE
0.0	41-600	100.0	100.0	SECURITY	APPROVED	PHASE

  

**WORKING**

**HEIGHT**

**APPROVED FOR:**

Storage Only

General Chemistry

Radiol isotopes

Carcinogen or Toxic Chemical Work

FACE VELOCITY

fpm

Date of Inspection:

Inspected by:

Expiration date:

Appendix B  
Lab Hood Do Not Use Form



# DO NOT USE

This hood shall not be used until repaired.  
The average face velocity is not within the  
established guidelines and may not provide  
adequate personal protection.

Risk Management and Safety has notified  
Maintenance and created a work request to  
repair this hood.

*For status update please contact your building  
maintenance representative.*

Date: \_\_\_\_\_

Time: \_\_\_\_\_

RM&S Representative \_\_\_\_\_



## Appendix C Fume Hood Evaluation Field Sheet

Building	Room No.	Hood No.	V or H	18" or Full	Pt. 1	Pt. 2	Pt. 3	Pt. 4	Pt. 5	Pt. 6	Avg. FPM	Date	Inspector	Notes

## Appendix D Fume Hood Evaluation Data Base Format

Building	Room No.	Hood No.	Type (V or H)	Height (18" or Full)	Avg. FPM	Date	Inspector	Notes