

FUME HOOD TESTING METHODOLOGY

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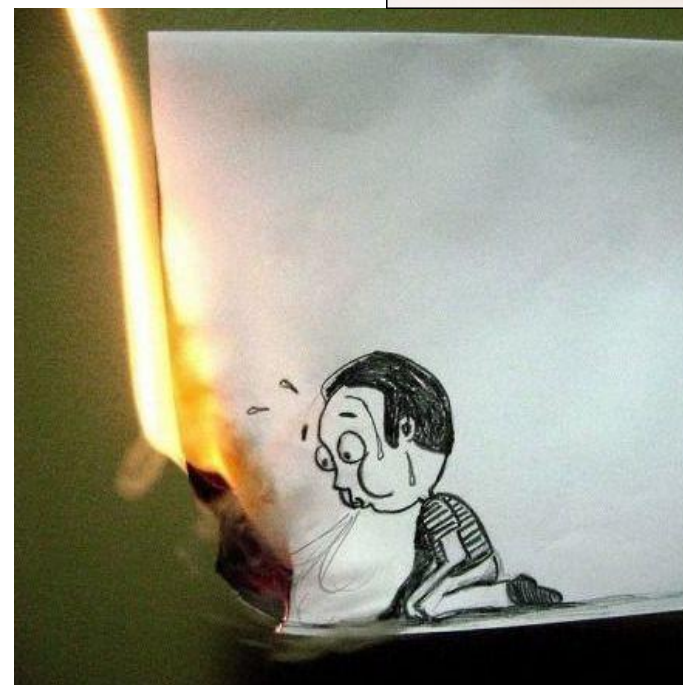
**University
of Victoria**

Occupational Health,
Safety & Environment





- Fume hood is a work surface
- Storage cabinet is for storage
 - Physically contains a fire
 - Smothers a fire with lack of oxygen (no air flow)
- Clean drips before returning to storage
- Use spill containing pans for liquids
- Segregate by chemical compatibility





Fume Hood Validation Certificate

WorkSafeBC →

_____ "A" Face Velocity Profile

WorkSafeBC →

_____ "B" Air Dynamics Tests

Best Practice

_____ "C" Sash Operations

Best Practice

_____ "D" Use and Operation

WorkSafeBC →

_____ "E" Alarm Calibration

Date Tested →

Date of Validation: _____ Due Date: _____

Comprehensive Report Ref. →

Model#: _____ Inventory #: _____

Certifier: _____

See Report for Details



- **A Face Velocity**

- **Pass/Fail**

- 0.40m/s to 0.60m/s

- individual reading within 20% of the average velocity

- UVic target 0.45m/s to 0.50m/s

- **B Air Dynamics**

- **Pass/Fail**

- Smoke testing to demonstrate containment

- Reverse flow; looping; eddying; or turbulence

- **E Alarm**

- **Pass/Fail**

- Calibrated to alarm when face velocity drops below 0.4m/s



- **C Sash Operation**

- Yes/No

- Ensure sash can maintain opening at designated height

- Moves freely

- **D Use & Operation**

- Yes/No

- Apparatus a minimum of 15cm from the hood face

- Does not adversely affect airflow into the hood

- **Values are reported as %**

- a pass in 4 of 5 criteria would give 60%

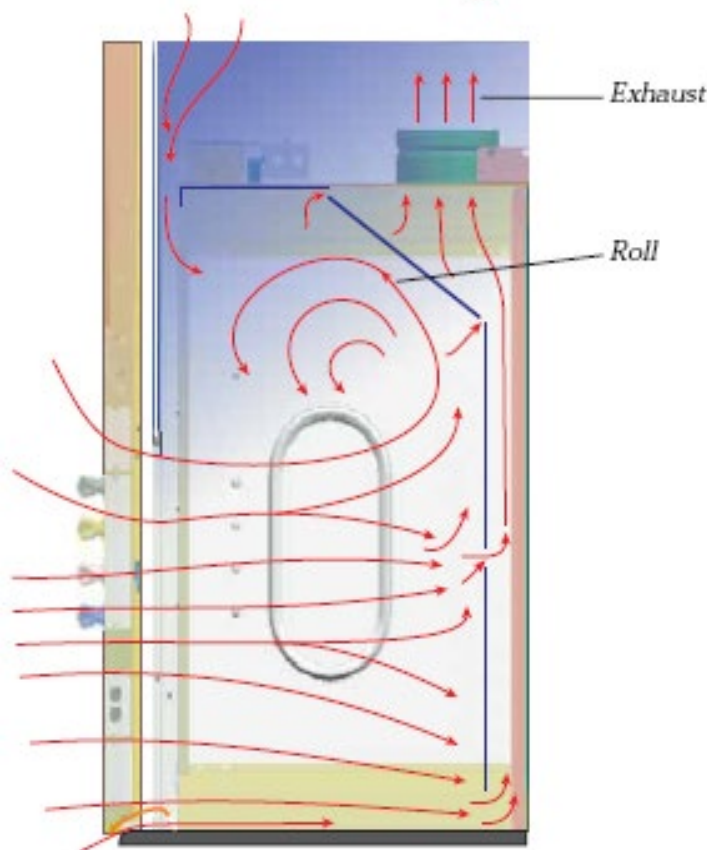
- Individual criteria are available in the Comprehensive Report available by request from OSHE



Regular

- Provide **operator protection** while using solvent vapours and dilute corrosive solutions
- Types of chemicals being used
 - Solid toxic chemicals
 - Volatile chemicals
 - Dilute corrosive solutions

Traditional Hood Design

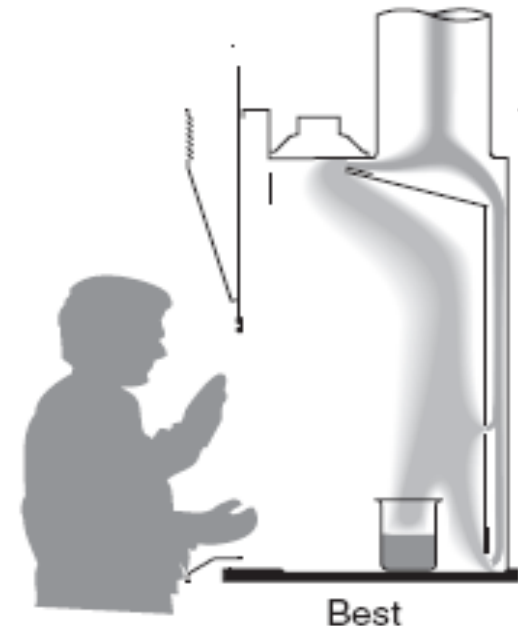
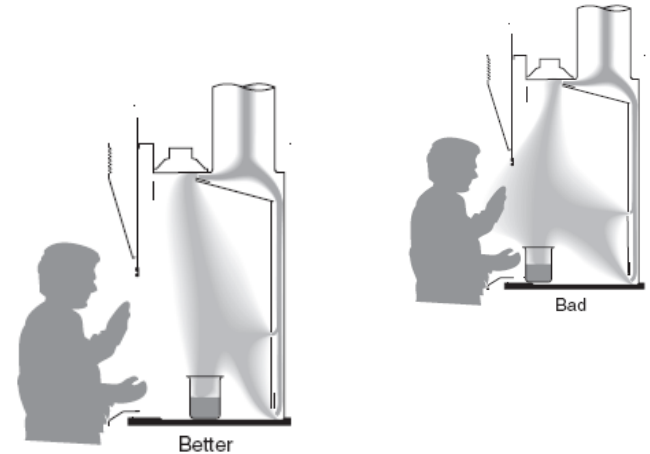


Corrosion resistant

- Provide **operator protection** while using solvent vapours and concentrated corrosive solutions
- Types of chemicals being used
 - Solid toxic chemicals
 - Volatile chemicals
 - Concentrated corrosive solutions



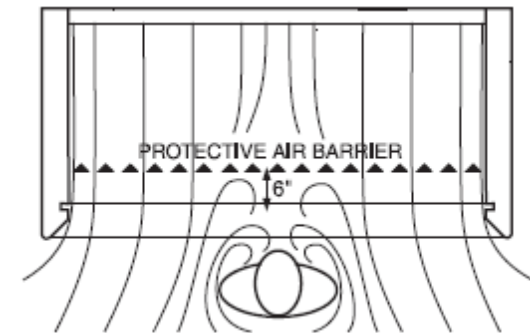
- Check air flow
- Adjust sash height to indicated level
 - Sash also functions as a splash shield
- Turn on the light
- Use slow, direct movements to avoid drawing the contaminant out of the hood.
- Keep foot traffic and air currents in front of the hood to a minimum to avoid disrupting the airflow into the hood.
- Compressed air guns can dramatically alter the flow of a hood



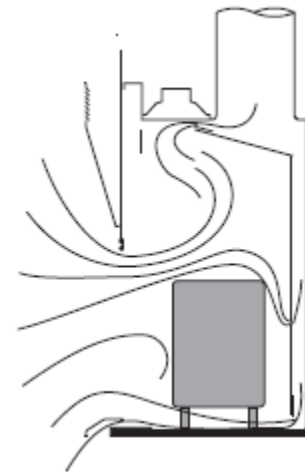
Reduce clutter to increase protection



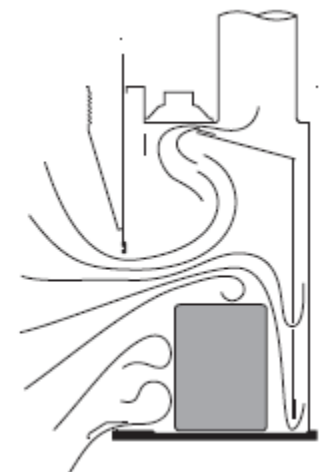
- Position work at least 15cm into the hood to ensure the hood airflow captures the hazard



- Do not block the air flow to the rear of the hood
- Reduce fume hood clutter or use a shelf to maintain clear airflow
- Used for working with chemicals
- Storage should be in designated chemical storage cabinets



Good



Bad



- Labconco 3:18min
- Labconco Fume Hood Airflow & Operation
<http://www.youtube.com/watch?v=q2Pp3wge2j8>
- Good video. Short, fast paced with smoke demonstrations of critical use elements raising equipment, cross ventilation, and quick adjustments causing spillage.

- Dartmouth College & the National Institute of Health 7:51min
- Chemical Fume Hood Animation in English
www.youtube.com/watch?v=nIAaEpWQdwADart
- Slow moving video with good cartoon animation of ventilation flow.

- UC Berkeley 3:38min
- UC Berkeley EHS Fumehood Safety
<http://www.youtube.com/watch?v=N8YD1aXygdU>
- Adequate basic video. Some good labels on fume hood and airflow monitor explanations. Smoke showing containment and turbulence.