

## **Mott Manufacturing Limited**

452 Hardy Road,  
PO Box 1120,  
Brantford, Ontario, Canada, N3T 5T3.  
Telephone: 519-752-7825  
Fax: 519-752-2895  
Web Site: www.mott.ca

### **Fume Hood Performance Test**

Test Date: 28-Apr-05

Model Number: 7421000

Test Results Applicable to the following models:

7421000  
7421040  
7423000  
7423040  
7424000  
7424040  
7425000  
7425040  
7426000  
7426040

Test Conducted By: A. Sinnamon  
Report Prepared By: A Sinnamon

## **Fume Hood Test Report**

Test Date(s)	28-Apr-05
Manufacturer:	Mott Manufacturing
Model:	7421000
Serial number:	0
Sash type:	vertical
Exterior width:	72 inches
Exterior height:	54.25 inches
Exterior depth:	32.625 inches
Tracer gas release rate:	4 l/min
Test conditions:	Full open sash

The above fume hood was tested the ASHRAE 110-95 protocol. Tests included smoke flow visualization, face velocity measurement and tracer gas. The hood was installed in Mott Manufacturing's in-factory test lab. All instruments are calibrated annually or verified on the day of use. Detailed information on the test equipment is available on request.

Results are summarized below for all tests. For detailed results see attached charts and graphs.

Large Volume Smoke Flow Visualization. A smoke "bomb" is used to produce a large volume smoke challenge within the hood. Large volume smoke visualization is rated qualitatively and is assigned a pass/fail result. ASHRAE 110 defines a fail as "A release of smoke from the hood that is steady and visible"

Rating: Pass Notes:

Local Smoke Visualization. A smoke pencil is used to produce a local source of smoke for detailed visualization. Local smoke visualization is rated qualitatively and is assigned a pass/fail result. ASHRAE 110 defines a fail as "Visible smoke flow out of the front of the hood"

Rating: Pass Notes:

Face Velocity Profile. A calibrated anemometer is used to measure velocities in one square foot areas across the open face of the fume hood. Results are tabulated by computer and charted. Average face velocity, as well as percentage positive and negative variation are noted here.

Average face Velocity	94
Positive Variance:	19%
Negative Variance:	-15%

Static Tracer Gas Tests: A mannequin is installed in front of the fume hood at the left, centre and right positions. Tracer gas is released at the specified rate and leakage rates are logged for a five minute period. Results for the position with the highest leakage rate are averaged to produce a rating. Rating is expressed as AM x.xx where x is the average release rate in parts per million.

Mannequin Left Rating:	AM	0.004 ppm
Mannequin Right rating:	AM	0.004 ppm
Mannequin Centre rating:	AM	0.002 ppm

Sash Movement Effect Tracer Gas Test: A mannequin is installed in front of the fume hood in the centre position, Gas is released at the specified rate and the sash is opened and closed on two minute intervals. The maximum peak reading during this test is known as the Sash Movement Effect. rating is expressed as SME-AM x.xx where x is the peak release rate in parts per million.

Sash Movement Effect Rating:	SME-AM	0.004 ppm
------------------------------	--------	-----------

Perimeter Scan: Mannequin is not used. Tracer gas ejector is positioned in the centre of the fume hood six inches behind the sash plane. The probe is traversed around the sash opening one inch outside the hood. Gas is released at the specified rate. The maximum peak reading during this test is recorded.

Perimeter Scan Rating:	Peak	0.002 ppm
------------------------	------	-----------

Conclusions: The above test results demonstrate fume hood performance meets the pass criteria set forth in ANSI/AIHA Z9.5-2003

Certification: I have reviewed the complete contents of this report and confirm that the details presented are complete and accurate.

All tests were conducted according to the protocols identified  
All equipment was calibrated as reported  
The fume hood identified was the fume hood tested  
The fume hood performance was as reported

Signature below confirm agreement with all performance data presented in this report..

Test Performed By:



---

Andy Sinnamon  
Mott Manufacturing  
Testing Technician

# Mott Manufacturing Ltd

## Face Velocity Test

**Project:** Standard Hood Testing

**Test No:**

**Test Performed By:** A. Sinnamon

**Date:** 28-Apr-05

**Room Number**

**Fume Hood Serial no:** Production Sample

**Fume Hood Model No:** 7421000

**Fume Hood Description:** Pro Series Bench Hood - Stepped Baffle

**Sash Type** Vertical

Fume Hood Overall Dimensions (L x D x H in): 72 x 32.625 x 54.25

**Target Face Velocity (ft/min):** 100

**Connection:** Phoenix Valve #2

Phoenix setting: 1250

Fan RPM: n/a Damper Setting - % Open: n/a Var Speed Cont: n/a

Sash Height (in): 29.5 Face Width (in): 62.5 Interior Depth (in): 24

Static n/a

### Sash Cells

Horizontal Cells 5 Vertical Cells 3 Sash Cell Area : 0.853588

Sash Cell Height (in): 9.833333 Sash Cell Width (in): 12.5

(sq ft)

### Sash Cell Centre Line Coordinates referenced from Lower Left Corner

#### Actual Face Velocity Measurements (ft/min)

CELL		A	B	C	D	E	F	G	H	I	K
	location	6.25	18.75	31.25	43.75	56.25	N/A	N/A	N/A	N/A	N/A
1	24.583333	104	94	90	97	98					
2	14.75	98	85	80	83	89					
3	4.9166667	112	99	91	93	97					
4	N/A										
5	N/A										
6	N/A										
7	N/A										
8	N/A										

#### Measured Variance from Average

CELL		A	B	C	D	E	F	G	H	I	K
	location	6.25	18.75	31.25	43.75	56.25	N/A	N/A	N/A	N/A	N/A
1	24.583333	11%	0%	-4%	3%	4%					
2	14.75	4%	-10%	-15%	-12%	-5%					
3	4.9166667	19%	5%	-3%	-1%	3%					
4	N/A										
5	N/A										
6	N/A										
7	N/A										
8	N/A										

**Average Face Velocity (ft/min):**

94

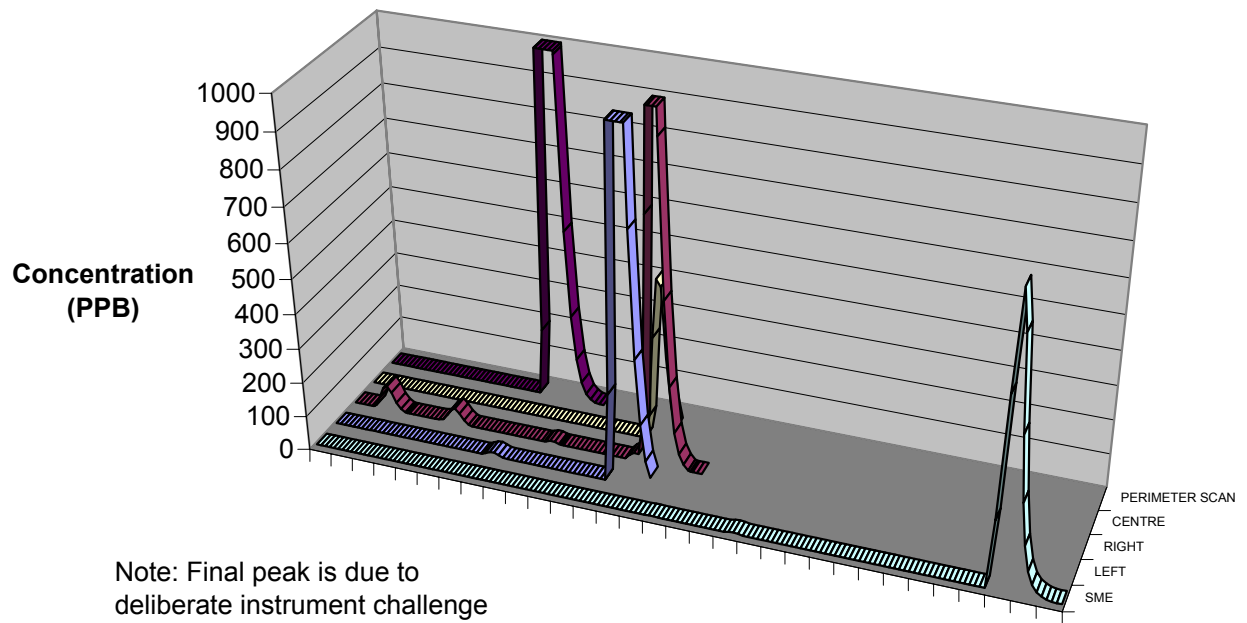
**Variance Actual Overall Face Velocity to Target Face Velocity:**

-6.05%

#### Results Summary @ STP

	ft/min	% Variance
<b>Overall Average Face Velocity</b>	<b>94</b>	
<b>Maximum Face Velocity</b>	<b>112</b>	<b>19%</b>
<b>Minimum Face Velocity</b>	<b>80</b>	<b>-15%</b>
<b>Average Exhaust Volume (CFM):</b>	<b>1203</b>	

## Tracer Gas Test Results



Note: Final peak is due to deliberate instrument challenge and does not indicate a loss of containment