



**ETL SEMKO**

3933 US Route 11  
Cortland, NY 13045  
Ph: (607) 753-6711  
Fax: (607) 753-7560  
Web: [www.intertek.com](http://www.intertek.com)

May 19, 2006

Intertek Order No. 3097239/001

Mr. Ben Kaepfner  
Engineering Dynamics Ltd.  
137 Pick Road RR1  
Carleton Place  
Ontario, CAN K7C3P1

Dear Mr. Kaepfner:

Please find enclosed Intertek Report No. 3097239-002 covering tests performed according to client specifications based on ASHRAE Standard 52.2-1999 on the V8 Pocket air filter.

The testing was authorized by receipt of deposit.

Thank you for turning to Intertek for your testing requirements. If you have any questions or further needs, please do not hesitate to contact me.

Sincerely,

Teresa M. Peck, CAFS  
Technical Team Leader  
Air Quality

TP

Enclosure



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Order No. 3097239/001

Date: May 19, 2006

**REPORT NO. 3097239-002**

**TEST OF ONE  
V8-2 POCKET  
AIR FILTER**

**RENDERED TO**

**ENGINEERING DYNAMICS LTD.  
137 PICK ROAD RR1  
CARLETON PLACE  
ONTARIO, CAN K7C3P1**

**General**

This report covers a test of one air filter, performed according to client specifications based on ASHRAE Standard 52.2-1999 entitled "Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size".

Testing was authorized by receipt of deposit.

**Identification of Test Specimen**

The filter tested was designated as one V8-2 Pocket air filter. A description is included in the data section on page four of this report.

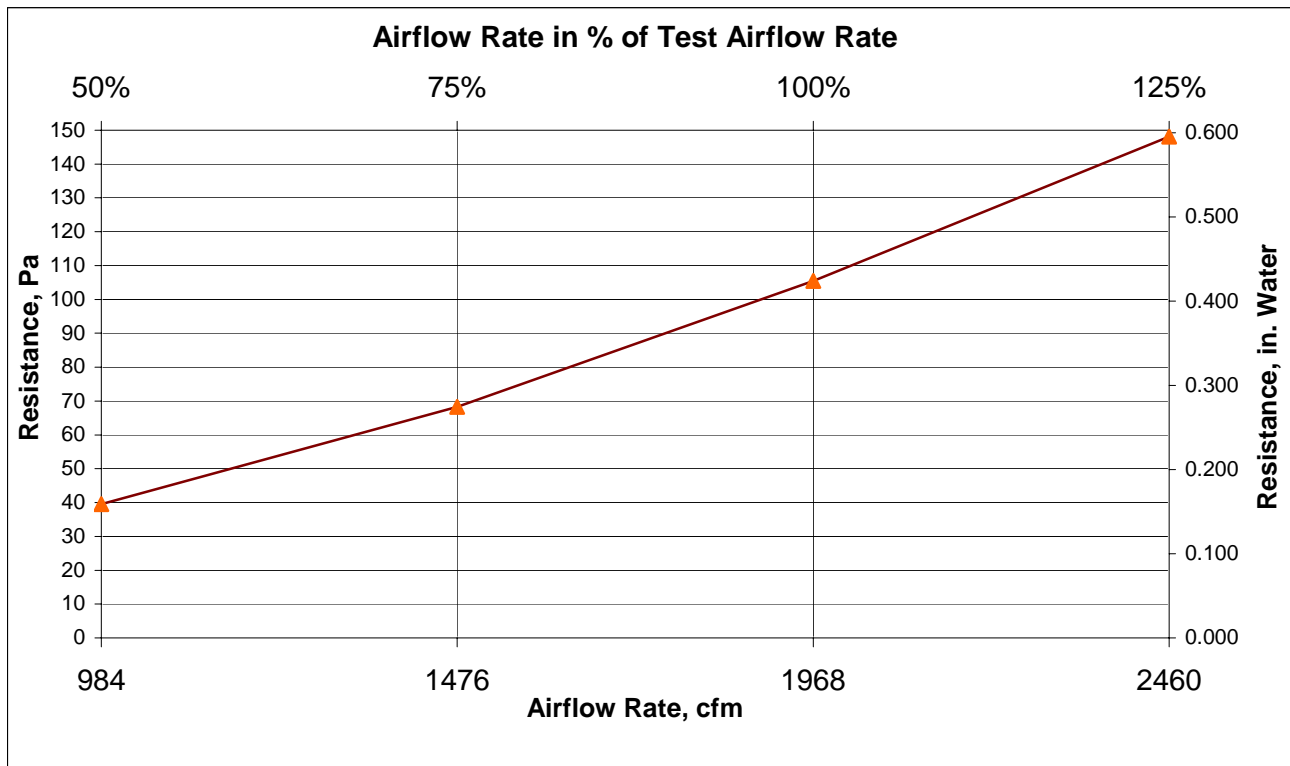
**Method of Test**

Tests were conducted as specified by the client based on ASHRAE Standard 52.2-1999. The test program consisted of measurement of initial resistance versus airflow rate (Section 9), and the test program for determination of particle size efficiency (Section 10). The test apparatus used was that specified in the above referenced standard. AC Fine Synthetic Test Dust was used for dust loading.

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An independent organization testing for safety, performance, and certification.

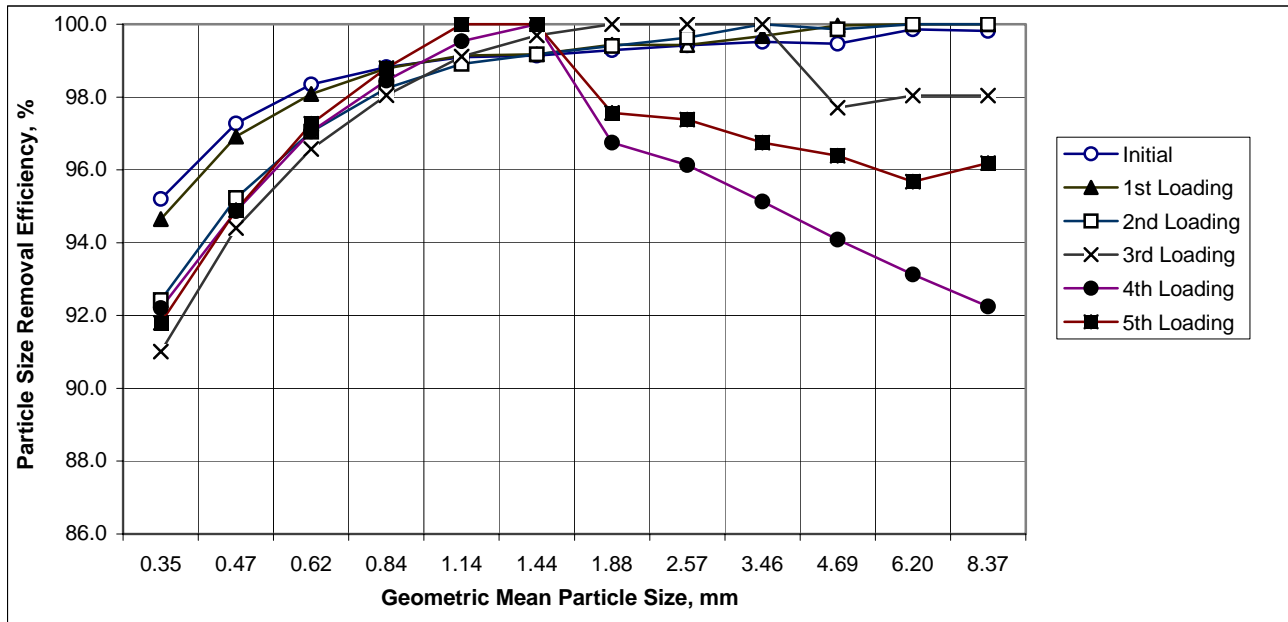
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Graph 1: Resistance of Clean Device vs. Airflow

Airflow Rate in % of Test Airflow Rate	Air Velocity		Airflow Rate		Resistance	
	m/s	fpm	m <sup>3</sup> /s	cfm	Pa	in H <sub>2</sub> O
50%	1.25	246.0	0.46	984	40	0.159
75%	1.87	369.0	0.70	1476	68	0.275
100%	2.50	492.0	0.93	1968	105	0.424
125%	3.12	615.0	1.16	2460	148	0.595

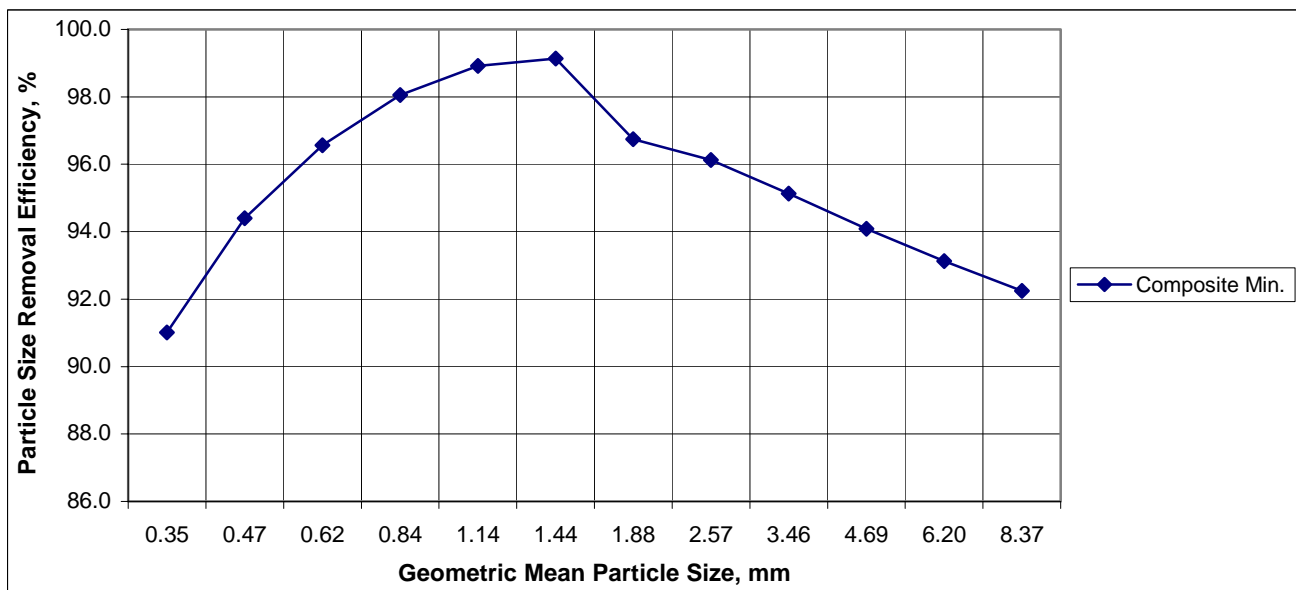
Table 1: Resistance of Clean Device vs. Airflow



Graph 2: PSE After Incremental Dust Loading

Range Number	1	2	3	4	5	6	7	8	9	10	11	12
Size Range, $\mu\text{m}$	0.30-0.40	0.40-0.55	0.55-0.70	0.70-1.00	1.00-1.30	1.30-1.60	1.60-2.20	2.20-3.00	3.00-4.00	4.00-5.50	5.50-7.00	7.00-10.00
Geometric Mean Particle Size, $\mu\text{m}$	0.35	0.47	0.62	0.84	1.14	1.44	1.88	2.57	3.46	4.69	6.20	8.37
Initial	95.2	97.3	98.3	98.8	99.1	99.1	99.3	99.4	99.5	99.5	99.9	99.8
1st Loading	94.6	96.9	98.1	98.8	99.1	99.2	99.4	99.4	99.7	100.0	100.0	100.0
2nd Loading	92.4	95.2	97.0	98.2	98.9	99.2	99.4	99.6	100.0	99.9	100.0	100.0
3rd Loading	91.0	94.4	96.6	98.1	99.1	99.7	100.0	100.0	100.0	97.7	98.0	98.0
4th Loading	92.2	94.9	97.1	98.5	99.5	100.0	96.7	96.1	95.1	94.1	93.1	92.2
5th Loading	91.8	94.9	97.3	98.8	100.0	100.0	97.6	97.4	96.7	96.4	95.7	96.2
Composite Minimum	91.0	94.4	96.6	98.1	98.9	99.1	96.7	96.1	95.1	94.1	93.1	92.2

Table 2: Particle Size Efficiency



Graph 3: Composite Minimum Efficiency Curve



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## Air Cleaner Performance Report Summary

Operator:	<i>J. Wheatley, N. Mrozowski, S. Hammond</i>	Test Date:	<i>May 19, 2006</i>
Supervisor:	<i>T. Peck</i>	Report Number:	<i>3097239-002</i>
		Order Number:	<i>3097239/001</i>

### Device Manufacturer's Data

Manufacturer: *Engineering Dynamics Ltd.*  
Device Model Designation: *V8-2*  
Test Requested By: *Engineering Dynamics Ltd.*  
Sample Obtained From: *supplied by client*

### Catalog Ratings

Airflow Rate: *Not specified*  
Initial Pressure Drop: *Not specified*

### Specified Test Conditions

Airflow Rate: *492 fpm (1968 cfm)*  
Final Pressure Drop: *349 Pa (1.40"w.g.)*

### Device Description

Height:	<i>24 inches</i>	Width:	<i>24 inches</i>	Depth:	<i>29 inches</i>
Generic Name:	<i>V8 Pocket</i>				
Media Type:	<i>Polyester</i>	Approx. Media Area:	<i>65 square feet</i>		
Media Color:	<i>White</i>	Adhesive Present?:	<i>no</i>		
Other Attributes:	<i>9.5kv</i>				

### Test Conditions

Airflow Velocity:	<i>492 fpm (1968 cfm)</i>		
Temperature Range:	<i>63-67 degF</i>	RH% Range:	<i>40-54 %</i>
Test Aerosol Type :	<i>KCI</i>		
Final Pressure Drop:	<i>349 Pa (1.40"w.g.)</i>		
Remarks:	<i>AC Fine Dust</i>		

### Resistance Test Results

Initial Resistance: *106 Pa (0.42 "w.g.)*      Final Resistance: *349 Pa (1.40 "w.g.)*

### Minimum Efficiency Reporting Data

Composite Average Efficiencies:	<i>Not tested</i>
MERV 1-4 Air Cleaner Average Arrestance per Std. 52.1:	<i>Not tested</i>
Minimum Efficiency Reporting Value (MERV):	<i>Not tested</i>

Report Prepared By:

Report Approved By:

*J. Wheatley*  
Technician

*T. Peck*  
Technical Team Leader

Sample	Dust Loading Schedule				Actual		Dust loaded	
	Beginning		Target		pa	wg	gms	oz
	pa	wg	pa	wg				
D1	105.6	0.424	107.5	0.43	107.5	0.432	30	1.058
D2	107.5	0.432	167.9	0.67	160	0.643	2355	83.07
D3	167.9	0.674	228.3	0.92	225	0.904	1322	46.63
D4	228.3	0.917	288.6	1.16	290	1.165	475	16.76
D5	288.6	1.159	349	1.4	349	1.402	400	14.11