

February 12, 2002

ITS Order No. 3017168-412

Mr. Rupert Langston  
Air Flow Technology, Inc.  
4810 70<sup>th</sup> Avenue  
Kenosha, WI 53144

Dear Mr. Langston;

Please find enclosed three copies of ITS Report No. 3017168-002 covering ASHRAE Standard 52.2-1999 tests performed on the model Series 615 2 ply flat panel air filter.

The testing was authorized by purchase order number 010302-RL.

Thank you for turning to ITS 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





Intertek Testing Services  
3933 US Route 11  
PO Box 2040  
Cortland, NY 13045-0950

Order No. 3017168-412

Date: February 12, 2002

**REPORT NO. 3017168-002**

**TEST OF ONE  
SERIES 615 2 PLY  
FLAT PANEL AIR FILTER**

**RENDERED TO  
AIR FLOW TECHNOLOGY, INC,  
4810 70<sup>TH</sup> AVENUE  
KENOSHA, WI 53144**

**General**

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

Testing was authorized by purchase order number 010302-RL.

**Identification of Test Specimen**

The filter tested was designated as series 615 2 ply flat panel air filter. A description is included in the data section on page four of this report.

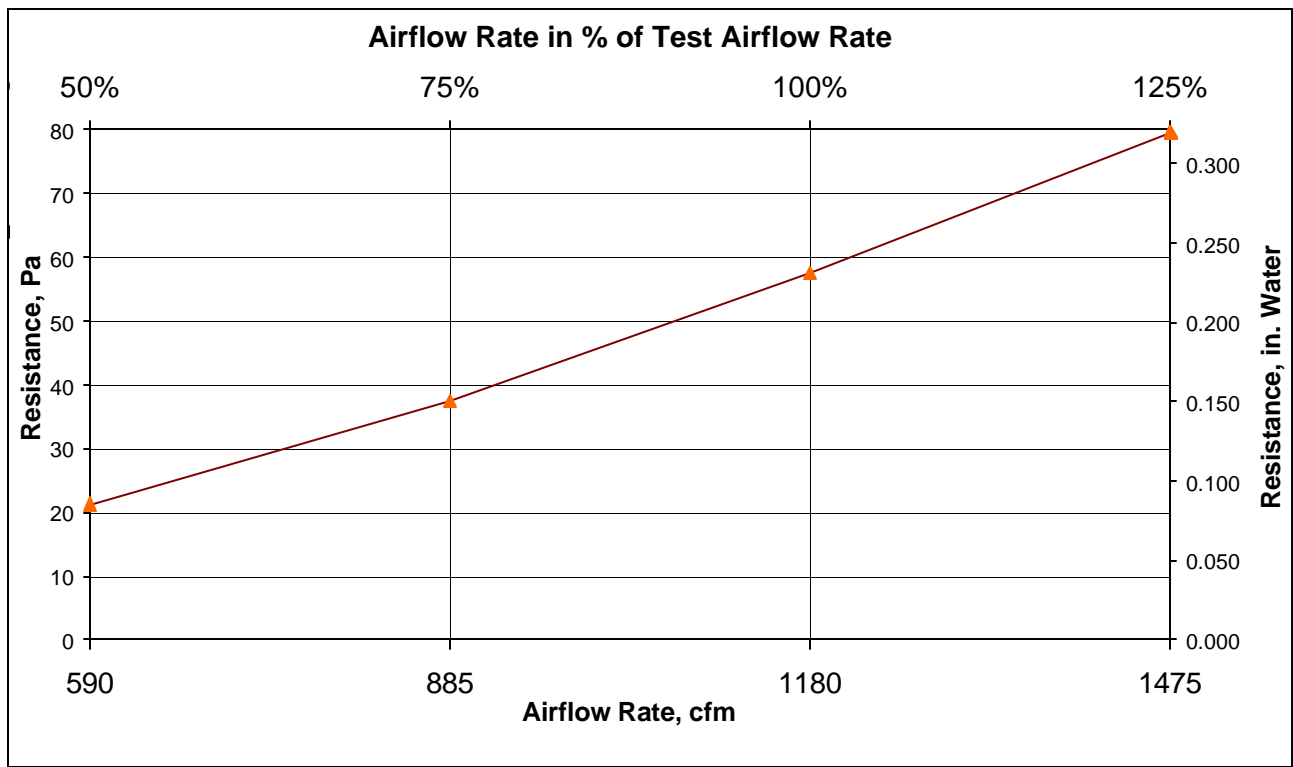
**Method of Test**

Tests were conducted as specified in 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. ASHRAE Synthetic Test Dust, as specified in Section 6.2, was used for dust loading.

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

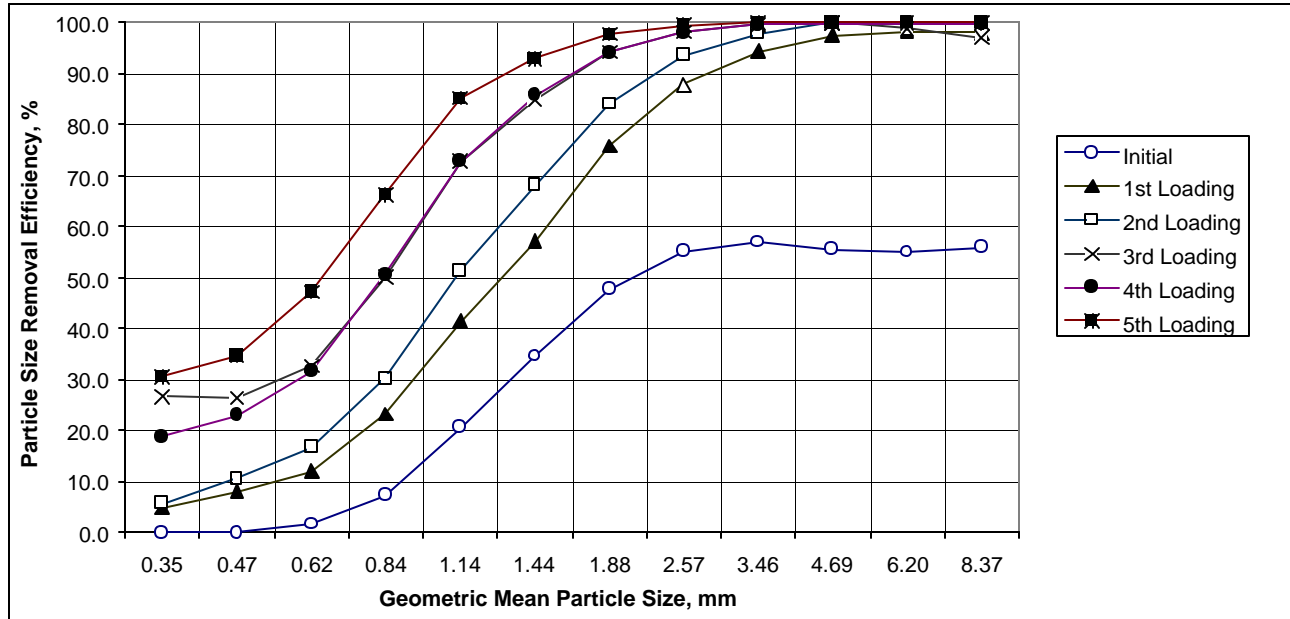
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Airflow Rate in % of Test Airflow Rate	Air Velocity		Airflow Rate		Resistance	
	m/s	fpm	m <sup>3</sup> /s	cfm	Pa	in H <sub>2</sub> O
50%	0.75	147.5	0.28	590	21	0.086
75%	1.12	221.3	0.42	885	37	0.150
100%	1.50	295.0	0.56	1180	58	0.231
125%	1.87	368.8	0.70	1475	80	0.320

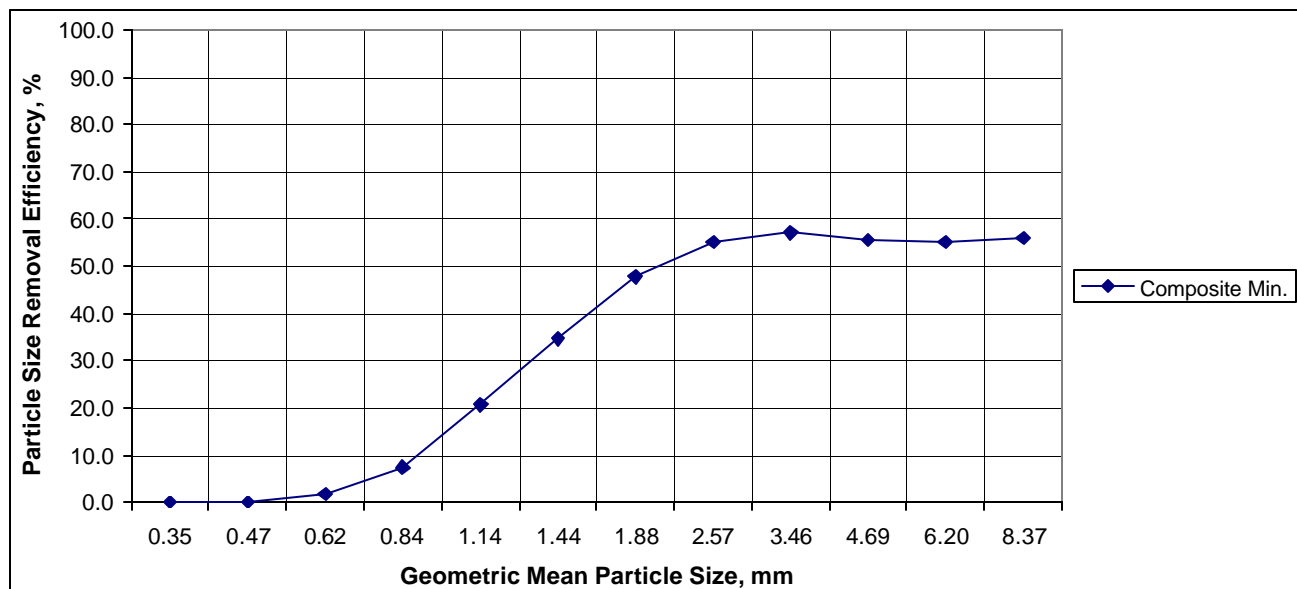
**Table 1:** Resistance of Clean Device vs. Airflow



Graph 2: PSE After Increment:

Range Number	1	2	3	4	5	6	7	8	9	10	11	12
Size Range, ?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, ?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	0.0	0.0	1.7	7.4	20.6	34.6	47.8	55.1	57.0	55.5	55.0	56.0
1st Loading	4.8	8.1	12.0	23.3	41.5	57.1	75.8	87.9	94.4	97.5	98.4	98.1
2nd Loading	5.8	10.6	16.7	30.1	51.4	68.2	84.1	93.6	97.9	100.0	100.0	100.0
3rd Loading	26.7	26.4	32.6	50.1	72.9	85.0	94.3	98.2	99.6	100.0	98.8	97.1
4th Loading	18.8	23.0	31.7	50.6	72.9	85.8	94.1	98.1	99.6	99.9	99.8	99.9
5th Loading	30.7	34.6	47.2	66.3	85.2	93.0	97.8	99.5	100.0	100.0	100.0	100.0
Composite Minimum	0.0	0.0	1.7	7.4	20.6	34.6	47.8	55.1	57.0	55.5	55.0	56.0

Table 2: Particle Size Efficiency



Graph 3: Composite Minimum



### ASHRAE 52.2 Air Cleaner Performance Report Summary

Operator: *J. Wheatley*      Date: *February 12, 2002*  
 Supervisor: *T. Peck*      Report Number: *3017168-002*  
    Order Number: *3017168-412*

#### Device Manufacturer's Data

Manufacturer: *Air Flow Technology, Inc.*  
 Device Model Designation: *Series 615 2 ply panel*  
 Test Requested By: *Air Flow Technology, Inc.*  
 Sample Obtained From: *Open Market Purchase*

#### Catalog Ratings

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

#### Specified Test Conditions

Airflow Rate: *295 fpm (1180cfm)*  
 Final Pressure Drop: *249 Pa (1.00"w.g.)*

#### Device Description

Height: *23 7/8 inches*      Width: *23 7/8 inches*      Depth: *3/4 inches*  
 Generic Name: *Flat Panel*  
 Media Type: *Synthetic*      Approx. Media Area: *4 square feet*  
 Media Color: *Blue/White*      Adhesive Present?: *Yes*  
 Other Attributes: *-*

#### Test Conditions

Airflow Velocity: *295 fpm (1180cfm)*  
 Temperature Range: *61-68 degF*      RH% Range: *25-47%*  
 Test Aerosol Type: *KCl*  
 Final Pressure Drop: *259 Pa (1.04"w.g.)*  
 Remarks: *Filter tested white media upstream, blue downstream*

#### Resistance Test Results

Initial Resistance: *57 Pa (0.23"w.g.)*      Final Resistance: *259 Pa (1.04"w.g.)*

#### Minimum Efficiency Reporting Data

Composite Average Efficiencies: *E1 = 2.3%, E2 = 39.5%, E3 = 55.9%*  
 MERV 1-4 Air Cleaner Average Arrestance per Std. 52.1: *Not Tested*  
 Minimum Efficiency Reporting Value (MERV): *MERV 7 @ 295 fpm*

Report Prepared By:

Report Reviewed By:

Report Approved By:

*J. Wheatley*  
 Technician

*T. Peck*  
 Technical Team Leader

*J. Sabelli*  
 Staff Engineer