



**AIR PERMEANCE TEST REPORT**

**Rendered to:**

**LAMTEC CORPORATION**

**PRODUCT: WMP-VR**

**Report No: 91673.01-106-31**  
**Report Date: 06/09/09**  
**Test Record Retention Date: 05/27/13**  
**Revision 1: 08/17/15**



**AIR PERMEANCE TEST REPORT**

Rendered to:

LAMTEC CORPORATION  
5010 River Road  
Mt. Bethel, Pennsylvania 18343-5610

Report No: 91673.01-106-31  
Test Dates: 05/15/09  
Through: 05/27/09  
Report Date: 06/09/09  
Test Record Retention Date: 05/27/13  
Revision 1: 08/17/15

**Product:** WMP-VR Polypropylene / Scrim / Kraft Laminate

**Project Summary:** Architectural Testing, Inc., an Intertek company ("Intertek-ATI"), was contracted by Lamtec Corporation, to conduct air permeance testing on five 44 in. x 44 in. samples of their WMP-VR. The following table lists the average air permeance values obtained:

<b>Air Pressure, Pa</b>	<b>Air Permeance. L/(Pa·m<sup>2</sup>·s)</b>
<b>25</b>	2 x 10 <sup>-06</sup>
<b>50</b>	1 x 10 <sup>-06</sup>
<b>75</b>	1 x 10 <sup>-06</sup>
<b>100</b>	1 x 10 <sup>-06</sup>
<b>150</b>	1 x 10 <sup>-06</sup>
<b>300</b>	<1 x 10 <sup>-06</sup>

Lamtec's WMP-VR is a Polypropylene / Scrim / Kraft Laminate, with the polypropylene film layer providing the air barrier properties. As such, Lamtec's other products manufactured with this same polypropylene layer are expected to provide similar air barrier performance. Such products include:

- |        |               |
|--------|---------------|
| WMP-10 | WMP-UV        |
| WMP-30 | WMP-VR-R Plus |
| WMP-50 | Gymguard      |
| WMP-F  | Arenashield   |

**Test Method:** The specimens were tested and evaluated according to ASTM E 2178-03, *Standard Test Method for Air Permeance of Building Materials*.

**Test Procedure:** The test specimen was prepared according to Figure 1 of the ASTM method, utilizing self-adhesive gaskets and 4 mil thick polyethylene sheeting. It was then placed on a nominal 40 in. x 40 in. steel grid placed on top of the test chamber, and duct tape was used to seal any air pathways around the perimeter of the test specimen and steel grid. The test specimen and metal grid were tightly secured to the top of the test chamber utilizing eight pressure clamps. Photographs of a typical test specimen and test assembly can be found in Appendix A.

The test specimen was then tested at preset air pressures ranging from 25 Pa to 300 Pa. Upon completion of the cycle, the polyethylene "tare" sheet was cut open and peeled away from the test specimen's surface. The test specimen was tested again at preset air pressures ranging from 25 Pa to 300 Pa. After completion of the test cycle the specimen was removed from the test machine, and the remaining four additional test specimens were prepped, loaded on to the machine, properly sealed and tested using the same procedure. Upon completion of the five tests, the air permeance of the set was calculated and graphically displayed.

**Test Results:** The individual results are reported in the following table. A graph of Measured Flow Rate versus Air Pressure can be found in Appendix B.

Air Pressure, Pa	Measured Flow Rate, L/(s·m <sup>2</sup> )				
	Sample ID (Sample # from Graph)				
	1 (333)	2 (334)	3 (335)	4 (340)	5 (337)
25	< 0.0001	< 0.0001	< 0.0001	0.0002	0.0008
50	< 0.0001	0.0005	< 0.0001	< 0.0001	< 0.0001
75	0.0006	< 0.0001	0.0002	< 0.0001	0.0004
100	< 0.0001	0.0002	< 0.0001	0.0004	0.0005
150	0.0003	< 0.0001	< 0.0001	0.0011	0.0009
300	0.0001	< 0.0001	< 0.0001	0.0006	0.0004

**Test Results:** The average results are reported in the following table.

Air Pressure, Pa	Average Flow Rate, L/(s·m <sup>2</sup> )	Calculated Flow Rate, L/(s·m <sup>2</sup> )
25	0.0002	< 0.0001
50	0.0001	0.0001
75	0.0002	0.0001
100	0.0002	0.0001
150	0.0005	0.0001
300	0.0002	0.0001

Data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Intertek-ATI for a period of four years from the original test date. At the end of this retention period such materials shall be discarded without notice and the service life of this report by Intertek-ATI will expire. Results obtained are tested values and were secured by using the designed test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimens tested. This report may not be reproduced, except in full, without the written approval of Intertek-ATI.

For INTERTEK-ATI:

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Components / Materials Testing

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Technician Team Lead  
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JMB:dmc/kf

Attachments (pages)      This report is complete only when all attachments listed are included.  
Appendix A - Photographs (1)  
Appendix B - Air Permeance Graph (1)

### Revision Log

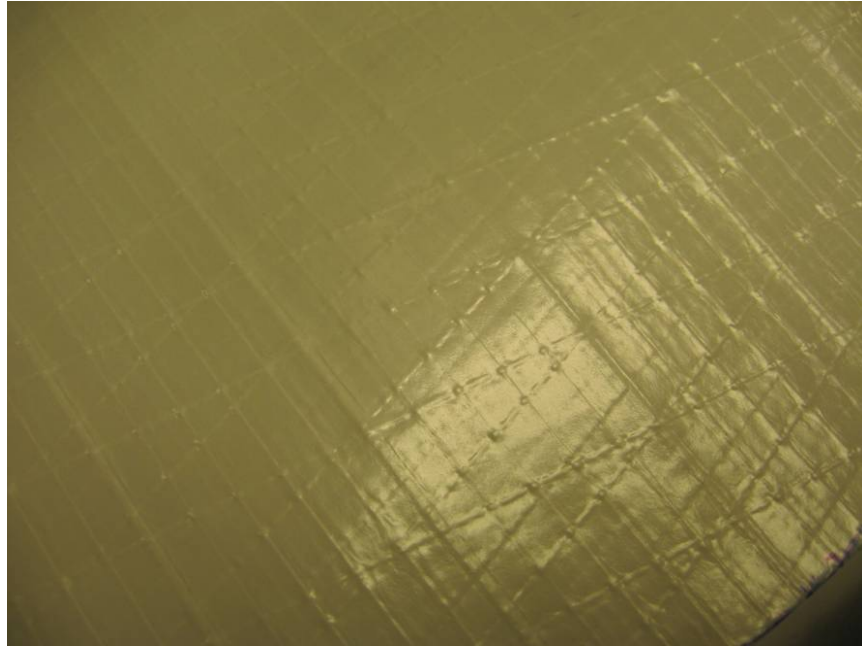
<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	06/09/09	N/A	Original report issue.
1	08/17/15	Cover, 1	Changed "Expiration Date" to "Test Record Retention Date"
		1	Changed Lamtec address to reflect current location.
		1, 2	Changed all flow rate units from L/s to L/(s·m <sup>2</sup> ); revised the look of all unit designations
		1, 3	Changed all "Architectural Testing" references to "Intertek-ATI"



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## **APPENDIX A**

### **Photographs**



**Photo No. 1**  
**WMP-VR Polypro and Kraft Membrane**



**Photo No. 2**  
**Air Permeance Machine at Test Completion**

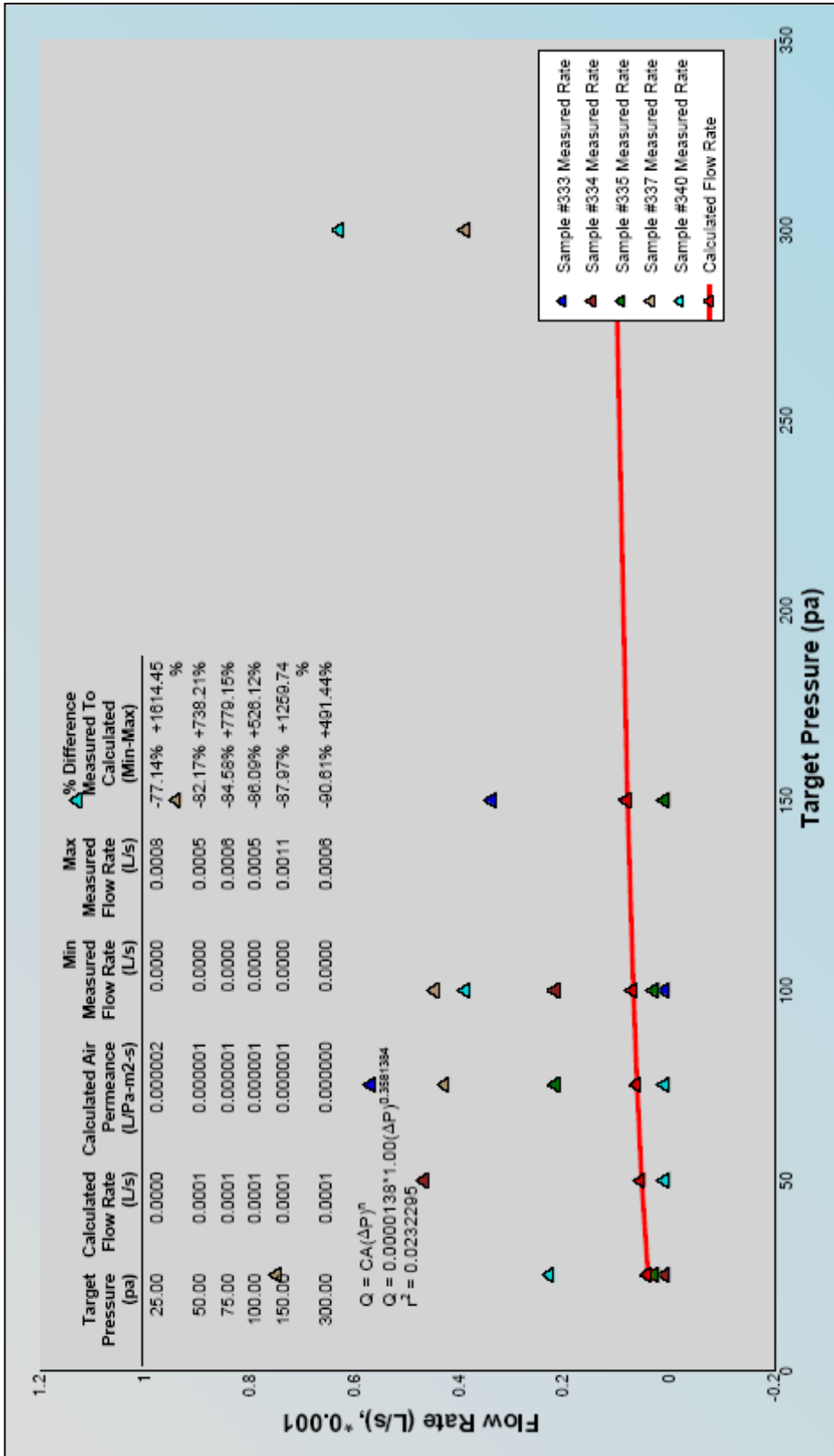


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## **APPENDIX B**

### **Air Permeance Graph**





**Error Analysis:** Regression analysis yielded a very poor correlation. The primary contributing factor is believed to be the very low permeance through the test specimens. Where very low measured flow rates resulted in negative calculated permeance, tare flow rates were manually adjusted in order to prepare the graph.