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**EVALUATION CENTER**

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**RENDERED TO**

**Mansonville Plastics (BC) Ltd.**  
**19402 56 Avenue**  
**Surrey, BC V3S 6K4**  
**Canada**

PRODUCT EVALUATED: Type 1 EPS with facer (nominal 1" thickness)  
EVALUATION PROPERTY: Air Permeance

**Report of testing Type 1 EPS with facer for Air Permeance in accordance  
with ASTM E2178-11: *Standard Test Method for Air Permeance of  
Building Materials, Section 7.3 (Rigid Materials)***

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# 1 TABLE OF CONTENTS

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1	TABLE OF CONTENTS .....	2
2	REVISION SUMMARY.....	2
3	INTRODUCTION .....	3
4	TEST SAMPLES .....	3
4.1.	SAMPLE SELECTION.....	3
4.2.	SAMPLE AND ASSEMBLY DESCRIPTION.....	3
5	TESTING AND EVALUATION METHODS.....	3
5.1.	ASTM E2178-11 AIR PERMEANCE .....	3
6	TESTING AND EVALUATION RESULTS.....	4
6.1.	RESULTS AND OBSERVATIONS.....	4
7	CONCLUSION .....	7
	APPENDIX A- EQUIPMENT CALIBRATION .....	8
	APPENDIX B- PHOTOS.....	8

# 2 REVISION SUMMARY

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DATE	SUMMARY
April 11, 2017	Date of original report

### 3 INTRODUCTION

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Intertek has conducted testing for Mansonville Plastics (BC) Ltd., on their Type 1 EPS with facer, to evaluate Air Permeance. Testing was conducted following the standard methods of ASTM E2178-11: *Standard Test Method for Air Permeance of Building Materials, Section 7.3 (Rigid Materials)*. This evaluation began April 3, 2017 and was completed April 5, 2017.

### 4 TEST SAMPLES

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#### 4.1. SAMPLE SELECTION

Samples were independently selected for testing by Intertek representative Luke Kong at Mansonville Plastics (BC) Ltd.'s Surrey, BC facility on December 20, 2016. Samples were received at the Evaluation Center on February 27, 2017 in good condition and labeled as MID1702270957.

#### 4.2. SAMPLE AND ASSEMBLY DESCRIPTION

The product was identified by the manufacturer as the following:

Type 1 EPS with facer, from Production Lot #30293, in a nominal 1" thickness.

Photos of the sample are included in Appendix B of this report.

### 5 TESTING AND EVALUATION METHODS

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#### 5.1. ASTM E2178-11 AIR PERMEANCE

Five (5) samples of Type 1 EPS with facer were evaluated for Air Permeance according to section 7.3 of ASTM E2178-11. Each sample was evaluated for air infiltration at six different test pressures ranging from 0.1 to 1.2 inH<sub>2</sub>O. Once an infiltration rate was determined for a given test pressure, the sample was masked and a background leakage rate was determined for the test apparatus at that test pressure. The reported sample leakage rate is the difference of these two rates, further adjusted for sample area.

## 6 TESTING AND EVALUATION RESULTS

### 6.1. RESULTS AND OBSERVATIONS

Results of the five samples are tabulated below and plotted in figure 1. Averaged results are plotted in figure 2 and a linear regression with an  $r^2$  value of 0.99 is included.

Sample 1		Date	4/3/2017			Thickness (in)
"WC"	Masked (L/min)	UnMasked (L/min)	Sample Leakage			
			(L/min)	(L/sec)	(L/sec-m <sup>2</sup> )	
0.1	0.06	0.08	0.02	0.00	0.000	0.987
0.2	0.09	0.12	0.03	0.00	0.001	0.963
0.3	0.11	0.15	0.04	0.00	0.001	0.971
0.4	0.14	0.19	0.05	0.00	0.001	0.973
0.6	0.19	0.26	0.07	0.00	0.001	0.964
1.2	0.30	0.42	0.12	0.00	0.002	0.963
0.4		0.19				0.961
0.3		0.15				0.978
0.2		0.11				0.973
						0.964
Average Thickness						0.970

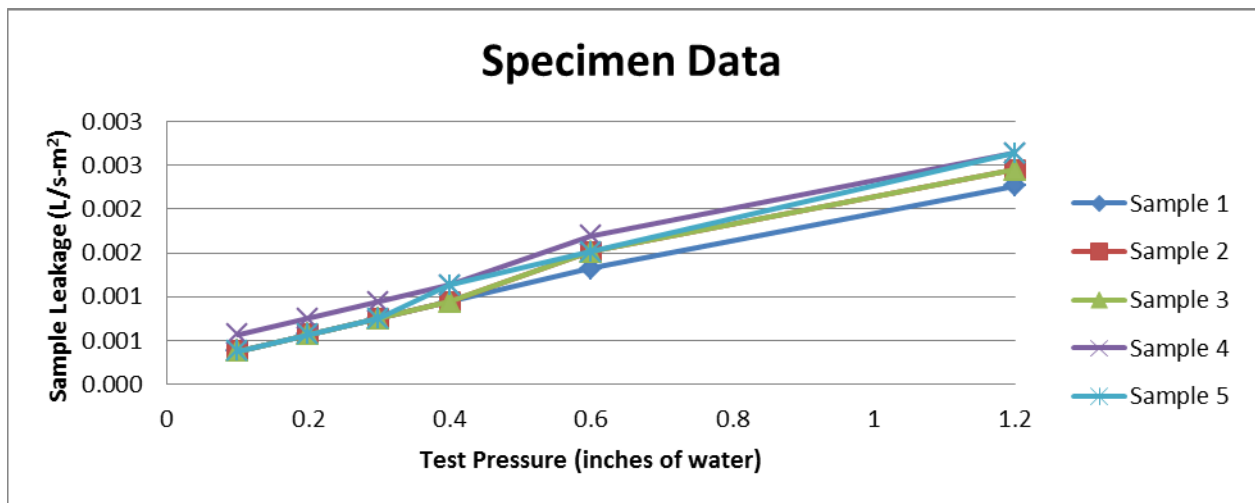
Sample 2		Date	4/3/2017			Thickness (in)
"WC"	Masked (L/min)	UnMasked (L/min)	Sample Leakage			
			(L/min)	(L/sec)	(L/sec-m <sup>2</sup> )	
0.1	0.05	0.07	0.02	0.00	0.000	0.961
0.2	0.09	0.12	0.03	0.00	0.001	0.967
0.3	0.12	0.16	0.04	0.00	0.001	0.962
0.4	0.15	0.20	0.05	0.00	0.001	0.959
0.6	0.19	0.27	0.08	0.00	0.002	0.958
1.2	0.30	0.43	0.13	0.00	0.002	0.961
0.4		0.20				0.978
0.3		0.16				0.973
0.2		0.12				0.964
						0.965
Average Thickness						0.965

Sample 3		Date	4/4/2017			Thickness (in)
"WC"	Masked (L/min)	UnMasked (L/min)	Sample Leakage			
			(L/min)	(L/sec)	(L/sec-m <sup>2</sup> )	
0.1	0.05	0.07	0.02	0.00	0.000	0.961
0.2	0.08	0.11	0.03	0.00	0.001	0.963
0.3	0.11	0.15	0.04	0.00	0.001	0.969
0.4	0.14	0.19	0.05	0.00	0.001	0.967
0.6	0.17	0.25	0.08	0.00	0.002	0.975
1.2	0.29	0.42	0.13	0.00	0.002	0.965
0.4		0.18				0.964
0.3		0.15				0.961
0.2		0.11				0.958
Average Thickness						0.967
Average Thickness						0.965

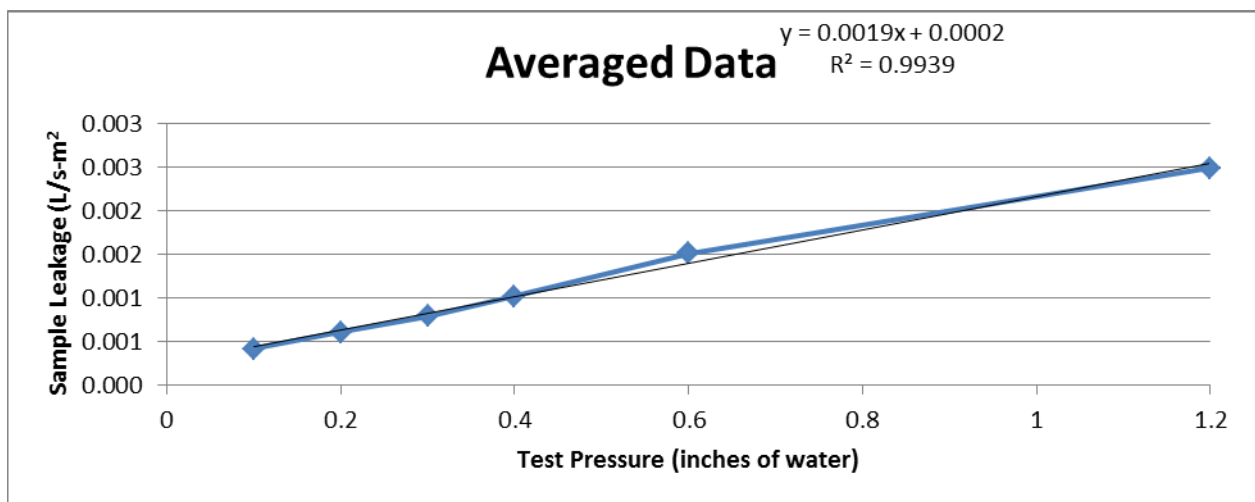
Sample 4		Date	4/4/2017			Thickness (in)
"WC"	Masked (L/min)	UnMasked (L/min)	Sample Leakage			
			(L/min)	(L/sec)	(L/sec-m <sup>2</sup> )	
0.1	0.05	0.08	0.03	0.00	0.001	0.978
0.2	0.08	0.12	0.04	0.00	0.001	0.971
0.3	0.11	0.16	0.05	0.00	0.001	0.964
0.4	0.14	0.20	0.06	0.00	0.001	0.977
0.6	0.18	0.27	0.09	0.00	0.002	0.972
1.2	0.29	0.43	0.14	0.00	0.003	0.981
0.4		0.19				0.968
0.3		0.16				0.969
0.2		0.12				0.966
Average Thickness						0.968
Average Thickness						0.971

Sample 5		Date	4/5/2017			Thickness (in)
"WC"	Masked (L/min)	UnMasked (L/min)	Sample Leakage			
			(L/min)	(L/sec)	(L/sec-m <sup>2</sup> )	
0.1	0.05	0.07	0.02	0.00	0.000	0.980
0.2	0.07	0.10	0.03	0.00	0.001	0.985
0.3	0.10	0.14	0.04	0.00	0.001	0.988
0.4	0.13	0.19	0.06	0.00	0.001	0.975
0.6	0.19	0.27	0.08	0.00	0.002	0.971
1.2	0.28	0.42	0.14	0.00	0.003	0.970
0.4		0.19				0.966
0.3		0.13				0.960
0.2		0.10				0.963
Average Thickness						0.959
Average Thickness						0.972

Pressure		Leakage (L/sec- m <sup>2</sup> )
WC	Pa	
0.1	25	0.000
0.2	50	0.001
0.3	75	0.001
0.4	100	0.001
0.6	150	0.002
1.2	300	0.002



**Figure 1- Compiled air permeance results**



**Figure 2- Averaged air permeance results**

## 7 CONCLUSION

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Intertek has conducted testing for Mansonville Plastics (BC) Ltd., on their Type 1 EPS with facer, to evaluate Air Permeance. Testing was conducted following the standard methods of ASTM E2178-11: *Standard Test Method for Air Permeance of Building Materials, Section 7.3 (Rigid Materials)*. This evaluation began April 3, 2017 and was completed April 5, 2017.

The conclusions of this test report may be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK

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## Appendix A- EQUIPMENT CALIBRATION

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Equipment	Asset Number	Calibration Due
Inclined Manometer	173	07/21/2017
Mass Flow Meter	1092	04/18/2017
Caliper	5493	04/16/2017

## Appendix B- PHOTOS

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