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EVALUATION OF 'BOREAL NATURE ELITE' SPRAY FOAM MATERIAL FOR WATER VAPOR PERMEANCE IN ACCORDANCE WITH ASTM E96/E96M-16

Report to: Genyk

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4 Pages

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1.0 INTRODUCTION

At the request of *Genyk*, Element Materials Technology was retained to evaluate a sample of spray foam material for water vapor permeance properties in accordance with ASTM E96/96M-16 test method.

Upon receipt, the sample was assigned the following Element Sample No.:

Client Sample Identification	Element Sample No.	
Boreal Nature Elite	20-06-B0040-WVP	

2.0 PROCEDURE

The sample was evaluated using the following test method:

Test Description	Test Method	
Standard Test Methods for Water Vapor Transmission of Materials	ASTME96/E96M-16, Procedure A (Desiccant)	

Procedure: Method A (Desiccant)

No. of Specimens: Three (3) and one (1) dummy

Sealant: Type 1 GE Silicone (100% silicone)

60% microcrystalline wax; 40% refined crystalline

paraffin wax

Equipment: Mitutoyo Micrometer, MII# B05010

Digital Calipers, MII# B10643
Digital Balance (0.01g), MII# B17286
Barometer, MII# B14977
Environmental Controller, MII# B11364

Conditioning: >88 hours at $23 \pm 2^{\circ}$ C, $50 \pm 5\%$ RH

Test Area: 0.0645 m²

Container Design: Stainless Steel Square Tray

Thickness: 57.48 mm (average of 7 measurements)

Test Conditions: $23 \pm 2^{\circ}\text{C}$, $50 \pm 5\%$ RH

Test Dates: 2020-08-19 to 2020-08-31

3.0 RESULTS

A summary of the water vapor permeance test results is presented in Table 1 and Figure 1. SI units are the primary unit of measure.

Table 1 – Water Vapor Permeance Test Results Applicable Standard: ASTM E96/E96M-16 Element Sample No.: 20-06-B00040-WVP						
Specimen	Mass, g		Water Vapor Permeance			
Number	Initial	Final	Change	ng/Pa⋅s⋅m²	US Perms	
1	3030.350	3034.120	3.770	45.165	0.790	
2	3034.060	3037.890	3.830	46.416	0.811	
3	3146.720	3150.430	3.710	44.868	0.784	
Average	3070.377	3074.147	3.770	45.5	0.80	

ASTM E96/E96M - 16 "Water Vapor Permeance"

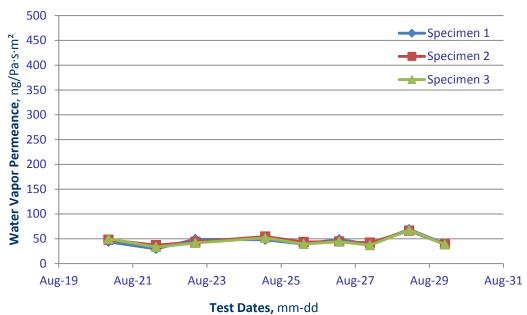


Figure 1: Elapsed time vs Water Vapor Permeance for Element Sample No.: 20-06-B0040-WVP.

4.0 CONCLUSION

The material submitted by *Genyk*, identified as "Boreal Nature Elite", was tested as described in this report. The material had a measured water vapor permeance of 45.5 ng/Pa•s•m² [0.80 US perms].

5.0 REVISION HISTORY

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Revision:

Comments:

2020-09-04

Original Document

N/A

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