Element Materials Technology
662 Cromwell Avenue
St Paul, MN
55114-1720 USA

P 651 645 3601
F 651 659 7348
T 888 786 7555
info.stpaul@element.com
element.com

Peel Properties of Window Film

Name	3M Renewable Energy	Date:	July 3, 20104
Attn:	Paul Neumann	Revision Date:	September 18, 2014
Address:	3M Center, 235-3D-02	Author:	William Stegeman
City, State, Zip:	St. Paul, MN 55144	Report Number:	ESP017051P-Ultra 600PL
		Client Purchase Order Number:	USMMMNY51T

INTRODUCTION

This report presents the results of peel tests conducted on a sample of window film. The testing was authorized by Paul Neumann of 3M Renewable Energy on June 12, 2014. The testing and data analysis were completed on September 18, 2014.

The scope of our work was limited to conducting peel tests on the sample submitted and reporting the results.

OBJECTIVE

Determine peel properties of the window film.

SAMPLE IDENTIFICATION

The sample was identified as 3M™ Scotchshield™ Safety and Security Film Ultra 600

TEST METHOD

The specimens were allowed to condition at standard laboratory conditions of 72 ± 4°F and 50 ± 5% relative humidity for at least 40 hours prior to testing. Testing was done according to ASTM Standards detailed below, with notes of parameters and/or deviations.

Test Method	Test Method Title	Parameters and/or Deviations from Method
ASTM D3330	Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape	Method A

CALIBRATED TEST EQUIPMENT

Honeywell Temp/RH Chart Recorder, S/N 7852 243000007, ID MM190-024 calibrated 8/7/13 calibrated 8/5/14, due 8/5/15

MTS Universal Test Machine, Mdl Qtest / 50LP, System #1532, ID MM210-009.3 & 6 calibrated 4/8/14 due 4/8/15

Interface Load Cell, 225 lbf capacity, S/N 677238, ID PT-163-042 calibrated 4/8/14, due 4/8/15

Mitutoyo Digimatic 8" Calipers, S/N 0006565, ID MM160-068 calibrated 8/8/13, calibrated 8/5/14, due 8/5/15

Mitutoyo Digimatic Indicator, Model C1012CMX, S/N 09040960, ID PT163-021 calibrated 8/8/13, calibrated 8/5/14, due 8/5/15

TEST RESULTS

Peel

Specimen	Width, in	Peak Load, lbs	Scatter Peel, lbs/in	Peel Strength, lbs/in
1	2.188	17.65	0.75	7.06
2	2.254	18.62	0.87	7.30
3	2.245	19.24	0.27	8.21
4	2.237	18.69	0.48	7.72
5	2.300	19.63	0.34	8.03
Average	**2.245**	**18.77**	**0.54**	**7.66**
Standard Deviation	**0.040**	**0.75**	**0.26**	**0.48**

Respectfully submitted,

William Stegeman
Advanced Materials Manager
Product Evaluation Department
P 651 659 7230

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