

Testing. Advising. Assuring.

Solar & Weathering Test Report No: 15-06-P0091 (Exova Proposal No.:15-006-355786 Rv1)

December 21, 2015

- CLIENT: Carter Fabricating Inc.
326 Deerhurst Drive, Brampton, Ontario, L6T 5H9
1. CONTACT Mike Libreiro, Tel (905) 487-1684 ext. 103, andrew@MLibreiro@carterfabricating.com
2. TEST Xenon Arc exposure of coated aluminium composite material
3. SAMPLES
- | <u>Description:</u> | <u>Exova ID</u> |
|--|--------------------|
| EVO Stone coated ACM
(6"x 6" Stucco Stone Coated ACM) | 15-06-P0091-1 to 3 |
4. SPECIFICATION
- | | |
|-------------------------|--|
| Material Specification: | CCMC TG 07 54 19.01 referencing |
| Test Method: | ASTM G155-13 Cycle 1 |
| Xenon Arc Filter: | Daylight (Borosilicate inner / Borosilicate Outer) |
| Thermometer Type: | Black Panel (Open Back, Rack Mounted) |
| Exposure Duration: | 2500 hours |
| Start Date: | May 12, 2015 |
| End Date: | December 21, 2015 |
- Sequence No. 1**
- | | |
|----------------------------------|--|
| Nominal Black Panel Temperature: | 63 ± 2.5°C |
| Irradiance: | 0.35 ± 0.02 W/m ² at 340 nm |
| Cycle Duration: | 102 minutes |
| Specimen Spray: | Off |
| Rack Spray: | Off |
- Sequence No. 2**
- | | |
|--------------------------|--|
| Irradiance: | 0.35 ± 0.02 W/m ² at 340 nm |
| Chamber Air Temperature: | uncontrolled |
| Cycle Duration: | 18 minutes |
| Specimen Spray: | On |
| Rack Spray: | Off |
5. EQUIPMENT
- | | |
|--|---------------------|
| Atlas Ci5000 Xenon Arc Weather-Ometer | (Exova MII: A15317) |
| Atlas Ci35A Xenon Arc Weather-Ometer | (Exova MII: A13512) |
| Gretag Macbeth ColourEye XTH Spectrophotometer | (Exova MII: A13519) |
| BKY MICRO-TRI-Gloss | (Exova MII: B12120) |
6. PROCEDURE The test specimens described in Section No. 3 were secured within the test chamber and exposed to the conditions described in Section No. 4 in accordance with ASTM G155-13 Cycle 1. Instrumental measurements of the specimens were performed at 500 hour intervals, for evidence of gloss and/or colour change.

ColourEye XTH Spectrophotometer

Display: COLORMETRIC
 Colour Equation: CIELAB
 Illuminate: D65
 Observer Angle: 10°
 Area View: Regular
 Specular: Included

BKY MICRO-TRI-Gloss

Geometry: 20°/60°/85°

7. RESULTS Colour and Gloss results are summarized below in Tables No. 1 and 2.

Table No. 1 - Summarized Colour Change Measurements Exova Sample No. 15-06-P0091								
Sample Identification	Interval (hours)	Measured Colour			Colour Change from Initial			
		L*	a*	b*	ΔL*	Δa*	Δb*	ΔE*
15-06-P0091-1	Initial	70.21	4.15	16.88				
	500	70.52	4.10	16.77	0.31	-0.05	-0.11	0.34
	1000	71.68	4.06	17.16	1.47	-0.09	0.28	1.50
	1500	72.87	6.29	18.79	2.66	2.14	1.91	3.91
	2000	73.64	6.26	19.07	3.43	2.11	2.19	4.58
	2500	73.74	6.36	19.50	3.53	2.21	2.62	4.92
15-06-P0091-2	Initial	70.66	4.13	16.81				
	500	70.89	4.11	16.83	0.23	-0.03	0.02	0.23
	1000	72.06	4.07	17.10	1.40	-0.06	0.30	1.43
	1500	73.02	6.18	18.77	2.36	2.05	1.96	3.69
	2000	73.40	6.28	19.14	2.74	2.15	2.34	4.19
	2500	74.46	6.24	19.33	3.80	2.11	2.52	5.02
15-06-P0091-3	Initial	70.45	4.15	16.76				
	500	71.02	4.08	16.76	0.58	-0.07	0.00	0.58
	1000	72.07	4.11	17.25	1.63	-0.03	0.50	1.70
	1500	73.35	6.24	19.00	2.90	2.10	2.25	4.22
	2000	73.33	6.27	19.14	2.89	2.13	2.38	4.30
	2500	74.31	6.36	19.56	3.87	2.22	2.81	5.26

Table No. 2 - Summarized Gloss Change Measurements Exova Sample No. 15-06-P0091							
Sample Identification	Interval (hours)	Measured Gloss			Gloss Change from Initial		
		20°	60°	85°	20°	60°	85°
15-06-P0091-1	Initial	0.7	0.8	0.1			
	500	0.7	0.8	0.1	0.0	0.0	0.0
	1000	0.7	0.8	0.1	0.0	0.0	0.0
	1500	0.7	0.8	0.0	0.0	0.0	-0.1
	2000	0.7	0.8	0.0	0.0	0.0	-0.1
	2500	0.7	0.8	0.0	0.0	0.0	-0.1
15-06-P0091-2	Initial	0.7	0.8	0.0			
	500	0.7	0.8	0.0	0.0	0.0	0.0
	1000	0.7	0.8	0.0	0.0	0.0	0.0
	1500	0.7	0.8	0.0	0.0	0.0	0.0
	2000	0.7	0.8	0.0	0.0	0.0	0.0
	2500	0.7	0.8	0.0	0.0	0.0	0.0
15-06-P0091-3	Initial	0.7	0.8	0.2			
	500	0.7	0.8	0.2	0.0	0.0	0.0
	1000	0.7	0.8	0.2	0.0	0.0	0.0
	1500	0.7	0.8	0.0	0.0	0.0	-0.2
	2000	0.7	0.8	0.0	0.0	0.0	-0.2
	2500	0.7	0.8	0.0	0.0	0.0	-0.2

8. CONCLUSION This letter is to certify that the test described herein was carried out in accordance with the Procedure listed in 6 above, and that all equipment used was in calibration.

Reported by:


Alexander Jackson, Ext 11207
Engineering Technologist
Solar & Weathering Test Facility

Reviewed & Authorized by:


Franz Bauer, Ext. 11403
Technical Manager – Building Performance Centre
Product Technologies Group

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**Appendix A
Specimen Photographs
(1 Page)**



Figure A1- Specimen No.: 15-06-P0091-1 – 2500 hrs. Exposure



Figure A2- Specimen No.: 15-06-P0091-2 – 2500 hrs. Exposure



Figure A3- Specimen No.: 15-06-P0091-3 – 2500 hrs. Exposure