



**PERFORMANCE EVALUATION TEST REPORT**

**Rendered to:**

**CBT SUPPLY, INC. / D.B.A. SMARTDESKS**

**PRODUCT: FFIT Floor**

**TYPE: Fixed Height Low Profile Raised Floor System Component**

**Report No: A9300.03-106-31**

**Report Date: 05/25/12**

**Test Record Retention Period: 09/13/15**

## PERFORMANCE EVALUATION TEST REPORT

Rendered to:

CBT SUPPLY, INC. / D.B.A. SMARTDESKS  
83 Jacobs Road  
Rockaway, New Jersey 07866

Report No: A9300.03-106-31  
Test Dates: 11/16/10  
Through: 09/13/11  
Report Date: 05/25/12  
Test Record Retention Period: 09/13/15

**Product:** FFIT Floor

**Type:** Fixed Height Low Profile Raised Floor System Component

**Project Summary:** Architectural Testing, Inc. was contracted by Powerflor USA, Inc. to perform performance evaluations on the 2.75 inch raised floor system panel components of the CBT Supply, Inc. / D.B.A. SMARTdesks FFIT system. This test report is a reissue of the original report A9300.01-106-31. This report is issued in the name of CBT Supply, Inc. dba SMARTdesks. This report details the procedures employed and results of this evaluation.

**Test Method:** The test specimens were evaluated in accordance with the following:

*CISCA Recommended Test Procedures for Access Floors*

Section 1 - Concentrated Load

Section 2 - Ultimate Loading

Section 3 - Rolling Loads (Wheel A, 10 Pass Test)

*ASTM D 635-10, Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.*

*ASTM D 1929-96 (Reapproved 2001)<sup>e1</sup>, Standard Test Method for Determining Ignition Temperatures of Plastics.*

*ASTM D 2843-99 (2004), Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics.*

*ASTM E 2322-03 (Reapproved 2009), Standard Test Method for Conducting Transverse and Concentrated Load Tests on Panels Used in Floor and Roof Construction.*

**Test Procedures:** Testing was performed on raised floor system panel components representative of the CBT Supply, Inc. / D.B.A. SMARTdesks FFIT system. Test materials were provided by Powerflor USA, Inc. on behalf of CBT Supply, Inc. / D.B.A. SMARTdesks and sampled by a representative of Architectural Testing, Inc. on October 29, 2010 at the Powerflor USA, Inc. Bel Air, Maryland facility unless otherwise stated in the individual test component produces section.

The complete raised floor panel specimens (overall nominal dimensions: 19.75 in x 19.75 in.) consisted of four quarter panels (individual panel section nominal dimensions: 9.75 in. x 9.75 in. x 2.75 in.) adhered to a single 19.75 in. square (0.375 in. depth) section of carpet. The specimens were allowed to condition in standard lab conditions ( $23 \pm 2$  °C and  $50 \pm 5\%$  RH) for a minimum of 14 days prior to testing.

### **CISCA Section 1 - Concentrated Load**

A total of three panel specimens were tested in accordance with the procedures detailed in CISCA Recommended Test Procedures for Access Floors, *Section 1*. Panel performance was evaluated at three separate locations (Panel Center [Four-Quarter Panel Juncture], Corner [Center of Individual Quarter Panel], and Offset Edge [Mid-Edge of Individual Quarter Panel]). The panel specimens were edge restricted as appropriate (no restriction to vertical movement was applied) on the test stage of a SATEC Unidrive, Model MII 50 UD Universal Testing Machine (ICN: Y002011). Each panel specimen was pre-loaded through a 1.0 in. square steel indenter to 400 lb<sub>f</sub>, released and re-loaded to 50 lb<sub>f</sub> prior to zeroing of the deflection measurement. Compressive load was applied at a rate of 1500 lb<sub>f</sub>/min in 200 lb increments which were maintained for one minute prior to measurement of peak surface deflection, release of load for a period of one minute and measurement of permanent set. Cyclic loading and measurement as described above was repeated until failure of the specimen at the test location was observed.

### **CISCA Section 2 - Ultimate Loading**

A total of three panel specimens were tested in accordance with the procedures detailed in CISCA Recommended Test Procedures for Access Floors, *Section 2*. Panel performance was evaluated at three separate locations (Panel Center [Four-Quarter Panel Juncture], Corner [Center of Individual Quarter Panel], and Offset Edge [Mid-Edge of Individual Quarter Panel]). The panel specimens were edge restricted as appropriate (no restriction to vertical movement was applied) on the test stage of a SATEC Unidrive, Model MII 50 UD Universal Testing Machine (ICN Y002011). Compressive load was applied at a rate of 1500 lb<sub>f</sub>/min to each panel specimen was through a 1.0 in. square steel indenter until failure of the specimen at the test location was observed.

**Test Procedures:** (Continued)

**CISCA Section 3 - Rolling Loads**

A total of two panel mock-ups (each consisting of three full size specimen panels arranged in line and edge-restricted with impeding vertical movement) were tested in accordance with the procedures detailed in CISCA Recommended Test Procedures for Access Floors, *Section 3* (10 Pass Test, Wheel A only). One mock-up was evaluated for each of two fixed travel paths. The travel paths by which the panel specimens were evaluated were Path 1: Traversing mock-up panels at full panel center and Path 2: Traversing mock-up panels through center of individual quarter panels. Prior to test initiation, the mock-up center panel specimens were measured for flatness and local variation as detailed in CISCA Section 3.4. The line of panel specimens were edge restricted (no restriction to vertical movement was applied) on the test stage of the rolling load apparatus and a total of 800 lbs applied to the first panel in line through a single type A wheel (3.0 in. diameter, 1.8125 in. wide) which was then passed back and forth at a rate of 100 ft/min for a total of ten full cycles. Upon completion of cycling, applied load was removed and the mock-up center specimen was measured for post-test deformation as was done prior to test.

**ASTM D 635 - Rate of Burn**

A total of ten test specimens were prepared from client-supplied materials and evaluated in accordance with the procedures detailed in ASTM D 635. The test specimens (nominal dimensions: 5.0 in. [127 mm] long x 0.5 in. [13 mm] wide x 0.14 in. [3.5 mm] thickness) were supported horizontally at one end and the free end exposed to a gas flame for 30 seconds. After removal of the flame, the test specimen was observed for time and extent of burning.

**ASTM D 1929 - Self and Flash Ignition Temperature**

Self-ignition temperature is the minimum temperature at which the self-heating properties of the specimen lead to ignition or ignition occurs of itself, under test conditions, in the absence of any additional flame ignition source. Flash ignition temperature is the minimum temperature at which, under specified test conditions, sufficient flammable gases are emitted to ignite momentarily upon application of a small external pilot flame. These temperatures were determined by observing the test specimen at a known temperature utilizing a self-ignition furnace in accordance with the procedures detailed in ASTM D 1929.

**ASTM D 2843 - Smoke Density**

A total of three test specimens were prepared from client-supplied materials and evaluated in accordance with the procedures detailed in ASTM D 2843. The test specimens (stacked to achieve nominal dimensions: 1.0 in. long x 1.0 in. wide x 0.25 in. thickness) were exposed to a flame inside a smoke chamber. The horizontal light absorption was measured across the light beam path of a photoelectric cell, and the condition of the smoke chamber was observed. The Light Absorption Curves are presented in Appendix B.

**Test Procedures:** (Continued)

**ASTM E 2322 - Uniform Load Evaluation**

A total of six replicate quarter panel specimens (nominal overall dimensions: 9.75 in. long x 9.75 in. wide x 2.625 in. high) were provided by the client for evaluation in accordance with the procedures detailed in ASTM E 2322, Section 10.2.1.2 - Vacuum Chamber method. A C10 steel test fixture was fabricated to accommodate the testing of all six specimens simultaneously and affixed to the floor of the test chamber. The assembled fixture was bagged to generate an airtight environment and a vacuum pump (ICN 005643) was employed to reduce air pressure between the specimens and the floor. A 70 psf preload was applied for a period of five minutes and released prior to zeroing of all deflection transducers. Incremental load was applied as per sections 6.2.2 - 6.3 (application of load in 50 psf increments, a five minute hold period, release of load and a five minute recovery period). Deflection measurements were taken at panel center from above each individual specimen as per section 10.4.1 at both peak deflection under load for each increment and at permanent set after release of load. Incremental loading was continued until the peak load performance was equivalent to the criteria stated in ICC-ES AC151, Section 3.2.3 (loads required by code: 2,000 lbf [per IBC Table 1607.1] uniformly distributed over 6.25 ft<sup>2</sup> = 320 psf. Section 3.2.3 requires minimum peak load of 5x code minimum [or 1,600 psf]) or failure of the specimen(s) was observed.

*Note: Specimen deformation measurements were discontinued at 1,400 psf due to limitations of test apparatus but cyclic loading continued until achievement of the stated test-end conditions.*

**Full Panel Load Bearing Area Failure Load Evaluation**

A total of five replicate quarter panel specimens (nominal overall dimensions: 9.75 in. long x 9.75 in. wide x 2.625 in. high) were provided by the client for ultimate performance evaluation of evenly distributed load application to full panel load bearing area. The specimens were individual placed upon the test stage of a SATEC Unidrive, Model MII 50 UD Universal Testing Machine (ICN Y002011) and compressive load was applied at a rate of 0.1 in/min to the entire specimen load bearing surface area through a 1.25 in. thick steel platen until failure was observed. Ultimate failure load was documented for each specimen, converted to pounds per square foot and averaged for the test series.

**Test Results Summary:** The results are summarized in the following table. A detailed accounting of individual specimen results is located in Appendix A.

**CISCA Recommended Procedures for Access Floors Results Summary**

Section		Test Details	Mean Results		
No.	Test				
1	Concentrated Load	Test Location	Load Increments (lb <sub>f</sub> )	Peak Load (lb <sub>f</sub> )	
		Full Panel Center	200	4440	
		Center of Quarter Panel		2411	
		Quarter Panel Midpoint Edge		1534	
2	Ultimate Load	Test Location	Peak Load (lb <sub>f</sub> )		
		Full Panel Center	5919		
		Center of Quarter Panel	2633		
		Quarter Panel Midpoint Edge	1651		
3	Rolling Load (Wheel A 10 Pass Test)	Travel Path	Applied Load (lb <sub>f</sub> )	Permanent Deformation (in)	
				Beam	Local
		1 - Full Panel Center	800	0.000	0.000
2 - Quarter Panel Center	0.000	0.000			

**Fire Testing Results Summary**

Test Standard		Mean Results <sup>1</sup>
Designation	Property Evaluated	
ASTM D 635	Rate of Burn	Average Linear Burning Rate, V = 0 mm/min Rate of Burn Classification: CC1
ASTM D 1929	Self Ignition Temperature	580 °C
	Flash Ignition Temperature	390 °C
ASTM D 2843	Smoke Density	Average Smoke Density Rating: 38.4

<sup>1</sup> All above fire testing results satisfy performance criteria presented in Miami Dade County Checklist #0445 For the Approval of: Plastic and Foam Plastic.

**Test Results Summary: (Continued)**

**ASTM E 2322 Uniform Load Evaluation Summary**

<b>Property Evaluated</b>	<b>Applied Uniform Load</b>	<b>AC151 Minimum Performance Criteria <sup>2</sup></b>	<b>Result</b>
<b>Ultimate Uniformly Distributed Load</b>	1,600 psf (76,608 Pa)	No damage allowable at 1,600 psf (5x loads required by the code)	No damage observed

<sup>2</sup> While observed product performance exceeds the stated requirements of AC151 with regards to uniform load minimum performance, the data presented herein does not satisfy AC151 due to lack of specimen sampling as per Section 2.4.

<b>Property Evaluated</b>	<b>Measurement</b>	<b>Applied Uniform Load <sup>3</sup></b>	<b>Mean Panel Deformation <sup>4</sup></b>
<b>Deformation Measurements</b>	Deflection under Load	320 psf (15,322 Pa)	0.09 in.
	Permanent Set		0.04 in.

<sup>3</sup> Applied uniform load values presented herein represent the minimum load required by the code (320 psf per IBC Table 1607.1). Incremental deformation data up to 1,400 psf is located in Appendix A

<sup>4</sup> Deformation measurements were taken at center of individual panel specimens and averaged for the series

**Full Panel Load Bearing Area Failure Load Evaluation Summary**

<b>Property Evaluated</b>	<b>Panel Load Bearing Area (in<sup>2</sup>)</b>	<b>Mean Failure Load (lbf)</b>	<b>Load per Unit Area (psi)</b>	<b>Ultimate Full Panel Failure Load (psf)</b>
<b>Ultimate Panel Failure Load</b>	95.06	35,876	377	54,344

This report is reissued in the name of CBT Supply, Inc. dba SMARTdesks through written authorization of Powerflor USA, Incorporated to whom the original report was rendered. The original Powerflor USA, Incorporated Report No. is A9300.01-106-31.

Architectural Testing will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. for the entire test record retention period.

Results obtained are tested values and were secured by using the designated tested 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 specimens tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.:

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Scott D. Scallorn - Technician I  
Components / Materials Testing

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Gary Hartman, P.E. - Director  
Components / Materials Testing

SDS:sds/nlb

Attachments (pages) This report is complete only when all attachments listed are included.

Appendix A - Data Sheets (13)

Appendix B - Smoke Density Light Absorption Curves (4)

Appendix C - Photographs (15)



### Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	05/25/12	N/A	Original report issue.

**APPENDIX A**

**Data Sheets**

<b>CISCA Section 1 - Concentrated Load (Full Panel Center Point) Deflection Data</b>				
<b>Test Location</b>	<b>Specimen No.</b>	<b>Applied Load (lb<sub>f</sub>)<sup>1</sup></b>	<b>Deflection (in)</b>	<b>Permanent Set (in)</b>
<b>Full Panel Center</b>	<b>1</b>	<b>200</b>	0.0746	0.0431
	<b>2</b>		0.0800	0.0481
	<b>3</b>		0.0776	0.0519
	<b>Mean</b>		<b>0.0774</b>	<b>0.0477</b>
<b>Full Panel Center</b>	<b>1</b>	<b>400</b>	0.0972	0.0556
	<b>2</b>		0.1035	0.0611
	<b>3</b>		0.0953	0.0622
	<b>Mean</b>		<b>0.0986</b>	<b>0.0596</b>
<b>Full Panel Center</b>	<b>1</b>	<b>600</b>	0.1120	0.0648
	<b>2</b>		0.1190	0.0705
	<b>3</b>		0.1065	0.0689
	<b>Mean</b>		<b>0.1125</b>	<b>0.0681</b>
<b>Full Panel Center</b>	<b>1</b>	<b>800</b>	0.1233	0.0724
	<b>2</b>		0.1308	0.0783
	<b>3</b>		0.1156	0.0739
	<b>Mean</b>		<b>0.1232</b>	<b>0.0749</b>
<b>Full Panel Center</b>	<b>1</b>	<b>1000</b>	0.1325	0.0791
	<b>2</b>		0.1408	0.0847
	<b>3</b>		0.1232	0.0779
	<b>Mean</b>		<b>0.1322</b>	<b>0.0806</b>
<b>Full Panel Center</b>	<b>1</b>	<b>1200</b>	0.1404	0.0845
	<b>2</b>		0.1499	0.0903
	<b>3</b>		0.1304	0.0814
	<b>Mean</b>		<b>0.1402</b>	<b>0.0854</b>
<b>Full Panel Center</b>	<b>1</b>	<b>1400</b>	0.1476	0.0891
	<b>2</b>		0.1577	0.0953
	<b>3</b>		0.1367	0.0845
	<b>Mean</b>		<b>0.1473</b>	<b>0.0896</b>
<b>Full Panel Center</b>	<b>1</b>	<b>1600</b>	0.1540	0.0932
	<b>2</b>		0.1645	0.0996
	<b>3</b>		0.1445	0.0872
	<b>Mean</b>		<b>0.1544</b>	<b>0.0933</b>
<b>Full Panel Center</b>	<b>1</b>	<b>1800</b>	0.1598	0.0968
	<b>2</b>		0.1708	0.1032
	<b>3</b>		0.1494	0.0897
	<b>Mean</b>		<b>0.1600</b>	<b>0.0965</b>

<b>CISCA Section 1 - Concentrated Load (Full Panel Center Point) Deflection Data</b> (Continued)				
<b>Test Location</b>	<b>Specimen No.</b>	<b>Applied Load (lb<sub>f</sub>)<sup>1</sup></b>	<b>Deflection (in)</b>	<b>Permanent Set (in)</b>
<b>Full Panel Center</b>	<b>1</b>	2000	0.1699	0.1007
	<b>2</b>		0.1771	0.1064
	<b>3</b>		0.1554	0.0921
	<b>Mean</b>		<b>0.1675</b>	<b>0.0997</b>
<b>Full Panel Center</b>	<b>1</b>	2200	0.1760	0.1039
	<b>2</b>		0.1828	0.1092
	<b>3</b>		0.1605	0.0946
	<b>Mean</b>		<b>0.1731</b>	<b>0.1026</b>
<b>Full Panel Center</b>	<b>1</b>	2400	0.1821	0.1066
	<b>2</b>		0.1884	0.1118
	<b>3</b>		0.1713	0.0968
	<b>Mean</b>		<b>0.1806</b>	<b>0.1051</b>
<b>Full Panel Center</b>	<b>1</b>	2600	0.1878	0.1089
	<b>2</b>		0.2026	0.1151
	<b>3</b>		0.1761	0.0988
	<b>Mean</b>		<b>0.1889</b>	<b>0.1076</b>
<b>Full Panel Center</b>	<b>1</b>	2800	0.1920	0.1111
	<b>2</b>		0.2089	0.1175
	<b>3</b>		0.1825	0.1006
	<b>Mean</b>		<b>0.1945</b>	<b>0.1098</b>
<b>Full Panel Center</b>	<b>1</b>	3000	0.1971	0.1130
	<b>2</b>		0.2115	0.1193
	<b>3</b>		0.1851	0.1025
	<b>Mean</b>		<b>0.1979</b>	<b>0.1116</b>
<b>Full Panel Center</b>	<b>1</b>	3200	0.2145	0.1164
	<b>2</b>		0.2229	0.1223
	<b>3</b>		0.1988	0.1045
	<b>Mean</b>		<b>0.2121</b>	<b>0.1144</b>
<b>Full Panel Center</b>	<b>1</b>	3400	0.2286	0.1213
	<b>2</b>		0.2265	0.1241
	<b>3</b>		0.1998	0.1060
	<b>Mean</b>		<b>0.2183</b>	<b>0.1172</b>

<b>CISCA Section 1 - Concentrated Load (Full Panel Center Point) Deflection Data</b> (Continued)				
<b>Test Location</b>	<b>Specimen No.</b>	<b>Applied Load (lb<sub>f</sub>)<sup>1</sup></b>	<b>Deflection (in)</b>	<b>Permanent Set (in)</b>
<b>Full Panel Center</b>	<b>1</b>	<b>3600</b>	0.2259	0.1225
	<b>2</b>		0.2326	0.1261
	<b>3</b>		0.2134	0.1082
	<b>Mean</b>		<b>0.2239</b>	<b>0.1189</b>
<b>Full Panel Center</b>	<b>1</b>	<b>3800</b>	0.2283	0.1248
	<b>2</b>		0.2403	0.1280
	<b>3</b>		0.2161	0.1102
	<b>Mean</b>		<b>0.2282</b>	<b>0.1210</b>
<b>Full Panel Center</b>	<b>1</b>	<b>4000</b>	0.2560	0.1308
	<b>2</b>		0.2464	0.1299
	<b>3</b>		0.2224	0.1118
	<b>Mean</b>		<b>0.2416</b>	<b>0.1242</b>
<b>Full Panel Center</b>	<b>1</b>	<b>4200</b>	0.2560	0.1334
	<b>2</b>		0.2919	0.1509
	<b>3</b>		0.2283	0.1134
	<b>Mean</b>		<b>0.2588</b>	<b>0.1326</b>
<b>Full Panel Center</b>	<b>1</b>	<b>4400</b>	0.2905	0.1475
	<b>2</b>		<b>Failure</b>	-
	<b>3</b>		0.2421	0.1104
	<b>Mean</b>		<b>0.5416</b>	<b>0.1289</b>

<sup>1</sup> Applied load was applied in 200 lbf increments, held for one minute, incremental peak deflection measured and released to allow for incremental permanent set determination.

<b>CISCA Section 1 - Concentrated Load (Full Panel Center Point) Peak Load Data</b>			
<b>Test Location</b>	<b>Specimen No.</b>	<b>Load at Failure (lb<sub>f</sub>)</b>	<b>Mode of Failure</b>
<b>Full Panel Center</b>	<b>1</b>	4432.46	Quarter Panel Kick Out
	<b>2</b>	4435.49	Quarter Panel Kick Out
	<b>3</b>	4453.48	Quarter Panel Kick Out
	<b>Mean</b>	<b>4440.48</b>	<b>Quarter Panel Kick Out</b>

<b>CISCA Section 1 - Concentrated Load (Center of Quarter Panel) Deflection Data</b>				
<b>Test Location</b>	<b>Specimen No.</b>	<b>Applied Load (lb<sub>f</sub>)<sup>1</sup></b>	<b>Deflection (in)</b>	<b>Permanent Set (in)</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>200</b>	0.1148	0.0513
	<b>2</b>		0.1185	0.0558
	<b>3</b>		0.1245	0.0584
	<b>Mean</b>		<b>0.1193</b>	<b>0.0552</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>400</b>	0.1710	0.0656
	<b>2</b>		0.1742	0.0698
	<b>3</b>		0.1811	0.0729
	<b>Mean</b>		<b>0.1754</b>	<b>0.0694</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>600</b>	0.2205	0.0762
	<b>2</b>		0.2236	0.0801
	<b>3</b>		0.2330	0.0840
	<b>Mean</b>		<b>0.2257</b>	<b>0.0801</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>800</b>	0.2685	0.0858
	<b>2</b>		0.2739	0.0890
	<b>3</b>		0.2792	0.0935
	<b>Mean</b>		<b>0.2739</b>	<b>0.0895</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>1000</b>	0.3187	0.0946
	<b>2</b>		0.3203	0.0970
	<b>3</b>		0.3288	0.1023
	<b>Mean</b>		<b>0.3226</b>	<b>0.0980</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>1200</b>	0.3677	0.1027
	<b>2</b>		0.3720	0.1048
	<b>3</b>		0.3778	0.1106
	<b>Mean</b>		<b>0.3725</b>	<b>0.1060</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>1400</b>	0.4229	0.1133
	<b>2</b>		0.4264	0.1151
	<b>3</b>		0.4308	0.1208
	<b>Mean</b>		<b>0.4267</b>	<b>0.1164</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>1600</b>	0.4847	0.1296
	<b>2</b>		0.4843	0.1322
	<b>3</b>		0.4911	0.1386
	<b>Mean</b>		<b>0.4867</b>	<b>0.1335</b>

<b>CISCA Section 1 - Concentrated Load (Center of Quarter Panel) Deflection Data</b> (Continued)				
<b>Test Location</b>	<b>Specimen No.</b>	<b>Applied Load (lb<sub>f</sub>)<sup>1</sup></b>	<b>Deflection (in)</b>	<b>Permanent Set (in)</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>1800</b>	0.6589	0.2013
	<b>2</b>		0.9186	0.2368
	<b>3</b>		0.9392	0.2461
	<b>Mean</b>		<b>0.8389</b>	<b>0.2281</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>2000</b>	0.8326	0.2548
	<b>2</b>		1.1516	0.2869
	<b>3</b>		1.1478	0.2820
	<b>Mean</b>		<b>1.0440</b>	<b>0.2745</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>2200</b>	0.9577	0.2780
	<b>2</b>		1.4907	0.4532
	<b>3</b>		1.3405	0.3690
	<b>Mean</b>		<b>1.2630</b>	<b>0.3667</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>2400</b>	1.0999	0.3103
	<b>2</b>		<b>Failure</b>	-
	<b>3</b>		<b>Failure</b>	-
	<b>Mean</b>		<b>1.0999</b>	<b>0.3103</b>
<b>Center of Quarter Panel</b>	<b>1</b>	<b>2600</b>	1.3408	0.3978
	<b>2</b>		-	-
	<b>3</b>		-	-
	<b>Mean</b>		<b>1.3408</b>	<b>0.3978</b>

<sup>1</sup> Applied load was applied in 200 lbf increments, held for one minute, incremental peak deflection measured and released to allow for incremental permanent set determination.

<b>CISCA Section 1 - Concentrated Load (Center of Quarter Panel) Peak Load Data</b>			
<b>Test Location</b>	<b>Specimen No.</b>	<b>Load at Failure (lb<sub>f</sub>)</b>	<b>Mode of Failure</b>
<b>Center of Quarter Panel</b>	<b>1</b>	2648.05	Panel Fracture
	<b>2</b>	2386.31	Panel Fracture
	<b>3</b>	2200.99	Panel Fracture
	<b>Mean</b>	<b>2411.78</b>	<b>Panel Fracture</b>

<b>CISCA Section 1 - Concentrated Load (Quarter Panel Midpoint Edge) Deflection Data</b>				
<b>Test Location</b>	<b>Specimen No.</b>	<b>Applied Load (lb<sub>f</sub>)<sup>1</sup></b>	<b>Deflection (in)</b>	<b>Permanent Set (in)</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	<b>200</b>	0.1184	0.0521
	<b>2</b>		0.1255	0.0536
	<b>3</b>		0.1226	0.0512
	<b>Mean</b>		<b>0.1222</b>	<b>0.0523</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	<b>400</b>	0.1854	0.0655
	<b>2</b>		0.1975	0.0682
	<b>3</b>		0.1926	0.0661
	<b>Mean</b>		<b>0.1918</b>	<b>0.0666</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	<b>600</b>	0.2491	0.0761
	<b>2</b>		0.2672	0.0793
	<b>3</b>		0.2588	0.0767
	<b>Mean</b>		<b>0.2584</b>	<b>0.0774</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	<b>800</b>	0.3165	0.0852
	<b>2</b>		0.3389	0.0904
	<b>3</b>		0.3387	0.0882
	<b>Mean</b>		<b>0.3314</b>	<b>0.0879</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	<b>1000</b>	0.3908	0.0968
	<b>2</b>		0.4185	0.1057
	<b>3</b>		0.4318	0.1064
	<b>Mean</b>		<b>0.4137</b>	<b>0.1029</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	<b>1200</b>	0.4781	0.1188
	<b>2</b>		0.5168	0.1342
	<b>3</b>		0.5675	Failure
	<b>Mean</b>		<b>0.5208</b>	<b>0.1265</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	<b>1400</b>	0.5889	0.1601
	<b>2</b>		0.6456	0.1886
	<b>3</b>		-	-
	<b>Mean</b>		<b>0.6173</b>	<b>0.1743</b>



<b>CISCA Section 1 - Concentrated Load (Quarter Panel Midpoint Edge) Deflection Data</b> (Continued)				
<b>Test Location</b>	<b>Specimen No.</b>	<b>Applied Load (lb<sub>f</sub>)<sup>1</sup></b>	<b>Deflection (in)</b>	<b>Permanent Set (in)</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	<b>1600</b>	0.8858	Failure
	<b>2</b>		0.8311	0.2824
	<b>3</b>		-	-
	<b>Mean</b>		<b>0.8584</b>	<b>0.2824</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	<b>1800</b>	-	-
	<b>2</b>		1.5119	Failure
	<b>3</b>		-	-
	<b>Mean</b>		<b>1.5119</b>	<b>-</b>

<sup>1</sup> Applied load was applied in 200 lbf increments, held for one minute, incremental peak deflection measured and released to allow for incremental permanent set determination.

<b>CISCA Section 1 - Concentrated Load (Quarter Panel Midpoint Edge) Peak Load Data</b>			
<b>Test Location</b>	<b>Specimen No.</b>	<b>Load at Failure (lb<sub>f</sub>)</b>	<b>Mode of Failure</b>
<b>Quarter Panel Midpoint Edge</b>	<b>1</b>	1601.14	Panel Fracture
	<b>2</b>	1801.16	Panel Fracture
	<b>3</b>	1201.20	Panel Fracture
	<b>Mean</b>	<b>1534.50</b>	<b>Panel Fracture</b>

CISCA Section 2 - Ultimate Load Comprehensive Data				
Test Location	Specimen No.	Loading Area (in <sup>2</sup> )	Ultimate Failure Load (lb <sub>f</sub> )	Mode of Failure
Full Panel Center	1	1.0	6039.7	Quarter Panel Kick Out
	2		5994.7	Quarter Panel Kick Out
	3		5722.5	Quarter Panel Kick Out
	Mean		<b>5919.0</b>	<b>Quarter Panel Kick Out</b>
Center of Quarter Panel	1	1.0	2941.8	Panel Fracture
	2		1959.0	Panel Fracture
	3		2999.0	Panel Fracture
	Mean		<b>2633.3</b>	<b>Panel Fracture</b>
Quarter Panel Midpoint Edge	1	1.0	1745.0	Panel Fracture
	2		1841.9	Panel Fracture
	3		1364.8	Panel Fracture
	Mean		<b>1650.6</b>	<b>Panel Fracture</b>

CISCA Section 3 - Rolling Load (Wheel A - 10 Pass Test) Comprehensive Data						
Travel Path		Applied Load (lb <sub>f</sub> )	Measured Deformation			
No.	Location		Beam Deformation		Local Deformation	
			Initial	Post-Cycling	Initial	Post-Cycling
1	Full Panel Center	800	0.000	<b>0.000</b>	0.000	<b>0.000</b>
2	Quarter Panel Center	800	0.000	<b>0.000</b>	0.000	<b>0.000</b>

ASTM D 635 - Rate of Burn						
Specimen	Initial Burn	Sustained Burn Beyond 30 sec or 25 mm	Length Burned, L (mm)	Time, t (sec)	Linear Burn Rate, V (mm/min)	Comments
1	Yes	No	0	30	0	The flame did not reach or pass the 25 mm gage mark for any specimen tested
2	Yes	No	0	30	0	
3	Yes	No	0	30	0	
4	Yes	No	0	30	0	
5	Yes	No	0	30	0	
6	Yes	No	0	30	0	
7	Yes	No	0	30	0	
8	Yes	No	0	30	0	
9	Yes	No	0	30	0	
10	Yes	No	0	30	0	

**Average Linear Burning Rate, V = 0 mm/min**

**Rate of Burn Classification: CC1**

*Satisfies performance criteria presented in Miami Dade County Checklist #0445 For the Approval of: Plastic and Foam Plastic.*

***Caveat:** This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions but does not by itself incorporate all factors required for fire hazards or fire risk assessment of materials, products, or assemblies under actual fire conditions.*

ASTM D 1929 - Self Ignition									
Specimen	Initial Mass (g)	Final Mass (g)	Mass Loss (g)	Initial Temperature (°C)			Final Temperature (°C)		
				Air	Furnace	Sample	Air	Furnace	Sample
1	2.7516	0.1387	2.6129	550.0	668.7	494.2	562.1	668.8	606.9
2	2.6819	0.2419	2.4400	589.9	713.8	524.6	644.5	713.9	605.9
3	3.0261	0.2020	2.8241	569.8	683.0	526.4	589.2	683.0	604.3
4	2.6658	0.2630	2.4028	580.2	681.6	540.1	602.3	681.7	602.7
Specimen	Ignition	Combustion Type	Observations (min:sec)						
			Char	Melt	Bubble	Foam	Smoke	Soot	
1	No	--	--	--	--	0:41	1:22	--	
2	Yes	Flame	--	--	--	0:26	0:57	1:20	
3	No	--	--	--	--	0:25	1:02	--	
4	Yes	Flame	--	--	--	0:27	0:58	1:32	

**Self Ignition Temperature: 580 °C**

*Satisfies performance criteria presented in Miami Dade County Checklist #0445 For the Approval of: Plastic and Foam Plastic.*

ASTM D 1929 - Flash Ignition									
Specimen	Initial Mass (g)	Final Mass (g)	Mass Loss (g)	Initial Temperature (°C)			Final Temperature (°C)		
				Air	Furnace	Sample	Air	Furnace	Sample
1	3.6451	0.5553	3.0898	449.9	555.2	383.9	483.9	555.4	464.7
2	3.2170	0.5676	2.6494	429.1	517.9	343.9	433.0	517.8	452.1
3	3.1259	1.2150	1.9109	411.8	504.8	295.4	421.8	505.3	436.7
4	3.3243	2.1222	1.2021	389.6	480.8	272.4	396.7	479.9	409.2
5	2.7366	1.8948	0.8418	379.9	466.4	250.2	382.4	466.5	376.4
Specimen	Ignition	Combustion Type	Observations (min:sec)						
			Char	Melt	Bubble	Foam	Smoke	Soot	
1	Yes	Flame	--	--	--	1:02	3:26	--	
2	Yes	Flame	--	--	--	1:06	3:49	--	
3	Yes	Flame	--	--	--	0:57	4:35	--	
4	Yes	Flame	--	--	--	0:59	7:30	--	
5	No	--	--	--	--	1:16	7:32	--	

**Flash Ignition Temperature: 390 °C**

*Caveat: These test results relate only to the behavior of test specimens under the particular conditions of the test. They are not intended to be used, and shall not be used, to assess the potential fire hazards of a material in use.*

<b>ASTM D 2843 - Smoke Density</b>					
<b>Specimen</b>	<b>Width (in)</b>	<b>Length (in)</b>	<b>Thickness (in)</b>	<b>Maximum Smoke Density (%)</b>	<b>Smoke Density Rating</b>
<b>1</b>	0.908	0.907	0.276	53.35	39.3
<b>2</b>	0.912	0.907	0.276	60.11	43.8
<b>3</b>	0.908	0.905	0.276	44.15	32.2

**Average Smoke Density Rating: 38.4**

*Satisfies performance criteria presented in Miami Dade County Checklist #0445 For the Approval of: Plastic and Foam Plastic.*

***Note:** During all smoke density tests, the letters on the exit sign were visible and readable through the smoke.*

***Caveat:** This standard should be used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire-hazard or fire-risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire-hazard assessment or a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard or fire-risk of a particular end use.*

<b>Full Panel Load Bearing Area Failure Load Evaluation</b>				
<b>Specimen No.</b>	<b>Panel Load Bearing Area (in<sup>2</sup>)</b>	<b>Failure Load (lb<sub>f</sub>)</b>	<b>Load per Unit Area (psi)</b>	<b>Ultimate Distributed Load (psf)</b>
<b>1</b>	95.06	35,743	376	54,144
<b>2</b>		35,871	377	54,338
<b>3</b>		36,067	379	54,635
<b>4</b>		36,867	388	55,846
<b>5</b>		34,829	366	52,759
<b>Mean</b>	<b>95.06</b>	<b>35,876</b>	<b>377</b>	<b>54,344</b>

<b>ASTM E 2322, Uniform Load/Deformation Evaluation - <i>Deflection Under Load</i></b>							
<b>Pressure (psf)</b>	<b>Specimen No.</b>						<b>Mean Deformation (in)</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	
<b>50</b>	0.02	0.02	0.01	0.01	0.02	0.03	<b>0.02</b>
<b>100</b>	0.04	0.03	0.03	0.02	0.04	0.04	<b>0.03</b>
<b>150</b>	0.05	0.04	0.04	0.03	0.05	0.05	<b>0.04</b>
<b>200</b>	0.06	0.05	0.06	0.05	0.06	0.07	<b>0.06</b>
<b>250</b>	0.09	0.07	0.07	0.06	0.08	0.08	<b>0.08</b>
<b>300</b>	0.09	0.07	0.08	0.07	0.09	0.09	<b>0.08</b>
<b>320</b>	<i>0.09</i>	<i>0.08</i>	<i>0.09</i>	<i>0.07</i>	<i>0.09</i>	<i>0.10</i>	<b><i>0.09</i></b>
<b>350</b>	0.10	0.08	0.10	0.07	0.09	0.10	<b>0.09</b>
<b>400</b>	0.10	0.08	0.09	0.08	0.10	0.11	<b>0.09</b>
<b>450</b>	0.11	0.09	0.11	0.09	0.10	0.11	<b>0.10</b>
<b>500</b>	0.11	0.09	0.11	0.09	0.11	0.12	<b>0.11</b>
<b>550</b>	0.12	0.11	0.12	0.11	0.11	0.13	<b>0.12</b>
<b>600</b>	0.12	0.11	0.13	0.11	0.11	0.13	<b>0.12</b>
<b>650</b>	0.13	0.11	0.13	0.11	0.12	0.14	<b>0.12</b>
<b>700</b>	0.13	0.10	0.13	0.11	0.11	0.13	<b>0.12</b>
<b>750</b>	0.14	0.11	0.13	0.12	0.12	0.14	<b>0.13</b>
<b>800</b>	0.14	0.11	0.14	0.12	0.12	0.14	<b>0.13</b>
<b>850</b>	0.15	0.12	0.15	0.12	0.13	0.15	<b>0.14</b>
<b>900</b>	0.15	0.12	0.15	0.13	0.13	0.15	<b>0.14</b>
<b>950</b>	0.16	0.12	0.15	0.13	0.13	0.14	<b>0.14</b>
<b>1000</b>	0.16	0.13	0.16	0.13	0.14	0.15	<b>0.15</b>
<b>1050</b>	0.17	0.13	0.16	0.13	0.14	0.15	<b>0.15</b>
<b>1100</b>	0.17	0.13	0.15	0.13	0.13	0.15	<b>0.14</b>
<b>1150</b>	0.18	0.13	0.16	0.13	0.14	0.15	<b>0.15</b>
<b>1200</b>	0.18	0.14	0.16	0.14	0.14	0.15	<b>0.15</b>
<b>1250</b>	0.19	0.16	0.16	0.15	0.15	0.18	<b>0.17</b>
<b>1300</b>	0.20	0.14	0.17	0.12	0.15	0.12	<b>0.15</b>
<b>1350</b>	0.20	0.14	0.17	0.12	0.15	0.13	<b>0.15</b>
<b>1400</b>	0.20	0.17	0.16	0.13	0.14	0.16	<b>0.16</b>

<b>ASTM E 2322, Uniform Load/Deformation Evaluation - <i>Permanent Set</i></b>							
<b>Pressure (psf)</b>	<b>Specimen No.</b>						<b>Mean Deformation (in)</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	
<b>50</b>	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<b>&lt;0.01</b>
<b>100</b>	0.01	<0.01	0.01	<0.01	0.01	0.01	<b>0.01</b>
<b>150</b>	0.01	0.01	0.01	0.01	0.01	0.01	<b>0.01</b>
<b>200</b>	0.02	0.01	0.02	0.01	0.02	0.03	<b>0.02</b>
<b>250</b>	0.04	0.03	0.04	0.03	0.04	0.04	<b>0.04</b>
<b>300</b>	0.04	0.03	0.04	0.03	0.04	0.04	<b>0.04</b>
<b>320</b>	<i>0.04</i>	<i>0.03</i>	<i>0.04</i>	<i>0.04</i>	<i>0.04</i>	<i>0.05</i>	<b><i>0.04</i></b>
<b>350</b>	0.04	0.03	0.04	0.04	0.04	0.05	<b>0.04</b>
<b>400</b>	0.05	0.04	0.05	0.04	0.04	0.06	<b>0.05</b>
<b>450</b>	0.05	0.04	0.05	0.05	0.05	0.06	<b>0.05</b>
<b>500</b>	0.05	0.04	0.05	0.05	0.05	0.06	<b>0.05</b>
<b>550</b>	0.05	0.04	0.06	0.05	0.05	0.06	<b>0.05</b>
<b>600</b>	0.05	0.04	0.06	0.05	0.05	0.07	<b>0.05</b>
<b>650</b>	0.06	0.04	0.06	0.05	0.05	0.07	<b>0.06</b>
<b>700</b>	0.06	0.04	0.06	0.06	0.06	0.07	<b>0.06</b>
<b>750</b>	0.06	0.04	0.06	0.06	0.06	0.07	<b>0.06</b>
<b>800</b>	0.06	0.04	0.06	0.06	0.06	0.08	<b>0.06</b>
<b>850</b>	0.06	0.04	0.07	0.06	0.06	0.08	<b>0.06</b>
<b>900</b>	0.06	0.04	0.06	0.06	0.06	0.08	<b>0.06</b>
<b>950</b>	0.06	0.04	0.07	0.06	0.06	0.08	<b>0.06</b>
<b>1000</b>	0.07	0.05	0.07	0.07	0.06	0.08	<b>0.07</b>
<b>1050</b>	0.07	0.05	0.07	0.07	0.06	0.09	<b>0.07</b>
<b>1100</b>	0.07	0.05	0.07	0.07	0.06	0.09	<b>0.07</b>
<b>1150</b>	0.08	0.05	0.08	0.06	0.06	0.09	<b>0.07</b>
<b>1200</b>	0.08	0.05	0.08	0.07	0.07	0.09	<b>0.07</b>
<b>1250</b>	0.08	0.05	0.087	0.07	0.07	0.10	<b>0.08</b>
<b>1300</b>	0.08	0.05	0.08	0.05	0.07	0.05	<b>0.06</b>
<b>1350</b>	0.08	0.05	0.08	0.05	0.07	0.05	<b>0.06</b>
<b>1400</b>	0.09	0.06	0.10	0.06	0.07	0.09	<b>0.08</b>

**APPENDIX B**

**Smoke Density Light Absorption Curves**



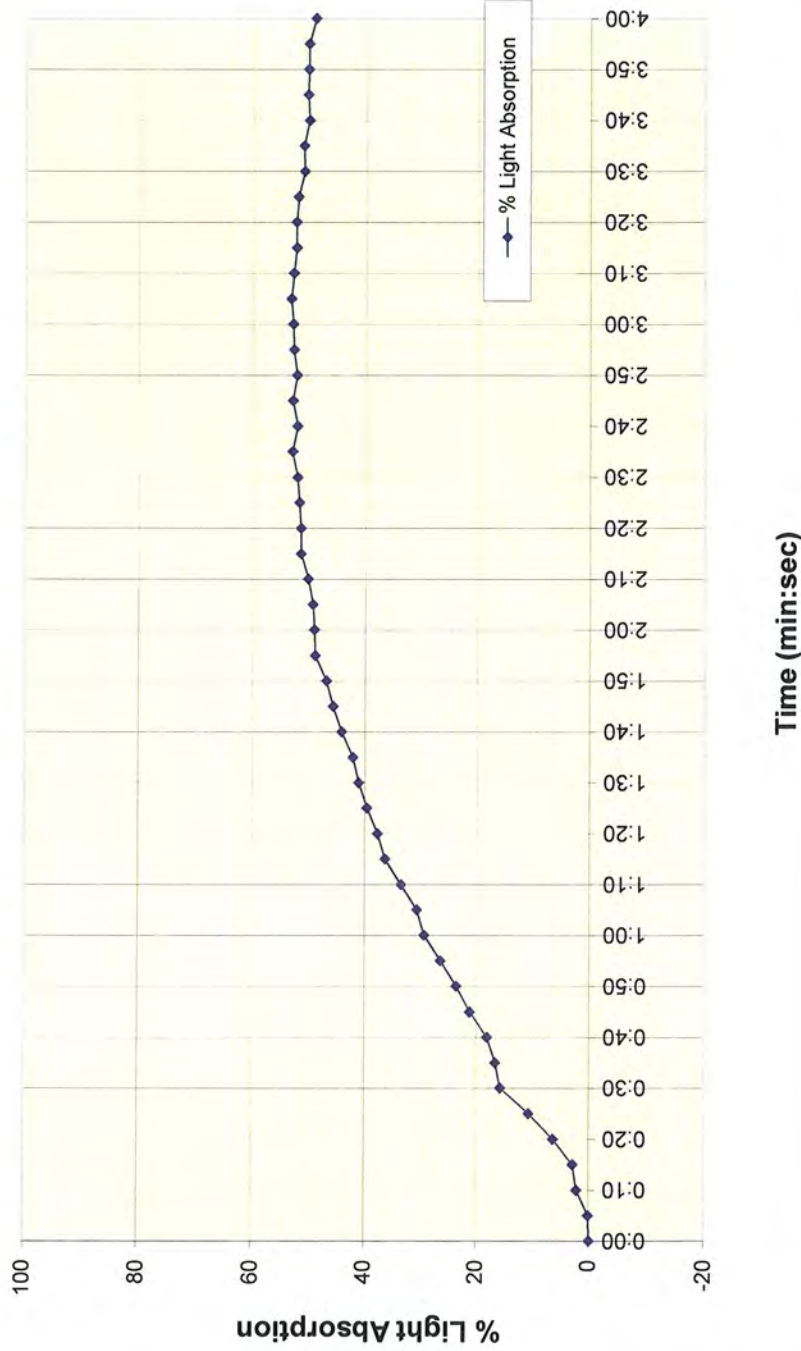
**Smoke Density Testing per ASTM D 2843**  
Exit Sign Chamber

ATI No.: A9300.01-106-31-r0  
Test Date: 5/25/2011  
Technician: SDS

Time (min:sec)	% Light Absorption	% Light Absorption
0:00	100.03	-0.03
0:05	99.91	0.09
0:10	97.81	2.19
0:15	97.13	2.87
0:20	93.62	6.38
0:25	89.32	10.68
0:30	84.23	15.77
0:35	83.34	16.66
0:40	81.85	18.15
0:45	78.78	21.22
0:50	76.35	23.65
0:55	73.53	26.47
1:00	70.63	29.37
1:05	69.32	30.68
1:10	66.42	33.58
1:15	63.58	36.42
1:20	62.23	37.77
1:25	60.35	39.65
1:30	58.91	41.09
1:35	57.82	42.18
1:40	55.80	44.20
1:45	54.24	45.76
1:50	53.06	46.94
1:55	51.02	48.98
2:00	50.86	49.14
2:05	50.59	49.41
2:10	49.73	50.27
2:15	48.44	51.56
2:20	48.42	51.58
2:25	48.12	51.88
2:30	47.78	52.22
2:35	46.89	53.11
2:40	47.77	52.23
2:45	46.95	53.05
2:50	47.65	52.35
2:55	47.11	52.89
3:00	46.98	53.02
3:05	46.65	53.35
3:10	47.10	52.90
3:15	47.57	52.43
3:20	47.55	52.45
3:25	47.90	52.10
3:30	48.93	51.07
3:35	48.81	51.19
3:40	49.78	50.22
3:45	49.52	50.48
3:50	49.62	50.38
3:55	49.71	50.29
4:00	50.88	49.12

Sample #	Manufacturer	Product Name	Material Type	Width (in)	Length (in)	Thickness (in)
1	Powerflor	Raised Floor Pedestal	Polycarbonate	0.908	0.907	0.276

**% Light Absorption Curve for Sample 1**



Calibration	Resistance (kΩ)
100% Light	2.277

Plot Area 240 Maximum Smoke Density 53.35 %  
Area Under Curve 94.2 Smoke Density Rating\* 39.3

\* Note: Miami-Dade County requires the Smoke Density Rating to be less than 75.

**Smoke Density Testing per ASTM D 2843**

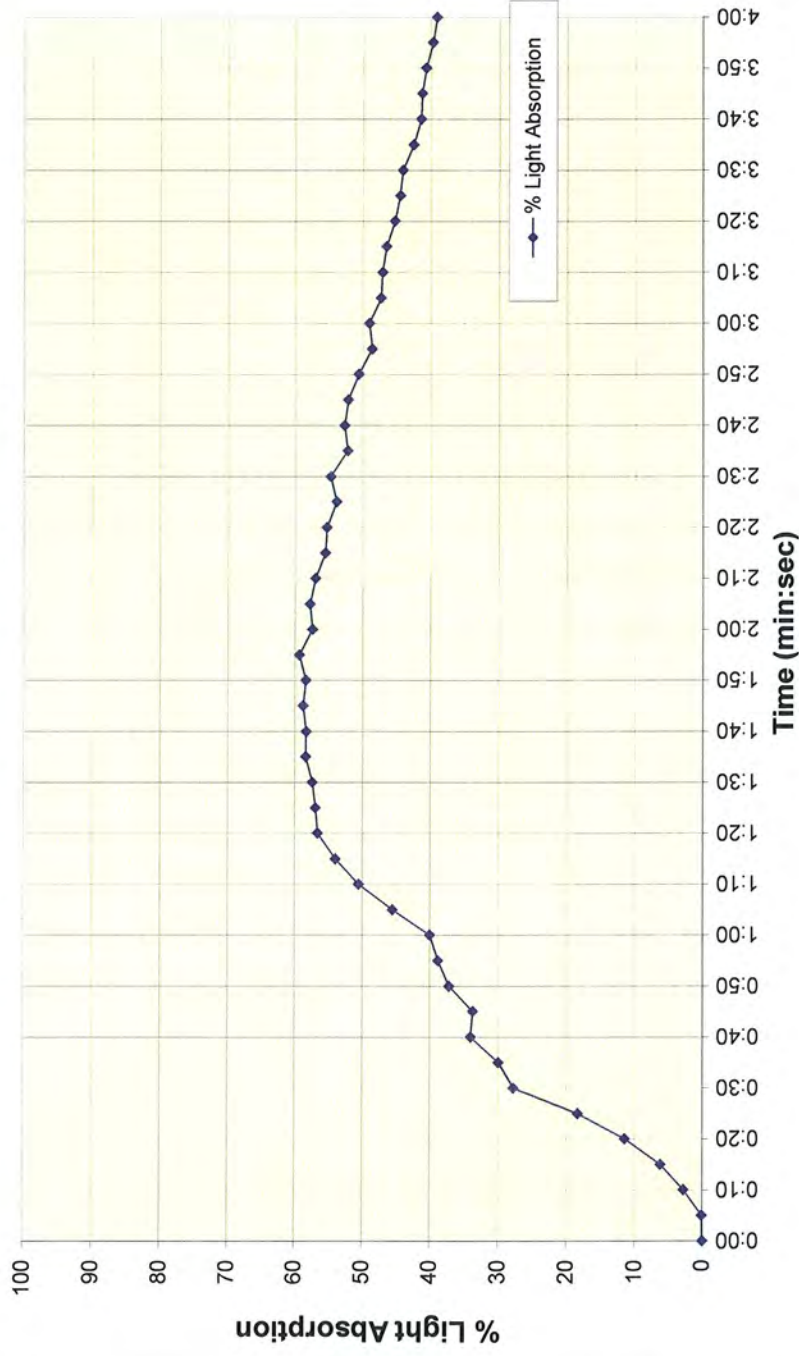
Exit Sign Chamber

ATI No.: A9300.01-106-31-r0  
 Test Date: 5/25/2011  
 Technician: SDS

Time (min:sec)	% Light Absorption	% Light Absorption
0:00	99.98	0.02
0:05	99.91	0.09
0:10	97.20	2.80
0:15	93.79	6.21
0:20	88.52	11.48
0:25	81.62	18.38
0:30	72.23	27.77
0:35	70.02	29.98
0:40	65.94	34.06
0:45	66.29	33.71
0:50	62.77	37.23
0:55	61.13	38.87
1:00	59.92	40.08
1:05	54.42	45.58
1:10	49.39	50.61
1:15	45.99	54.01
1:20	43.32	56.68
1:25	43.01	56.99
1:30	42.52	57.48
1:35	41.56	58.44
1:40	41.62	58.38
1:45	41.17	58.83
1:50	41.57	58.43
1:55	40.60	59.40
2:00	42.50	57.50
2:05	42.15	57.85
2:10	42.99	57.01
2:15	44.44	55.56
2:20	44.64	55.36
2:25	46.09	53.91
2:30	45.20	54.80
2:35	47.69	52.31
2:40	47.24	52.76
2:45	47.78	52.22
2:50	49.34	50.66
2:55	51.28	48.72
3:00	50.89	49.11
3:05	52.61	47.39
3:10	52.81	47.19
3:15	53.43	46.57
3:20	54.67	45.33
3:25	55.45	44.55
3:30	55.83	44.17
3:35	57.40	42.60
3:40	58.52	41.48
3:45	58.66	41.34
3:50	59.23	40.77
3:55	60.23	39.77
4:00	60.80	39.20

Sample #	Manufacturer	Product Name	Material Type	Width (in)	Length (in)	Thickness (in)
2	Powerflor	Raised Floor Pedestal	Polycarbonate	0.912	0.907	0.276

**% Light Absorption Curve for Sample 2**



Calibration	Resistance (kΩ)
100% Light	2.282

Plot Area 240 Maximum Smoke Density 60.11 %  
 Area Under Curve 105.1 Smoke Density Rating\* 43.8

\* Note: Miami-Dade County requires the Smoke Density Rating to be less than 75.



**Smoke Density Testing per ASTM D 2843**

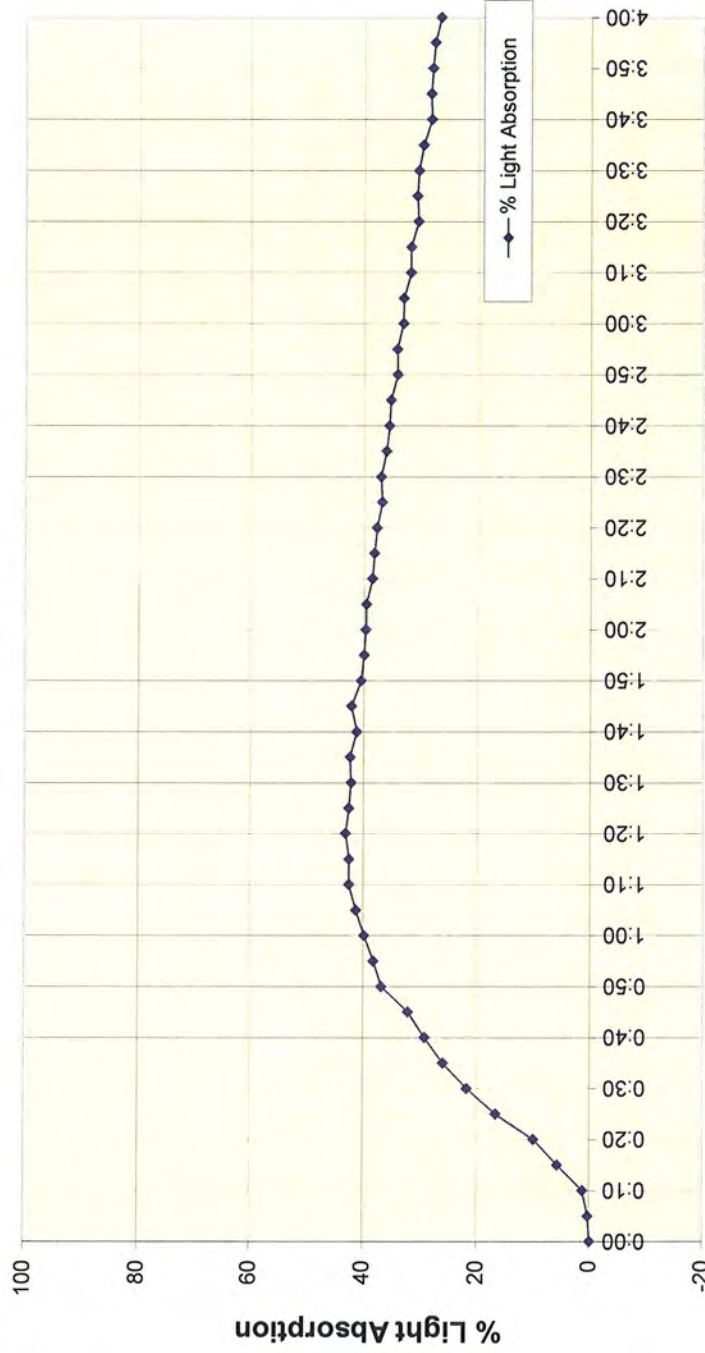
Exit Sign Chamber

ATTI No.: A9300.01-106-31-r0  
 Test Date: 5/25/2011  
 Technician: SDS

Time (min:sec)	% Light Absorption	% Light Absorption
0:00	100.01	-0.01
0:05	99.74	0.26
0:10	98.75	1.25
0:15	94.24	5.76
0:20	90.00	10.00
0:25	83.26	16.74
0:30	78.22	21.78
0:35	74.01	25.99
0:40	70.79	29.21
0:45	67.88	32.12
0:50	63.18	36.82
0:55	61.79	38.21
1:00	60.14	39.86
1:05	58.67	41.33
1:10	57.46	42.54
1:15	57.48	42.52
1:20	56.88	43.12
1:25	57.43	42.57
1:30	57.79	42.21
1:35	57.61	42.39
1:40	58.78	41.22
1:45	57.86	42.14
1:50	59.51	40.49
1:55	60.00	40.00
2:00	60.29	39.71
2:05	60.37	39.63
2:10	61.43	38.57
2:15	61.80	38.20
2:20	62.22	37.78
2:25	63.13	36.87
2:30	62.91	37.09
2:35	63.87	36.13
2:40	64.36	35.64
2:45	64.61	35.39
2:50	65.79	34.21
2:55	65.74	34.26
3:00	66.78	33.22
3:05	66.85	33.15
3:10	68.10	31.90
3:15	68.11	31.89
3:20	69.38	30.62
3:25	69.19	30.81
3:30	69.43	30.57
3:35	70.26	29.74
3:40	71.65	28.35
3:45	71.54	28.46
3:50	71.85	28.15
3:55	72.24	27.76
4:00	73.27	26.73

Sample #	Manufacturer	Product Name	Material Type	Width (in)	Length (in)	Thickness (in)
3	Powerflor	Raised Floor Pedestal	Polycarbonate	0.908	0.905	0.276

**% Light Absorption Curve for Sample 3**



**Time (min:sec)**

Calibration	Resistance (kΩ)
100% Light	2.281

Plot Area	240	Maximum Smoke Density	44.15 %
Area Under Curve	77.4	Smoke Density Rating*	32.2

\* Note: Miami-Dade County requires the Smoke Density Rating to be less than 75.

**Smoke Density Testing per ASTM D 2843**

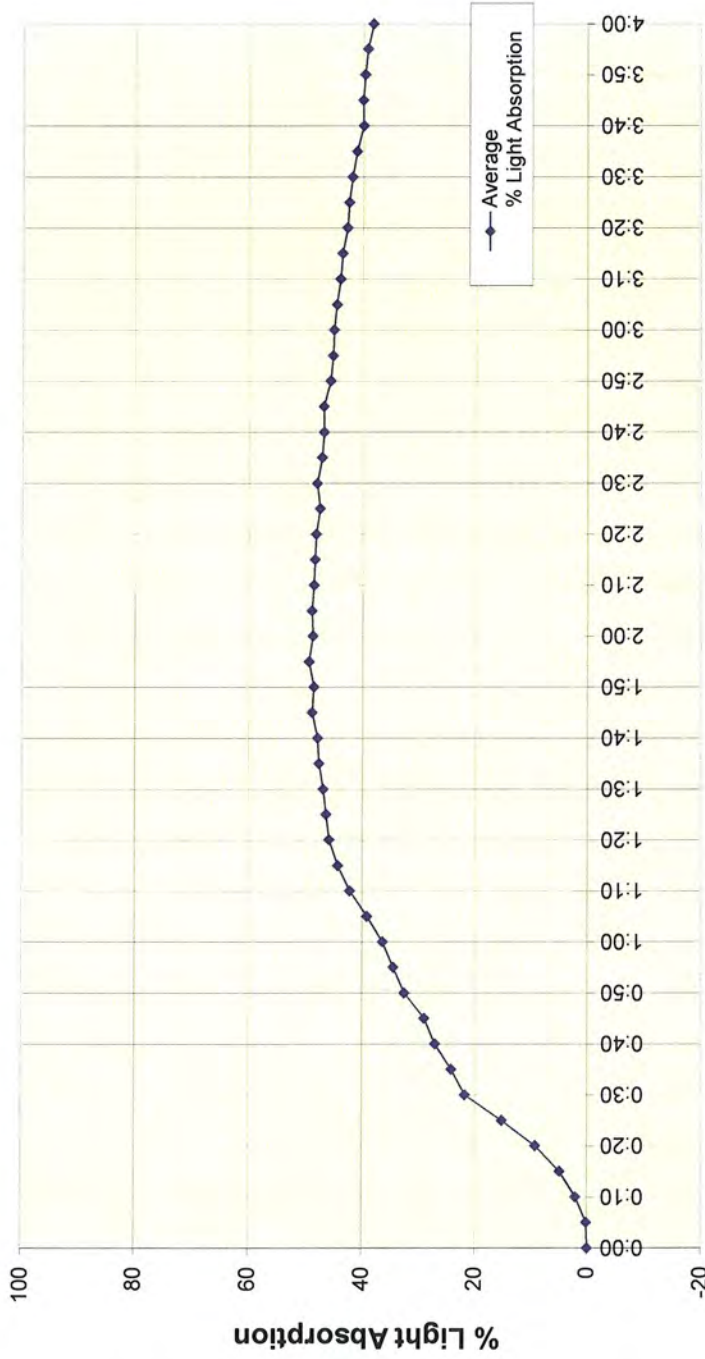
Exit Sign Chamber

ATI No.: A9300.01-106-31-r0  
 Test Date: 5/25/2011  
 Technician: SDS

Time (min:sec)	Average % Light Absorption
0:00	0.00
0:05	0.15
0:10	2.08
0:15	4.95
0:20	9.29
0:25	15.27
0:30	21.77
0:35	24.21
0:40	27.14
0:45	29.02
0:50	32.57
0:55	34.52
1:00	36.44
1:05	39.19
1:10	42.25
1:15	44.32
1:20	45.86
1:25	46.40
1:30	46.92
1:35	47.67
1:40	47.93
1:45	48.91
1:50	48.62
1:55	49.46
2:00	48.78
2:05	48.97
2:10	48.62
2:15	48.44
2:20	48.24
2:25	47.55
2:30	48.03
2:35	47.18
2:40	46.88
2:45	46.89
2:50	45.74
2:55	45.29
3:00	45.11
3:05	44.63
3:10	44.00
3:15	43.63
3:20	42.80
3:25	42.49
3:30	41.94
3:35	41.18
3:40	40.02
3:45	40.09
3:50	39.77
3:55	39.28
4:00	38.35

Sample #	Manufacturer	Product Name	Material Type	Width (in)	Length (in)	Thickness (in)
AVERAGE	Powerflor	Raised Floor Pedestal	Polycarbonate	0.909	0.906	0.276

**Average % Light Absorption Curve**



Time (min:sec)

Calibration	Resistance (kΩ)
100% Light	2.277

Plot Area	240	Maximum Smoke Density	49.59 %
Area Under Curve	92.2	Smoke Density Rating*	38.4

\* Note: Miami-Dade County requires the Smoke Density Rating to be less than 75.

## **APPENDIX C**

### **Photographs**





**Photo No. 1**  
**Typical Fixed Height Low Profile Raised Floor System Panel Specimens As-Received**



**Photo No. 2**  
**Typical Pretest Condition Quarter Panel Detail**



**Photo No. 3**  
**CISCA Sections 1 and 2 - Full Panel Center Point Loading Test Setup**



**Photo No. 4**  
**CISCA Sections 1 and 2 - Full Panel Center Point Loading Test in Progress**

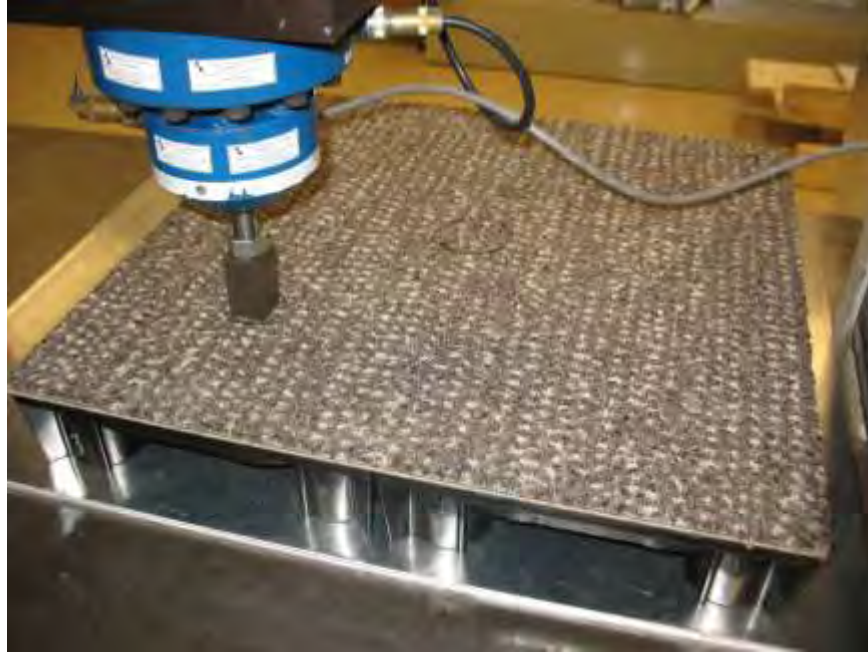


**Photo No. 5**  
**CISCA Sections 1 and 2 - Full Panel Center Point Loading Test Kick Out Failure**

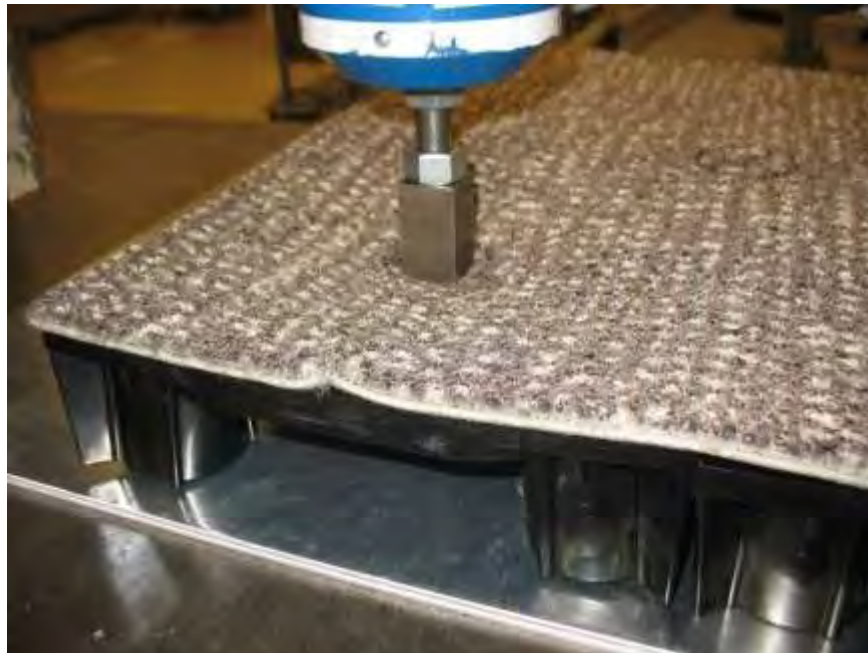


**Photo No. 6**  
**CISCA Sections 1 and 2 - Full Panel Center Point Loading Test Underside Failure Detail**





**Photo No. 7**  
**CISCA Sections 1 and 2 - Center of Quarter Panel Loading Test Setup**



**Photo No. 8**  
**CISCA Sections 1 and 2 - Center of Quarter Panel Loading Test in Progress**



**Photo No. 9**  
**CISCA Sections 1 and 2 - Center of Quarter Panel Loading Test Panel Fracture Failure**



**Photo No. 10**  
**CISCA Sections 1 and 2 - Center of Quarter Panel Underside Failure Detail**



**Photo No. 11**  
**CISCA Sections 1 and 2 - Quarter Panel Midpoint Edge Loading Test Setup**



**Photo No. 12**  
**CISCA Sections 1 and 2 - Quarter Panel Midpoint Edge Loading Test in Progress**





**Photo No. 13**  
**CISCA Sections 1 and 2 - Quarter Panel Midpoint Edge Loading Test Panel**  
**Fracture Failure**



**Photo No. 14**  
**CISCA Section 3 - Rolling Load Test Apparatus**



**Photo No. 15**  
**CISCA Section 3 - Travel Path 1 (Full Panel Center) Post-Cycling Specimen Condition**



**Photo No. 16**  
**CISCA Section 3 - Travel Path 2 (Quarter Panel Center) Post-Cycling Specimen Condition**



**Photo No. 17**  
**CISCA Section 3 - Post-Cycling Beam Deformation Measurement**



**Photo No. 18**  
**CISCA Section 3 - Post-Cycling Local Deformation Measurement**



**Photo No. 19**  
**ASTM D 635 - Rate of Burn Test Setup**



**Photo No. 20**  
**ASTM D 635 - Flame Exposure Detail**





**Photo No. 21**  
**ASTM D 635 - Typical Post Exposure Specimen Detail**

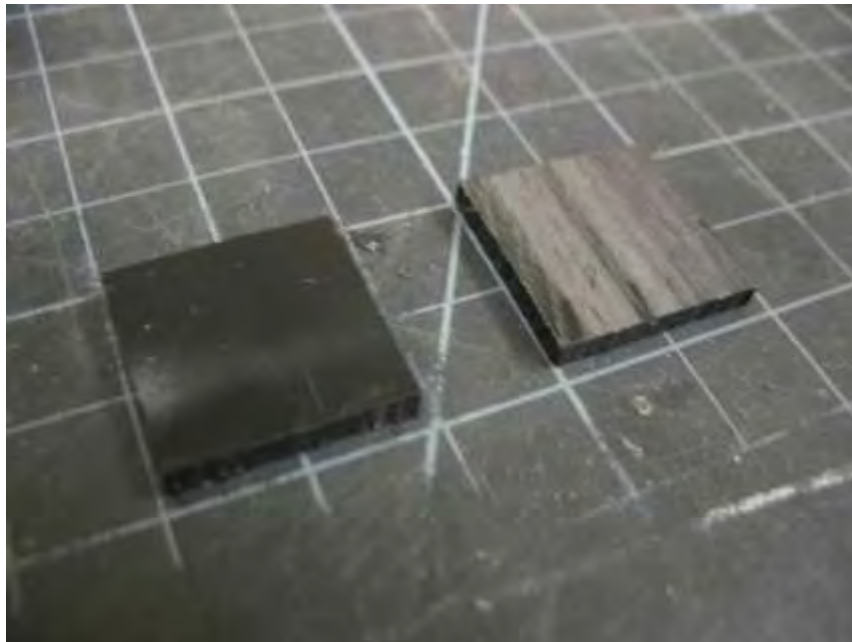


**Photo No. 22**  
**ASTM D 1929 - Typical Pretest Condition Ignition Specimens**





**Photo No. 23**  
**ASTM D 1929 - Typical Post-Ignition Specimen Condition**



**Photo No. 24**  
**ASTM D 2643 - Typical Pretest Condition Smoke Density Specimens**  
**(Specimens Were Stacked to Achieve Required Test Thickness)**



**Photo No. 25**  
**ASTM D 2643 - Smoke Density Test Apparatus**



**Photo No. 26**  
**ASTM D 2643 - Typical Post-Exposure Condition Smoke Density Specimen**



**Photo No. 27**  
**ASTM E 2322 - Uniform Load Evaluation Test Fixture**



**Photo No. 28**  
**ASTM E 2322 - Typical Posttest Condition Uniform Load Specimen**  
**(No Damage Observed Post 1,600 psf Applied Load)**



**Photo No. 29**  
**Full Panel Load Bearing Area Failure Load Evaluation Test Setup**



**Photo No. 30**  
**Typical Full Panel Load Bearing Area Failure Load Evaluation Compressive Failure Detail**