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January 27, 2012 1/1

Mr. Clyde Allen
The Tapco Group
4057 South Oak Street
Metamora, MI 48455

RE: Intertek Summary Letter 100625560MID-01 (Please reference Intertek Test Report G100061092MID-001 for full test report)
Shutter Type: Atlantic Premium Shutters Architectural Collection Louver (1/8" polycarbonate sheet on exterior)
Shutter Size: 30" by 102"
Test Standards: R & D large missile testing per ASTM E1886-05 Sections 11.1.2 through 11.3

Architectural Collection- Louver

Sample	Impact Location	Missile Speed (ft/sec)	Observations	Through Penetration
#13	#1- Lower Right Corner	51	Crack in lower rail- knocked out approx. 13 louvers- approx. 3.5" permanent deformation	No
	#2- Center Meeting Edge	51	Crack in meeting stile- knocked out numerous louvers- tie bar bolts replaced with 2.5"	No
	#3- Center Panel	50	Crack in fiberglass- knocked out numerous louvers	No
#14	#1- Lower Left Corner	50	Crack in bottom rail- bent hinge- knocked out numerous louvers	No
	#2- Center Meeting Edge	51	Crack in meeting edge stile- knocked out louvers	No
	#3- Center Panel	50	Crack in fiberglass- knocked out louvers	No
#15	#1- Center Meeting Edge	50	Minimal effect	No
	#2- Center Panel	50	Knocked out approx. 20 louvers-Crack in fiberglass	No
	#3- Upper Left Corner	49	Broke hinge support- Crack in top rail- knocked out louvers	No

Summary of Results

Missile Level	D (per ASTM E1996)
Nominal Missile Speed	50 ft/sec
Wind Zone	4 (per ASTM E1996)

Note: The test specimens were only tested to the impact portion of ASTM E1886.

Reported by:
Russ Burt
Senior Associate Engineer

Reviewed by:
Rick Curkeet, P.E.
Chief Engineer

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January 27, 2012

Mr. Clyde Allen
The Tapco Group
4057 South Oak Street
Metamora, MI 48455

RE: Intertek Summary Letter 100625560MID-02 (Please reference Intertek Test Report G100061092MID-001 for full test report)
Shutter Type: Atlantic Premium Shutters Architectural Collection Raised Panel (1/8" polycarbonate sheet on exterior)
Shutter Size: 30" by 102"
Test Standards: R & D large missile testing per ASTM E1886-05 Sections 11.1.2 through 11.3

Architectural Collection- Raised Panel

Sample	Impact Location	Missile Speed (ft/sec)	Observations	Through Penetration
#18	#1- Center Panel	50	Crack in horizontal member	No
	#2- Center Meeting Edge	49	Minimal effect	No
	#3- Lower Right Corner	50	Hinge bent- cracked bottom rail	No
#20	#1- Center Panel	50	Horizontal crack	No
	#2- Center Meeting Edge	50	Cracked meeting stiles	No
	#3- Lower Left Corner	50	Crack in fiberboard	No
#21	#1- Center Panel	50	Crack	No
	#2- Center Meeting Edge	50	Cracked meeting stiles	No
	#3- Upper Right Corner	50	Crack	No

Summary of Results

Missile Level	D (per ASTM E1996)
Nominal Missile Speed	50 ft/sec
Wind Zone	4 (per ASTM E1996)

Note: The test specimens were only tested to the impact portion of ASTM E1886.

Reported by:

Russ Burt
Senior Associate Engineer

Reviewed by:

Rick Curkeet, P.E.
Chief Engineer

CONSTRUCTION TESTING CORPORATION

13873 N.W. 19th Avenue Miami, Florida 33054

Phone : 305-685-6657 Fax : 305-685-6659 Email : ctclab@bellsouth.net

Report No: 02-042 **21 December 2002**

Test Dates: 23& 24 October, 1 & 2 November 2002

SUMMARY OF TESTING : LOUVERED BAHAMA SHUTTERS

Client:

Atlantic Shutter Systems

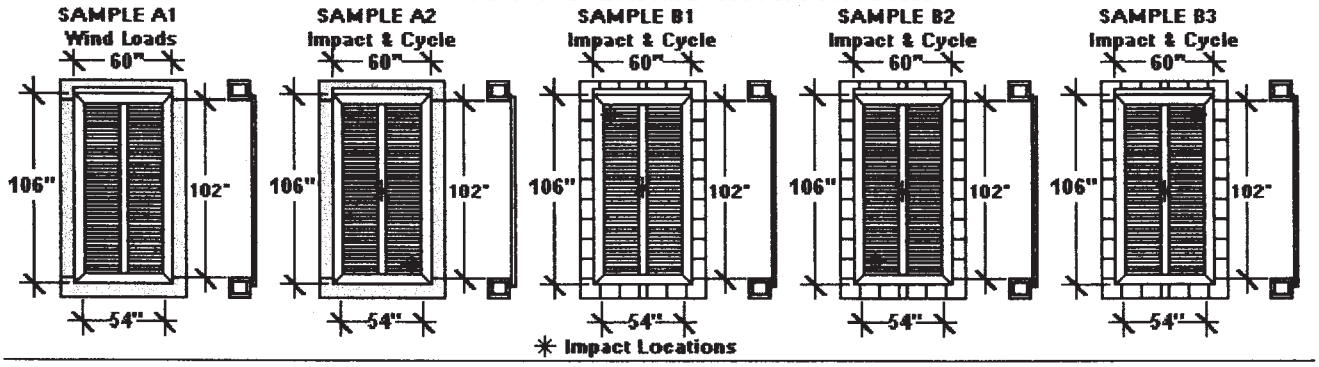
3239 HWY 301 NORTH

LATTA, SC 29565

Phone: 877-437-0608 Fax: 843-752-0111

ATLANTIC SHUTTER SYSTEMS : LOUVERED BAHAMA SHUTTER

Tested for ASTM E 330 & ASTM E 1886 Per ASTM E 1996



WIND LOADS : Specimen A1 was wind loaded in accordance with **ASTM E 330-97**. Positive wind loading verified a **Design Load of 60.0 PSF** and was discontinued to preserve the specimen for negative wind loads. Negative wind loading verified a **Design Load of -60.0 PSF,** loading was continued until the specimen's anchorages failed (DL +/- 62.4 PSF, proven but not taken advantage of during the required cyclic wind load testing).

IMPACTS : Specimen A2, B1, B2 & B3 were impacted in accordance with **ASTM E 1886-97** per specification **ASTM E 1996-02** at **Missile Level D.** None failed as a result of impacts.

CYCLIC WIND LOADS : Specimen A2, B1, B2 & B3 were subjected to cyclic wind loads in accordance with **ASTM E 1886-97** per specification **ASTM E 1996-02, Table 1.** All specimen successfully completed the cyclic wind loads to verified a **Design Load of +/- 60 PSF**.

CONCLUSION: Following testing all specimen were disassembled. No failures were observed in the shutters, the fastenings or anchorages, except as noted in specimen deliberately tested to failure, descriptions of these follow the relevant data. The shutter product here in and in the accompanying drawings complies with **Standard Specification for Performance of... Storm Shutters Impacted by Windborne Debris in Hurricanes** for a **Design Load of +/- 60 PSF** at **Missile Level D.**

Respectfully submitted,

CONSTRUCTION TESTING CORPORATION
(Miami-Dade Certification # 01-0212.01)
(SBCCI Certification # TL-9741)

Report by George Dotzler: _____.

Test witnessed & report reviewed By Yamil G. Kuri, P.E.: : _____.

DEC 26 2002

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January 27, 2012 1/1

Mr. Clyde Allen
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RE: Intertek Summary Letter 100625560MID-05 (Please reference Intertek Test Report G100526294MID-001 for full test report)
Shutter Type: Atlantic Premium Shutters Classic Collection Board and Batten (1/8" polycarbonate sheet on exterior)
Shutter Size: 24" by 84"
Test Standards: R & D large missile testing per ASTM E1886-05 Sections 11.1.2 through 11.3

Classic Collection – Board and Batten

Sample	Impact Location	Missile Speed (ft/sec)	Observations	Through Penetration
#1	#1- Center of Panel	49	Crack in fiberboard	No
	#2- Center Meeting Edge	51	Crack in fiberboard- 2 hinges bent	No
	#3- Lower Right Corner	50	Crack in fiberboard- 2 hinges bent	No
#2	#1- Center Panel	50	Crack in fiberboard	No
	#2- Center Meeting Edge	49	Crack in fiberboard- 2 hinges bent	No
	#3- Lower Left Corner	50	Crack in fiberboard- 2 hinges bent	No
#3	#1- Center Panel	51	Crack in fiberboard- 3 hinges bent	No
	#2- Center Meeting Edge	50	Crack in fiberboard	No
	#3- Upper Right Corner	50	Crack in fiberboard- 2 hinges bent	No

Summary of Results

Missile Level	D (per ASTM E1996)
Nominal Missile Speed	50 ft/sec
Wind Zone	4 (per ASTM E1996)

Note: The test specimens were only tested to the impact portion of ASTM E1886.

Reported by:

Russ Burt
Senior Associate Engineer

Reviewed by:

Rick Curkeet, P.E.
Chief Engineer

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Metamora, MI 48455

RE: Intertek Summary Letter 100625560MID-03 (Please reference Intertek Test Report G100061092MID-001 for full test report)
Shutter Type: Atlantic Premium Shutters Classic Collection Faux Louver (1/8" polycarbonate sheet on exterior)
Shutter Size: 30" by 96"
Test Standards: R & D large missile testing per ASTM E1886-05 Sections 11.1.2 through 11.3

Classic Collection - Faux Louver

Sample	Impact Location	Missile Speed (ft/sec)	Observations	Through Penetration
#2	#1- Center of Panel	50	10" crack in fiberboard- fiberboard broken in half	No
	#2- Center Meeting Edge	49	Crack in stile of right panel	No
	#3- Lower Right Corner	49	Hinge support bent- 3" by 4" section of fiberboard broken	No
#3	#1- Center Panel	50	12" crack in fiberboard- 2 hinge supports bent	No
	#2- Center Meeting Edge	50	Both stiles cracked	No
	#3- Upper Left Corner	50	Hinge bent- 13" by 6" crack in fiberboard- hinge weld broke	No
#4	#1- Lower Left Corner	50	Bent hinge- crack in fiberboard- approx. 3" permanent deformation	No
	#2- Center Meeting Edge	50	Crack in fiberboard at both stiles	No
	#3- Center Panel	51	Crack in fiberboard	No

Summary of Results

Missile Level	D (per ASTM E1996)
Nominal Missile Speed	50 ft/sec
Wind Zone	4 (per ASTM E1996)

Note: The test specimens were only tested to the impact portion of ASTM E1886.

Reported by:

Russ Burt
Senior Associate Engineer

Reviewed by:

Rick Curkeet, P.E.
Chief Engineer

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January 27, 2012 1/1

Mr. Clyde Allen
The Tapco Group
4057 South Oak Street
Metamora, MI 48455

RE: Intertek Summary Letter 100625560MID-04 (Please reference Intertek Test Report G100061092MID-001 for full test report)
Shutter Type: Atlantic Premium Shutters Classic Collection Raised Panel (1/8" polycarbonate sheet on exterior)
Shutter Size: 30" by 96"
Test Standards: R & D large missile testing per ASTM E1886-05 Sections 11.1.2 through 11.3

Classic Collection – Raised Panel

Sample	Impact Location	Missile Speed (ft/sec)	Observations	Through Penetration
#5	#1- Center of Panel	50	Crack in hinge stile fiberboard	No
	#2- Center Meeting Edge	50	Crack in fiberboard at meeting stile	No
	#3- Lower Left Corner	51	20" crack in fiberboard- bent hinge- approx. 4" permanent deformation	No
#6	#1- Center Panel	50	Crack in fiberboard	No
	#2- Center Meeting Edge	50	Both stiles cracked at meeting edge	No
	#3- Lower Right Corner	50	Crack in fiberboard- bent hinge- Approx. 4.75" permanent deformation	No
#7	#1- Center Panel	50	Bent hinge- crack in fiberboard	No
	#2- Center Meeting Edge	50	Crack in fiberboard at both stiles	No
	#3- Upper Left Corner	50	Crack in fiberboard- bent hinge	No

Summary of Results

Missile Level	D (per ASTM E1996)
Nominal Missile Speed	50 ft/sec
Wind Zone	4 (per ASTM E1996)

Note: The test specimens were only tested to the impact portion of ASTM E1886.

Reported by:

Russ Burt
Senior Associate Engineer

Reviewed by:

Rick Curkeet, P.E.
Chief Engineer

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