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REPORT ISSUED TO:

WORDLWIDE DOOR CORPORATION

5017 North Coolidge Avenue
Tampa, FL 33613

Report No: TEL 01701823
Test Dates: April 12, 2017
Through April 21, 2017
Report Date: April 24, 2017

IAS Lab Accreditation Number TL-299

Project Summary: Testing Evaluation Laboratories, Inc. (TEL) was contracted by Worldwide Door Corporation to perform tests on Opaque Fiberglass Doors with Sidelites at TEL's Plant City, FL test facility.

Test specimen descriptions and results are reported herein.

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

High Velocity Hurricane Zone Protocols – TAS 201-94, TAS 202-94 and TAS 203-94

Test Specimen Description:

Series / Model: Opaque Fiberglass Doors

Type: Opaque Inswing and Outswing Impact Rated Fiberglass Doors with Sidelites (OXO and OXXO)

Overall Size: 112.00" w x 97.00" h – Outswing (OXO) – Specs. 1, 1a, 1b, 1c
112.00" w x 98.00" h – Inswing (OXO) – Specs. 2, 2a
148.75" w x 97.00" h – Outswing (OXXO) – Specs. 3, 3a, 3b, 3c
148.75" w x 98.00" h – Inswing (OXXO) – Specs. 4, 4a

Daylight Opening: 21.00" wide x 79" high – Sidelites – All Specimens

Frame Material: Composite

Finish: Unfinished

For Tested Elevation, Vertical Cross Sections, Horizontal Cross Sections, Components, Frame Anchoring, Glazing Details and Bill of Materials See Attached Drawing Numbers L-7960, L-7961, L-7962 and L-7963.

STRUCTURAL TESTS - TAS 202-94

Specimen 1 – 3’0 x 8’0 - Opaque Fiberglass Door with Sidelites – OXO – Outswing - CHS

TAS 202-94	Design Pressure	Positive 60.0	Negative 60.0		Result
Air Infiltration (ASTM E283-04)		Pressure 1.57 PSF		SCFM/Ft ² 0.016	Pass
Structural Loads (ASTM E330-02)					
Range	Time (sec)	Load (psf)	Location	Deflection	Allowable (Def)
Half Test Positive	30	30.00			
Design Positive	30	60.00	1	0.657"	Report
Half Test Negative	30	30.00			
Design Negative	30	60.00	1	0.907"	Report
Water Infiltration (ASTM E331-00)		Pressure 9.00 PSF		Time 15.0 Min.	Result Pass

Note #1: Water Infiltration performed after Positive and Negative half and design loads.

Structural Loads (ASTM E330-02)						
Range	Time (sec)	Load (psf)	Location	Deflection	Set	Allowable (Set)
Half Proof Positive	10	45.00				
Test Positive	30	90.00	1	0.850"	0.023"	0.382"
Half Proof Negative	10	45.00				
Test Negative	30	90.00	1	1.099"	0.205"	0.382"
			2	1.381"	0.046"	0.197"

Deflection Locations:

- Location 1 – Center of Mullion at Latch Stile.*
- Location 2 – Top of Door Panel at Latch Stile in Negative Direction.*

Conclusion: TEL observed no signs of failure in any area of this test specimen during the Uniform Static Load Test. In addition, specimen met the permanent set requirements. Therefore, this specimen satisfies the uniform static load test requirements of TAS 202-94.

James Hayhurst, Test Technician

STRUCTURAL TESTS - TAS 202-94

Specimen 2 – 3'0 x 8'0 - Opaque Fiberglass Door with Sidelites – OXO – Inswing - CHS

TAS 202-94	Design Pressure	Positive 60.0	Negative 65.0		
Air Infiltration (ASTM E283-04)		Pressure 1.57 PSF		SCFM/Ft ² 0.054	Result Pass
Structural Loads (ASTM E330-02)					
Range	Time (sec)	Load (psf)	Location	Deflection	Allowable (Def)
Half Test Positive	30	30.00			
Design Positive	30	60.00	1	0.893"	Report
Half Test Negative	30	32.50			
Design Negative	30	65.00	1	0.698"	Report
Water Infiltration (ASTM E331-00)		Pressure 0.00 PSF		Time 15.0 Min.	Result Pass

Note #1: Water Infiltration performed after Positive and Negative half and design loads.

Structural Loads (ASTM E330-02)						
Range	Time (sec)	Load (psf)	Location	Deflection	Set	Allowable (Set)
Half Proof Positive	10	45.00				
Test Positive	30	90.00	1	1.308"	0.075"	0.385"
			2	1.094"	0.010"	0.197"
Half Proof Negative	10	48.75				
Test Negative	30	97.50	1	0.962"	0.028"	0.385"

Deflection Locations:

Location 1 – Center of Mullion at Latch Stile.

Location 2 – Top of Door Panel at Latch Stile in Positive Direction.

Conclusion: TEL observed no signs of failure in any area of this test specimen during the Uniform Static Load Test. In addition, specimen met the permanent set requirements. Therefore, this specimen satisfies the uniform static load test requirements of TAS 202-94.

James Hayhurst, Test Technician

STRUCTURAL TESTS - TAS 202-94

Specimen 3 – 6’0 x 8’0 - Opaque Fiberglass Doors with Sidelites – OXXO – Outswing - CHS

TAS 202-94	Design Pressure	Positive 55.0	Negative 55.0		Result
Air Infiltration (ASTM E283-04)		Pressure 1.57 PSF		SCFM/Ft ² 0.091	Pass
Structural Loads (ASTM E330-02)					
Range	Time (sec)	Load (psf)	Location	Deflection	Allowable (Def)
Half Test Positive	30	27.50			
Design Positive	30	55.00	1	0.758"	Report
Half Test Negative	30	27.50			
Design Negative	30	55.00	1	0.689"	Report
Water Infiltration (ASTM E331-00)		Pressure 8.25 PSF		Time 15.0 Min.	Result Pass

Note #1: Water Infiltration performed after Positive and Negative half and design loads.

Structural Loads (ASTM E330-02)						
Range	Time (sec)	Load (psf)	Location	Deflection	Set	Allowable (Set)
Half Proof Positive	10	41.25				
Test Positive	30	82.50	1	1.184"	0.090"	0.386"
			2	2.063"	0.164"	0.381"
Half Proof Negative	10	41.25				
Test Negative	30	82.50	1	1.166"	0.382"	0.386"
			2	3.467"	0.162"	0.381"
			3	1.283"	0.129"	0.197"

Deflection Locations:

Location 1 – Center of Mullion at Latch Stile.

Location 2 – Center of Astragal.

Location 3 – Top of Door Panel in Negative Direction

Conclusion: TEL observed no signs of failure in any area of this test specimen during the Uniform Static Load Test. In addition, specimen met the permanent set requirements. Therefore, this specimen satisfies the uniform static load test requirements of TAS 202-94.

James Hayhurst, Test Technician

STRUCTURAL TESTS - TAS 202-94

Specimen 4 – 6'0 x 8'0 - Opaque Fiberglass Doors with Sidelites – OXXO – Inswing - CHS

TAS 202-94	Design Pressure	Positive 50.0	Negative 55.0		Result
Air Infiltration (ASTM E283-04)		Pressure 1.57 PSF		SCFM/Ft ² 0.031	Pass
Structural Loads (ASTM E330-02)					
Range	Time (sec)	Load (psf)	Location	Deflection	Allowable (Def)
Half Test Positive	30	25.00			
Design Positive	30	50.00	1	0.658"	Report
Half Test Negative	30	27.50			
Design Negative	30	55.00	1	0.748"	Report
Water Infiltration (ASTM E331-00)					
		Pressure 0.00 PSF		Time 15.0 Min.	Result Pass

Note #1: Water Infiltration performed after Positive and Negative half and design loads.

Structural Loads (ASTM E330-02)						
Range	Time (sec)	Load (psf)	Location	Deflection	Set	Allowable (Set)
Half Proof Positive	10	37.50				
Test Positive	30	75.00	1	1.215"	0.244"	0.386"
			2	2.995"	0.282"	0.381"
			3	3.476"	0.053"	0.197"
Half Proof Negative	10	41.25				
Test Negative	30	82.50	1	1.250"	0.105"	0.386"
			2	2.443"	0.246"	0.381"

Deflection Locations:

- Location 1 – Center of Mullion at Latch Stile.*
- Location 2 – Center of Astragal.*
- Location 3 – Top of Door Panel in Positive Direction*

Conclusion: TEL observed no signs of failure in any area of this test specimen during the Uniform Static Load Test. In addition, specimen met the permanent set requirements. Therefore, this specimen satisfies the uniform static load test requirements of TAS 202-94.

James Hayhurst, Test Technician

IMPACT AND CYCLING TESTS

Specimen 1a – 3’0 x 8’0 - Opaque Fiberglass Door with Sidelites – OXO – Outswing - CHS

TAS 201-93 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
75° F	D	9.0 lbs, 3 oz.	8'- 0"	17’0"
Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	93.00"	51.00"	50.1 fps
2	Pass	89.00"	17.50"	50.0 fps
3	Pass	56.00"	48.50"	50.1 fps
4	Pass	44.50"	7.00"	49.8 fps
5	Pass	37.50"	53.00"	49.9 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

TAS 203-94 – Fatigue Load Cycling Design Pressure +60.0 psf / -60.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	12.0 to 30.0	3500	2.71
0% to 60%	0.0 to 36.0	300	2.92
50% to 80%	30.0 to 48.0	600	1.23
30% to 100%*	18.0 to 60.0	100	1.68
Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	18.0 to 60.0	50	1.54
50% to 80%	30.0 to 48.0	1050	1.14
0% to 60%	0.0 to 36.0	50	1.29
20% to 50%	12.0 to 30.0	3350	1.09
*Door Panel deflected 1.00" from original plane at 100% Positive load and 1.50" from original plane at 100% Negative load. (Note: Deflection measured at center of door panel.) At the completion of cycles the specimen was intact.			

James Hayhurst, Test Technician

Conclusion: The large missile impacted the intended targets. After 9,002 cycles the specimen showed no resultant failure or duress and no failure of fasteners. Therefore, this specimen satisfies the large missile requirements of TAS 201-94/TAS 203-94.

IMPACT AND CYCLING TESTS

Specimen 1b – 3’0 x 8’0 - Opaque Fiberglass Door with Sidelites – OXO – Outswing - CHS

TAS 201-93 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
75° F	D	9.0 lbs, 3 oz.	8'- 0"	17'0"
Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	93.00"	52.00"	49.8 fps
2	Pass	88.00"	17.50"	49.8 fps
3	Pass	56.00"	49.00"	50.1 fps
4	Pass	44.00"	7.00"	49.9 fps
5	Pass	37.50"	52.00"	50.0 fps

Orientation of Missile at Impact was within +/-5° of horizontal.
 None of the impacts penetrated the specimens.
 "X" measurement is from the left edge of test specimen.
 "Y" measurement is from the bottom edge of test specimen.

TAS 203-94 – Fatigue Load Cycling Design Pressure +60.0 psf / -60.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	12.0 to 30.0	3500	2.82
0% to 60%	0.0 to 36.0	300	2.35
50% to 80%	30.0 to 48.0	600	1.75
30% to 100%*	18.0 to 60.0	100	1.72

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	18.0 to 60.0	50	1.79
50% to 80%	30.0 to 48.0	1050	1.44
0% to 60%	0.0 to 36.0	50	2.06
20% to 50%	12.0 to 30.0	3350	1.25

*Door Panel deflected 1.00" from original plane at 100% Positive load and 1.50" from original plane at 100% Negative load. (Note: Deflection measured at center of door panel.) At the completion of cycles the specimen was intact.

James Hayhurst, Test Technician

Conclusion: The large missile impacted the intended targets. After 9,002 cycles the specimen showed no resultant failure or duress and no failure of fasteners. Therefore, this specimen satisfies the large missile requirements of TAS 201-94/TAS 203-94.

IMPACT AND CYCLING TESTS

Specimen 1c – 3’0 x 8’0 - Opaque Fiberglass Door with Sidelites – OXO – Outswing - CHS

TAS 201-93 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
75° F	D	9.0 lbs, 3 oz.	8'- 0"	17'0"
Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	92.00"	51.00"	50.2 fps
2	Pass	98.00"	85.00"	49.8 fps
3	Pass	68.00"	90.00"	50.0 fps
4	Pass	56.00"	48.50"	49.8 fps
5	Pass	37.50"	53.00"	49.9 fps

Orientation of Missile at Impact was within +/-5° of horizontal.
 None of the impacts penetrated the specimens.
 "X" measurement is from the left edge of test specimen.
 "Y" measurement is from the bottom edge of test specimen.

TAS 203-94 – Fatigue Load Cycling Design Pressure +60.0 psf / -60.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	12.0 to 30.0	3500	1.19
0% to 60%	0.0 to 36.0	300	2.08
50% to 80%	30.0 to 48.0	600	1.14
30% to 100%*	18.0 to 60.0	100	1.62

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	18.0 to 60.0	50	1.90
50% to 80%	30.0 to 48.0	1050	1.51
0% to 60%	0.0 to 36.0	50	2.09
20% to 50%	12.0 to 30.0	3350	1.54

*Door Panel deflected 1.00" from original plane at 100% Positive load and 1.25" from original plane at 100% Negative load. (Note: Deflection measured at center of door panel.) At the completion of cycles the specimen was intact.

James Hayhurst, Test Technician

Conclusion: The large missile impacted the intended targets. After 9,002 cycles the specimen showed no resultant failure or duress and no failure of fasteners. Therefore, this specimen satisfies the large missile requirements of TAS 201-94/TAS 203-94.

IMPACT AND CYCLING TESTS

Specimen 2a – 3’0 x 8’0 - Opaque Fiberglass Door with Sidelites – OXO – Inswing - CHS

TAS 201-93 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
75° F	D	9.0 lbs, 3 oz.	8'- 0"	17'0"
Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	75.00"	49.50"	49.9 fps
2	Pass	56.50"	50.00"	50.1 fps
3	Pass	68.00"	8.00"	50.1 fps
4	Pass	21.00"	52.00"	49.8 fps
5	Pass	25.00"	18.00"	49.9 fps

Orientation of Missile at Impact was within +/-5° of horizontal.
 None of the impacts penetrated the specimens.
 "X" measurement is from the left edge of test specimen.
 "Y" measurement is from the bottom edge of test specimen.

TAS 203-94 – Fatigue Load Cycling Design Pressure +60.0 psf / -65.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	12.0 to 30.0	3500	2.75
0% to 60%	0.0 to 36.0	300	2.95
50% to 80%	30.0 to 48.0	600	1.94
30% to 100%*	18.0 to 60.0	100	2.35

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	19.5 to 65.0	50	2.03
50% to 80%	32.5 to 52.0	1050	1.10
0% to 60%	0.0 to 39.0	50	2.18
20% to 50%	13.0 to 32.5	3350	1.20

*Door Panel deflected 1.00" from original plane at 100% Positive load and 0.88" from original plane at 100% Negative load. (Note: Deflection measured at center of door panel.) At the completion of cycles the specimen was intact.

James Hayhurst, Test Technician

Conclusion: The large missile impacted the intended targets. After 9,002 cycles the specimen showed no resultant failure or duress and no failure of fasteners. Therefore, this specimen satisfies the large missile requirements of TAS 201-94/TAS 203-94.

IMPACT AND CYCLING TESTS

Specimen 3a – 6’0 x 8’0 - Opaque Fiberglass Doors with Sidelites – OXXO – Outswing - CHS

TAS 201-93 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
75° F	D	9.0 lbs, 3 oz.	8'- 0"	17'0"
Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	20.00"	52.00"	50.2 fps
2	Pass	23.00"	18.50"	50.0 fps
3	Pass	56.00"	6.00"	50.2 fps
4	Pass	74.50"	53.25"	49.9 fps
5	Pass	81.00"	5.00"	49.7 fps
6	Pass	92.50"	50.00"	49.9 fps
7	Pass	111.25"	48.50"	50.0 fps

Orientation of Missile at Impact was within +/-5° of horizontal.
None of the impacts penetrated the specimens.
"X" measurement is from the left edge of test specimen.
"Y" measurement is from the bottom edge of test specimen.

TAS 203-94 – Fatigue Load Cycling Design Pressure +55.0 psf / -55.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	11.0 to 27.5	3500	1.57
0% to 60%	0.0 to 33.0	300	2.61
50% to 80%	27.5 to 44.0	600	1.22
30% to 100%*	16.5 to 55.0	100	2.18

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	16.5 to 55.0	50	2.35
50% to 80%	27.5 to 44.0	1050	1.24
0% to 60%	0.0 to 33.0	50	2.14
20% to 50%	11.0 to 27.5	3350	1.53

*Door Panel deflected 1.50" from original plane at 100% Positive load and 2.13" from original plane at 100% Negative load. (Note: Deflection measured at center of door panel.) At the completion of cycles the specimen was intact.

James Hayhurst, Test Technician

Conclusion: The large missile impacted the intended targets. After 9,002 cycles the specimen showed no resultant failure or duress and no failure of fasteners. Therefore, this specimen satisfies the large missile requirements of TAS 201-94/TAS 203-94.

IMPACT AND CYCLING TESTS

Specimen 3b – 6’0 x 8’0 - Opaque Fiberglass Doors with Sidelites – OXXO – Outswing - CHS

TAS 201-93 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
75° F	D	9.0 lbs, 3 oz.	8'- 0"	17'0"
Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	129.00"	52.00"	49.7 fps
2	Pass	125.00"	18.00"	50.0 fps
3	Pass	111.50"	48.00"	49.9 fps
4	Pass	92.00"	48.50"	50.1 fps
5	Pass	80.00"	7.00"	49.9 fps
6	Pass	74.50"	53.00"	50.0 fps
7	Pass	56.00"	6.00"	50.0 fps

Orientation of Missile at Impact was within +/-5° of horizontal.
 None of the impacts penetrated the specimens.
 "X" measurement is from the left edge of test specimen.
 "Y" measurement is from the bottom edge of test specimen.

TAS 203-94 – Fatigue Load Cycling Design Pressure +55.0 psf / -55.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	11.0 to 27.5	3500	1.78
0% to 60%	0.0 to 33.0	300	2.74
50% to 80%	27.5 to 44.0	600	1.59
30% to 100%*	16.5 to 55.0	100	2.20

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	16.5 to 55.0	50	2.98
50% to 80%	27.5 to 44.0	1050	1.90
0% to 60%	0.0 to 33.0	50	2.40
20% to 50%	11.0 to 27.5	3350	1.88

*Door Panel deflected 1.88" from original plane at 100% Positive load and 1.88" from original plane at 100% Negative load. (Note: Deflection measured at center of door panel.) At the completion of cycles the specimen was intact.

James Hayhurst, Test Technician

Conclusion: The large missile impacted the intended targets. After 9,002 cycles the specimen showed no resultant failure or duress and no failure of fasteners. Therefore, this specimen satisfies the large missile requirements of TAS 201-94/TAS 203-94.

IMPACT AND CYCLING TESTS

Specimen 3c – 6’0 x 8’0 - Opaque Fiberglass Doors with Sidelites – OXXO – Outswing - CHS

TAS 201-93 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
75° F	D	9.0 lbs, 3 oz.	8'- 0"	17'0"
Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	130.00"	50.50"	49.9 fps
2	Pass	134.00"	84.00"	49.9 fps
3	Pass	111.50"	48.50"	49.8 fps
4	Pass	105.00"	90.00"	49.9 fps
5	Pass	93.00"	48.50"	50.1 fps
6	Pass	74.00"	53.00"	50.0 fps
7	Pass	56.00"	5.50"	49.8 fps

Orientation of Missile at Impact was within +/-5° of horizontal.
 None of the impacts penetrated the specimens.
 "X" measurement is from the left edge of test specimen.
 "Y" measurement is from the bottom edge of test specimen.

TAS 203-94 – Fatigue Load Cycling Design Pressure +55.0 psf / -55.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	11.0 to 27.5	3500	1.25
0% to 60%	0.0 to 33.0	300	1.82
50% to 80%	27.5 to 44.0	600	1.19
30% to 100%*	16.5 to 55.0	100	2.39

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	16.5 to 55.0	50	2.64
50% to 80%	27.5 to 44.0	1050	1.24
0% to 60%	0.0 to 33.0	50	2.20
20% to 50%	11.0 to 27.5	3350	1.52

*Door Panel deflected 1.13" from original plane at 100% Positive load and 1.38" from original plane at 100% Negative load. (Note: Deflection measured at center of door panel.) At the completion of cycles the specimen was intact.

James Hayhurst, Test Technician

Conclusion: The large missile impacted the intended targets. After 9,002 cycles the specimen showed no resultant failure or duress and no failure of fasteners. Therefore, this specimen satisfies the large missile requirements of TAS 201-94/TAS 203-94.

IMPACT AND CYCLING TESTS

Specimen 4a – 6’0 x 8’0 - Opaque Fiberglass Doors with Sidelites – OXXO – Inswing - CHS

TAS 201-93 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
75° F	D	9.0 lbs, 3 oz.	8'- 0"	17'0"
Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	56.50"	50.25"	49.8 fps
2	Pass	68.00"	8.00"	50.2 fps
3	Pass	74.50"	49.50"	49.9 fps
4	Pass	93.00"	7.00"	49.9 fps
5	Pass	111.50"	49.00"	49.8 fps
6	Pass	136.25"	51.50"	50.1 fps
7	Pass	134.50"	18.00"	50.0 fps

Orientation of Missile at Impact was within +/-5° of horizontal.
 None of the impacts penetrated the specimens.
 "X" measurement is from the left edge of test specimen.
 "Y" measurement is from the bottom edge of test specimen.

TAS 203-94 – Fatigue Load Cycling Design Pressure +50.0 psf / -55.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	10.0 to 25.0	3500	1.59
0% to 60%	0.0 to 30.0	300	2.72
50% to 80%	25.0 to 40.0	600	1.52
30% to 100%*	15.0 to 50.0	100	1.75

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	16.5 to 55.0	50	1.62
50% to 80%	27.5 to 44.0	1050	1.29
0% to 60%	0.0 to 33.0	50	1.41
20% to 50%	11.0 to 27.5	3350	1.26

*Door Panel deflected 2.75" from original plane at 100% Positive load and 1.25" from original plane at 100% Negative load. (Note: Deflection measured at center of door panel.) At the completion of cycles the specimen was intact.

James Hayhurst, Test Technician

Conclusion: The large missile impacted the intended targets. After 9,002 cycles the specimen showed no resultant failure or duress and no failure of fasteners. Therefore, this specimen satisfies the large missile requirements of TAS 201-94/TAS 203-94.

Conditions, Terms, and General Notes Regarding These Tests

The product tested Has Been compared to the detailed drawing, bill of materials and fabrication information supplied by the client so named herein. Our analysis, which includes dimensional and component description comparisons, indicate the tested product and engineering information supplied by the client “Are Equivalent”. The report and representative samples will be retained for four years from the date of initial test.

These test results were obtained by employing all requirements of the designated test methods with no Deviations unless explicitly noted in test report. The test results and specimen supplied for testing are in compliance with the reference.

The test results are specific to the product tested by this laboratory and of the sample supplied by the client named herein, and they relate to no other product either manufactured by the client, a fabricator of the client or of the client or of installed field performance.

This test report does not constitute certification of this product, but only that the above test results were obtained using the designated test methods and they indicate compliance with the performance requirements (paragraphs as listed) of the above referenced specifications.

Testing Evaluation Laboratories, Inc. makes no opinions or endorsements regarding this product and its performance. This report may not be reproduced or quoted in partial form without the expressed written approval of Testing Evaluation Laboratories, Inc.

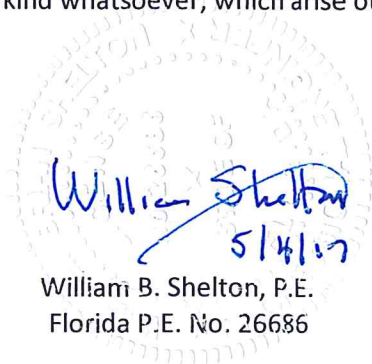
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Limitation of liability: Due diligence was used in performing the tests and reporting the results. By acceptance of this report, this client agrees to hold harmless and indemnify Testing Evaluation Laboratories, Inc., its employees, subcontractors and officers and owners against all claims and demands of any kind whatsoever, which arise out of or in any manner connected with the performance of work referred to herein.

Testing Evaluation Laboratories, Inc.



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Revision Log

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