

R W Building Consultants, Inc.

Consulting and Engineering Services for the Building Industry P.O. Box 230 Valrico, FL 33595 Phone 813.659.9197

Florida Board of Professional Engineers Certificate of Authorization No. 9813

June 09, 2014

Joseph Zammit Fleetwood Window and Doors 1 Fleetwood Way Corona, CA 92879

REF: Non-Impact Glazing Comparative Analysis for Fleetwood KONA 3800 Fixed Windows (Corresponding Test Report: TEL 01991007)

Joseph,

Attached is the non-impact glazing comparative analysis for the above mentioned product.

Included are:

- 1. A summary chart identifying the tested glazing details, the corresponding non-impact comparable glazing and the ASTM E1300 calculated load resistance. For the fixed windows, the non-impact glazing considered were 1/4" annealed, 3/16" heat strengthened and 3/16" tempered insulated glass.
- 2. A drawing identifying the tested impact glazing and the comparable non-impact glazing details. For example, if the tested impact unit is the "A" glazing, then the 3 non-impact units are "A1", "A2" & "A3".
- 3. The ASTM E1300 calculations for each tested impact glazing and the comparable non-impact glazing details.

Please contact me if any additional information is required.

Sincerely,

Lyndon F. Schmidt, P.E. Florida PE No. 43409

V.P. Engineering

R.W. Building Consultants, Inc.

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FLEETWOOD GLAZING COMPARATIVE ANALYSIS

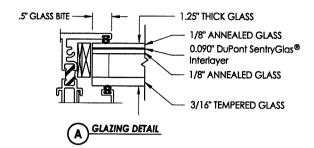
Kona 3800 Fixed Windows

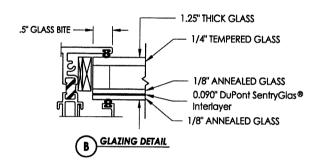
Test Report: TEL 01991007

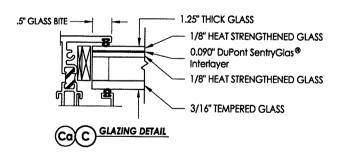
		DLO (in.)	ASTM E1300 LOAD RESISTANCE (psf)
TESTED GLAZING	Α	37.5 x 93.1	76.6
COMPARABLE	A1	32.5 x 84.1	77.2
GLAZING	A2	37.5 x 93.1	92.6
	A3	37.5 x 93.1	185
TESTED GLAZING	В	37.5 x 93.1	98.5
COMPARABLE	B1	31.5 x 66.1	98.7
GLAZING	B2	37.5 x 89.1	98.8
	B3	37.5 x 93.1	185
TESTED GLAZING	С	57.1 x 117.1	91.6
COMPARABLE	C1	38.1 x 64.1	92.3
GLAZING	C2	57.1 x 89.1	92.4
	C3	57.1 x 117.1	139
TESTED GLAZING	Ca	47.1 x 141.1	60.3
COMPARABLE	Ca1	47.1 x 87.1	61.4
GLAZING	Ca2	47.1 x 125.1	61.4
	Ca3	47.1 x 141.1	105
TESTED GLAZING	D	57.1 x 117.1	118
COMPARABLE	D1	32.1 x 55.1	120
GLAZING	D2	36.1 x 78.1	119
	D3	57.1 x 117.1	139

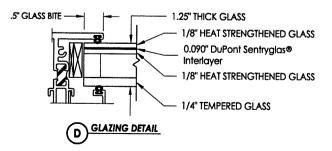
TESTED IMPACT GLAZING

TEST REPORT: TEL 01991007



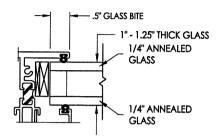




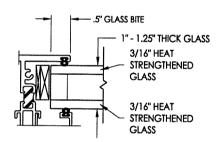


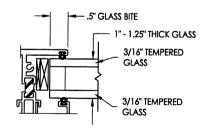
NON-IMPACT GLAZING

VERIFIED PER ASTM E1300



A1 B1 C1 Ca1 D1 GLAZING DETAIL





GLAZING DETAIL

PRODUCT:	FI FETWOOD	700		PART OR ASSEMBLY:	9	GLAZING DETAILS	
						À	
							REVISIONS
						DATE	
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RW BUILDING CONSULTANTS, INC. 813.659.9197							
DATE: 6-2-14 SCALE: N.T.S.							
SCALE: N.T.S. DWG. BY: JK							

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LFS CHK. BY: DRAWING NO .: NA

SHEET 1 OF 1

Glazing Information Project Details

Edge Supports: 4 Sides Glazing Angle: 90° Lite Dimensions:

Width: 37.5 in. Height: 93.1 in.

Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON

Location: PF 1731

Comments: TESTED IMPACT GLASS

"A" GLAZING

Glass Construction (Rectangular)

Double Glazed Insulating Unit
Outboard Lite: { Fully Tempered }

Nominal Thickness: 3/16 in.

Air Space: 0.5 in.
Inboard Lite: { Annealed }

Interlayer Type: SentryGlas® Plus
Outboard Ply Thickness: 1/8 in.
Interlayer Thickness: 0.09 in.
Inboard Ply Thickness: 1/8 in.

Nominal Thickness: 1/4 in.

Short Load Duration, Resistance, and Deflection Data

Load (~ 3 sec.): Load Resistance: Approximate center of glass deflection:

76.6 psf 0.48 in.

60.0 psf

Conclusion

Based on your design information, the load resistance is greater than or equal to the specified loading.

Statement of Compliance

Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04.

Disclaimer:

This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions:

- The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations.
- Procedures exist to determine load resistance for rectangular glass assemblies that are:
 - a. Continuously supported along all four edges,
 - b. Continuously supported along three edges,
 - c. Continuously supported along two parallel edges, and
 - d. Continuously supported along one edge.
- The software user has the responsibility of selecting the correct procedures for the required application from the software.
- The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge.
- The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.
- The non-factored load values for laminated glass are representative of test data and calculations performed for an interlayer at a temperature of 50° C (122° F).

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

Neither SDG nor GANA guarantees and each disclaims any responsibility for any particular results relating to the use of the Window Glass Design 2004 Software Program. SDG and GANA disclaim any liability for any personal injury or any loss or damage of any kind, including all indirect, special, or consequential damages and lost profits, arising out of or relating to the use of the Window Glass Design 2004 Software Program.

Prepared by: _____ on 6/3/2014

Glazing Information		Project Details
Edge Supports: 4 Sides Glazing Angle: 90° Lite Dimensions: Width:	32.5 in.	Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Location: PF 1731 Comments: NON-IMPACT COMPARABLE GLASS 1/4" ANNEALED "A1" GLAZING
Height:	84.1 in.	
Glass Construction	(Rectangular)	
Double Glazed Insulating		Air Space: 0.5 in.
Outboard Lite: { Annea	aled }	Inboard Lite: { Annealed }
Nominal Thickness:	1/4 in.	Nominal Thickness: 1/4 in.
Short Load Duration	, Resistance,	and Deflection Data
Load (~ 3 sec.): Load Resistance: Approximate center of gla	ss deflection:	60.0 psf 77.2 psf 0.27 in.
Conclusion		
Based on your design in the specified loading.	nformation, the load	d resistance is greater than or equal to
Statement of Compliance		
Procedures followed in determin	ing the resistance of this	window glass are in accordance with ASTM E1300-04.
	e damage and has been properly esistance for rectangular glass as all four edges, three edges, two parallel edges, and	ss types exposed to uniform lateral loads of short or long duration subject to the following conditions: glazed in the opening in conformance with the manufacturer's recommendations. semblies that are:
The software user has the responsible The stiffness of members supporting where L denotes that length of the supporting the supporting that the supporting the supporting the supporting the supporting that the supporti	lity of selecting the correct proce any glass edge shall be sufficien apported edge. ety Plus II 0.090 Polyurethane La	dures for the required application from the software. It that under design load, edge deflections shall not exceed L/175, Irge Missile Resistant interlayer is comparable to the PVB interlayer. On and local building codes.

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Tepared by:

Prepared by: _ on 6/3/2014

Glazing Information

Project Details

Edge Supports: 4 Sides Glazing Angle: 90°

Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON

Location: PF 1731

Lite Dimensions:

Comments: NON-IMPACT COMPARABLE GLASS 3/16" HEAT STRENGTHENED "A2" GLAZING

Width: Height: 37.5 in. 93.1 in.

Glass Construction (Rectangular)

Air Space: 0.5 in.

Double Glazed Insulating Unit

Inboard Lite: { Heat Strengthened }

Outboard Lite: { Heat Strengthened } Nominal Thickness: 3/16 in.

Nominal Thickness: 3/16 in.

Short Load Duration, Resistance, and Deflection Data

Load (~ 3 sec.): Load Resistance: 60.0 psf 92.6 psf

Approximate center of glass deflection:

0.61 in.

Conclusion

Based on your design information, the load resistance is greater than or equal to the specified loading.

Statement of Compliance

Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04.

This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions:

- The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations
- Procedures exist to determine load resistance for rectangular glass assemblies that are:
 - a. Continuously supported along all four edges,
 - b. Continuously supported along three edges.
 - c. Continuously supported along two parallel edges, and
 - d. Continuously supported along one edge.

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- The software user has the responsibility of selecting the correct procedures for the required application from the software.
- The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge.
- The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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Prepared by:

on 6/3/2014

Glazing Information

Project Details

Edge Supports: 4 Sides Glazing Angle: 90°

Lite Dimensions:

Width: 37.5 in. Height: 93.1 in.

Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON

Location: PF 1731

Comments: NON-IMPACT COMPARABLE GLASS

3/16" TEMPERED "A3" GLAZING

Glass Construction (Rectangular)

Double Glazed Insulating Unit Air Space: 0.5 in.

Outboard Lite: { Fully Tempered }

Nominal Thickness: 3/16 in.

Inboard Lite: { Fully Tempered }

Nominal Thickness: 3/16 in.

Short Load Duration, Resistance, and Deflection Data

Load (~ 3 sec.): 60.0 psf Load Resistance: 185 psf Approximate center of glass deflection: 0.61 in.

Conclusion

Based on your design information, the load resistance is greater than or equal to the specified loading.

Statement of Compliance

Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04.

Disclaimer

This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions:

- The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations.
- Procedures exist to determine load resistance for rectangular glass assemblies that are:
 - a. Continuously supported along all four edges,
 - b. Continuously supported along three edges,
 - c. Continuously supported along two parallel edges, and
 - d. Continuously supported along one edge.
- The software user has the responsibility of selecting the correct procedures for the required application from the software.
- The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge.
- The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

on 6/3/2014

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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Glazing Information	Project Details
Edge Supports: 4 Sides Glazing Angle: 90° Lite Dimensions: Width: 37.5 in. Height: 93.1 in.	Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Location: PF 1731 Comments: TESTED IMPACT GLASS "B" GLAZING
Glass Construction (Rectangular)	
Double Glazed Insulating Unit Outboard Lite: { Annealed } Interlayer Type: SentryGlas® Plus Outboard Ply Thickness: 1/8 in. Interlayer Thickness: 0.09 in. Inboard Ply Thickness: 1/8 in. Nominal Thickness: 1/4 in.	Air Space: 0.5 in. Inboard Lite: { Fully Tempered } Nominal Thickness: 1/4 in.
Short Load Duration, Resistance,	and Deflection Data
Load (~ 3 sec.): Load Resistance: Approximate center of glass deflection: Conclusion Based on your design information, the load	60.0 psf 98.5 psf 0.42 in.
the specified loading. Statement of Compliance	id resistance is greater than or equal to
Procedures followed in determining the resistance of this	s window glass are in accordance with ASTM E1300-04.
Disclaimer: This software can be used to determine the load resistance of specified gla The glass is free of edge and surface damage and has been properl Procedures exist to determine load resistance for rectangular glass a a. Continuously supported along all four edges, b. Continuously supported along three edges, c. Continuously supported along two parallel edges, and d. Continuously supported along one edge. The software user has the responsibility of selecting the correct proce. The stiffness of members supporting any glass edge shall be sufficie where L denotes that length of the supported edge. The manufacturer states that the Safety Plus II 0.090 Polyurethane L The non-factored load values for laminated glass are representative	ass types exposed to uniform lateral loads of short or long duration subject to the following conditions: y glazed in the opening in conformance with the manufacturer's recommendations. ssemblies that are: edures for the required application from the software. Int that under design load, edge deflections shall not exceed L/175, arge Missile Resistant interlayer is comparable to the PVB interlayer. of test data and calculations performed for an interlayer at a temperature of 50° C (122° F).
SDG and GANA disclaim any liability for any personal injury or any loss arising out of or relating to the use of the Window Glass Design 2004 So Prepared by: On 6/3	for any particular results relating to the use of the Window Glass Design 2004 Software Program. or damage of any kind, including all indirect, special, or consequential damages and lost profits, oftware Program. 3/2014
arising out of or relating to the use of the Window Glass Design 2004 So	oftware Program.

Glazing Information **Project Details** Edge Supports: 4 Sides Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Glazing Angle: 90° Location: PF 1731 Lite Dimensions: Comments: NON-IMPACT COMPARABLE GLASS Width: 1/4" ANNEALED "B1" GLAZING 31.5 in. Height: 66.1 in. Glass Construction (Rectangular) **Double Glazed Insulating Unit** Air Space: 0.5 in. Outboard Lite: { Annealed } Inboard Lite: { Annealed } Nominal Thickness: 1/4 in. Nominal Thickness: 1/4 in. Short Load Duration, Resistance, and Deflection Data Load (~ 3 sec.): 60.0 psf Load Resistance: 98.7 psf Approximate center of glass deflection: 0.22 in. Conclusion Based on your design information, the load resistance is greater than or equal to the specified loading. Statement of Compliance Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04. Disclaimer: This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions: - The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations. - Procedures exist to determine load resistance for rectangular glass assemblies that are: a. Continuously supported along all four edges, b. Continuously supported along three edges, c. Continuously supported along two parallel edges, and d. Continuously supported along one edge. - The software user has the responsibility of selecting the correct procedures for the required application from the software. - The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge - The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer. For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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on 6/3/2014

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Prepared by:

Glazing Information **Project Details** Edge Supports: 4 Sides Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Glazing Angle: 90° Location: PF 1731 Lite Dimensions: Comments: NON-IMPACT COMPARABLE GLASS Width: 37.5 in. 3/16" HEAT STRENGTHENED "B2" GLAZING Height: 89.1 in. Glass Construction (Rectangular) **Double Glazed Insulating Unit** Air Space: 0.5 in. Outboard Lite: { Heat Strengthened } Inboard Lite: { Heat Strengthened } Nominal Thickness: 3/16 in. Nominal Thickness: 3/16 in. Short Load Duration, Resistance, and Deflection Data Load (~ 3 sec.): 60.0 psf Load Resistance: 98.8 psf Approximate center of glass deflection: 0.59 in. Conclusion Based on your design information, the load resistance is greater than or equal to the specified loading. Statement of Compliance Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04. **Disclaimer:** This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions: - The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations. - Procedures exist to determine load resistance for rectangular glass assemblies that are: Continuously supported along all four edges. b. Continuously supported along three edges, c. Continuously supported along two parallel edges, and d. Continuously supported along one edge. - The software user has the responsibility of selecting the correct procedures for the required application from the software. - The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175,

- where L denotes that length of the supported edge
- The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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1 + PL Prepared by: on 6/3/2014 **LFS**

Glazing Information **Project Details** Edge Supports: 4 Sides Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Glazing Angle: 90° Location: PF 1731 Lite Dimensions: Comments: NON-IMPACT COMPARABLE GLASS Width: 3/16" TEMPERED "B3" GLAZING 37.5 in. Height: 93.1 in. Glass Construction (Rectangular) **Double Glazed Insulating Unit** Air Space: 0.5 in. Outboard Lite: { Fully Tempered } Inboard Lite: { Fully Tempered } Nominal Thickness: 3/16 in. Nominal Thickness: 3/16 in. Short Load Duration, Resistance, and Deflection Data Load (~ 3 sec.): 60.0 psf Load Resistance: 185 psf Approximate center of glass deflection: 0.61 in. Conclusion Based on your design information, the load resistance is greater than or equal to the specified loading. **Statement of Compliance** Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04. Disclaimer: This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions: - The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations. - Procedures exist to determine load resistance for rectangular glass assemblies that are: a. Continuously supported along all four edges, b. Continuously supported along three edges, c. Continuously supported along two parallel edges, and d. Continuously supported along one edge. - The software user has the responsibility of selecting the correct procedures for the required application from the software. - The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge. - The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer. For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes. Neither SDG nor GANA guarantees and each disclaims any responsibility for any particular results relating to the use of the Window Glass Design 2004 Software Program. SDG and GANA disclaim any liability for any personal injury or any loss or damage of any kind, including all indirect, special, or consequential damages and lost profits, arising out of or relating to the use of the Window Glass Design 2004 Software Program.

on 6/3/2014

Prepared by:

Glazing Information **Project Details** Edge Supports: 4 Sides Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Glazing Angle: 90° Location: PF 1731 Lite Dimensions: Comments: TESTED IMPACT GLASS Width: "C" GLAZING 57.1 in. Height: 117 in. Glass Construction (Rectangular) **Double Glazed Insulating Unit** Air Space: 0.5 in. Outboard Lite: { Fully Tempered } Inboard Lite: { Heat Strengthened } Nominal Thickness: 3/16 in. Interlayer Type: SentryGlas® Plus Outboard Ply Thickness: 1/8 in. Interlayer Thickness: 0.09 in. Inboard Ply Thickness: 1/8 in. Nominal Thickness: 1/4 in. Short Load Duration, Resistance, and Deflection Data Load (~ 3 sec.): 60.0 psf Load Resistance: 91.6 psf Approximate center of glass deflection: 1.15 in. Conclusion Based on your design information, the load resistance is greater than or equal to the specified loading. Statement of Compliance Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04. Disclaimer: This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions: - The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations. - Procedures exist to determine load resistance for rectangular glass assemblies that are: a. Continuously supported along all four edges, b. Continuously supported along three edges. c. Continuously supported along two parallel edges, and d. Continuously supported along one edge - The software user has the responsibility of selecting the correct procedures for the required application from the software. - The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge - The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer. - The non-factored load values for laminated glass are representative of test data and calculations performed for an interlayer at a temperature of 50° C (122° F). For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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Prepared by: ______ on 6/2/2014

Glazing Information		Project Details	
Edge Supports: 4 Sides Glazing Angle: 90° Lite Dimensions: Width: Height:	38.1 in. 64.1 in.	Project Details Projec	
Glass Construction	(Rectangular)		
Double Glazed Insulating	Unit	Air Space: 0.5 in.	
Outboard Lite: { Annea		Inboard Lite: { Annealed }	
Nominal Thickness:	- · ·	Nominal Thickness: 1/4 in.	
Short Load Duration	, Resistance,	and Deflection Data	
Load (~ 3 sec.):		60.0 psf	
Load Resistance: Approximate center of gla	ss deflection:	92.3 psf 0.32 in.	
Conclusion			
	nformation, the load	d resistance is greater than or equal to	
Statement of Compliance			
Procedures followed in determin	ing the resistance of this	window glass are in accordance with ASTM E1300-04.	
	e damage and has been properly esistance for rectangular glass as all four edges, three edges, two parallel edges, and	ss types exposed to uniform lateral loads of short or long duration subject to the following of glazed in the opening in conformance with the manufacturer's recommendations. semblies that are:	conditions:

- The software user has the responsibility of selecting the correct procedures for the required application from the software.
- The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge.

 The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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(7-FC___on 6/3/2014 Prepared by: _ LFS

Glazing Information Project Details Edge Supports: 4 Sides Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Glazing Angle: 90° Location: PF 1731 Lite Dimensions: Comments: NON-IMPACT COMPARABLE GLASS Width: 57.1 in. 3/16" HEAT STRENGTHENED "C2" GLAZING Height: 89.1 in. Glass Construction (Rectangular) **Double Glazed Insulating Unit** Air Space: 0.5 in. Outboard Lite: { Heat Strengthened } Inboard Lite: { Heat Strengthened } Nominal Thickness: 3/16 in. Nominal Thickness: 3/16 in. Short Load Duration, Resistance, and Deflection Data Load (~ 3 sec.): 60.0 psf Load Resistance: 92.4 psf Approximate center of glass deflection: 1.01 in. Conclusion Based on your design information, the load resistance is greater than or equal to

Statement of Compliance

Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04.

Disclaimer:

the specified loading.

This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions:

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- The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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Prepared by: C7-DC on 6/3/2014

Glazing Information Project Details

Edge Supports: 4 Sides Glazing Angle: 90° Lite Dimensions:

Width: 57.1 in.

Height: 117 in. Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON

Location: PF 1731

Comments: NON-IMPACT COMPARABLE GLASS

3/16" TEMPERED "C3" GLAZING

Glass Construction (Rectangular)

Double Glazed Insulating Unit

Outboard Lite: { Fully Tempered } Nominal Thickness: 3/16 in.

Air Space: 0.5 in.

Inboard Lite: { Fully Tempered } Nominal Thickness: 3/16 in.

Short Load Duration, Resistance, and Deflection Data

Load (~ 3 sec.): Load Resistance: 60.0 psf 139 psf 1.36 in.

Approximate center of glass deflection:

Conclusion

Based on your design information, the load resistance is greater than or equal to the specified loading.

Statement of Compliance

Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04.

Disclaimer:

This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions:

- The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations.
- Procedures exist to determine load resistance for rectangular glass assemblies that are:
 - a. Continuously supported along all four edges,
 - b. Continuously supported along three edges.
 - c. Continuously supported along two parallel edges, and
 - d. Continuously supported along one edge.
- The software user has the responsibility of selecting the correct procedures for the required application from the software.
- The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175,
- where L denotes that length of the supported edge.
- The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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Prepared by:

LFS

on 6/3/2014

Glazing Information **Project Details** Edge Supports: 4 Sides Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Glazing Angle: 90° Location: PF 1731 Lite Dimensions: Comments: TESTED IMPACT GLASS Width: "Ca" GLAZING 47.1 in. Height: 141 in. Glass Construction (Rectangular) **Double Glazed Insulating Unit** Air Space: 0.5 in. Outboard Lite: { Fully Tempered } Inboard Lite: { Heat Strengthened } Nominal Thickness: 3/16 in. Interlayer Type: SentryGlas® Plus Outboard Ply Thickness: Interlayer Thickness: 0.09 in. Inboard Ply Thickness: 1/8 in. Nominal Thickness: 1/4 in. Short Load Duration, Resistance, and Deflection Data Load (~ 3 sec.): 60.0 psf Load Resistance: 60.3 psf Approximate center of glass deflection: 1.07 in. Conclusion Based on your design information, the load resistance is greater than or equal to the specified loading. Statement of Compliance Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04. Disclaimer: This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions: - The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations. - Procedures exist to determine load resistance for rectangular glass assemblies that are: a. Continuously supported along all four edges, b. Continuously supported along three edges. c. Continuously supported along two parallel edges, and d. Continuously supported along one edge - The software user has the responsibility of selecting the correct procedures for the required application from the software. - The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edg - The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

- The non-factored load values for laminated glass are representative of test data and calculations performed for an interlayer at a temperature of 50° C (122° F).

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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arising out of or relating to the use of the Window Glass Design 2004 Software Program.

Prepared by:		1756	on 6/2/2014
	LES		_

Glazing Information	<u>n</u>	Project Details	
Edge Supports: 4 Sides Glazing Angle: 90° Lite Dimensions: Width: Height:	47.1 in. 87.1 in.	Project Name: FLEETWOOD NON-IMPACT GL Location: PF 1731 Comments: NON-IMPACT COMPARABLE GLA 1/4" ANNEALED "Ca1" GLAZING	
Glass Construction	ı (Rectangular)		
Double Glazed Insulatin	g Unit	Air Space: 0.5 in.	
Outboard Lite: { Ann	ealed }	Inboard Lite: { Annealed }	
Nominal Thicknes	s: 1/4 in.	Nominal Thickness: 1/4 in.	
Short Load Duration	<u>n, Resistance,</u>	and Deflection Data	
Load (~ 3 sec.):		60.0 psf	
Load Resistance:		61.4 psf	
Approximate center of g	lass deflection:	0.63 in.	
Conclusion			
Based on your design the specified loading.	information, the loa	nd resistance is greater than or equal to	
Statement of Compliance			
Procedures followed in determ	nining the resistance of thi	s window glass are in accordance with ASTM E1300-04.	
- The glass is free of edge and sur - Procedures exist to determine loa a. Continuously supported alo b. Continuously supported alo c. Continuously supported alo d. Continuously supported alo - The software user has the respon - The stiffness of members support where L denotes that length of the	face damage and has been properl d resistance for rectangular glass a ing all four edges, ing three edges, ing two parallel edges, and ing one edge. isibility of selecting the correct proci ing any glass edge shall be sufficie e supported edge. Safety Plus II 0.090 Polyurethane L	edures for the required application from the software. Int that under design load, edge deflections shall not exceed L/175, Large Missile Resistant interlayer is comparable to the PVB interlayer.	ving conditions:
	for any personal injury or any loss	for any particular results relating to the use of the Window Glass Design 2004 Softwar s or damage of any kind, including all indirect, special, or consequential damages and I oftware Program.	
Prepared by:	on 6/3	3/2014	

Glazing Information		Project Details
Edge Supports: 4 Sides Glazing Angle: 90° Lite Dimensions: Width:	47.1 in.	Project Name: FLEETWOOD NON-IMPACT GLASS COMPARI Location: PF 1731 Comments: NON-IMPACT COMPARABLE GLASS 3/16" HEAT STRENGTHENED "Ca2" GLAZING
Height:	125 in.	
Glass Construction (Rectangular	')
Double Glazed Insulating	Unit	Air Space: 0.5 in.
Outboard Lite: { Heat S		Inboard Lite: { Heat Strengthened }
Nominal Thickness:		Nominal Thickness: 3/16 in.
Short Load Duration	, Resistance	e, and Deflection Data
Load (~ 3 sec.):		60.0 psf
Load Resistance:		61.4 psf
Approximate center of glas	ss deflection:	1.18 in.
Conclusion	ranne armen and the armen and armen armen delected annuals.	
	formation, the lo	oad resistance is greater than or equal to
the specified loading.		
Statement of Compliance		
Procedures followed in determin	ing the resistance of t	this window glass are in accordance with ASTM E1300-04.
Disclaimer:		
	- NO	I glass types exposed to uniform lateral loads of short or long duration subject to the following conditions:
 Ine glass is free of edge and surface Procedures exist to determine load re 		perly glazed in the opening in conformance with the manufacturer's recommendations. It is assemblies that are:
a. Continuously supported along		
b. Continuously supported along to		
 c. Continuously supported along t d. Continuously supported along t 		
	Annual Control of the	rocedures for the required application from the software.
 The stiffness of members supporting where L denotes that length of the su 	any glass edge shall be suffi upported edge.	icient that under design load, edge deflections shall not exceed L/175, the Large Missile Resistant interlayer is comparable to the PVB interlayer.
For other limiting conditions that may apply		ementem €lanterar destile at the statement attain €lantation to the statement of the statement at a statement of the stateme

on 6/3/2014 Prepared by: LFS

Glazing Information **Project Details** Edge Supports: 4 Sides Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Glazing Angle: 90° Location: PF 1731 Lite Dimensions: Comments: NON-IMPACT COMPARABLE GLASS Width: 47.1 in. 3/16" TEMPERED "Ca3" GLAZING Height: 141 in. Glass Construction (Rectangular) **Double Glazed Insulating Unit** Air Space: 0.5 in. Outboard Lite: { Fully Tempered } Inboard Lite: { Fully Tempered } Nominal Thickness: 3/16 in. Nominal Thickness: 3/16 in. Short Load Duration, Resistance, and Deflection Data Load (~ 3 sec.): 60.0 psf Load Resistance: 105 psf Approximate center of glass deflection: 1.35 in. Conclusion Based on your design information, the load resistance is greater than or equal to the specified loading. Statement of Compliance

Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04.

Disclaimer:

This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions:

- The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations.
- Procedures exist to determine load resistance for rectangular glass assemblies that are:
 - a. Continuously supported along all four edges,
 - b. Continuously supported along three edges,
 - c. Continuously supported along two parallel edges, and
 - d. Continuously supported along one edge.
- The software user has the responsibility of selecting the correct procedures for the required application from the software.
- The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge.
- The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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Prepared by: ______ on 6/3/2014

Glazing Information	Project Details
Edge Supports: 4 Sides Glazing Angle: 90° Lite Dimensions: Width: 57.1 in. Height: 117 in.	Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Location: PF 1731 Comments: TESTED IMPACT GLASS "D" GLAZING
Glass Construction (Rectangular)	
Double Glazed Insulating Unit	Air Space: 0.5 in.
Outboard Lite: { Fully Tempered } Nominal Thickness: 1/4 in.	Inboard Lite: { Heat Strengthened }
Nominal Mickness. 1/4 III.	Interlayer Type: SentryGlas® Plus Outboard Ply Thickness: 1/8 in. Interlayer Thickness: 0.09 in. Inboard Ply Thickness: 1/8 in.
	Nominal Thickness: 1/4 in.
Short Load Duration, Resistance, a	and Deflection Data
Load (~ 3 sec.):	60.0 psf
Load Resistance: Approximate center of glass deflection:	118 psf 1.09 in.
Conclusion	
Based on your design information, the load the specified loading.	I resistance is greater than or equal to
Statement of Compliance	
Procedures followed in determining the resistance of this Disclaimer:	window glass are in accordance with ASTM E1300-04.
This software can be used to determine the load resistance of specified glas	s types exposed to uniform lateral loads of short or long duration subject to the following conditions: glazed in the opening in conformance with the manufacturer's recommendations. semblies that are:
 d. Continuously supported along one edge. The software user has the responsibility of selecting the correct proced The stiffness of members supporting any glass edge shall be sufficient where L denotes that length of the supported edge. The manufacturer states that the Safety Plus II 0.090 Polyurethane Lar 	that under design load, edge deflections shall not exceed L/175,
For other limiting conditions that may apply, refer to Section 5 of ASTM E130	
	r any particular results relating to the use of the Window Glass Design 2004 Software Program. r damage of any kind, including all indirect, special, or consequential damages and lost profits, ware Program.
Prepared by:on 6/2/	2014
LFS	

Glazing Information

Project Details

Edge Supports: 4 Sides

Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON Location: PF 1731

Glazing Angle: 90° Lite Dimensions:

Comments: NON-IMPACT COMPARABLE GLASS

Width:

1/4" ANNEALED "D1" GLAZING

Height:

Glass Construction (Rectangular)

Double Glazed Insulating Unit Outboard Lite: { Annealed } Nominal Thickness: 1/4 in. Air Space: 0.5 in.

Inboard Lite: { Annealed } Nominal Thickness: 1/4 in.

Short Load Duration, Resistance, and Deflection Data

32.1 in.

55.1 in.

Load (~ 3 sec.):

60.0 psf

Load Resistance:

120 psf

Approximate center of glass deflection:

0.19 in.

Conclusion

Based on your design information, the load resistance is greater than or equal to the specified loading.

Statement of Compliance

Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04.

Disclaimer:

This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions:

- The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations.
- Procedures exist to determine load resistance for rectangular glass assemblies that are:
 - a. Continuously supported along all four edges,
 - b. Continuously supported along three edges,
 - c. Continuously supported along two parallel edges, and
 - d. Continuously supported along one edge.

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- The software user has the responsibility of selecting the correct procedures for the required application from the software
- The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge
- The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

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Prepared by:

on 6/2/2014

Glazing Information Project Details

Edge Supports: 4 Sides Glazing Angle: 90°

Lite Dimensions:

Width: 36.1 in. Height: 78.1 in.

Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON

Location: PF 1731

Comments: NON-IMPACT COMPARABLE GLASS

3/16" HEAT STRENGTHENED "D2" GLAZING

Glass Construction (Rectangular)

Double Glazed Insulating Unit Air Space: 0.5 in.

Outboard Lite: { Heat Strengthened } Inboard Lite: { Heat Strengthened } Nominal Thickness: 3/16 in.

Short Load Duration, Resistance, and Deflection Data

Load (~ 3 sec.): 60.0 psf Load Resistance: 119 psf Approximate center of glass deflection: 0.5 in.

Conclusion

Based on your design information, the load resistance is greater than or equal to the specified loading.

Statement of Compliance

Procedures followed in determining the resistance of this window glass are in accordance with ASTM E1300-04.

Disclaimer:

This software can be used to determine the load resistance of specified glass types exposed to uniform lateral loads of short or long duration subject to the following conditions:

- The glass is free of edge and surface damage and has been properly glazed in the opening in conformance with the manufacturer's recommendations.
- Procedures exist to determine load resistance for rectangular glass assemblies that are:
 - a. Continuously supported along all four edges,
 - b. Continuously supported along three edges,
 - c. Continuously supported along two parallel edges, and
 - d. Continuously supported along one edge.
- The software user has the responsibility of selecting the correct procedures for the required application from the software
- The stiffness of members supporting any glass edge shall be sufficient that under design load, edge deflections shall not exceed L/175, where L denotes that length of the supported edge.

on 6/2/2014

- The manufacturer states that the Safety Plus II 0.090 Polyurethane Large Missile Resistant interlayer is comparable to the PVB interlayer.

For other limiting conditions that may apply, refer to Section 5 of ASTM E1300 and local building codes.

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Prepared by:

Glazing Information		Project Details	
	57.1 in. 117 in.	Project Name: FLEETWOOD NON-IMPACT GL. Location: PF 1731 Comments: NON-IMPACT COMPARABLE GLA 3/16" TEMPERED "D3" GLAZING	
Glass Construction (Rectangular)		
Double Glazed Insulating U		Air Space: 0.5 in. Inboard Lite: { Fully Tempered }	
Nominal Thickness:		Nominal Thickness: 3/16 in.	
Short Load Duration,	, Resistance,	and Deflection Data	
Load (~ 3 sec.): Load Resistance: Approximate center of glas	ss deflection:	60.0 psf 139 psf 1.37 in.	
Conclusion			
Based on your design in the specified loading.	formation, the loa	nd resistance is greater than or equal to	
Statement of Compliance	and the second s		
Procedures followed in determini	ng the resistance of this	s window glass are in accordance with ASTM E1300-04.	
The glass is free of edge and surface Procedures exist to determine load res a. Continuously supported along a b. Continuously supported along th c. Continuously supported along th d. Continuously supported along o The software user has the responsibili The stiffness of members supporting a where L denotes that length of the supported that the supporting a supporti	damage and has been properly sistance for rectangular glass a all four edges, hree edges, wo parallel edges, and one edge. ity of selecting the correct proceany glass edge shall be sufficient poported edge. Ity Plus II 0.090 Polyurethane L	edures for the required application from the software. nt that under design load, edge deflections shall not exceed L/175, arge Missile Resistant interlayer is comparable to the PVB interlayer.	ing conditions:
	any personal injury or any loss	for any particular results relating to the use of the Window Glass Design 2004 Software or damage of any kind, including all indirect, special, or consequential damages and lo oftware Program.	
Prepared by:	on 6/2	2/2014	