FLEETWOOD GLAZING COMPARATIVE ANALYSIS

3900-T Aluminum Side Hinged Door

**TEST REPORT:**  TEL 01991315

<table>
<thead>
<tr>
<th></th>
<th>MAX. DLO (in.)</th>
<th>ASTM E1300 LOAD RESISTANCE (psf)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Door</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tested Glazing</td>
<td>A 29.0 x 108.0</td>
<td>&gt; 209</td>
</tr>
<tr>
<td>Comparable Glazing</td>
<td>A1 29.0 x 108.0</td>
<td>&gt; 209</td>
</tr>
<tr>
<td><strong>Sidelite</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tested Glazing</td>
<td>A 57.0 x 117.0</td>
<td>124</td>
</tr>
<tr>
<td>Comparable Glazing</td>
<td>A1 57.0 x 117.0</td>
<td>165</td>
</tr>
<tr>
<td><strong>Sidelite</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tested Glazing</td>
<td>A 47.0 x 108.0</td>
<td>156</td>
</tr>
<tr>
<td>Comparable Glazing</td>
<td>A1 47.0 x 108.0</td>
<td>182</td>
</tr>
</tbody>
</table>
TESTED IMPACT GLAZING

TEST REPORT: TEL 01991315

1-1/2" THICK GLASS
3/16" HEAT STRENGTHENED GLASS
0.090" SentryGlas® Interlayer
3/16" HEAT STRENGTHENED GLASS
AIR SPACE
1/4" TEMPERED GLASS

0.5" GLASS BITE

GLAZING DETAIL

NON-IMPACT GLAZING

VERIFIED PER ASTM E1300

1" THICK GLASS
1/4" TEMPERED GLASS

0.5" GLASS BITE

1/4" TEMPERED GLASS

GLAZING DETAIL

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Glass Load Resistance Report -- FLEETWOOD NON-IMPACT GLASS COMPARISON

Glazing Information
Edge Supports: 4 Sides
Glazing Angle: 90°
Height: 108 in.

Glass Construction (Rectangular)
Double Glazed Insulating Unit
Outboard Lite: { Fully Tempered }
Nominal Thickness: 1/4 in.

Project Details
Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON
Location: FLEETWOOD SIDE HINGED DOOR
Comments: TESTED IMPACT GLASS "A" GLAZING (DOOR)

Air Space: 0.5 in.
Inboard Lite: { Heat Strengthened }
Interlayer Type: SentryGlas® Plus
Outboard Ply Thickness: 3/16 in.
Interlayer Thickness: 0.09 in.
Inboard Ply Thickness: 3/16 in.
Nominal Thickness: 3/8 in.

Short Load Duration, Resistance, and Deflection Data
Load (~ 3 sec.): 65.0 psf
Load Resistance: > 209 psf
Approximate center of glass deflection: 0.08 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.

Prepared by: LFS on 9/2/2015
Glass Load Resistance Report -- FLEETWOOD NON-IMPACT GLASS COMPARISON

Glazing Information

Edge Supports: 4 Sides
Glazing Angle: 90°
Lite Dimensions:
  Width: 29.0 in.
  Height: 108 in.

Glass Construction (Rectangular)

Double Glazed Insulating Unit
  Outboard Lite: { Fully Tempered }
  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.): 65.0 psf
Load Resistance: > 209 psf
Approximate center of glass deflection: 0.21 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.

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  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.

Prepared by: LFS on 9/2/2015

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.
Glass Load Resistance Report -- FLEETWOOD NON-IMPACT GLASS COMPARISON

Glazing Information
Edge Supports: 4 Sides
Glazing Angle: 90°
Lite Dimensions:
  Width: 57.0 in.
  Height: 117 in.

Project Details
Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON
Location: FLEETWOOD SIDE HINGED DOOR
Comments: TESTED IMPACT GLASS
          "A" GLAZING (SIDELITE)

Glass Construction (Rectangular)
Double Glazed Insulating Unit
  Outboard Lite: { Fully Tempered }
  Nominal Thickness: 1/4 in.

Air Space: 0.5 in.
Inboard Lite: { Heat Strengthened }
  Interlayer Type: SentryGlas® Plus
  Interlayer Thickness: 0.09 in.
  Outboard Ply Thickness: 3/16 in.
  Inboard Ply Thickness: 3/16 in.
  Nominal Thickness: 3/8 in.

Short Load Duration, Resistance, and Deflection Data
Load (~ 3 sec.): 65.0 psf
Load Resistance: N/A
Approximate center of glass deflection: N/A

Conclusion
Calculations have not been performed.

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).
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Prepared by: [Signature] on 9/2/2015
LFS
### Glazing Information

<table>
<thead>
<tr>
<th>Edge Supports:</th>
<th>4 Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glazing Angle:</td>
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</tr>
<tr>
<td>Lite Dimensions:</td>
<td></td>
</tr>
<tr>
<td>Width:</td>
<td>57.0 in.</td>
</tr>
<tr>
<td>Height:</td>
<td>117 in.</td>
</tr>
</tbody>
</table>

### Project Details

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>FLEETWOOD NON-IMPACT GLASS COMPARISON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>FLEETWOOD SIDE HINGED DOOR</td>
</tr>
<tr>
<td>Comments:</td>
<td>NON-IMPACT COMPARABLE GLASS</td>
</tr>
<tr>
<td></td>
<td>1/4&quot; TEMPERED &quot;A1&quot; GLAZING (SIDELITE)</td>
</tr>
</tbody>
</table>

### Glass Construction (Rectangular)

<table>
<thead>
<tr>
<th>Double Glazed Insulating Unit</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Outboard Lite:</td>
<td>Fully Tempered</td>
</tr>
<tr>
<td>Nominal Thickness:</td>
<td>1/4 in.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Space:</th>
<th>0.5 in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inboard Lite:</td>
<td>Fully Tempered</td>
</tr>
<tr>
<td>Nominal Thickness:</td>
<td>1/4 in.</td>
</tr>
</tbody>
</table>

### Short Load Duration, Resistance, and Deflection Data

- Load (~ 3 sec.): 65.0 psf
- Load Resistance: N/A
- Approximate center of glass deflection: N/A

### Conclusion

Calculations have not been performed.

### 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: [Signature] on 9/2/2015

LFS
Glass Load Resistance Report -- FLEETWOOD NON-IMPACT GLASS COMPARISON

Glazing Information

<table>
<thead>
<tr>
<th>Edge Supports:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Glazing Angle:</td>
<td>90°</td>
</tr>
<tr>
<td>Lite Dimensions:</td>
<td></td>
</tr>
<tr>
<td>Width:</td>
<td>47.0 in.</td>
</tr>
<tr>
<td>Height:</td>
<td>108 in.</td>
</tr>
</tbody>
</table>

Glass Construction (Rectangular)

<table>
<thead>
<tr>
<th>Double Glazed Insulating Unit</th>
<th>Air Space: 0.5 in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outboard Lite:</td>
<td>{ Fully Tempered }</td>
</tr>
<tr>
<td>Nominal Thickness:</td>
<td>1/4 in.</td>
</tr>
<tr>
<td>Inboard Lite:</td>
<td>{ Heat Strengthened }</td>
</tr>
<tr>
<td>Interlayer Type:</td>
<td>SentryGlas® Plus</td>
</tr>
<tr>
<td>Interlayer Thickness:</td>
<td>0.09 in.</td>
</tr>
<tr>
<td>Outboard Ply Thickness:</td>
<td>3/16 in.</td>
</tr>
<tr>
<td>Inboard Ply Thickness:</td>
<td>3/16 in.</td>
</tr>
<tr>
<td>Nominal Thickness:</td>
<td>3/8 in.</td>
</tr>
</tbody>
</table>

Short Load Duration, Resistance, and Deflection Data

| Load (~ 3 sec.): | 65.0 psf |
| Load Resistance: | 156 psf |
| Approximate center of glass deflection: | 0.41 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:

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  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 PV/6 interlayer.
- The non-factor 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.

Prepared by: [Signature] on 9/3/2015
Glass Load Resistance Report -- FLEETWOOD NON-IMPACT GLASS COMPARISON

**Glazing Information**
- Edge Supports: 4 Sides
- Glazing Angle: 90°
- Lite Dimensions:
  - Width: 47.0 in.
  - Height: 108 in.

**Project Details**
- Project Name: FLEETWOOD NON-IMPACT GLASS COMPARISON
- Location: FLEETWOOD SIDE HINGED DOOR
- Comments: NON-IMPACT COMPARABLE GLASS
  - 1/4" TEMPERED "A1" GLAZING (SIDELITE)

**Glass Construction (Rectangular)**
- Double Glazed Insulating Unit
- Outboard Lite: { Fully Tempered }
- Inboard Lite: { Fully Tempered }
- Nominal Thickness: 1/4 in.

**Air Space:** 0.5 in.
- Nominal Thickness: 1/4 in.

**Short Load Duration, Resistance, and Deflection Data**
- Load (~ 3 sec.): 65.0 psf
- Load Resistance: 182 psf
- Approximate center of glass deflection: 0.8 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.

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  - Continuously supported along two parallel edges, and
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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 PV8 interlayer.

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

**Prepared by:** [Signature]
- LFS
- on 9/3/2015