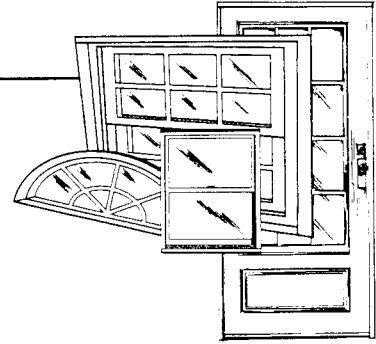


CERTIFIED TESTING LABORATORIES

Architectural Division • 7252 Narcoossee Rd. • Orlando, FL 32822
(407)-384-7744 • Fax (407)-384-7751



Report No.: CTLA456W

DC Not. No.:99032

Date: October 19, 1999

CTL Certification # 99-0105.02

Test Dates: October 6, 7, 1999

Test Requested By - JELD-WEN, INC.
31725 Highway 97 North
Suite C
Chiloquin, OR 97624

Tests Conducted: PA 201, PA 202 & PA 203 (with no deviations)

| | | | | |
|---------------------------|-------------------------------------|----------|-------------|-------------|
| Design Pressures - | Specimen 1, 2 & 3 (PA 201 & PA 203) | Outswing | + 60.0 psf. | - 65.0 psf. |
| | Specimen 4 (PA 202) | Outswing | + 50.0 psf. | - 46.0 psf. |
| | Specimen 5 (PA 202) | Outswing | + 53.0 psf. | - 57.0 psf. |

(1) DESCRIPTION OF SERIES:

Model Designation - Challenge Gladiator - Outswing / Wood Edge Steel Door
As per drawings no. L99-64, sheets 1 through 7.

Overall Size - Specimen 1, 2, 3, 4, & 5 105.25" wide x 81.25" high x 4.5625" deep

Configuration - OXXO

| | | |
|----------------------------------|-----------------------|---|
| No. & Size of Doors - | Specimens 1, 2, 3 & 5 | (opaque door panels w/glazed sidelites) |
| | (1) active | 36.0" wide x 79.75" high. |
| | (1) active w/astragal | 37.75" wide x 79.75" high |
| | (2) sidelite | 15.25" wide x 81.25" high |
| | Specimen 4 | (glazed door panels w/glazed sidelites) |
| | (1) active | 36.0" wide x 79.75" high. |
| | (1) active w/astragal | 37.75" wide x 79.75" high |
| | (2) sidelite | 15.25" wide x 81.25" high |

(2) MATERIAL CHARACTERISTICS:

Frame and Door Material - Finger jointed pine jambs and steel panels.

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Frame Construction – The head jambs and side jambs are finger jointed pine measuring 4.5625” x 1.25” (drawing no. L99-64, sheet 7 of 7 item 1). The head jamb and side jambs are mortised, butted and joined using (3)7/8” x 2” wire staples. The threshold tested is an Aluminum Outswing Bump measuring 4.625” x 1.0” (drawing no. L99-64, sheet 7 of 7 item 3).

Door Panel Construction: The panel is constructed from 25 GA. (0.018”) thick galvanized steel skins. The interior cavity of each door is filled with polystyrene (1.0 to 1.25lb. density) as stated and manufactured by JELD-WEN, INC. The steel face sheets are glued to expanded polystyrene, with bottom wood rail (drawing no. L99-64, sheet 7 of 7 item 10), top wood rail (drawing no. L99-64, sheet 7 of 7 item 11). The hinge and latch stiles are wood (drawing no. L99-64, sheet 7 of 7 item 11). The lock reinforcement consists of wood placed between the exterior sheets of steel (drawing no. L99-64, sheet 7 of 7 item 5).

Sidelite Panel Construction: The panel is constructed from 25 GA. (0.018”) thick galvanized steel skins. The interior cavity of each sidelite panel is filled with polystyrene (1.0 to 1.25lb. density) as stated and manufactured by JELD-WEN, INC. The steel face sheets are glued to the expanded polystyrene, with bottom wood rail (drawing no. L99-64, sheet 7 of 7 item 10), top wood rail (drawing no. L99-64, sheet 7 of 7 item 11). The side stiles are wood (drawing no. L99-64, sheet 7 of 7 item 7).

Glazing: ½” tempered insulated glass as mfg. by ODL

Glazing Method – The glass was captured between split lite frames and secured utilizing #8 x 1.5” tech screws: Door Panel – 3 on each horizontal and 6 on each vertical (drawing no. L99-64, sheet 4 of 7).
Sidelite Panel – 2 on each horizontal and 6 on each vertical (drawing no. L99-64, sheet 4 of 7).

Daylight Opening - Door Panel – 21.8175” wide x 63.8175” high
Sidelite Panel – 6.0” wide x 63.8175” high

Weather-stripping - Schlegel Q-Lon, QDS 650 Compression (1) row header, (1) row sill, (1) row length of each leg jamb and (1) row length of astragal (drawing no. L99-64, sheet 7 of 7 item 12).

Schlegel Q-Lon foam pad (1) @ each corner of jamb @ threshold.

Hardware Specimens 1,2,3,4&5 (1) Kwikset 200 Latchbolt @ 36” from bottom of panel
(1) Kwikset 660 Deadbolt @ 41.5” from bottom of panel
(6) Three 4” hinges each door panel @ (see drawing no. L99-64, sh.4 of 7)
(1) Aluminum Astragal (see drawing L99-64. sh.4 of 7)

Weepholes - None
Muntins - None
Reinforcement - None

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Sealant - Latex caulking as needed to seal unit into rough opening. Addition caulking required at the bottom corners of weather-stripping, and at the Astragal/Threshold.

Additional Description -

All specimens were installed in a wood test buck.

Specimens 1, 2 & 3 were tested for Large Missile Impact and Fatigue Load Cycling (PA 201 & PA 203).

Specimen 4 was tested for Air Infiltration, Water Infiltration, Static Air and Forced Entry Tests (PA 202).

Specimen 5 was tested for Air Infiltration, Water Infiltration, Static Air and Forced Entry Tests (PA 202).

(3) INSTALLATION:

Screws and Method of Attachment -

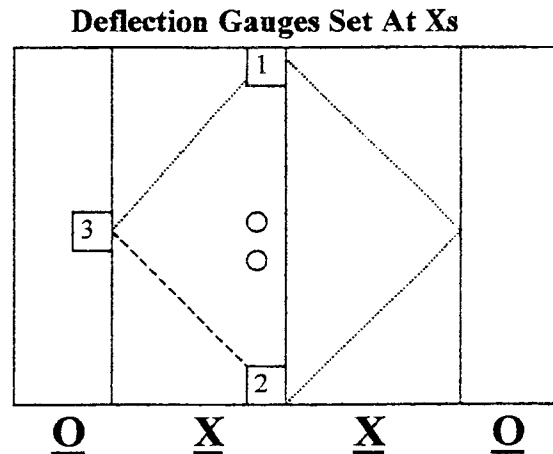
Specimen 1, 2, 3, 4 & 5

36 - # 8 x 2-1/2" flat head phillips wood screws, used to fasten frame to the wood buck.
(see drawing no. L99-64, sheet 4 of 7 for anchor locations)

Test Results:

Test Sequence: PA 202

1. Air Infiltration
2. 1/2 Test Pressure Positive
3. 1/2 Test Pressure Negative
4. Design Pressure Positive
5. Design Pressure Negative
6. Water Infiltration Positive Direction
7. Full Test pressure Positive
8. Full Test Pressure Negative
9. Forced Entry



Deflection was measured with three (3) CDI 5" dial indicators: location #1-SN 971649614, location #2-SN 982539158 and location #3-SN 980369793.

Specimen 4 (outswing glazed w/sidelites)

AIR INFILTRATION

Air Infiltration Tests were conducted in accordance with DCBCCD PA 202-94

| | | |
|---------------------|----------------|----------------|
| Air at 1.57 psf | Actual | Allowable |
| Specimen 4 Outswing | 0.01 CFM/SQ FT | 0.34 CFM/SQ FT |

David Stahl P.E.
1/19/00

WATER INFILTRATION TEST

Water Infiltration Test was conducted in accordance with DCBCCD PA 202 - 94

Specimen 4 Outswing Water @ 9.0 psf for 15 min. No water penetration over sill.

Specimen 4 Cont.

STATIC AIR PRESSURE TESTS

Static Tests were conducted in accordance with DCBCCD PA 202-94

Design Loads + 50.0 psf, - 46.0 psf. Specimen 4 (outswing)

| Range of test | time | actual load | deflection | perm. set |
|----------------|-----------|-------------|--------------------|-----------|
| Positive loads | (seconds) | psf | | |
| 1/2 Test | 30 | 37.5 | | |
| Design | 30 | 50.0 | Mullion (3) 0.231" | 0.035" |
| Test | 30 | 75.0 | Door T (1) 0.648" | 0.015" |
| | | | Door B (2) 0.489" | 0.001" |
| | | | Mullion (3) 0.298" | 0.042" |

| Range of test | time | actual load | deflection | perm. set |
|----------------|-----------|-------------|--------------------|-----------|
| Negative loads | (seconds) | psf | | |
| 1/2 Test | 30 | 39.0 | | |
| Design | 30 | 52.0 | Mullion (3) 0.210" | 0.011" |
| Test | 30 | 69.0 | Door T (1) 1.310" | 0.069" |
| | | | Door B (2) 1.935" | 0.015" |
| | | | Mullion (3) 0.310" | 0.036" |

- (3) Mullion - Max. allowable deflection at design load (L/180) $81.25 / 180 = 0.451"$
- (1) Door T - Max. allowable perm. set at test load (0.4% of span) $.004 \times 79.75 = 0.319"$
- (2) Door B - Max. allowable perm. set at test load (0.4% of span) $.004 \times 79.75 = 0.319"$
- (3) Mullion - Max. allowable perm. set at test load (0.4% of span) $.004 \times 81.25 = 0.325"$

FORCED ENTRY TEST

Forced Entry Test was conducted in accordance with DCBCCD PA 202-94

| <u>Specimen</u> | <u>Size</u> | <u>Time</u> | <u>Result</u> |
|-----------------|----------------------------|-------------|--------------------------------|
| Specimen 4 | 105.25" wide x 81.25" high | 30 seconds | (Doors remained locked & shut) |

NOTE: Active door panel remained engaged and was operable before and after all tests.

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 1/18/00

Specimen 5 (outswing opaque w/sidelites)

STATIC AIR PRESSURE TESTS

Static Tests were conducted in accordance with DCBCCD PA 202-94

Design Loads + 53.0 psf, - 57.0 psf. Specimen 5 (outswing)

| Range of test | time | actual load | deflection | perm. set |
|----------------|-----------|-------------|--------------------|-----------|
| Positive loads | (seconds) | psf | | |
| 1/2 Test | 30 | 39.75 | | |
| Design | 30 | 53.0 | Mullion (3) 0.225" | 0.006" |
| Test | 30 | 79.5 | Door T (1) 0.793" | 0.052" |
| | | | Door B (2) 0.711" | 0.064" |
| | | | Mullion (3) 0.353" | 0.035" |

| Range of test | time | actual load | deflection | perm. set |
|----------------|-----------|-------------|--------------------|-----------|
| Negative loads | (seconds) | psf | | |
| 1/2 Test | 30 | 42.75 | | |
| Design | 30 | 57.0 | Mullion (3) 0.152" | 0.021" |
| Test | 30 | 85.5 | Door T (1) 1.280" | 0.140" |
| | | | Door B (2) 1.500" | 0.048" |
| | | | Mullion (3) 0.239" | 0.017" |

- (3) Mullion - Max. allowable deflection at design load (L/180) $81.25 / 180 = 0.451"$
- (1) Door T - Max. allowable perm. set at test load (0.4% of span) $.004 \times 79.75 = 0.319"$
- (2) Door B - Max. allowable perm. set at test load (0.4% of span) $.004 \times 79.75 = 0.319"$
- (3) Mullion - Max. allowable perm. set at test load (0.4% of span) $.004 \times 81.25 = 0.325"$

FORCED ENTRY TEST

Forced Entry Test was conducted in accordance with DCBCCD PA 202-94

| <u>Specimen</u> | <u>Size</u> | <u>Time</u> | <u>Result</u> |
|-----------------|----------------------------|-------------|--------------------------------|
| Specimen 5 | 105.25" wide x 81.25" high | 30 seconds | (Doors remained locked & shut) |

NOTE: Active door panel remained engaged and was operable before and after all tests

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1/14/94

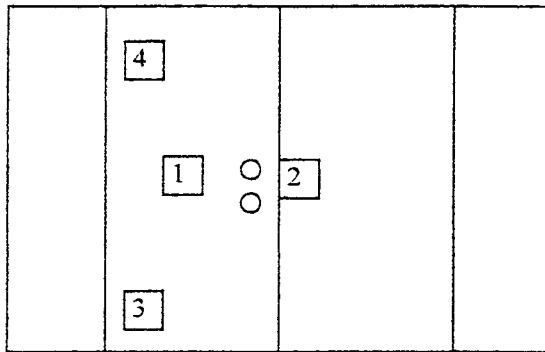
IMPACT TEST – LARGE MISSILE

Impact tests were conducted in accordance with DCBCCD PA 201-94.

Note:

X measurement from left edge of specimen.
Y measurement from bottom edge of test specimen.

Type and weight of missile: # 2 Southern Yellow Pine 2x4, Length approx. 89-5/16" & 9 lb.



Specimen 1 Opaque Double Doors w/sidelites

| Impact No. | Impact Loc. | Speed Ft/Sec. | X Meas. | Y Meas. |
|------------|-------------|---------------|---------|---------|
| 1. | 1 | 50.1 | 33.25" | 40.50" |
| 2. | 2 | 50.2 | 52.75" | 40.25" |
| 3. | 3 | 50.1 | 22.50" | 6.25" |

None of the impacts penetrated the specimen and all locks remained engaged.

Specimen 2 Opaque Double Doors w/sidelites

| Impact No. | Impact Loc. | Speed Ft/Sec. | X Meas. | Y Meas. |
|------------|-------------|---------------|---------|---------|
| 1. | 1 | 50.3 | 33.50" | 41.50" |
| 2. | 2 | 50.1 | 52.50" | 40.50" |
| 3. | 3 | 50.0 | 22.25" | 6.50" |

None of the impacts penetrated the specimen and all locks remained engaged.

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1/12/00

IMPACT TEST – LARGE MISSILE **cont.**

Specimen 3 **Opaque Double Doors w/sidelites**

| Impact No. | Impact Loc. | Speed Ft/Sec. | X Meas. | Y Meas. |
|------------|-------------|---------------|---------|---------|
| 1. | 1 | 50.1 | 33.75" | 41.00" |
| 2. | 2 | 50.1 | 52.50" | 40.25" |
| 3. | 4 | 50.2 | 22.75" | 75.00" |

None of the impacts penetrated the specimen and all locks remained engaged.

FATIGUE LOADING TEST

Cycle tests were conducted in accordance with DCBCCD PA 203

Specimen 1 **Opaque Double Door w/sidelites**

Design Load psf = + 60.0 psf, - 65.0 psf

Positive loads

| <u>Range of Test</u> | <u># Cycles</u> | <u>Load</u> | <u>Cycles/Min.</u> |
|----------------------|-----------------|-------------|--------------------|
| + .0 to 0.5 | 600 | 32.5 PSF | 56 |
| + .0 to 0.6 | 70 | 39.0 PSF | 56 |
| + .0 to 1.3 | 1 | 78.0 PSF | |

671 cycles completed

Negative Loads

| <u>Range of Test</u> | <u># Cycles</u> | <u>Load</u> | <u>Cycles/Min.</u> |
|----------------------|-----------------|-------------|--------------------|
| + .0 to 0.5 | 600 | 32.5 PSF | 56 |
| + .0 to 0.6 | 70 | 39.0 PSF | 56 |
| + .0 to 1.3 | 1 | 84.5 PSF | |

671 cycles completed

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners. Locks remained engaged. There were no cracks longer than 5" x 1/16" through which air could pass observed. The door was operable at end of test.

Done by J. E. [Signature]
1/18/00

Specimen 2

Design Load psf = + 60.0 psf, - 65.0 psf

Positive loads

| <u>Range of Test</u> | <u># Cycles</u> | <u>Load</u> | <u>Cycles/Min.</u> |
|----------------------|-----------------|-------------|--------------------|
| + .0 to 0.5 | 600 | 32.5 PSF | 56 |
| + .0 to 0.6 | 70 | 39.0 PSF | 56 |
| + .0 to 1.3 | 1 | 78.0 PSF | |

671 cycles completed

Negative Loads

| <u>Range of Test</u> | <u># Cycles</u> | <u>Load</u> | <u>Cycles/Min.</u> |
|----------------------|-----------------|-------------|--------------------|
| + .0 to 0.5 | 600 | 32.5 PSF | 56 |
| + .0 to 0.6 | 70 | 39.0 PSF | 56 |
| + .0 to 1.3 | 1 | 84.5 PSF | |

671 cycles completed

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners. Locks remained engaged. There were no cracks longer than 5" x 1/16" through which air could pass observed. The door was operable at end of test.

Specimen 3

Design Load psf = + 60.0 psf, - 65.0 psf

Positive loads

| <u>Range of Test</u> | <u># Cycles</u> | <u>Load</u> | <u>Cycles/Min.</u> |
|----------------------|-----------------|-------------|--------------------|
| + .0 to 0.5 | 600 | 32.5 PSF | 56 |
| + .0 to 0.6 | 70 | 39.0 PSF | 56 |
| + .0 to 1.3 | 1 | 78.0 PSF | |

671 cycles completed

Negative Loads

| <u>Range of Test</u> | <u># Cycles</u> | <u>Load</u> | <u>Cycles/Min.</u> |
|----------------------|-----------------|-------------|--------------------|
| + .0 to 0.5 | 600 | 32.5 PSF | 56 |
| + .0 to 0.6 | 70 | 39.0 PSF | 56 |
| + .0 to 1.3 | 1 | 84.5 PSF | |

671 cycles completed

Specimen showed no resultant failure or duress after cycle test. No failure of fasteners. Locks remained engaged. There were no cracks longer than 5" x 1/16" through which air could pass observed. The door was operable at end of test.

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1/11/10

Submittal drawings numbered, L99-64 sheets 1, 2, 3, 4, 5, 6 and 7 and marked with the CTL stamp are a part of this report.

The results obtained and reported apply only to the specimens tested.

Comment: Nominal 2 mil polyethylene film was used to seal against air leakage during structural loads. The film was used in a manner that did not influence the test results.

Remarks: Detailed drawings were available for laboratory records and comparison to the test specimen At the time of this report. A copy of this report along with representative sections of the test Specimen will be retained by CTL for a period of ten (10) years. The results obtained apply only to the specimen tested.

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.

Certified Testing Laboratories assumes that all information provided by the client is accurate and that the physical and chemical properties of the components are as stated by the manufacturer.


Observers

J. R. Avgeris – Engineer, JELD-WEN, INC.
Rick Wright – Consultant, R.W. Building Consultants, Inc.

Dade County Witness: Not present

All Tests Witnessed by:

Ramesh Patel P.E.
Chris Bennet CTL
Ted Scanlon CTL


Ramesh Patel, P. E. 1/18/00
Florida Reg # 20224
October 21, 1999

Certified Testing Laboratories, Inc.

James Blakely
Vice President
Architectural Division

cc: JELD-WEN, INC. (2)
Rick Wright (2)
Ramesh Patel (1)
File (1)