

CLIENT: **Miracle Distributions Inc.**
#106, 2451 W. Grapevine Mills Circle
Grapevine, TX 76051

| | |
|------------------------------|----------------------------------|
| Project No: MED-1245f | Report Date: July 1, 2024 |
|------------------------------|----------------------------------|

SAMPLE ID: Single Hung Window

SAMPLE DESCRIPTION: 4'-7 1/8" (55 1/8") by 7'-6 1/2" (90 1/2") high.

SAMPLING DETAIL: The test sample manufactured by Miracle Distributions Inc. was submitted directly to QAI by the client. Samples were not independently selected for testing.

DATE OF RECEIPT: Samples were received at the QAI Medley Laboratories on March 8, 2024.

TESTING PERIOD: March 20, 2024.

TESTING LOCATION: QAI Laboratories – Medley, Florida, USA

TEST PROCEDURE: Testing to the following requirements:

- AAMA/WDMA/CSA 101/1. S.2/A440-22 North American Fenestration Standard/Specification for windows, doors, and skylights

TEST RESULTS: Miracle Distributions Inc. single hung window achieved a CW-PG25 rating when tested in accordance with the NAFS standard.

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Prepared By

Signed for and on behalf of
QAI Laboratories

Lusinda Delgado

Lusinda Delgado
Technical Report Writer

Jose Sanchez
Operation Manager



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Technician:
Jose Sanchez



| DESCRIPTION OF SAMPLE | |
|-----------------------|--|
| Model Designation: | Single Hung Window |
| Overall Size: | 4'-7 1/8" (55 1/8") by 7'-6 1/2" (90 1/2") high |
| Configuration: | O/X |
| Number of Vents: | One |
| Size of Vent: | 5'-0 1/8" (53 1/8") by 1'-11 3/8" (23 3/8") high |
| Product Designator: | CW-PG25 |
| Sample F-1 | |

| Frame Corners Construction | Number of Fasteners | Size of Fasteners |
|-----------------------------|---------------------|-------------------|
| Upper corners fastened with | N/A | Welded |
| Lower corners fastened with | N/A | Welded |

| Vent Corners Construction | Number of Fasteners | Size of Fasteners |
|-----------------------------|---------------------|-------------------|
| Upper corners fastened with | N/A | Welded |
| Lower corners fastened with | N/A | Welded |

| Glazing | | | |
|--|--|---------------------------|----------------|
| Glazing Location | Glazing Material | Glazing Compound | Compound Color |
| Vent and fixed lite | 7/8" overall nominal insulated laminated glass composed of 3/16" **tempered glass-1/2" air space using a **Tecnofoam spacer-3/16" **tempered glass | None | N/A |
| Glazing Penetration: 3/8" | | | |
| Glazing Method: Exterior glazed | | | |
| Glazing Compound Exterior side of glass: using a glazing bead | | | |
| Glazing Compound Interior side of glass: using glazing tape | | | |
| Daylight Opening: | Vent: 50" by 20 1/4" high | Fixed: 52" x 63 1/4" high | |

| Weather Stripping | | |
|-------------------|-------------|---|
| Quantity | Description | Location |
| Single row | Pile | Vent jamb rails, vent bottom rail and vent meeting rail |

| Hardware | | | | |
|----------|---|------------------|-------------------|----------------------|
| Quantity | Description | Distance | Location | Method of Attachment |
| Two | Surface mount metallic cam locks with no visible product markings | 6" from each end | Vent meeting rail | (2) 8 x 1" PH SMS |

Sample Installation

The sample was tested in a single 2" by 12" yellow pine wood test buck with a double 2" x 4" pressure treated wood buck strip. The frame head, frame sill and frame jambs were installed using a single row of No. 10 by 1 1/2" PH SMS spaced 12" on center.

| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
|--------------------|----------------------------|--|---------|--------------------------|
| Title of Test | Motion to Open/Close | Breakaway | Results | Remarks |
| Operating Force | 18/12 lbf | 16 lbf | Passed | Maximum allowable 35 lbf |

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| | | |
|------------------------------|----------------------------|---|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.0 inches Hg |
| Title of Test | Results | |
| Force to Latch | Passed | |
| Open: 8 lbf Close: 10 lbf | | |

| | | | |
|--|----------------------------|--|----------------|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | |
| Notes: Maximum allowable 0.30 cfm/sq.ft | | | |
| Title of Test | Pressure | Reading | Results |
| Air Infiltration Test: (ASTM E283) | (76.61 pa) 1.6 psf | 0.21 cfm/sq.ft | Passed |

| | | | | |
|-----------------------|----------------------------|--|----------------|------------------|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
| Notes: | | | | |
| Title of Test | Pressure | | Results | Add. Info |
| Water Resistance Test | (180 pa) 3.76 psf | Cycle 1 | Passed | ASTM E547 |
| | | Cycle 2 | Passed | |
| | | Cycle 3 | Passed | |
| | | Cycle 4 | Passed | |

| | | | | |
|-----------------------|----------------------------|--|----------------|------------------|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
| Notes: | | | | |
| Title of Test | Pressure | | Results | Add. Info |
| Water Resistance Test | (180 pa) 3.76 psf | 15 minutes | Passed | ASTM E331 |

| | | | |
|------------------------------------|----------------------------|--|--|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | |
| Title of Test | Pressure | Notes | |
| 1/2 Design Load Test Positive Load | (600 pa) 12.53 psf | | |
| | Results | Passed | |

| | | | | |
|--------------------------------|----------------------------|--|----------------|------------------|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
| Title of Test | Pressure | Notes | | |
| Design Load Test Positive Load | (1200 pa) 25.06 psf | see appendix A | | |
| Reading# | Deflection | Permanent Set | Results | Add. Info |
| 1 | 0.403" | 0.028" | Passed | |
| 2 | 0.059" | 0.001" | Passed | |
| 3 | 0.036" | 0.001" | Passed | |

| | | | |
|------------------------------------|----------------------------|--|--|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | |
| Title of Test | Pressure | Notes | |
| 1/2 Design Load Test Negative Load | (600 pa) 12.53 psf | | |
| | Results | Passed | |

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| | | | | |
|--------------------------------|----------------------------|--|----------------|------------------|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
| Title of Test | | Pressure | Notes | |
| Design Load Test Negative Load | | (1200 pa) 25.06 psf | | |
| see appendix A | | | | |
| Reading# | Deflection | Permanent Set | Results | Add. Info |
| 1 | 0.511" | 0.036" | Passed | |
| 2 | 0.085" | 0.003" | Passed | |
| 3 | 0.080" | 0.002" | Passed | |

| | | | | |
|--|----------------------------|--|--------------|--|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
| Title of Test | | Pressure | Notes | |
| 1/2 Structural Load Test Positive Load | | (900 pa) 18.80 psf | | |
| Results | | | Passed | |

| | | | | |
|---------------------------------------|----------------------------|--|----------------|------------------|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
| Title of Test | | Pressure | Notes | |
| Uniform Structural Test Positive Load | | (1800 pa) 37.59 psf | | |
| see appendix A | | | | |
| Reading# | Deflection | Permanent Set | Results | Add. Info |
| 1 | 0.708" | 0.038" | Passed | |
| 2 | 0.143" | 0.005" | Passed | |
| 3 | 0.136" | 0.005" | Passed | |

| | | | | |
|--|----------------------------|--|--------------|--|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
| Title of Test | | Pressure | Notes | |
| 1/2 Structural Load Test Negative Load | | (900 pa) 18.80 psf | | |
| Results | | | Passed | |

| | | | | |
|---------------------------------------|----------------------------|--|----------------|------------------|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
| Title of Test | | Pressure | Notes | |
| Uniform Structural Test Negative Load | | (1800 pa) 37.59 psf | | |
| see appendix A | | | | |
| Reading# | Deflection | Permanent Set | Results | Add. Info |
| 1 | 0.881" | 0.045" | Passed | |
| 2 | 0.186" | 0.008" | Passed | |
| 3 | 0.179" | 0.007" | | |

| | | | | |
|---------------------------------|----------------------------|--|--|--|
| Sample: F-1 | Temperature: 74.1°F | Barometric Reading: 30.01 inches Hg | | |
| Title of Test | | Results | | |
| Forced Entry Test | | Passed | | |
| ASTM F588 | Type A Window | Grade 10 | | |
| Disassembly Test | Section A2.1 | | | |
| Type A Window Assembly Test | Section A2.5 | | | |
| Lock Hardware Manipulation Test | Section A2.2 | | | |
| Sash Manipulation Test | Section A2.3 | | | |

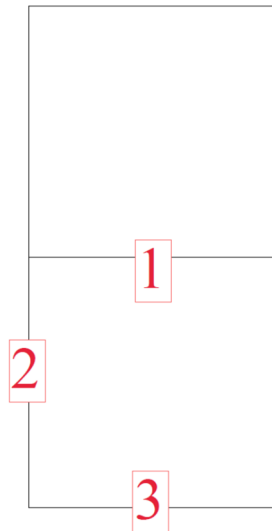
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| | | | | |
|----------------------|----------------------------|--|--------|---------------------------|
| Sample: F-1 | Temperature: 75.8°F | Barometric Reading: 30.01 inches Hg | | |
| Title of Test | | Results | | |
| Deglazing Test | | Passed | | |
| Member | Load | Movement | GP | Percentage of Deglazement |
| Left vent jamb rail | 51.71 pounds | 0.028" | 0.361" | 8% |
| Right vent jamb rail | 51.71 pounds | 0.031" | 0.360" | 9% |
| Vent meeting rail | 71.94 pounds | 0.040" | 0.358" | 12% |
| Vent bottom rail | 71.94 pounds | 0.036" | 0.353" | 10% |

| | | | | |
|--------------------------|----------------------------|--|--|--|
| Sample: F-1 | Temperature: 75.8°F | Barometric Reading: 30.01 inches Hg | | |
| Title of Test | | Results | | |
| Corner Weld Test | | Passed | | |
| Lower Left Frame Corner | 52 pounds | the break occurred but did not extend along the entire weld line | | |
| Lower Right Frame Corner | 48 pounds | the break occurred but did not extend along the entire weld line | | |
| Upper Left Frame Corner | 54 pounds | the break occurred but did not extend along the entire weld line | | |
| Upper Right Frame Corner | 52 pounds | the break occurred but did not extend along the entire weld line | | |
| Lower Left Vent Corner | 40 pounds | the break occurred but did not extend along the entire weld line | | |
| Lower Right Vent Corner | 44 pounds | the break occurred but did not extend along the entire weld line | | |
| Upper Left Vent Corner | 54 pounds | the break occurred but did not extend along the entire weld line | | |
| Upper Right Vent Corner | 38 pounds | the break occurred but did not extend along the entire weld line | | |

Appendix A



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Notes

* Designates measurements by laboratory

** as per manufacturer

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At conclusion of above tests, there was no apparent damage to fasteners. Test specimens were covered with 1.5 mil plastic sheeting to seal from air leakage when load test was performed, however this had no effect on above results.

The loads were held for 10 seconds.

REVISION HISTORY:

7/1/2024: Initial report release

*****END REPORT*****

