PERFORMANCE TESTS IN ACCORDANCE WITH
AAMA/WDMA/CSA 101/I.S.2/A440-08 & A440S1-09

Test Report Summary:

<table>
<thead>
<tr>
<th>Product type:</th>
<th>PVC Sliding Door</th>
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</thead>
<tbody>
<tr>
<td>Product series/model:</td>
<td>S-7500 OX Series Patio Door</td>
</tr>
<tr>
<td>Primary product designator:</td>
<td></td>
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<tr>
<td>Optional secondary designator:</td>
<td>Positive Design pressure (DP) = 1680 Pa (35.0 psf)</td>
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<tr>
<td></td>
<td>Negative design pressure (DP) = -1680 Pa (-35.0 psf)</td>
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<tr>
<td></td>
<td>Water penetration resistance test pressure = 290 Pa (6.00 psf)</td>
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<td></td>
<td>Canadian air infiltration / exfiltration level = A3 Level</td>
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</tbody>
</table>

| Test completion date: | 12/13/2013 |
| Report date: | 06/20/2014 |
| Revision date: | - |
| Reissue date: | 01/27/2017 |
| Number of pages: | 8 |

| CAN/CGSB 82.1-M89 ratings: | A3 / B3 / C1 / E3 / F1 |

Note: Reference must be made to Air-Ins Inc. complete report for test specimen description and detailed test results.

Physical Testing Department
Air-Ins Inc.

Approved by: Jean Miller, Eng.
Director, Physical Testing Department
Air-Ins Inc.

Manufactured under licence by:
MI WINDOWS AND DOORS
650 W. MARKET STREET
GRATZ, PA
USA, 17030

Report No.: AI-04159-D1 (Reissue-56)
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The results in this report relate only to the items tested. This report shall not be reproduced except in full, without the written approval of Air-ins Inc.
1.0 INTRODUCTION

Air-Ins Inc. laboratory was retained by "PH Tech Inc." to test a door according to the performance levels in the AAMA/WDMA/CSA 101/I.S.2/A440-08 & A440S1-09 Standards. The original report issued to "PH Tech Inc." is hereby reissued to "MI Windows and Doors" for their use as an under licence product manufacturer. The sample components and manufacturing are documented in section 2.0.

Note concerning the use of units of measurement in this report:
According to the AAMA/WDMA/CSA 101/I.S.2/A440-08 Standard, the use of SI (metric) units is the standard, while IP (Imperial) values given in parentheses are for reference purposes only, and are inexact rounded values. Section 5.0 contains testing results converted to IP units for the sake of convenience only. The only exception to using Si values is in the Performance Grade (PG) portion of the product designation.

Note concerning drawings:
The drawings reviewed for the production of this report are stamped and are on file at Air-Ins Inc. The availability of individual drawings will be at the discretion of the client.

2.0 DESCRIPTION OF THE SPECIMEN TESTED

Type: Horizontal Sliding, OX of AAMA/WDMA/CSA 101/I.S. 2/A440-08.
- Number of sashes: (1) operable sash and (1) fixed sash.

Model: S-7500 OX Series Patio Door

Assembly drawings: S-7500 PVC Frame Patio Door OX/XO (TS, OS). (Outside glazing bead welded sashes)

Drawings reviewed: - Part nos.: 701, 703, 710, 723, 5775, 7000, 7002, 7004, 7026,
Performance Evaluation: S-7500 OX Series Sliding Door

The results in this report relate only to the items tested. This report shall not be reproduced except in full, without the written approval of Air-ins Inc.
- Sash rolling rail: Part no. 9790
- Dust plug base: Part no. 703 (head), 710-BLM66 (sill)
- Reinforcement: None
- Weatherstripping:
  - Sill at sash meeting stiles: Dust plug with base, part no. 710-BLM66. Sill at screen: Insect stop part no. PBAB 8445-270 (Schlegel). Interior-side and exterior-side jamb pockets: pile brush T-slot; PB-8420-270 (Schlegel), pile brush PB-8320-187 (Schlegel) and coextruded compression bulb. Head at sash meeting stiles: Dust plug with base, part no. 703. Lower rail (both ends fixed panel): foam block; channelled; 25 mm x 25 mm x 19 mm).
- Sealant: Sealant at assembly of the interior and exterior sill before installation. Sealant between sill/head extremities and jambs. Sealant between the fixed sash support and jamb. Sealant along the entire length of the fixed sash support on the interior side. Sealant around the dust plug holder on the sill adjacent to the fixed sash support at the meeting stiles level.
- Drainage: Drawings no. 7000, 701, 723 and 9991
- Overall dimensions: 2440 mm (96.06") W x 2440 mm (96.06") H

Sash:
- Material Extruded PVC
- Joinery type: Thermally welded mitre joints
- Rails and stiles: Part no. 7587
- Interlocks adaptor: Part no. 7026
- Sliding cap: Part no. 8842
- Glazing stops: Part no. 5775
- Wheel shim: Part no. 7541
- Sash covering cap: Part no. 7523
- Reinforcement: Part no. 9598 (lock stile) and 9599 (meeting stiles)

Performance Evaluation: S-7500 OX Series Sliding Door

The results in this report relate only to the items tested. This report shall not be reproduced except in full, without the written approval of Air-ins Inc.
Weatherstripping: Rails: pile brush with fin; T slot; HF-7522-270 (Schlegel). Interlock stile: pile brush with fin; T slot; HF-7522-270 (Schlegel).

Sealant: Sealant at perimeter beside the coextrusion fin before laying the sealed unit.

Drainage: Drawing: 2.1.7. Glazing, cutting of horizontal glazing bead no. 5771

Overall dimensions: Active sash: 1223 mm (48.15") W x 2330 mm (91.73") H. Fixed sash: 1223 mm (48.15") W x 2330 mm (91.73") H

Hardware:
- Handle: (1) 9748 (Fasco)
- Keeper and lock: (1) 9149 (Fasco) with #8 x 2" screws
- Rollers: (2) Part no. 9732 (PH Tech)
- Weep hole plug: (1) Part no. 9734
- Weep hole cover: (1) Part no. 9808
- Sash bumper: (1) Part no. 8940 (P.H Tech)

Glazing: (Legend: C= Clear, Tt= Tinted, LE= Low-E, S= Surface #, A= Annealed, T= Tempered)
- Type: Double glazed sealed unit
- Total thickness: 25 mm (1.00")
- Glass thickness: Ext: 4.0 mm (0.16") . Int: 4.0 mm (0.16")
- Air space gap width: 17 mm (0.67")
- Type of glass: Ext: C-T / Int: C-T
- Type of spacer: Super Spacer
- Type of filling gas: Argon
- Glass retention: Glazing stop
- Glazing seals: Interior face: Sealant at sash perimeter. Exterior face: Glazing stop. Part no. 5775
- Setting blocks: (2) blocks at stiles, (2) blocks at upper rail and (2) blocks at lower rails, part no. 8933
- Day light opening: Fixed sash: 1055 mm (41.54") W x 2165 mm (85.24") H
  Active sash: 1057 mm (41.61") W x 2167 mm (85.31") H
Screen:
- Quantity: (1) Silensia screens.
- Frame material: Extruded aluminum
- Mesh material: Fiberglass
- Anchoring method: (4) roller
- Auxiliary parts: - (4) Sliding devices
  - (1) Recessed plastic handle
  - (1) Pile brush, t-slot retention
- Overall dimensions: 1202 mm (47.32”) W x 2355 mm (92.72”) H

3.0 ALTERATION(S)

Alteration(s) performed in the laboratory on tested specimen to meet the reported performances:
None

4.0 TEST BENCH INFORMATION

Information regarding the Test Bench and related instrumentation used for testing:

Testing was performed on Air-Ins Inc. test bench identified as TB03-GCC. Latest calibration of this test bench and related equipment dates to January 2014.
### 5.0 RESULTS OF PERFORMANCE TESTS

#### 5.1 TEST SPECIMEN PRIMARY TESTING

<table>
<thead>
<tr>
<th>TEST</th>
<th>CLASS SPECIFICATIONS</th>
<th>TEST RESULTS</th>
<th>GRADE OR COMMENT</th>
</tr>
</thead>
</table>
| **Operating Force Test** | Force to initiate motion < 135 N (30 lbf)  
 Force to maintain motion < 90 N (20 lbf)  
 Force to latch < 100 N (22.5 lbf)  
 AAMA/WDMA/CSA 101/I.S.2/A440-08 par. 5.3.2.1 & ASTM-E2068-00 (2008) | Measured to initiate = 100 N (22 lbf)  
 Measured to maintain = 38 N (9 lbf)  
 Measured to latch = 82 N (19 lbf) | Passed |
| **Air Leakage Resistance Test** | $Q_{\text{inf}} \leq 1.5 \text{l/s-m}^2 @ 75 \text{Pa}$  
 ($\leq 0.3 \text{cfm/ft}^2 @ 1.57 \text{psf}$)  
 AAMA/WDMA/CSA 101/I.S.2/A440-08 par. 5.3.2.1 & ASTM-E283-04 | $Q_{\text{inf}} = 0.29 \text{l/s-m}^2 @ 75 \text{Pa}$  
 ($0.06 \text{cfm/ft}^2 @ 1.57 \text{psf}$) | Passed |
| **Water Resistance Test** | No water infiltration under a minimum pressure differential of 180 Pa (3.75 psf)  
 AAMA/WDMA/CSA 101/I.S.2/A440-08 par. 5.3.3.2 & ASTM-E547-00 (2009) | No water infiltration under the minimum test pressure for the Class. | 290 Pa  
 (6.00 psf) |
| **Uniform Load Deflection Test** | Member deflection at a minimum design pressure (DP) of 1200 Pa (25.00 psf) and at optional DP performance levels.  
 AAMA/WDMA/CSA 101/I.S.2/A440-08 par. 5.3.4.2 & ASTM-E330-02 (2010) | Net deflection measured on the meeting stile:  
 25.07 mm @ −1200 Pa (0.99" @ −25.00 psf)  
 28.94 mm @ +1200 Pa (1.14" @ +25.00 psf)  
 39.29 mm @ −1680 Pa (1.55" @ −35.00 psf)  
 37.56 mm @ +1680 Pa (1.48" @ +35.00 psf)  
 Allowed: Not applicable for this performance class | Reported only |
| **Uniform Load Structural Test** | Permanent deformation is limited to $\leq 0.4\%$ (L) at a minimum structural test pressure (STP) of 1800 Pa (37.50 psf) and at optional STP levels.  
 AAMA/WDMA/CSA 101/I.S.2/A440-08 par. 5.3.4.3 & ASTM-E330-02 (2010) | Permanent deformation measured on the meeting stile:  
 1.80 mm @ −1800 Pa (0.07" @ −37.50 psf)  
 1.90 mm @ +1800 Pa (0.07" @ +37.50 psf)  
 3.86 mm @ −2520 Pa (0.15" @ −52.50 psf)  
 2.95 mm @ +2520 Pa (0.12" @ +52.50 psf)  
 Allowed $\leq 8.98$ mm (0.35") | STP 35 |
| **Forced-Entry Resistance Test** | All sliding doors shall be tested according to ASTM F842-04 minimum performance level 10.  
 AAMA/WDMA/CSA 101/I.S.2/A440-08 par. 5.3.5 | Grade 10 of ASTM F842-04  
 $T=5$ min., $L=1334$ N (300 lbf), $L=778$ N (175 lbf),  
 $L=133$ N (30 lbf), $L=222$ N (50 lbf) + panel weight | Passed |

Performance Evaluation: S-7500 OX Series Sliding Door

The results in this report relate only to the items tested. This report shall not be reproduced except in full, without the written approval of Air-ins Inc.
5.2 **TEST SPECIMEN AUXILIARY TESTING**

<table>
<thead>
<tr>
<th>TEST</th>
<th>CLASS SPECIFICATIONS</th>
<th>TEST RESULTS</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welded Corner Test</td>
<td>When loaded to failure, the break shall not extend along the entire weld line.</td>
<td>For each corner detail (sashes) the breakage does not extend along the entire weld line.</td>
<td>Passed</td>
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<td>AAMA/WDMA/CSA 101/I.S.2/A440-08 par. 5.3.6.2</td>
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<tr>
<td>Deglazing Test</td>
<td>Deglazing &lt; 90% of original glazing bite. The load for vertical sash members is 320 N (70 lbf) and 230 N (50 lbf) for all other rails.</td>
<td>Allowed: 15.7 mm (0.07&quot;)/ 90 % Measured: 1.5 mm (0.07&quot;)/ 8.5 % for stiles Measured: 1.0 mm (0.07&quot;) / 6 % for rails</td>
<td>Passed</td>
</tr>
<tr>
<td></td>
<td>AAMA/WDMA/CSA 101/I.S.2/A440-08 par. 5.3.6.3 &amp; ASTM E987-88 (2009)</td>
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6.0 CONCLUSION

Based on the tests results, the door described in this report meets the requirements of the AAMA/WDMA/CSA 101/I.S. 2/A440-08 & A440S1-09 Standards regarding performance testing (articles 5.0).

Detailed assembly drawings showing wall thickness of all members, corner construction and hardware application are on file and have been compared to the sample submitted.

The above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the referenced specification. The test records from this evaluation will be retained for a minimum of four (4) years from the date of report issuance. This report does not constitute certification of this product, which may only be granted by a certification agency.

Note on the Limitation of Liability:
Due care was taken in performing the testing sequence and in reporting the results related to the test specimen received for evaluation. Through acceptance of this report, the Client agrees to exempt Air-Ins Inc. employees and owners from all liability claims and demands arising from any matter related to or concerning the quality and execution of the performance evaluation contained in this report.

7.0 REVISION LOG

<table>
<thead>
<tr>
<th>Rev. #</th>
<th>Date</th>
<th>Page(s)</th>
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