



AIR-INS inc.

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**PERFORMANCE TESTS CONDUCTED
ON A PVC SLIDING GLASS DOOR MODEL "DIVA"
IN ACCORDANCE WITH AAMA/NWWDA 101/I.S. 2-97**

Prepared for:

**THERMOPLAST INC.
3035, LE CORBUSIER BLVD.
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AIR-INS INC.

**Report: AI-02453-E Rev.1
Report date: March 16th, 2005**

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The results in this report related only to the items tested. This report shall not be reproduced except in full, without the written approval of Air-ins Inc



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SLIDING GLASS DOOR PERFORMANCE EVALUATION

1.0 INTRODUCTION

Air-Ins Inc. laboratory was retained by "Thermoplast" to test a sliding glass door according to the performance levels in the AAMA/NWWDA 101/I.S. 2-97 standard. The sample components and manufacturing are documented in section 2.0.

2.0 DESCRIPTION OF THE SLIDING DOOR TESTED

Model: DIVA

Assembly drawings: Porte Patio Diva Horizontal and vertical cross section.

Drawings reviewed: Drawings No. RH-7088, 7088, RH-7074, RH-7090, RS-7010, RS-7018, RH-7013, RH-7076, 7076, RH-7078, 7078, RH-7080, RH-7084, FOAMJAMB, RF-7080, RF-7084, RF-7088, 013, 014, 015, 017, BLOC-FS, BLOC-MS, FOAMBLOC, MP-POIGNEE, FASCONEW, POIG-DIV1, A11 SPECIAL, XC-1064, SCeltETE, SCelJAMB, FOAMREnc, SPACER.

Date of reception: 09/28/2004

Date of testing: 10/06/2004, 11/19/2004, 12/20/2004, 01/18/2005 and 03/23/2005

Type : Double glazed with 1 operable sash sliding door
- Number of sashes: 2



Frame:

- Material: Extruded PVC
- Assembly method: Milled straight cut, sealed with foam pad and screwed, drawing no. SCELJAMB and SCELTETE.
- Head: Die no. RH-7074
- Sill: Die no. RH-7088
- Reinforcement: Galvanized steel, drawing no. RF-7088
- Jambs: Die no. RH-7074
- Auxiliary parts:
 - Fixed panel support, die no. RH-7090
 - Antilift block, drawing no. RS-7018
 - Airtight block no. BLOC-FS and BLOC-MS
 - Rolling rail drawings no. 013 and 015
 - Sash stopper die no. RS-7010
- Overall dimensions: 71 1/4 in. width x 79 1/2 in. height

Moveable sash:

- Material: Extruded PVC
- Assembly method: Mitre cut thermally welded
- Head and sill rail: Die no. RH-7076
- Pull stile: Die no. RH-7076
- Meeting stile: Die no. RH-7080
- Glazing stop: Die no. RS-7013
- Reinforcements:
 - Pull stile: Drawing: 017
 - Meeting stile: Drawing: RF-7080
- Rolling device: No. A-11 (Ricci) + SPACER
- Overall dimensions: 35 1/2 in. width x 76 7/8 in. height

Performance Evaluation: Sliding Glass Door



Fixed sash:

- Material: Extruded PVC
- Assembly method: Mitre cut, thermally welded
- Head and sill rail: Die no. RH-7078
- Pull stile: Die no. RH-7078
- Meeting stile: Die no. RH-7084
- **Screwing insert:** **Die no. 7011**
- Glazing stop: Die no. RS-7013
- Reinforcements: Meeting stile: Drawing: RF-7084
- Overall dimensions: 35 1/2 in. width x 76 7/8 in. height

Hardware:

- Mortise: No. MP-POIGNÉE (Thermoplast)
- Keepers: No. MP-POIGNEE (Thermoplast)
- Handle: No. FASCONEW (Fasco)

Weatherstripping:

	Exterior side	Interior side
Sashes:		
Head rail	Co-extruded lip RH-7078	-----
Sill rail	Co-extruded lip RH-7078	XC-1064 (Amesbury)
Pull stile	Co-extruded lip RH-7078	-----
Meeting stile	HF-7320-187 (Schlegel)	HF-7320-187 (Schlegel)
Frame:		
Head	-----	HF-7320-187 (Schlegel)
Sill	-----	PB-8322-187 (Schlegel)
Jambs	-----	HF-7320-187 (Schlegel)
Foam block Polyethylene # 4021	-Bottom of the frame, moveable sash side drawing no. FoamJamb. -Top and bottom, meeting stile, fixed sash drawing no. Foamrenc. -At both ends of the fixed panel support, drawing no. Foambloc.	

Performance Evaluation: Sliding Glass Door



Sealant Application: (see assembly drawing)

- Frame:**
 - Sealant between the two parts of the airtight block.
 - Sealant at each ends and under the fixed sash support.

- Sashes:**
 - Sealant at corners of the foam tape.
 - Sealant at corners of the glazing before fixing the glazing stops.

Glazing method:

- Glazing retention: With glazing stop no. RH-7013
- Setting blocks: 2/stiles and 1/rails
- Weatherstripping:
 - Exterior side: Foam tape (double sided) (1/6 in. x 1/2 in.)
 - Interior side: Co-extruded lip on glazing stops

Glazing:

- Type: Double sealed unit
- Total thickness: 7/8 in.
- Glass thickness: 1/8 in.
- Type of glass: Clear, tempered
- Type of spacer: Aluminium (A1-D)
- Type of filling gas: Air

Drainage hole or drainage system : (see drawings)

- Frame: Drawing no. 7088

- Sash:
 - Moveable: Drawing no. 7076
 - Fixed: Drawing no. 7078

Performance Evaluation: Sliding Glass Door



Screen:

- Frame materials: Extruded aluminum
- Assembly method: Screwed mitre cut
- Mesh materials: Fiberglass
- Auxiliary parts:
 - Handle and keeper
 - Rollers on rails
- Overall dimensions: 35 3/4 in. width x 78 in. height

(i) The text in *italic* shown in section 2.0 identifies the corrective measures or modification performed in the laboratory on the tested specimen to meet the reported performances.

Performance Evaluation: Sliding Glass Door

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3.0 TESTS RESULTS:

TEST	RESIDENTIAL CLASS SPECIFICATIONS	TEST RESULTS	GRADE OR COMMENTS
Operating force test	Initiate in motion < 30 lbf Keep in motion < 20 lbf <i>AAMA /NWWDA 101/I.S.2.-97 par. 2.2.19.5.1</i>	Measured to initiate= 21 lbf Measured to maintain= 8 lbf	Passed
Air tightness test	0.3 ft ³ /min-ft ² @ 1.57 psf <i>AAMA /NWWDA 101/I.S.2.-97 par. 2.1.2</i> <i>ASTM-E283-99</i>	Surface: 39.33 ft ² 0.09 ft ³ /min-ft ² @ 1.57 psf	Passed
Water resistance test	No water infiltration under a minimum pressure differential of 2.86 psf. <i>AAMA /NWWDA 101/I.S.2.-97 par. 2.1.3</i> <i>ASTM-E547-00</i>	No water infiltration under a pressure differential of 8.25 psf with and without screen.	55
Uniform load structural test	Permanent deformation < 0.4% of the span member at 22.5 psf <i>AAMA /NWWDA 101/I.S.2.-97 par. 2.1.4.2</i> <i>ASTM-E330-97</i>	<u>Meeting stile:</u> Allowed: 0.307 in. Measured: 0.012 in. at 22.5 psf 0.017 in. at - 22.5 psf Measured: 0.072 in. at 75.0 psf 0.061 in. at -75.0 psf	50
Deglazing test	Deglazing < 100% of original glazing bits. The load for vertical rails is 70 lbf and 50 lbf for all other rails. <i>AAMA /NWWDA 101/I.S.2.-97 par. 2.2.19.5.2</i> <i>ASTM-E987-94</i>	Allowed: 0.55 in/100% Measured: 0.082 in/15% at stiles Measured: 0.026 in/5% at rails	Passed
Welded corner test	When loaded to failure, the break shall not extend along the entire weld line. <i>AAMA /NWWDA 101/I.S.2.-97 par. 2.1.7</i>	All members satisfies	Passed
Resistance to forced entry	All sliding door shall be tested according to ASTM F842-97 performance level 10. <i>AAMA /NWWDA 101/I.S.2.-97 par. 2.1.8</i>	Grade 30 of ASTM F842-97 T ₁ =10 min., L ₁ =800 lbf, L ₂ =400 lbf, L ₃ =100 lbf & L ₄ =50 lbf + 90 lbf	Passed
Lead-check swab test	All polymeric profiles of the specimens shall be tested according to <i>ASTM E1753-01</i> with the <i>LeadCheck® Swab #PB-2M96</i> . <i>AAMA 109-04</i>	<u>Negative test:</u> Absence of the characteristic colour change that indicated a low probability of lead being present in the profiles of the tested specimen.	Passed

Performance Evaluation: Sliding Glass Door



4.0 CONCLUSION

Based on the tests results, the sliding glass door described in this report meets the requirements of the Standard AAMA/NWWDA 101/I.S. 2-97 regarding operating force, air infiltration, water resistance, uniform load structural, deglazing, welded corner, resistance to forced entry and lead check.

The overall product designation of that sliding glass door is: SGD-R50 (71 x 79)

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. This report does not constitute certification of this product, which may only be granted by certification agency.

AIR-INS INC.

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Bruno Monat, Tech.

Approved by:

Robert Jutras, Eng.

- Dist: - Client (1)**
- NAMI (1)**

Performance Evaluation: Sliding Glass Door



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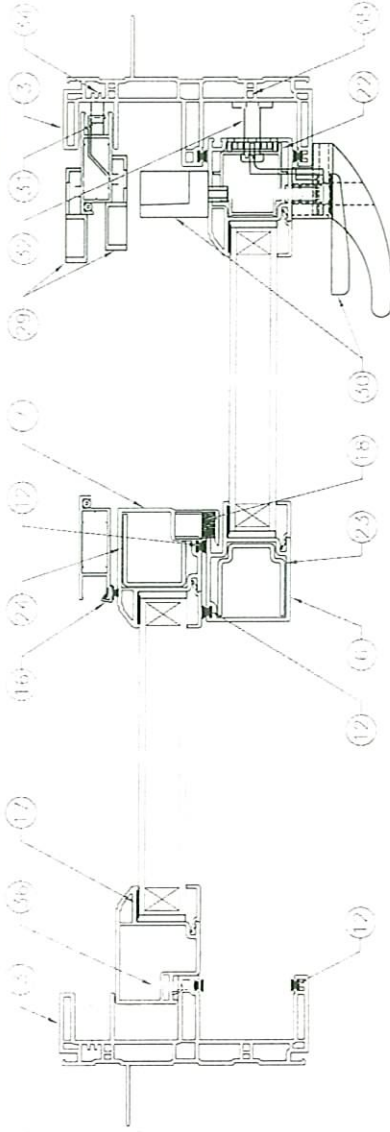
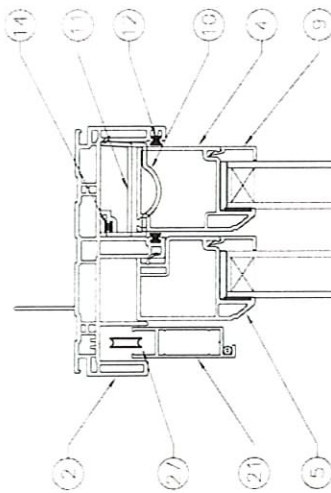
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APPENDIX

Performance Evaluation: Sliding Glass Door

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PORTE PATIO DIVA

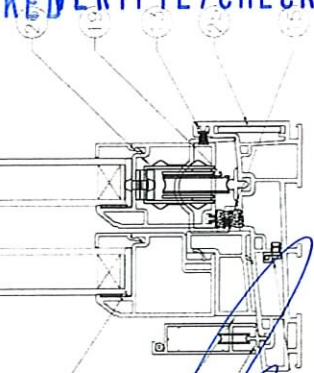


PORTE PATIO 4 5/8"

NO.	DESCRIPTION	NO. CAT.
1	SEUIL	7088
2	TÊTE	7074
3	JAMBAGE	7074
4	VOLET MOBILE	7076
5	VOLET FIXE	7078
6	VOLET RENCONTRE MOBILE	7080
7	VOLET RENCONTRE FIXE	7084
8	BLOC DE SOUTIEN	7090
9	PARCLOSE 7/8"	7015
10	ARRÊT DE VOLET	7010
11	BLOC DE TÊTE	7018
12	COUPE-FROID	SCHLEGEL HF-7320-187
13	COUPE-FROID	SCHLEGEL PB-8322-187
14	COUPE-FROID	SCHLEGEL PB-8315-187
15	COUPE-FROID DE VOLET MOBILE	
16	COUPE-MOUCHE	
17	RUBAN D'ETANCHÉITE	JACOBS & THOMPSON 2544RRL-WH-2M12
18	SCÉLLANT ETANCHÉITE RENC. FIXE	
19	RAIL DE ROULEMENT	

NO.	DESCRIPTION	NO. CAT.
20	RAIL POUR MOUSTIQUE	
21	PROFILE MOUSTIQUE	
22	RENFORT POUR POIGNÉE	ALUMINIUM
23	RENFORT POUR VOLET MOBILE	ACIER CALIBRE 14
24	RENFORT POUR RENCONTRE FIXE	ACIER CALIBRE 14
25	RENFORT POUR LE SEUIL	ACIER CALIBRE 12
26	ROULETTE TANDEM	
27	ROULETTE POUR MOUSTIQUE	
28	CALE DE BLOCAGE (DURO. 80)	23 X 50.8 X 3.2mm
29	POIGNÉE INT. ET EXT. DE MOUSTI	
30	POIGNÉE INT. ET EXT. DE VOLET	
31	GÂCHE DE MOUSTIQUE	
32	GÂCHE DE VOLET	
33	CLAPET DE DRAINAGE	ASHLAND #11149 + #11150
34	VIS POUR GÂCHE DE MOUSTIQUE	TÊTE PLATE #8 X 5/8"
35	VIS POUR GÂCHE A VOLET	TÊTE PLATE #8 X 5/8"
36	VIS POUR VOLET FIXE	TÊTE PLATE #8X1 1/4"

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