

MIAMI-DADE COUNTY PERFORMANCE TEST REPORT

Report No.: B5634.01-201-18

Rendered to:

KML WINDOWS, INC.
Strathroy, Ontario

PRODUCT TYPE: Aluminum Clad Wood Fixed Windows
SERIES/MODEL: Coastal Aluminum Clad Direct Glazed Fixed Windows - HPIR and Mono

This report contains in its entirety:

Cover Page: 1 page
Report Body: 54 pages
Sketches: 4 pages
Drawings: 24 pages

Test Dates: 12/16/11
Through: 02/16/12
Report Date: 02/24/12
Test Record Retention End Date: 02/16/22
Miami-Dade County Notification No.: ATIMN 11024

1.0 Report Issued To: KML Windows, Inc.
71 Second Street
Strathroy, Ontario, Canada N7G 3H8

2.0 Test Laboratory: Architectural Testing, Inc.
849 Western Avenue North
St. Paul, Minnesota
651-636-3835

3.0 Project Summary:

3.1 Product Type: Aluminum Clad Wood Fixed Windows

3.2 Series/Model: Coastal Aluminum Clad Direct Glazed Fixed Windows - HPIR and Mono

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test methods. The samples were tested per Florida Building Code, Test Protocols for High Velocity Hurricane Zone, Protocols TAS 201-94, TAS 202-94 and TAS 203-94. Samples #1, #2, #3 and #4 tested met the performance requirements set forth in the protocols for a +70.0 / -80.0 psf *Design Pressure* rating. Samples #5, #6, #7, #8, #9 and #10 tested met the performance requirements set forth in the protocols for a ± 70.0 psf *Design Pressure* rating.

3.4 Miami-Dade County Notification No.: ATIMN 11024

3.5 Test Dates: 12/16/11 - 02/16/12

3.6 Test Location: Architectural Testing, Inc. test facility in St. Paul, Minnesota.

3.7 Test Sample Source: The test specimens were provided by the client. Representative samples of the test specimens will be retained by Architectural Testing for a minimum of ten years from the test completion date.

3.8 Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimens reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

3.9 List of Official Observers:

<u>Name</u>	<u>Company</u>
Jeffrey P. Crandall	Architectural Testing, Inc.
Dax R. Stoehr	Architectural Testing, Inc.
Tony D. Gavin	Architectural Testing, Inc.
Shawn G. Collins, P.E.	Architectural Testing, Inc.
Eric J. Schoenthaler	Architectural Testing, Inc.

4.0 Test Specifications:

TAS 201-94, *Impact Test Procedures.*

TAS 202-94, *Criteria for Testing Impact and Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure Loading.*

TAS 203-94, *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.*

5.0 Test Specimen #1 Description:

5.1 Product Type: Aluminum Clad Wood Rectangle Fixed Window

5.2 Series/Model: Coastal Aluminum Clad Direct Glazed Rectangle Window - HPIR

5.3 Product Sizes:

Overall Area: 50.0 ft ²	Width (inches)	Height (inches)
Overall size	60	120

5.4 Frame Construction:

Frame Member	Material	Description
All	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screw per corner.
Wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

5.5 Weatherstripping: No weatherstripping was utilized.

5.0 Test Specimen #1 Description: (Continued)

5.6 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Edgetech silicone foam spacer (1/4" x 1/2")	5.7 mm heat-strengthened / 0.090 SentryGlas Plus by DuPont / 5.7 mm heat-strengthened	6.0 mm Tempered	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	57" x 117"	1/2"

5.7 Drainage: No drainage was utilized.

5.8 Hardware: No hardware was utilized.

5.9 Reinforcement: No reinforcement was utilized.

6.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	#12 x 2-1/2" screws	Through the frame 4" from each corner and spaced 6" on center.

7.0 Test Specimen #2 Description:

7.1 Product Type: Aluminum Clad Wood Fixed Springline Window

7.2 Series/Model: Coastal Aluminum Clad Direct Glazed Springline Window - HPIR

7.3 Product Sizes:

Overall Area: 47.4 ft ²	Width (inches)	Height (inches)
Overall size	60	120

7.4 Frame Construction:

Frame Member	Material	Description
Jambs and sill	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.
Head jamb	Aluminum / LVL	Exterior aluminum cladding was secured onto interior LVL frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screw per corner.
Upper wood	Butt	Corners were butted, sealed with wood glue and secured with three #8 x 2" screws per corner. The joint was additionally secured with a 24 gauge, 12" gusset plate secured with eight #8 x 3/4" screws.
Lower wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

7.5 Weatherstripping: No weatherstripping was utilized.

7.0 Test Specimen #2 Description: (Continued)

7.6 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Edgetech silicone foam spacer (1/4" x 1/2")	5.7 mm heat-strengthened / 0.090 SentryGlas Plus by DuPont / 5.7 mm heat-strengthened	6.0 mm Tempered	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	57" x 117"	1/2"

7.7 Drainage: No drainage was utilized.

7.8 Hardware: No hardware was utilized.

7.9 Reinforcement: No reinforcement was utilized.

8.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	Installation clips	The clips were secured to the frame with three #8 x 3/4" screws. The clips were secured to the buck with one #8 x 1-5/8" screw. The clips were 4" from each corner and spaced 6" on center.
Nail flange	11 gauge 1-1/2" hot galvanized roofing nails	The nails were 3" from each corner and spaced 10" on center.

9.0 Test Specimen #3 Description:

9.1 Product Type: Aluminum Clad Wood Fixed Archtop Window

9.2 Series/Model: Coastal Aluminum Clad Direct Glazed Archtop Window - Mono

9.3 Product Sizes:

Overall Area: 49.3 ft ²	Width (inches)	Height (inches)
Overall size	60	120

9.4 Frame Construction:

Frame Member	Material	Description
Jambs and sill	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.
Head jamb	Aluminum / LVL	Exterior aluminum cladding was secured onto interior LVL frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screw per corner.
Wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

9.5 Weatherstripping: No weatherstripping was utilized.

9.0 Test Specimen #3 Description: (Continued)

9.6 Glazing:

Glass Type	Glazing	Glazing Method
Monolithic	5.7 mm heat-strengthened / 0.090 SentryGlas Plus by DuPont / 5.7 mm heat-strengthened	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	57" x 117"	1/2"

9.7 Drainage: No drainage was utilized.

9.8 Hardware: No hardware was utilized.

9.9 Reinforcement: No reinforcement was utilized.

10.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	#12 x 2-1/2" screws	Through the frame 4" from each corner and spaced 6" on center.

11.0 Test Specimen #4 Description:

11.1 Product Type: Aluminum Clad Wood Fixed Rectangle Window

11.2 Series/Model: Coastal Aluminum Clad Direct Glazed Rectangle Window - Mono

11.3 Product Sizes:

Overall Area: 50.0 ft ²	Width (inches)	Height (inches)
Overall size	60	120

11.4 Frame Construction:

Frame Member	Material	Description
All	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screw per corner.
Wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

11.5 Weatherstripping: No weatherstripping was utilized.

11.0 Test Specimen #4 Description: (Continued)

11.6 Glazing:

Glass Type	Glazing	Glazing Method
Monolithic	5.7 mm heat-strengthened / 0.090 SentryGlas Plus by DuPont / 5.7 mm heat-strengthened	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	57" x 117"	1/2"

11.7 Drainage: No drainage was utilized.

11.8 Hardware: No hardware was utilized.

11.9 Reinforcement: No reinforcement was utilized.

12.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	Installation clips	The clips were secured to the frame with three #8 x 3/4" screws. The clips were secured to the buck with one #8 x 1-5/8" screw. The clips were 4" from each corner and spaced 6" on center.
Nail flange	11 gauge 1-1/2" hot galvanized roofing nails	The nails were 3" from each corner and spaced 10" on center.

13.0 Test Specimen #5 Description:

13.1 Product Type: Aluminum Clad Wood Fixed Rectangle Window

13.2 Series/Model: Coastal Aluminum Clad Direct Glazed Rectangle Window - HPIR

13.3 Product Sizes:

Overall Area: 36.0 ft ²	Width (inches)	Height (inches)
Overall size	54	96

13.4 Frame Construction:

Frame Member	Material	Description
All	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screws per corner.
Wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

13.5 Weatherstripping: No weatherstripping was utilized.

13.0 Test Specimen #5 Description: (Continued)

13.6 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Edgetech silicone foam spacer (1/4" x 1/2")	5.7 mm annealed / 0.090 SentryGlas Plus by DuPont / 5.7 mm annealed	6.0 mm Tempered	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	51" x 93"	1/2"

13.7 Drainage: No drainage was utilized.

13.8 Hardware: No hardware was utilized.

13.9 Reinforcement: No reinforcement was utilized.

14.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	Installation clips	The clips were secured to the frame with three #8 x 3/4" screws. The clips were secured to the buck with one #8 x 1-5/8" screw. The clips were 4" from each corner and spaced 6" on center.
Nail flange	11 gauge 1-1/2" hot galvanized roofing nails	The nails were 3" from each corner and spaced 10" on center.

15.0 Test Specimen #6 Description:

15.1 Product Type: Aluminum Clad Wood Fixed Springline Window

15.2 Series/Model: Coastal Aluminum Clad Direct Glazed Springline Window - HPIR

15.3 Product Sizes:

Overall Area: 33.8 ft ²	Width (inches)	Height (inches)
Overall size	54	96

15.4 Frame Construction:

Frame Member	Material	Description
Jambs and sill	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.
Head jamb	Aluminum / LVL	Exterior aluminum cladding was secured onto interior LVL frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screw per corner.
Upper wood	Butt	Corners were butted, sealed with wood glue and secured with three #8 x 2" screws per corner. The joint was additionally secured with a 24 gauge, 12" gusset plate secured with eight #8 x 3/4" screws.
Lower wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

15.5 Weatherstripping: No weatherstripping was utilized.

15.0 Test Specimen #6 Description: (Continued)

15.6 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Edgetech silicone foam spacer (1/4" x 1/2")	5.7 mm annealed / 0.090 SentryGlas Plus by DuPont / 5.7 mm annealed	6.0 mm Tempered	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	51" x 93"	1/2"

15.7 Drainage: No drainage was utilized.

15.8 Hardware: No hardware was utilized.

15.9 Reinforcement: No reinforcement was utilized.

16.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	#12 x 2-1/2" screws	Through the frame 4" from each corner and spaced 6" on center.

17.0 Test Specimen #7 Description:

17.1 Product Type: Aluminum Clad Wood Fixed Archtop Window

17.2 Series/Model: Coastal Aluminum Clad Direct Glazed Archtop Window - Mono

17.3 Product Sizes:

Overall Area: 34.7 ft ²	Width (inches)	Height (inches)
Overall size	54	96

17.4 Frame Construction:

Frame Member	Material	Description
Jambs and sill	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.
Head jamb	Aluminum / LVL	Exterior aluminum cladding was secured onto interior LVL frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screw per corner.
Wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

17.5 Weatherstripping: No weatherstripping was utilized.

17.0 Test Specimen #7 Description: (Continued)

17.6 Glazing:

Glass Type	Glazing	Glazing Method
Monolithic	5.7 mm heat-strengthened / 0.090 SentryGlas Plus by DuPont / 5.7 mm heat-strengthened	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	51" x 93"	1/2"

17.7 Drainage: No drainage was utilized.

17.8 Hardware: No hardware was utilized.

17.9 Reinforcement: No reinforcement was utilized.

18.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	#12 x 2-1/2" screws	Through the frame 4" from each corner and spaced 6" on center.

19.0 Test Specimen #8 Description:

19.1 Product Type: Aluminum Clad Wood Fixed Rectangle Window

19.2 Series/Model: Coastal Aluminum Clad Direct Glazed Rectangle Window - HPIR

19.3 Product Sizes:

Overall Area: 15.0 ft ²	Width (inches)	Height (inches)
Overall size	36	60

19.4 Frame Construction:

Frame Member	Material	Description
All	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screw per corner.
Wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

19.5 Weatherstripping: No weatherstripping was utilized.

19.0 Test Specimen #8 Description: (Continued)

19.6 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Edgetech silicone foam spacer (1/4" x 1/2")	3.9 mm annealed / 0.090 PVB by DuPont / 3.9 mm annealed	3.0 mm annealed	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	33" x 57"	1/2"

19.7 Drainage: No drainage was utilized.

19.8 Hardware: No hardware was utilized.

19.9 Reinforcement: No reinforcement was utilized.

20.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	#12 x 2-1/2" screws	Through the frame 4" from each corner and spaced 12" on center.

21.0 Test Specimen #9 Description:

21.1 Product Type: Aluminum Clad Wood Fixed Springline Window

21.2 Series/Model: Coastal Aluminum Clad Direct Glazed Springline Window - HPIR

21.3 Product Sizes:

Overall Area: 14.0 ft ²	Width (inches)	Height (inches)
Overall size	36	60

21.4 Frame Construction:

Frame Member	Material	Description
Jambs and sill	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.
Head jamb	Aluminum / LVL	Exterior aluminum cladding was secured onto interior LVL frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screw per corner.
Upper wood	Butt	Corners were butted, sealed with wood glue and secured with three #8 x 2" screws per corner. The joint was additionally secured with a 24 gauge, 12" gusset plate secured with eight #8 x 3/4" screws.
Lower wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

21.5 Weatherstripping: No weatherstripping was utilized.

21.0 Test Specimen #9 Description: (Continued)

21.6 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Edgetech silicone foam spacer (1/4" x 1/2")	3.9 mm annealed / 0.090 PVB by DuPont / 3.9 mm annealed	3.0 mm annealed	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	33" x 57"	1/2"

21.7 Drainage: No drainage was utilized.

21.8 Hardware: No hardware was utilized.

21.9 Reinforcement: No reinforcement was utilized.

22.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	Installation clips	The clips were secured to the frame with three #8 x 3/4" screws. The clips were secured to the buck with one #8 x 1-5/8" screw. The clips were 4" from each corner and spaced 12" on center.
Nail flange	11 gauge 1-1/2" hot galvanized roofing nails	The nails were 3" from each corner and spaced 10" on center.

23.0 Test Specimen #10 Description:

23.1 Product Type: Aluminum Clad Wood Fixed Archtop Window

23.2 Series/Model: Coastal Aluminum Clad Direct Glazed Archtop Window - Mono

23.3 Product Sizes:

Overall Area: 14.6 ft ²	Width (inches)	Height (inches)
Overall size	36	60

23.4 Frame Construction:

Frame Member	Material	Description
Jambs and sill	Aluminum / wood	Exterior aluminum cladding was secured onto interior pine wood frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.
Head jamb	Aluminum / LVL	Exterior aluminum cladding was secured onto interior LVL frame members with 1/4" x 3/8" staples 7" from each end and spaced 8" on center.

	Joinery Type	Detail
Aluminum cladding	Miter	Corners were miter cut, sealed with a gasket and secured with one #8 x 1" screw and one #8 x 2-1/2" screws per corner.
Wood	Miter	Corners were miter cut, sealed with a gasket and secured with two #8 x 2" screws per corner.

23.5 Weatherstripping: No weatherstripping was utilized.

23.0 Test Specimen #10 Description: (Continued)

23.6 Glazing:

Glass Type	Glazing	Glazing Method
Monolithic	3.9 mm annealed / 0.090 PVB by DuPont / 3.9 mm annealed	The glass was set from the interior against a Dow Corning 995 silicone back bedding and back filled. Wood glazing stops with 7/16" by 1/32" double-sided adhesive foam tape were secured with 1-1/4" brad nails 2" from each corner and spaced 6" on center.

Location	Quantity	Daylight Opening	Glass Bite
Frame	1	33" x 57"	1/2"

23.7 Drainage: No drainage was utilized.

23.8 Hardware: No hardware was utilized.

23.9 Reinforcement: No reinforcement was utilized.

24.0 Installation:

The specimen was installed into a wood buck. The rough opening allowed for a 1/2" shim space. The exterior perimeter of the window was sealed with sealant.

Location	Anchor Description	Anchor Location
Frame perimeter	#12 x 2-1/2" screws	Through the frame 4" from each corner and spaced 12" on center.

25.0 Test Specimen #1 Results: The temperature during testing was 74°F. The results are tabulated as follows:

Protocol TAS 202-94, Static Air Pressure Tests

Test Unit #1

Design Pressure: +70.0 / -80.0 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads			
50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.03	0.04	0.04
Permanent Set	0.01	0.01	0.01
Design Pressure (+70.00 psf)			
Maximum Deflection	0.04	0.05	0.04
Permanent Set	0.01	0.01	0.02
50% of Test Pressure (-60.00 psf)			
Maximum Deflection	0.07	0.07	0.06
Permanent Set	0.03	0.03	0.03
Design Pressure (-80.00 psf)			
Maximum Deflection	0.12	0.13	0.11
Permanent Set	0.06	0.05	0.05
Water Infiltration	Pass		
15% Positive Design Pressure (+10.50 psf)			
Test Pressure (+105.00 psf)			
Maximum Deflection	0.05	0.06	0.05
Permanent Set	0.01	0.01	0.01
Test Pressure (-120.00 psf)			
Maximum Deflection	0.25	0.25	0.23
Permanent Set	0.09	0.08	0.08
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #1 for indicator locations.

25.0 Test Specimen #1 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 50.0 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 50.1 fps	
Impact Area:	Upper left glazing corner
Observations:	Missile hit target area; deglazed along entire corner
Results:	Fail

25.0 Test Specimen #1 (Retest) Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 96-1/2"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 50.4 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 50.4 fps	
Impact Area:	Upper left glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Note: See Architectural Testing Sketch #1 for impact locations.

25.0 Test Specimen #1 (Retest) Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #1 (Retest)

Design Pressure: +70.0 / -80.0 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	2.61	0.01	0.01	0.01
0 to 42.0	300	2.72	0.08	0.07	0.07
35.0 to 56.0	600	1.81	0.11	0.10	0.10
21.0 to 70.0	100	2.75	0.13	0.13	0.12
			Permanent Set (inches)		
			0.03	0.03	0.03

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
24.0 to 80.0	50	2.84	0.10	0.09	0.07
40.0 to 64.0	1050	2.16	0.09	0.08	0.05
0 to 48.0	50	2.77	0.07	0.05	0.03
16.0 to 40.0	3350	1.90	0.06	0.05	0.02
			Permanent Set (inches)		
			0.01	0.01	0.01

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #1 for indicator locations.

26.0 Test Specimen #2 Results: (Continued)

Protocol TAS 202-94, Static Air Pressure Tests

Test Unit #2

Design Pressure: +70.0 / -80.0 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads 50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.09	0.09	0.08
Permanent Set	0.02	0.02	0.02
Design Pressure (+70.00 psf)			
Maximum Deflection	0.12	0.12	0.11
Permanent Set	0.03	0.02	0.02
50% of Test Pressure (-60.00 psf)			
Maximum Deflection	0.23	0.23	0.22
Permanent Set	0.06	0.06	0.06
Design Pressure (-80.00 psf)			
Maximum Deflection	0.33	0.32	0.31
Permanent Set	0.07	0.07	0.07
Water Infiltration 15% Positive Design Pressure (+10.50 psf)	Pass		
Test Pressure (+105.00 psf)			
Maximum Deflection	0.18	0.18	0.17
Permanent Set	0.03	0.03	0.03
Test Pressure (-120.00 psf)			
Maximum Deflection	0.51	0.50	0.48
Permanent Set	0.07	0.06	0.07
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #1 for indicator locations.

26.0 Test Specimen #2 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 49.6 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 50.0 fps	
Impact Area:	Upper left glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Note: See Architectural Testing Sketch #1 for impact locations.

26.0 Test Specimen #2 Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #2

Design Pressure: +70.0 / -80.0 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	2.10	0.09	0.10	0.10
0 to 42.0	300	2.45	0.08	0.09	0.10
35.0 to 56.0	600	2.15	0.12	0.13	0.14
21.0 to 70.0	100	2.93	0.12	0.14	0.15
			Permanent Set (inches)		
			0.05	0.04	0.05

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
24.0 to 80.0	50	2.67	0.13	0.13	0.14
40.0 to 64.0	1050	1.90	0.12	0.12	0.13
0 to 48.0	50	2.44	0.11	0.10	0.11
16.0 to 40.0	3350	1.68	0.10	0.09	0.10
			Permanent Set (inches)		
			0.06	0.06	0.06

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #1 for indicator locations.

27.0 Test Specimen #3 Results: (Continued)

Protocol TAS 202-94, Static Air Pressure Tests

Test Unit #3

Design Pressure: +70.0 / -80.0 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads 50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.05	0.05	0.05
Permanent Set	0.02	0.01	0.01
Design Pressure (+70.00 psf)			
Maximum Deflection	0.09	0.09	0.08
Permanent Set	0.03	0.02	0.02
50% of Test Pressure (-60.00 psf)			
Maximum Deflection	0.15	0.15	0.14
Permanent Set	0.04	0.04	0.04
Design Pressure (-80.00 psf)			
Maximum Deflection	0.24	0.23	0.21
Permanent Set	0.05	0.05	0.05
Water Infiltration 15% Positive Design Pressure (+10.50 psf)	Pass		
Test Pressure (+105.00 psf)			
Maximum Deflection	0.18	0.18	0.15
Permanent Set	0.04	0.04	0.04
Test Pressure (-120.00 psf)			
Maximum Deflection	0.47	0.45	0.42
Permanent Set	0.04	0.04	0.05
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #1 for indicator locations.

27.0 Test Specimen #3 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 50.5 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 50.1 fps	
Impact Area:	Upper left glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Note: See Architectural Testing Sketch #1 for impact locations.

27.0 Test Specimen #3 Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #3

Design Pressure: +70.0 / -80.0 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	1.91	0.10	0.10	0.09
0 to 42.0	300	2.72	0.11	0.11	0.10
35.0 to 56.0	600	1.69	0.13	0.13	0.12
21.0 to 70.0	100	2.52	0.16	0.16	0.15
			Permanent Set (inches)		
			0.08	0.08	0.08

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
24.0 to 80.0	50	2.28	0.14	0.14	0.12
40.0 to 64.0	1050	2.09	0.13	0.13	0.12
0 to 48.0	50	2.65	0.09	0.09	0.07
16.0 to 40.0	3350	2.09	0.08	0.08	0.07
			Permanent Set (inches)		
			0.05	0.05	0.04

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #1 for indicator locations. Test Specimens #3 and #4 were cycled in a common chamber.

28.0 Test Specimen #4 Results: (Continued)

Protocol TAS 202-94, Static Air Pressure Tests

Test Unit #4

Design Pressure: +70.0 / -80.0 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads 50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.06	0.05	0.04
Permanent Set	0.01	0.01	0.01
Design Pressure (+70.00 psf)			
Maximum Deflection	0.11	0.09	0.08
Permanent Set	0.03	0.02	0.02
50% of Test Pressure (-60.00 psf)			
Maximum Deflection	0.14	0.14	0.13
Permanent Set	0.05	0.05	0.05
Design Pressure (-80.00 psf)			
Maximum Deflection	0.23	0.22	0.21
Permanent Set	0.07	0.07	0.07
Water Infiltration 15% Positive Design Pressure (+10.50 psf)	Pass		
Test Pressure (+105.00 psf)			
Maximum Deflection	0.18	0.16	0.13
Permanent Set	0.05	0.04	0.03
Test Pressure (-120.00 psf)			
Maximum Deflection	0.42	0.39	0.37
Permanent Set	0.08	0.07	0.09
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #1 for indicator locations.

28.0 Test Specimen #4 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 49.1 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 50.0 fps	
Impact Area:	Lower left glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Note: See Architectural Testing Sketch #1 for impact locations.

28.0 Test Specimen #4 Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #4

Design Pressure: +70.0 / -80.0 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	1.91	0.11	0.11	0.12
0 to 42.0	300	2.72	0.14	0.14	0.13
35.0 to 56.0	600	1.69	0.18	0.19	0.17
21.0 to 70.0	100	2.52	0.23	0.23	0.21
			Permanent Set (inches)		
			0.10	0.10	0.08

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
24.0 to 80.0	50	2.28	0.21	0.22	0.21
40.0 to 64.0	1050	2.09	0.20	0.21	0.20
0 to 48.0	50	2.65	0.15	0.15	0.15
16.0 to 40.0	3350	2.09	0.14	0.14	0.14
			Permanent Set (inches)		
			0.06	0.04	0.05

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #1 for indicator locations. Test Specimens #3 and #4 were cycled in a common chamber.

29.0 Test Specimen #5 Results: (Continued)

Protocol TAS 202-94, Static Air Pressure Tests

Test Unit #5

Design Pressure: ±70.00 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads 50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.05	0.05	0.04
Permanent Set	0.01	0.01	0.01
Design Pressure (+70.00 psf)			
Maximum Deflection	0.08	0.08	0.07
Permanent Set	0.02	0.02	0.02
50% of Test Pressure (-52.50 psf)			
Maximum Deflection	0.06	0.06	0.06
Permanent Set	0.01	0.01	0.02
Design Pressure (-70.00 psf)			
Maximum Deflection	0.10	0.10	0.09
Permanent Set	0.02	0.02	0.03
Water Infiltration 15% Positive Design Pressure (+10.50 psf)	Pass		
Test Pressure (+105.00 psf)			
Maximum Deflection	0.14	0.13	0.12
Permanent Set	0.04	0.03	0.03
Test Pressure (-105.00 psf)			
Maximum Deflection	0.18	0.18	0.17
Permanent Set	0.03	0.03	0.03
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #2 for indicator locations.

29.0 Test Specimen #5 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 49.8 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 49.5 fps	
Impact Area:	Upper right glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Note: See Architectural Testing Sketch #2 for impact locations.

29.0 Test Specimen #5 Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #5

Design Pressure: ±70.00 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	2.00	0.08	0.08	0.07
0 to 42.0	300	2.79	0.12	0.12	0.11
35.0 to 56.0	600	2.38	0.16	0.15	0.15
21.0 to 70.0	100	2.54	0.18	0.18	0.17
			Permanent Set (inches)		
			0.06	0.06	0.05

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
21.0 to 70.0	50	2.79	0.16	0.15	0.15
35.0 to 56.0	1050	1.76	0.12	0.13	0.12
0 to 42.0	50	2.38	0.09	0.09	0.09
14.0 to 35.0	3350	1.73	0.08	0.09	0.08
			Permanent Set (inches)		
			0.02	0.03	0.02

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #2 for indicator locations. Test Specimens #5 and #6 were cycled in a common chamber.

30.0 Test Specimen #6 Results: (Continued)

Protocol TAS 202-94, Static Air Pressure Tests

Test Unit #6

Design Pressure: ±70.00 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads 50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.04	0.04	0.04
Permanent Set	0.01	0.01	0.01
Design Pressure (+70.00 psf)			
Maximum Deflection	0.06	0.06	0.06
Permanent Set	0.02	0.02	0.02
50% of Test Pressure (-52.50 psf)			
Maximum Deflection	0.05	0.05	0.05
Permanent Set	0.01	0.01	0.01
Design Pressure (-70.00 psf)			
Maximum Deflection	0.09	0.09	0.08
Permanent Set	0.01	0.01	0.01
Water Infiltration 15% Positive Design Pressure (+10.50 psf)	Pass		
Test Pressure (+105.00 psf)			
Maximum Deflection	0.08	0.08	0.06
Permanent Set	0.01	0.01	0.01
Test Pressure (-105.00 psf)			
Maximum Deflection	0.17	0.18	0.18
Permanent Set	0.03	0.03	0.04
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #2 for indicator locations.

30.0 Test Specimen #6 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 50.1 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 49.8 fps	
Impact Area:	Upper left glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Note: See Architectural Testing Sketch #2 for impact locations.

30.0 Test Specimen #6 Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #6

Design Pressure: ±70.00 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	2.00	0.04	0.04	0.04
0 to 42.0	300	2.79	0.07	0.07	0.08
35.0 to 56.0	600	2.38	0.08	0.08	0.09
21.0 to 70.0	100	2.54	0.09	0.09	0.10
			Permanent Set (inches)		
			0.03	0.03	0.03

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
21.0 to 70.0	50	2.79	0.07	0.07	0.08
35.0 to 56.0	1050	1.76	0.07	0.06	0.07
0 to 42.0	50	2.38	0.05	0.05	0.05
14.0 to 35.0	3350	1.73	0.04	0.04	0.04
			Permanent Set (inches)		
			0.02	0.03	0.02

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #2 for indicator locations. Test Specimens #5 and #6 were cycled in a common chamber.

31.0 Test Specimen #7 Results: (Continued)

Protocol TAS 202-94, Static Air Pressure Tests

Test Unit #7

Design Pressure: ±70.00 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads 50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.02	0.02	0.02
Permanent Set	0.01	0.01	0.01
Design Pressure (+70.00 psf)			
Maximum Deflection	0.03	0.03	0.02
Permanent Set	0.01	0.01	0.01
50% of Test Pressure (-52.50 psf)			
Maximum Deflection	0.03	0.03	0.03
Permanent Set	0.02	0.02	0.02
Design Pressure (-70.00 psf)			
Maximum Deflection	0.05	0.05	0.05
Permanent Set	0.02	0.02	0.02
Water Infiltration 15% Positive Design Pressure (+10.50 psf)	Pass		
Test Pressure (+105.00 psf)			
Maximum Deflection	0.06	0.06	0.05
Permanent Set	0.02	0.01	0.01
Test Pressure (-105.00 psf)			
Maximum Deflection	0.10	0.10	0.10
Permanent Set	0.02	0.02	0.02
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #3 for indicator locations.

31.0 Test Specimen #7 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 49.8 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 49.3 fps	
Impact Area:	Upper right glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations in glazing. Broke interior stop.
Results:	Pass

Note: See Architectural Testing Sketch #3 for impact locations.

31.0 Test Specimen #7 Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #7

Design Pressure: ±70.00 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	1.70	0.06	0.07	0.07
0 to 42.0	300	1.90	0.08	0.08	0.08
35.0 to 56.0	600	1.85	0.10	0.10	0.11
21.0 to 70.0	100	2.33	0.12	0.13	0.13
			Permanent Set (inches)		
			0.06	0.06	0.07

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
21.0 to 70.0	50	2.05	0.12	0.12	0.14
35.0 to 56.0	1050	1.32	0.10	0.09	0.11
0 to 42.0	50	2.13	0.08	0.08	0.08
14.0 to 35.0	3350	1.29	0.07	0.07	0.08
			Permanent Set (inches)		
			0.01	0.01	0.01

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #3 for indicator locations.

32.0 Test Specimen #8 Results: (Continued)

Protocol TAS 202-94, Static Air Pressure Tests

Test Unit #8

Design Pressure: ±70.00 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads 50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.01	0.01	0.01
Permanent Set	0.01	<0.01	<0.01
Design Pressure (+70.00 psf)			
Maximum Deflection	0.01	0.02	0.01
Permanent Set	0.01	0.01	<0.01
50% of Test Pressure (-52.50 psf)			
Maximum Deflection	0.01	0.02	0.03
Permanent Set	0.01	0.01	0.02
Design Pressure (-70.00 psf)			
Maximum Deflection	0.02	0.03	0.03
Permanent Set	0.01	0.01	0.02
Water Infiltration 15% Positive Design Pressure (+10.50 psf)	Pass		
Test Pressure (+105.00 psf)			
Maximum Deflection	0.02	0.04	0.03
Permanent Set	0.01	<0.01	0.01
Test Pressure (-105.00 psf)			
Maximum Deflection	0.07	0.05	0.05
Permanent Set	0.03	0.02	0.02
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #3 for indicator locations.

32.0 Test Specimen #8 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 49.1 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 49.6 fps	
Impact Area:	Lower right glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Note: See Architectural Testing Sketch #3 for impact locations.

32.0 Test Specimen #8 Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #8

Design Pressure: ±70.00 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	1.61	0.05	0.04	0.05
0 to 42.0	300	1.96	0.06	0.04	0.05
35.0 to 56.0	600	1.86	0.06	0.04	0.05
21.0 to 70.0	100	2.01	0.07	0.05	0.06
			Permanent Set (inches)		
			0.02	0.01	0.02

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
21.0 to 70.0	50	2.71	0.02	0.03	0.04
35.0 to 56.0	1050	2.06	0.01	0.03	0.03
0 to 42.0	50	2.11	0.01	0.02	0.02
14.0 to 35.0	3350	1.75	0.01	0.02	0.02
			Permanent Set (inches)		
			0.01	0.02	0.02

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #3 for indicator locations. Test Specimens #8, #9 and #10 were cycled in a common chamber.

33.0 Test Specimen #9 Results: (Continued)

Protocol TAS 202-94, *Static Air Pressure Tests*

Test Unit #9

Design Pressure: ±70.00 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads 50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.03	0.04	0.04
Permanent Set	0.01	0.01	0.01
Design Pressure (+70.00 psf)			
Maximum Deflection	0.03	0.04	0.04
Permanent Set	0.01	0.01	0.01
50% of Test Pressure (-52.50 psf)			
Maximum Deflection	0.01	0.02	0.02
Permanent Set	<0.01	0.01	<0.01
Design Pressure (-70.00 psf)			
Maximum Deflection	0.02	0.03	0.03
Permanent Set	0.01	0.01	0.01
Water Infiltration 15% Positive Design Pressure (+10.50 psf)	Pass		
Test Pressure (+105.00 psf)			
Maximum Deflection	0.03	0.05	0.05
Permanent Set	0.01	0.01	0.01
Test Pressure (-105.00 psf)			
Maximum Deflection	0.07	0.08	0.07
Permanent Set	0.01	0.01	0.01
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #3 for indicator locations.

33.0 Test Specimen #9 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 49.2 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 49.7 fps	
Impact Area:	Lower right glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Note: See Architectural Testing Sketch #3 for impact locations.

33.0 Test Specimen #9 Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #9

Design Pressure: ±70.00 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	1.61	0.02	0.03	0.02
0 to 42.0	300	1.96	0.02	0.03	0.02
35.0 to 56.0	600	1.86	0.02	0.02	0.02
21.0 to 70.0	100	2.01	0.02	0.03	0.02
			Permanent Set (inches)		
			0.01	0.01	0.01

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
21.0 to 70.0	50	2.71	0.03	0.05	0.07
35.0 to 56.0	1050	2.06	0.03	0.05	0.06
0 to 42.0	50	2.11	0.03	0.04	0.05
14.0 to 35.0	3350	1.75	0.03	0.04	0.04
			Permanent Set (inches)		
			0.03	0.03	0.04

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #3 for indicator locations. Test Specimens #8, #9 and #10 were cycled in a common chamber.

34.0 Test Specimen #10 Results: (Continued)

Protocol TAS 202-94, *Static Air Pressure Tests*

Test Unit #10

Design Pressure: ± 70.00 psf

Title of Test	Results
Air Infiltration at 1.57 psf (25 mph)	<0.01 cfm/ft ²
Air Infiltration at 6.24 psf (50 mph)	<0.01 cfm/ft ²

	Indicator Reading (inches)		
	#1	#2	#3
Structural Loads 50% of Test Pressure (+52.50 psf)			
Maximum Deflection	0.01	0.03	0.02
Permanent Set	0.01	0.01	0.01
Design Pressure (+70.00 psf)			
Maximum Deflection	0.02	0.03	0.03
Permanent Set	0.01	0.01	0.01
50% of Test Pressure (-52.50 psf)			
Maximum Deflection	0.03	0.03	0.03
Permanent Set	0.01	0.01	0.01
Design Pressure (-70.00 psf)			
Maximum Deflection	0.05	0.05	0.05
Permanent Set	0.01	0.01	0.01
Water Infiltration 15% Positive Design Pressure (+10.50 psf)	Pass		
Test Pressure (+105.00 psf)			
Maximum Deflection	0.03	0.04	0.03
Permanent Set	0.01	0.01	0.01
Test Pressure (-105.00 psf)			
Maximum Deflection	0.08	0.08	0.10
Permanent Set	0.02	0.01	0.04
Forced Entry - ASTM F 588-07	Pass		

Note: See Architectural Testing Sketch #3 for indicator locations.

34.0 Test Specimen #10 Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9.1 lbs

Missile Length: 94"

Muzzle Distance from Test Specimen: 16' 0"

Impact #1: Missile Velocity: 49.6 fps	
Impact Area:	Center of glazing
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Impact #2: Missile Velocity: 49.7 fps	
Impact Area:	Lower right glazing corner
Observations:	Missile hit target area; no rips, tears or penetrations
Results:	Pass

Note: See Architectural Testing Sketch #3 for impact locations.

34.0 Test Specimen #10 Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #10

Design Pressure: ±70.00 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
14.0 to 35.0	3500	1.61	0.03	0.04	0.02
0 to 42.0	300	1.96	0.03	0.04	0.02
35.0 to 56.0	600	1.86	0.03	0.04	0.02
21.0 to 70.0	100	2.01	0.04	0.04	0.03
			Permanent Set (inches)		
			0.01	0.01	0.01

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (seconds)	Maximum Deflection at Indicator (inches)		
			#1	#2	#3
21.0 to 70.0	50	2.71	0.05	0.04	0.06
35.0 to 56.0	1050	2.06	0.04	0.04	0.05
0 to 42.0	50	2.11	0.03	0.03	0.05
14.0 to 35.0	3350	1.75	0.03	0.03	0.04
			Permanent Set (inches)		
			0.02	0.01	0.04

Observations: No additional damage or deglazing was observed.

Result: Pass

Note: See Architectural Testing Sketch #3 for indicator locations. Test Specimens #8, #9 and #10 were cycled in a common chamber.

35.0 Test Equipment:

Cannon: Constructed from steel piping utilizing compressed air to propel the missile

Missile: 2x4 Southern Pine

Timing Device: Electronic Beam Type

Cycling Mechanism: Computer controlled centrifugal blower with electronic pressure measuring device

Deflection Measuring Device: Linear transducers and dial indicators

36.0 Laboratory Compliance Statements: The following are provided as required by the protocols for the testing reported herein.

Upon completion of testing, specimens tested for TAS 201-94 met the requirements of Section 1626 of the Florida Building Code, Building (2007).

Upon completion of testing, specimens tested for TAS 202-94 met the requirements of Section 1620 of the Florida Building Code, Building (2007).

Upon completion of testing, specimens tested for TAS 203-94 met the requirements of Section 1626 of the Florida Building Code, Building (2007).

Tape and film were not used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

The service life of this report will expire on the stated Test Record Retention End Date, at which time such materials as drawings, data sheets, samples of test specimens, copies of this report, and any other pertinent project documentation, shall be discarded without notice.

If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimens can be made. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimens tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, Inc.

Eric J. Schoenthaler
Project Manager

Shawn G. Collins, P.E.
Laboratory Support Engineer

EJS:cmd/jb

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Sketches (4)

Appendix-B: Drawings (24)

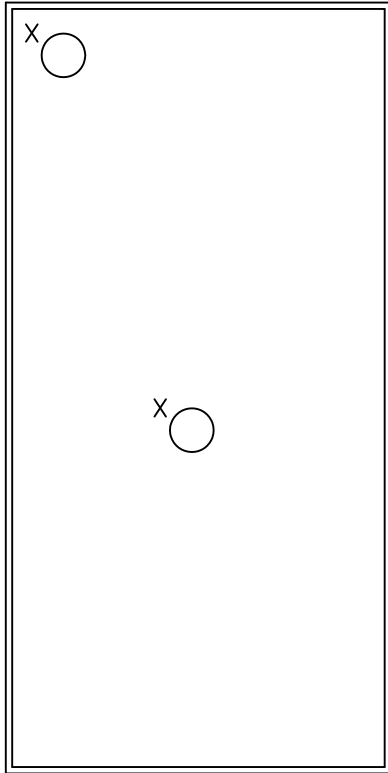


Test Report No.: B5634.01-201-18
Report Date: 02/24/12
Test Record Retention End Date: 02/16/22

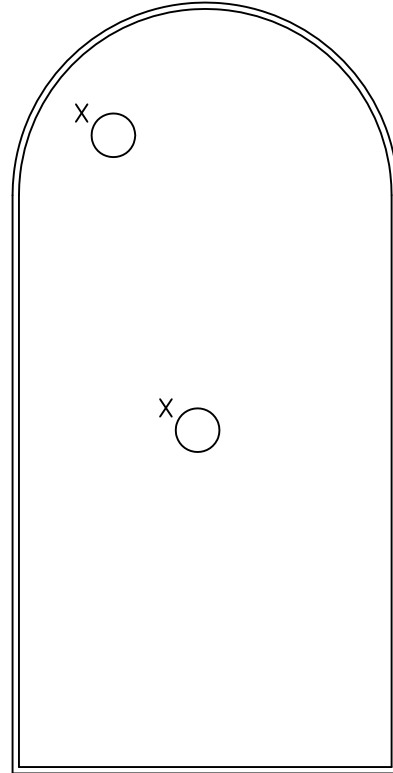
Appendix A

Sketches

SKETCH #1



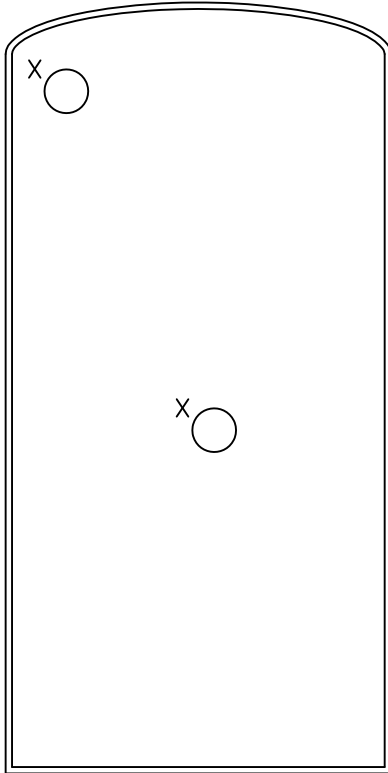
UNIT 1



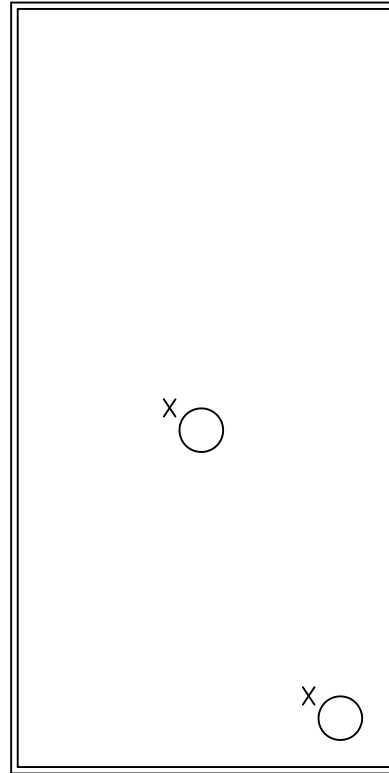
UNIT 2

X = INDICATOR LOCATION
x○ = IMPACT LOCATION

SKETCH #2



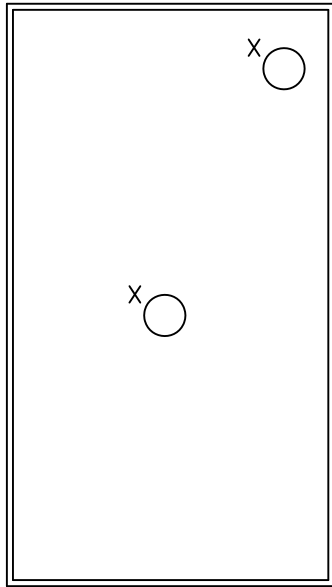
UNIT 3



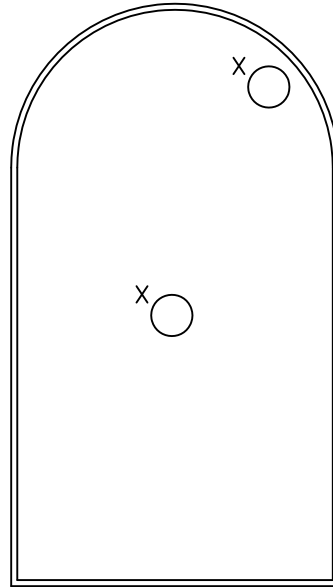
UNIT 4

X = INDICATOR LOCATION
x○ = IMPACT LOCATION

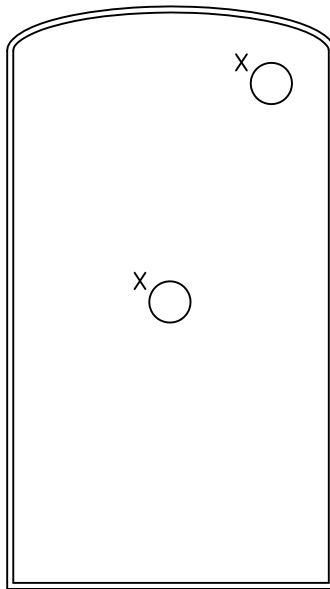
SKETCH #3



UNIT 5



UNIT 6

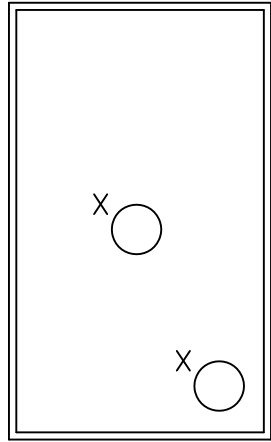


UNIT 7

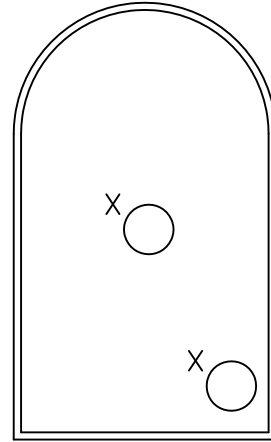
✕ = INDICATOR LOCATION

x○ = IMPACT LOCATION

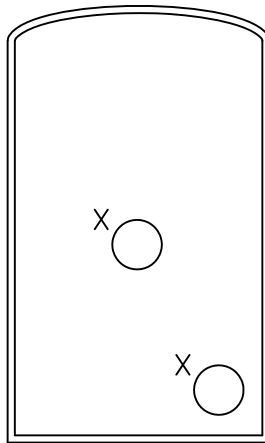
SKETCH #4



UNIT 8



UNIT 9



UNIT 10

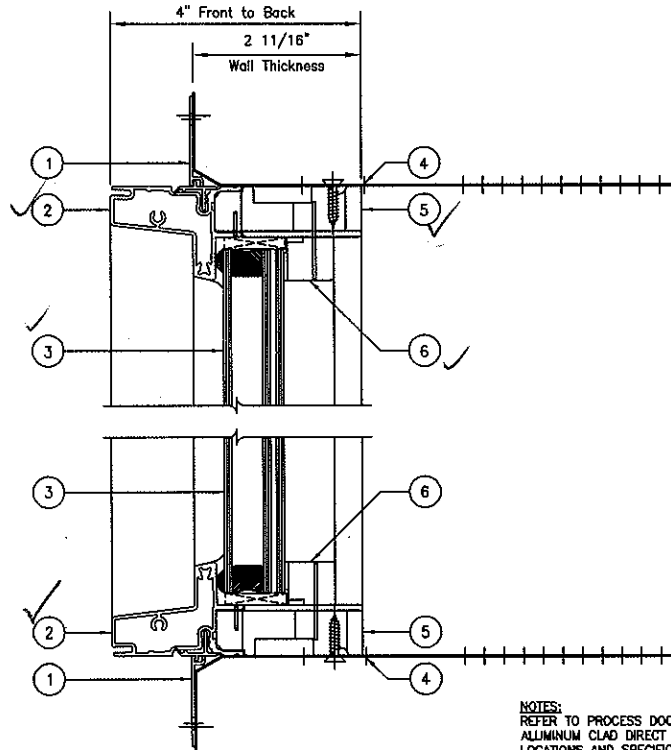
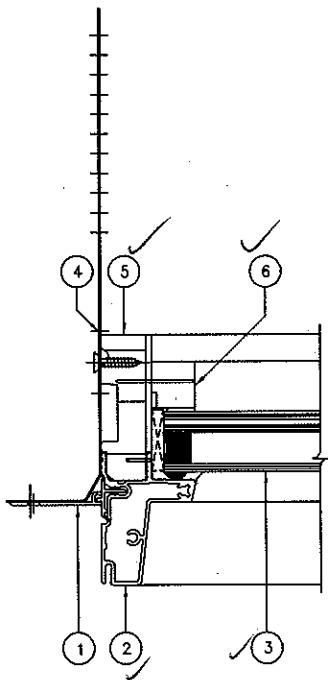
✕ = INDICATOR LOCATION
x○ = IMPACT LOCATION



Test Report No.: B5634.01-201-18
Report Date: 02/24/12
Test Record Retention End Date: 02/16/22

Appendix B

Drawings



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B57634

Date 1.13.12 Tech [Signature]

NOTES:
REFER TO PROCESS DOCUMENT PP09KM0022 - SPECIFICATIONS FOR ALUMINUM CLAD DIRECT GLAZED WINDOWS FOR SEALANT & FASTENER LOCATIONS AND SPECIFICATIONS.

*PART OR PROFILE DOES NOT APPEAR IN SECTIONS SHOWN.

NO.	DESCRIPTION	BY	DATE	ECH NO.
02	COASTAL INSTALLATION CLIP CHANGED	RBB	29 DEC: 10	200178

ITEM	DESCRIPTION	PROFILE OR PN
6	3/4" STOP - LINEAL	PF1206
5	AKG 2-11/32" FRAME MEMBER - LINEAL	PF2053
4	COASTAL INSTALLATION CLIP	PN-113960
3	INSUL GLAZED UNIT (AS PER ORDER)	
2	1 1/2" ALUMINUM FRAME CLADDING - LINEAL	PF2052
1	NAILING FLANGE - LINEAL	PF2079

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Title:
COASTAL AKG ARCHITECTURAL SERIES
ALUMINUM CLAD FIXED WINDOW 'BOM' GEN. II

Drawn: RBB Chk'd: _____
Date: 12 FEB 2009 Scale: HALF SIZE

Drawing Number SK2759



Process Specification

Title:
Specifications for Aluminium
Clad Direct Glazed Windows

Number:
PP09KM0022
Page: 2 of 3

Issued By: Graham Marks

Approved By: Sean Dixon

Specifications	Standard Hallmark Certified Products	Impact Certified Products (Coastal)
Standards	AAMA/WDMA/CSA 101/1.5.2/A440-05 & 08	ASTM E1886/E1996-05 & 06 Missile Level D Wind Zone 4 and Florida Building Code HVHZ (TAS 201-94, TAS 202-94 & TAS-203-94)
Rating	FW-LC50 125"x84" (A440-05) Class LC-PG50 125"x84" - FW (A440-08)	36" x 60" (Tested Size): +70/-70 ✓ 54" x 96" (Tested Size): +70/-70 ✓ 60" x 120" (Tested Size): +70/-80 ✓
Frame Member Corner Assembly	(2 AKG)(3) # 8 x 2" screws each corner – Standard Jamb ✓ (3) #8 x 2" screws each corner – Thick Jamb (2) minimum #8 x 2" screws each corner- A Series Jamb	
Frame Member Corner Sealing	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets
Springline Unit Frame Member – Leg to Curved Head Assembly Butt Joint	Castle Drill Method – Butt Joint (3) #8 x 2" P.H., SQ, SMS Screw (1) 24 GA – 12" Galvanized Gusset Plate per Side (8) #8 x 3/4" P.H., P.D., SMS Screws <i>Test sample complies with these details. Deviations are noted.</i>	
Springline Unit Frame Member – Leg to Curved Head Sealing Butt Joint	PVA Wood Glue for wood to wood butt joint <i>Date 1/13/12 Tech [Signature]</i>	
Frame Cladding Corner Sealing	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets
Large Springline Unit with 2 pcs. Curved Frame Cladding Center Joint Sealing	Use Butyl Tape between curved center Butt Joint. Drill & Pump Dow Corning 1199 silicone sealant into both sides of frame extrusion cavity.	
Frame Cladding Assembly & Frame Cladding Corner Assembly	1/4" x 3/8" staples @ 7"(max.) from ends & 8" O.C. maximum. Also, staples on back of jamb, random as required. Dry fit no sealant Standard Jamb- (1) #8 x 1" screws & (1) #8x2 1/2" Thick Jamb- (2) #8 x 1" screws A Series Jamb- (2) #8 x 2 1/2" screws	1/4" x 3/8" Staples @ 7" (max.) from ends & 8" O.C. maximum. Also, staples on back of jamb, random as required. Dry fit no sealant Standard Jamb- (1) #8 x 1" screws & (1) #8x2 1/2" Thick Jamb- (2) #8 x 1" screws & (1) #8 x 2 1/2" A- Series Jamb- (2) #8 x 2 1/2" screws
Glazing Method	Glass is set from interior against a bed of Dow Corning 1199 silicone sealant with a double sided adhesive foam tape and a perimeter cap bead of Dow 891 silicone sealant. Color match silicone to standard cladding color options. Wood glazing stops with double sided adhesive tape and fastened with 1-1/4" staples @ 2" from ends & 8" O.C. maximum.	Glass is set from interior against a 1/8" bed of Dow Corning 995 Black Structural Silicone Sealant using glazing bumpons spacers to obtain glazing bead thickness for all color options except White 995 silicone is used for White Cladding Option. Structural Silicone is also used in the full perimeter in the Glazing Cavity. Wood Glazing Stops with double sided adhesive tape and fastened with 1-1/4" brad nails (Standard or Thick jamb) or 1 5/8" brad nails (A-Series jamb) @ 2" from ends & 6" O.C. maximum.
Glass Options	Any Monolithic or Insulated unit that meets the size and wind-load requirements of ASTM E1300 that does not exceed product rating.	Standard Direct Glazed Units 1) Up to 36" x 60" Frame size use 5/32" AN./090 PVB/ 5/32" AN. Laminated glass. Laminated Glass can be used as Monolithic or in an Insulated unit with 1/8" Annealed Glass.

Controlled Network
Version Only



Process Specification

Title:
Specifications for Aluminium
Clad Direct Glazed Windows

Number:
PP09KM0022
Page: 3 of 3

Issued By: Graham Marks

Approved By: Sean Dixon

Specifications	Standard Hallmark Certified Products	Impact Certified Products (Coastal)
		<p>2) Up to 54"x96" Frame size use 1/4" AN/.090 SGP/1/4" AN. Laminated glass. Laminated Glass can be used as Monolithic or in an insulated unit with 1/4" Tempered glass. ✓</p> <p>3) Up to 60" x 120" Frame size use 1/4" HS/.090 SGP/ 1/4" HS. Laminated Glass. Laminated Glass can be use as Monolithic or in an Insulated Unit with 1/4" Tempered Glass. ✓</p> <p>A-Series Direct Glazed Units</p> <p>1) Up to 36" x 60" Frame size use 5/32" AN/.090 PVB/ 5/32" AN. Laminated glass. Laminated Glass must be used as part of an Insulated unit with 1/8" Annealed Glass.</p> <p>** Insul. Unit exterior light can also be supplied in tempered glass.</p> <p>2) Up to 54" x 96" Frame size use 1/4" AN/.090 SGP/1/4" AN. Laminated glass. Laminated Glass must be used as part of an Insulated unit with 1/4" Tempered Glass.</p> <p>3) Up to 60" x 120" Frame size use 1/4" HS/.090 SGP/1/4" HS Laminated Glass. Laminated Glass must be used as part of an Insulated unit with 1/4" Tempered Glass.</p>
Frame Size Restrictions	125" x 84" maximum size. Note- Other sizes available by Comparative or Extrapolation analysis per WDMA I.S. 11.	60" x 120" maximum size. Note- Other sizes available by Comparative or Extrapolation analysis per WDMA I.S. 11.
Frame Installation Clip Options	Standard installation clip fastened to frame with (2) #8 x 3/4", FH, PD, SS screws. Clip spacing: 4" from corners and O.C. spacing as noted on the production order paperwork. Sheer Screw Option Thru Jamb - #10 x 3" @ 4" from corner and 8" minimum & 24" O.C. maximum.	Coastal installation clip fastened to the frame with (3) #8 x 3/4", FH, PD, screw. Clip spacing: 4" from corners and O.C. spacing as noted on the production order paperwork. ✓ Sheer screw option through jamb #12 x 2-1/2" @ 4" from corners and 6" O.C. maximum. ✓



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B52634

Date 1/13/12

Tech [Signature]

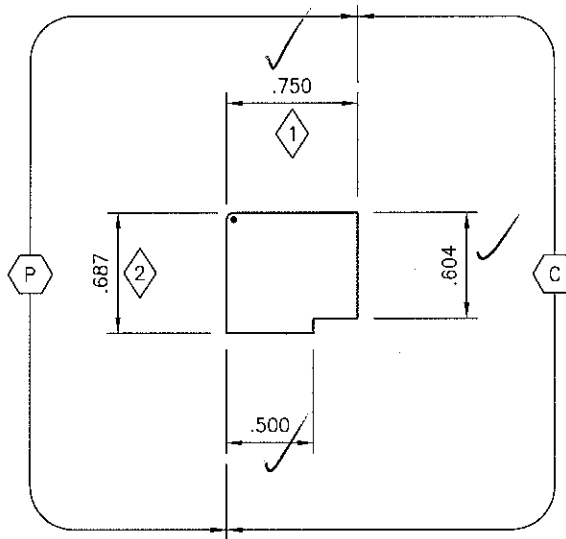
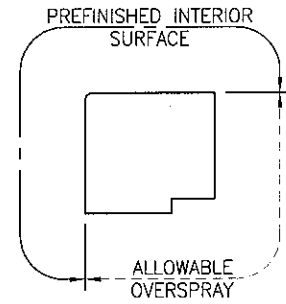
Controlled Network
Version Only

EXPOSED SURFACES

P PRIMARY

S SECONDARY

C CONCEALED



Test sample complies with these details. Deviations are noted.

Report# B57634

Date 1.13.12 Tech JK

NOTES:

1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 2.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1°	

STANDARD RADIUS MARKERS:

● RADII = 0.040 ■ RADII = ○ RADII = □ RADII =

PINE 5/4" CLEAR SOLID	P.I. 5/4" CLEAR SOLID
MAHOG 4/4" CLEAR SOLID	ALDER 4/4" CLEAR SOLID
OAK 4/4" CLEAR SOLID	HICKORY 4/4" CLEAR SOLID
CHERRY 4/4" CLEAR SOLID	WALNUT 4/4" CLEAR SOLID
MAPLE 4/4" CLEAR SOLID	OTHER
VG FIR 4/4" CLEAR SOLID	OTHER

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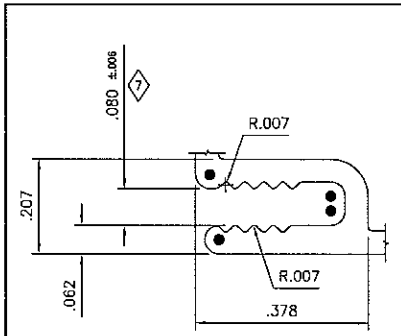
The information contained in this document is strictly proprietary to Andersen Corporation and may not be disclosed to nonemployees of the company or used in any way or for any purpose outside of the company without the express written consent of Andersen Corporation. Unauthorized use, reproduction, disclosure or retention of any information contained herein is expressly prohibited. All patent, copyright, proprietary and manufacturing rights are reserved.

Title: 3/4" STOP
-LINEAL-

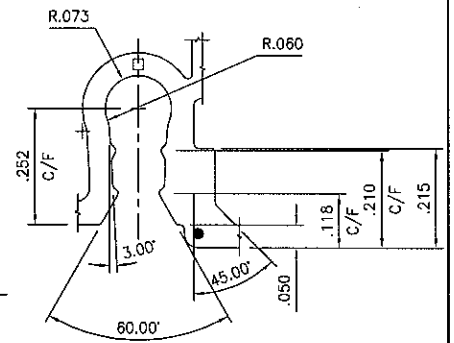
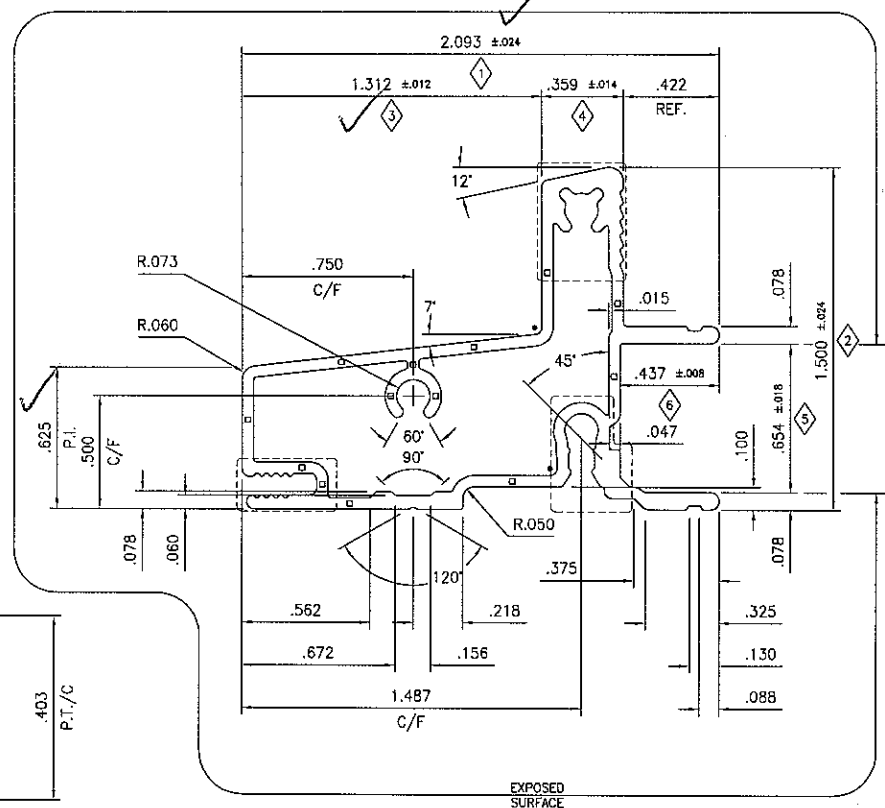
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Date: 09 DEC 1996 Scale: FULL SIZE

Drawing Number **PF1206** (1 of 2)

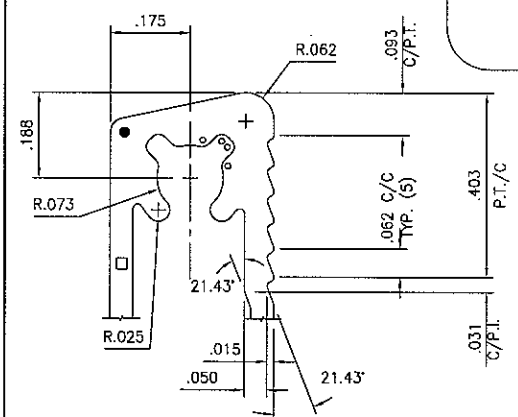
04	HEIGHT CHANGED FROM 0.703 TO 0.687	RBB	12 JUN 08	200109
NO.	DESCRIPTION	BY	DATE	ECN NO.



ACCESSORY GROOVE DETAIL
4X FULL SIZE



NAILING FIN GROOVE DETAIL
4X FULL SIZE



GLAZING BEAD/SCREW BOSS DETAIL
4X FULL SIZE

- NOTES:
1. CRITICAL DIMENSIONS USED: 1 THRU 7.
 2. DIMENSIONS WITHOUT TOLERANCES USE ALUMINUM INDUSTRY STANDARDS.
 3. ALL DIMENSIONS APPLY TO POST PAINTING.
 4. FINISH SPECIFICATION:
PRIME PAINTED - PPO9KM0053
PAINTED (2604) - PPO9KM0047
 5. REFER TO CAD DRAWING FOR UNSPECIFIED DIMENSIONS.

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B51634

Date 1/13/12 Tech [Signature]

UNLESS OTHERWISE SPECIFIED:		○ RADI = 0.020	● RADI = 0.031
□ WALLS = 0.050	■ WALLS =	BREAK ALL CORNERS WITH: R 0.010	
P.I. = POINT OF INTERSECTION		P.T. = POINT OF TANGENCY	
ALLOY: 6063 or EQUIVALENT	TEMPER: T5		
HARDNESS: WEBSTER 7 OR ABOVE AS EXTRUDED			
SHAPE: HOLLOW	C.C.D. (in.): 2.28644		
AREA (sq.in.): 0.46360	PERIMETER (in.): 9.24167		
WT. (lb/ft): 0.53963	WT. (kg/m): 0.80307		
LENGTH:			
MIN. BENDING RADIUS: LINEAL ONLY			
D1	RELEASED TO PRODUCTION	R98	11 FEB 09 200109
NO.	DESCRIPTION	BY	DATE EDN NO.

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Title: **DG ALUMINUM FRAME CLADDING**
THIN JAMB - LINEAL

Drawn: RBB Chk'd: _____
Date: 20 MAY 2008 Scale: 2X FULL SIZE

Drawing Number: **PF2052**



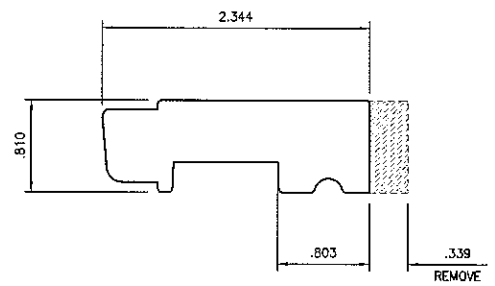
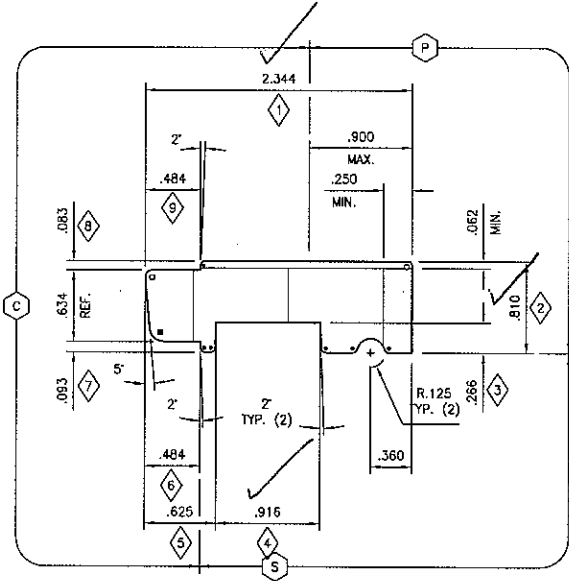
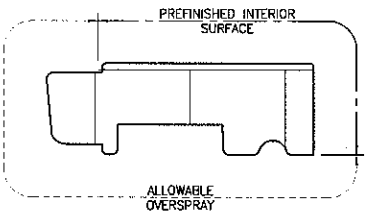
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B57634

Date 1.13.12 Tech [Signature]

EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED



PROFILE CAN EITHER BE PRODUCED FROM CLEAR SOLID PF2054 OR B206 BLANK (B212 FOR PINE) AS SHOWN ON LEFT REMOVE

- NOTES:
1. PRESERVATIVE TREATMENT REQUIRED.
 2. CRITICAL DIMENSIONS USED: 1 THRU 9.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±0.10	RADI ±0.15
DIMS 1" to 3" ±0.15	LENGTH DIMS < or = 36" ±0.15
DIMS > 3" ±0.31	LENGTH DIMS > 36" ±0.31
ANGLES ±1°	

STANDARD RADIUS MARKERS:

● RADI = 0.040	■ RADI =	○ RADI = 0.031	□ RADI = 0.062
----------------	----------	----------------	----------------

PINE B206 P or B212 or PF2054	P.L. B206 P or B212 or PF2054
MAHOG B206 M (AS SHOWN) or PF2054	ALDER B206 A (AS SHOWN) or PF2054
OAK B206 O (AS SHOWN) or PF2054	HICKORY B206 H (AS SHOWN) or PF2054
CHERRY B206 C (AS SHOWN) or PF2054	WALNUT B206 W (AS SHOWN) or PF2054
MAPLE B206 D (AS SHOWN) or PF2054	OTHER
VG FIR B206 F (AS SHOWN) or PF2054	OTHER

DZ MOODIFIED PROFILE FOR BETTER FIT	RBB	18 JAN 11	200201
NO. DESCRIPTION	BY	DATE	ECN NO.

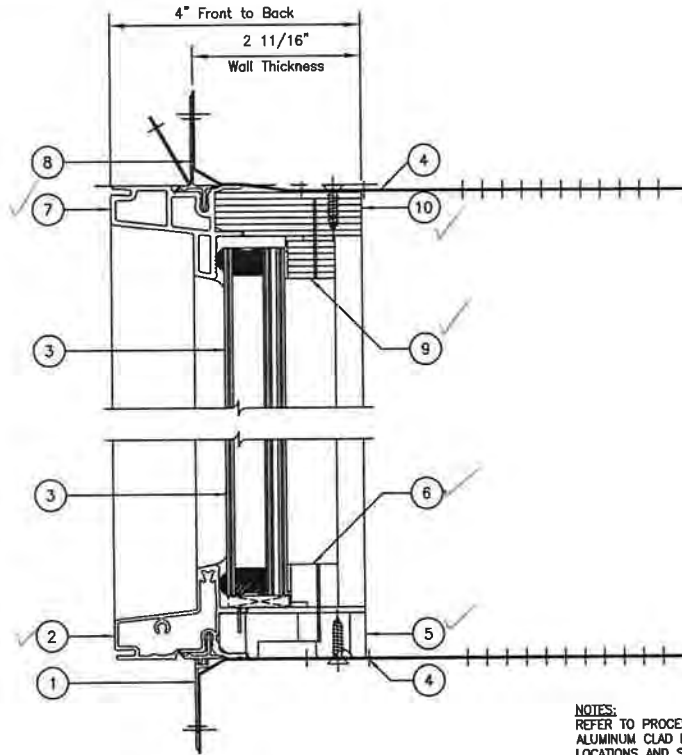
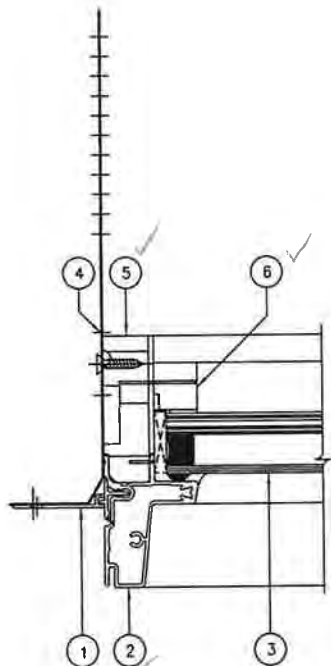
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Title: AKG 2-11/32" FRAME MEMBER, GEN. II
- LINEAL -

Drawn: RBB Chk'd: _____
Date: 26 MAY 2008 Scale: FULL SIZE

Drawing Number PF2053 (1 of 2)



NOTES:
REFER TO PROCESS DOCUMENT PP09KM0022 - SPECIFICATIONS FOR ALUMINUM CLAD DIRECT GLAZED WINDOWS FOR SEALANT & FASTENER LOCATIONS AND SPECIFICATIONS.

*PART OR PROFILE DOES NOT APPEAR IN SECTIONS SHOWN.

Architectural Testing
 Report # B5634
 Date 1/13/12

ITEM	DESCRIPTION	PROFILE OR PN
10	AKG 2-11/32" FRAME MEMBER - CURVED	PF2053
9	3/4" STOP - CURVED	PF1206
8	FLEXIBLE NAILING FLANGE	PF2080
7	1 1/2" ALUMINUM FRAME CLADDING - BENDABLE	PF2051
6	3/4" STOP - LINEAL	PF1206
5	AKG 2-11/32" FRAME MEMBER - LINEAL	PF2053
4	COASTAL INSTALLATION CLIP	PW-113960
3	INSUL GLAZED UNIT (AS PER ORDER)	
2	1 1/2" ALUMINUM FRAME CLADDING - LINEAL	PF2052
1	NAILING FLANGE - LINEAL	PF2079

NO.	DESCRIPTION	BY	DATE	ECN NO.
02	COASTAL INSTALLATION CLIP CHANGED	RBB	29 DEC 10	200178

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Title:
 COASTAL AKG ARCHITECTURAL SERIES
 ALUMINUM CLAD/FIXED WINDOW 'BOM' GEN. II

Drawn: RBB Chk'd:
 Date: 12 FEB 2009 Scale: HALF SIZE

Drawing Number SK2759



Process Specification

Title:
Specifications for Aluminium
Clad Direct Glazed Windows

Number:
PP09KM0022
Page: 2 of 3

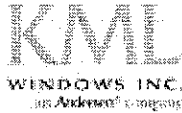
Issued By: Graham Marks

Approved By: Sean Dixon

Specifications	Standard Hallmark Certified Products	Impact Certified Products (Coastal)
Standards	AAMA/WDMA/CSA 101/1.S.2/A440-05 & 08	ASTM E1886/E1996-05 & 06 Missile Level D Wind Zone 4 and Florida Building Code HVHZ (TAS 201-94, TAS 202-94 & TAS-203-94)
Rating	FW-LC50 125"x84" (A440-05) Class LC-PG50 125"x84" - FW (A440-08)	36" x 60" (Tested Size): +70/-70 ✓ 54" x 96" (Tested Size): +70/-70 ✓ 60" x 120" (Tested Size): +70/-80 ✓
Frame Member Corner Assembly	(2 AKG)(3) # 8 x 2" screws each corner – Standard Jamb ✓ (3) #8 x 2" screws each corner – Thick Jamb (2) minimum #8 x 2" screws each corner- A Series Jamb	
Frame Member Corner Sealing	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets
Springline Unit Frame Member – Leg to Curved Head Assembly Butt Joint	Castle Drill Method – Butt Joint ✓ (3) #8 x 2" P.H., SQ, SMS Screw ✓ (1) 24 GA – 12" Galvanized Gusset Plate per Side ✓ (8) #8 x 3/4" P.H., P.D., SMS Screws ✓	
Springline Unit Frame Member – Leg to Curved Head Sealing Butt Joint	PVA Wood Glue for wood to wood butt joint	
Frame Cladding Corner Sealing	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets	Preformed EPDM or Silicone (depends on color) details. two sided adhesive foam gaskets noted.
Large Springline Unit with 2 pcs. Curved Frame Cladding Center Joint Sealing	Use Butyl Tape between curved center Butt Joint. Drill & Pump Dow Corning 1199 silicone sealant into both sides of frame extrusion cavity.	
Frame Cladding Assembly & Frame Cladding Corner Assembly	1/4" x 3/8" staples @ 7"(max.) from ends & 8" O.C. maximum. Also, staples on back of jamb, random as required. Dry fit no sealant Standard Jamb- (1) #8 x 1" screws & (1) #8x2 1/2" Thick Jamb- (2) #8 x 1" screws A Series Jamb- (2) #8 x 2 1/2" screws	1/4" x 3/8" Staples @ 7" (max.) from ends & 8" O.C. maximum. Also, staples on back of jamb, random as required. Dry fit no sealant Standard Jamb- (1) #8 x 1" screws & (1) #8x2 1/2" ✓ Thick Jamb- (2) #8 x 1" screws & (1) #8 x 2 1/2" A- Series Jamb- (2) #8 x 2 1/2" screws
Glazing Method	Glass is set from interior against a bed of Dow Corning 1199 silicone sealant with a double sided adhesive foam tape and a perimeter cap bead of Dow 891 silicone sealant. Color match silicone to standard cladding color options. Wood glazing stops with double sided adhesive tape and fastened with 1-1/4" staples @ 2" from ends & 8" O.C. maximum.	Glass is set from interior against a 1/8" bed of Dow Corning 995 Black Structural Silicone Sealant using glazing bumpons spacers to obtain glazing bead thickness for all color options except White 995 silicone is used for White Cladding Option. Structural Silicone is also used in the full perimeter in the Glazing Cavity. Wood Glazing Stops with double sided adhesive tape and fastened with 1-1/4" brad nails (Standard or Thick jamb) or 1 5/8" brad nails (A-Series jamb) @ 2" from ends & 6" O.C. maximum.
Glass Options	Any Monolithic or Insulated unit that meets the size and wind-load requirements of ASTM E1300 that does not exceed product rating.	Standard Direct Glazed Units 1) Up to 36" x 60" Frame size use 5/32" AN./090 PVB/ 5/32" AN. Laminated glass. Laminated Glass can be used as Monolithic or in an Insulated unit with 1/8" Annealed Glass.

Architectural Testing
Report # B57634
Date 1/13/12 Tech [Signature]

Controlled Network
Version Only



Process Specification

Title:
Specifications for Aluminium
Clad Direct Glazed Windows

Number:
PP09KM0022
Page: 3 of 3

Issued By: Graham Marks

Approved By: Sean Dixon

Specifications	Standard Hallmark Certified Products	Impact Certified Products (Coastal)
		<p>2) Up to 54"x96" Frame size use 1/4" AN./090 ✓ SGP/1/4" AN. Laminated glass. Laminated Glass can be used as Monolithic or in an insulated unit with 1/4" Tempered glass.</p> <p>3) Up to 60" x 120" Frame size use 1/4" HS./090 ✓ SGP/ 1/4" HS. Laminated Glass. Laminated Glass can be used as Monolithic or in an Insulated Unit with 1/4" Tempered Glass.</p> <p>A-Series Direct Glazed Units</p> <p>1) Up to 36" x 60" Frame size use 5/32" AN./090 PVB/ 5/32" AN. Laminated glass. Laminated Glass must be used as part of an Insulated unit with 1/8" Annealed Glass.</p> <p>** Insul. Unit exterior light can also be supplied in tempered glass.</p> <p>2) Up to 54" x 96" Frame size use 1/4" AN./090 SGP/1/4" AN. Laminated glass. Laminated Glass must be used as part of an Insulated unit with 1/4" Tempered Glass.</p> <p>3) Up to 60" x 120" Frame size use 1/4" HS./090 SGP/1/4" HS Laminated Glass. Laminated Glass must be used as part of an Insulated unit with 1/4" Tempered Glass.</p>
Frame Size Restrictions	125" x 84" maximum size. Note- Other sizes available by Comparative or Extrapolation analysis per WDMA I.S. 11.	60" x 120" maximum size. Note- Other sizes available by Comparative or Extrapolation analysis per WDMA I.S. 11.
Frame Installation Clip Options	Standard installation clip fastened to frame with (2) #8 x 3/4", FH, PD, SS screws. Clip spacing: 4" from corners and O.C. spacing as noted on the production order paperwork. Sheer Screw Option Thru Jamb - #10 x 3" @ 4" from corner and 8" minimum & 24" O.C. maximum.	Coastal installation clip fastened to the frame with (3) #8 x 3/4", FH, PD, screw. Clip spacing: 4" from corners and O.C. spacing as noted on the production order paperwork. ✓ Sheer screw option through jamb #12 x 2-1/2" @ 4" from corners and 6" O.C. maximum. ✓



Architectural Testing

Test sample complies with these details.
Deviations are noted.

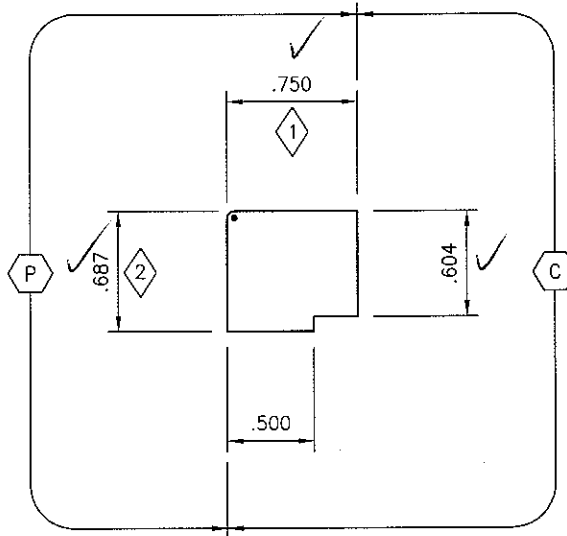
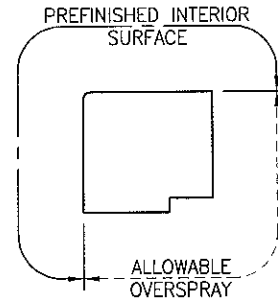
Report# B57634
Date 1.13.12 Tech [Signature]

EXPOSED SURFACES

(P) PRIMARY

(S) SECONDARY

(C) CONCEALED



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 85234
Date 1.13.12 Tech AK

NOTES:

1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 2.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1'	

STANDARD RADIUS MARKERS:

● RADII = 0.040 ■ RAOII = ○ RADII = □ RADII =

PINE 5/4" CLEAR SOLID	P.I. 5/4" CLEAR SOLID
MAHOG 4/4" CLEAR SOLID	ALDER 4/4" CLEAR SOLID
OAK 4/4" CLEAR SOLID	HICKORY 4/4" CLEAR SOLID
CHERRY 4/4" CLEAR SOLID	WALNUT 4/4" CLEAR SOLID
MAPLE 4/4" CLEAR SOLID	OTHER _____
VG FIR 4/4" CLEAR SOLID	OTHER _____

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Title: 3/4" STOP
-LINEAL-

Drawn: JMC Chk'd: _____
Date: 09 DEC 1996 Scale: FULL SIZE

04	HEIGHT CHANGED FROM 0.703 TO 0.687	RBB	12 JUN 08	200109
NO.	DESCRIPTION	BY	DATE	ECN NO.

Drawing Number **PF1206** (1 of 2)

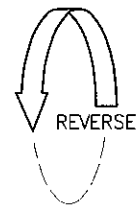
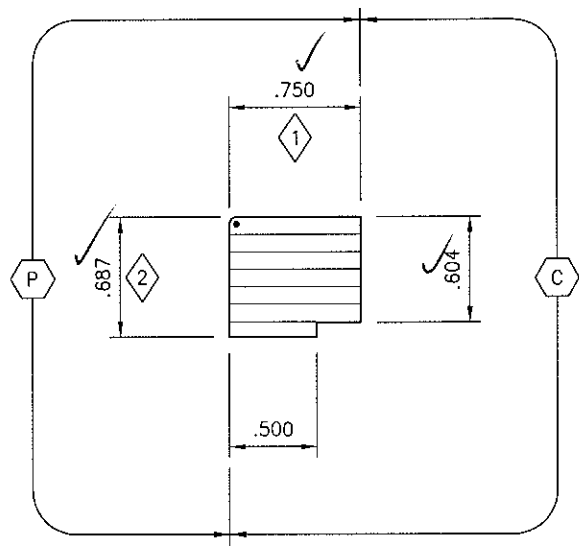
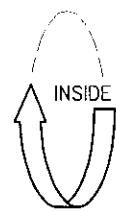
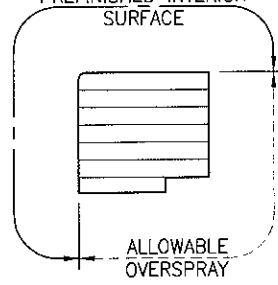
EXPOSED SURFACES

P PRIMARY

S SECONDARY

C CONCEALED

PREFINISHED INTERIOR SURFACE



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B2234

Date 1/13/12

Tech: [Signature]

NOTES:

1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 2.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1°	

STANDARD RADIUS MARKERS:

● RADII = 0.040	■ RADII =	○ RADII =	□ RADII =
PINE 7 LAYERS - MS1009	P.I. 7 LAYERS - MS1009		
MAHOG 7 LAYERS - MS1022	ALDER 7 LAYERS - MS1051		
OAK 7 LAYERS - MS1075	HICKORY 7 LAYERS - MS1095		
CHERRY 7 LAYERS - MS1023	WALNUT 7 LAYERS - MS1100		
MAPLE 7 LAYERS - MS1034	OTHER		
VG FIR 7 LAYERS - MS1073	OTHER		

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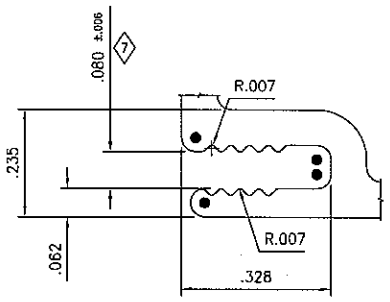
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Title: 3/4" STOP
- CURVED -

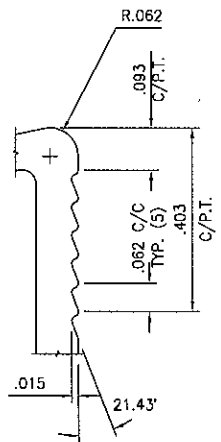
Drawn: JMC Chk'd: _____
Date: 09 DEC 1996 Scale: FULL SIZE

Drawing Number **PF1206** (2 of 2)

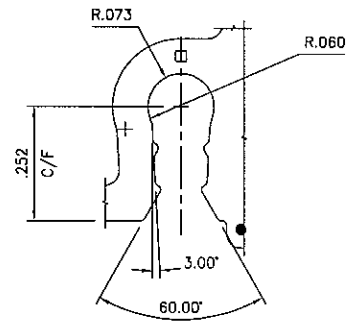
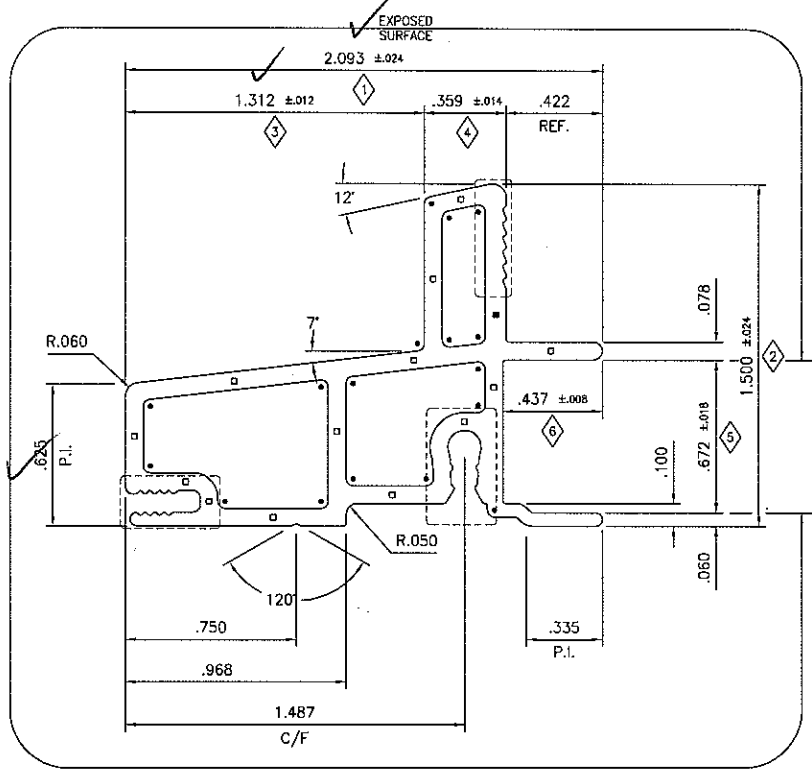
04	HEIGHT CHANGED FROM 0.703 TO 0.687	RBB	12 JUN 08	200109
NO.	DESCRIPTION	BY	DATE	ECN NO.



ACCESSORY GROOVE DETAIL
4X FULL SIZE



GLAZING BEAD DETAIL
4X FULL SIZE



NAILING FIN GROOVE DETAIL
4X FULL SIZE

Architectural Testing
Test sample complies with these details.
Deviations are noted.

Report# B56234
Date 1.13.12 Tech SK

- NOTES:
1. CRITICAL DIMENSIONS USED: 1 THRU 7.
2. DIMENSIONS WITHOUT TOLERANCES USE ALUMINUM INDUSTRY STANDARDS.
3. ALL DIMENSIONS APPLY TO POST PAINTING.
4. FINISH SPECIFICATION:
PRIME PAINTED - PP09KM0053
PAINTED (2604) - PP09KM0047
5. REFER TO CAD DRAWING FOR ALL UNSPECIFIED DIMENSIONS.

UNLESS OTHERWISE SPECIFIED: □ WALLS = 0.078 ■ WALLS = 0.093 BREAK ALL CORNERS WITH: R.010 P.I. = POINT OF INTERSECTION P.T. = POINT OF TANGENCY		○ RADII = 0.038 ● RADII = 0.031
ALLOY: 6063 or EQUIVALENT	TEMPER: T4	
HARDNESS: WEBSTER 2 TO 5 AS EXTRUDED		
SHAPE: HOLLOW	C.C.D. (in.): 2.28784	
AREA (sq.in.): 0.62831	PERIMETER (in.): 9.16184	
WT. (lbs/ft): 0.73135	WT. (kg/m): 1.08839	
LENGTH:		
MIN. BENDING RADIUS: 8.500" EFS		
D1	RELEASED TO PRODUCTION	RBB 11 FEB 09 200109
NO.	DESCRIPTION	BY DATE EGN NO.

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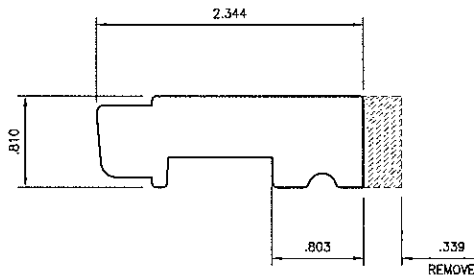
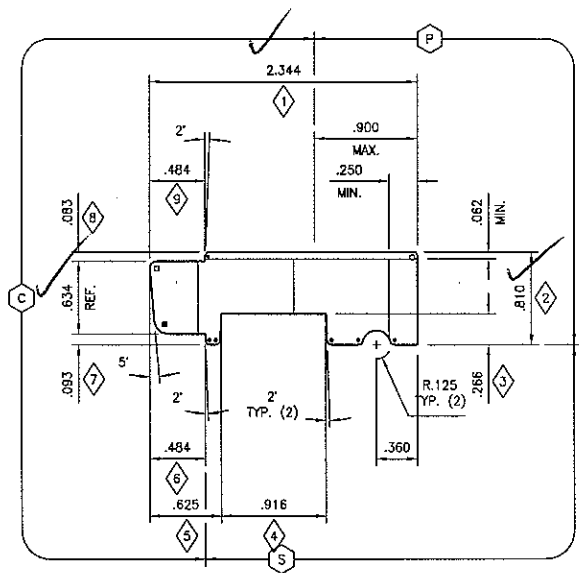
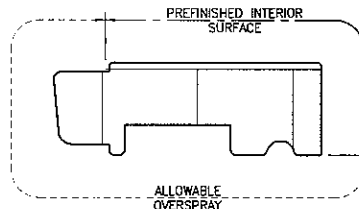
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Title: DG ALUMINUM FRAME CLADDING
THIN JAMB BENDABLE

Drawn: RBB Chk'd: _____
Date: 20 MAY 2008 Scale: 2X FULL SIZE

Drawing Number: **PF2051**

EXPOSED SURFACES **P** PRIMARY **S** SECONDARY **C** CONCEALED



PROFILE CAN EITHER BE PRODUCED FROM CLEAR SOLID PF2054 OR B206 BLANK (B212 FOR PINE) AS SHOWN ON LEFT

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B53034
1.13.12 Tech SJK

NOTES:
1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 9.

TOLERANCE UNLESS OTHERWISE SPECIFIED:		RADI ±.015	
DIMS < or = 1" ±.010	LENGTH DIMS < or = 36" ±.015		
DIMS 1" to 3" ±.015	LENGTH DIMS > 36" ±.031		
DIMS > 3" ±.031	ANGLES ±1'		
STANDARD RADIUS MARKERS:			
● RADI = 0.040	■ RADI =	○ RADI = 0.031	□ RADI = 0.062
PINE B206 P or B212 or PF2054	P.I. B206 P or B212 or PF2054		
MAHOG B206 M (AS SHOWN) or PF2054	ALDER B206 A (AS SHOWN) or PF2054		
OAK B206 O (AS SHOWN) or PF2054	HICKORY B206 H (AS SHOWN) or PF2054		
CHERRY B206 C (AS SHOWN) or PF2054	WALNUT B206 W (AS SHOWN) or PF2054		
MAPLE B206 D (AS SHOWN) or PF2054	OTHER		
VG FIR B206 F (AS SHOWN) or PF2054	OTHER		
DZ MODIFIED PROFILE FOR BETTER FIT	RBB	18 JAN 11	200201
NO. DESCRIPTION	BY	DATE	ECN NO.

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Title: AKG 2-11/32" FRAME MEMBER, GEN. II
- LINEAL -

Drawn: RBB Chk'd: _____
Date: 26 MAY 2008 Scale: FULL SIZE

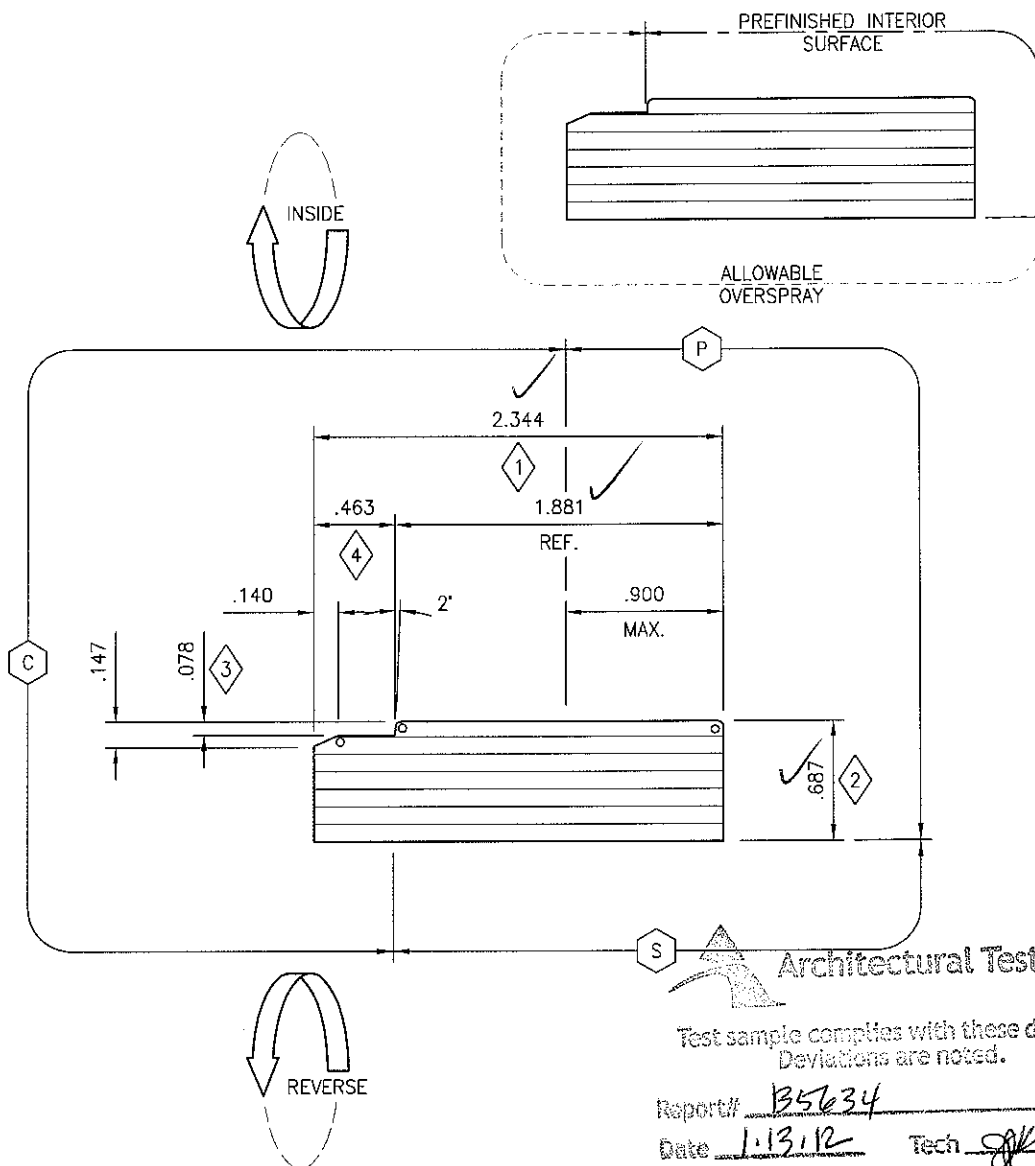
Drawing Number: PF2053 (1 of 2)

EXPOSED SURFACES

(P) PRIMARY

(S) SECONDARY

(C) CONCEALED



NOTES:

1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 4.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1'	

STANDARD RADIUS MARKERS:

● RADII = ■ RADII = ○ RADII = 0.031 □ RADII =

PINE 7 layers - MS1009	P.I. 7 layers - MS1009
MAHOG 7 layers - MS1005	ALDER 7 layers - MS1081
OAK 7 layers - MS1007	HICKORY 7 layers - MS1083
CHERRY 7 layers - MS1001	WALNUT 7 layers - MS1084
MAPLE 7 layers - MS1082	OTHER _____
VG FIR 7 layers - MS1080	OTHER _____

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Title: **AKG - 2-11/32" FRAME MEMBER, GEN. II**

- CURVED -

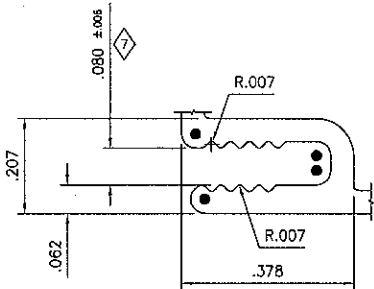
Drawn: RBB Chk'd: _____
Date: 29 MAY 2008 Scale: FULL SIZE

01	RELEASED TO PRODUCTION	RBB	08 JUN 09	200109
NO.	DESCRIPTION	BY	DATE	ECN NO.

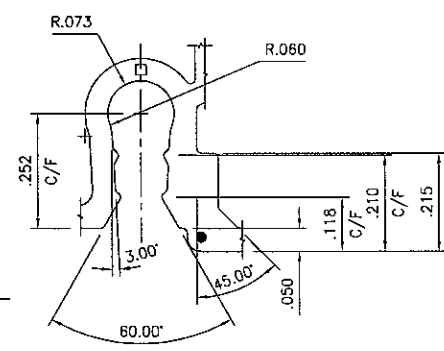
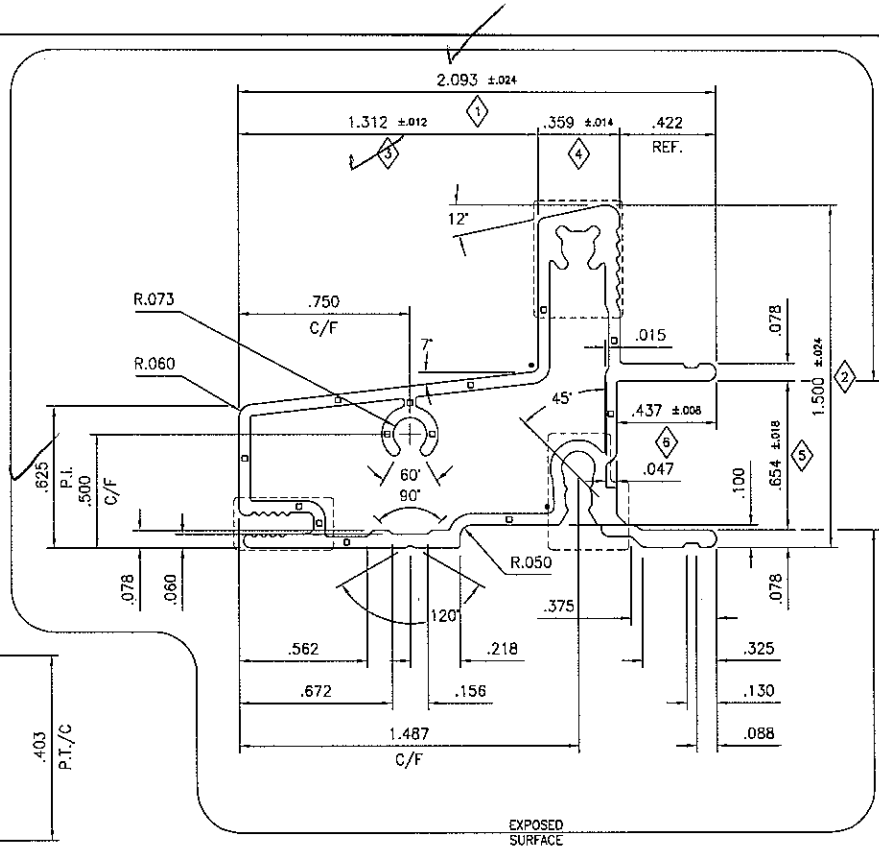
Drawing Number

PF2053

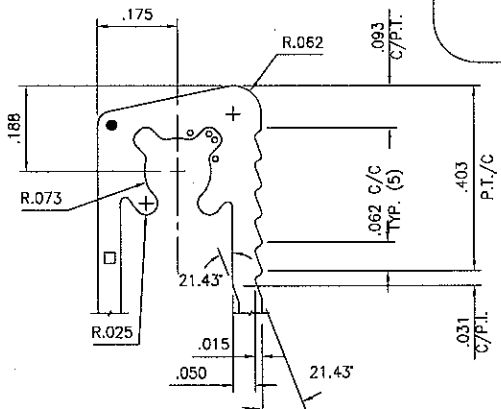
(2 of 2)



ACCESSORY GROOVE DETAIL
4X FULL SIZE



NAILING FIN GROOVE DETAIL
4X FULL SIZE



GLAZING BEAD/SCREW BOSS DETAIL
4X FULL SIZE

Architectural Testing
Test sample complies with these details.
Deviations are noted.

Order # B5634
1.13.12 Tech [Signature]

- NOTES:
1. CRITICAL DIMENSIONS USED: 1 THRU 7.
2. DIMENSIONS WITHOUT TOLERANCES USE ALUMINUM INDUSTRY STANDARDS.
3. ALL DIMENSIONS APPLY TO POST PAINTING.
4. FINISH SPECIFICATION:
PRIME PAINTED - PP09KM0053
PAINTED (2604) - PP09KM0047
5. REFER TO CAD DRAWING FOR UNSPECIFIED DIMENSIONS.

UNLESS OTHERWISE SPECIFIED: □ WALLS = 0.050 ■ WALLS = BREAK ALL CORNERS WITH R 0.010 P.I. = POINT OF INTERSECTION		○ RADI = 0.020 ● RADI = 0.031
ALLOY: 6063 or EQUIVALENT		TEMPER: T5
HARDNESS: WEBSTER 7 OR ABOVE AS EXTRUDED	SHAPE: HOLLOW	C.C.D. (in.): 2.28644
AREA (sq.in.): 0.46360	PERIMETER (in.): 9.24167	WT. (lbs/ft): 0.53963
LENGTH:		WT. (kg/m): 0.80307
MIN. BENDING RADIUS: LINEAL ONLY		
01 RELEASED TO PRODUCTION	RBB	11 FEB 09 200105
NO. DESCRIPTION	BY	DATE ECN NO.

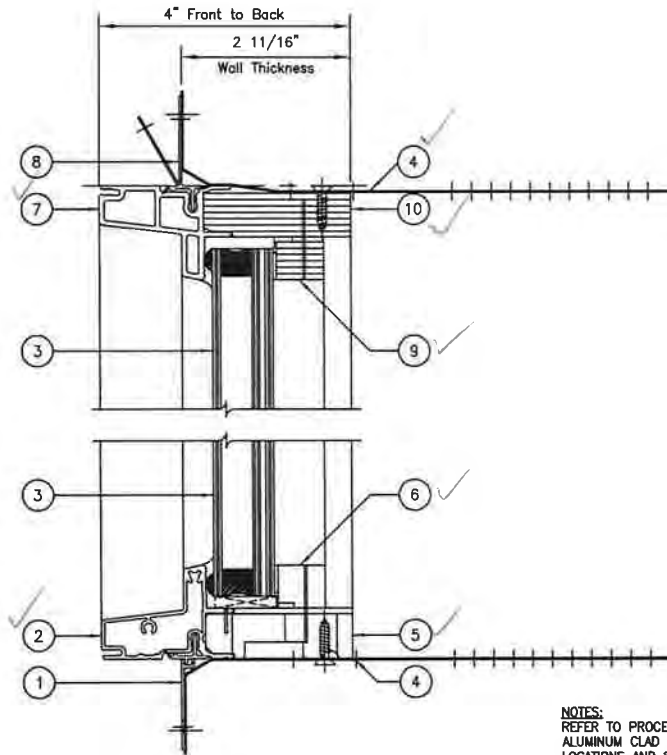
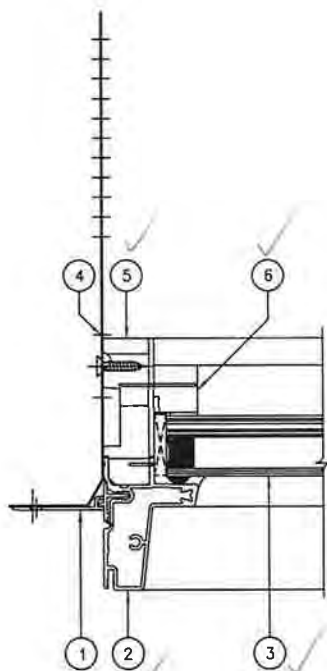
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Title: **DG ALUMINUM FRAME CLADDING**
THIN JAMB - LINEAL

Drawn: RBB Chk'd: _____
Date: 20 MAY 2008 Scale: 2X FULL SIZE

Drawing Number: **PF2052**



NOTES:
REFER TO PROCESS DOCUMENT PPOBKMD022 - SPECIFICATIONS FOR ALUMINUM CLAD DIRECT GLAZED WINDOWS FOR SEALANT & FASTENER LOCATIONS AND SPECIFICATIONS.

*PART OR PROFILE DOES NOT APPEAR IN SECTIONS SHOWN.

02	COASTAL INSTALLATION CLIP CHANGED	RBB	29 DEC 10	200178
NO.	DESCRIPTION	BY	DATE	ECN NO.

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Title:
**COASTAL AKG ARCHITECTURAL SERIES
ALUMINUM CLAD DIRECT GLAZED WINDOW 'BOM' GEN. II**

Drawn: RBB Chk'd: _____
Date: 12 FEB 2009 Scale: HALF SIZE

Drawing Number **SK2759**

10	AKG 2-11/32" FRAME MEMBER - CURVED	PF2053	
9	3/4" STOP - CURVED	PF1206	
8	FLEXIBLE NAILING FLANGE	PF2080	
7	1 1/2" ALUMINUM FRAME CLADDING - BENDABLE	PF2051	
6	3/4" STOP - LINEAL	PF1206	
5	AKG 2-11/32" FRAME MEMBER - LINEAL	PF2053	
4	COASTAL INSTALLATION CLIP	PN-113960	
3	INSUL GLAZED UNIT (AS PER ORDER)		
2	1 1/2" ALUMINUM FRAME CLADDING - LINEAL	PF2052	
1	NAILING FLANGE - LINEAL	PF2079	
ITEM	DESCRIPTION	PROFILE OR PN	

Architectural Testing
Test Report - Window Details

Rev: B57634
Date: 1-13-12 JK



Process Specification

Title:
Specifications for Aluminium
Clad Direct Glazed Windows

Number:
PP09KM0022
Page: 2 of 3

Issued By: Graham Marks

Approved By: Sean Dixon

Specifications	Standard Hallmark Certified Products	Impact Certified Products (Coastal)
Standards	AAMA/WDMA/CSA 101/IS.2/A440-05 & 08	ASTM E1886/E1996-05 & 06 Missile Level D Wind Zone 4 and Florida Building Code HVHZ (TAS 201-94, TAS 202-94 & TAS-203-94)
Rating	FW-LC50 125"x84" (A440-05) Class LC-PG50 125"x84" - FW (A440-08)	36" x 60" (Tested Size): +70/-70 ✓ 54" x 96" (Tested Size): +70/-70 ✓ 60" x 120" (Tested Size): +70/-80 ✓
Frame Member Corner Assembly	(2 AKG)(3) # 8 x 2" screws each corner – Standard Jamb ✓ (3) #8 x 2" screws each corner – Thick Jamb (2) minimum #8 x 2" screws each corner- A Series Jamb	
Frame Member Corner Sealing	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets
Springline Unit Frame Member – Leg to Curved Head Assembly Butt Joint	Castle Drill Method – Butt Joint (3) #8 x 2" P.H., SQ, SMS Screw (1) 24 GA – 12" Galvanized Gusset Plate per Side (8) #8 x 3/4" P.H., P.D., SMS Screws	
Springline Unit Frame Member – Leg to Curved Head Sealing Butt Joint	PVA Wood Glue for wood to wood butt joints Date <u>1.13.12</u> Tech <u>SAK</u>	
Frame Cladding Corner Sealing	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets	Preformed EPDM or Silicone (depends on color) two sided adhesive foam gaskets
Large Springline Unit with 2 pcs. Curved Frame Cladding Center Joint Sealing	Use Butyl Tape between curved center Butt Joint. Drill & Pump Dow Corning 1199 silicone sealant into both sides of frame extrusion cavity.	
Frame Cladding Assembly & Frame Cladding Corner Assembly	1/4" x 3/8" staples @ 7"(max.) from ends & 8" O.C. maximum. Also, staples on back of jamb, random as required. Dry fit no sealant Standard Jamb- (1) #8 x 1" screws & (1) #8x2 1/2" Thick Jamb- (2) #8 x 1" screws A Series Jamb- (2) #8 x 2 1/2" screws	1/4" x 3/8" Staples @ 7" (max.) from ends & 8" O.C. maximum. Also, staples on back of jamb, random as required. Dry fit no sealant Standard Jamb- (1) #8 x 1" screws & (1) #8x2 1/2" ✓ Thick Jamb- (2) #8 x 1" screws & (1) #8 x 2 1/2" A- Series Jamb- (2) #8 x 2 1/2" screws
Glazing Method	Glass is set from interior against a bed of Dow Corning 1199 silicone sealant with a double sided adhesive foam tape and a perimeter cap bead of Dow 891 silicone sealant. Color match silicone to standard cladding color options. Wood glazing stops with double sided adhesive tape and fastened with 1-1/4" staples @ 2" from ends & 8" O.C. maximum.	Glass is set from interior against a 1/8" bed of Dow Corning 995 Black Structural Silicone Sealant using glazing bumpers spacers to obtain glazing bead thickness for all color options except White 995 silicone is used for White Cladding Option. Structural Silicone is also used in the full perimeter in the Glazing Cavity. Wood Glazing Stops with double sided adhesive tape and fastened with 1-1/4" brad nails (Standard or Thick jamb) or 1 5/8" brad nails (A-Series jamb) @ 2" from ends & 6" O.C. maximum.
Glass Options	Any Monolithic or Insulated unit that meets the size and wind-load requirements of ASTM E1300 that does not exceed product rating.	Standard Direct Glazed Units 1) Up to 36" x 60" Frame size use 5/32" AN./090 PVB/ 5/32" AN. Laminated glass. Laminated Glass can be used as Monolithic or in an Insulated unit with 1/8" Annealed Glass.

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Support # B5634

Date 1.13.12 Tech SAK



Process Specification

Title:
Specifications for Aluminium
Clad Direct Glazed Windows

Number:
PP09KM0022
Page: 3 of 3

Issued By: Graham Marks

Approved By: Sean Dixon

Specifications	Standard Hallmark Certified Products	Impact Certified Products (Coastal)
		<p>2) Up to 54" x 96" Frame size use 1/4" AN./090 SGP/1/4" AN. Laminated glass. Laminated Glass can be used as Monolithic or in an insulated unit with 1/4" Tempered glass. ✓</p> <p>3) Up to 60" x 120" Frame size use 1/4" HS./090 SGP/ 1/4" HS. Laminated Glass. Laminated Glass can be use as Monolithic or in an Insulated Unit with 1/4" Tempered Glass. ✓</p> <p>A-Series Direct Glazed Units</p> <p>1) Up to 36" x 60" Frame size use 5/32" AN./090 PVB/ 5/32" AN. Laminated glass. Laminated Glass must be used as part of an Insulated unit with 1/8" Annealed Glass.</p> <p>** Insul. Unit exterior light can also be supplied in tempered glass.</p> <p>2) Up to 54" x 96" Frame size use 1/4" AN./090 SGP/1/4" AN. Laminated glass. Laminated Glass must be used as part of an Insulated unit with 1/4" Tempered Glass.</p> <p>3) Up to 60" x 120" Frame size use 1/4" HS/090 SGP/1/4" HS Laminated Glass. Laminated Glass must be used as part of an Insulated unit with 1/4" Tempered Glass.</p>
Frame Size Restrictions	125" x 84" maximum size. Note- Other sizes available by Comparative or Extrapolation analysis per WDMA I.S. 11.	60" x 120" maximum size. Note- Other sizes available by Comparative or Extrapolation analysis per WDMA I.S. 11.
Frame Installation Clip Options	Standard installation clip fastened to frame with (2) #8 x 3/4", FH, PD, SS screws. Clip spacing: 4" from corners and O.C. spacing as noted on the production order paperwork. Sheer Screw Option Thru Jamb - #10 x 3" @ 4" from corner and 8" minimum & 24" O.C. maximum.	Coastal installation clip fastened to the frame with (3) #8 x 3/4", FH, PD, screw. Clip spacing: 4" from corners and O.C. spacing as noted on the production order paperwork. ✓ Sheer screw option through jamb #12 x 2-1/2" @ 4" from corners and 6" O.C. maximum. ✓



Architectural Testing

Test sample complies with these details.
Deviations are noted.

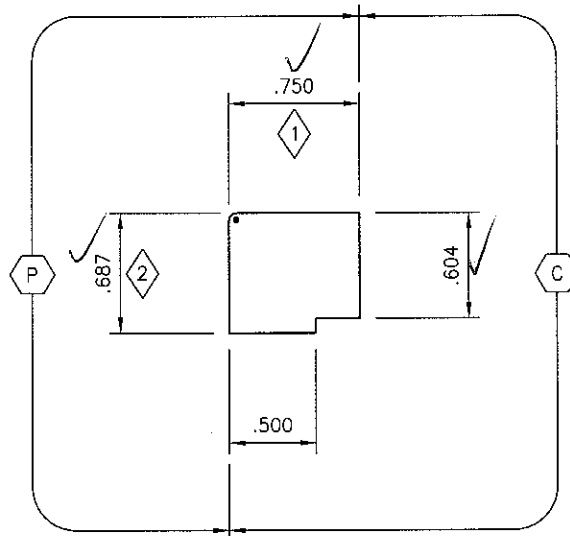
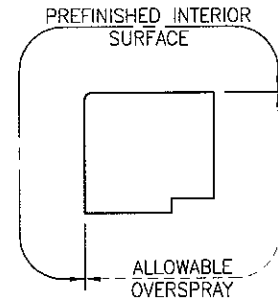
Report# B5634
Date 1.13.12 Tech [Signature]

EXPOSED SURFACES

P PRIMARY

S SECONDARY

C CONCEALED



Test sample complies with these details.
Deviations are noted.

Report# B57634
Date 1.13.12 Tech [Signature]

NOTES:

1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 2.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1'	

STANDARD RADIUS MARKERS:

● RADII = 0.040 ■ RADII = ○ RADII = □ RADII =

PINE 5/4" CLEAR SOLID	P.I. 5/4" CLEAR SOLID
MAHOG 4/4" CLEAR SOLID	ALDER 4/4" CLEAR SOLID
OAK 4/4" CLEAR SOLID	HICKORY 4/4" CLEAR SOLID
CHERRY 4/4" CLEAR SOLID	WALNUT 4/4" CLEAR SOLID
MAPLE 4/4" CLEAR SOLID	OTHER _____
VG FIR 4/4" CLEAR SOLID	OTHER _____

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Title: _____
3/4" STOP
-LINEAL-

Drawn: JMC Chk'd: _____
Date: 09 DEC 1996 Scale: FULL SIZE

04	HEIGHT CHANGED FROM 0.703 TO 0.687	RBB	12 JUN 08	200109
NO.	DESCRIPTION	BY	DATE	ECN NO.

Drawing Number **PF1206** (1 of 2)

EXPOSED SURFACES

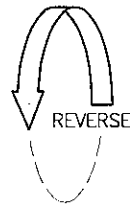
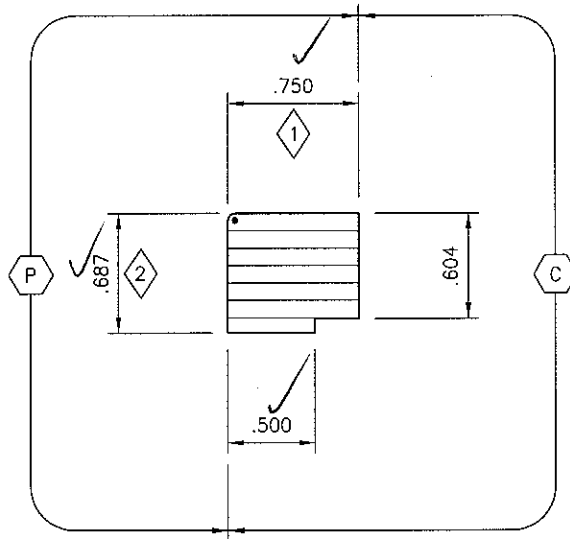
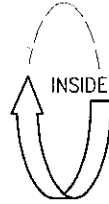
P PRIMARY

S SECONDARY

C CONCEALED

PREFINISHED INTERIOR SURFACE

ALLOWABLE OVERSPRAY



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B5634

Date 1/13/12 Tech [Signature]

NOTES:

1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 2.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1°	

STANDARD RADIUS MARKERS:

● RADII = 0.040 ■ RADII = ○ RADII = □ RADII =

PINE 7 LAYERS - MS1009	P.I. 7 LAYERS - MS1009
MAHOG 7 LAYERS - MS1022	ALDER 7 LAYERS - MS1051
OAK 7 LAYERS - MS1075	HICKORY 7 LAYERS - MS1095
CHERRY 7 LAYERS - MS1023	WALNUT 7 LAYERS - MS1100
MAPLE 7 LAYERS - MS1034	OTHER _____
VG FIR 7 LAYERS - MS1073	OTHER _____

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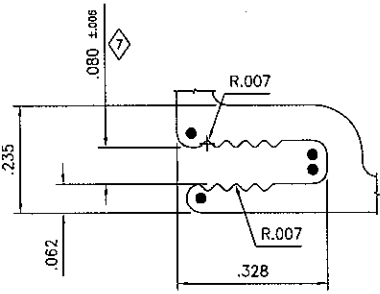
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Title: _____
3/4" STOP

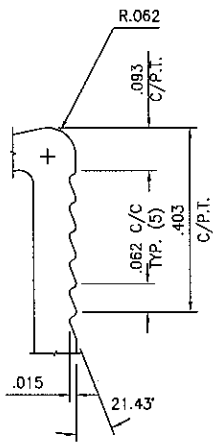
Drawn: JMC Chk'd: _____
Date: 09 DEC 1996 Scale: FULL SIZE

Drawing Number **PF1206** (2 of 2)

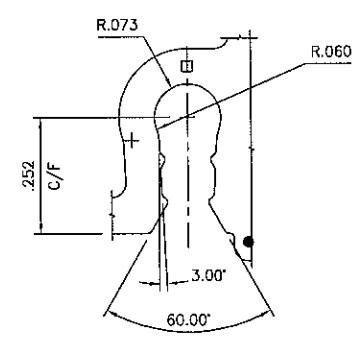
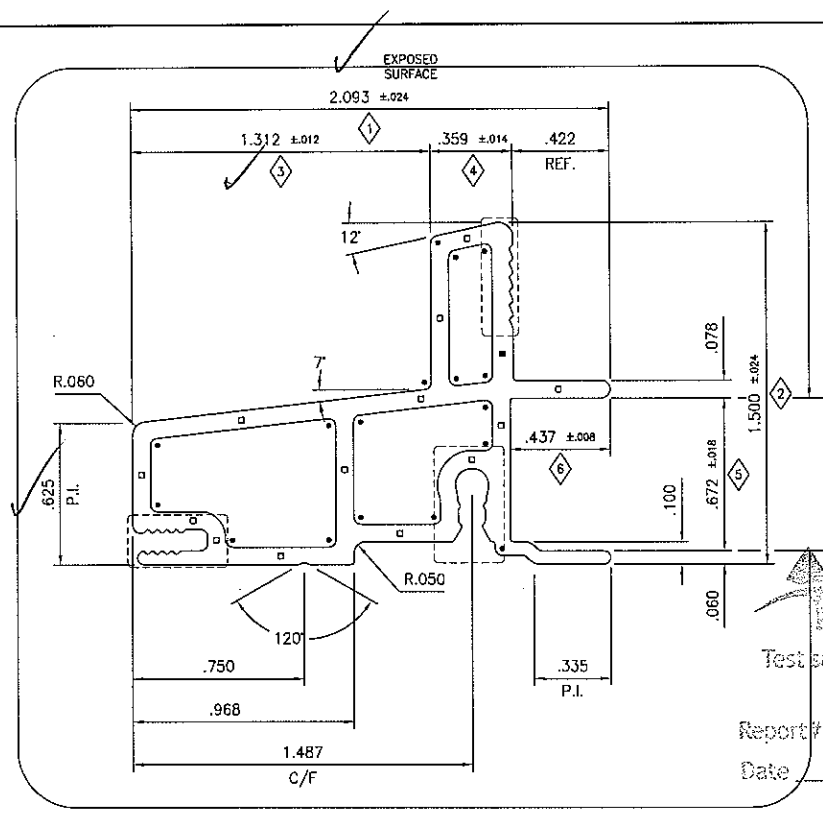
04	HEIGHT CHANGED FROM 0.703 TO 0.687	RBB	12 JUN 08	200109
NO.	DESCRIPTION	BY	DATE	ECN NO.



ACCESSORY GROOVE DETAIL
4X FULL SIZE



GLAZING BEAD DETAIL
4X FULL SIZE



NAILING FIN GROOVE DETAIL
4X FULL SIZE

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report # B5634

Date 1.13.12 Tech [Signature]

- NOTES:
1. CRITICAL DIMENSIONS USED: 1 THRU 7.
 2. DIMENSIONS WITHOUT TOLERANCES USE ALUMINUM INDUSTRY STANDARDS.
 3. ALL DIMENSIONS APPLY TO POST PAINTING.
 4. FINISH SPECIFICATION:
PRIME PAINTED - PPO9KM0053
PAINTED (2604) - PPO9KM0047
 5. REFER TO CAD DRAWING FOR ALL UNSPECIFIED DIMENSIONS.

UNLESS OTHERWISE SPECIFIED: □ WALLS = 0.070 ■ WALLS = 0.093 ○ RADI = 0.039 ● RADI = 0.031			
BREAK ALL CORNERS WITH: R 0.010		P.T. = POINT OF TANGENCY	
P.I. = POINT OF INTERSECTION		P.T. = POINT OF TANGENCY	
ALLOY: 6063 or EQUIVALENT	TEMPER: T4		
HARDNESS: WEBSTER 2 TO 5 AS EXTRUDED			
SHAPE: HOLLOW	C.C.D. (in.): 2.28784		
AREA (sq.in.): 0.62831	PERIMETER (in.): 9.16184		
WT. (lb/vol): 0.73135	WT. (kg/vol): 1.08839		
LENGTH:			
MIN. BENDING RADIUS: 8.500" EFS			
01 RELEASED TO PRODUCTION	RBB	11 FEB 09	200109
NO. DESCRIPTION	BY	DATE	ECN NO.

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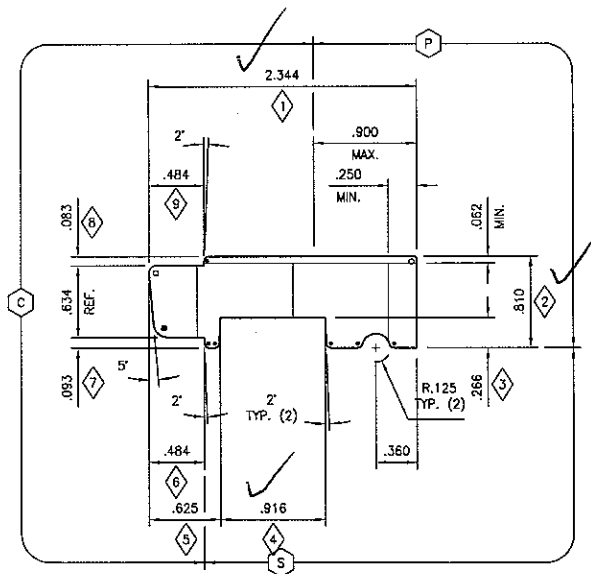
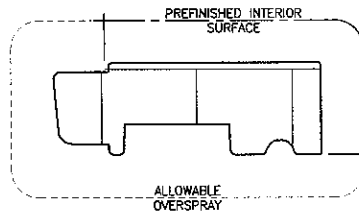
Title: DG ALUMINUM FRAME CLADDING

THIN JAMB BENDABLE

Drawn: RBB Chk'd: _____
Date: 20 MAY 2008 Scale: 2X FULL SIZE

Drawing Number: **PF2051**

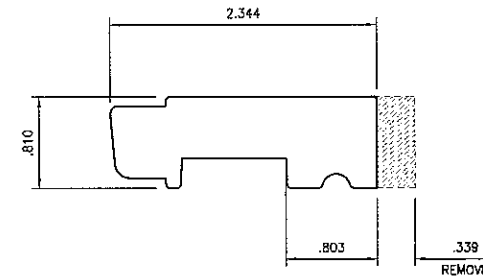
EXPOSED SURFACES (P) PRIMARY (S) SECONDARY (C) CONCEALED



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B52034
Date 1/13/12 Tech [Signature]



PROFILE CAN EITHER BE PRODUCED FROM CLEAR SOLID PF2054
OR B206 BLANK (B212 FOR PINE) AS SHOWN ON LEFT

- NOTES:
1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 9.

TOLERANCE UNLESS OTHERWISE SPECIFIED:	
DIMS < or = 1" ±0.010	RADI ±0.015
DIMS 1" to 3" ±0.015	LENGTH DIMS < or = 36" ±0.015
DIMS > 3" ±0.031	LENGTH DIMS > 36" ±0.031
ANGLES ±1'	
STANDARD RADIUS MARKERS:	
● RADI = 0.040	■ RADI = 0.031
○ RADI = 0.031	□ RADI = 0.062
PINE B206 P or B212 or PF2054	P.I. B206 P or B212 or PF2054
MANOQ B206 M (AS SHOWN) or PF2054	ALDER B206 A (AS SHOWN) or PF2054
OAK B206 O (AS SHOWN) or PF2054	HICKORY B206 H (AS SHOWN) or PF2054
CHERRY B206 C (AS SHOWN) or PF2054	WALNUT B206 W (AS SHOWN) or PF2054
MAPLE B206 D (AS SHOWN) or PF2054	OTHER
VG FIR B206 F (AS SHOWN) or PF2054	OTHER
02 MODIFIED PROFILE FOR BETTER FIT	RBB 18 JAN 11 200201
NO. DESCRIPTION	BY DATE EGN NO.

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Title: AKG 2-11/32" FRAME MEMBER, GEN. II
LINEAL -

Drawn: RBB Chk'd: _____
Date: 26 MAY 2008 Scale: FULL SIZE

Drawing Number: PF2053 (1 of 2)

EXPOSED SURFACES



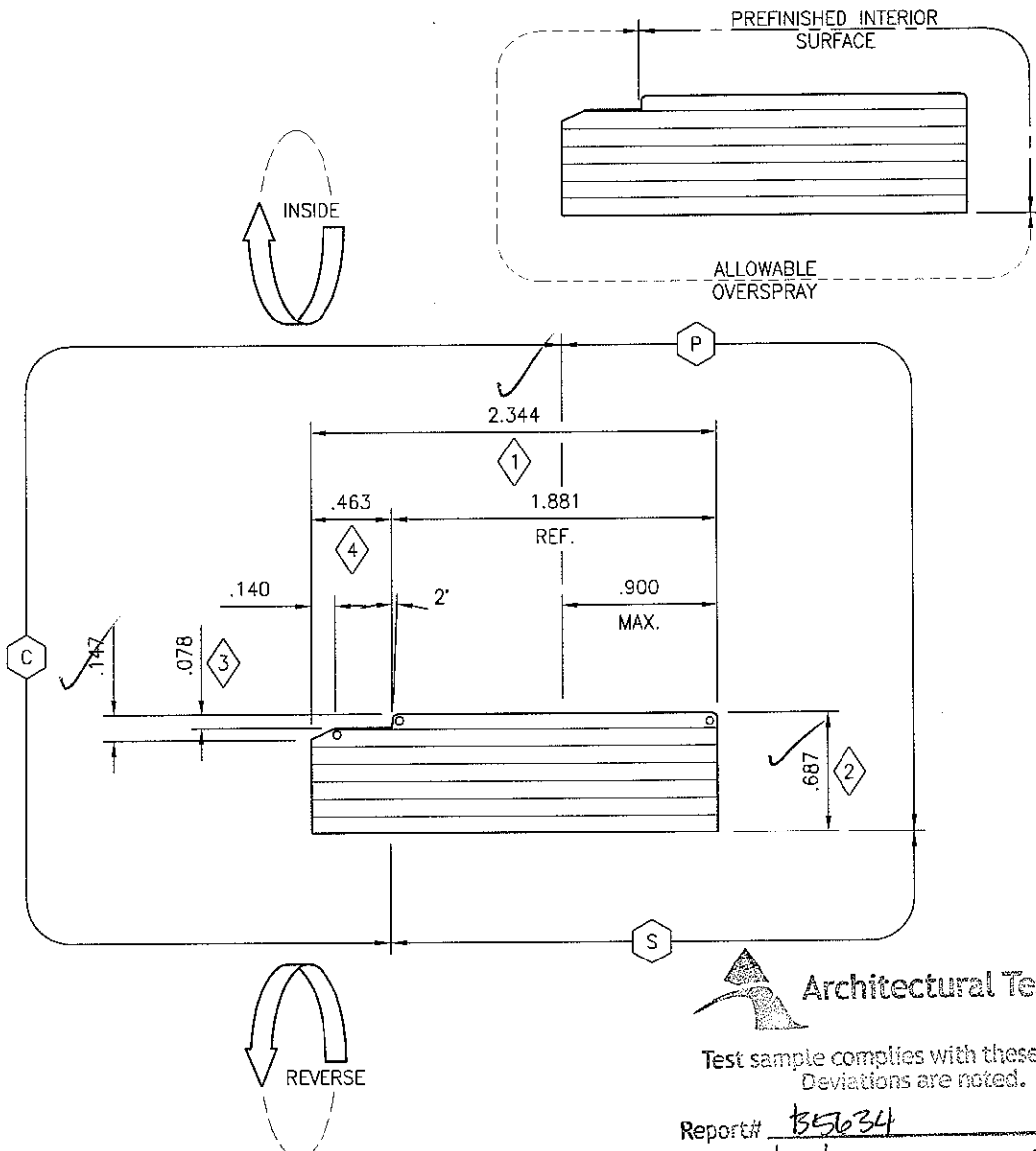
PRIMARY



SECONDARY



CONCEALED



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B5634
Date 1/13/12 Tech gjk

NOTES:

1. PRESERVATIVE TREATMENT REQUIRED.
2. CRITICAL DIMENSIONS USED: 1 THRU 4.

TOLERANCE UNLESS OTHERWISE SPECIFIED:

DIMS < or = 1" ±.010	RADII ±.015
DIMS 1" to 3" ±.015	LENGTH DIMS < or = 36" ±.015
DIMS > 3" ±.031	LENGTH DIMS > 36" ±.031
ANGLES ±1'	

STANDARD RADIUS MARKERS:

● RADII =	■ RADII =	○ RADII = 0.031	□ RADII =
PINE 7 layers - MS1009	P.I. 7 layers - MS1009		
MAHOG 7 layers - MS1005	ALDER 7 layers - MS1081		
OAK 7 layers - MS1007	HICKORY 7 layers - MS1083		
CHERRY 7 layers - MS1001	WALNUT 7 layers - MS1084		
MAPLE 7 layers - MS1082	OTHER _____		
VG FIR 7 layers - MS1080	OTHER _____		

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Title:
AKG - 2-11/32" FRAME MEMBER, GEN. II
- CURVED -

Drawn: RBB Chk'd: _____
Date: 29 MAY 2008 Scale: FULL SIZE

01	RELEASED TO PRODUCTION	RBB	08 JUN 09	200109
NO.	DESCRIPTION	BY	DATE	ECN NO.

Drawing Number **PF2053** (2 of 2)

