

## **Cascade Aluminum, Inc. Warranties & Finish Designations**

### **Product Warranties**

#### Limited Product Warranty

CASCADE ALUMINUM, INC., is not responsible for nor has control over the use of their products. The Owner, the Architect, and the installing Contractor shall be responsible for the correct selection and sizing of the proper systems incorporated into the construction and compliance with all the applicable building and safety codes.

CASCADE ALUMINUM, INC., warrants that their products, entrance framing and storefront systems, shall be free from material defects in the manufacturing workmanship and materials for a period of five years from the date of shipment. This warranty is valid only when material provided by CASCADE ALUMINUM, INC., have been installed and maintained in accordance with CASCADE ALUMINUM, INC., installation instructions and recommendations.

This warranty shall be limited to defects appearing within five years from the date of shipment. Should defects become apparent, CASCADE ALUMINUM, INC., shall be notified in writing, within the warranty period, listing any defects in material or workmanship.

Upon determination of failure or defective material or workmanship, CASCADE ALUMINUM, INC., will repair or replace defective material or make repayment of the original price to the holder of the warranty. CASCADE ALUMINUM, INC., reserves the right to determine Warranty action; repair, replacement, or repayment of purchase price. This Warranty does not include labor or material required for related work.

CASCADE ALUMINUM, INC., makes no other warranties or representations, either expressed or implied, concerning product fitness for a particular purpose. CASCADE ALUMINUM, INC., shop drawings indicate our understanding of the job requirements and are submitted for the appropriate approval of the Architect and Contractor.

#### Life Time Aluminum Entrance Door Warranty

CASCADE ALUMINUM, INC., is not responsible for nor has control over the use of their products. The Owner, the Architect, and the Glazing Contractor shall be responsible for the correct selection and sizing of the aluminum entry system incorporated into the construction and in compliance with all the applicable building and safety codes.

CASCADE ALUMINUM, INC., warrants that their Door Corner Construction assembly, both Mechanical Construction or Welded Construction up to 4'0" x 8'0" leaf size, shall be free from material defects in manufacturing workmanship and materials for the life of the opening under normal usage and not subjected to abuse or wind damage.

This Warranty is valid only when materials provided by CASCADE ALUMINUM, INC., have been installed and maintained in accordance with CASCADE ALUMINUM, INC., installation instructions and recommendations. This warranty shall be void if the lead has been subjected to improper installation or mechanical damage indicative of obvious mistreatment or abuse.

Upon determination of failure or defective workmanship or material, CASCADE ALUMINUM, INC., will repair or replace defective material or make repayment of purchase price to the holder of the warranty. CASCADE ALUMINUM, INC., reserves the right to determine Warranty action; replace, replace, or repayment of purchase price. This warranty does not include labor or material required for related work.

CASCADE ALUMINUM, INC., makes no other warranties or representations, either expressed or implied, concerning product fitness for a particular purpose. CASCADE ALUMINUM, INC., shop drawings indicate our understanding of the job requirements and are submitted for the appropriate approval of the Architect and Contractor.

CASCADE ALUMINUM, INC., will fabricate materials to the dimensions shown on the approved shop drawings; however, CASCADE ALUMINUM, INC., will not be responsible for the accuracy of said drawings or the failure of the fabricators to comply with required field conditions. Under no circumstances shall CASCADE ALUMINUM, INC., be held responsible or liable for direct, indirect, special, or consequential damages including, but not limited to loss of profits or use of the structure.

### **Finish Designations**

<b>Number</b>	<b>Finish</b>
#80	Mill Finish
#100	Clear AA M12C22A31
#125	Dark Bronze AA M12C22A44
#130	Black AA M12C22A44
#150	Kynar 70% Resin White

Also available in custom painted finishes as per architect's specification.

# CASCADE ALUMINUM, INC.

## STANDARD CENTER GLAZING SYSTEMS SERIES 150 OR 450 FLUSH GLAZING SYSTEM

### I. GENERAL DESCRIPTION

Work Included: Furnish all necessary materials, labor and equipment for the complete installation of aluminum framing as shown on the drawings as specified herein specifier note: It is suggested that related items such as, aluminum entrance doors, glass and sealant be included whenever possible.

Work Not Included: Structural support of the framing system, interior closures, trim. (Specifier lists other exclusions).

Related Work Specified elsewhere: (Specifier lists).

### QUALITY ASSURANCE

Drawings and specifications are based upon the series (specify framing system as manufactured by CASCADE ALUMINUM. When ever substitute products are to be considered, supporting technical literature, samples, drawings and performance data must be submitted ten (10) days prior to bid in order to make a valid comparison of the products involved. Test reports certified by an independent test laboratory must be made available upon request.

### PERFORMANCE REQUIREMENTS

Structural Performance-Deflection shall be tested in accordance with ASTM E 330. Maximum deflection of a member shall not exceed 1/175 of its span, and when the load is removed there shall be no evidence of permanent deformation or damage when tested under a load of (Specify) P.S.F.

### II. PRODUCTS MATERIALS

Extrusions shall be 6063 alloy with a T-6 temper, complying with (ASTM B 221- 04-A, G.S. 10-A=T6).

All fasteners, whether exposed or unexposed shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A 164. Exposed fasteners must match storefront finish selected.

An asphaltic bituminous coating shall be applied to insure isolation of dissimilar metals, if steel stiffeners are required. All glazing gaskets shall be EPDM elastomeric with fiberglass reinforcement cord to prevent stretching. All perimeter anchoring shall be structurally engineered prior to installation.

### FINISH

All exposed framing surfaces shall be free of scratches and other serious blemishes.

Aluminum extrusions shall be given a caustic etch followed by an anodotic oxide treatment to obtain (Specify one of the following).

\_\_\_An Architectural Class I anodotic coating conforming to Aluminum Association Standard AA-M12 C22 A44. Specify #130 Black or #125 Dark Bronze, or #100 Custom Colored Bronze anodizing.

\_\_\_An #100 clear anodotic coating conforming to Aluminum Association Standard AA-M12 C22 A31 or 204.

\_\_\_An 70% fluoropolymer (KYNAR) Resin Complying with AAMA 2605.

\_\_\_An Acrodize hard coat pearlescent 50% fluoropolymer (KYNAR) Resin, with the same ceramic pigmentation as full strength 70% Fluoropolymer, complying with AAMA 2604.

### FABRICATION

The framing system shall provide for flush glazing on all sides with no projecting stops. Vertical and horizontal members shall have a nominal face dimension of (Specify). The overall depth shall be 4 ½ entrance framing members shall be compatible with the glass framing in appearance. An aluminum sub-sill or sill can shall be continuous at the sill section and shall provide integral pressure relief.

### III. EXECUTION INSTALLATION

Glass framing shall be set in correct locations as shown in the details and shall be level, square, plumb and in alignment with other work in accordance with the manufacturer's installation instructions and approved shop drawings. All joints between framing and the building structure shall be sealed to secure a watertight installation.

### PROTECTION AND CLEANING

After installation, the General Contractor shall adequately protect exposed portions of aluminum surfaces from damage by grinding and polishing compounds, plaster, limbs, acids, cement, or other contaminants.

The General Contractor shall be responsible for final cleaning.

SERIES	FACE WIDTH	DEPTH	GLAZING INFILL
150	1 ¾	4 ½	¼
450	2	4 ½	1

# CASCADE ALUMINUM, INC.

## ENTRANCE DOOR SPECIFICATIONS

### I. GENERAL DESCRIPTION

**Work Included:** Furnish all necessary materials, labor and equipment for the complete installation of aluminum entrance doors, door frames and related hardware, as shown on the drawings as specified herein specifier note:

**Work Not Included:** Structural support of the framing system, interior closures, trim. (Specifier lists other exclusions).

Related Work Specified elsewhere: (Specifier lists).

### QUALITY ASSURANCE

For purpose of designating type and quality in this section, drawings and specifications are based upon the door series \_\_\_\_\_ system as manufactured by CASCADE ALUMINUM. Whenever substitute products are to be considered, supporting technical literature, samples, drawings and performance data must be submitted ten (10) days prior to bid in order to make a valid comparison of the products involved.

### PERFORMANCE REQUIREMENTS

Cascade Aluminum shall warrant that prior to fabrication of any entrance package, that it will use due diligence to ensure the end users products have the appropriate hardware supplied to ensure the entrance package will function without maintenance issues, and provide years of trouble free operation.

### II. PRODUCTS MATERIALS

Extrusions shall be 6063 alloy with a T-6 temper, with typical .125 walls complying with (ASTM B 221- 04-A, G.S. 10-A=T6).

All fasteners, whether exposed or unexposed shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A 164. Exposed fasteners must match storefront finish selected.

### III. DOOR CONSTRUCTION

Door stiles and rails shall be tubular sections, accurately joined at the corners with heavy concealed reinforcement brackets secured with bolts and screws, with optional mig welding. Each door will have an adjustment mechanism for minor clearance adjustments after installation. Door jambs and header shall be fully weather-stripped. The active meeting stile of a pair to be a double line of mohair.

### FINISH

All exposed framing surfaces shall be free of scratches and other serious blemishes.

Aluminum extrusions shall be given a caustic etch followed by an anodotic oxide treatment to obtain (Specify one of the following).

\_\_\_An Architectural Class I anodic coating conforming to Aluminum Association Standard AA-M12 C22 A44. Specify #130 Black or #125 Dark Bronze or #100 Custom Colored Bronze anodizing.

\_\_\_An #100 clear anodic coating conforming to Aluminum Association Standard AA-M12 C22 A31 or 204.

\_\_\_An 70% fluoropolymer (KYNAR) Resin Complying with AAMA 2605.

\_\_\_An Acrodize hard coat pearlescent 50% fluoropolymer (KYNAR) Resin, with the same ceramic pigmentation as full strength 70% Fluoropolymer, complying with AAMA 2604.

### HARDWARE

All hardware for doors and frames shall be manufacturers standard unless otherwise specified. If custom hardware is to be furnished by others, templates and or physical hardware must be submitted prior to fabrication.

### IV. EXECUTION INSTALLATION

All items under this heading shall be set in correct locations as shown in the details and shall be level, square, plumb and in alignment with other work in accordance with the manufacturer's installation instructions and approved shop drawings. Upon completion of the installation of the entrance, it shall be the responsibility of the glazing contractor to make all final adjustments to attain normal operation of each door and its related hardware.

### PROTECTION AND CLEANING

After installation, the General Contractor shall adequately protect exposed portions of aluminum surfaces from damage by grinding and polishing compounds, plaster, limbs, acids, cement, or other contaminants.

The General Contractor shall be responsible for final cleaning.

	<b>SERIES</b>	<b>FACE WIDTH</b>	<b>DEPTH</b>	<b>GLAZING INFILL</b>
<b>Narrow</b>	<b>200</b>	<b>2</b>	<b>1 ¾</b>	<b>¼" or 1"</b>
<b>Medium</b>	<b>350</b>	<b>3 ½</b>	<b>1 ¾</b>	<b>¼" or 1"</b>
<b>Wide</b>	<b>500</b>	<b>5</b>	<b>1 ¾</b>	<b>¼" or 1"</b>



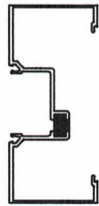
**CASCADe**  
**ALUMINUM**

*The clear choice for aluminum  
fabricated products*

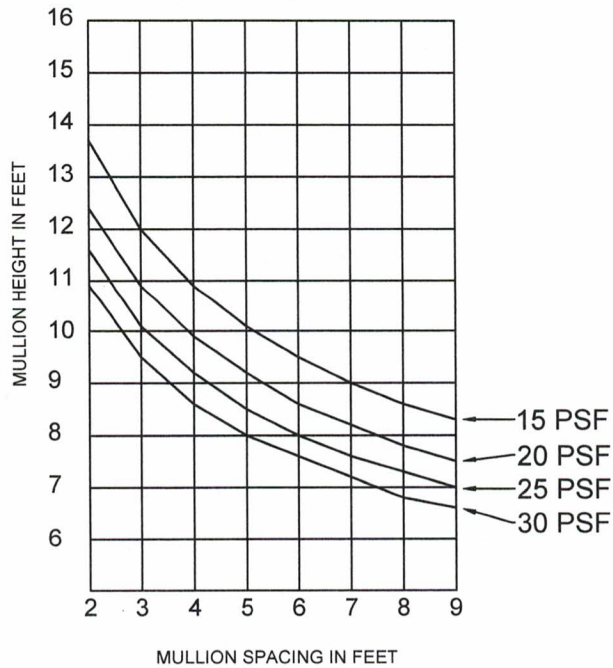
4102 NE 72nd Ave  
Vancouver, WA 98661

## WINDLOAD CHART

## 450 TCS



PART # TV452R  
I = 2.505  
S = 1.09  
MATERIAL: 6063-T6 ALUM  
Fy = 25 ksi  
E = 10,100 ksi



BASED ON A MEMBER DEFLECTION L/175

BUILDING LAWS AND CODES GOVERNING THE DESIGN AND USE OF GLAZED ENTRANCE, STOREFRONTS, AND CURTAIN WALL PRODUCTS VARY WIDELY. IT IS THE RESPONSIBILITY OF THE OWNER, ARCHITECT AND GLAZING CONTRACTOR TO DESIGN A SYSTEM TO MEET ALL APPLICABLE CODES. CASCADe ALUMINUM HAS NO CONTROL OVER THE SELECTION OF THE PRODUCTS, CONFIGURATIONS, OR GLAZING MATERIALS AND ASSUMES NO RESPONSIBILITY THEREOF.



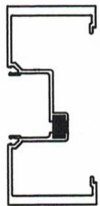
**CASCADE  
ALUMINUM**

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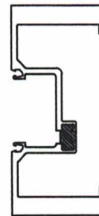
4102 NE 72nd Ave  
Vancouver, WA 98661

# WINDLOAD CHART

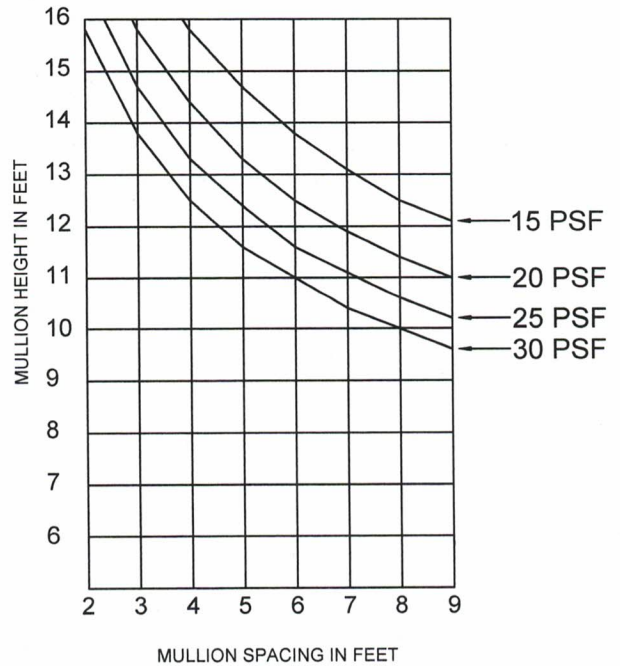
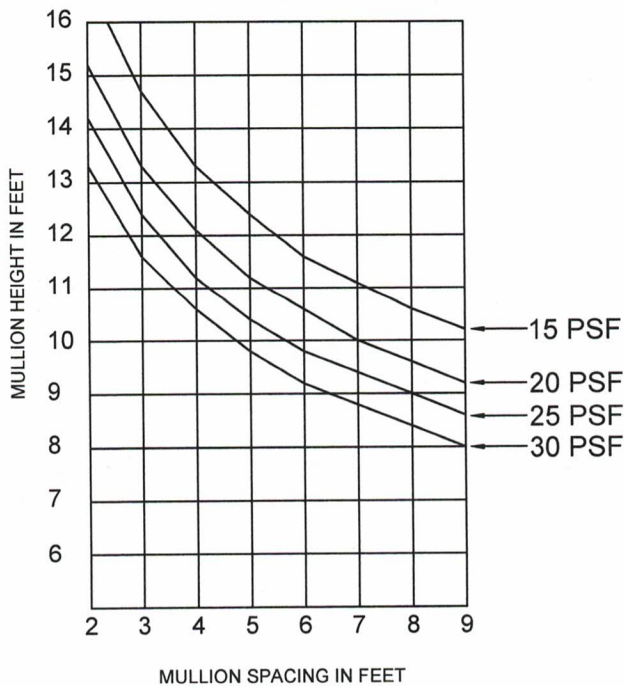
# 450 TCS



PART #TIV452  
I = 4.606  
S = 2.04  
MATERIAL: 6063-T6 ALUM  
Fy = 25 ksi  
E = 10,100 ksi



PART #TH452  
I = 7.6897  
S = 3.41  
MATERIAL: 6063-T6 ALUM  
Fy = 25 ksi  
E = 10,100 ksi



BASED ON A MEMBER DEFLECTION L/175

BUILDING LAWS AND CODES GOVERNING THE DESIGN AND USE OF GLAZED ENTRANCE, STOREFRONTS, AND CURTAIN WALL PRODUCTS VARY WIDELY. IT IS THE RESPONSIBILITY OF THE OWNER, ARCHITECT AND GLAZING CONTRACTOR TO DESIGN A SYSTEM TO MEET ALL APPLICABLE CODES. CASCADE ALUMINUM HAS NO CONTROL OVER THE SELECTION OF THE PRODUCTS, CONFIGURATIONS, OR GLAZING MATERIALS AND ASSUMES NO RESPONSIBILITY THEREOF.



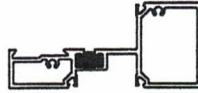
**CASCADE  
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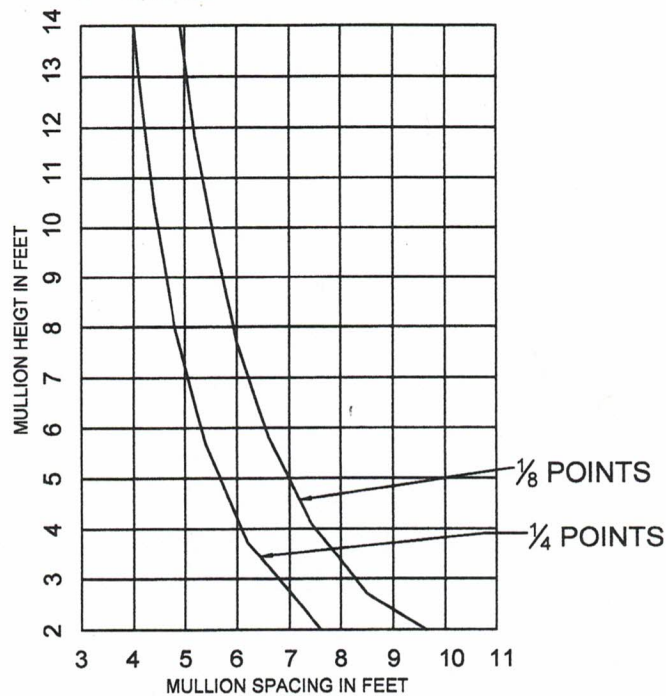
4102 NE 72nd Ave  
Vancouver, WA 98661

## DEAD LOAD CHART

## 450 TCS



PART #TH450  
I = 0.43  
S = 0.37  
MATERIAL: 6063-T6 ALUM  
Fy = 25 ksi  
E = 10,100 ksi



BASED ON A MEMBER DEFLECTION L/360

BUILDING LAWS AND CODES GOVERNING THE DESIGN AND USE OF GLAZED ENTRANCE, STOREFRONTS, AND CURTAIN WALL PRODUCTS VARY WIDELY. IT IS THE RESPONSIBILITY OF THE OWNER, ARCHITECT AND GLAZING CONTRACTOR TO DESIGN A SYSTEM TO MEET ALL APPLICABLE CODES. CASCADE ALUMINUM HAS NO CONTROL OVER THE SELECTION OF THE PRODUCTS, CONFIGURATIONS, OR GLAZING MATERIALS AND ASSUMES NO RESPONSIBILITY THEREOF.

# ***QUALITY TESTING INC.***

3310 Hill Avenue, Everett, WA 98201  
Phone: (425) 259-6799  
FAX: (425) 259-4936  
email: qualtest@premier1.net

## **NFRC SIMULATION REPORT**

# **C2003-352**

**REPORT TO:** Cascade Aluminum, Inc.  
4102 N.E. 72<sup>nd</sup> Ave.  
Vancouver, WA 98661

**U-FACTOR BASELINE SIMULATION NUMBER:** C2003-352  
**U-FACTOR BASELINE SIMULATION DATE:** 10/03/2003  
**U-FACTOR BASELINE REPORT DATE:** 10/03/2003  
**U-FACTOR REVISION DATE:** N/A  
**APPENDIX SIMULATION NUMBER:** N/A  
**APPENDIX SIMULATION DATE:** N/A  
**APPENDIX REVISION DATE:** N/A  
**SHGC REVISION DATE:** N/A

**PRODUCT:** 450, 2 x 4-1/2 Thermally Broken Aluminum Center Set.

REPORT TO: Cascade Aluminum, Inc.  
4102 N.E. 72<sup>nd</sup> Ave.  
Vancouver, WA 98661

REPORT DATE: 10/03/2003

SIMULATION METHOD: NFRC 100, Procedure for Determining  
Fenestration Product U-Factors (2001)  
NFRC 200, Procedure for Determining  
Fenestration Product Solar Heat Gain  
Coefficients at Normal Incidence(2001)  
Including all currently published Technical Interpretations

SIMULATION PROGRAMS: Center of Glass: Windows 5.2.17  
2-D Heat Transfer: THERM 5.2.14

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MODEL/TYPE: Series 450, 2X4-1/2 Thermally Broken Center Sct.

CONFIGURATION: OO

FRAME TYPE AND FINISH: Mill finished thermally broken aluminum extrusions

REINFORCEMENT: NA

IG GLASS PARAMETERS: IG units are 6mm glass/.500" gap/ 6mm glass.

GLAZING METHOD: The glass is slipped into the head and jamb extrusions, then sandwiched between two EPDM wedge gaskets. An aluminum snap bead is then inserted along the sill and then sandwiched between two EPDM gaskets to finish the installation.

GAS FILL METHOD: N/A

GAS FILL CONCENTRATION: Design gas fill = N/A.  
(PROVIDED BY THE MANUFACTURER)

SPACERS: Aluminum dual seal silicone (Type A1-D)  
(MATERIALS AND CONSTRUCTION)

GRILLS (INTERNAL OR TDL): N/A.

GRILLS (PATTERNS): NA

HARDWARE: No continuous hardware.

WEATHERSTRIP: NA

ELECTRONIC DATA: Supporting information including THERM 5.2 and WINDOW 5.2 files are being submitted as part of this report.

ADDITIONAL INFORMATION: The manufacturer is capable of producing, in it's normal manufacturing process, products in sizes identical to the model sizes listed in the NFRC 100 Table 1 and have a least deviation of 0 within the tolerances of NFRC 100. All simulations are performed in the sizes and configurations listed in NFRC table 1 except that a non-standard size may be simulated and identified in the matrix to match the manufacturer's Physical test sample. Glass and Glazing types, Lowe placement, finishes and other required information is included in the NFRC U-Factor Simulation Summary Report and/or the NFRC SHGC/VT Simulation Summary Report included in this document. Additional supporting information and modeling assumptions are included in the individual reports obtained from the approved simulation programs and in the notes following the required summary reports.

#### CONCLUSIONS

Detailed assembly drawings, cross-sectional drawings, and a bill of materials as supplied by the client were used as the basis for performing the simulations. Copies are attached to this report. The results were secured by using the designated methods and NFRC approved simulation programs as required by, and in full compliance with, the NFRC 100 procedure. This report does not constitute certification of this product. The results in this report apply to the sample as shown in the attached drawings, using the components and construction methods described herein. Quality testing does not warrant the accuracy of the computer programs used to obtain the results.

This report is the joint property of Quality Testing and the client to whom it is issued. Permission to reproduce this report by anyone other than Quality Testing and the Client must be granted in writing by both of the above parties. This report may not be reproduced except in it's entirety. Ratings included in this report are for submittal to an NFRC-licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes.



Randal J. Van Voorst  
Simulator In Responsible Charge

### NFRC U-factor Simulation Summary Report

MfrProdCod (30 Characters)	Product Number	Pane ID # [1]	Pane ID # [2]	Pane ID # [3]	Pane Thickness # [1]	Pane Thickness # [2]	Pane Thickness # [3]	Gap 1	Gap 2	Gap Fill 1	Emissivity Surface 2	Emissivity Surface 3	Internal Grids	Spacer	U-factor (2001)	Condensation Resistance
CLEAR/CLEAR	001	103	103		0.236	0.236		0.500		AIR				A1-D	0.52	28
LOF/CLEAR	002	9924	103		0.236	0.236		0.500		AIR	0.157			A1-D	0.41	29
CIG 17Z/CLEAR	003	2014	103		0.236	0.236		0.500		AIR	0.042			A1-D	0.38	29

NOTES:

- 1) U-Factor simulations use the emissivity from the NFRC spectral library file # 13.0
- 2) The following Simplifications to a Product Lines per NFRC 100 were applied:
  - A) For U-Factor purposes, all glazing options which vary only in glazing tint or obscenity are assumed to have the same U-Factor as glazing options without such tints or obscenity and are not simulated, PROVIDED that such options are not associated with a change in coating properties.
  - 3) All glass thicknesses indicated are nominal values.

*RIV*

"U" VALUE of

LOWE. ESTIMATED

of .35  
WITH S Bld  
LOWE "E"



# AIR + Water infiltration Test Results. Tested @ 8.0# PSF

Vancouver Extrusion Company, Inc., 5509 NW Lower River Road, Vancouver, Wa. 98660

## TESTED FOR:

Cascade Aluminum, Inc.  
4102 NE 72nd Ave.  
Vancouver, Wa. 98661

### 1.0 PURPOSE:

The purpose of this report is to present the testing methods employed and test results obtained during the performance testing of one (1) Aluminum Storefront System described in paragraph 4.0 of this report.

### 2.0 TEST REFERENCES:

- 2.1 ASTM E 330-90
- 2.2 ASTM E 331-86
- 2.3 ASTM E 283-91

### 3.0 SUMMARY:

The test loads were specified by the manufacturer, typical for this type of system, and under those loads the test results in paragraph 5.0 indicate that the test sample described in paragraph 4.0 of this report complied with the performance requirements using the above referenced test methods.

### 4.0 SAMPLE SUBMITTED:

SERIES: 2" X 4 1/2" Center Glaze System

CONFIGURATION: Two bay system with an intermediate horizontal per bay.

FRAME SIZE: 95.75" X 95.62"

DAYLIGHT OPENING  
OF TOP LITES: 44.87" X 58.00"

DAYLIGHT OPENING  
OF BOTTOM LITES: 44.87" X 31.75"

GLASS TYPE: All of the lites consisted of one (1) inch overall insulated glass with 3/16" clear annealed on both sides.

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DATE :	JUNE 30, 1992
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**GLAZING:**

All of the lites were sandwiched between pull - in vinyl gasket on the inside and roll-in vinyl gasket on the inside and roll - in vinyl gasket on the outside.

**WEEPAGE:**

The sill - can contained two (2) 1/4" x 5/8" weep slots as follows:

- a) .One six (6") from each end.

**GLASS BLOCKS:**

Each lite rested on two epdm setting blocks that were set at quarter points. The blocks measured 4.0" long x .625" high x 1.125" deep.

**CAULKING:**

- a) All of the exposed exterior and interior metal to metal joints, where horizontals met verticals, were sealed with silicone full profile.
- b) The aluminum clips at each end of intermediate horizontals were not sealed.
- c) The end verticals at the bottom end were sealed with polyurethane to the sill - can full profile and up the inside and outside legs of the sill - can.
- d) Anchor screws along the sill were sealed with silicone.
- e) The outside frame perimeter was sealed to the 2" x 8" wooden frame with a heavy bead of silicone.

**CONSTRUCTION:**

The sill and head were each anchored to the 2" x 8" wood rough opening with four (4) #10 x 1" PPH screws. The screws were located as follows:

- a) One six inches (6") from each end.
- b) One four inches (4") on each side of the center vertical.

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## CONSTRUCTION:

The intermediate horizontal clips were each fastened to their respective vertical with (3) #10 x 1 1/2" PPH screws.

### 5.0 TEST PROCEDURES AND RESULTS

5.1 All testing procedures were performed in accordance with the performance requirements of the test specifications referenced in paragraph 2.0 of this report.

5.2	<u>TEST RESULTS PARAGRAPH</u>	<u>TEST DESCRIPTION</u>	<u>MEASURED</u>	<u>ALLOWED</u>
	2.1.2	Air infiltration (ASTM E 283-91) 6.24 PSF	0.034 CFM/SIFT	.06 cfm/SqFt
	2.1.2	Water Penetration (ASTM E 331-86) 8.0 PSF	No Leakage	Controlled leakage
	2.1.2	Uniform Load Structural (ASTM E 330-90) 30 PSF POS	.380"	.55"

#### NOTE:

Deflections (defl.) were taken on the center vertical at three locations as follows:

- a) One at each end
- b) One at the midspan

At the conclusion of the Uniform Load Structural test the system remained in tact and no defects were noted.

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This report is the exclusive property of the client so named herein and is applicable to the specimen tested. Results obtained are tested values and do not constitute an opinion or an endorsement by this laboratory.

A copy of this report along with sections of the specimen tested will be retained by this laboratory for a period of four years.

Testing Completed: June 6, 1992  
Report Completed: June 17, 1992



PETE CRANSUL  
TEST ENGINEER

REPORT NO.:	HB94-083
DATE	: JUNE 30, 1992
PAGE	: 4 OF 4

# CASCADE ALUMINUM, INC.

## STANDARD CENTER GLAZING SYSTEMS SERIES 150 OR 450 FLUSH GLAZING SYSTEM

### I. GENERAL DESCRIPTION

Work Included: Furnish all necessary materials, labor and equipment for the complete installation of aluminum framing as shown on the drawings as specified herein specifier note: It is suggested that related items such as, aluminum entrance doors, glass and sealant be included whenever possible.

Work Not Included: Structural support of the framing system, interior closures, trim. (Specifier lists other exclusions).

Related Work Specified elsewhere: (Specifier lists).

### QUALITY ASSURANCE

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### PERFORMANCE REQUIREMENTS

Structural Performance-Deflection shall be tested in accordance with ASTM E 330. Maximum deflection of a member shall not exceed 1/175 of its span, and when the load is removed there shall be no evidence of permanent deformation or damage when tested under a load of (Specify) P.S.F.

### II. PRODUCTS MATERIALS

Extrusions shall be 6063 alloy with a T-6 temper, complying with (ASTM B 221- 04-A, G.S. 10-A=T6).

All fasteners, whether exposed or unexposed shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A 164. Exposed fasteners must match storefront finish selected.

An asphaltic bituminous coating shall be applied to insure isolation of dissimilar metals, if steel stiffeners are required. All glazing gaskets shall be EPDM elastomeric with fiberglass reinforcement cord to prevent stretching. All perimeter anchoring shall be structurally engineered prior to installation.

### FINISH

All exposed framing surfaces shall be free of scratches and other serious blemishes.

Aluminum extrusions shall be given a caustic etch followed by an anodotic oxide treatment to obtain (Specify one of the following).

\_\_\_An Architectural Class I anodotic coating conforming to Aluminum Association Standard AA-M12 C22 A44. Specify #130 Black or #125 Dark Bronze, or #100 Custom Colored Bronze anodizing.

\_\_\_An #100 clear anodotic coating conforming to Aluminum Association Standard AA-M12 C22 A31 or 204.

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\_\_\_An Acrodize hard coat pearlescent 50% fluoropolymer (KYNAR) Resin, with the same ceramic pigmentation as full strength 70% Fluoropolymer, complying with AAMA 2604.

### FABRICATION

The framing system shall provide for flush glazing on all sides with no projecting stops. Vertical and horizontal members shall have a nominal face dimension of (Specify). The overall depth shall be 4 ½ entrance framing members shall be compatible with the glass framing in appearance. An aluminum sub-sill or sill can shall be continuous at the sill section and shall provide integral pressure relief.

### III. EXECUTION INSTALLATION

Glass framing shall be set in correct locations as shown in the details and shall be level, square, plumb and in alignment with other work in accordance with the manufacturer's installation instructions and approved shop drawings. All joints between framing and the building structure shall be sealed to secure a watertight installation.

### PROTECTION AND CLEANING

After installation, the General Contractor shall adequately protect exposed portions of aluminum surfaces from damage by grinding and polishing compounds, plaster, limbs, acids, cement, or other contaminants. The General Contractor shall be responsible for final cleaning.

SERIES	FACE WIDTH	DEPTH	GLAZING INFILL
150	1 ¾	4 ½	¼
450	2	4 ½	1