

1038/1090 Specifications

A. UNIT FEATURES

1038:

1. Pivot brackets to be fabricated from extruded aluminum and finished to match unit. Pivot mechanism to include gravity closure to return door to closed position.
2. Pivot jamb to include 1/4" tempered glass with beveled edge.
3. 1038 pivot doors shall have a lateral adjustment of plus or minus 7/8" on the pivot side.
4. Units shall include an optional adjustable strike jamb that provides an additional plus 3/8" adjustment. This strike jamb is .437" taller than the standard strike jamb, thus providing an additional width of 13/16".
5. Curb design allows attachment to base with double-sided foam tape (supplied), sealant, or adhesive.

1090:

1. Side panels (1091), return panels (1092), neo angle units (1094), and custom configurations available with Alumax StikStall applications. (See separate StikStall specifications)
2. 1090 units shall have a full length vinyl latch and strike seal. Pivot shall contain two piece nylon bushings.

1038/1090:

1. All doors to be glazed with 3/8" tempered glass with polished edges.
2. Handle hardware to be formed acrylic handle with attachment hardware of machined aluminum finished to match unit. Hardware to mount thru holes fabricated in glass to show no exposed fasteners. **Handle is not to be used as a Grab Bar.**
3. Pivot mechanism to be mounted in notch which is fabricated into glass prior to tempering. Pivot must be mounted into notched glass. Pivots attached only with sealant, adhesives, or held with friction alone are not permitted.
4. Detailed instruction sheets and cross sections with custom unit fabrication formulas.
5. 24 hour product information and support via the **Alumax Bath Enclosures Website** (www.alumag.com).

B. UNIT VALIDITY

1. Wet test: All joints, seams, and seals are tested and evaluated for leaks in a wet test module.
2. Mechanical test: Moving parts or components subject to wear are cycle tested to simulate 20 years of use.
3. Artificial aging: Plastic components are selectively tested by artificial aging. This process subjects the parts to ultraviolet light, heat, and humidity to test the resistance of the material to these conditions.
4. Quality: Alumax Bath Enclosures are produced in accordance with procedures specified by ISO 9000.

C. MATERIALS AND CONSTRUCTION

1. Size Limitations: 1038/1090 units *shall not* exceed 15 1/4 square feet or 2196 square inches of glass maximum in door panel. This restriction provides for the following maximum unit sizes:

Maximum allowable width of unit = 32" (@ 76" tall)

Maximum allowable height of unit = 84" (@ 27" wide)

Door glass is not to exceed 3/8" nominal thickness.

Door glass notches for top and bottom rails to be as supplied by Alumax or per Alumax specifications, not to be altered in any way.

2. INSTALLATION NOTE: Pivot jamb should be firmly attached to the wall with #8 x 2" screws provided with the unit. Jamb should be firmly supported with wood framing behind tile or wall board. No plastic wall anchors are to be used on the pivot jamb side of 1038 units.

Bottom gravity pivot bushing (1038) is not to be altered in any way. This part must be seated fully into the bottom bracket or curb. Use no shims or other devices to raise the door height by raising the bushing.

3. Alloy and Temper: Extruded aluminum shall be 6463-T6 alloy per ASTM B 221. This alloy is designed to accept a bright finish after anodizing. Used for decorative trim applications, machineable, polished, and anodized - also heat treatable.

MECHANICAL PROPERTIES OF 6463-T6 (b)					
Thickness in inches (b)	Tensile Strength - ksi				Elongation percent min. in 2 in. or 4D
	Ultimate		Yield		
	min.	max.	min.	max.	
Up thru 0.124	30	..	25.0	..	8
0.125 - 1.000	30	..	25.0	..	10

- a. Hardness of 6463-T6 on Rockwell B scale: 20-50.

- b. T6 temper designates a material that is thermally treated to produce stable tempers then solution heat treated and artificially aged. For complete temper designation consult technical publications ANSI 35.1 or the Aluminum Association publication, Aluminum Standards and Data.
 - c. The thickness of the cross-section from which the tension test specimen is taken determines the applicable mechanical properties. The data base and criteria upon which these mechanical property limits are established are outlined in the Aluminum Association publication Aluminum Standards and Data (ASD) Section 6, "Mechanical Properties".
4. Metal Gauge: The nominal wall thickness of individual aluminum extruded components for this unit varies with structural needs.

Component	Description	Nominal Wall Thickness
SC-605	Pivot Jamb	.125"/.062"
SC-606	Strike Jamb	.062"
SC-608	Adjustable Strike (male)	.062"
SC-609	Adjustable Strike (female)	.062"
SC-607	Curb	.062"
66229	Pivot Bracket	.468"/.312"
66131	Top & Bottom Rail	.090"/.114"

5. Tolerances: Tolerances on all aluminum extruded components shall comply with Aluminum Association requirements unless otherwise specified.
6. Hardware: All hardware parts that are incorporated in the product shall be of aluminum, stainless steel, or other corrosion resistant material(s) compatible with aluminum. Cadmium or zinc-plated parts, where used, shall be in compliance with ASTM A 164-71 or 165-74. Nickel or chrome-plated parts, where used, shall be in compliance with ASTM B 456.71, SC2. Stainless material should have a preference of a 310 alloy with a 410 alternative.

For detailed technical information about stainless steel download the following files from the Alumax Bath Enclosures website at www.alumag.com:

STAINLES.ZIP, S_STEEL.ZIP

- a. Fasteners to follow International Fasteners Institute standard B18.6.3 for Slotted and Recessed Head Machine Screws and Metallic Drive Screws or B18.6.4 for Slotted and Recessed Head Tapping Screws and Metallic Drive Screws.
- b. Pivot Block – cast metal Alloy VN5-Z33522 (also Alloy #7) ASTM-A-640A or equivalent.
- c. Pivot Pin – Stainless Steel ASTM A276 TY 302 Passivated.

**d. DOUBLE STICK CURB ATTACHMENT TAPE
Mechanical Properties**

ADHESIVE

Shelf Life	2 years (stored at 75 deg. F and 50% relative humidity out of direct sunlight in closed package)
Application Temp. Range	65 deg. F – 120 deg. F
General Service Temp. range	0 deg. F – 150 deg. F
Static Shear	15 lbs/in sq.
180 Peel Adhesion	128 ounces/inch width
Tensile	50 lbs/in sq.
Shear Adhesion (1000g/in sq.)	No creep @ 500+ hours

FOAM BASE

Foam Density	6#
Water Absorption per ASTM D-1667	0.04 (lbs/ft sq.)
Elongation per ASTM D-1564	323-395 (% to break)
Strength per ASTM D-1564	180-220 (lbs/in sq.)

e. INJECTION MOLDED NYLON COMPONENTS

(1038 Top Pivot Bushing, Male Gravity Pivot Bushing, Adjustable Jamb Block, 1090 Pivot Bushings)

Mechanical Properties of Base Material

Property	ASTM Method	Units	
Specific Gravity	D792	---	(D) 1.39
Water absorption 24 hr. immersion	D570	%	(D) .005 - .006
Tensile Strength at yield	D638	psi	(D) 26,000
Flexural Strength at yield	D790	psi	(D) 36,000
Izod Impact ¼" Notched	D256	ft lb/in	(D) 1.7 (C) 2.3
Deflection Temp. under load at 264 psi	D648	Deg. F.	480
Coefficient of Linear Thermal Expansion	D696	In/in/F	1.8

D - Tested in dry, as molded condition

C – Conditioned to 50% relative humidity

**f. INJECTION MOLDED NYLON COMPONENTS
(Adjustable Jamb Screw)
Mechanical Properties of Base Material**

Property	ASTM Method	Units	
Specific Gravity	D792	---	(D) 1.14
Water absorption 24 hr. immersion	D570	%	(D) 1.2
Tensile Strength at yield	D638	psi	(D) 12,500
Flexural Strength at yield	D790	psi	(D) 15,000
Izod Impact ¼" Notched	D256	ft lb/in	(D) 1.1 (C) 4.7
Deflection Temp. under load at 264 psi	D648	Deg. F.	212
D - Tested in dry, as molded condition C – Conditioned to 50% relative humidity			

**g. GRAVITY PIVOT BUSHING (1038)
Mechanical Properties of Base Material**

Property	ASTM Method	Units	
Specific Gravity	D792	---	1.42
Water absorption 24 hr. immersion	D570	%	0.40
Tensile Strength at yield	D638	psi	9,900
Flexural Strength at yield	D790	psi	450,000
Izod Impact ¼" Notched	D256	ft lb/in	1.40
Coefficient of Friction		---	0.30
Shear Strength		psi	9,000
Hardness		C	Rockwell R Scale 120

h. ACRYLIC HANDLE			
Mechanical Properties of Base Material			
Property	ASTM Method	Units	
Specific Gravity	D792	---	1.17 – 1.20
Water Absorption @24 hrs. 1/8" Thick	D750	%	0.03 – 0.4
Tensile Strength	D638 & D651	psi	8,000 – 11,000
Flexural Strength	D790	psi	12,000 – 17,000
Izod Impact Notched 1/2" x 1/2" bar	D256	ft. lb/in	0.4 – 0.5
Hardness	D785	Rockwell	M80 – M100
Effect of Sunlight	---	Very Slight	
Effect of Organic Solvents	D543	Soluble in ketones, esters, and aromatic chlorinated hydrocarbons. Resistant to alcohol at room temp.	
Effect of Weak Acids	D543	Practically nil	
Effect of Strong Acids	D543	Attacked only by oxidizing acids and H ₂ SO ₄	
Effect of Weak Alkalines	D543	Practically nil	
Effect of Strong Alkalines	D543	Attacked	

7. Glazing Vinyls: Vinyls and other glazing seal materials shall be of material compatible with aluminum, be resistant to water and common household chemicals and shall create a water-tight seal between the glass and its surrounding frame.

a. MECHANICAL PROPERTIES OF 1038/1090 GLAZING VINYL	
Plasticized, filled with Shore A	
Durometer Hardness of 70	
Tensile Break Strength	1130 psi
Ultimate Elongation	350%
Specific Gravity 23/23 C	1.42
Shore "A" Hardness Initial @ 10 sec.	79 75
Brittleness Point, F 50% Failure @	-33

b. MECHANICAL PROPERTIES OF 1038/1090 DUAL DUROMETER VERTICAL SEAL (Flexible Component) Plasticized, filled with Shore A Durometer Hardness of 65	
Tensile Break Strength	1100 psi
Ultimate Elongation	360%
Specific Gravity 23/23 C	1.39
Shore "A" Hardness Initial @ 10 sec.	65 61
Brittleness Point, F 50% Failure @	-33

c. MECHANICAL PROP. OF 1038/1090 DUAL DUROMETER WATER DEFLECTOR (Flexible Component) Plasticized, filled with Shore A Durometer Hardness of 70	
Tensile Break Strength	1130 psi
Ultimate Elongation	360%
Specific Gravity 23/23 C	1.42
Shore "A" Hardness Initial @ 10 sec.	79 75
Brittleness Point, F 50% Failure @	-33

d. 1038/1090 DUAL DUROMETER GLAZING VINYLs AND SEALS Mechanical Properties of Rigid Component			
Property	ASTM Method	Units	
Specific Gravity	D792	---	1.34
Hardness Durometer D	D2240	---	85
Rockwell R	D785	---	107
Tensile Strength	D638	psi	6,350
Flexural Strength	D790	psi	12,400
Izod Impact, 1/8" Notched	D256	ft lb/in	15
Optical Clarity – Transmittance	D1003	%	74
Haze (.65 mil)		%	5

All data obtained at 73 deg. F from injection molded
Test specimens prepared per ASTM D647 and D1897

- Glazing Materials: All glazing materials to be safety tempered glass with a nominal thickness of .375" for door panels and .250" for the pivot jamb or other safety glazing materials to conform to Federal Standard CPSC 16 CFR 1201 Category 1 and 2, Safety Standard for Architectural Glazing Materials. Dimensional tolerances shall conform to ASTM C 1036-85 and ASTM C 1048-85.

Glass jamb to be wet glazed into pivot brackets and wall jamb.

For detailed information concerning the mechanical properties of tempered glass download the following files from the Alumax Bath Enclosures website at www.alumag.com:

TECHGLAS.ZIP, GLASPROP.ZIP

9. Finish Specifications (Anodized): The finish on anodized aluminum components shall conform to the following Aluminum Association Specifications:

- a. Silver: AA-M21-C31-A21 for buffed, clear, bright anodized aluminum.
- b. Gold: AA-M21-C31-A23 for buffed, colored, bright anodized aluminum.

Anodized aluminum components are tested or inspected for thickness of anodic coating (.00015" min.\.00030" max.), color range variation, and integrity of the anodic seal.

NOTE: The finished surface of anodized aluminum parts can be damaged by harsh cleansers. In particular, glass cleaners or other cleaning products with a PH of less than 7 or more than 9 can damage the anodized finish with prolonged exposure.

10. Finish Specifications (Painted)

Painted components shall conform to AAMA 603.8, Voluntary Performance Requirements and Test Procedures For Pigmented Organic Coatings On Extruded Aluminum.

- a. White powder coating shall conform to Aluminum Association standard AA-M10-C40-R1X.

Material used is polyurethane powder coating.

TYPICAL PROPERTIES OF 1038/1090 POWDER COATING		
Property	ASTM Method	
Specific Gravity, PCI #4	---	1.2 – 1.9
Gloss	D523	5 – 95+
Pencil Hardness	---	H – 2H
Impact	D2794	To 160 Inch lbs
Mandrel Bend	D522	1/8 Inch
Cross Hatch Adhesion	D5339	Excellent
MFK resistance, PCI #8	---	50 Double Rubs
Abrasion resistance	D1044	Good
Salt Spray	D8117	500 Hrs. Min
Film Thickness	D1186	1.0 – 4.0 Mils