



# 890 Specifications

## A. UNIT FEATURES

1. Pivot jambs to have a continuous vinyl seal.
2. Pull handles shall be of extruded aluminum finished to match the unit.
3. All doors to have continuous drip rail and vinyl wiper blade at bottom of door panel. Drip rail will be sloped to drain water to the interior of the door when opened. Installation of the drip rail is by double-sided foam tape. Mechanical fasteners are permitted.
4. Vinyl drip wiper is fully adjustable for precise fit to curb.
5. Top pivot pin to have safety washer to prevent accidental dislodging of the door.
6. Latch to be permanently mounted magnetic strips.
7. All units to have continuous curb with weep slots to drain any infiltrated water to the interior of the unit.
8. Optional towel bar kits available.
9. Side panels (891, 895), return panels (892), neo angle units (894), and custom configurations available with Alumax StikStall applications. (See separate StikStall specifications).
10. Detailed instruction sheets and cross sections with custom unit fabrication formulas.
11. 24 hour product information and support via the **Alumax Bath Enclosures Website** ([www.alumaxbath.com](http://www.alumaxbath.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 is assured by various in house verification procedures.

## **C. MATERIALS AND CONSTRUCTION**

1. Size Limitations:

Maximum allowable width of unit = 34" (@ 80" tall)

Maximum allowable height of unit = 84" (@ 30" wide)

2. 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.

<b>MECHANICAL PROPERTIES OF 6463-T6 (b)</b>					
<b>Thickness in inches</b>	<b>Tensile Strength - ksi</b>				<b>Elongation percent</b>
	<b>Ultimate</b>		<b>Yield</b>		
(b)	<b>min.</b>	<b>max.</b>	<b>min.</b>	<b>max.</b>	<b>min. in 2 in. or 4D</b>
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".
3. Metal Gauge: The nominal wall thickness of individual aluminum extruded components for this unit varies with structural needs.

<b>Component</b>	<b>Description</b>	<b>Nominal Wall Thickness</b>
SC-505	Header	.062" - .094"
SC-505A	Curb	.062" - .094"
SC-508	Wall Jamb	.062"
SC-552	Pivot and Strike Jambs	.062"
SC-513	90° Post	.062"
SC-512	135° Post	.062"
SC-506	Curb Fill	.062" - .093"
SC-899	Panel Top & Bottom Rail	.062"
SC-549	Panel Strike Rail	.062"
SC-900	Panel Pivot Rail	.062"
SC-589	Drip Rail	.062"

4. Tolerances: Tolerances on all aluminum extruded components shall comply with Aluminum Association requirements unless otherwise specified.

5. 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.

- 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.

<b>d. MECHANICAL PROPERTIES OF 890 DUAL DUROMETER VERTICAL SEAL (Flexible Component) &amp; DRIP VINYL Plasticized, filled with Shore A Durometer Hardness of 65</b>	
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

**e. 890 DUAL DUROMETER 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 Haze (.65 mil)	D1003	%	74
		%	5

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

**f. DOUBLE STICK DRIP RAIL 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.)

<b>g. DRIP PLUG Mechanical Properties of Base Material</b>			
<b>Property</b>	<b>ASTM Method</b>	<b>Units</b>	
Specific Gravity	D792	---	1.36
Hardness	D785	R scale	121
Tensile Strength at yield	D638	psi	23,000
Flexural Strength at yield	D790	psi	34,000
Izod Impact at 73° F, Notched	D256	ft lb/in	1.40
Water absorption 24 hr immersion	D570	%	1.1

6. 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.

<b>a. MECHANICAL PROPERTIES OF 890 GLAZING VINYL Plasticized, filled with Shore A Durometer Hardness of 60</b>	
Tensile Break Strength	920 psi
Ultimate Elongation	600%
Specific Gravity 23/23 C	1.28
Shore "A" Hardness Initial @ 10 sec.	61 58
Brittleness Point, F 50% Failure @	-6

7. Glazing Materials: All glazing materials to be safety tempered glass with a nominal thickness of .156"/.188" on obscure or clear panels, 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.
8. Finish Specifications (Anodized): The finish on anodized aluminum components shall conform to the following Aluminum Association Specifications:
- Silver: AA-M21-C31-A21 for buffed, clear, bright anodized aluminum.
  - Gold: AA-M21-C31-A23 for buffed, colored, bright anodized aluminum.
  - Brushed Nickel: AA-M35-C31-A23 for brushed, colored, bright anodized aluminum.
  - Satin: AA-M10-C22-A21 for etched, clear, 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.

9. 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. Powder coating shall conform to Aluminum Association standard AA-M10-C40-R1X.

Material used is polyurethane powder coating.

<b>TYPICAL PROPERTIES OF 890 POWDER COATING</b>		
<b>Property</b>	<b>ASTM Method</b>	
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