ALUMAX
BATH ENCLOSURES
a product of Alcoa

640/650 Specifications

Carlson's Glass & Mirror | Phone: 732.223.8050 | www.CarlsonsGlass.com

A. UNIT FEATURES

1. Fully adjustable, sealed, heavy duty ball bearing rollers. Up and down adjustment of panels is plus or minus .156".
2. Safety tee-lock wall jamb to header connection.
3. Easy clean, self-draining tub track.
4. Molded nylon panel guide of sufficient height to prevent the accidental dislodging of interior panel.
5. Molded jamb bumpers with concealed fasteners.
6. (Optional) anti-jump header insert.
7. Interior and exterior towel bars with molded clear polypropionate towel bar brackets and anti-reverse finger pulls. **Towel bars are not to be used as grab bars.**
8. Reversible header design.
9. Available in tub (640) and shower height (650).
10. Side panel (641), return panel (642), and side neo-angle (644) kits available.
11. Detailed instruction sheets and cross sections with custom unit fabrication formulas.

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 = 72" (@ 72" tall)

   Maximum allowable height of unit = 84" (@ 60" wide)

   Deflection of header on maximum sized unit with 5/32" glass = .093".

   Deflection of header on maximum sized unit with 3/16" glass = .110".

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.

MECHANICAL PROPERTIES OF 6463-T6 (b)					
Thickness in inches	**Tensile Strength - ksi**				**Elongation percent**
(b)	**Ultimate**		**Yield**		**min. in 2 in.**
	min.	**max.**	**min.**	**max.**	**or 4D**
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.

Component	**Description**	**Nominal Wall Thickness**
SC-896	Wall Jamb	.050"
SC-850	Wall Jamb Fill	.050"
SC-884	Panel Side Rails	.050" - .062"
SC-882	Panel Top Rail	.050" - .062"
SC-883	Panel Bottom Rail	.050" - .062"
SC-881	Header	.078"
SC-556	Tub Track	.062" - .125"
SC-907	Tub Track Fill	.062
SC-850	Wall Fill	.050"
SC-805	Towel Bar	.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. Roller Bearings: Maximum load (2 bearings) – 60 lb., Estimated life of bearing 75,000 cycles minimum.

c. TOWEL BAR BRACKET Mechanical Properties of Base Material			
Property	**ASTM Method**	**Units**	
Specific Gravity	D792	---	1.20
Rockwell Hardness	D785	R scale	75
Tensile Strength at yield	D638	psi	3,000
Flexural Strength at yield	D790	psi	4,400
Izod Impact at 73° F, Notched	D256	ft lb/in	8.3
Deformation under load at 1000 psi	D621	%	2
Water absorption 24 hr immersion	D570	%	1.9

d. PANEL GUIDE Mechanical Properties of Base Material			
Property	**ASTM Method**	**Units**	
Tensile Strength	D638	psi	16,500
Elongation @ break	D638	%	15
Elongation @ yield	D638	psi	4
Flexural Modulus at 73° F	D790	psi	470,000
Izod Impact at 73° F, Notched	D256	ft lb/in	1
Deformation under load at 2000 psi	D621	%	1.4

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.

a. MECHANICAL PROPERTIES OF 640/650 GLAZING VINYL Plasticized, filled with Shore A Durometer Hardness of 60	
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 framed 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:

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

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

   c. Brushed Nickel: AA-M35-C31-A23 for brushed, colored, bright anodized aluminum.

   d. 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.

TYPICAL PROPERTIES OF 640/650 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