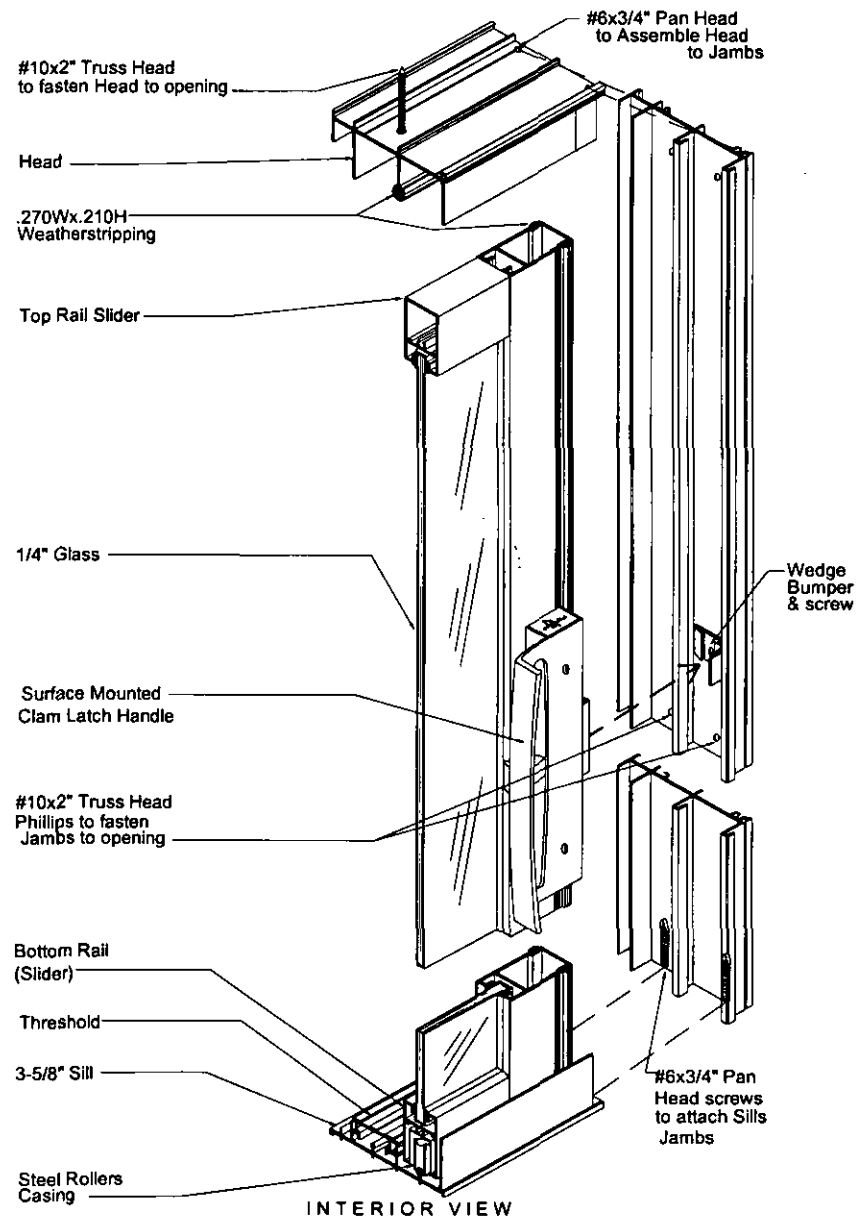


TYPICAL 4000 SERIES "OX"
INSIDE SLIDER - 3 5/8" FRAME

All details subject to change



Product Standards and Guide Specifications

SECTION 08160 SLIDING METAL DOORS

Part 1 – General

1.01 Summary

- A. Section includes:
 - 1. Sliding Metal Doors
- B. Related Sections:

1.02 References

- A. American Architectural Manufacturers Association (AAMA)
- B. American Society for Testing and Materials (ASTM)
- C. Aluminum Association (AA)
- D. National Wood Window & Door Association (NWWDA)

1.03 System Description

- A. General: In addition to requirements shown or specified, comply with:
 - 1. Applicable provisions of AAMA Windows and Sliding Glass Doors Manual for design, materials, fabrication and installation of component parts.
- B. Design Requirements: Arcadia ARC-4000 Series SGD-C35 (nonthermal) Commercial Sliding Doors 3-5/8-inch depth.
- C. Performance Requirements: Each assembly shall be tested by a recognized testing laboratory or agency in accordance with specified test methods.
 - 1. Conformance to C-35 specifications in AAMA/NWWDA 101/I.S. 2-97.
 - a. Air Infiltration: Accordance with ASTM E 283.
 - b. Water Resistance: Accordance with ASTM E 331.

1.04 Quality Assurance

- A. Single Source Responsibility:
 - 1. Obtain entrances, storefronts, ribbon walls, window walls, curtain walls, window systems, and finish through one source from a single manufacturer.
- B. Provide test reports from AAMA accredited laboratories certifying the performances as specified in 1.03.

1.05 Warranty

- A. Warranted against failure and/or deterioration of metals due to manufacturing process for a period of two (2) years.

Part 2 – Products

2.01 Manufacturers

- A. Acceptable Manufacturers:
 - 1. Arcadia Architectural Products, Inc., 60 Bonner Street, Stamford, CT. 203-316-8000, fax 203-316-8200.
- B. Acceptable Products:
 - 1. Arcadia ARC-4000 Series (nonthermal) Commercial Sliding Doors, 3-5/8" depth.

2.02 Materials

- A. All doors shall be fabricated from aluminum extrusions of 6063-75 alloy and shall be free of defects which impair strength and appearance.
- B. The sill shall contain a full-length nylon track cap.
- C. Sliding panels shall be equipped with two adjustable steel tandem rollers (stainless steel tandem rollers optional) incorporating factory lubricated sealed radial ball bearings and shall be adjustable without removing panel from frame.
- D. Glazing channel shall be flexible black polyvinyl chloride material per standard CS-230-60 and shall be available 5/8" insulating glass units, 3/16" and 1/4" single glazing.
- E. Screens made of extruded aluminum frame and screened with 18 x 14 fiber mesh.

2.03 Finish

- A. Finish all exposed areas of aluminum and components as indicated.
 - 1. Clear Anodized Class II (204 R1-0.4-0.7 mils thick) meeting AAMA 607.1.
- (or) 1. Dark Bronze Anodized Class 1 (0.7 mils thick) meeting AAMA 608.1.
- (or) 1. Standard finish is White PPG UC-71533 – baked-on enamel – polycron – AAMA 603.98
- (or) 1. Standard finish is Quaker Bronze PPG UC-72867 – baked-on enamel – polycron – AAMA 603.98.
- (or) 1. Custom colors in a baked-on enamel or Duranar finish are also available – AAMA 604.98 and AAMA 605.98.

2.04 Fabrication

- A. The frame shall provide self-aligning rigid joint assembly using screws and must be back caulked to insure a weather-resistant seal.
- B. The profile of the fixed jamb shall include a pocket to receive and conceal the fixed stile producing a flush sight line. The profiles of the latching jamb shall include a recess to receive the lock stile.
- C. Panel members shall be of the mortise type to provide strong interlocking, mechanically fastened, hairline joints.
- D. Sliding panels shall be located on the exterior or interior and both sliding and fixed panels shall be removable for re-glazing and maintenance.
- E. The sliding panel when in a locked position shall not be removable from the outside.
- F. The fixed panel shall be held in position at both the top, middle and bottom by specially designed angular clips (referred to as fixed panel retaining clips) which are fastened to the fixed jamb, as well as retained by a head clip which is fastened to the top of the fixed interlocker and fastened to the head of the frame and by the sill cover threshold.
- G. The interlockers and locking stiles shall be heavy gauge tubular sections assuring precise alignment and to resist twisting under load conditions.
- H. Sill members shall provide a continuous water barrier without any notching and shall incorporate a pressure equalization area.

Part 3 – Execution

3.01 Examinations

- A. Examine conditions and verify substrate conditions are acceptable for product installation.

3.02 Installation

- A. Install in accordance with approved shop drawings and manufacturers installation instructions.

3.03 Field Quality Control

- A. Contractor's responsibility to make all necessary final adjustments to attain normal operation of each window and its mechanical hardware.

END OF SECTION

Forms+Surfaces Metal Stile & Rail Doors combine visual sophistication with extraordinary design flexibility. System elements can be specified in virtually limitless combinations of materials, finishes and three-dimensional patterns to create exquisite custom-looking doors.

DOOR SPECIFICATIONS

How the System Works

Metal Stile & Rail Doors are defined by three basic parameters:

1. **Stile & Rail Configuration** – Choose single, double or triple insets.
2. **Metal Facing for Stiles & Rails** – Choose any of the Architectural Metal options listed below.
3. **Inset Material** – Choose any of the Architectural Metal, Bonded Metal® or Patterned Glass options listed below.

Material Options

ARCHITECTURAL METALS (available for stiles & rails and insets)

Any flat Architectural Metal can be specified for stiles & rails and insets. Insets can also be additionally enhanced with a variety of dimensional patterns. Please refer to our *Architectural Metals Tech Brief* for complete information on available metals, finishes and patterns.

Stainless Steel – We're the experts in stainless steel. The strength, beauty and maintenance ease of this enduring material make it a favorite choice for door facings.

Anodized Aluminum – Anodized surfaces add a look of cool sophistication that's particularly appropriate in modern, high-tech environments.

Fused Metal – This advanced, warm-colored form of stainless steel offers a durable, cost-effective and low-maintenance alternative to traditional yellow metals.

Muntz, Bronze and Copper – The warm tones of muntz, bronze and copper are perfect for more traditional environments or for any application that requires a rich, inviting atmosphere.

BONDED METAL® (available for insets only)

Bonded Metal is an extremely durable composite whose high-relief, highly detailed surfaces have the character and appearance of solid metal. Four different Bonded Metals are available in more than two dozen distinctive patterns. Please refer to the *Bonded Metal Tech Brief* for pattern swatches and complete information on how to specify Bonded Metal.

PATTERNED GLASS (available for insets only)

Forms+Surfaces Patterned Glass combines the benefits of glass with a level of privacy more often associated with solid materials. Patterned Glass is available in four standard cast patterns and is tempered for maximum safety. Please refer to our web site for pattern swatches and additional information. Conventional clear or tinted non-patterned glazing is also available for Metal Stile & Rail Doors.

Edge and Astragal Materials

Vertical edges and astragals are available in black or clear extruded aluminum, with or without weather-stripping.

Dimensions

Standard sizes are 36" x 84" or 36" x 96". Standard door thickness is 1-13/16". Forms+Surfaces can also manufacture specially sized doors within the design discipline of the series. Custom door thickness will vary depending on the door's proportions.



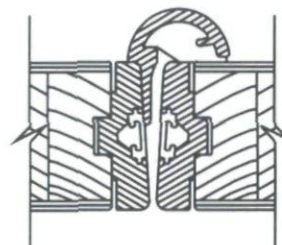
Triple inset stile & rail: Sandstone finish stainless steel
Insets: Minneapolis patterned glass



Single inset stile & rail: satin finish stainless steel. Insets: random finish stainless steel



Double inset stile & rail: Sandstone finish Fused Bronze. Insets: Delta pattern Bonded Nickel Silver



Aluminum Astragal



Aluminum Edge

Construction

Architectural Metal and Bonded Metal facings are laminated under pressure to both sides of wood or steel cores. Wood cores are solid wood; steel cores combine a resin impregnated honeycomb paper or polystyrene center with a steel skin.

Weight

Metal Stile & Rail Doors weigh approximately 8 lbs. per square foot; exact weights will vary depending on the materials and accessories specified.

Fire Rating

Metal Stile & Rail doors are not currently available fire rated. However, our extensive line of Architectural Metal doors offers a wealth of design options with a full range of UL® fire ratings. Please call or refer to our web site for additional information.

ACCESSORY SPECIFICATIONS**Door Frames**

Door frames can be purchased separately for Metal Stile & Rail Doors. Frames are shipped knocked down for mechanical assembly on-site. Door frames are available in the materials and finishes listed in the table below:

materials	available finishes				
	Satin	Polished	Sandstone	Linen	Painted
Stainless Steel	•	•	•	•	
Fused Bronze	•		•		
Fused Nickel Silver	•		•		
Muntz	•	•			
Bronze	•				
Galvanized Steel					•

Door Pulls and Other Hardware

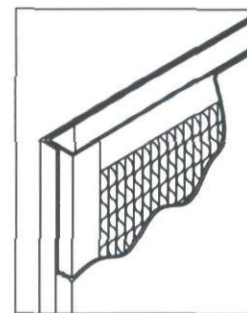
Forms+Surfaces offers an extensive collection of architectural door pulls compatible with Metal Stile & Rail Doors. We will prep-only or prep and supply additional hardware including hinges, locks, flushbolts, roller latches, viewers, door-bottom weather-stripping and thresholds. Metal Stile & Rail Doors can also be prepared to receive specialty hardware pending a review of the requirements.

TO ORDER, SPECIFY:**Metal Stile & Rail Doors**

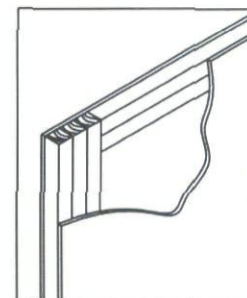
1. Door quantity (each leaf = one door)
2. Door configuration (single, double or triple inset; single door or pair)
3. Door swing and active door (if pair)
4. Stile & rail metal and finish
5. Inset material, finish and pattern
6. Edge finish; weather-stripping
7. Astragal (if pair)
8. Bottom weather-stripping
9. Hardware schedule (specify the manufacturer's name, part number, metal and finish selection of all hardware required)
10. Finished opening dimensions (or rough opening dimensions if Forms+Surfaces is supplying door frame)

Door frames (if supplied by Forms+Surfaces)

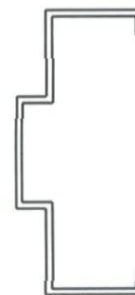
1. Rough opening dimensions
2. Adjacent wall thickness
3. Adjacent wall condition (exposed or finished; wood stud, metal stud or masonry)
4. Door frame metal and finish



Steel Core Door



Wood Core Door



Door Frame Profile

Comet door pulls combine the versatility and cost-effectiveness of tubular pulls with a highly attractive tapered profile. Grips are 32mm diameter at their center point tapering down to 19mm diameter flat grip ends. Pulls may be specified in stainless steel, brass or bronze, all available in a full range of superb finishes. Durably constructed and beautiful in form, Comet door pulls are an affordable way to add modern flair and timeless elegance to any architectural setting.

Metals and Finishes

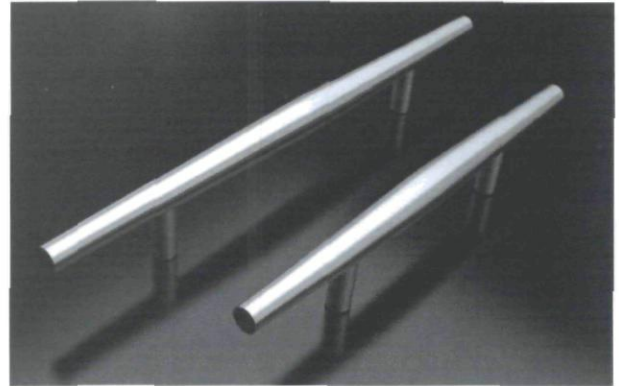
Stainless Steel	US32	Polished Stainless Steel
	US32D	Satin Stainless Steel
	SSS	Stippled Stainless Steel
Brass	US3	Polished Brass
	US4	Satin Brass
Bronze	US9	Polished Bronze
	US10	Satin Bronze
	US10B	Oil-Rubbed Bronze

Installation

Comet door pulls may be single mounted or mounted back-to-back on wood, metal or glass doors. Comet door pulls are installed using our Mounting System "B". Refer to Mounting Options B1, B2, B3, B4, B5, B6 and B7 in the Hardware Mounting Options Tech Brief for additional information.

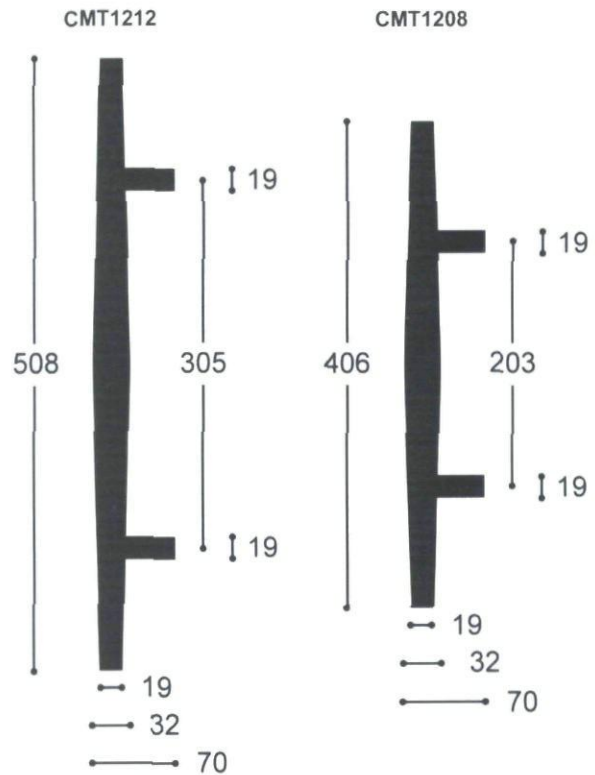
Maintenance

Comet door pulls are designed for interior or exterior use. Regular maintenance will help ensure the lasting beauty of each pull.



Size Options and Dimensions

(all dimensions in millimeters)



List Pricing and Ordering Information

No additional charge for mounting hardware. All pricing is for single units, not pairs.

model	stainless steel	list price	brass & bronze	list price
HDCMT1208 203 c.c.	US32, US32D, SSS	\$239	US3, US4, US9, US10, US10B	\$299
HDCMT1212 305 c.c.	US32, US32D, SSS	\$256	US3, US4, US9, US10, US10B	\$320

To order specify: Quantity, model number, metal and finish, mounting option, door material and door thickness. Pricing does not include freight.

© 2007 Forms+Surfaces All dimensions are nominal. Pricing and specifications subject to change without notice. Different computers, monitors and printers will render colors differently; actual finishes may vary slightly from colors shown here. For the most current version of this tech brief please refer to our web site at www.forms-surfaces.com.



Generic Classification	Solution Dyed Modacrylic	Flame Resistance (FR)	Fabric does not melt drip and is inherently flame retardant passing the following FR requirements:
Description	Woven fabric made of 100% SEF/FR [®] Self-extinguishing fibers. These are modacrylic solution dyed fibers with a fluorocarbon finish.		•California State Fire Marshall's Test Procedure #801, Title 19, Registration #F368.01
Weight	Approximately 9.25 oz. per square yard. 314 grams per square meter.		•NFPA 701.
Width	60 inches or 152.4 cm.		•ASTM E-84-84 - Values for flame spread and smoke density is Class A or Class 1 building material.
Color	Very resistant to ultraviolet rays and color degradation (see warranty). Most colors tested up to 1500 hours in fadeometer with minimal or no change. Fade resistant to most chemicals.		•F.A.A. 25.853(b) interior aircraft textiles and furnishings.
Durability/ Average Life Span	5-10 years. (Depends on climate and proper use of fabric.)		•FMVSS302: Auto, bus, train.
Underside	Same as top surface, both sides alike.		•CPAI-84: Tent walls and roof.
Surface	Plain Weave. Excellent breathability.	Mildew Resistant	•New York Board of Standards 294-40-SR.
Transparency Level	Light shades translucent for good illuminated use.		•UFAC: Upholstered furniture.
Abrasion Resistance	Good.	Chemical Resistance	•NFPA 1975 - Fireman's station uniform (FTMS 5903-191) and institutional blankets.
Flexibility	Excellent in both hot and very cold conditions. Will not crack or peel.	Water Repellency	•UL 214 Certification (U.S.)
Fabric Identification	Contrasting marker yarn in selvage gives positive identification.	Oil Resistance	•CAN/UL S109 Certification (Canada).
		Sewability	•Outside North America - Consult Glen Raven for Specifications.
		Heat Sealing	
			Excellent. Fabric will not support growth of mildew. Mildew growing on foreign matter attached to fabric is easily removed.
			Fabric highly resistant to acids, alkalis, and solvents.
			Excellent.
			Good.
			Excellent.
			Can be heat sealed using sealing tape and heat source such as radio frequency bar type welder.

FIVE YEAR LIMITED WARRANTY FOR SUNBRELLA FIRESIST[®]

This warranty is valid only if its accompanying certificate is completed and mailed within 10 days of installation.

What Is Covered?

This warranty covers the fabric becoming unserviceable because of loss of color or strength from normal exposure conditions including sunlight, mildew, rot and atmospheric chemicals. It does not cover labor and installations supplied by the dealer.

How Long is the Coverage Period?

The warranty coverage runs for 5 years from the date of original installation.

What Will Glen Raven Do?

Glen Raven will supply new fabric free to replace the fabric which becomes unserviceable.

How Can You Get Service?

Call the dealer from whom you purchased the product to inspect the installation. The dealer will contact Glen Raven and secure replacement fabric for you.

How Does State Law Apply?

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.



FR94-523



634 South Hambleton Avenue, City of Industry, CA 91744-5742
818-965-5312 or 800-841-0555 FAX 818-964-0878



"SUNBRELLA FIREST" FABRIC

TECHNICAL DATA

CONSTRUCTION

Plain Weave - 35 picks & 75 ends - 16/2 cc
Width - Standard - 46 inches, 116.8 cm
Weight - 9.25 ounces/square yard, 314 grams/square meter
11.82 ounces/linear yard, 366 grams/linear meter

WATER REPELLENCY/OIL RESISTANCE

AATCC Test #127 - 30 cm column or better
AATCC Test #22 - 100 or better (Spray)
BAG Test - 500 ml water 24 hours - no leaks
AATCC Test #118 - (Oil) - 5

STRENGTH

	<u>Warp</u>	<u>Filling</u>	
ASTM D - 1682-64	286	167	Grab
ASTM D - 2262-83	14.3	10.9	Tongue

CHEMICAL RESISTANCE

No color change and minimal strength loss (less than 15%) to the following chemical solutions in the listed % concentrations.

Acids - Sulfuric - 1%, 70%
Hydrochloric 1%, 37%
Nitric 1%, 40%
Formic 1%, 90%*
Phosphoric 1%, 85%
Hydrofluoric 1%, 52%
Chromic 1%, 50%
Aqua Regia 100%*

Alkalies - Caustic Soda 0.5%, 25%
Sodium Hypochlorite .5%, 5.0%
Sodium Chlorite 0.5%, 5.0%
Sodium Fluoride 4%
Hydrogen Peroxide 0.3%, 30%*

Solvents - Phenol 1.0%, 5.0%
Ethylen Glycol 100%
Acetone 100%
Methyl Ethyl Keytone 100%
Meta-Cresol 100%
Perchloroethylene 100%

TEST CONDITIONS

20 hours at 70°F.
5 minutes at 180°F. except 90% Formic*, Aqua Regia*, and 30% Hydrogen Peroxide*.

10/20/94 08:55 401 729 1287 UN112A 401 729 1287 003/003

"SUNBRELLA FIRESIST" FABRIC

A Unique Product by Glen Raven Mills, Inc.

- . Unsurpassed permanent flame resistance and color fastness.
 - Fabric is made with 100% SEF PLUS (self extinguishing fiber) which is a color-pigmented modacrylic fiber, an inherently fire resistant polymer.
 - Fire retardant and color properties will not wash out nor dry clean away.
 - Color and fabric is very resistant to ultra-violet degradation. Glen Raven gives it a 5-year limited warranty for outdoor use.
 - Passes or exceeds test procedure #801, Title 19, California State Fire Marshal's Test and NFPA #701. Registered by California Fire Marshal.
 - Fabric does not melt drip.
- . Outstanding textile and drapability properties.
- . Acid, alkali, and solvent resistant.
- . Excellent soil and stain release properties.
- . Water repellent.
- . Excellent breathability.
- . Outstanding mildew resistance.
- . Very low moisture regain and fabric shrinkage.
- . Fabric weight 9.25 oz./sq.yd., 46" wide, 10 colors.

SUNBRELLA TECHNICAL SPECS. (CONT.)
(DYE FINISH)

WATER REPELLENCY/STAIN

✓ SPRAY AATC TEST METHOD 22-1985	100
✓ HYDROSTATIC AATC TEST METHOD 127-1985	36 NOMINAL
OIL REPELLENCY: HYDROCARBON RESISTANCE ASTM D118-1983	5+
✓ GLEN RAVEN BAG TEST - 18" X 18" SQ. 500 ML. WATER FOR 24 HRS.	NO LEAKS

ULTRA-VIOLET RADIATION PENETRATION:

THE PIGMENTS OF THE SOLUTION DYED ACRYLIC FIBER
SCREEN OUT 90-PLUS PERCENT OF ULTRA-VIOLET RAYS.

SUNBRELLA TECHNICAL SPECIFICATIONS
(DL2 FINISH)

FIBER/YARN

DENIER		3
YARN SIZE	WARP:	18/2
	FILLING:	18/2
STAPLE LENGTH		2 inch
SINGLE TWIST		14.85 Z
PLY TWIST		13 T.P.I.

STRENGTH/STRETCH

CONSTRUCTION ASTM-D-3775-85	WARP:	76
	FILLING:	35
ASTM-D-3774	STANDARD WIDTH:	46 inch & 60 inch
WEIGHT ASTM-D-3776-85 (oz./sq. yd.)		9.00 - 9.25
TENSILE STRENGTH ASTM-D-1682-64	WARP:	266
	FILLING:	155
TENSILE STRENGTH	WARP:	14.0
ASTM-D-2262-83 TONGUE METHOD	FILLING:	9.3
TEARING STRENGTH (TRAPEZOID)	WARP:	43.0
FTMS NO. 191 METHOD 5136	FILLING:	22.3
BURSTING STRENGTH (BALL)		223.4
ASTM-D-3787-80A		
STRETCH GROWTH ASTM-D-2594-72 (MODIFIED)		
% STRETCH AT 200 LBS.	WARP:	1.67
	FILLING:	5.83
% GROWTH AFTER 1 MINUTE	WARP:	.62
	FILLING:	2.92
% GROWTH AFTER 1 HOUR	WARP:	.52
	FILLING:	2.08
YARN SLIPPAGE	WARP:	86.6
ASTM-D-4034-81	FILLING:	92.0
DIMENSIONAL CHANGE (%)	WARP:	0.0
ASTM-D-3597-81, SEC. 7.5	FILLING:	0.0
SURFACE ABRASION (WYZENBEEK)	PASSED 30,000+ CYCLES	
ASTM-D-3597-81, SEC. 7.4		

CRACKING:

DATE TEST: JAN CARBON ARC 16A 1982
PERCH AC 15E 1982

CRACKING:

WET:

DATE: 8-1985

DRY: 5

GLEN RAVEN MILLS, INC.

PRODUCT SPECIFICATIONS

Revised: 02/01/93

SUNBRELLA FIRESIST^(a)

Fiber Content	100% Solution Dyed Mod-Acrylic	
Hydrostatic Pressure	AATCC 127-1985	33 cm
Spray Resistance	G. R. "Super Spray"	100
Oil Resistance	AATCC 118-1983	5
Bag Test	No Leaks or Wet-Out	
Glen Raven - 18"x18" square, 1 Liter H ₂ O, 24 hour duration		
Construction	ASTM D-3775-85	Warp 75 Filling 35
Weight	ASTM 3776-85	9.50 oz/sq. yd. ± 0.25 oz/sq. yd.
Width	ASTM D-3774	46.25" ± 0.25" 60.25" ± 0.25"
Breaking Strength	ASTM D-1682-64	Warp 280 lbs. Filling 160 lbs.
Tearing Strength	ASTM D-2262-83	Warp 15.0 lbs. Filling 9.0 lbs.

Note: Fire retardant is inherent and will not wash out.



CARE AND CLEANING

1. **SUNBRELLA®** fabric should be cleaned regularly before substances such as dirt, roof particles, etc., are allowed to accumulate on and become embedded in the fabric. The fabric can be cleaned without being removed from the frame. Simply brush off any loose dirt, roof particles, etc.; hose down and clean with a mild natural soap in lukewarm water (no more than 100° F.) Rinse thoroughly to remove soap. **DO NOT USE DETERGENTS!**
2. For stubborn stains soak the fabric for approximately twenty minutes in a solution of no more than 1/2 cup (4 oz.) of bleach and 1/4 cup (2 oz.) natural soap per gallon of water at approximately 100° F. A non-chlorine bleach is recommended for **SUNBRELLA® "Plus"** because of the urethane coating. Rinse thoroughly in cold water to remove all of the soap. Note: Excessive soaking in bleach can deteriorate sewing threads. This method of cleaning may remove part of the water repellency and the fabric should receive an application of an air-curing water repellent treatment, such as APCO, UNISEAL, SUNSEAL or similar products, if water repellency is a factor.
3. **SUNBRELLA®** may be dry cleaned but a water repellent treatment must be applied to the fabric after dry cleaning to reestablish water repellency. **SUNBRELLA®** is made from 100% acrylic fiber and is thermoplastic or heat sensitive. When washing or cleaning, **DO NOT SUBJECT TO EXCESSIVE HEAT** as the fabric will shrink. **DO NOT STEAM PRESS OR DRY IN ELECTRIC OR GAS DRYERS**, but allow to air dry.
4. In cases where a **SUNBRELLA®** awning is taken down and stored during the winter season, it should be cleaned, allowed to air dry, and stored in a dry, well ventilated area. Many fabricators offer a reasonably priced removal, cleaning, storage, and rehang service on a yearly basis.

LIMITED WARRANTY

For Sunbrella® Awning and Marine Fabric

This warranty is valid only if the accompanying certificate is completed and mailed within 10 days of installation.

What is Covered? This warranty covers the fabric becoming unserviceable because of loss of color or strength from normal exposure conditions, including sunlight, mildew, rot and atmospheric chemicals. It does not cover labor and installation supplied by the dealer.

How Long is the Coverage Period? The warranty coverage runs for 5 years from the date of original installation.

What Will Glen Raven Do? Glen Raven will supply new fabric free to replace the fabric which becomes unserviceable.

How Can You Get Service? Call the dealer from whom you purchased the product to inspect the installation. Or call another Sunbrella dealer listed in the Yellow Pages under "Awnings and Canopies" or "Boat Tops and Covers." The dealer will contact Glen Raven and secure replacement fabric for you.

How Does State Law Apply? This warranty gives you specific legal rights and you may also have other rights which vary from state to state.



Glen Raven Mills, Inc. Glen Raven, NC 27215

®Registered trademark
Glen Raven Mills, Inc.

Nº 337355

A