SECTION 08 88 53

SECURITY GLAZING

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\*\* NOTE TO SPECIFIER \*\* Riot Glass; security glazing, polycarbonate sheet.
This section is based on the products of Riot Glass, which is located at:17941 Brookshire Ln.Huntington Beach, CA 92647Toll Free Tel: 800-580-2303Email: [request info (info@riotglass.com)](https://arcat.com/rfi?action=email&company=Riot%252BGlass&message=RE%253A%2520Spec%2520Question%2520(08880rio)%253A%2520&coid=52549&spec=08880rio&rep=&fax=)
Web: <https://www.riotglass.com>
 [ [Click Here](https://arcat.com/company/riot-glass-52549) ] for additional information.
In our collective decades of experience in retrofit security glazing, we were often disappointed with the options available to us for many of the unique window openings we were asked to secure. Over time, we began making our own custom solutions that adapt to the more difficult projects.
Riot Glass is a reliable, cost-effective product line specifically designed to secure vulnerable entry points like glass doors and windows without sacrificing visual appeal.
Riot Glass™ is a leading manufacturer of American-made security glass and door systems. Protecting stores, schools, and homes from threats is our business and our mission.

1. GENERAL
	1. SECTION INCLUDES
		1. Security glass and framing for forced entry protection. (ArmorPlast 25)
	2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 08 41 13 - Aluminum-Framed Entrances and Storefronts.
		2. Section 08 50 00 - Windows.
		3. Section 08 83 13 - Mirrored Glass Glazing.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American National Standards Institute (ANSI): ANSI Z97.1 - Safety Glazing Materials Used in Buildings.
		2. ASTM International (ASTM):
			1. ASTM D149 - Standard Test Method For Dielectric Breakdown Voltage And Dielectric Strength Of Solid Electrical Insulating Materials At Commercial Power Frequencies.
			2. ASTM D150 - Standard Test Methods For AC Loss Characteristics And Permittivity (Dielectric Constant) Of Solid Electrical Insulation.
			3. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
			4. ASTM D257 - Standard Test Methods for DC Resistance or Conductance of Insulating Materials.
			5. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
			6. ASTM D638 - Standard Test Method for Tensile Properties of Plastics.
			7. ASTM D648 - Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.
			8. ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics.
			9. ASTM D696 - Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between minus 30 degrees C and 30 degrees C with a Vitreous Silica Dilatometer.
			10. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
			11. ASTM D792 - Standard Test Methods For Density And Specific Gravity (Relative Density) Of Plastics By Displacement.
			12. ASTM D1003 - Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics.
			13. ASTM D1044 - Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion by the Taber Abraser.
			14. ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
			15. ASTM D1929 - Standard Test Method for Determining Ignition Temperature of Plastics.
			16. ASTM D3763 - Standard Test Method for High Speed Puncture Properties of Plastics Using Load and Displacement Sensors.
			17. ASTM F1233 - Standard Test Method for Security Glazing Materials And Systems.
		3. H.P.White:
			1. Test 5-aa 1 - Certification Standards for Retrofitting and Reinforcing of Standard Commercial Entry Systems, Windows and Glazing.
			2. HPW-TP-0500.03 - Transparent Materials for Use in Forced Entry or Containment Barriers.
		4. Consumer Product Safety Commission (CPSC): CPSC 16CFR1201, Safety Standard for Architectural Glazing.
		5. Underwriters Laboratories LLC (UL):
			1. UL 94 - Tests for Flammability of Plastic Materials for Parts in Devices and Appliances.
			2. UL 972 - Standard for Burglary Resisting Glazing Material.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.
		3. Shop Drawings: Including but not limited to details of materials, construction, finish, and relationship with adjacent construction.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum three years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Each type of product from a single manufacturing source to ensure uniformity.

\*\* NOTE TO SPECIFIER \*\* Include mock-up if the project size or quality warrant the expense. The following is one example of how a mock-up on might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
			1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
			2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
			3. Retain mock-up during construction as standard for comparison with completed work.
			4. Do not alter or remove mock-up until work is completed or removal is authorized.
	1. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
		2. If ambient conditions are not met at the time of delivery, manufacturer reserves the right to void the warranty.
	4. WARRANTY
		1. Manufacturer's Warranty: Provide manufacturer's standard limited warranty against defects in materials and workmanship.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Riot Glass, which is located at:17941 Brookshire Ln.Huntington Beach, CA 92647Toll Free Tel: 800-580-2303Email: [request info (info@riotglass.com)](https://arcat.com/rfi?action=email&company=Riot%252BGlass&message=RE%253A%2520Spec%2520Question%2520(08880rio)%253A%2520&coid=52549&spec=08880rio&rep=&fax=);Web: <https://www.riotglass.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* ArmorPlast™ AR Polycarbonate Sheet is an abrasion and UV resistant sheet that offers glass-like surface hardness coupled with the impact strength of polycarbonate. Additionally, ArmorPlast AR Polycarbonate Sheet offers resistance from yellowing and hazing for longer service life in high profile applications. Typical applications for ArmorPlast include school, hospital, and retail store glazing. ArmorPlast is also used extensively in correctional and psychiatric facilities.

* + 1. Also ideal for retail smash and grab burglary protection, this nonballistic (containment grade) glazing shield product allows bullet penetration but won't break down or appreciably diminish in strength. Although a glazing shield does not stop bullets, it resists cracking or shattering. Even after being riddled with bullets, it remains a barrier to entry because it cannot be easily dislodged and a would-be intruder's hand is prevented from passing through to open the door, keeping intruders out of the building.
	1. SECURITY GLAZING
		1. Security Glass and Framing Systems: ArmorPlast 25 as manufactured by Riot Glass.
			1. Construction: Single layer polycarbonate sheet.
			2. Glass Thickness: Nominal 1/4 inch (6.4 mm) AR-1 sheet.

\*\* NOTE TO SPECIFIER \*\* The polycarbonate sheets and aluminum framing are cut to required sizes based on provided window measurements to the manufacturer. The items are shipped as ' kits' ready for installation. For reference, the raw material polycarbonate sheets come in the following sizes:

* + - 1. 48 x 96 inches (1219 x 2438 mm).
			2. 60 x 96 inches (1524 x 2438 mm).
			3. 72 x 96 inches (1829 x 2438 mm).
			4. 60 x 120 inches (1524 x 3048 mm).
			5. 72 x 120 inches (1829 x 3048 mm).
			6. Riot Glass offers to clients, access to proprietary video which explains in simple detail how to measure and document existing window sizes so the appropriate kits may be supplied, Riot Glass also supplies access to proprietary video for kit installation.
			7. Sheet Sizes: As required to meet window dimensions as detailed and supplied to the Manufacturer.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Framing: Extruded aluminum, Alloy 6063-T5.
			1. Hardware: Tamper resistant hardware concealed by low-profile, protective cover.

\*\* NOTE TO SPECIFIER \*\* Delete mounting options not required.

* + - 1. Mounting on Doors: Surface mount, interior.
			2. Mounting on Doors: Surface mount, exterior.
			3. Mounting on Storefront: Surface mount, interior.
			4. Mounting on Storefront: Surface mount, exterior.
			5. Mounting on Storefront: Full frame, interior.
			6. Mounting on Storefront: Full frame, exterior.
			7. Mounting on Curtainwall: Surface mount, exterior.
			8. Mounting on Curtainwall: Full frame, interior.
			9. Mounting on Curtainwall: Full frame, exterior.

\*\* NOTE TO SPECIFIER \*\* Delete finish options not required.

* + - 1. Finish: Clear anodized.
			2. Finish: Bronze anodized.
			3. Finish: As selected by Architect
	1. PERFORMANCE REQUIREMENTS
		1. Consumer Product Safety Commission, CPSC 16CFR1201, ANSI Z97.1: Categories I and II.
		2. Forced Entry Testing:
			1. Tested in accordance with ASTM F1233.
			2. Meets requirements of H.P. White
				1. Test 5-aa 1.
				2. HPW-TP-0500.03.
			3. Listed with UL under UL 972.
		3. Regional Compliance: BOCA, ICBO, SBCCI, and Dade County: CC-1 rating.
		4. Standards Compliance: Physical.
			1. Specific Gravity, ASTM D792: 1.2 percent.
			2. Light Transmission, Clear 1/8 inch (3.2 mm), ASTM D1003: 86 percent.
			3. Light Transmission, Gray/Bronze, ASTM D1003: 50 percent.
			4. Chemical Resistance, ASTM D1308: Pass, 24 hours.
			5. Taber Abrasion, 100 Cycles CS1OF, Delta Haze, ASTM D1044: 1-2 percent.
		5. Standards Compliance: Mechanical.
			1. Tensile Strength, Ultimate, ASTM D638: 9500 psi.
			2. Flexural Strength, ASTM D790: 13500 psi.
			3. Compressive Strength, ASTM D695: 12500 psi.
			4. Modulus of Elasticity, ASTM D638: 340000 psi.
			5. Poisson' s Ratio: 0.38
			6. Izod Impact Strength, Notched at 1/8 inch (3.2 mm), ASTM D256: 12-16 ft-lb/in.
			7. Izod Impact Strength, Unnotched at 1/8 inch (3.2 mm), ASTM D256: 60 ft-lb/in (no failure).
			8. lnstrumented Impact, 1/8 inch (3.2 mm): Greater than 45 ft-lbs.
		6. Standards Compliance: Thermal.
			1. Coefficient of Thermal Expansion, ASTM D696: 375000 in/in/degree F
			2. Heat Deflection Temperature at 264 psi, ASTM D648: 270 degrees F.
			3. Heat Deflection Temperature at 66 psi, ASTM D648: 280 degrees F.
		7. Standards Compliance: Electrical.
			1. Dielectric Constant, at 10 Hz, ASTM D150: 2.96.
			2. Dielectric Constant, at 60 Hz, ASTM D150: 3.17.
			3. Volume Resistivity, ASTM D257: 8.2 x 10^16 Ohm-cm.
			4. Dissipation Factor, at 60 Hz, ASTM D150: 0.0009.
			5. Dissipation Factor, at 1 MHz, ASTM D150: 0.01.
			6. Arc Resistance, ASTM D495.
				1. Stainless Steel Strip Electrode: 10-11.
				2. Tungsten Electrodes: 120.
			7. Dielectric Strength, in air, 125 mils, ASTM D149: 380 V/mil.
		8. Standards Compliance: Flammability.
			1. Horizontal Burn, AEB, ASTM D635: Less than 1 inch (25 mm).
			2. Ignition Temperature, Self, ASTM D1929: 1070 degrees F (577 degrees C).
			3. Ignition Temperature, Flash, ASTM D1929: 870 degrees F (465 degrees C).
			4. UL 94, Clear at .060 inch, UL 94: HB.
			5. UL 94, Clear at .236 inch, UL 94: V1.
1. EXECUTION
	1. EXAMINATION AND PREPARATION
		1. Prepare openings and substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions.
		2. Do not proceed with installation until openings and substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
		3. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
	2. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals and in proper relationship with adjacent construction.
			1. Install components plumb and true in alignment with established lines, without warp or rack.
			2. Fit joints to produce hairline joints free of burrs and distortion.
	3. CLEANING AND PROTECTION
		1. Clean and protect products in accordance with the manufacturer's recommendations.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION