SECTION 10 26 41

BALLISTIC RESISTANT COMPOSITE PANELS

Display hidden notes to specifier. (Don't know how? [Click Here](https://www.arcat.com/sd/display_hidden_notes.shtml))

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\*\* NOTE TO SPECIFIER \*\* SafeWood Designs, Inc.; ballistic resistant wood framed storefront, doors, and windows.
This section is based on the products of SafeWood Designs, Inc., which is located at:
7281 Commerce Cir. W.
Fridley, MN 55432
Tel: 844-896-1800
Email: [request info (sales@safewooddesigns.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=SafeWood+Designs,+Inc.&coid=52745&rep=&fax=&message=RE:%20Spec%20Question%20(10264wdd):%20%20&mf=)
Web: <http://safewooddesigns.com>
 [ [Click Here](https://www.arcat.com/arcatcos/cos52/arc52745.html) ] for additional information.
We established SafeWood Designs because our changing world means that safety and security needs are increasing, and gun violence is a very real threat. An unfortunate threat to our schools, homes, places of worship, offices, and businesses.
In today's market nearly all ballistic doors, walls and room products are "cookie cutter," often leaving your home or business looking and feeling like a prison.
Why should having safety and security mean losing warmth and elegance? In an ideal world, all secure surroundings would be beautiful, blending with existing millwork and furnishings completely undetected.
At SafeWood Designs you can have both beauty and safety.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Ballistic resistant composite panels.
	1. RELATED SECTIONS

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

* + 1. Section 04 40 00 - Stone Assemblies.
		2. Section 05 10 00 - Structural Metal Framing
		3. Section 05 50 00 - Metal Fabrications.
		4. Section 06 10 00 - Rough Carpentry.
		5. Section 08 83 13 - Mirrored Glass Glazing.
		6. Section - .
		7. Section 09 30 00 - Tiling.
		8. Section 09 90 00 - Painting and Coating.
	1. REFERENCES

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

* + 1. National Institute of Justice (NIJ):
			1. NIJ Standard 0108.01 - Ballistic Standards.
		2. Underwriters Laboratories (UL):
			1. UL 752 - Specifications and Ammunition, Standard for Bullet Resisting Equipment.
	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.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern, and color. Provide samples of the following elements.
		2. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five 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: Provide 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 a 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 store or install products under environmental conditions outside manufacturer's recommended limits.
		2. Maintain temperature and humidity in installation area as required to maintain moisture content of installed woodwork within acceptable limits as defined by AWI, from at least two days prior to the date of product arrival through the remainder of construction period.
		3. Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 degrees F (16 and 32 degrees C) and relative humidity as directed by AWI for the appropriate region during the remainder of the construction period and the warranty period.
	4. WARRANTY
		1. Manufacturer's Warranty: Provide manufacturer's standard limited warranty.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: SafeWood Designs, Inc., which is located at: 7281 Commerce Cir. W.; Fridley, MN 55432; Tel: 844-896-1800; Email: [request info (sales@safewooddesigns.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=SafeWood+Designs,+Inc.&coid=52745&rep=&fax=&message=RE:%20Spec%20Question%20(10264wdd):%20%20&mf=); Web: <http://safewooddesigns.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.
	1. BALLISTIC RESISTANT COMPOSITE PANELS
		1. Material Performance Data:
			1. Density per ASTM D792: 0.066 lbs per cu inch (1.80 grams per cu cm).
			2. Tensile Modulus per ASTM D638: 2.6 to 3.5 msi (17.92 to 24.13 GPa)
			3. Tensile Strength per ASTM D638: 45 to 60 ksi (310 to 414 MPa).
			4. Flexural Modulus per ASTM D790: 2.1 to 2.7 msi (14.5 to 18.6 GPa).
			5. Flexural Strength [er ASTM D790: 65 ksi (448 MPa).
			6. Compressive Strength ASTM D695: 40 ksi (276 MPa).
			7. Barcol Hardness per ASTM D2583: 50 to 60.
			8. Glass Content - Continuous Glass Fiber: 55.0 wt percent.
			9. Fire Rating per ASTM E119-09c: 1 hour
			10. Flame Spread Rating per ASTM E84-08a: 45.
				1. NFPA and IBC Class B rating achieved.
			11. Smoke Developed Rating per ASTM E84-08a: 165.
				1. NFPA and IBC Class B rating achieved.
			12. Additional Performance Advantages
				1. Durable.
				2. Corrosion resistant.
				3. Electrical non-conductive
				4. Low thermal conductivity
				5. Light weight.
			13. The composite matrix allows for retention of projectiles avoiding hazardous ricochet.
		2. Construction: Layers of 0 to 90 degree woven E-glass fiber reinforcements with a proprietary resin system.
			1. Panel Customization:
				1. Drilling.
				2. Routing.
				3. Machining.
				4. Finishing.
				5. Custom colors.
				6. Unique panel sizes.
			2. Panel Width Range: 36 x 48 inch (914 x 1219 mm) minimum.
			3. Panel Length Range: 48 x 120 inch (1219 x 3048 mm) maximum.
		3. GlasArmor Panels:

\*\* NOTE TO SPECIFIER \*\* Delete UL Level options and panel sizes not required.

* + - 1. UL Level 1.
				1. Thickness: 0.256 inches (6.5 mm).
				2. Nominal Weight: 2.7 lbs per sq ft (0.13 kPa)
				3. Ammunition: 0.354 inch (9 mm) full metal copper jacket with lead core.

Velocity: 1175 fps (358 mps). Number of Shots: 3.

* + - * 1. Size (WxL): 36 x 96 inches (914 x 2438 mm). Color: Natural.
				2. Size (WxL): 36 x 120 inches (914 x 3048 mm). Color: Natural.
				3. Size (WxL): 48 x 96 inches (1219 x 2438 mm). Color: Natural.
				4. Size (WxL): 48 x 108 inches (1219 x 2743 mm). Color: Natural.
				5. Size (WxL): 48 x 120 inches (1219 x 3048 mm). Color: Natural.
				6. Size (WxL): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm). Color: \_\_\_\_\_\_.
			1. UL Level 2. NIJ Level II-A.
				1. Thickness: 0.384 inches (9.75 mm).
				2. Nominal Weight: 4.0 lbs per sq ft (0.19 kPa)
				3. Ammunition: .357 magnum jacketed with soft lead point.

Velocity: 1250 fps (381 mps). Number of Shots: 3.

* + - * 1. Size (WxL): 36 x 96 inches (914 x 2438 mm). Color: Natural.
				2. Size (WxL): 36 x 120 inches (914 x 3048 mm). Color: Natural.
				3. Size (WxL): 48 x 96 inches (1219 x 2438 mm). Color: Natural.
				4. Size (WxL): 48 x 108 inches (1219 x 2743 mm). Color: Natural.
				5. Size (WxL): 48 x 120 inches (1219 x 3048 mm). Color: Natural.
				6. Size (WxL): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm). Color: \_\_\_\_\_\_.
			1. UL Level 3. NIJ Level III-A.
				1. Thickness: 0.500 inches (12.7 mm).
				2. Nominal Weight: 5.4 lbs per sq ft (0.26 kPa)
				3. Ammunition: .44 magnum lead semi-wadcutter gas checked.

Velocity: 1350 fps (411.5 mps). Number of Shots: 3.

* + - * 1. Size (WxL): 36 x 96 inches (914 x 2438 mm). Color: Natural.
				2. Size (WxL): 36 x 120 inches (914 x 3048 mm). Color: Natural.
				3. Size (WxL): 48 x 96 inches (1219 x 2438 mm). Color: Natural.
				4. Size (WxL): 48 x 96 inches (1219 x 2438 mm). Color: Grey.
				5. Size (WxL): 48 x 96 inches (1219 x 2438 mm). Color: White.
				6. Size (WxL): 48 x 96 inches (1219 x 2438 mm). Color: Tan.
				7. Size (WxL): 48 x 108 inches (1219 x 2743 mm). Color: Natural.
				8. Size (WxL): 48 x 108 inches (1219 x 2743 mm). Color: Grey.
				9. Size (WxL): 48 x 120 inches (1219 x 3048 mm). Color: Natural.
				10. Size (WxL): 48 x 120 inches (1219 x 3048 mm). Color: Grey.
				11. Size (WxL): 48 x 120 inches (1219 x 3048 mm). Color: White.
				12. Size (WxL): \_\_\_ x \_\_\_ inches (\_\_\_ x \_\_\_ mm). Color: \_\_\_\_\_\_\_.
			1. Additional Protection Against Higher Power Ammunitions: Achieved by layering multiple GlasArmor panels. Contact the manufacturer for more information regarding your specific application.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
		3. Lay out the project to utilize the largest panel sizes to minimize the number of seams.
		4. Fabricate panels to desired size by cutting with a circular saw equipped with a diamond abrasive blade. Wear safety equipment including safety glasses and dust masks.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
			1. Secure panels to steel or wood framing by mechanically fastening with heavy-duty wallboard or lag screws.
			2. When constructing walls, rest the initial course of panels firmly on the floor to avoid any unsupported panel weight on the wall framing.
			3. Reinforce panel seams with a 4 inch (102 mm) batten of additional material. Position batten strips to cover the seam and attach to both panels using appropriate wallboard screws
			4. Use overlapping butt joints when installing panels into corners.
			5. Panels expand to absorb ballistic impact. When covering a sensitive substructure such as glass, shim panels 3/8 inches (9 mm) to prevent impact shock damage.
			6. Panels can be finished by covering with drywall, paneling, painting, or wall covering.
				1. Painting or wall covering will require the use of a suitable primer.
	4. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* + 1. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
	1. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturer's recommendations.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION