**SECTION 09 7800**

**RESIN INFUSED COMPOSITE WALL PANELS**

This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by one of the following methods:

Microsoft Word 2010: Display the FILE tab on the ribbon, click OPTIONS, then on left menu click on DISPLAY. Under ALWAYS SHOW THESE select or deselect HIDDEN TEXT.

Microsoft Word 2007: Click the OFFICE button, select WORD OPTIONS, select DISPLAY, then select or deselect the HIDDEN TEXT option.

Corel WordPerfect: From the pull-down menus select VIEW, then select or deselect the HIDDEN TEXT option.

This guide specification has been prepared by TorZo Surfaces to assist design professionals in the preparation of a specification section covering Durum, Hemp, Indure, Orient, Parda, and Tiikeri resin infused composite wall panels for interior locations. Refer to TorZo Surfaces literature for additional information.

The following should be noted in using this guide specification:

Optional text requiring a selection by the user is enclosed within brackets, e.g.: "Section [09 0000.] [\_\_ \_\_ \_\_.]"

Items requiring user input are enclosed within brackets, e.g.: "Section [\_\_ \_\_ \_\_ - \_\_\_\_\_\_\_\_]."

Optional paragraphs are separated by an "OR" statement, e.g.:

\*\*\*\* OR \*\*\*\*

"Green" requirements are included for projects requiring LEED certification, and are included as green text. For additional information on LEED, visit the U.S. Green Building Council website at [www.usgbc.org.](http://www.usgbc.org)

Other guide specifications are available from TorZo Surfaces covering other uses for resin infused composite products, including:

 Section 06 8313 - Resin Infused Composite Fabrications

 Section 09 6429 - Resin Infused Composite Flooring

For assistance on the use of the products in this section, contact TorZo Surfaces by calling 866-822-0002, by email at info@torzosurfaces.com, or visit their website at [(www.torzosurfaces.com](http://www.torzosurfaces.com).

1. **GENERAL**
	1. SUMMARY
		1. Section Includes:
			1. Resin infused composite wall panels.
			2. Setting materials and accessories.

Edit the following paragraphs to suit project requirements and to coordinate with other sections in the project manual.

* + 1. Related Sections:
			1. Division 01: Administrative, procedural, and temporary work requirements.
			2. Section [06 1100 - Framing and Sheathing] [\_\_ \_\_\_\_ - \_\_\_\_\_\_\_] - Wood substrate.
			3. Section [09 2900 - Gypsum Board] [\_\_ \_\_\_\_ - \_\_\_\_\_\_\_] - Gypsum board substrate.
			4. Section [07 9200 - Joint Sealers] [\_\_ \_\_\_\_ - \_\_\_\_\_\_\_] - Joint sealers.
			5. Section [09 2813 - Cementitious Backing Boards] [\_\_ \_\_\_\_ - \_\_\_\_\_\_\_] - Cementitious backer unit substrate.
	1. REFERENCES

In the following paragraphs, include only those reference standards that are included within the text of this section.

* + 1. ASTM International (ASTM) [(www.astm.org](http://www.astm.org)):
			1. D1037 - Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials.
			2. D2395 - Standard Test Methods for Specific Gravity of Wood and Wood-Based Materials.\
			3. D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
			4. E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
		2. Forest Stewardship Council (FSC) ([www.fscus.org](http://www.fscus.org)) STD-40-004 - Chain of Custody Standard.
	1. SUBMITTALS

Include the following if physical samples are required. Edit to suit project requirements.

* + 1. Samples: [3 x 3] [\_\_ x \_\_] inch resin infused composite samples [in specified color.] [showing available colors.]

Include the following for submission of sustainable design submittals.

* + 1. Sustainable Design Submittals:
			1. Recycled Content: Certify percentages of post-consumer and pre-consumer recycled content.
			2. Low-Emitting Materials: Certify volatile organic compound (VOC) content.
			3. Rapidly Renewable Materials: Certify materials made from plants harvested within a ten year or shorter cycle.
			4. Certified Wood: Certify Forest Stewardship Council chain-of-custody certificate number.

Include the following for submission of closeout submittals for the Owner's record purposes.

* + 1. Closeout Submittals:
			1. Maintenance Data: Include recommended cleaning materials and procedures, and list of materials detrimental to resin infused composite panels.
	1. QUALITY ASSURANCE

The following two paragraphs specify a minimum level of experience required of the parties performing the work of this section. Retain if required, and edit to suit project requirements.

* + 1. Manufacturer Qualifications: Minimum [10] [\_\_] years [documented] experience in manufacture of resin infused composite materials.
		2. Fabricator and Installer Qualifications: Minimum [2] [\_\_] years [documented] experience in work of this Section.

Include the following for a full size mockup for review of construction and coordination of work of several sections. Edit to suit project requirements.

* + 1. Mockup:
			1. Construct wall panel mockup, [6] [\_\_] feet wide x [full height.] [[\_\_] feet high.]
			2. Locate [where directed.] [\_\_\_\_.]
			3. Approved mockup may remain as part of the Work.
	1. WARRANTY
		1. Provide manufacturer's 10 year warranty against defects in materials and workmanship.
1. **PRODUCTS**
	1. MANUFACTURERS
		1. Contract Documents are based on products by TorZo Surfaces. [(www.torzosurfaces.com](http://www.torzosurfaces.com))

Edit the following to indicate whether or not substitutions will be allowed; coordinate with Division 01 requirements.

* + 1. Substitutions: [Under provisions of Division 01.] [Not permitted.]
	1. MATERIALS

Include the following for Durum sheet.

* + 1. Resin Infused Composite Panels:
			1. Product: Durum.
			2. Sustainable content: 70 percent pre-consumer recycled and rapidly renewable wheat straw.
			3. Free from added urea formaldehyde.

Edit the following paragraph to indicate color of resin infused composite sheet.

* + - 1. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

Edit the following paragraph to indicate thickness of resin infused composite sheet.

* + - 1. Thickness: [3/8] [5/8] [7/8] inch, tested to ASTM D1037.
			2. Physical characteristics:
				1. Density: 72, tested to ASTM D2395.
				2. Internal bond: 325, tested to ASTM D1037.
				3. Modulus of rupture: 7432, tested to ASTM D1037.
				4. Modulus of elasticity: 897,792, tested to ASTM D1037.
				5. Hardness, Janka ball: 4225, tested to ASTM D1037.
				6. Screw holding; tested to ASTM D1037:

Face: 672.

Edge: 681.

* + - * 1. Linear expansion: 0.13, tested to ASTM D1037.
				2. Moisture content: 2.5, tested to ASTM D4442.
				3. Fire rating: Class B, tested to ASTM E84.

\*\*\*\* OR \*\*\*\*

Include the following for Hemp sheet.

* + 1. Resin Infused Composite Panels:
			1. Product: Hemp.
			2. Sustainable content: 50 percent pre-consumer recycled and rapidly renewable hemp fiber.
			3. Free from added urea formaldehyde.

Edit the following paragraph to indicate color of resin infused composite sheet.

* + - 1. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

Edit the following paragraph to indicate thickness of resin infused composite sheet.

* + - 1. Thickness: [3/8] [1/2] inch, tested to ASTM D1037.
			2. Physical characteristics:
				1. Density: 70, tested to ASTM D2395.
				2. Internal bond: 92, tested to ASTM D1037.
				3. Modulus of rupture: 2397, tested to ASTM D1037.
				4. Modulus of elasticity: 550,473, tested to ASTM D1037.
				5. Hardness, Janka ball: 3100, tested to ASTM D1037.
				6. Screw holding; tested to ASTM D1037:

Face: 434.

Edge: 372.

* + - * 1. Linear expansion: 0.18, tested to ASTM D1037.
				2. Moisture content: 3.0, tested to ASTM D4442.
				3. Fire rating: Class B, tested to ASTM E84.

\*\*\*\* OR \*\*\*\*

Include the following for Indure sheet.

* + 1. Resin Infused Composite Panels:
			1. Product: Indure.
			2. Recycled content: 65 percent pre-consumer recycled FSC-certified wood.
			3. Free from added urea formaldehyde.

Edit the following paragraph to indicate color of resin infused composite sheet.

* + - 1. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

Edit the following paragraph to indicate thickness of resin infused composite sheet.

* + - 1. Thickness: [3/8] [1/2] [3/4] inch, tested to ASTM D1037.
			2. Physical characteristics:
				1. Density: 78, tested to ASTM D2395.
				2. Internal bond: 887, tested to ASTM D1037.
				3. Modulus of rupture: 8300, tested to ASTM D1037.
				4. Modulus of elasticity: 737,000, tested to ASTM D1037.
				5. Hardness, Janka ball: 7792, tested to ASTM D1037.
				6. Screw holding; tested to ASTM D1037:

Face: 843.

Edge: 952.

* + - * 1. Linear expansion: 0.07, tested to ASTM D1037.
				2. Moisture content: 4.0, tested to ASTM D4442.
				3. Fire rating: Class B, tested to ASTM E84.

\*\*\*\* OR \*\*\*\*

Include the following for Orient sheet.

* + 1. Resin Infused Composite Panels:
			1. Product: Orient.
			2. Recycled content: 50 percent pre-consumer recycled FSC-certified wood.
			3. Free from added urea formaldehyde.

Edit the following paragraph to indicate color of resin infused composite sheet.

* + - 1. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

Edit the following paragraph to indicate thickness of resin infused composite sheet.

* + - 1. Thickness: [5/16] [1/2] [3/4] inch, tested to ASTM D1037.
			2. Physical characteristics:
				1. Density: 72, tested to ASTM D2395.
				2. Internal bond: 498, tested to ASTM D1037.
				3. Modulus of rupture: 8823, tested to ASTM D1037.
				4. Modulus of elasticity: 1,281,514, tested to ASTM D1037.
				5. Hardness, Janka ball: 4589, tested to ASTM D1037.
				6. Screw holding; tested to ASTM D1037:

Face: 751.

Edge: 729.

* + - * 1. Linear expansion: 0.07, tested to ASTM D1037.
				2. Moisture content: 2.0, tested to ASTM D4442.
				3. Fire rating: Class C, tested to ASTM E84.

\*\*\*\* OR \*\*\*\*

Include the following for Parda sheet.

* + 1. Resin Infused Composite Panels:
			1. Product: Parda.
			2. Recycled content: 70 percent pre-consumer recycled FSC-certified wood.
			3. Free from added urea formaldehyde.

Edit the following paragraph to indicate color of resin infused composite sheet.

* + - 1. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

Edit the following paragraph to indicate thickness of resin infused composite sheet.

* + - 1. Thickness: [3/8] [1/2] inch, tested to ASTM D1037.
			2. Physical characteristics:
				1. Density: 76, tested to ASTM D2395.
				2. Internal bond: 735, tested to ASTM D1037.
				3. Modulus of rupture: 4477, tested to ASTM D1037.
				4. Modulus of elasticity: 797,295, tested to ASTM D1037.
				5. Hardness, Janka ball: 4897, tested to ASTM D1037.
				6. Screw holding; tested to ASTM D1037:

Face: 672.

Edge: 681.

* + - * 1. Linear expansion: 0.13, tested to ASTM D1037.
				2. Moisture content: 3.0, tested to ASTM D4442.
				3. Fire rating: Class B, tested to ASTM E84.

\*\*\*\* OR \*\*\*\*

Include the following for Tiikeri sheet.

* + 1. Resin Infused Composite Panels:
			1. Product: Tiikeri.
			2. Recycled content: 50 percent pre-consumer recycled rapidly renewable sorghum straw.
			3. Free from added urea formaldehyde.

Edit the following paragraph to indicate color of resin infused composite sheet.

* + - 1. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

Edit the following paragraph to indicate thickness of resin infused composite sheet.

* + - 1. Thickness: [5/16] [5/8] inch, tested to ASTM D1037.
			2. Physical characteristics:
				1. Density: 62, tested to ASTM D2395.
				2. Internal bond: 112, tested to ASTM D1037.
				3. Modulus of rupture: 2397, tested to ASTM D1037.
				4. Modulus of elasticity: 550,473, tested to ASTM D1037.
				5. Hardness, Janka ball: 3100, tested to ASTM D1037.
				6. Screw holding; tested to ASTM D1037:

Face: 434.

Edge: 372.

* + - * 1. Linear expansion: 0.18, tested to ASTM D1037.
				2. Moisture content: 3.0, tested to ASTM D4442.
				3. Fire rating: Class B, tested to ASTM E84.

\*\*\*\* OR \*\*\*\*

* + 1. Resin Infused Composite Panels:
			1. Product: Striata.
			2. Recycled content: 100% pre-consumer recycled wood.
			3. Free from added urea formaldehyde.

Edit the following paragraph to indicate color of resin infused composite sheet.

* + - 1. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

Edit the following paragraph to indicate thickness of resin infused composite sheet.

* + - 1. Thickness: [5/16] [1/2] [3/4] inch, tested to ASTM D1037.
			2. Physical characteristics:
				1. Density: 38, tested to ASTM D2395.
				2. Internal bond: 159, tested to ASTM D1037.
				3. Modulus of rupture: 11,923, tested to ASTM D1037.
				4. Modulus of elasticity: 1,661,152, tested to ASTM D1037.
				5. Hardness, Janka ball: 1141, tested to ASTM D1037.
				6. Screw holding; tested to ASTM D1037:

Face: 441.

Edge: 307.

* + - * 1. Linear expansion: 0.01, tested to ASTM D1037.
				2. Moisture content: 7.3, tested to ASTM D4442.
				3. Fire rating: Class B, tested to ASTM E84.

\*\*\*\* OR \*\*\*\*

* + 1. Resin Infused Composite Panels:
			1. Product: Striata Fusion.
			2. Recycled content: 70 pre-consumer recycled wood.
			3. Free from added urea formaldehyde.

Edit the following paragraph to indicate color of resin infused composite sheet.

* + - 1. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

Edit the following paragraph to indicate thickness of resin infused composite sheet.

* + - 1. Thickness: [5/16] [1/2] [3/4] inch, tested to ASTM D1037.
			2. Physical characteristics:
				1. Density: 68, tested to ASTM D2395.
				2. Internal bond: 287, tested to ASTM D1037.
				3. Modulus of rupture: 15,387, tested to ASTM D1037.
				4. Modulus of elasticity: 2,155,160, tested to ASTM D1037.
				5. Hardness, Janka ball: 4589, tested to ASTM D1037.
				6. Screw holding; tested to ASTM D1037:

Face: 663.

Edge: 478.

* + - * 1. Linear expansion: 0.01, tested to ASTM D1037.
				2. Moisture content: 3.9, tested to ASTM D4442.
				3. Fire rating: Class B, tested to ASTM E84.
	1. ACCESSORIES
		1. Adhesives:
			1. Type recommended by resin infused composite panel manufacturer.
			2. Maximum volatile organic compound (VOC) content: [70] [\_\_] grams per liter.
		2. Filler: Color-matched wood filler or solid surface epoxy.
		3. Finish: Clear [conversion varnish,] [polyurethane,] [laquer,] [satin.] [semigloss.] [gloss.]
	2. FABRICATION
		1. Fabricate panels to sizes and shapes indicated, in accordance with manufacturer's instructions and approved Shop Drawings.
		2. Provide holes and cutouts for mounting of wall-mounted equipment and accessories.
		3. Fill voids with filler; finish smooth and flush with adjacent surfaces.
		4. Lightly sand completed fabrications with minimum 220 grit orbital sander.
		5. Wipe off surfaces using mineral spirits and allow to dry.
		6. Apply one coat sealer and two finish coats. Allow each coat to dry completely before applying subsequent coats.
		7. Allowable Tolerances:
			1. Maximum variation in size: [1/8] [\_\_] inch.
			2. Maximum variation in location of openings: [1/8] [\_\_] inch from indicated location.
1. **EXECUTION**
	1. PREPARATION
		1. Clean surfaces to receive panels; remove loose and foreign matter than could interfere with adhesion.
	2. INSTALLATION
		1. Install panels in accordance with manufacturer’s instructions and approved Shop Drawings.
		2. Adhere panels with continuous beads of adhesive.
		3. Install panels plumb. Align adjacent pieces in same plane.
		4. Install with hairline joints.
	3. INSTALLATION TOLERANCES
		1. Maximum variation from plumb: 1/4 inch in 10 feet, noncumulative.
		2. Maximum variation in plane between adjacent pieces at joint: Plus or minus 1/16 inch.
	4. CLEANING
		1. Clean panels in accordance with manufacturer's instructions.

END OF SECTION