**SECTION 10 21 13**

**FRP/ Aluminum Bathroom Partitions**

**PART 1 GENERAL**

1. **SECTION INCLUDES**
	1. Special-Lite Bathroom Partitions.
2. **RELATED SECTIONS**
	1. Section 10 20 00 – Interior Specialties.
	2. Section 10 21 00 – Compartments and Cubicles.
3. **REFRENCES**

* 1. [ASTM-B209](#ASTM_B_209) – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
	2. [ASTM-B221](#ASTM_B_221) – Standard Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
	3. [ASTM-D256](#ASTM_D_256) – Standard Test Methods for Determining the Pendulum Impact Resistance of Plastics.
	4. [ASTM-D570](#ASTM_D_570) – Standard Test Method for Water Absorption of Plastics.
	5. [ASTM-D638](#ASTM_D_638) – Standard Test Method for Tensile Properties of Plastics.
	6. [ASTM-D790](#ASTM_D_790) – Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
	7. [ASTM-D1621](#ASTM_D_1621) – Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
	8. [ASTM-D1622](#ASTM_D_1622) – Standard Test Method for Apparent Density of Rigid Cellular Plastics.
	9. [ASTM-D1623](#ASTM_D_1623) – Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
	10. [ASTM-D2126](#ASTM_D_2126) – Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
	11. [ASTM-D2583](#ASTM_D_2583) – Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
	12. [ASTM-D3029](#ASTM_D_3029) – Test Methods for Impact Resistance of Flat Rigid Plastic Specimens by Means of a Tup (Falling Weight) (Withdrawn 1995) (Replaced by ASTM-D5420).
	13. [ASTM-D5116](#ASTM_D_5116) – Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/ Products.
	14. [ASTM-D5420](https://www.astm.org/Standards/D5420.htm) – Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact).
	15. [ASTM-D6670](#ASTM_D_6607) – Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/ Products.
	16. [ASTM-E84](#ASTM_E_84) – Standard Test Method for Surface Burning Characteristics of Building Materials.
	17. [NFPA 286](https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=286) – Standard methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.
1. **SUBMITTALS**
	1. Must comply with Section 01 33 00 – Submittal Procedures.
	2. Action Submittals/ Informational Submittals.
		1. Product Data.
			1. Submit manufacturer’s product data sheets, catalog pages illustrating the products, description of materials, components, fabrication, finishes, installation instructions, and applicable test reports.
		2. Shop Drawings.
			1. Submit manufacturer’s shop drawings, including elevations, sections, and details indicating dimensions, tolerances, materials, fabrication, doors, panels, and finish.
		3. Samples.
			1. Submit manufacturer’s panel sample composed of panel face sheet, core, framing and finish.
			2. Submit manufacturer’s sample of standard colors for panel face and frame.
		4. Testing and Evaluation Reports.
			1. Submit testing reports and evaluations provided by manufacturer conducted by and accredited independent testing agency certifying panels and frames comply with specified performance requirements listed in Section 2.03.
		5. Manufacturer Reports.
			1. Manufacturer’s Project References.
				1. Submit list of successfully completed projects including project name, location, name of architect, type, and quantity of panels manufactured.
	3. Closeout Submittals.
		1. Operation and Maintenance Manual.
			1. Submit manufacturer’s maintenance and cleaning instructions for panels.
		2. Warranty Documentation.
			1. Submit manufacturer’s standard warranty.
2. **QUALITY ASSURANCE**
	1. Manufacturer’s Qualifications.
		1. Continuously engaged in manufacturing of panels of similar type to that specified, with a minimum of 25 years concurrent successful experience.
		2. Evidence of a documented complaint resolution quality management system.
3. **DELIVERY, STORAGE, AND HANDLING**
	1. Delivery.
		1. Deliver materials to site in manufacturer’s original, unopened, containers and packaging.
	2. Storage.
		1. Store materials in a clean, dry area, indoors in accordance with manufacturer’s instructions.
	3. Handling.
		1. Protect materials and finish from damage during handling and installation.
4. **WARRANTY**
	1. Warrant panels and factory hardware against failure in materials and workmanship, including excessive deflection, faulty operation, defects in hardware installation, and deterioration of finish or construction in excess or normal wear and tear.
	2. Standard Period.
		1. Ten years starting on date of shipment.
	3. Limited lifetime
		1. Covers failure of corner joinery, core deterioration, and delamination or bubbling of panel skin and corrosion of all-fiberglass products while the panel is in its specified application in its original installation.
	4. Finish
		1. Anodized, aluminum:10 years.

**PART 2 PRODUCTS**

1. **FRP/ALUMINUM BATHROOM PARTITIONS**
	1. Manufacturer.
		1. Special-Lite, Inc.
			1. PO Box 6, Decatur, Michigan 49045.
			2. Toll Free (800) 821-6531, Phone (269) 423-7068, Fax (800) 423-7610.
			3. Web Site [www.special-lite.com](http://www.special-lite.com).
			4. E-Mail info@special-lite.com.
2. **DESCRIPTION**
	1. Model.
		1. [Special-Lite Bathroom Partitions.](https://special-lite.com/product/special-lite-toilet-partitions/)
	2. Panel Size.
		1. Standard Size.
			1. 58” tall x 59” wide.
		2. Optional Sizes.
			1. 58” tall x up to 72” wide.
	3. Door Size.
		1. 24” or 36” wide door opening.
	4. Pilaster Size.
		1. 80” tall standard size.
		2. Minimum 3” wide in 1” increments up to 12”, 12” to 24” wide in 2” increments.
	5. Construction.
		1. Panel Thickness.
			1. 1-1/4”.
		2. Aluminum Perimeter Channel.
			1. Aluminum extrusions made from 6063 aluminum alloys with a minimum temper of T5.
			2. Minimum 1-3/4” deep one-piece extrusion with have integral reglets to accept face sheet on both interior and exterior side of panel which secure face sheet into place and permit flush appearance.
			3. Screw or snap in place applied caps are not acceptable.
		3. Corners.
			1. Mitered.
			2. Mechanically fastened.
		4. Core.
			1. Poured-in-place polyurethane foam.
			2. Laid in foam cores are not acceptable.
		5. Face Sheet.
			1. Standard
				1. 0.09” thick, pebble texture, through color with SpecLite 3® integral surfaseal film FRP sheet.
				2. Optional painted finish consult manufacturer.
				3. Class C standard.
			2. Attachment of face sheet.
				1. Extruded panel perimeter frame to have integral reglets to accept face sheet on both sides of panel which secure face sheet into place and permit flush appearance.
				2. Use of glue to bond face sheet to core or extrusions is not acceptable.
		6. Pilaster Shoes.
			1. 4” tall anodized aluminum.
		7. Headrail.
			1. Extruded, anodized aluminum with anti-grip profile.
		8. Latch.
			1. Sliding type.
			2. Thru bolted to door.
		9. Mounting Brackets.
			1. Standard.
				1. Full height “U-Shaped” aluminum brackets.
				2. Panels to be thru bolted to brackets.
			2. Optional.
				1. Full height “T-Shaped” aluminum brackets.
				2. Panels to be thru bolted to brackets.
3. **PERFORMANCE**
	1. Face Sheet.
		1. Standard, Colonial White, Beige, Pearl Grey, Class C 0.09” thick, pebble texture, through color with SpecLite 3® integral surfaseal film FRP sheet.
			1. Flexural Strength, ASTM-D790: 8.6 x 103 psi.
			2. Flexural Modulus, ASTM-D790: 0.44 x 106 psi.
			3. Tensile Strength, ASTM-D638: 4.6 x 103 psi.
			4. Tensile Modulus, ASTM-D638: 0.75 x 106 psi.
			5. Barcol Hardness, ASTM-D2583: 27.
			6. Izod Impact, ASTM-D256: 8.6 ft-lb/in.
			7. Gardner Impact Strength, ASTM-D5420: 30 in-lb.
			8. Water Absorption, ASTM-D570: 0.16%/24hrs at 77°F.
			9. Surface Burning, ASTM-E84: Flame Spread ≤ 200, Smoke Developed ≤ 450.
			10. Taber Abrasion Resistance, Taber Test: 0.01% Max Wt. Loss, cs-17 wheels, 1000g. Wt., 25 cycles.
			11. Chemical Resistance.
				1. Excellent Rating.

Acetic Acid, Concentrated.

Acetic Acid, 5%.

Bleach Solution.

Detergent Solution.

Distilled Water.

Ethyl Acetate.

Formaldehyde.

Heptane.

Hydrochloric Acid, 10%.

Hydrogen Peroxide, 3%.

Isooctane.

Lactic Acid, 10%.

* + - 1. USDA/FSIS Requirements.
				1. FRP face sheet with SpecLite 3® integral surfaseal is a finished outer surface material that is rigid; durable; non-toxic; non-corrosive; moisture resistant; a light, solid color such as white; easily inspected; smooth or an easily cleaned texture.
				2. FRP face sheet with SpecLite 3® integral surfaseal does not contain any known carcinogen, mutagen, or teratogen classified as hazardous substances; heavy metals or toxic substances; antimicrobials; pesticides or substances with pesticidal characteristics.
		1. Standard, Light Grey, Seawolf, Blue, Black, Slate Grey, Sage Brown, White, Desert Sand, Class C 0.09” thick, pebble texture, through color with SpecLite 3® integral surfaseal film FRP sheet.
			1. Flexural Strength, ASTM-D790: 16.4 x 103 psi.
			2. Flexural Modulus, ASTM-D790: 0.6 x 106 psi.
			3. Tensile Strength, ASTM-D638: 12.0 x 103 psi.
			4. Tensile Modulus, ASTM-D638: 1.3 x 106 psi.
			5. Barcol Hardness, ASTM-D2583: 50.
			6. Izod Impact, ASTM-D256: 18.5 ft-lb/in.
			7. Gardner Impact Strength, ASTM-D5420: 100 in-lb.
			8. Water Absorption, ASTM-D570: 0.20%/24hrs at 77°F.
			9. Surface Burning, ASTM-E84: Flame Spread ≤ 200, Smoke Developed ≤ 450.
			10. Chemical Resistance.
				1. Excellent Rating.

Acetic Acid, Concentrated.

Acetic Acid, 5%.

Bleach Solution.

Detergent Solution.

Distilled Water.

Ethyl Acetate.

Formaldehyde.

Heptane.

Hydrochloric Acid, 10%.

Hydrogen Peroxide, 3%.

Isooctane.

Lactic Acid, 10%.

* + - 1. USDA/FSIS Requirements.
				1. FRP face sheet with SpecLite 3® integral surfaseal is a finished outer surface material that is rigid; durable; non-toxic; non-corrosive; moisture resistant; a light, solid color such as white; easily inspected; smooth or an easily cleaned texture.
				2. FRP face sheet with SpecLite 3® integral surfaseal does not contain any known carcinogen, mutagen, or teratogen classified as hazardous substances; heavy metals or toxic substances; antimicrobials; pesticides or substances with pesticidal characteristics.
	1. Panel Core.
		1. Density, ASTM-D1622: ≤ 5.0 pcf.
		2. Compressive Properties, ASTM-D1621: Compressive Strength ≥ 60 psi, Compressive Modulus ≥ 1948 psi.
		3. Tensile and Tensile Adhesion Properties, ASTM-D1623: Tensile Adhesion, 3” x 3” FRP Facers ≥ 53 psi, Tensile Adhesion, 1” x 1” Foam ≥ 104 psi.
		4. Thermal and Humid Aging, ASTM-D2126: Volume Change at 158 °F, 100% humidity, 14 days ≤ 13%.
		5. Thermal Conductivity, ASTM-C518, Thermal Resistance ≥ 0.10 m2K/W.
	2. Complete Panel.
		1. NFPA 286
			1. Pass
		2. Indoor Air Quality, ASTM-D5116, ASTM-D6607: GreenGuard, GreenGuard Gold.
1. **MATERIALS**
	1. Aluminum Members.
		1. Aluminum extrusions made 6061 or 6063 aluminum alloys.
		2. Sheet and plate to conform to ASTM-B209.
		3. Alloy and temper to be selected by manufacturer for strength, corrosion resistance, and application of required finish, and control of color.
	2. Fiberglass.
		1. See 2.02.E.5.
	3. Fasteners.
		1. All exposed fasteners will have a finish to match material being fastened.
		2. 410 stainless steel or other non-corrosive metal.
		3. Must be compatible with items being fastened.
2. **FABRICATION**
	1. Factory Assembly.
		1. Complete cutting, fitting, forming, drilling, and grinding of metal before assembly.
		2. All cut edges to be free of burs.
		3. Welding of panel perimeter frame is not acceptable.
		4. Maintain continuity of line and accurate relation of planes and angles.
		5. Secure attachments and support at mechanical joints with hairline fit at contact surfaces.
	2. Shop Fabrication
		1. All shop fabrication to be completed in accordance with manufactures process work instructions.
		2. Quality control to be performed before leaving each department.
3. **FINISHES**
	1. Panel.
		1. Aluminum Perimeter Frame.
			1. Anodizing.
				1. Class 1 Anodizing, minimum 0.7 mils thick.
				2. Clear 215 R1, AA-M10C12C22A41.
		2. FRP Face Sheets
			1. Through color.
				1. [Color.](https://special-lite.com/wordpress/wp-content/uploads/files/Categories/Restroom_Partitions/Literature/Restroom-Partition-brochure.pdf)

Choose an item.

1. **ACCESSORIES**
	1. Hinges.
		1. Standard.
			1. SL-38.
		2. Optional.
			1. SL-64 self-closing.

**PART 3 EXECUTION**

1. **EXAMINATION**
	1. Examine areas to receive panels.
	2. Notify architect of conditions that would adversely affect installation or subsequent use.
	3. Do no proceed with installation until unsatisfactory conditions are corrected.
2. **PREPARATION**
	1. Ensure openings to receive panels are plumb, level, square, and in tolerance.
3. **ERECTION**
	1. Install panels in accordance with manufacturer’s instructions.
	2. Install panels plumb, level, square, true to line, and without warp or rack.
	3. Anchor panels securely in place.
	4. Separate aluminum from other metal surfaces with bituminous coatings or other means approved by architect.
	5. Repair minor damages to finish in accordance with manufacturer’s instructions and as approved by architect.
	6. Remove and replace damaged components that cannot be successfully repaired as determined by architect.
4. **FIELD QUALITY CONTROL**
	1. Manufacture’s Field Services.
		1. Manufacturer’s representative shall provide technical assistance and guidance for installation of panels.
5. **ADJUSTING**
	1. Adjust partition doors, hinges, and locksets for smooth operation without binding.
6. **CLEANING**
	1. Clean panels promptly after installation in accordance with manufacturer’s instructions.
	2. Do not use harsh cleaning materials or methods that would damage finish.

**END OF SECTION**