SECTION 08 16 13

FRP FLUSH PANEL DOORS

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\*\* NOTE TO SPECIFIER \*\* Cline Aluminum Doors, Inc.; FRP Flush Panel Doors and Aluminum Frame products.  
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This section is based on the products of Cline Aluminum Doors, Inc., which is located at:112 32nd Ave. W.Bradenton, FL 34205-8096Toll Free Tel: 800-648-6736Tel: 941-746-4104Fax: 941-746-5153Email: [request info (information@clinedoors.com)](https://arcat.com/rfi?action=email&company=Cline%252BAluminum%252BDoors%252C%252BInc.&message=RE%253A%2520Spec%2520Question%2520(08270cli)%253A%2520&coid=31485&spec=08270cli&rep=&fax=941-746-5153)  
Web: <http://www.clinedoors.com>   
 [ [Click Here](https://arcat.com/company/cline-aluminum-doors-inc-31485) ] for additional information.  
Founded in 1961, Cline Doors has been providing high quality commercial doors for over 50 years. As the oldest manufacturer of flush aluminum doors in the country, Cline prides itself on manufacturing quality doors and frames that withstand the harshest environments. The Series 100BE aluminum flush door sets the industry standard with our experience in the commercial arena. Expanding on this success, Cline introduced the Series 200BE FRP Flush Door, the Series 400SE Heavy-Duty Screen Door, and the Series 500SE Stile and Rail Door. These different door series all facilitate in meeting or exceeding the demands from architects, owners, and contractors. Cline Doors is the perfect fit for your commercial, governmental, educational, industrial, recreational, or transportation applications.  
Whether you are looking for Aluminum, FRP, Stile and Rail, or Heavy-Duty Screen Doors, Cline has the product to fit your application. Cline Doors pre- and post-consumer recycle content can contribute to your Sustainable Design and Green Building requirements, while our low maintenance and service longevity also reduce Life-Cycle Costs. Our expertise in the industry, along with competitive pricing, fast lead-times and exceptional customer service, makes Cline a leader for American-manufactured products that will meet all your commercial needs.

1. GENERAL
   1. SECTION INCLUDES

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

* + 1. Flush Panel FRP Doors.
    2. Aluminum Door Frames.
  1. RELATED SECTIONS

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

* + 1. Section 04 27 23 - Cavity Wall Unit Masonry [04 20 00] - Unit Masonry Assemblies: Prepared opening in masonry.
    2. Section 06 10 00 - Rough Carpentry [06 10 00] - Rough Carpentry: Hardware installation.
    3. Section 08 71 00 - Door Hardware [08 71 00] - Door Hardware: Product Requirements for cylinder core and keys.
    4. Section 07 90 00 - Joint Protection [07 91 00] - Joint Sealers.
    5. Section 08 83 13 - Mirrored Glass Glazing [08 80 00] - Glazing.
    6. Section 09 90 00 - Painting and Coating [09 91 00] - Field Painting.
  1. REFERENCES

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

* + 1. AAMA 605.2 - Guide Specification for High Performance Finishes
    2. AAMA 609 - Anodized Architectural Finishes Cleaning and Maintenance.
    3. AAMA 611 - Anodized Architectural Standards.
    4. AAMA 701 - Pile Weather Strip.
    5. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
    6. ASRM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
    7. ASTM C 365 - Standard Test Method for Flatwise Compressive Properties of Sandwich Cores
    8. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials
    9. ASTM E 330 - Structural Performance of Exterior Doors.
    10. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
  1. DESIGN / PERFORMANCE REQUIREMENTS
     1. Performance: Based on minimum single door size tested of 3 feet (91.44 cm) by 7 feet (213.36 cm) with 24 inch (60.96 cm) by 34 inch (86.36 cm) vision light.
        1. With door closed and locked, unit tested in accordance with ASTM E 330 at static air pressure difference of 90 pounds per square foot positive pressure and 90 pounds per square foot negative pressure.
        2. At conclusion of test there shall be no glass breakage, permanent damage to fasteners, hardware parts, support arms or actuating mechanism, nor any other damage that would cause the door to be inoperable.
     2. Florida Building Code Compliant: Florida Building Code Product Approval #FL6336
  2. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Fabrication and hardware mounting details.
        2. Preparation instructions and recommendations.
        3. Storage and handling requirements and recommendations.
        4. Installation instructions.
        5. Operation and maintenance data.
     3. Shop Drawings: Indicate the following:
        1. Elevations and details of each door and frame type.
        2. Schedule of doors and frames.
        3. Conditions at openings with various wall thicknesses and materials.
        4. Location and installation requirements for hardware.
        5. Thicknesses of materials, joints.
        6. Connections and trim.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
    2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) by 6 inches (150 mm), representing actual product, color, and of finish. Where color or texture variations are anticipated for anodized finishes, include two or more units in each set of samples indicating extreme limits of variations.
    3. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
    4. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment and periodic cleaning and maintenance of all components.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Company specializing in manufacturing FRP and aluminum door and aluminum frame systems of the type required for this project, with minimum ten continuous years documented experience.
     2. Installer Qualifications: Company specializing in installation aluminum door and frame systems of the type required for this project, with minimum five continuous years documented experience.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project 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: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
       1. Finish areas designated by Architect.
       2. Do not proceed with remaining work until workmanship and color are approved by Architect.
       3. Refinish mock-up area as required to produce acceptable work.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver doors and frames palleted, wrapped or individually crated. Protect door sides with surrounding grooved 2 inch (50.8 mm) by 4 inch (101.6 mm) wood frame, covered with 275 pound (124.74 kg) test corrugated cardboard.
     2. Store products under cover in manufacturer's unopened packaging with labels intact until installation.
        1. Place units on minimum 4 inch (101.6 mm) wood blocking.
        2. Do not use non-vented plastic or canvas covers.
        3. Remove packaging immediately if packaging becomes wet.
        4. Provide 0.25 inch (6.35 mm) air spaces between stacked doors.
     3. Protect materials and finish from damage during handling and installation.
  2. SEQUENCING
     1. Ensure that templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
  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 absolute limits.
     2. Verify actual openings by field measurements before fabrication; show recorded measurements on shop drawings.
     3. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.
  4. WARRANTY
     1. Provide manufacturer's 10 year warranty against defects in workmanship and materials, including warping, rotting, decaying or bowing.
     2. Provide installers 5 year warranty against defects due to workmanship and materials handling.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Cline Aluminum Doors, Inc., which is located at:112 32nd Ave. W.Bradenton, FL 34205-8096Toll Free Tel: 800-648-6736Tel: 941-746-4104Fax: 941-746-5153Email: [request info (information@clinedoors.com)](https://arcat.com/rfi?action=email&company=Cline%252BAluminum%252BDoors%252C%252BInc.&message=RE%253A%2520Spec%2520Question%2520(08270cli)%253A%2520&coid=31485&spec=08270cli&rep=&fax=941-746-5153);Web: <http://www.clinedoors.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. FRP FLUSH DOORS AND ALUMINUM FRAMES
     1. FRP Flush Doors: Provide FRP Flush Door Series 200BE of the type, size and design indicated on the Drawings.
        1. Minimum Thickness: 1.75-inches (44 mm)
        2. Construction: 3-ply composite laminate system.
        3. Door Size: Sizes are nominal; provide standard clearances as follows:
           1. Hinge and Lock Stiles: 0.125-inch (3.18 mm).
           2. Between Meeting Stiles: 0.25-inch (6.35 mm).
           3. At Top Rails: 0.125-inch (3.18 mm).
           4. Between Door Bottom and Threshold: 0.125-inch (3.18 mm).
     2. Aluminum Frames: Provide Aluminum Door frames of the type, size and design indicated on the Drawings.
     3. Aluminum Members: Provide alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish.
     4. FRP Door Components: Minimum 3 ply composite laminated construction to include:
        1. Facing: 0.120-inch (3.05 mm) composite FRP panel exterior grade, UV-protected fiber reinforced polyester panel on interior and exterior faces. Ultraviolet inhibitors shall be maximum amount formulated within the resin. Exterior and interior FRP panels shall be a Class C Flame Spread: Maximum of 75, and Smoke Developed Rating of 450 or less (ASTM E 84)

\*\* NOTE TO SPECIFIER \*\* Select one of the following two surface texture paragraphs and delete the one not required. Pebble embossed is standard.

* + - 1. Surface texture shall be pebble embossed with a non-directional pattern.
      2. Surface Texture shall be smooth.
      3. All mylar transporter fabrication film must be removed from FRP face sheets prior to door fabrication.
      4. FRP face panels shall be USDA accepted with minimal porosity.
      5. Face sheet shall be bonded to core and backup tube from edge to edge of door.
      6. FRP face sheets shall be a Class C Flame Spread: Maximum of 75 and Smoke Developed rating of 450 or less (ASTM E 84), for both interior and exterior faces of interior and exterior doors
      7. Core: Organic marine grade honeycomb core with high compression strength of 94.8 psi (ASTM C 365), and internal aluminum hardware backup tube.
      8. Hardware Backup: Minimum of 4.25 inches (107.95 mm) in width, 1.375 inches (34.93 mm) in depth with a wall thickness of 0.125 inches (3.18 mm). Contiguous for the full perimeter of the door to allow for all specified and non specified hardware reinforcement.
      9. Hardware Preparation: Provide for specified hardware including mortise lock edge prep or cylindrical lock prep; and pairs prepped for flush bolts, if required.
      10. Bonding Agent: Environmentally friendly adhesive with strength buildup of 350 pounds per square inch (24.6 kg/cm2).
      11. Perimeter Door Trim: Wall thickness of 0.050 inch (1.25 mm) minimum in 6063-T5 extruded aluminum alloy conforming to ASTM B 221 with special beveled edge cap design and integral weather stripping on lock stile.
      12. Replaceable Door Trim: Mechanically fastened to the hardware backup tube, allowing for replacement in the field, if damaged.
      13. Trim Finish: To have minimum of an AAMA Class I anodized finish.
      14. Weather stripping: Replaceable wool pile with nylon fabric, polypropylene backing meeting AAMA 701 standards. Applied weather stripping is not acceptable.
      15. Only nonferrous, non-rusting members are acceptable, including tie rods, screws and reinforcement plates.
      16. All components and agents shall meet EPA standards.
    1. FRP Finish

\*\* NOTE TO SPECIFIER \*\* Select the color required from following paragraphs and delete those not required.

* + - 1. Color: Selected by Architect from manufacturer's full range of available colors.
      2. Color: Custom color matching Architect's sample.

\*\* NOTE TO SPECIFIER \*\* Select the following glazing paragraph if required and delete if not required.

* + 1. Glazing:
       1. Glass:

\*\* NOTE TO SPECIFIER \*\* Select the glass required from following paragraphs and delete the ones not required.

* + - * 1. 0.25-inch (6.36 mm) tempered.
        2. 1-inch (25 mm) insulating, tempered.
        3. 0.5625-inch (14.29 mm) laminated hurricane glass.
      1. Stops: Snap-in, non-removable type, 6063-T5 extruded aluminum alloy conforming to ASTM B 221 and 0.050-inch (1.25 mm) thickness.
      2. Seals: Vinyl inserts.
      3. No fasteners shall be exposed.

\*\* NOTE TO SPECIFIER \*\* Select the following door louver paragraph if required and delete if not required.

* + 1. Door Louvers:
       1. Blades and Frames: 6063-T5 extruded aluminum alloy conforming to ASTM B 221, 0.062 inch (1.57 mm) minimum thickness. Louver blades shall be inverted "Y" type.
       2. Insect Screens: 14-18 mesh, 0.011 inch (0.28 mm) diameter Alclad aluminum, set in 6063-T5 extruded aluminum alloy frame conforming to ASTM B 221, 0.050 inch (1.25 mm) minimum thickness.
       3. Louver shall have a minimum of 50 percent free airflow.

\*\* NOTE TO SPECIFIER \*\* Select the following aluminum frame component paragraph if required and delete if not required.

* + 1. Aluminum Frame:
       1. Frame Components: Extruded channel (tubular) 6063-T5 aluminum alloy conforming to ASTM B 221, minimum wall thickness 0.125 inch (3.18 mm); cut corners square and joinery shall be mechanical with no exposed fasteners.
       2. Profile:
       3. Open Back with Applied Stop (OBS), 1.75-inch by 5 inch (44 by 127 mm).
       4. Hinge and Strike Mounting Plates: Extruded aluminum alloy bar stock, 0.1875 inch (4.75 mm) thick mounted in a concealed integral channel with no exposed fasteners.
       5. Replaceable Weatherstripping: AAMA 701, wool pile with nylon fabric, polypropylene backing, at head and jambs.
       6. Door Stop: Snap-in door stop shall be 0.1875-inch (4.76mm) extruded aluminum bar stock. Screw-on stops are not acceptable.
    2. Aluminum Finish

\*\* NOTE TO SPECIFIER \*\* Select the finish required from following paragraphs and delete those not required. Clear anodic coating is standard

* + - 1. Finish: Clear anodic coating; AA-M12C22A31 Class II mechanical finish, non-specular, with chemical medium-matte etch, minimum thickness 0.4-mil (0.01 mm).
      2. Finish: Dark Bronze anodic coating; AA-M12C22A34 Class II mechanical finish, non-specular as fabricated, with medium-matte chemical etch, minimum thickness 0.4-mil (0.01 mm).
      3. Finish: Medium Bronze anodic coating: AA-M12C22A34 Class II mechanical finish, non-specular as fabricated, with medium-matte chemical etch, minimum thickness 0.4-mil (0.01 mm).
      4. Finish: Light Bronze anodic coating; AA-M12C22A34 Class II mechanical finish, non-specular as fabricated, with medium-matte chemical etch, minimum thickness 0.4-mil (0.01 mm).
      5. Finish: Black anodic coating; AA-M12C22A34 Class II mechanical finish, non-specular as fabricated, with medium-matte chemical etch, minimum thickness 0.4-mil (0.01 mm).
      6. Finish: High Performance Organic Coating: Kynar/Polyvinylidene Fluoride (PVDF) (AAMA 605.2).

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the one not required.

* + - 1. Color: Selected by Architect from manufacturer's full range of available colors.
      2. Color: Custom color matching Architect's sample.
    1. Accessories
       1. Fasteners: Aluminum, nonmagnetic stainless steel, or other material warranted by manufacturer as non-corrosive and compatible with aluminum components. Do not use exposed fasteners.
       2. Brackets and Reinforcements: Manufacturer's high-strength aluminum units where feasible, otherwise, nonferrous stainless steel.
       3. Bituminous Coating: Cold-applied asphaltic mastic, compounded for 30-mil (0.76 mm) thickness per coat.
  1. FABRICATION
     1. FRP Flush Door: Fabricate Doors of the type, size and design indicated on the Drawings.
        1. Thickness: 1.75-inches (44 mm), 5-ply composite laminate system.
        2. Door Size: Sizes are nominal; provide standard clearances as follows:
           1. Hinge and Lock Stiles: 0.125-inch (3.18 mm).
           2. Between Meeting Stiles: 0.25-inch (6.35 mm).
           3. At Top Rails: 0.125-inch (3.18 mm).
           4. Between Door Bottom and Threshold: 0.125-inch (3.18 mm).
        3. Coordinate with Section 08 83 13 - Mirrored Glass Glazing Hardware for the reinforcing requirements of the hardware specified.

\*\* NOTE TO SPECIFIER \*\* Select the aluminum frame if required from following paragraphs and delete if not required.

* + 1. Aluminum Frames: Fabricate doors frames of the type, size and design indicated on the Drawings.
       1. Cut corners square.
       2. Reinforce and secure mechanically.
       3. No exposed fasteners.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. Verify that wall surfaces and openings are ready to receive frames and are within tolerances specified in manufacturer's instructions.
      3. Verify frames installed by other trades for installation of doors of this section are in strict accordance with the manufacturer's instructions.
      4. If preparation is the responsibility of another installer, notify Architect 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. INSTALLATION

\*\* NOTE TO SPECIFIER \*\* Select the following three aluminum frame paragraphs if required and delete if not required.

* + 1. Install frames in accordance with manufacturer's instructions and approved shop drawings; set frames plumb, square, level, and aligned to receive doors.
    2. Perform cutting, fitting, forming, drilling, and grinding of frames as required for project conditions; do not damage sight-exposed finishes.
    3. Anchor frames to adjacent construction within tolerances specified in manufacturer's instructions.
    4. Seal metal-to-metal joints between framing members using good quality elastomeric sealant.
    5. Where aluminum surfaces contact with metals other than stainless steel, zinc or small areas of white bronze, protect from direct contact by one or more of the following methods.
       1. Paint dissimilar metal with one coat of heavy-bodied bituminous paint.
       2. Apply good quality elastomeric sealant between aluminum and dissimilar metal.
       3. Paint dissimilar metal with one coat of primer and one coat of paint recommended for aluminum surface applications.
       4. Use non-absorptive tape or gasket in permanently dry locations.
    6. Hang doors with required clearances as follows:
       1. Hinge and Lock Stiles: 0.125 inch (3.18 mm).
       2. Between Meeting Stiles: 0.250 inch (6.35 mm).
       3. At Top Rails: 0.125 inch (3.18 mm).
       4. Between Door Bottom and Threshold: 0.125 inch (3.18 mm).
    7. Adjust doors and hardware to operate properly.

\*\* NOTE TO SPECIFIER \*\* Edit the following paragraphs as required and delete those not required.

* + 1. Install glazing in glazing frames.
    2. Install hardware for doors of this section as specified in Section 06 10 00 - Rough Carpentry.
    3. Installation of door hardware is specified in Section 08 71 00 - Door Hardware.
    4. Installation of glass is specified in Section 08 83 13 - Mirrored Glass Glazing.
  1. CLEANING
     1. Upon completion of installation, thoroughly clean door and frame surfaces in accordance with AAMA 609.
     2. Do not use abrasive, caustic or acid cleaning agents.
  2. PROTECTION
     1. Protect products of this section from damage caused by subsequent construction until substantial completion.
     2. Repair damaged or defective products to original specified condition in accordance with manufacturer's recommendations.
     3. Replace damaged or defective products that cannot be repaired to Architect's acceptance.
  3. SCHEDULES

\*\* NOTE TO SPECIFIER \*\* Retain Paragraph below if required to suit project requirements. Identify products by name on the Drawings or use this paragraph to define the location of each type of material to be used. The following are some examples of schedule references. Edit as required to suit project or delete and identify products on the Drawings.

* + 1. :
    2. :

END OF SECTION