



SECTION 08 42 13.01

BLAST-RESISTANT ALUMINUM ENTRANCES (FORCEFRONT-BLAST MONUMENTAL DOORS)

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: This Section includes, but shall not be limited to, all necessary materials, labor, and equipment for the complete installation of blast-resistant aluminum entrance doors, door frames, and hardware as shown on the Drawings and specified herein.

1.2 SYSTEM DESCRIPTION

- A. Provide the manufacturer's aluminum entrances, adapted to the application indicated, and modified as required to comply with performance requirements and materials required, as demonstrated by testing the manufacturer's corresponding systems according to test methods indicated.
 - 1. Blast Performance Characteristics: Provide a blast resistant aluminum entrance assembly. Doors shall be the manually operated, side hinged, swinging type, as scheduled. Each door assembly shall include, but shall not be limited to, the door, frame, anchors, hardware, and accessories and shall be provided by a single manufacturer. Frames and anchors shall be capable of transferring blast and rebound reactions to the adjacent supporting structure. Resistance to blast shall be demonstrated either by design calculations or tests on prototype door assemblies.
 - a. Blast Performance Summary:

<u>Applicable Standard</u>	<u>Rating</u>
ASTM F1642-04	Minimal Hazard
GSA TS01-2003	Performance Condition 2
UFC 4-010-01	Medium Level of Protection

1.3 SUBMITTALS

- A. General: See Section 01 33 00 - Submittal Procedures.
 - 1. Product Data: Submit product data showing material proposed.
 - 2. Shop Drawings: Submit shop drawings for each product and accessory required.
 - 3. Samples: If colors not preselected or scheduled, submit samples for initial color selection. Submit samples for verification purposes.
- B. Quality Control Submittals:
 - 1. Design Data:
 - a. Submit design calculations for the glazed entrance system and the connections for attaching them to the structure.

- b. Submit design calculations for the blast-resistant aluminum entrance assemblies showing conformance with the specified blast-resistant requirements. The design data shall be signed and sealed by the professional engineer. In lieu of design calculations, certified test reports from an independent inspecting and testing agency may be provided to verify the blast-resistant aluminum entrance assembly's ability to resist the specified blast resistance.
- 2. Test Reports: Submit two copies each, plus the number the Contractor wants returned, of tests.
- 3. Certificates:
 - a. Submit designer's certification.
 - b. Submit manufacturer's certification that the Installer is approved.

Retain below for project requiring LEED certification.

- C. LEED Submittals: Furnish submittals that are required to comply with requirements for LEED certification.
- D. Operation and Maintenance Manuals: Furnish complete operation and maintenance manuals describing the materials, devices, and procedures to be followed in operating, cleaning, and maintaining the work.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with applicable requirements of the laws, codes, ordinances, and regulations of Federal, State, and local authorities having jurisdiction. Obtain necessary approvals from such authorities.
- B. Mock-Ups: Prior to installation of the work, fabricate and erect mock-ups for each type of finish and application required to verify selections made under sample submittals and to demonstrate aesthetic effects as well as qualities of materials and execution.
- C. Pre-Installation Conference: Conduct pre-installation conference in accordance with Section 01 31 19 - Project Meetings.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver units to the Project site completely identified. Store in dry protected location off ground in accordance with manufacturer's instructions. Protect from damage, including, but not limited to, from weather and construction activities.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Take field measurements prior to fabrication of the work and preparation of shop drawings, to ensure proper fitting of the work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: Product specified is "ForceFront-Blast Monumental Doors" as manufactured by Tubelite, Inc. Items specified are to establish a standard of quality for design, function, materials, and appearance. Equivalent products by listed manufacturers are acceptable. The Architect will be the sole judge of the basis of what is equivalent.
 - 1. Product shall be American-made.

2.2 MATERIALS

Retain below for project requiring LEED certification.

- A. LEED Requirements: Provide products and materials that comply with requirements for LEED certification.
- B. Materials:
 - 1. Extrusions shall be of aluminum alloy 6063-T5 extruded within commercial tolerance and free from defects impairing strength and/or durability. Door stile and rail sections shall be a minimum of 0.1875 inch (4.76 mm) wall thickness. Door frame sections to be of 0.1875 inch (4.76 mm) wall thickness at critical areas, with glazing and door moldings a minimum of 0.050 inch (1.27 mm) wall thickness.
 - a. Recycled Content: Provide manufacturer's proprietary product fabricated of aluminum with a recycled content of more than 80 percent ("Ecoluminum," Tubelite, Inc.).
 - 2. Steel tension rods of 0.375 inch (9.5 mm) diameter shall run the full width of the top and bottom rails and shall be fixed with steel plates and lock nuts.
 - 3. Door frame members shall have continuous wool pile/vinyl fin weatherstripping at the head and jamb members. Provide bottom rail weatherstripping at threshold if indicated or scheduled. Door stops shall be of snap-in design on butt hinge and offset pivot applications, eliminating use of exposed screws.
- C. Wide Stile Doors: Provide wide (6 inches [152 mm]) stile doors and frames.
- D. Hardware: Standard hardware shall be as furnished by the manufacturer in accordance with the test reports, the Drawings, and as scheduled. Check with the manufacturer first for the availability of special hardware that can be substituted for the standard hardware.

2.3 FABRICATION

- A. Carefully fit and match work with continuity of line and design. Rigidly secure members with hairline joints, unless otherwise indicated. Reinforce members and joints for rigidity and strength as needed to fulfill performance requirements. Fabrication shall comply with manufacturer's requirements to suit blast-resistant requirements specified.
 - 1. Door glazing shall be by means of an interior and exterior fixed gasket of high quality extruded elastomeric material.
 - 2. Conceal fasteners unless otherwise indicated.
 - 3. Separate dissimilar materials with a heavy coating of epoxy paint or other suitable permanent separation as required to prevent galvanic action.

2.4 FINISHES

- A. General: Comply with NAAMM MFM for recommendations relative to application and designation of finishes. Finish designations prefixed by "AA" conform to the system established by the Aluminum Association for designating aluminum finishes.

Retain finishes below which are applicable to the Project.

- B. Aluminum Finishes ("Eco-Efficient"):
 - 1. Class I Clear Anodized Finish: AA-M10-C21-A41 complying with AAMA 611.
 - 2. Class II, Clear Anodized Finish: AA-M10-C21-A31 complying with AAMA 611.
 - 3. Class I Color Anodized Finish: AA-M10-C21-A44 complying with AAMA 611. Provide color as indicated or, if not indicated, as selected by the Architect from the manufacturer's standards.

4. Class II, Color Anodized Finish: AA-M10-C21-A32/A34 complying with AAMA 611. Provide color as indicated or, if not indicated, as selected by the Architect from the manufacturer's standards.
5. High Performance Organic Coating: AA-C12-C42-R1x.
 - a. Standard Two-Coat Polyvinylidene Fluoride (PVDF) Finish Coating: Manufacturer's standard thermocured system, complying with AAMA 2605, composed of primer and color topcoat containing not less than 70 percent PVDF resin by weight. Provide color as indicated or, if not indicated, as selected by the Architect from the manufacturer's standards.
 - b. Special Three-Coat Polyvinylidene Fluoride (PVDF) Finish Coating: Manufacturer's standard three-coat thermocured system, complying with AAMA 2605, composed of primer, color coat, and clear topcoat, with both color coat and clear topcoat containing not less than 70 percent PVDF resin by weight. Provide color as indicated or, if not indicated, as selected by the Architect from the manufacturer's standards.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine areas and conditions under which the work is to be installed, and notify the Contractor in writing, with a copy to the Owner and the Architect, of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.
 1. Beginning of the work shall indicate acceptance of the areas and conditions as satisfactory by the Installer.

3.2 PREPARATION

- A. Coordinate and furnish anchors, concrete inserts, sleeves, anchor bolts, etc., that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to the Project site.

3.3 INSTALLATION

- A. Installation shall be in accordance with reviewed product data, final shop drawings, the manufacturer's specifications and recommendations, and as indicated on the Drawings. Installation shall be in accordance with manufacturer's written requirements to suit blast-resistant requirements specified.
 1. Erection Tolerances: Comply with manufacturer's published instructions.

Retain Field Quality Control Article below if field testing is required for the Project.

3.4 FIELD QUALITY CONTROL

- A. See Section 01 45 23 - Inspecting and Testing Services.
 1. Blast-Resistant Criteria: Provide field quality control in accordance with manufacturer requirements and as required to verify blast resistance criteria, including, but not limited to, checking installation of embedded items before pouring of concrete and after pouring to verify the accuracy of dimensions of embedded items, performing necessary correction action, supervising assembly, providing final inspection of assemblies, inspection and testing of welds, and operation tests, if applicable.

3.5 ADJUSTING AND CLEANING

- A. Touch-Up Painting: Immediately after installation, touch-up scratched, nicked, abraded, chipped, or otherwise damaged areas of the finish so as to be unnoticeable.
- B. Cleaning: Wash to remove any deleterious material from finished surfaces immediately.

3.6 DEMONSTRATION

- A. Maintenance Instructions: Instruct the Owner's personnel who will be responsible for maintaining and cleaning the work after the time of final acceptance.

3.7 PROTECTION

- A. Provide final protection and maintain conditions in a manner acceptable to the Installer, that shall ensure that the aluminum entrances shall be without damage at time of Substantial Completion.

END OF SECTION

DISCLAIMER STATEMENT

This guide specification is intended to be used by a qualified construction specifier. This guide specification is not intended to be verbatim as a project specification without appropriate modifications for the specific use intended. The guide specification must be used and coordinated with the procedures of each design firm, and the particular requirements of a specific construction project. This guide specification is subject to change without written notice by the manufacturer.