SECTION 08 39 53

BLAST RESISTANT DOORS, WINDOWS AND FRAMING SYSTEMS

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\*\* NOTE TO SPECIFIER \*\* Armortex® Inc.; blast resistant products.  
 .  
This section is based on the products of Armortex® Inc., which is located at:  
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Schertz, TX 78154  
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Web: [www.armortex.com](http://www.armortex.com)   
 [ [Click Here](http://www.arcat.com/arcatcos/cos35/arc35322.html) ] for additional information.  
Armortex has been manufacturing Bullet, Blast and Forced Entry Resistant products for more than thirty years. Our product line includes Armortex® brand fiberglass composite panels, glass and containment glazing, fixed windows and transaction windows, pass-thru transaction equipment (drawers, hoppers, dip trays), speakers, gun ports, gun lockers and man traps. We also fabricate wood and hollow metal doors as well as aluminum storefront systems and related security equipment.  
Armortex® products are widely used in courtrooms, government and corporate offices, banks, convenience stores, police stations, military bases, check cashing facilities, cashier booths, prisons and any place where ballistic and attack resistant products are required. U.S. Dept of State FE/BR thermally broken aluminum windows and steel doors are also available.  
Through our ISO 9001:2008 quality management system we design and build quality products that protect lives. Our Bullet, Blast and Forced Entry Resistant products are available worldwide, direct from Armortex®. Please contact us for complete information.

1. GENERAL
   1. SECTION INCLUDES

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

* + 1. Blast resistant products including the following:
       1. Bullet-resistant windows. (625 BR Thermally Broken Windows)
       2. Bullet resistant aluminum storefronts. (Aluminum Storefront 44/450 Frame System)
       3. Bullet resistant aluminum storefronts. (Aluminum Storefront TH 600 Frame System)
       4. Bullet resistant storefront entrances. (Aluminum 44/350 Door System)
       5. Blast resistant doors. (LP06& MP610 Blast Door)
  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 71 53 - Security Door Hardware.
    6. Section 08 83 13 - Mirrored Glass Glazing.
    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. American Architectural Manufacturers Association (AAMA):
       1. 611 - Voluntary Specification for Anodized Architectural Aluminum.
       2. 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Architectural Extrusions and Panels.
    2. American Society of Civil Engineers (ASCE): ASCE-7 - Minimum Design Loads for Buildings and Other Structures.

\*\* NOTE TO SPECIFIER \*\* Steel doors and frames only.

* + 1. American Society of Civil Engineers (ASCE): Blast resistant Buildings in Petrochemical Facilities, Task Committee on Blast resistant Design.
    2. American Welding Society (AWS): D1.2/D1.2M - Structural Welding Code - Aluminum.

\*\* NOTE TO SPECIFIER \*\* Steel doors and frames only.

* + 1. American Welding Society (AWS): D1.3/D1.3M - Structural Welding Code - Sheet Steel.

\*\* NOTE TO SPECIFIER \*\* Steel doors and frames only. Delete if not required.

* + 1. ASTM International (ASTM):
       1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
       2. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
       3. ASTM F1642 - Standard Test Method for Glazing and Glazing Systems Subject to Airblast Loadings.
       4. ASTM F2247 - Standard Test Method for Metal Doors Used In Blast Resistant Applications.
    2. ASTM International (ASTM):
       1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
       2. ASTM C509 - Standard Specification for Elastomeric Cellular Preformed Gasket and Sealing Material.
       3. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
       4. ASTM E283 - Standard Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors.
       5. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors under the Influence of Wind Loads.
       6. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Doors, and Curtain Walls by Uniform Static Air Pressure Differential.
    3. Underwriters Laboratories (UL): UL-752 - Bullet Resisting Equipment.

\*\* NOTE TO SPECIFIER \*\* Steel doors and frames only. Delete if not required.

* + 1. US General Services Administration (GSA) TS01 - Standard Test Method for Glazing and Glazing Systems Subject to Dynamic Overpressure Loadings.
  1. 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. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
     3. Shop Drawings:
        1. Submit shop drawings prepared by the manufacturer showing plans, sections, elevations, layouts, profiles and product component locations and finishes
        2. Include dimensioned elevation of each type opening assembly in project; indicate sizes and locations of hardware, and lites if specified.
        3. Schedule: Indicate each opening assembly in project; cross-referenced to plans, elevations, and details.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Provide hardware templates to door and frame assembly manufacturer for preparation of door and frame units to receive hardware other than hinges.
    2. Calculations: Submit blast calculations by a qualified blast engineer to substantiate that the system design and anchorage meets or exceeds the minimum performance required.

\*\* NOTE TO SPECIFIER \*\* 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. Regional Materials: Indicate cost of products harvested, extracted, recovered, or manufactured within 500 mile radius of Project site.

\*\* NOTE TO SPECIFIER \*\* Include the following for submission of closeout submittals on cleaning of glazing materials.

* + 1. Maintenance Data: Include instructions for cleaning of glazed panels.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified with a minimum documented experience of five years.
     2. Pre-installation Meetings:Conduct pre-installation meeting to verify project requirements, substrate conditions, and manufacturer's installation instructions.
     3. Coordination of Work: Coordinate layout and installation of components with other construction supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system, and partitions.
  2. DELIVERY, STORAGE, AND HANDLING
     1. Deliver materials in manufacturer's unopened, undamaged packaging, with manufacturer's labels intact.
     2. Remove wraps or covers from windows and frames upon delivery at the building site; clean and touch-up scratches or disfigurement caused by shipping or handling promptly.
     3. Store products in manufacturer's unopened packaging until ready for installation.
     4. Store panel assemblies, off the ground and on end, to prevent damage to face corners and edges.
     5. Store assemblies covered to protect them from damage but permitting air circulation.
  3. SEQUENCING
     1. Ensure that locating 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.
     2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
  4. 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.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Armortex® Inc., which is located at: 5926 Corridor Pkwy.; Schertz, TX 78154; Toll Free Tel: 800-880-8306; Tel: 210-661-8306; Fax: 210-661-8308; Email: [request info (rsnelling@armortex.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Armortex%26reg;+Inc.&coid=35322&rep=&fax=210-661-8308&message=RE:%20Spec%20Question%20(08398arm):%20%20&mf=); Web: [www.armortex.com](http://www.armortex.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.

\*\* NOTE TO SPECIFIER \*\* Select the blast resistant components required from the following paragraphs as required for the project and delete those not required.

* 1. BULLET-RESISTANT WINDOWS (625 BR Thermally Broken Windows)
     1. Product; Fixed, Thermally Broken, Bullet Resistant, Aluminum Windows: Armortex 625 BR Thermally Broken Aluminum Bullet Resistant / Blast Mitigation Window, Up to 30 Caliber Armor Piecing and 42 psi Maximum Blast. Fabricated of extruded aluminum with a thermal break between the interior and exterior surfaces. All surfaces smooth with no exposed fasteners.
        1. Performance:
           1. Windows shall conform to GSA-TS01 for the following level of Dynamic Overpressure Loading protection:

\*\* NOTE TO SPECIFIER \*\* Select one of the following performance standards as required. Delete those not required.

Level 1: Protection with a 6 psi pressure, 40 psi-msec impulse, blast load.

Level 2: Protection with a 6 psi pressure, 40 psi-msec impulse, blast load.

Level 3: Protection with a 6 psi pressure, 40 psi-msec impulse, blast load.

Level 4: Protection with a 6 psi pressure, 40 psi-msec impulse, blast load.

Level 5: Protection with a 6 psi pressure, 40 psi-msec impulse, blast load.

Level 6: Protection with a 6 psi pressure, 40 psi-msec impulse, blast load.

Level 7: Protection with a 6 psi pressure, 40 psi-msec impulse, blast load.

Level 8: Protection with a 6 psi pressure, 40 psi-msec impulse, blast load.

* + - * 1. Windows shall conform to DOD UFC 4-010-01 Antiterrorism Force Protection Construction Standards.
        2. Windows shall conform to NIJ 0108.01 Standard for the following level of protection:

\*\* NOTE TO SPECIFIER \*\* Select one of the following performance standards as required. Delete those not required.

Level I.

Level II.

Level IIIa.

Level III.

Level IV.

* + - 1. Frame:
         1. Size: Face 2-1/2 inches (64 mm) and 6 inches (152 mm) deep.
         2. Material: Extruded aluminum, alloy and temper 6005-T6. Ultimate tensile strength of 37.7 ksi, and shear strength of 29.7 ksi.
         3. Thermal Break: Continuous structural urethane thermal barrier around the entire perimeter of the frame that shall not be bridged by any metal conductor at any point. Thermally "improved" frames are not acceptable.
         4. Glazing Cavity: Minimum of 1.75 inch (44 mm) deep and 2.875 inches (73 mm) wide.
      2. Glass: Field glazed with laminated glass conforming to ASTM C 1172 and conforming to the level of protection specified. Glazing shall be:

\*\* NOTE TO SPECIFIER \*\* Delete Glass not required.

* + - * 1. Clear, flat annealed transparent laminated glass.
        2. Insulated clear, flat annealed transparent laminated glass.
        3. Insulated clear, flat annealed low E laminated glass.
      1. Glazing: Glaze windows in accordance with GANA guide lines.
         1. Silicone: Structural silicone Dow Corning 995 complying with ASTM C 920.
         2. Setting Blocks: Neoprene in strict compliance with ASTM C 509 Type II option and ASTM C 864 with an 80-85 shore "A" durometer as tested under ASTM D 2000.
      2. Anchors: Provide as required to suit the protection level specified.

\*\* NOTE TO SPECIFIER \*\* Select the finish required from the following paragraphs as required for the project and delete the finishes not required.

* 1. Bullet resistant aluminum storefronts. (Aluminum Storefront 44/450 Frame System)
     1. Product: Model 44/250 as manufactured by ARMORTEX.

\*\* NOTE TO SPECIFIER \*\* Edit the following to suit project requirements. Select the first option for Model 44/250, the second option for Model 44/450, and the third option for Model 44/600.

* + - 1. Fabricate frames from extruded aluminum with 1-1/2 inches (38 mm) face width x 2-1/2 inches (64 mm) depth.
    1. Product: Model 44/450 as manufactured by ARMORTEX.

\*\* NOTE TO SPECIFIER \*\* Edit the following to suit project requirements. Select the first option for Model 44/250, the second option for Model 44/450, and the third option for Model 44/600.

* + - 1. Fabricate frames from extruded aluminum with 2-1/2 inches (64 mm) face width x 4-1/2 inches (114 mm) depth.
    1. Product: Model 44/600 as manufactured by ARMORTEX.

\*\* NOTE TO SPECIFIER \*\* Edit the following to suit project requirements. Select the first option for Model 44/250, the second option for Model 44/450, and the third option for Model 44/600.

* + - 1. Fabricate frames from extruded aluminum with 2-1/2 inches (64 mm) face width x 6 inches (152 mm) depth.
    1. Storefront Assemblies: Defeat ballistic assaults from .44 magnum hand gun, Ballistic Level 3, tested to UL 752.

\*\* NOTE TO SPECIFIER \*\* Include the following for exterior systems. Edit to suit project requirements.

* + 1. Design Requirements: Design exterior systems to withstand:
       1. Design wind pressure in accordance with Authority Having Jurisdiction (AHJ) with maximum allowable deflection of L/175, tested in accordance with ASTM E330.
       2. Movement caused by an ambient temperature range of 120 degrees F and a surface temperature range of 160 degrees F.

\*\* NOTE TO SPECIFIER \*\* Include the following for exterior systems.

* + 1. Performance Requirements:
       1. Air infiltration: Maximum 0.06 CFM per square foot of fixed area at static pressure differential of 6.24 PSF tested to ASTM E283.
       2. Water infiltration: No uncontrolled water leakage, tested to ASTM E331 at minimum test pressure of 8.0 PSF.
       3. Uniform structural loading: No glass breakage or permanent damage to fasteners or system components, tested to ASTM E330 at 1.5 times design pressure.
    2. Aluminum Extrusions:
       1. ASTM B221, 6061-T6 alloy and temper; minimum 38.0 KSI ultimate tensile strength and minimum 35.0 KSI yield strength.

\*\* NOTE TO SPECIFIER \*\* Insert percent of recycled content for steel in the following paragraph; contact ARMORTEX to verify current recycled content availability.

* + - 1. Recycled content: Minimum [\_\_] percent, with minimum [\_\_] percent classified as post-consumer.
    1. Accessories:
       1. Internal Fasteners: Type 18-8 stainless steel.
       2. Interior Glazing Gaskets: ASTM C509, Type II, Option 1 and ASTM C864; closed cellular neoprene, 40 to 50 Shore A durometer.
       3. Exterior Glazing Gaskets: ASTM C864; solid neoprene, 65 to 75 Shore A durometer.
       4. Glazing: Accept 3/4 inch to 1-3/8 inches (19 mm to 35 mm) thick glazing materials.
    2. Fabrication:
       1. Fabricate with tight joints and connections providing hairline joints and true alignment of adjacent members.
       2. Glazing not removable from threat side of assembly.
       3. Welding: In accordance with AWS D1.2/D1.2M. Grind exposed welds flush and smooth.
  1. Bullet resistant aluminum storefronts. (Aluminum Storefront TH 600 Frame System)
     1. Product: Model TH600 by ARMORTEX

\*\* NOTE TO SPECIFIER \*\* Edit the following to suit project requirements; delete if this information is indicated on Drawings.

* + 1. Storefront Assemblies:
       1. Ballistic Level 4, tested to UL 752.
       2. Ballistic Level 5, tested to UL 752.
       3. Ballistic Level 8, tested to UL 752.
       4. GSA P-100, Classifications C Blast Resistant.
       5. Rated to FEMA 361.

\*\* NOTE TO SPECIFIER \*\* Include the following for exterior systems. Edit to suit project requirements.

* + 1. Design Requirements: Design exterior systems to withstand:
       1. Design wind pressure in accordance with Authority Having Jurisdiction (AHJ) with maximum allowable deflection of L/175, tested in accordance with ASTM E330.
       2. Movement caused by an ambient temperature range of 120 degrees F and a surface temperature range of 160 degrees F.

\*\* NOTE TO SPECIFIER \*\* Include the following for exterior systems.

* + 1. Performance Requirements:
       1. Air infiltration: Maximum 0.06 CFM per square foot of fixed area at static pressure differential of 6.24 PSF tested to ASTM E283.
       2. Water infiltration: No uncontrolled water leakage, tested to ASTM E331 at minimum test pressure of 12.0 PSF.
       3. Uniform structural loading: No glass breakage or permanent damage to fasteners or system components, tested to ASTM E330 at 1.5 times design pressure.
    2. Aluminum Extrusions:
       1. ASTM B221, 6061-T6 alloy and temper; minimum 38.0 KSI ultimate tensile strength and minimum 35.0 KSI yield strength.

\*\* NOTE TO SPECIFIER \*\* Insert percent of recycled content for steel in the following paragraph; contact ARMORTEX to verify current recycled content availability.

* + - 1. Recycled content: Minimum [\_\_] percent, with minimum [\_\_] percent classified as post consumer.
    1. Accessories:
       1. Internal Fasteners: Type 18-8 stainless steel.
       2. Interior Glazing Gaskets: ASTM C509, Type II, Option 1 and ASTM C864; closed cellular neoprene, 40 to 50 Shore A durometer.
       3. Exterior Glazing Gaskets: ASTM C864; solid neoprene, 65 to 75 Shore A durometer.
       4. Glazing: Accept 1-1/4 to 2-1/16 inch thick glazing materials.
    2. Fabrication:
       1. Fabricate frames from extruded aluminum with 2-1/2 inches (64 mm) face width x 6 inches (152 mm) overall depth.
       2. Fabricate with tight joints and connections providing hairline joints and true alignment of adjacent members.
       3. Glazing not removable from threat side of assembly.
       4. Welding: In accordance with AWS D1.2/D1.2M. Grind exposed welds flush and smooth.
  1. Bullet resistant storefront entrances. (Aluminum 44/350 Door System)

\*\* NOTE TO SPECIFIER \*\* Include the following for exterior systems. Edit to suit project requirements.

* + 1. Product: Model 44/350 by ARMORTEX
    2. Design Requirements: Design exterior systems to withstand:
       1. Design wind pressure in accordance with Authority Having Jurisdiction (AHJ) with maximum allowable deflection of L/175, tested in accordance with ASTM E330.
       2. Movement caused by an ambient temperature range of 120 degrees F and a surface temperature range of 160 degrees F.

\*\* NOTE TO SPECIFIER \*\* Include the following for exterior systems.

* + - 1. Air infiltration: Maximum 0.06 CFM per square foot of fixed area at static pressure differential of 6.24 PSF tested to ASTM E283.
      2. Water infiltration: No uncontrolled water leakage, tested to ASTM E331 at minimum test pressure of 8.0 PSF.
      3. Uniform structural loading: No glass breakage or permanent damage to fasteners or system components, tested to ASTM E330 at 1.5 times design pressure.
    1. Performance Classification: AW in accordance with AAMA/NWWDA/CSA 101/I.S.2/A440.
    2. Storefront Assemblies: Ballistic Level 3, tested to UL 752.
    3. Aluminum Extrusions:
       1. ASTM B221, 6061-T6 alloy and temper; minimum 38.0 KSI ultimate tensile strength and minimum 35.0 KSI yield strength.
    4. Accessories:
       1. Glazing Gaskets: ASTM C509, Type II, Option 1, and C864; solid neoprene, 65 to 75 Shore A durometer.
       2. Setting Blocks: Solid neoprene, 80-90 Shore A durometer).
       3. Glazing: UL Listed Level 3 glass clad polycarbonate.
       4. Fasteners: No. 12 TEKS zinc coated with self sealing neoprene washers.
    5. Fabrication:
       1. Head and Sill: One piece extrusions without integral weep system at sill.
       2. Jambs: Two piece extrusions with removable faces to allow for re-glazing.
       3. Mullions: Three piece extrusions with removable faces to allow for glazing and individual light replacement.
       4. Fabricate with tight joints and connections providing hairline joints and true alignment of adjacent members.
       5. Exposed fasteners not permitted.
       6. Glazing Members:
          1. Accommodate glazing transparencies or opaque panels from 1/2 to 1-3/8 inch thickness.
          2. Glazing not removable from threat side of door.
       7. Welding: In accordance with AWS D1.2/D1.2M. Grind exposed welds flush and smooth.
  1. Blast resistant STEEL doors. (LP06& MP610 Blast Door)
     1. Product: Model LP06 by ARMORTEX
     2. Product: Model MP610 by ARMORTEX
     3. Door and Frame Assemblies:
        1. Hazard Category II blast protection, engineered to ASCE Blast resistant Buildings in Petrochemical Facilities.
        2. Engineered to GSA TS01, ASTM F1642, and ASTM F2247.

\*\* NOTE TO SPECIFIER \*\* Include the following for standard steel doors and frames.

* + 1. Steel Sheet:
       1. ASTM A1008/1008M, cold rolled, free from scale, pitting, coil breaks, and other surface defects.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph for galvannealed steel doors and frames.

* + 1. Galvannealed Steel Sheet:
       1. ASTM A924, Class A40 galvannealed.
    2. Accessories
       1. Glazing: Material consistent with the blast pressure requirements.

\*\* NOTE TO SPECIFIER \*\* A single point locking device is recommended where no rebound is specified. Where a rebound response of 50 percent or greater is specified a three point locking is recommended. Provide removable mullions where door pairs are used. A heavy duty door closer is recommended for active leaves.

* + - 1. Hinges: Select SL HD, aluminum continuous gear type.
    1. Fabrication:

\*\* NOTE TO SPECIFIER \*\* Edit the following to suit project requirements.

* + - 1. Fabricate from [steel] [galvannealed steel] sheet.
      2. Mortise and reinforce doors and frames at factory to receive hardware in accordance with approved hardware schedule.
      3. Weld frame corners; knock-down and mechanical joints not acceptable.
      4. Welding: In accordance with AWS D1.3/D1.3M. Grind exposed welds flush and smooth.
      5. Finish work neat and free from defects.
      6. Attach temporary spreader bars welded to bottom of frames.
      7. Factory hang doors in frames using specified hinges.
      8. Allowable Tolerances: Plus or minus 1/16 inch for frame opening width, height, diagonal dimensions, and overall width and height (outside to outside).
    1. Finishes:
       1. Dress tool marks and surface imperfections to smooth surfaces.
       2. Clean and chemically treat steel surfaces.
       3. Apply manufacturer's standard rust inhibiting gray primer paint.

\*\* NOTE TO SPECIFIER \*\* Aluminum finishes only. Delete if not required.

* 1. FACTORY FINISH
     1. Provide aluminum finishes in accordance with Aluminum Association Standard AA DAF-45.

\*\* NOTE TO SPECIFIER \*\* Select one of the following 4 paragraphs for the finish required for the project and delete the finishes not required.

* + 1. Clear Anodized Aluminum Surfaces: 204-R1 Class-II anodized aluminum coating.
    2. Dark Bronze Color Anodized Aluminum Surfaces: 313-R1 Class-II Dark Bronze anodized aluminum coating.
    3. Other Anodized Color: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    4. Painted Aluminum Surfaces: As fabricated mechanical finish, chemically cleaned, and prepared for applied coating; with organic coating.

\*\* NOTE TO SPECIFIER \*\* Select one of the following 2 paragraphs for the coating finish required and delete the finish not required.

* + - 1. Organic Coating:

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

* + - * 1. Manufacturer's standard power coat finish.
        2. Thermosetting modified acrylic enamel.
      1. High Performance Organic Coating:
         1. Fluoropolymer coating system with minimum 70 percent polyvinylidene fluoride resin.
      2. Color:

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

* + - * 1. As selected from manufacturer's standard range.
        2. Custom color as selected by the Architect.
        3. To match glazed aluminum curtain wall.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until openings and installing surfaces have been properly prepared.
      2. Verify openings are in accordance with approved shop drawings
      3. Verify that all supports have been installed in accordance with the Drawings.
      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
      1. Install in accordance with manufacturer's instructions and requirements of UL 752. Install all equipment plumb, level, rigid and in true alignment.
      2. Set equipment in accordance with the manufacturer's printed recommendations. Use proper anchoring devices for the material to be anchored to. All exposed anchor holes shall be used for anchoring.
      3. Install hardware as specified in Section 08 71 53 - Security Door Hardware in accordance with the hardware manufacturer's recommendations and templates.
      4. Installation Tolerances: Do not exceed the following installation tolerances:
         1. Squareness: Plus or minus 1/16 inch (1.6 mm) measured on a line, 90 degrees from one jamb, at the upper corner of the frame at the other jamb.
         2. Alignment: Plus or minus 1/16 inch (1.6 mm) measured on jambs on a horizontal line parallel to the plane of the wall.
         3. Twist: Plus or minus 1/16 inch (1.6 mm) measured at face corners of jambs on parallel lines perpendicular to the plane of the wall.
         4. Plumb: Plus or minus 1/16 inch (1.6 mm) measured on the jamb at the floor.
   4. INSPECTION AND CLEANING
      1. Verify that installation is complete and complies with requirements and manufacturer's instructions to provided specified blast resistance level, correcting deficiencies if any exist.
      2. Clean glass and anchoring accessories following installation. Remove excess sealants and other glazing materials from adjacent finished surfaces.
      3. Remove labels and protective covers.
   5. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION