SECTION08110

STEEL DOORS AND FRAMES

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\*\* NOTE TO SPECIFIER \*\* Galaxy Metal Products; steel door and frame products.  
.  
This section is based on the products of Galaxy Metal Products, which is located at:  
2960 Woodbridge Ave.  
Edison, NJ 08837  
Toll Free Tel: 800-294-8199  
Email: [request info (mceceri@galaxymetalproducts.com )](https://admin.arcat.com/users.pl?action=UserEmail&company=Galaxy+Metal+Products&coid=48404&rep=&fax=&message=RE:%20Spec%20Question%20(08110gal):%20%20&mf=)  
Web: <http://galaxymetalproducts.com> | <http://www.buysuperstud.com>   
 [ [Click Here](https://www.arcat.com/arcatcos/cos48/arc48404.html) ] for additional information.  
Galaxy strives to provide the industry's best metal doors and frames. All of our products are offered with optional UL Label Service.  
At Galaxy, we build our doors. Out plant is large. Our technology is advanced. Our workers are experienced. These attributes help Galaxy deliver the best doors for your money.  
Our entire line of products has been subjected to rigorous testing to ensure they withstand all of the elements of your most demanding jobs.

1. GENERAL
   1. SECTION INCLUDES

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

* + 1. Steel doors and steel frames.
    2. RELATED SECTIONS

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

* + 1. Section 04800 - Masonry Assemblies.
    2. Section 08210 - Wood Doors.
    3. Section 08710 - Door Hardware.
    4. Section 08800 - Glazing: Glass for door lights and borrow lights.
    5. Section 09250 - Gypsum Board.
    6. Section 09900 - Painting: Field painting of doors and frames.
    7. Section 13710 - Intrusion Detection: Security system.
    8. Section 13800 - Building Automation and Control: Building monitoring system.
    9. Section 16123 - Building Wire and Cable: Power supply to electric hardware devices.
  1. REFERENCES

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

* + 1. ANSI/NFPA 80 - Standard for Fire Doors and Windows.
    2. ANSI A115.IG - Installation Guide for Doors and Hardware
    3. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames.
    4. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
    5. ANSI A250.11, Recommended Erection Instructions for Steel Frames.
    6. ASTM E 152 - Standard Methods of Fire Tests of Door Assemblies.
    7. ASTM A 366/A 366M - Standard Specification for Commercial Steel (CS) Sheet, Carbon, (0.15 Maximum Percent) Cold-Rolled.
    8. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-coated (Galvannealed) by the Hot-Dip Process.
    9. A 924 - Specification for General Requirements for Steel Sheet, Metallic Coated by the Hot Dip Process
    10. ASTM A 1008/A 1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
    11. HMMA-820 TN03 - Guidelines for Glazing of Hollow Metal Transoms,Sidelights and Windows
    12. NYC MEA 142-98-M Vol. II - E.Fire Door Assemblies: Accepted for use City of New York, Department of Buildings.
    13. NFPA 252 - Standard Methods of Fire Tests for Door Assemblies.
    14. UL 10B - Standard for Fire Tests of Door Assemblies.
    15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
    16. UL 63 - Outline of Investigation for Fire Door Frames
    17. U.S. Green Building Council, LEED Building Design and Construction (BD+C)Version 4.0 Rating System. (LEED v4.0)
  1. SUBMITTALS
     1. Submit under provisions of Section 01300.
     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: Include schedule identifying each unit, with door marks or numbers referencing drawings. Show layout, profiles, product components and anchorages.
        1. Indicate frame configuration, anchor types and spacing, location of cutouts for hardware, reinforcement, to ensure doors and frames are properly prepared and coordinated to receive hardware.
        2. Indicate door elevations, internal reinforcement, closure method, and cutouts for glass lights and louvers.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraphs if LEED is not applicable.

* + 1. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
       1. Product Data for Credit MR 4.1 and MR 4.2: For products having recycled content, documentation including percentages by weight of post consumer and preconsumer recycled content
          1. Include statement indicating costs for each product having recycled content.
       2. Product Data for Credit MR 5.1 and Credit MR 5.2: Submit data, including location and distance from Project of material manufacturer and point of extraction, harvest or recovery for main raw material.
          1. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if samples are not required.

* + 1. Samples: 18 by 24 inches (457 by 610 mm) cut away sample door with provisions for lockset, hinge and corner section of frame.
    2. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Minimum five years documented experience manufacturing products specified this Section.
     2. Installer Qualifications: Minimum five years documented experience installing products specified this Section.
     3. All products shall conform to the requirements of ANSI A250.8 Recommended Specifications for Standard Steel Doors and Frames".
     4. Fire Rated Doors and Frames:
        1. Doors and frames shall be tested in accordance with UL 10B, "Fire Tests of Door Assemblies", NFPA 252, "Fire Tests of Door Assemblies", and UL 10C, "Positive Pressure Fire Tests of Door Assemblies".
        2. Doors and frames must have an approved marking or physical label, applied by an authorized facility, in accordance with the procedure set forth by an independent certification agency.
        3. Fire door assemblies in exit enclosures and exit passageways; maximum transmitted temperature end point rating of not more than 250 degrees F (121 degrees C) above ambient at the end of 30 minutes of the standard fire test exposure.
        4. Conform to applicable codes for fire ratings. It is the intent of this specification that hardware and its application comply or exceed the standards for labeled openings. In case of conflict between types required for fire protection, furnish type required by NFPA and UL.
     5. Fire Door Assemblies: Accepted for use City of New York, Department of Buildings MEA 142-98-M Vol. II. UL tested in accordance with ASTM E 152, 3 hr for:
        1. Single Swing doors not exceeding 48 inches wide by 96 inches high or 46 inches wide by 102 inches high or 40 inches wide by 108 inches high; Doors swinging in pairs with single point latches 96 inches high or 80 inches wide by 108 inches high.
     6. Stairwell Doors shall have a 250 degree F temperature rise rating (30 minute fire test duration.) The fire label on the door shall indicate the specific hourly rating.
  2. DELIVERY, STORAGE, AND HANDLING
     1. Store products in manufacturer's unopened packaging until ready for installation.
     2. Store doors vertically in a dry area, under a proper vented cover. Place on 4 inch (102 mm) high wood sills to prevent rust or damage. Provide 1/4-inch (6 mm) space between doors to promote air circulation.
     3. Store frames in an upright position with heads uppermost under cover. Place on 4 inch (102 mm) high wood sills to prevent rust and damage. Store assembled frames five units maximum in a stack with 2 inch (51 mm) space between frames to promote air circulation.
     4. Do not use non-vented plastic or canvas shelters to prevent rust or damage.
     5. Should wrappers become wet, remove immediately.
  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.

\*\* NOTE TO SPECIFIER \*\* Factory assembled and welded Hollow Metal Framing Systems (Architectural Stick Assemblies) require verification of field dimensions from the Contractor. Frame fabrication should not begin until these "final" dimensions have been submitted.

* 1. COORDINATION
     1. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal cutouts and reinforcement for door hardware, electric devices and recessed items.
     2. Coordinate Work with frame opening construction, door and hardware installation.
     3. Sequence installation to accommodate required door hardware.

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if factory assembled frames are not required.

* + 1. Verify field dimensions for factory assembled frames prior to fabrication.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Galaxy Metal Products, which is located at: 2960 Woodbridge Ave.; Edison, NJ 08837; Toll Free Tel: 800-294-8199; Email: [request info (mceceri@galaxymetalproducts.com )](https://admin.arcat.com/users.pl?action=UserEmail&company=Galaxy+Metal+Products&coid=48404&rep=&fax=&message=RE:%20Spec%20Question%20(08110gal):%20%20&mf=); Web: <http://galaxymetalproducts.com> | <http://www.buysuperstud.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 01600.
    3. Provide all steel doors and frames from a single manufacturer.
  1. DOORS
     1. General: Construct exterior/interior doors to the following designs and gages:

\*\* NOTE TO SPECIFIER \*\* The following steel doors are available with ANSI L, B, and CE doors. Select Exterior, Interior and gage paragraphs required and delete those not required.

* + - 1. Exterior Doors: Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60:
         1. Thickness:

18 gage (1 mm).

16 gage (1.3 mm).

14 gage (1.7 mm).

* + - * 1. Include galvannealed components and internal reinforcements with galvannealed doors.
        2. Close tops of exterior swing-out doors to eliminate moisture penetration. Galvannealed steel top caps are permitted.
      1. Interior Doors: Cold-rolled steel, ASTM A 1008/A 1008M:
         1. Thickness:

20 gage (0.8 mm).

18 gage (1 mm).

16 gage (1.3 mm).

14 gage (1.7 mm).

* + - 1. Interior Doors: Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60:
         1. Thickness:

20 gage (0.8 mm).

18 gage (1 mm).

16 gage (1.3 mm).

* + - 1. Include galvannealed components and internal reinforcements.
      2. Prime Finish Doors: Clean, phosphatize and factory prime painted doors indicated on Door Schedule as HM.

\*\* NOTE TO SPECIFIER \*\* The following paragraph is for Glass Trim for ANSI L, B, and CE labeled and non-labeled doors. Delete the paragraph if not required.

* + - 1. Glass moldings and stops:
         1. Fabricate from 24 gage (0.5 mm) steel conforming to:

Interior openings ASTM designation A 366 cold rolled steel.

Exterior openings ASTM designation A 924 Zinc-Iron Alloy-Coated galvannealed steel with a zinc coating of 0.06 ounces per square foot (A60) for exterior openings.

* + - * 1. Install trim into the door as a four sided welded assembly with mitered, reinforced and welded corners.
        2. Trim: identical on both sides of the door.
        3. Exposed fasteners are not permitted.
        4. Labeled and non-labeled doors: use the same trim.
        5. Acceptable mounting methods:

Fit into a formed area of the door face, not extending beyond the door face, and interlocking into the recessed area

Cap the cutout not extend more than 1/16 inch (1.6 mm) from the door face.

* + - 1. Hardware Reinforcements:
         1. Hinge reinforcements for full mortise hinges: minimum 7 gage (4.76 mm).
         2. Lock reinforcements: minimum 16 gage (1.3 mm).
         3. Closer reinforcements: minimum 14 gage (1.7 mm) steel, 20-inch (508 mm) long.
         4. Galvannealed doors: include galvannealed hardware reinforcements.
         5. Projection welded hinge and lock reinforcements to the edge of the door.
         6. Provided adequate reinforcements for other hardware as required.

\*\* NOTE TO SPECIFIER \*\* The following paragraph includes ANSI L and B Doors. Select appropriate paragraph below and delete paragraph not required. Available in heights from 6 feet 8 inches (2032 mm) to 10 feet (3048 mm) and widths from 1 foot 6 inches (457 mm) to 4 feet (1219 mm) in 2 inch 50 mm) increments. Custom or special sizes are also available. Consult with manufacturer for additional information on availability. Delete paragraph if not required.

* + 1. Full Flush Doors:
       1. Door Thickness: 1-3/4 inches (45 mm).
       2. Door faces reinforced and sound deadened as follows:
          1. Honeycomb Core: Reinforced, stiffened, sound deadened and insulated with impregnated Kraft honeycomb core completely filling the inside of the doors and laminated to inside faces of both panels using contact adhesive applied to both panels and honeycomb core.
          2. Steel Stiffened Core: Vertical stiffeners, hat-shaped, minimum 20 gage (0.8 mm) steel, type same as face sheet material, spaced 6 inches (150 mm) apart and welded to inside of face sheets 5 inches (127 mm) on center; full-thick glass fiber insulation between stiffeners.

\*\* NOTE TO SPECIFIER \*\* Select one or more as required of the following paragraphs and delete the ones not required. If more than one edge type is required, indicate the types required on the door schedule.

* + - 1. Vertical edge seams: Provide doors with continuous vertical mechanical inter-locking joints at lock and hinge edges. Finish edges as follows:
         1. Visible Interlocked Edge: Continuous vertical mechanical interlocking joints with visible edge seams and continuous bead of structural epoxy in internal vertical connection
         2. Filled Vertical Edges (F): Continuous vertical mechanical interlocking joints with internal epoxy seal; edge seams epoxy filled and ground smooth.
         3. Welded Vertical Edges (W): Continuous vertical mechanical interlocking joints; edge seams welded, epoxy filled, and ground smooth.
      2. Bevel hinge and lock door edges 1/8 inch (3 mm) in 2 inches (50 mm). Square edges on hinge and/or lock stiles are not acceptable.
      3. Reinforce top and bottom of doors with galvannealed 14 gage (1.7 mm), welded to both panels.
      4. Glazing Bead: Formed steel sheet.

\*\* NOTE TO SPECIFIER \*\* UL and FM labeled doors are available for fire ratings up to 3 hours. Delete paragraph below if labeled doors are not required.

* + - 1. Fire Rating: Supply door units bearing Labels for fire ratings indicated in Door Schedule for the locations indicated.

\*\* NOTE TO SPECIFIER \*\* The following description is for Temperature Rise doors which are the same as ANSI L door specified above. Consult with manufacturer for additional information on availability. Delete paragraph if not required. Note that Temperature Rise fire rated doors are specified for locations requiring a 250 degree temperature rise (i.e. stair towers).

* + 1. Temperature Rise Doors:
       1. Door Thickness: 1-3/4 inches (45 mm).
       2. Mineral Fiber Core: Full 1-3/4 inches (45 mm) mineral fiber core material designed to comply with the 250 degrees F (121 degrees C) maximum temperature rise rating.
       3. Vertical edge seams: Provide doors with continuous vertical mechanical inter-locking joints at lock and hinge edges. Finish edges as follows:

\*\* NOTE TO SPECIFIER \*\* Select one or more as required of the following paragraphs and delete the ones not required. If more than one edge type is required, indicate the types required on the door schedule.

* + - * 1. Visible Interlocked Edge: Continuous vertical mechanical interlocking joints with visible edge seams and continuous bead of structural epoxy in internal vertical connection
        2. Filled Vertical Edges (F): Continuous vertical mechanical interlocking joints with internal epoxy seal; edge seams epoxy filled and ground smooth.
        3. Welded Vertical Edges (W): Continuous vertical mechanical interlocking joints; edge seams welded, epoxy filled, and ground smooth.
      1. Bevel hinge and lock door edges 1/8 inch (3 mm) in 2 inches (50 mm). Square edges on hinge and/or lock stiles are not acceptable.
      2. Reinforce top and bottom of doors with galvannealed 14 gage (1.7 mm), welded to both panels.

\*\* NOTE TO SPECIFIER \*\* UL, WH and FM labeled doors are available for fire ratings up to 3 hours. Delete paragraph below if labeled doors are not required.

* + - 1. Fire Rating: Supply door units bearing Labels for fire ratings indicated in Door Schedule for the locations indicated.
    1. Full Glass Entrance Doors:

\*\* NOTE TO SPECIFIER \*\* Select Interior and/or Exterior door materials from the following two paragraphs. Delete paragraph not required.

* + - 1. Exterior Doors: 14 gage (1.7 mm) Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60.
      2. Interior Doors: 14 gage (1.7 mm) Cold-rolled steel, ASTM A 1008/A 1008M.
      3. Door Thickness: 1-3/4 inches (45 mm).
         1. Honeycomb Core: Reinforced, stiffened, sound deadened and insulated with impregnated Kraft honeycomb core completely filling the inside of the doors and laminated to inside faces of both panels using contact adhesive applied to both panels and honeycomb core
      4. Vertical edge seams: Provide doors with continuous vertical mechanical inter-locking joints at lock and hinge edge seams epoxy filled and ground smooth. Reinforce intersections of the vertical stiles and bottom rails with internal corner gussets to provide added strength and rigidity.
      5. Bevel hinge and lock door edges 1/8 inch (3 mm) in 2 inches (50 mm). Square edges on hinge and/or lock stiles are not acceptable.
  1. DOOR FRAMES
     1. General: Construct exterior/interior metal door frames to the following designs and gages;

\*\* NOTE TO SPECIFIER \*\* Select Exterior, Interior type(s) and gage paragraphs required and delete those not required. Note that Knock Down frames are interior drywall type and not applicable for masonry installation.

* + - 1. Exterior Frames: Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60:
         1. Thickness:

16 gage (1.3 mm).

14 gage (1.7 mm).

* + - 1. Interior Frames in Masonry: Zinc-Iron Alloy-Coated galvannealed steel, ASTM A 653, Class A60, galvannealed steel.
         1. Thickness:

16 gage (1.3 mm).

14 gage (1.7 mm).

* + - 1. Interior Frames in stud wall construction: cold rolled steel, ASTM A 1008/A 1008M.
         1. Thickness:

18 gage (1 mm).

16 gage (1.3 mm).

14 gage (1.7 mm).

* + - 1. Interior KD Drywall Frames (Pressure Fit): cold rolled steel, ASTM A 1008/A 1008M.
         1. Thickness:

18 gage (1 mm).

16 gage (1.3 mm).

14 gage (1.7 mm).

* + - 1. Include galvannealed components and internal reinforcements with galvannealed frames.

\*\* NOTE TO SPECIFIER \*\* Delete paragraph below if electrical provisions are not required.

* + - 1. Electrical Requirements: Coordinate all electrical requirements for doors and frames. Make provisions for installation of electrical items so that wiring can be readily removed and replaced.
         1. Provide cutouts and reinforcements required for metal door frame to accept electric components.
         2. Frame with Electrical Hinges: Weld UL listed grout guard cover box welded over center hinge reinforcing. Top or bottom hinge locations are not permitted.
         3. Provide cutouts and reinforcements required to accept security system components.
         4. Coordinate with Section 08710 for electrified hardware items.

\*\* NOTE TO SPECIFIER \*\* The following paragraph describes knocked down frames for field assembly or set-up and welded with temporary shipping bars. Select the appropriate paragraphs below. Delete the paragraphs not required.

* + 1. Flush Steel Frames:

\*\* NOTE TO SPECIFIER \*\* Select knock-down or welded frames and delete the one not required. If more than type is required, indicate the types required on the door schedule.

* + - 1. Construction: Three-piece knock-down frames; mitered joints, with locking tab at each head and jamb intersection.
      2. Construction: Factory-welded three sided frames in accordance with UL 63.

\*\* NOTE TO SPECIFIER \*\* Select face or full profile welded frames as required. If more than type is required, indicate the types required on the door schedule.

* + - * 1. Face welded: Weld miter joints between head and jamb faces completely along their length either internally or externally. The remaining elements of the frame profile (soffit, stop and rabbets) are not welded. Grind and finish face joints smooth.
        2. Full profile welded:

Weld miter joints between head and jamb faces completely along their length either internally or externally.

Internally weld perimeter profile joints full length of soffit and rabbets with hairline seams on external meeting surfaces. Grind and finish face joints smooth.

* + - 1. Profile:

\*\* NOTE TO SPECIFIER \*\* Select one of the following profile paragraphs and delete the ones not required. If more than profile is required or if custom profile is required, indicate the profiles required on the door schedule.

* + - * 1. 2 inches (51 mm) face dimension with 5/8 inch (16 mm) high stop, and types and throat dimensions indicated on the Door Schedule.
        2. 1 inch (25 mm) face dimension with 5/8 inch (16 mm) high stop, and types and throat dimensions indicated on the Door Schedule.
        3. Custom special face dimension with 5/8 inch (16 mm) high stop, and types and throat dimensions indicated on the Door Schedule.
      1. Provide following reinforcement and accessories:

\*\* NOTE TO SPECIFIER \*\* Verify door hardware preparation with door hardware section for the two paragraphs below.

* + - * 1. Hinge Preparation for 4-1/2 inches (114 mm) high, standard weight, or heavy weight, full mortise hinges; with plaster guard.
        2. Hinge Preparation for 5 inch (127 mm) high, universal standard weight, or heavy weight, full mortise hinges; with plaster guard.
        3. Strike preparation (single doors) for 4-7/8 inch (123 mm) universal strike; with plaster guard.
        4. Silencers. Prepare frames to receive inserted type door silencers, 3 per strike jamb on single doors, and 2 per head for pair of doors. Stick-on silencers are not permitted.

\*\* NOTE TO SPECIFIER \*\* UL and FM labeled frames available for fire ratings of up to 3 hours. Delete paragraph below if labeled frames are not required.

* + - 1. Fire Rating: Supply frame units bearing Labels for fire ratings indicated in Door Schedule for the locations indicated.
      2. Finish: Factory prime finish in accordance with ANSI A 250.10.

\*\* NOTE TO SPECIFIER \*\* The following describes Drywall Frames. Select paragraphs required and delete those not required.

* + 1. Steel Frames for Drywall:
       1. Profile:
          1. Profile: 2 inches (51 mm) face dimension, 1/2 inch (13 mm) backbend with 5/16 inch (8 mm) return, 5/8 inch (16 mm) high stop, types and throat dimensions indicated.
       2. Provide following reinforcement and accessories:

\*\* NOTE TO SPECIFIER \*\* Verify door hardware preparation with door hardware section for the two paragraphs below.

* + - * 1. Hinge preparation for 4-1/2 inches (114 mm) high, full mortise hinges, 0.134 inch (3.4 mm) or 0.180 inch (4.6 mm) leaf thickness.
        2. Strike preparation (single doors) for 4-7/8 inch (125 mm) universal strike; with plaster guard.
        3. Closer reinforcement: minimum 14 gage (1.7 mm) steel.
        4. Projection weld hinge and strike reinforcements to the door frame.
        5. Provide metal plaster guards for all mortised cutouts.
        6. Include galvannealed hardware reinforcements in all galvannealed frames.
        7. Silencers. Prepare frames to receive inserted type door silencers, 3 per strike jamb on single doors, and 2 per head for pair of doors. Stick-on silencers are not permitted.
      1. Anchors: Locate adjustable anchors in each jamb 4 inches (102 mm) from the top of the door opening to hold frame in rigid alignment.
         1. Provide 14 ga. pressure anchors used in conjunction with base floor clips as required.

\*\* NOTE TO SPECIFIER \*\* UL labeled frames available for fire ratings of up to 3 hours. Delete paragraph below if labeled frames are not required.

* + - 1. Fire Rating: Supply frame units bearing Labels for fire ratings indicated in Door Schedule for the locations indicated.
      2. Finish: Factory prime finish.

\*\* NOTE TO SPECIFIER \*\* Edit the following paragraphs as required for the project. Delete the paragraphs not required.

* 1. ACCESSORIES
     1. Anchors: Manufacturer's standard framing anchors, specified in manufacturer's printed installation instructions for project conditions.
     2. Astragals for pairs of doors: Manufacturer's standard for labeled and non-labeled openings.
     3. Plaster Guards: Same material as door frame, minimum 24 gage (0.5 mm) minimum; provide for all strike boxes.
     4. Silencers: Resilient rubber, Inserted type, three per strike jamb for single openings and two per head for paired openings. Stick-on silencers shall not be permitted except on hollow metal framing systems.
     5. Glazing: Specified in Section 08800.

\*\* NOTE TO SPECIFIER \*\* Select louvers from the following paragraphs as required for the project. Delete the paragraphs not required.

* + 1. Door Louvers:
       1. Inserted: 1 inch (25 mm) thick, inverted "Y" blade type, inserted into an opening prepared in the door faces. Blades are made from 18 gage (1.0 mm) steel and welded to a fabricated sub-frame. Louver is held in place by a retaining frame (shroud), supplied with louver.
          1. Free air space is 50 percent of louver area.
          2. Size: As indicated on the Drawings.
          3. Frame: with tamper proof fasteners.

\*\* NOTE TO SPECIFIER \*\* Fusible Link louvers must be tested and listed for use in fire door applications. Refer to the Fire Rated section of this manual. Listed fusible link louvers are available in Land B-Series doors. Fusible link louvers are available for Land B-Series Doors; L-514 12 inches by 14 inches (305 mm by 356 mm), L-515 12 inches by 24 inches (305 mm by 610 mm), L-516 18 inches by 14 inches (457 mm by 356 mm), L-517 18 inches by 24 inches (457 mm by 610 mm), L-518 24 inches by 14 inches (610 mm by 356 mm), L-519 24 inches by 24 inches (610 mm by 610 mm).

* + - 1. Fusible Link: Louvers are 1 inch (25 mm) thick, steel "Z" blade type, containing a fusible link that will break at a prescribed temperature, releasing a closing mechanism. Free air space is 30 percent of louver area.
         1. UL Rated.
         2. Size: As indicated on the Drawings.
         3. Frame: with tamper proof fasteners.
  1. FABRlCATlON
     1. Steel Frames:
        1. Three-piece knock-down frames: Head and jamb intersecting corners die-cut, mitered at 45 degrees, with locking tabs for rigid connection when assembled.
        2. Factory-welded frames: Head and jamb intersecting corners mitered at 45 degrees, with back welded joints ground smooth.
           1. Continuous faceweld the joint between the head and jamb faces along their length either internally or externally. Grind, prime paint, and finish smooth face joints with no visible face seams.
           2. Externally weld, grind, prime paint, and finish smooth face joints at meeting mullions or between mullions and other frame members per a current copy of ANSI A250.8.
           3. Provide temporary steel spreaders (welded to the jambs at each rabbet of door openings) on welded frames during shipment. Remove temporary steel spreaders prior to installation of the frame.

\*\* NOTE TO SPECIFIER \*\* Delete following paragraph if no electrical or security components are required.

* + - 1. Provide cutouts and reinforcements required for electrical and security components specified elsewhere in this specification.
  1. FlNlSHES
     1. Chemical Treatment: Treat steel surfaces to promote paint adhesion.
     2. Factory Prime Finish: Meet requirements of ANSI A250.10.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. Verify that substrate conditions are acceptable for installation of doors and frames in accordance with manufacturer's installation instructions and technical bulletins.
      3. Verify door frame openings are installed plumb, true, and level.
      4. Select fasteners of adequate type, number, and quality to perform intended functions.
      5. If substrate 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.
      2. Install frames plumb, level, rigid and in true alignment in accordance with ANSI A250.11, "Recommended Erection Instructions for Steel Frames" and ANSI A115.IG, "Installation Guide for Doors and Hardware".
      3. All frames other than slip-on types shall be fastened to the adjacent structure to retain their position and stability. Drywall slip-on frames shall be installed in prepared wall openings, and shall use pressure type and sill anchors to maintain stability.
      4. Where grouting is required in masonry installations, frames shall be braced or fastened to prevent the pressure of the grout from deforming the frame members. Grout shall be mixed to provide a 4 inch (102 mm) maximum slump and hand troweled into place. Grout mixed to a thin "pumpable" consistency shall not be used.
      5. Install fire-rated doors and frames in accordance with NFPA 80 and local code authority requirements.
      6. Install doors to maintain alignment with frames to achieve maximum operational effectiveness and appearance. Adjust to maintain perimeter clearances as required. Shim as needed to assure the proper clearances are achieved.
      7. Glaze and seal exterior transom, sidelight and window frames in accordance with HMMA-820 TN03.
      8. Install hardware as specified in Section 08710 in accordance with the hardware manufacturer's recommendations and templates. ANSI A115.IG, "Installation Guide for Doors and Hardware" shall be consulted for other pertinent information.
   4. CLEARANCES
      1. Clearance between the door and frame head and jambs for both single swing and pairs of doors shall be 1/8 inch (3.2 mm).
      2. Clearance between the meeting edges of pairs of doors shall be 3/16 inch plus or minus 1/16 inch (5 mm plus or minus 1.6 mm). For fire rated applications, the clearance between the meeting edges of pairs of doors shall be 1/8 inch plus or minus 1/16 inch (3.2 mm plus or minus 1.6 mm).
      3. Bottom clearance shall be 3/4 inch (19 mm) (Standard).
      4. The clearance between the face of the door and door stop shall be 1/16 inch to 1/8 inch (1.6 mm plus or minus 3.2 mm).
      5. All clearances shall be, unless otherwise specified, subject to a tolerance of plus or minus 1/32 inch (.4 mm).
   5. ADJUSTING AND CLEANING
      1. Adjust doors for free swing without binding.
      2. Adjust hinge sets, locksets, and other hardware. Lubricate using a suitable lubricant compatible with door and frame coatings.
      3. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions before owner's acceptance.
      4. Remove from project site and legally dispose of construction debris associated with this work.
   6. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.
   7. 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