

STANDARD SPECIFICATION
JANUARY 2010

DIVISION 8

SECTION 8A METAL DOORS AND FRAMES

8A.01 GENERAL: Comply with all of the Contract Documents.

8A.02 SCOPE OF WORK: Refer to "Division Scope of Work"

8A.03 WORK NOT INCLUDED

- A. Finish Hardware by Section 8D.
- B. Installation of Finish Hardware by Section 6B.

8A.04 HOLLOW METAL WORK MATERIALS

- A. Hollow metal door frames and doors shall be of cold rolled sheet steel, and with bracing, supports etc., in accordance with ASTM A-7.
- B. Prime coat and finish coat for hollow metal work shall be rust inhibiting resistive type as approved by Architect/Engineer.
- C. Insulating between panels of hollow metal doors shall be mineral rock wool insulation.
- D. This contractor shall coordinate his work with the requirements of Finish Hardware by Section 8D.
- E. Provide all necessary and required Fire Underwriter's Labels where designated in the schedule, and the proper hardware for the labeled doors and frames.
- F. Gauges
 - 1. Metal Bucks
 - a. 18 U.S. gauge steel for interior wood doors.
 - b. 16 U.S. gauge steel for interior hollow metal doors except 12 gauge steel for vestibule doors.
 - c. 12 U.S. gauge steel for exterior doors.
 - 2. Hollow Metal doors

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- a. 18 U.S. gauge steel for interior doors except 14 gauge steel for vestibule doors.
 - b. 14 U.S. gauge steel for exterior doors.
- G. All hollow metal frames shall be filled solid with cement at fire rating openings.
- H. Kick-plates of high pressure laminated plastic shall be provided where indicated on Door Schedule. Kick-plates shall be 2" less than width of door, to nearest stock size, 10" high minimum. Edges shall be beveled. Kick-plates shall be predrilled and pre-countersunk at all four corners and at least every 6" o.c. Furnish tamperproof stainless steel screws for attachment to doors.

8A.05 SHOP DRAWINGS

- A. Shop drawings shall be submitted to Architect/Engineer, for approval for work specified herein, including the schedules, details etc., and containing indicated sizes, gauges, anchors, attachments etc. Approval of shop drawings shall be required before fabrication and delivery to job site. Verify dimensions of openings and thickness of partitions before fabrication.

8A.06 WORKMANSHIP

- A. Hollow metal work shall be of first grade in properly equipped factory or shop and shall be manufactured by a recognizable firm. All fabrication work as far as possible shall be done in shop; shipping work for erection only to the job site. All fitting and assembling shall be made to job templates, shop assembled and given a trial fit for proper and expeditious installation at job. All required and necessary connections, fastenings, holes etc., shall be provided for work of other contiguous trades.

8A.07 GENERAL CONSTRUCTION

- A. Hollow metal doors shall be custom made lock seam, fully welded, conforming to types, sizes, and profiles noted, 1-3/4" thick unless otherwise noted, complete with cutouts and reinforcing in accordance with approved shop drawings.
- B. Doors shall be flush type, constructed of two (2) plates of sheet steel, assembled and reinforced with 22 gauge hat or truss section vertical stiffeners, spaced 6" o.c., extending the full height of the door and spot welded to both door plates not more than 4" o.c. Tops and bottoms of doors shall be closed with continuous recessed 16 gauge steel channels spot welded to both faces at not over 3" o.c. The outer vertical edges of sheets shall be returned at edges to a close and accurate fit. Spaces between vertical stiffeners shall be completely filled with approved type insulation, to eliminate "metallic ring". Closure channels shall be set flush as required to accommodate weather-stripping.

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- C. All welds shall be ground, filled, and dressed smooth to make them invisible and provide a smooth flush finish.
- D. Doors shall be free of wind, reinforced at corners and elsewhere sufficiently to prevent sagging or twisting.
- E. When doors are scheduled to have glass panels, openings for sash shall be reinforced with 16 gauge steel channels spot welded to both sheets at 3" o.c. Removable stops shall conform to gauge specified herein, with mitered corner joints, and secured to framed opening with cadmium or zinc coated countersunk screws. Stops shall conform to sizes and profiles noted. Provide a minimum of two (2) screws per side unless otherwise noted.
- F. All hollow metal bucks, for hollow metal doors, shall be fully welded units conforming to fire rating, gauges, sizes and profiles as noted completed with cut outs and reinforcement. Bucks shall have back bends and shall have adequate anchorage as approved by Architect/Engineer.
- G. All hollow metal bucks for interior hollow core wood doors shall be of the knock down type. Knock down bucks shall have back bends and shall have adequate anchorage.
- H. Hollow metal work shall be carefully mitered and welded together with reinforcements as required. Surfaces shall be free from wave, buckle, warp or other irregularities and shall accurately fit together. Members shall be in proper alignment with edges and arises clean and straight. All parts shall be neatly mitered or coped to form the proper assembly. Face jointing shall be hairline and all reinforcement shall be concealed, as well as mortises for hardware, sinkages etc., required for attached work or contiguous trades. Hardware reinforcement of sufficient thickness and properly sized shall be added to receive bolts and screws for hardware fastening. Necessary reinforcement shall be added to stiffen door and frame where stress and the corresponding strain may be transmitted through hardware. Hinge side of door and door frame shall be reinforced continuously (top to bottom) with 1/4" thick plate. Plate shall continuously weld to door and door frame. Provide head reinforcement for hollow metal frames for 3'-0" wide doors and for closure at head of door if required. Members shall be matched to produce continuity of line. Surfaces in contract shall be smooth true and even and the joints shall be perfectly tight.
- I. Preparation shall be made for hardware attachment and other work by drilling and tapping all necessary members, locating same by template. Butts and required screws are to be shipped to the job site. This contractor shall coordinate the work with all hardware requirements.
- J. This contractor shall verify all finished partition thickness for sizing the frame widths and existing masonry openings for door widths and heights.
- K. Provide fire rated bucks and doors where required. Refer to door schedule.

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- L. Provide adjustable floor knees, consisting of clip angles bolted to plates, welded to bottom of door jambs. Knees shall be fastened to slab or wood sub-flooring with two (2) 3/8" bolts. Adjustment shall be not less than 2".
- M. Jamb Anchors
1. Frames in masonry walls shall be provided with adjustable jamb anchors, Underwriter approved, "T" strap or stirrup and strap type. Anchors shall be not less than 12" long, 2 1/2" wide, corrugated and/or perforated. Stirrups shall be spot welded to frames for support of non-removable anchors.
 2. Frames for installation at gypsum drywall metal stud partitions shall be provided with steel anchors not less than 18 gauge and floor clip angles in accordance with the approved shop drawings.
 3. Anchoring of frames to in-place concrete, masonry or steel shall be accomplished with anchors of suitable design in accordance with approved shop drawings.
 4. Provide a minimum of three (3) anchors per jamb for frames 7'-0" high and under, and one (1) additional anchor for each additional 30" or less of frame height. Position anchors at level of butts and locks, or as directed. Jamb anchors shall permit passage of electrical conduit as required by job conditions, except at drywall partitions.

8A.08 INSTALLATION

- A. All hollow metal doors and frames shall be installed by thoroughly experienced mechanics. Anchors and attachments shall be set as detailed, necessary and required, thoroughly bedding same in mortar, or securing to wood/metal studs etc. Surface fastenings will not be permitted, unless for special conditions with Architect's/Engineer's approval. No work shall be altered or reset without Architect's/Engineer's explicit approval. All hardware shall be installed by skilled mechanics by Section 6B.
- B. Frames shall be delivered only when conditions at site are ready to receive same and shall be delivered to the job site in good condition, complete and ready for installation.

8A.09 SHOP PAINTING OF HOLLOW METAL WORK

- A. Prepare all surfaces clean, remove scale, dust, grease of foreign material. All surfaces of frames and doors shall then receive a thorough brush or spray coat of approved type rust inhibiting paint.

8A.10 PROTECTION

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- A. After erection, all work under this Section shall be protected to avoid damage of any nature. Any damaged work shall be replaced by this contractor. He shall also be responsible for adjacent work that may be incidentally damaged.

8A.11 COORDINATION

- A. All work in this shall be coordinated with work of contiguous trades, so that this and the abutting or connecting work will have proper fit satisfactory to Architect/Engineer.

8A.12 GUARANTEES

- A. Guarantee all items of work furnished and installed under this Section for (1) one year, in addition to manufacturer's standard warranties. All guarantees to be from the date, when **Final Certificate of Occupancy** is issued from Department of Buildings.

END OF SECTION