Design Guideline 081113
Hollow Metal Doors and Frames

Scope

Scope: Hollow metal doors and frames, interior and exterior applications.

Related Sections

U-M Design Guideline Sections:
6.0 DG08 14 16 Flush Wood Doors
6.0 DG08 71 00 Door Hardware

U-M Master Specification Sections: (A digitally accessible version is pending; please email AEC-Digital Accessibility Support if assistance is needed)
MS08 11 13 Hollow Metal Doors and Frames
MS08 14 16 Flush Wood Doors
MS08 71 00 Door Hardware

Design and Installation Requirements

Exterior Doors and Frames

- Exterior doors and frames, including anchors shall be galvanized: ASTM A653/ A653M, commercial quality, G90 coating designation.
- Frame min. 16 Gage
- Provide weep hole openings in bottom of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
- Exterior Doors: Provide doors fabricated with thermal-resistance value (R-Value) of not less than 4.0 deg D x h x sq.ft./Btu when tested according to ASTM C 1363.
- Exterior Doors & Frames: Reference ASHRAE Standard 90.1, 5.4.3.2. Doors and Frames labeled certified by the manufacturer. Product shall be tested by NFRC certified lab.
- Frames shall be fabricated with mitered or coped and welded face corners and seamless face joints.
- Fabricate frames as full profile welded.

Interior Frames

- Frames shall be fabricated with mitered or coped and welded face corners and seamless face joints.
- Frame min. 16 Gage
- Fabricate frames as face welded.

Doors

- Reference ANSI A250.8 and A250.4
- Heavy Duty, Model 2 (Seamless) min. 16 Gage face sheets

    - Exterior application
    - Interior application, as needed based on use, potential abuse.
- Moderate Heavy Duty, Model 2 (Seamless), min. 18 Gage face sheets
    - Interior application

Door Frames metal thickness min. 16 gage.

Prepare doors and frames to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling and tapping.

Shop paint exposed surface of doors and frames units. Verify compatibility with manufacturer baked-on rust inhibitive primer.

Installation

- Apply bituminous coating to non fire rated frame interiors to receive grout fill.
- At masonry and concrete walls solidly fill space between frames and masonry/ concrete with grout.
- Metal stud partitions, solidly fill space between frames and metal stud with grout
- Consider installing a conduit for future card reader within grout filled frames.