

DIVISION 08 - OPENINGS

SECTION 08 11 10 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes: Provide full flush steel (hollow metal) doors and pressed steel frames, anchors, and silencers.
1.2 REFERENCES
A. Steel Door Institute (SDI): SDI-100 (ANSI/SDI A250.8) - Specifications - Standard Steel Doors and Frames.
B. National Association of Architectural Metal Manuf. (NAAMM): Hollow Metal Manual.
1.3 ADMINISTRATIVE REQUIREMENTS
A. Coordinate hardware installation with Section 08 71 00 - Door Hardware.
1.4 SUBMITTALS
A. Product Data: Submit manufacturer's literature.
B. Shop Drawings: Indicate general construction, configuration, jointing methods, reinforcements, anchorage methods, hardware locations, and locations of cut-outs.
C. Schedule: Provide schedule of hollow metal work prepared by or under supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with door hardware schedule.

PART 2 - PRODUCTS
2.1 SYSTEMS MANUFACTURERS
A. The Ceco Corporation: Curries Division Assa Abloy Door Group; Anwel Building Products Inc.; Macotta Co. of Canada, Ltd.; Fleming Door Products.
2.2 MATERIALS
A. System Description: Full flush steel (hollow metal) doors and pressed steel frames, anchors, and silencers. Comply with general requirements in SDI-100 and NAAMM Hollow Metal Manual.
B. Doors: Hollow metal flush steel door, 1-3/4" thick. Full flush with steel channel or welded edge; close top with flush end closer treatment, bottom optional flush or recessed channel; steel stiffened core, insulated with U value of 0.24 or better except where opening into unconditioned space.
1. Exterior Doors: Minimum 0.053" (16 gage)
2. Interior Doors: Minimum 0.042" (18 gage).
C. Frames: Welded (pre-assembled) type (knock-down frames not permitted).
1. Exterior Frames: Minimum 0.067" (14 gage).
2. Interior Frames: Minimum 0.053" (16 gage).
3. Door Silencers: Manufacturer's standard resilient type; removable for replacement.
3. Mortar Guard Boxes: Minimum 0.026" (22 gage) boxes welded in place; provide where frames may be grouted.
D. Fire Rated Units: Construct in accordance with requirements for fire rating, NFPA 252 or UL 10C, and NFPA 80.
1. Labels: Place metal fire rating labels where visible when doors and frames are in installed, opened position.
2. Fire Ratings: Refer to Drawings for fire rating requirements.
3. Temperature Rise Rating: Provide doors with maximum 450°F Temperature Rise Rating in 30 minute fire exposure period at doors to exit enclosures and where otherwise required by applicable codes.

2.3 FABRICATION
A. Conform to requirements of SDI (ANSI A250 Series) or NAAMM.
B. Reinforce and prepare doors and frames to receive hardware.
1. Refer to Section 08 71 00 for hardware requirements.
C. Frames: Accurately form and cut mitered corners of welded type; continuously weld on inside surfaces (fully welded); grind welded joints to smooth uniform finish.
1. Head Reinforcement: Reinforce frames wider than 4'-0" with minimum 0.093" (12 gage) formed steel channels welded in place, flush with top of frames.
2. Doors at Glazed Panels: Reinforce jambs and heads of frames for doors which occur adjacent to glazed sidelights and partitions.
3. Profile bottom of jamb to contour of concrete at change in floor elevation occurring within jamb width.
4. Exposed Fasteners: Countersunk, flat Phillips or Jackson heads for exposed screws and bolts.
D. Door Silencers:
1. Place three single bumpers on single door frames; space equally along strike jambs.
2. Place two bumpers for each door at double door frames; place on frame heads.
3. Except on frames to receive smoke, sound, or thermal seals, drill stops to receive rubber door silencers.
E. Provide jamb anchors per SDI-100 (ANSI/SDI 250.8) and NAAMM; weld floor jamb anchors in place.
F. Provide double doors tested and approved without astragals.
G. Edge Clearances:
1. Between Doors and Frames: Maximum 1/8" at head and jambs.
2. Door Sills (No Threshold): Maximum 3/8".
3. Door Sills (Threshold): Maximum 3/4" above finished floor.
4. Between Edges of Pairs of Doors: Maximum 1/8".
5. Fire Rated Doors: As required for fire ratings.
H. Finish: Comply with requirements of Section 09 90 00 - Painting and Coating for primer including application and compatibility with specified finishes.
1. Interior Units: Prime paint.
2. Exterior Exposed Units: Apply minimum #60 non-soluble epoxy coating, ASTM A924 and A653; surface treat after priming to remove oils and prepare for painting; apply one coat of primer.

PART 3 - EXECUTION
3.1 INSTALLATION
A. Install doors and frames in accordance with SDI-100 (ANSI/SDI 250.8) and ANSI/SDI A250.11 or NAAMM "Hollow Metal Manual" and manufacturer's recommendations and installation instructions.
1. Install fire rated units in conformance with fire label requirements and NFPA 80.
2. Mortise, remove, drill and tap at factory for hardware in accordance with templates furnished by hardware supplier.
B. Install doors and frames plumb and square, and with maximum diagonal distortion of 1/16".

C. Remove and replace doors and frames damaged during delivery, storage, installation and construction. Paste filler repair shall not be permitted.

SECTION 08 14 00 - WOOD DOORS

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes: Provide flush wood doors as indicated.
1. Contractor Option: Provide shop finished wood doors.
1.2 REFERENCES
A. Architectural Woodwork Standards. (AWS) Edition 1, 2009.
B. Window and Door Manufacturer's Association (WDMA): Guide Specifications.
1.3 ADMINISTRATIVE REQUIREMENTS
A. Metal Frames: Coordinate with Section 08 11 10 - Hollow Metal Doors and Frames for prefit wood doors.
B. Wood Jambs: Coordinate with Section 06 20 00 - Finish Carpentry for prefit wood doors for door jambs.
C. Hardware: Coordinate hardware installation with Section 08 71 00 - Door Hardware.
D. Painting: Coordinate with Section 09 90 00 - Painting and Coating; wood doors to be shop finished or field painted.
1.4 SUBMITTALS
A. Product Data: Submit manufacturer's literature.
B. Shop Drawings: Indicate general construction, jointing methods, hardware locations, and locations of cut-outs.
C. Samples: Submit samples of wood doors indicating construction, veneering, and finish. Submit shop finish for wood doors where doors are furnished shop finished.
D. Certificates: Submit manufacturer certification indicating compliance to applicable requirements of either AWS or WDMA Standards; note which standards were followed or if both standards have been met.
1.5 PROJECT CONDITIONS
A. Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized in accordance with referenced standards requirements applicable to Project location.
1.6 WARRANTY
A. Extended Correction Period: Provide for replacing, rehangng, and refinishing wood doors exhibiting defects in materials or workmanship including warp and delamination for not less than two years.
B. Door Manufacturer's Warranty: Submit door manufacturer's standard form signed by manufacturer, installer, and Contractor, agreeing to repair or replace defective doors which warp (bow, cup, or twist), which show telegraphing of core construction in face veneers, or which do not conform to tolerance limitations of specified quality standards.
1. Include reinstallation if required owing to repair or replacement of defective doors where defect was not apparent prior to hanging, complete and ready for installation.
2. Warranty Period Interior Solid-Core Doors: Lifetime of original installation.

PART 2 - PRODUCTS
2.1 SYSTEMS MANUFACTURERS
A. Algoma Hardwoods, Inc.; Eggers Industries Architectural Door Division; Marshfield Door Systems, Inc.
2.2 MATERIALS
A. System Description: Provide flush wood doors as indicated.
B. Solid Core Flush Wood Doors: AWS/Premium Grade, 5 Ply Hot Press, 1-3/4" thick solid wood framed glued block construction or particulateboard core five ply construction; Contractor option to use WDMA comparable standards.
1. Opaque Painted Wood Veneers: AWS/Custom Grade White Birch veneers for opaque finish; nominal 1/40" thick before sanding, not less than 1/50" after sanding.
2. Edges: Stile edges to match face veneer, minimum 1-1/8" thick after trim.
3. Core: Bond stiles and rails to core and sand prior to assembly of face veneers.
4. Bond Type: Provide Type II Bond for interior doors.
5. Performance Level: Extra Heavy Duty.
C. Fire Rated Flush Wood Doors: 1-3/4" thick, match non-rated door appearance; comply with applicable codes: UL or Warnock Hersey rated.
1. Labels: Place fire rating labels where visible when doors are installed in opened position.
2. Fire Ratings: Refer to Drawings for fire rating requirements.
3. Core: Use wood core construction for fire rated flush doors; mineral core permitted for longer jambs; provide 5" top and bottom rails for mineral core doors.
4. Temperature Rating: Provide doors with maximum 450°F Temperature Rise Rating in 30 minute fire exposure period at doors to exit enclosures and where otherwise required by applicable codes.

2.3 FABRICATION AND FINISH
A. Fabricate doors in accordance with requirements of specified standards.
1. Prefit wood doors.
2. Prepare doors to receive hardware in shop, refer to Section 08 71 00 for hardware requirements and templates.
3. Factory machine doors for mortise hardware.
B. Bevel strike edge of single-acting doors, 1/8" in 2".
C. Fire Rated Doors: Fabricate fire rated doors in accordance with requirements of Underwriters' Laboratories (UL) or Warnock Hersey International.
1. Provide fire rated doors with maximum allowable edge strips, of wood species to match face veneers.
2. Provide doors with blocking designed for addition of closers, even where doors are not indicated to receive closers.
3. Provide astragals and metal edge trim for double doors, in accordance with requirements for fire rated doors.
D. Finish:
1. Seal top and bottom edges of all doors with two coats of varnish.
2. Seal around all cutouts before hardware is set into place with two coats of varnish.
3. Factory prime to receive field finish as specified in Section 09 90 00 - Painting and Coating.
E. Shop Finished Doors (Contractor Option): Conform to requirements in Section 09 90 00 - Painting and Coating.

PART 3 - EXECUTION
3.1 INSTALLATION
A. Install wood doors in accordance with manufacturer's recommendations and installation instructions, and reference standards, plumb and square, and with maximum diagonal distortion of 1/16".
B. Install fire rated wood doors in accordance with requirements for specified fire label and requirements of NFPA 80.
1. Field cutting of fire rated doors shall not be acceptable.
C. Rehang or replace doors which do not swing or operate freely.
3.2 PROTECTION
A. Protection: Protect doors as recommended by door manufacturer to ensure doors are without damage at time of substantial completion.
1. Unfinished Doors: Repair or replace doors damaged prior to finishing.
2. Shop Finished Doors: Refinish or replace damaged doors.

SECTION 08 31 00 - ACCESS DOORS AND PANELS

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes: Provide access doors set in finished surfaces.
1. Provide access doors and panels as required for access to controls and valves behind finished surfaces.
2. Coordinate with various trades for controls and valves which may be concealed.
1.2 SUBMITTALS
A. Product Data: Furnish manufacturer's literature.
B. Shop Drawings: Indicate locations of access doors required but not indicated on Architectural Drawings.
PART 2 - PRODUCTS
2.1 SYSTEMS MANUFACTURERS
A. Karp Associates, Inc.; MIFAB, Inc.; Nystrom Building Products; J.L. Industries, Jensen Industries.
2.2 MATERIALS
A. System Description: Provide access doors and panels set in finished surfaces.
B. Regulatory Requirements: Where doors and panels are located in fire rated assemblies provide assemblies listed in Underwriters Laboratories, Inc. "Classified Building Materials Index" for rating shown.
1. Provide UL label on each rated access door.
2. Materials tested, labeled and inspected by Warnock Hersey International are acceptable upon approval of authorities.
C. Access Doors and Panels: Provide access door and panel assemblies consisting of an integral unit with flush metal doors and panels, complete and ready for installation.
1. Non-Fire Rated Units: Flush panel access doors; provide type with frame flange concealed in finished construction.
2. Fire Rated Units: Manufacturer's standard UL rated insulated flush doors with 1" flanged frame and self-closing mechanism.
D. Frames:
1. Typical: Fabricate from not less than 0.053" (16 gage) steel.
2. Wet Areas and As Indicated: Fabricate from not less than 0.053" (16 gage) stainless steel with satin directional polish. No. 4 finish.
E. Doors:
1. Typical: Flush panel type, fabricate from not less than 0.067" (14 gage) steel.
2. Wet Areas and As Indicated: Flush panel type, fabricate from not less than 0.067" (14 gage) stainless steel with satin directional finish, No. 4 finish.
F. Hinges: Provide continuous piano type hinge; stainless steel where at stainless steel access doors.
G. Locking Devices: Provide flush, key operated cylinder lock for each access door; provide two keys per lock and key locks alike, unless otherwise scheduled.
H. Typical: Painted Finish: Finish steel access doors and panels with manufacturer's factory-applied enamel prime coat applied over phosphoric coating, etc.

2.3 FABRICATION
A. Size Variations: Obtain Architect's acceptance of manufacturer's standard size units which may vary slightly from sizes shown or scheduled.
B. Fabricate units of continuous welded steel construction; grind welds smooth and flush with adjacent surfaces.
C. Provide attachment devices and fasteners of type required for specific job conditions.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine areas and conditions under which access doors are to be installed.
1. Do not proceed with work until unsatisfactory conditions are corrected; installation signifies acceptance of conditions.
B. Obtain specific locations and sizes for required access doors from trades requiring access to concealed equipment; coordinate installation with work of other trades.
3.2 INSTALLATION
A. Comply with manufacturer's installation instructions for access doors.
1. Install fire rated access doors in accordance applicable code requirements and with requirements of NFPA 80.
2. Locate access doors and panels in locations shown on Drawings or as approved by Architect.
B. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.
C. Adjust hardware and doors after installation for proper operation.

SECTION 08 33 00 - OVERHEAD COILING DOORS

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes: Provide overhead coiling (roll-up) door systems with curtains, guides, counterbalance, hardware, and accessories as required for complete, operational installation.
1. Provide electrical wiring from make-up box to electrical operators and control stations.
1.2 SUBMITTALS
A. Product Data: Submit manufacturer's literature.
B. Shop Drawings: Indicate pertinent dimensioning, general construction, component connections and details, locking devices, anchorage methods, and hardware locations.
1.3 GUARANTEE
A. Manufacturer: Furnish to Owner door manufacturer's written 2-year guarantee for overhead coiling doors against all defects in materials and workmanship, including without limitation against failure of factory applied finish. Guarantee shall be signed by manufacturer, installer, and Contractor.
PART 2 - PRODUCTS
2.1 SYSTEMS MANUFACTURERS
A. Overhead Door Corp. IS26 Series Door and Model PG-138 Operator.
B. Substitutions: Not permitted.
2.2 MATERIALS
A. System Description: Provide overhead coiling (roll-up) door systems with curtains, guides, counterbalance, hardware, and accessories.
B. Regulatory Requirements (Fire Rated Doors): Where indicated provide assemblies that comply with NFPA 80, tested in accordance with ASTM E 182, and listed in Underwriters Laboratories (UL) Building Materials Directory, and bearing UL label.
1. Materials tested, labeled and inspected by Warnock Hersey International are acceptable upon approval of authorities.
2. Oversized Doors: Doors exceeding 120 or 24 feet in any length, shall have UL "Certificate of Inspection for Oversize Doors", in lieu of label.
C. Design Criteria
1. Exterior Doors: Design and reinforce to withstand loads as required by applicable codes but not less than minimum 20 psf positive and 15 psf negative wind force with maximum L/240 deflection.
2. Fire Rated Doors: Design fire rated doors with closing device and governor to close automatically in case of fire, governor unit inoperative during normal door operations.
a. Provide closing device actuated by magnetic release holders, building smoke detector system.
b. Design release mechanism for easy resetting.
c. Provide units allowing manual lifting of curtain in emergency exit after automatic closing, with certain obstruction released.
3. Cycles: Design for not less than 25 cycles per day, 50,000 cycles service life.
D. Overhead Coiling Doors: Fabricate of continuous length for width of door without splices.
1. Electrically Operated: Provide UL approved system with electric motor sized per minimum 200 lbs. door and 100 lbs. weight and applicable code listed.
2. Power Failure Backup: Provide UL approved manual crank socket for release in case of power failure; provide removable crank.
E. Curtains: Provide face, interlocking slats, ends terminate slats fitted with end caps; provide 1/4" width angles to provide reinforcement and mobility; provide 1/4" width angles to provide reinforcement and mobility; provide 1/4" width angles to provide reinforcement and mobility.
1. Slats: Minimum 1/4" thick, ASTM A653, Grade A, with G90 zinc coating, 75% to 24 inch, 3, phosphate treated before fabrication, 18" deep.
2. Exterior Face: 0.020" (24 gage) galvanized steel.
3. Interior Face: 0.020" (24 gage) galvanized steel.
4. Slot Cavity: Fill with CFC-free polyurethane insulation with an insulating value of not less than R-7.7.
F. Curtain Guides: Formed steel angles of required sizes and configurations.
G. Roller Shaft (Counterbalance): Steel pipe and helical steel spring system capable of producing sufficient torque to assure easy operation of curtain from any position with 25% overload factor; adjustable spring tension.
H. Housing: Minimum 0.020" (24 gage) steel, internally reinforced to maintain rigidity and form.
I. Hood: 24-gage galvanized steel with baffle. Provide with intermediate supports.
J. Weatherstripping (Exterior Doors): Waterproof and rotproof, resilient type, located along jamb edges, bottom of curtain, and within housing.
K. Smoke Gaskets (Fire Rated Doors): Provide gaskets and closures as required to prevent spread of smoke through overhead door system.
1. Label: Provide labeled smoke control doors.
L. Metal Finish: Hot dip galvanize minimum G90 and prime paint; do not stop prime surfaces in contact with concrete or requiring field welding; stop prime in one coat; comply with requirements of Section 09 90 00 - Painting and Coating.
1. Touch up field welds with zinc-rich primer.
M. Hardware: Manufacturer's standard hardware for door types specified; keyed from interior only.
1. Locks: Cylindrical, keyed in accordance with Section 08 71 00 - Door Hardware.
N. Electric Operators: UL approved, minimum 3/4 HP Class A insulated electric motor; fully enclosed magnetic cross-line reversing starter; with overload protection, voltage as indicated on Electrical Drawings.
1. Speed: Minimum 2'3" per second, maximum 1' per second.
2. Control Station: Key operated (open-close-stop) type, for each electric operator, 24 volt circuit, flush mounted.
3. Locking: Provide sliding ball deadlock in bottom bar operated by cylinder lock from the interior side only. Masterkey to building keying system, coordinate with Section 08 71 00 - Door Hardware.
4. Brake System: Adjustable friction clutch double-shoe brakes system actuated by independent full line voltage solenoid controlled by motor starter.

PART 3 - EXECUTION

3.1 INSTALLATION
A. Install overhead coiling doors, complete, in accordance with manufacturer's instructions and recommendations.
1. Install fire rated doors in accordance with requirements for indicated fire label and NFPA Bulletin No. 80.
2. Coordinate installation of electric operators and controls with electrical service.
B. Fit, align, lubricate, and adjust complete door assemblies level and plumb. Provide smooth operation.

PART 3 - EXECUTION

3.1 INSTALLATION
A. Install wood doors in accordance with manufacturer's recommendations and installation instructions, and reference standards, plumb and square, and with maximum diagonal distortion of 1/16".
B. Install fire rated wood doors in accordance with requirements for specified fire label and requirements of NFPA 80.
1. Field cutting of fire rated doors shall not be acceptable.
C. Rehang or replace doors which do not swing or operate freely.
3.2 PROTECTION
A. Protection: Protect doors as recommended by door manufacturer to ensure doors are without damage at time of substantial completion.
1. Unfinished Doors: Repair or replace doors damaged prior to finishing.
2. Shop Finished Doors: Refinish or replace damaged doors.

SECTION 08 33 00 - OVERHEAD COILING GRILLES

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes: Provide overhead coiling (roll-up) door systems with curtains, guides, counterbalance, hardware, and accessories.
B. Regulatory Requirements (Fire Rated Doors): Where indicated provide assemblies that comply with NFPA 80, tested in accordance with ASTM E 182, and listed in Underwriters Laboratories (UL) Building Materials Directory, and bearing UL label.
1. Materials tested, labeled and inspected by Warnock Hersey International are acceptable upon approval of authorities.
2. Oversized Doors: Doors exceeding 120 or 24 feet in any length, shall have UL "Certificate of Inspection for Oversize Doors", in lieu of label.
C. Design Criteria
1. Exterior Doors: Design and reinforce to withstand loads as required by applicable codes but not less than minimum 20 psf positive and 15 psf negative wind force with maximum L/240 deflection.
2. Fire Rated Doors: Design fire rated doors with closing device and governor to close automatically in case of fire, governor unit inoperative during normal door operations.
a. Provide closing device actuated by magnetic release holders, building smoke detector system.
b. Design release mechanism for easy resetting.
c. Provide units allowing manual lifting of curtain in emergency exit after automatic closing, with certain obstruction released.
3. Cycles: Design for not less than 25 cycles per day, 50,000 cycles service life.
D. Overhead Coiling Doors: Fabricate of continuous length for width of door without splices.
1. Electrically Operated: Provide UL approved system with electric motor sized per minimum 200 lbs. door and 100 lbs. weight and applicable code listed.
2. Power Failure Backup: Provide UL approved manual crank socket for release in case of power failure; provide removable crank.
E. Curtains: Provide face, interlocking slats, ends terminate slats fitted with end caps; provide 1/4" width angles to provide reinforcement and mobility; provide 1/4" width angles to provide reinforcement and mobility.
1. Slats: Minimum 1/4" thick, ASTM A653, Grade A, with G90 zinc coating, 75% to 24 inch, 3, phosphate treated before fabrication, 18" deep.
2. Exterior Face: 0.020" (24 gage) galvanized steel.
3. Interior Face: 0.020" (24 gage) galvanized steel.
4. Slot Cavity: Fill with CFC-free polyurethane insulation with an insulating value of not less than R-7.7.
F. Curtain Guides: Formed steel angles of required sizes and configurations.
G. Roller Shaft (Counterbalance): Steel pipe and helical steel spring system capable of producing sufficient torque to assure easy operation of curtain from any position with 25% overload factor; adjustable spring tension.
H. Housing: Minimum 0.020" (24 gage) steel, internally reinforced to maintain rigidity and form.
I. Hood: 24-gage galvanized steel with baffle. Provide with intermediate supports.
J. Weatherstripping (Exterior Doors): Waterproof and rotproof, resilient type, located along jamb edges, bottom of curtain, and within housing.
K. Smoke Gaskets (Fire Rated Doors): Provide gaskets and closures as required to prevent spread of smoke through overhead door system.
1. Label: Provide labeled smoke control doors.
L. Metal Finish: Hot dip galvanize minimum G90 and prime paint; do not stop prime surfaces in contact with concrete or requiring field welding; stop prime in one coat; comply with requirements of Section 09 90 00 - Painting and Coating.
1. Touch up field welds with zinc-rich primer.
M. Hardware: Manufacturer's standard hardware for door types specified; keyed from interior only.
1. Locks: Cylindrical, keyed in accordance with Section 08 71 00 - Door Hardware.
N. Electric Operators: UL approved, minimum 3/4 HP Class A insulated electric motor; fully enclosed magnetic cross-line reversing starter; with overload protection, voltage as indicated on Electrical Drawings.
1. Speed: Minimum 2'3" per second, maximum 1' per second.
2. Control Station: Key operated (open-close-stop) type, for each electric operator, 24 volt circuit, flush mounted.
3. Locking: Provide sliding ball deadlock in bottom bar operated by cylinder lock from the interior side only. Masterkey to building keying system, coordinate with Section 08 71 00 - Door Hardware.
4. Brake System: Adjustable friction clutch double-shoe brakes system actuated by independent full line voltage solenoid controlled by motor starter.

PART 2 - PRODUCTS

2.1 SYSTEMS MANUFACTURERS
A. Karp Associates, Inc.; MIFAB, Inc.; Nystrom Building Products; J.L. Industries, Jensen Industries.
2.2 MATERIALS
A. System Description: Provide access doors and panels set in finished surfaces.
B. Regulatory Requirements: Where doors and panels are located in fire rated assemblies provide assemblies listed in Underwriters Laboratories, Inc. "Classified Building Materials Index" for rating shown.
1. Provide UL label on each rated access door.
2. Materials tested, labeled and inspected by Warnock Hersey International are acceptable upon approval of authorities.
C. Access Doors and Panels: Provide access door and panel assemblies consisting of an integral unit with flush metal doors and panels, complete and ready for installation.
1. Non-Fire Rated Units: Flush panel access doors; provide type with frame flange concealed in finished construction.
2. Fire Rated Units: Manufacturer's standard UL rated insulated flush doors with 1" flanged frame and self-closing mechanism.
D. Frames:
1. Typical: Fabricate from not less than 0.053" (16 gage) steel.
2. Wet Areas and As Indicated: Fabricate from not less than 0.053" (16 gage) stainless steel with satin directional polish. No. 4 finish.
E. Doors:
1. Typical: Flush panel type, fabricate from not less than 0.067" (14 gage) steel.
2. Wet Areas and As Indicated: Flush panel type, fabricate from not less than 0.067" (14 gage) stainless steel with satin directional finish, No. 4 finish.
F. Hinges: Provide continuous piano type hinge; stainless steel where at stainless steel access doors.
G. Locking Devices: Provide flush, key operated cylinder lock for each access door; provide two keys per lock and key locks alike, unless otherwise scheduled.
H. Typical: Painted Finish: Finish steel access doors and panels with manufacturer's factory-applied enamel prime coat applied over phosphoric coating, etc.

2.3 FABRICATION
A. Size Variations: Obtain Architect's acceptance of manufacturer's standard size units which may vary slightly from sizes shown or scheduled.
B. Fabricate units of continuous welded steel construction; grind welds smooth and flush with adjacent surfaces.
C. Provide attachment devices and fasteners of type required for specific job conditions.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine areas and conditions under which access doors are to be installed.
1. Do not proceed with work until unsatisfactory conditions are corrected; installation signifies acceptance of conditions.
B. Obtain specific locations and sizes for required access doors from trades requiring access to concealed equipment; coordinate installation with work of other trades.
3.2 INSTALLATION
A. Comply with manufacturer's installation instructions for access doors.
1. Install fire rated access doors in accordance applicable code requirements and with requirements of NFPA 80.
2. Locate access doors and panels in locations shown on Drawings or as approved by Architect.
B. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.
C. Adjust hardware and doors after installation for proper operation.

SECTION 08 33 00 - OVERHEAD COILING DOORS

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes: Provide overhead coiling (roll-up) door systems with curtains, guides, counterbalance, hardware, and accessories as required for complete, operational installation.
1. Provide electrical wiring from make-up box to electrical operators and control stations.
1.2 SUBMITTALS
A. Product Data: Submit manufacturer's literature.
B. Shop Drawings: Indicate pertinent dimensioning, general construction, component connections and details, locking devices, anchorage methods, and hardware locations.
1.3 GUARANTEE
A. Manufacturer: Furnish to Owner door manufacturer's written 2-year guarantee for overhead coiling doors against all defects in materials and workmanship, including without limitation against failure of factory applied finish. Guarantee shall be signed by manufacturer, installer, and Contractor.
PART 2 - PRODUCTS
2.1 SYSTEMS MANUFACTURERS
A. Overhead Door Corp. IS26 Series Door and Model PG-138 Operator.
B. Substitutions: Not permitted.
2.2 MATERIALS
A. System Description: Provide overhead coiling (roll-up) door systems with curtains, guides, counterbalance, hardware, and accessories.
B. Regulatory Requirements (Fire Rated Doors): Where indicated provide assemblies that comply with NFPA 80, tested in accordance with ASTM E 182, and listed in Underwriters Laboratories (UL) Building Materials Directory, and bearing UL label.
1. Materials tested, labeled and inspected by Warnock Hersey International are acceptable upon approval of authorities.
2. Oversized Doors: Doors exceeding 120 or 24 feet in any length, shall have UL "Certificate of Inspection for Oversize Doors", in lieu of label.
C. Design Criteria
1. Exterior Doors: Design and reinforce to withstand loads as required by applicable codes but not less than minimum 20 psf positive and 15 psf negative wind force with maximum L/240 deflection.
2. Fire Rated Doors: Design fire rated doors with closing device and governor to close automatically in case of fire, governor unit inoperative during normal door operations.
a. Provide closing device actuated by magnetic release holders, building smoke detector system.
b. Design release mechanism for easy resetting.
c. Provide units allowing manual lifting of curtain in emergency exit after automatic closing, with certain obstruction released.
3. Cycles: Design for not less than 25 cycles per day, 50,000 cycles service life.
D. Overhead Coiling Doors: Fabricate of continuous length for width of door without splices.
1. Electrically Operated: Provide UL approved system with electric motor sized per minimum 200 lbs. door and 100 lbs. weight and applicable code listed.
2. Power Failure Backup: Provide UL approved manual crank socket for release in case of power failure; provide removable crank.
E. Curtains: Provide face, interlocking slats, ends terminate slats fitted with end caps; provide 1/4" width angles to provide reinforcement and mobility; provide 1/4" width angles to provide reinforcement and mobility.
1. Slats: Minimum 1/4" thick, ASTM A653, Grade A, with G90 zinc coating, 75% to 24 inch, 3, phosphate treated before fabrication, 18" deep.
2. Exterior Face: 0.020" (24 gage) galvanized steel.
3. Interior Face: 0.020" (24 gage) galvanized steel.
4. Slot Cavity: Fill with CFC-free polyurethane insulation with an insulating value of not less than R-7.7.
F. Curtain Guides: Formed steel angles of required sizes and configurations.
G. Roller Shaft (Counterbalance): Steel pipe and helical steel spring system capable of producing sufficient torque to assure easy operation of curtain from any position with 25% overload factor; adjustable spring tension.
H. Housing: Minimum 0.020" (24 gage) steel, internally reinforced to maintain rigidity and form.
I. Hood: 24-gage galvanized steel with baffle. Provide with intermediate supports.
J. Weatherstripping (Exterior Doors): Waterproof and rotproof, resilient type, located along jamb edges, bottom of curtain, and within housing.
K. Smoke Gaskets (Fire Rated Doors): Provide gaskets and closures as required to prevent spread of smoke through overhead door system.
1. Label: Provide labeled smoke control doors.
L. Metal Finish: Hot dip galvanize minimum G90 and prime paint; do not stop prime surfaces in contact with concrete or requiring field welding; stop prime in one coat; comply with requirements of Section 09 90 00 - Painting and Coating.
1. Touch up field welds with zinc-rich primer.
M. Hardware: Manufacturer's standard hardware for door types specified; keyed from interior only.
1. Locks: Cylindrical, keyed in accordance with Section 08 71 00 - Door Hardware.
N. Electric Operators: UL approved, minimum 3/4 HP Class A insulated electric motor; fully enclosed magnetic cross-line reversing starter; with overload protection, voltage as indicated on Electrical Drawings.
1. Speed: Minimum 2'3" per second, maximum 1' per second.
2. Control Station: Key operated (open-close-stop) type, for each electric operator, 24 volt circuit, flush mounted.
3. Locking: Provide sliding ball deadlock in bottom bar operated by cylinder lock from the interior side only. Masterkey to building keying system, coordinate with Section 08 71 00 - Door Hardware.
4. Brake System: Adjustable friction clutch double-shoe brakes system actuated by independent full line voltage solenoid controlled by motor starter.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine areas and conditions under which access doors are to be installed.
1. Do not proceed with work until unsatisfactory conditions are corrected; installation signifies acceptance of conditions.
B. Obtain specific locations and sizes for required access doors from trades requiring access to concealed equipment; coordinate installation with work of other trades.
3.2 INSTALLATION
A. Comply with manufacturer's installation instructions for access doors.
1. Install fire rated access doors in accordance applicable code requirements and with requirements of NFPA 80.
2. Locate access doors and panels in locations shown on Drawings or as approved by Architect.
B. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.
C. Adjust hardware and doors after installation for proper operation.

SECTION 08 33 00 - OVERHEAD COILING GRILLES

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes: Provide overhead coiling (roll-up) door systems with curtains, guides, counterbalance, hardware, and accessories as required for complete, operational installation.
1. Provide electrical wiring from make-up box to electrical operators and control stations.
1.2 SUBMITTALS
A. Product Data: Submit manufacturer's literature.
B. Shop Drawings: Indicate pertinent dimensioning, general construction, component connections and details, locking devices, anchorage methods, and hardware locations.
1.3 GUARANTEE
A. Manufacturer: Furnish to Owner door manufacturer's written 2-year guarantee for overhead coiling doors against all defects in materials and workmanship, including without limitation against failure of factory applied finish. Guarantee shall be signed by manufacturer, installer, and Contractor.
PART 2 - PRODUCTS
2.1 SYSTEMS MANUFACTURERS
A. Overhead Door Corp. IS26 Series Door and Model PG-138 Operator.
B. Substitutions: Not permitted.
2.2 MATERIALS
A. System Description: Provide overhead coiling (roll-up) door systems with curtains, guides, counterbalance, hardware, and accessories.
B. Regulatory Requirements (Fire Rated Doors): Where indicated provide assemblies that comply with NFPA 80, tested in accordance with ASTM E 182, and listed in Underwriters Laboratories (UL) Building Materials Directory, and bearing UL label.
1. Materials tested, labeled and inspected by Warnock Hersey International are acceptable upon approval of authorities.
2. Oversized Doors: Doors exceeding 120 or 24 feet in any length, shall have UL "Certificate of Inspection for Oversize Doors", in lieu of label.
C. Design Criteria
1. Exterior Doors: Design and reinforce to withstand loads as required by applicable codes but not less than minimum 20 psf positive and 15 psf negative wind force with maximum L/240 deflection.
2. Fire Rated Doors: Design fire rated doors with closing device and governor to close automatically in case of fire, governor unit inoperative during normal door operations.
a. Provide closing device actuated by magnetic release holders, building smoke detector system.
b. Design release mechanism for easy resetting.
c. Provide units allowing manual lifting of curtain in emergency exit after automatic closing, with certain obstruction released.
3. Cycles: Design for not less than 25 cycles per day, 50,000 cycles service life.
D. Overhead Coiling Doors: Fabricate of continuous length for width of door without splices.
1. Electrically Operated: Provide UL approved system with electric motor sized per minimum 200 lbs. door and 100 lbs. weight and applicable code listed.
2. Power Failure Backup: Provide UL approved manual crank socket for release in case of power failure; provide removable crank.
E. Curtains: Provide face, interlocking slats, ends terminate slats fitted with end caps; provide 1/4" width angles to provide reinforcement and mobility; provide 1/4" width angles to provide reinforcement and mobility.
1. Slats: Minimum 1/4" thick, ASTM A653, Grade A, with G90 zinc coating, 75% to 24 inch, 3, phosphate treated before fabrication, 18" deep.
2. Exterior Face: 0.020" (24 gage) galvanized steel.
3. Interior Face: 0.020" (24 gage) galvanized steel.
4. Slot Cavity: Fill with CFC-free polyurethane insulation with an insulating value of not less than R-7.7.
F. Curtain Guides: Formed steel angles of required sizes and configurations.
G. Roller Shaft (Counterbalance): Steel pipe and helical steel spring system capable of producing sufficient torque to assure easy operation of curtain from any position with 25% overload factor; adjustable spring tension.
H. Housing: Minimum 0.020" (24 gage) steel, internally reinforced to maintain rigidity and form.
I. Hood: 24-gage galvanized steel with baffle. Provide with intermediate supports.
J. Weatherstripping (Exterior Doors): Waterproof and rotproof, resilient type, located along jamb edges, bottom of curtain, and within housing.
K. Smoke Gaskets (Fire Rated Doors): Provide gaskets and closures as required to prevent spread of smoke through overhead door system.
1. Label: Provide labeled smoke control doors.
L. Metal Finish: Hot dip galvanize minimum G90 and prime paint; do not stop prime surfaces in contact with concrete or requiring field welding; stop prime in one coat; comply with requirements of Section 09 90 00 - Painting and Coating.
1. Touch up field welds with zinc-rich primer.
M. Hardware: Manufacturer's standard hardware for door types specified; keyed from interior only.
1. Locks: Cylindrical, keyed in accordance with Section 08 71 00 - Door Hardware.
N. Electric Operators: UL approved, minimum 3/4 HP Class A insulated electric motor; fully enclosed magnetic cross-line reversing starter; with overload protection, voltage as indicated on Electrical Drawings.
1. Speed: Minimum 2'3" per second, maximum 1' per second.
2. Control Station: Key operated (open-close-stop) type, for each electric operator, 24 volt circuit, flush mounted.
3. Locking: Provide sliding ball deadlock in bottom bar operated by cylinder lock from the interior side only. Masterkey to building keying system, coordinate with Section 08 71 00 - Door Hardware.
4. Brake System: Adjustable friction clutch double-shoe brakes system actuated by independent full line voltage solenoid controlled by motor starter.

PART 3 - EXECUTION

3.1 INSTALLATION
A. Install overhead coiling doors, complete, in accordance with manufacturer's instructions and recommendations.
1. Install fire rated doors in accordance with requirements for indicated fire label and NFPA Bulletin No. 80.
2. Coordinate installation of electric operators and controls with electrical service.
B. Fit, align, lubricate, and adjust complete door assemblies level and plumb. Provide smooth operation.

PART 3 - EXECUTION

3.1 INSTALLATION
A. Install wood doors in accordance with manufacturer's recommendations and installation instructions, and reference standards, plumb and square, and with maximum diagonal distortion of 1/16".
B. Install fire rated wood doors in accordance with requirements for specified fire label and requirements of NFPA 80.
1. Field cutting of fire rated doors shall not be acceptable.
C. Rehang or replace doors which do not swing or operate freely.
3.2 PROTECTION
A. Protection: Protect doors as recommended by door manufacturer to ensure doors are without damage at time of substantial completion.
1. Unfinished Doors: Repair or replace doors damaged prior to finishing.
2. Shop Finished Doors: Refinish or replace damaged doors.

SECTION 08 33 00 - OVERHEAD COILING GRILLES

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes: Provide manually operated and electrically operated overhead coiling (roll-up) grilles, with hardware and accessories as required for complete installation.
B. Related Sections.
1. Division 28, Electrical service to make-up box located on electric grille operators; empty conduit from control stations to grille operators.
1.2 SUBMITTALS
A. Product Data: Submit manufacturer's literature.
B. Shop Drawings: Indicate pertinent dimensioning, general construction, component connections and details, anchorage methods, and hardware locations.
1.3 WARRANTY
A. Extended Correction Period: Extend correction period to two years. Repair or replace systems and materials which fail to perform as intended.
PART 2 - PRODUCTS
2.1 SYSTEMS MANUFACTURERS
A. Overhead Door Corp.
B. Substitutions: Not permitted.
2.2 MATERIALS
A. System Description: Provide manually operated and electrically operated overhead coiling (roll-up) grilles, with hardware and accessories.
B. Regulatory Requirements (Fire Rated Grilles): Where indicated provide assemblies that comply with NFPA 80, tested in accordance with ASTM E 182, and listed in Underwriters Laboratories (UL) Building Materials Directory, and bearing UL label.
1. Materials tested, labeled and inspected by Warnock Hersey International are acceptable upon approval of authorities.
2. Oversized Grilles: Grilles exceeding 120 or 24 feet in any length, shall have UL "Certificate of Inspection for Oversize Grilles", in lieu of label.
C. Design Criteria
1. Exterior Grilles: Design and reinforce to withstand loads as required by applicable codes but not less than minimum 20 psf positive and 15 psf negative wind force with maximum L/240 deflection.
2. Fire Rated Grilles: Design fire rated grilles with closing device and governor to close automatically in case of fire, governor unit inoperative during normal grille operation.
a. Provide closing device actuated by magnetic release holders, building smoke detector system.
b. Design release mechanism for easy resetting.
c. Provide units allowing manual lifting of curtain in emergency exit after automatic closing, with certain obstruction released.
3. Cycles: Design for not less than 25 cycles per day, 50,000 cycles service life.
D. Overhead Coiling Grilles: Fabricate of continuous length for width of door without splices.
1. Electrically Operated: Provide UL approved system with electric motor sized per minimum 200 lbs. door and 100 lbs. weight and applicable code listed.
2. Power Failure Backup: Provide UL approved manual crank socket for release in case of power failure; provide removable crank.
E. Curtains: Provide face, interlocking slats, ends terminate slats fitted with end caps; provide 1/4" width angles to provide reinforcement and mobility; provide 1/4" width angles to provide reinforcement and mobility.
1. Slats: Minimum 1/4" thick, ASTM A653, Grade A, with G90 zinc coating, 75% to 24 inch, 3, phosphate treated before fabrication, 18" deep.
2. Exterior Face: 0.020" (24 gage) galvanized steel.
3. Interior Face: 0.020" (24 gage) galvanized steel.
4. Slot Cavity: Fill with CFC-free polyurethane insulation with an insulating value of not less than R-7.7.
F. Curtain Guides: Formed steel angles of required sizes and configurations.
G. Roller Shaft (Counterbalance): Steel pipe and helical steel spring system capable of producing sufficient torque to assure easy operation of curtain from any position with 25% overload factor; adjustable spring tension.
H. Housing: Minimum 0.020" (24 gage) steel, internally reinforced to maintain rigidity and form.
I. Hood: 24-gage galvanized steel with baffle. Provide with intermediate supports.
J. Weatherstripping (Exterior Grilles): Waterproof and rotproof, resilient type, located along jamb edges, bottom of curtain, and within housing.
K. Smoke Gaskets (Fire Rated Grilles): Provide gaskets and closures as required to prevent spread of smoke through overhead grille system.
1. Label: Provide labeled smoke control doors.
L. Metal Finish: Hot dip galvanize minimum G90 and prime paint; do not stop prime surfaces in contact with concrete or requiring field welding; stop prime in one coat; comply with requirements of Section 09 90