

**SECTION 08215  
SIMULATED STILE AND RAIL MDF DOORS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
  - 1. Standard and fire rated type MDF doors with simulated panels.
  - 2. Prefit and premachine simulated stile and rail MDF doors.
  
- B. Related Sections:
  - 1. Division – 1 ORGANIZATIONS & SERVICES
    - A. Section 01300 - Administrative Requirements
    - B. Section 01400 - Quality Requirements
    - C. Section 01500 - Temporary Facilities and Controls
  - 2. Division – 6 WOOD & PLASTICS
    - A. Section 06100 - Rough Carpentry.
    - B. Section 06405 - Architectural Woodwork.
    - C. Section 06460 - Wood Frames.
  - 3. Division – 8 DOORS & WINDOWS
    - A. Section 08110 - Hollow Metal Doors and Frames.
    - B. Section 08210 – Flush Wood Doors.
    - C. Section 08710 – Finish Hardware.
    - D. Section 08810 - Glazing: Glass and glazing for doors.

**1.2 REFERENCES**

- A. American National Standards Institute (ANSI)
  - 1. A115-W – 1995, WOOD DOOR HARDWARE STANDARDS Hardware Preparations.
  - 2. A117.1 – 1998, Accessible and Usable Buildings and Facilities.
  
- B. American Society for Testing and Materials (ASTM)
  - 1. ASTM E 119-00a, Standard Test Methods for Fire Tests of Building Construction and Materials.
  
- C. Door and Hardware Institute (DHI)
  - 1. Locations for architectural hardware for standard steel doors and frames, 1990.
  - 2. Sequence and format for the hardware schedule, January 1996.
  - 3. Hardware for Labeled Fire Doors, February 1993 edition.
  - 4. Hardware for Health Care Facilities, June 1983.
  - 5. Abbreviations and Symbols, September 1983.
  
- D. HPVA – Hardwood and Plywood Veneer Association.
  
- E. International Building Code (IBC 2000)
  
- F. National Fire Protection Association (NFPA)
  - 1. NFPA-80 Standard for Fire Doors and Windows, 1999 edition.

2. NFPA-80A Recommended Practice for Protection of Buildings from Exterior Fire Exposures, 2001 edition.
  3. NFPA-101 Life Safety Code, 2000 edition.
  4. NFPA-101A Guide on Alternative Approaches to Life Safety, 2001 edition.
  5. NFPA-101B Code for Means of Egress for Buildings and Structures, 1999 edition.
  6. NFPA-105 Recommended Practice for the Installation of Smoke-Control Door Assemblies, 1999 edition.
  7. NFPA-252 Standard Methods of Fire Tests of Door Assemblies, 1999 edition.
- G. Steel Door Institute (SDI)
1. SDI-105-98 Recommended Erection Instructions for Steel Frames.
  2. SDI-117-93 Manufacturing Tolerances for Standard Steel Doors and Frames.
  3. SDI-122-99 Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
  4. SDI-124-98 Maintenance of Standard Steel Doors and Frames.
- H. Underwriters Laboratories (UL)
1. UL 10C/UBC7-2-97 Fire Tests of Door Assemblies Positive Pressure
  2. UL 1784-90 Air Leakage Tests of Door Assemblies
  3. Door Assemblies Air Leakage Test (1784-90)
- I. Uniform Building Code (UBC):
1. UBC 7-2 1997, Fire Test of Door Assemblies.
- J. Window and Door Manufacturers Association (WDMA)
1. IS 1 - 1997 Industry Standard for Architectural Wood Doors.

### 1.3 SUBMITTALS

- A. General Requirements:
1. Scope of work is to provide simulated stile and rail MDF doors in compliance with the approved shop drawings, approved finish hardware schedule and approved door and frame schedule.
  2. MDF doors to meet positive pressure Category A and B requirements.
- B. Shop Drawings and Product Data:
1. Submit in accordance with Section 01330.
  2. Indicate general construction, jointing methods, hardware and louver locations, and locations of cutouts for glass if required.
  3. Provide 6 copies of the approved door and frame schedule in the DHI horizontal format with shop drawings.
- C. Schedules:
1. Provide door and frame schedule in the DHI horizontal format.
  2. Door and frame schedule to be prepared by a CDC (Certified Door Consultant) or someone of comparable experience.
- D. Product Data:
1. Provide catalog cuts of each item.

## E. Samples:

1. Submit 12" x 12" corner sample of each different type of door, i.e. PC, SCL, FD1.

## F. Operations and Maintenance Data:

At date of acceptance provide owner with 1 copy of an owners Operations and Maintenance Manual. This manual is to be a 3-ring loose-leaf binder with the project name and address on the front cover and spine. In this manual are to be 1 copy of the following items:

1. As Built Door & Frame Schedule.
2. As Built Shop Drawings.
3. As Built Finish Hardware Schedule.
4. Door Manufacturer's Installation Instructions.
5. Each related specification Section.
6. Name, address and phone number of the simulated stile and rail door manufacturer.
7. Name, address and phone number of the local manufacturers representative.
8. Name, address and phone number of the material supplier and contact person.
9. Manufacturers care and maintenance instructions.

## G. Certification:

1. Submit certification that doors and frames comply with UBC 7-2 1997.

#### 1.4 QUALITY ASSURANCE

A. Fire-Rated Simulated Stile and Rail MDF Doors: Provide MDF doors which are identical in materials and construction to units tested in door and frame assemblies in accordance NFPA 252 and which are labeled and listed for ratings indicated by ITS – Warnock Hersey, UL or other testing and inspection agency acceptable to authorities having jurisdiction.

1. Doors: Comply with UBC 7-2 1997 where required.
2. Comply with UL-10C Category A and Category B.

B. Temperature Rise Rating: At stairwell enclosures, provide doors that have Temperature Rise Rating of 250 degrees F maximum in 30 minutes of fire exposure.

C. Supplier Qualifications: Supplier to have a full time Certified Door Consultant (CDC) on staff or someone of comparable experience. Supplier to have been engaged in this type of business for 3 or more years.

D. Certification of Label Construction:

1. Warnock Hersey, Inc (WH)
2. Underwriters Laboratories, Inc. (UL)

E. Substitutions: Apply for substitutions in compliance with the requirements set fourth in Division 1 and no less than 10 business days prior to bid date.

#### 1.5 DELIVERY STORAGE AND HANDLING

A. Site Conditions: Storage area for simulated stile and rail MDF doors is to be in a dried, well ventilated, conditioned and secure area with controlled and stabilized humidity per manufacturers recommendations.

- B. Marking and Packaging:
1. Doors to be marked per the approved door and frame schedule.
  2. Doors with Infinity, Architectural or Designer Moldings and Ovation Raised Moldings to be individually shrink wrapped with cardboard protective edges running the length of the stiles and then palletized.
  3. Encore Doors to be palletized and shrink wrapped
  4. Ovation Doors to be palletized and shrink wrapped.
- C. Delivery: Coordinate delivery with Installer not less than 3 weeks prior to delivery.
- D. Storage:
1. Follow the manufacturer's Care and Installation guidelines.
  2. Store Doors flat and palletized with not more that 20 door leaves per pallet.
  3. Doors to be a minimum of 6" above floor while in storage.
  4. Store Doors on a level surface.
  5. Cover doors to keep clean and avoid discoloration with an opaque covering that does not permit light to penetrate. Cover must allow air circulation.
- E. Handle doors with clean, white soft cotton gloves to prevent contamination by hand oils and dirt. Gloves are to be provided by whoever handles doors at any given time.
- F. Do not drag doors across one another or across other surfaces.
- G. Handle doors per manufacturers recommendations.

## 1.6 GUARANTEE/WARRANTY

- A. Guarantee: Provide manufacturer's guarantee for all simulated stile and rail MDF doors. Guarantee period: Ten (10) years on interior applications. Doors exhibiting defects in materials or workmanship including warp and delamination within guarantee period shall be replaced with new doors.

## **PART 2 PRODUCTS**

### 2.1 ACCEPTABLE MANUFACTURER

- A. ABS Manufacturing – 8360 Elder Creek Road – Sacramento, CA 95828; Phone: (888) 454-2888; Fax: (888) 454-2889
- B. Substitutions will be considered under Section 01600 provided sample of substitution is submitted to architect along with sample of specified product for comparison. Only those products specifically approved by addendum will be considered acceptable.

### 2.2 MATERIALS

## A. Millennium MDF Infinity Doors with Molding:

1. Door Construction: 1/8" primed MDF over 28 lb. minimum particleboard core. Provide 1" softwood stiles, 2 1/4" full bound wood top and bottom rails. Furnish 1 3/4" thick doors.
2. Molding: Furnish only premium MDF (Medium Density Fiberboard) molding in profile indicated below. Bond molding into a precision-machined cavity created by CAD driven numerically controlled routing equipment. Provide the following molding profile(s):
  - a. Infinity Molding Profile
  - b. Infinity Flush Molding Profile
  - c. Architectural Molding Profile
  - d. Architectural Flush Molding Profile
  - e. Designer Molding Profile
  - f. Designer Flush Molding Profile
  - g. Infinity Plant-on Molding Profile
  - h. Architectural Plant-on Molding Profile
3. Adhesive: Use only moisture resistant Type 1 glue in the internal construction of the door.
4. Door Construction for Inlaid Molding 45-60-90-Minute 1-3/4" Doors: Provide premium grade primed MDF (Medium Density Fiberboard) over Intumescent layered core: Edge banded MDF vertical stiles.
5. Door Construction for Plant-on Molding 45-60-90 Minute 1-3/4" Doors: Provide 1/8" primed MDF (Medium Density Fiberboard) over 1-1/2" Mineral Core.

## B. Fire Rated Millennium MDF Doors with and without Molding

1. Doors to comply with UL-10C, Category A or B. Attach proper fire label to door.
2. Door construction to be manufacturer's standard construction for fire rated doors to comply with necessary test procedures and codes.
3. Provide the following molding profile(s) on the fire rated doors:
  - a. Infinity Molding Profile [20-Minute, 45-Minute, 60-Minute, 90-Minute]
  - b. Plant-On Infinity Molding Profile [20-Minute, 45-Minute, 60-Minute, 90-Minute]
  - c. Plant-On Architectural Molding Profile [45-Minute, 60-Minute, 90-Minute]
  - d. Architectural Molding Profile [20-Minute]
  - e. Designer Molding Profile [20-Minute]
  - f. Encore [20-Minute, 45-Minute, 60-Minute, 90-Minute]
  - g. Ovation [20-Minute, 45-Minute, 60-Minute, 90-Minute]
4. See Finish Hardware Section 08 71 00 for Category G Edge Sealing Systems that must be applied to Category B Doors.

## C. Millennium Encore Doors

1. Door Construction for 1 3/4" Doors: Provide 1/2" premium grade primed MDF (Medium Density Fiberboard) over 3/4" EPS foam core. Furnish 1-5/8" MDF top and bottom rail with 1" softwood stiles.
2. Door Construction for 1-3/8" Doors: Provide 3/8" premium grade primed MDF (Medium Density Fiberboard) over 5/8" EPS foam core. Furnish 1-5/8" MDF top and bottom rail with 1" softwood stiles.
3. Door Construction for 20-Minute 1 3/4" Doors: Provide 1/2" premium grade primed MDF (Medium Density Fiberboard) over 3/4" 44# particleboard core. Furnish 1" fir stiles and 2 1/4" MDF top and bottom rail.
4. Door Construction for 90-Minute 1-3/4" Doors: Provide premium grade primed MDF (Medium Density Fiberboard) over Intumescent layered core. Edge banded MDF vertical stiles.
5. Adhesive: Use only moisture resistant Type 1 glue in the internal construction of the door.

## D. Millennium Ovation Doors

1. Door Construction for 1-3/8" Flat Panel Doors: 9/16" Premium grade primed MDF (Medium Density Fiberboard) skins that sandwich 3/8" MDF board panels. Provide 1" Wood Stiles on each vertical edge precision routed into and sandwiched between the MDF skins.

2. Door Construction for 1-3/4" Flat Panel Doors: 11/16" Premium grade primed MDF (Medium Density Fiberboard) skins which sandwich 3/8" MDF board panels. Provide 1" Wood Stiles on each vertical edge precision routed into and sandwiched between the MDF skins.
3. Door Construction 1-3/8" Raise Panel Doors: 11/16" Premium grade primed MDF (Medium Density Fiberboard) skins which sandwich individual raised panels in one of the following panel thickness – 9/16", 7/8". . Provide 1" Wood Stiles on each vertical edge precision routed into and sandwiched between the MDF skins.
4. Door Construction 1-3/4" Raise Panel Doors: 7/8" Premium grade primed MDF (Medium Density Fiberboard) skins which sandwich individual raised panels in one of the following panel thickness – 7/8" or 1-1/4". Provide 1" Wood Stiles on each vertical edge precision routed into and sandwiched between the MDF skins.
5. Door Construction 1-3/4" 20-Minute Fire Rated Doors: 11/16" Premium grade primed MDF (Medium Density Fiberboard) skins which sandwich individual raised panels of 1-1/4" thickness or individual Flat Panels of 11/16" thickness. Category B provide 1" Wood Stiles on each vertical edge precision routed into and sandwiched between the MDF skins. Category A provide 1" Hardwood stiles with built in intumescent strip on each vertical edge precision routed into and sandwiched between the MDF skins and 1" Hardwood top rail with built in intumescent strip.
6. Door Construction 1-3/4" 45-60-90-Minute Fire Rated Doors: 9/16" Premium grade primed MDF (Medium Density Fiberboard) skins which sandwich 5/8" Intumescent layered core Flat Panels for single doors or 7/8" Intumescent layered core Flat Panels for pairs: Edge Banded MDF vertical stiles.
7. Adhesive: Use only moisture resistant Type 1 glue in the internal construction of the door.

#### E. Smoke Control Doors

1. Doors to comply with UL 1784-90 Air Leakage Tests of Door Assemblies. Attach secondary "S" smoke label to door.
2. Frame Applied Seals: See Section 08 71 00 for Category J gaskets that must be applied to "S" labeled doors complying with UL1784.

#### F. Door Design

1. Provide Millennium Design # \_\_\_\_\_ on all doors.
2. Provide Millennium Design # \_\_\_\_\_ on corridor side of door, and Millennium Design # \_\_\_\_\_ on room side of door.

## 2.3 ACCESSORIES

#### A. Mirror Option:

1. Millennium Hardboard Doors: Provide 1/8" category 2 safety backed mirror panel bonded directly to skin of the door. Furnish decorative raised mirror molding to match molding used on other hardboard doors.
2. Millennium Encore Doors: Provide 1/8" category 2 safety backed mirror panel bonded directly to door. Mirror to sit flush with face of door.
3. Millennium Ovation Doors: Provide 1/8" category 2 safety backed mirror panel bonded directly to skin on the panel or on double sided mirror, 1/8" mirrors adhered back-to-back and then precision routed into and sandwiched between the MDF skins.
4. Door Design
  - a. Provide mirror on both sides of door.
  - b. Provide mirror on one side of door and Millennium Design # \_\_\_\_\_ on other side of door.

**B. Fixed Lite Option:**

1. Millennium Infinity Doors: Provide ¼" Tempered Clear Glass, Tempered Obscure (P516) Glass or White Laminated Glass installed in place of square panel design. Furnish special raised glass lite molding to stop glass panels in place.
2. Millennium Ovation Doors: Provide ¼" Tempered Clear Glass, Tempered Obscure (P516) Glass or White Laminated Glass installed in place of square, arch or eyebrow panel design Refer to door elevations and details on plans.
3. Refer to door elevations and details on plans.

**C. Louver Option:**

1. Millennium Infinity Doors: Provide precision routed integral panels with 2-1/4" primed MDF (Medium Density Fiberboard) louver blades, either in slat or false louver design, installed in place of square panel design.
2. Millennium Ovation Doors: Provide precision routed integral panels with 2-1/4" primed MDF (Medium Density Fiberboard) louver blades, either in slat or false louver design, installed in place of square panel design.

**E. Marking Board Option:**

1. Millennium Encore Doors: Provide magnetic chalkboard or white dry erase board panel bonded directly to door. Marking board to sit flush with face of door.
2. Millennium Ovation Doors: Provide magnetic chalkboard or white dry erase board panel bonded directly to skin on the panel and then precision routed into and sandwiched between the MDF skins
3. Door Design:
  - a. Provide Marking board on both sides of door.
  - b. Provide Marking board on one side of door and Millennium Design # \_\_\_\_\_ on other side of door.

**2.4 FABRICATION**

- A. Fabricate MDF doors in accordance with requirements of WDMA I.S. 1 - 1997 Quality Standards.
- B. Fabricate fire rated doors in accordance with requirements of ITS – Warnock Hersey or Underwriters' Laboratories, with metal label on each door including UL-10C.
- C. Provide blocking for hardware per hardware manufacturers requirements for hardware to be installed without thru-bolts.
- D. Factory prime doors for field finish.
- E. Bevel lock and hinge edges of single acting doors 3 degrees or 1/8 inch in 2 inches.
- F. Prepare doors to receive hardware. Refer to Section 08710 - Hardware and NFPA 80 for hardware requirements including UL-10C.
  1. Prefit and bevel to net opening size less approximately 1/4 inch in width on single swing doors 3/16" inch in width for paired doors. Provide 1/4 inch clearance above finished floor, unless otherwise indicated on drawings. Provide 1/8 inch clearance at top of door.
  2. Slightly ease vertical edges.
- G. Fire Rated Pair of Doors; greater than 20 minute: Supply overlapping astragals or metal edge sets only as required by NFPA 80 1999 or by door manufacturer's fire door installation instructions. If an astragal is required, to comply with fire rated labeling requirements for pairs of fire rated doors, provide door manufacturer's standard tested astragal as required.

**2.5 SOURCE QUALITY CONTROL**

- A. Inspect doors prior to shipment, any doors that are damaged, not machined properly or defective shall be repaired to manufacturers quality standards for new doors or be replaced prior to shipment.

### **PART 3 EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine installed door frames before hanging doors.
- B. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.
- D. Inspect jobsite to ensure a dry and secure area that meets manufacturers storage recommendations is available and ready to receive the doors prior to delivery of doors.

#### **3.2 PREPARATION**

Prior to delivery of MDF doors, and while MDF doors are being stored, the storage area shall:

- A. Be free of all trash and debris.
- B. Meet manufacturers recommendations for storage of MDF doors.
- C. Be conditioned and have stabilized humidity control.

#### **3.3 INSTALLATION**

- A. Handle doors in accordance with recommendations of WDMA I.S. 1, "Care and Installation at Job Site."
- B. Condition doors to average temperature and humidity in area of installation for not less than 48 hours prior to installation. Store doors per recommendations of WDMA I.S. 1, "Care and Installation at Job Site."
- C. Install in neat and workmanlike manner, free from hammer or tool marks, open joints or slivers.
- D. Set plumb, level, square and true. Install doors after building humidity is at acceptable level.
- E. Remove and replace all warped, twisted, bowed, or otherwise damaged doors. Do not install doors that cannot be properly fitted to frames.
- F. Adjust doors and hardware and other moving or operating parts to function smoothly and correctly.



- G. The field finishing process must follow the WDMA I.S. 1, "Care and Handling at Job Site" instructions for field applied finishes.
- H. Protect the work of other trades damage from the installation of doors and frames.
- I. Install doors in accordance with the following:
  - 1. Manufacturers instructions, recommendations and tolerances.
  - 2. NFPA-80
  - 3. SDI-105
  - 4. Approved Finish Hardware Schedule
  - 5. Approved Door and Frame Schedule
  - 6. Approved Shop Drawings
  - 7. All applicable codes and requirements

### **3.4 CARE AND FINISHING**

- A. Finish doors in accordance with door manufacturer's Care and Finishing instructions.
- B. All six sides of door must be sealed. *Including top and bottom.*

### **3.5 ADJUSTING AND CLEANING**

Prior to final acceptance and at no additional cost to owner:

- A. Adjust doors to meet required tolerances:
- B. General Contractor to clean doors per manufacturers instructions to be free from all foreign materials.
- C. Repair damaged doors per manufacturers instructions and guidelines.
- D. Replace damaged doors that cannot be repaired to the manufacturers standards of quality.
- E. Replace defective doors.

### **3.6 PROTECTION**

- A. Infinity doors to be individually shrink wrapped with cardboard protective edges running the length of the stiles and then palletized; Encore doors to palletized and shrink wrapped; Ovation doors to palletized and shrink wrapped.
- B. Protect doors from damage by other trades.
- C. Keep area around doors free from trash and debris.
- D. Protect doors as directed under Section 01700.

**END OF SECTION**