SECTION 081416 - WOOD DOORS

PART 1 - GENERAL

1.01 SECTION INCLUDES:
A. The work of this section shall include all labor, material equipment and services required and necessary to furnish and install all wood doors as indicated or specified.

1.02 REFERENCES
A. The materials, products and installation of items provided as part of this section work shall be in conformance with the following referenced standards and specifications as applicable:
   1. ANSI - American National Standards Institute
   2. AWI - American Woodwork Institute
   3. NWMA - National Woodwork Manufacturers Association
   4. WDHS - Wood Door Hardware Standards

1.03 SUBMITTALS
A. Submit manufacturer's product, data sheets, installation, instructions and maintenance procedures for each type of door.
B. Submit samples of each color, finish and pattern indicated by the Contract Documents.
C. Submit details of core and edge construction, trim for openings and louvers and similar components.
D. Submit certifications to show compliance with specifications and plans.
E. Submit product data on required preservative treatment.
F. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
   1. Dimensions and locations of blocking.
   2. Dimensions and locations of mortises and holes for hardware.
   3. Dimensions and locations of cutouts.
   4. Undercuts.
   5. Requirements for veneer matching.
   6. Doors to be factory finished and finish requirements.
   7. Fire-protection ratings for fire-rated doors.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING
A. Delivery of Materials:
   1. The doors delivery to the Site shall only occur if the entire building is weather tight and has been free from dampness due to the plastering, gypsum wallboard finishing or other moisture producing work for at least ten days.
   2. Protect doors during transit by enveloping each unit in an individual cover. Pallets of doors shall have covers and skids to protect materials from transit damage.
   3. Doors and protective covers shall be individually marked in accordance with approved Shop Drawing designations.
B. Storage of Materials:
   1. Comply with the "On-Site Care" recommendations of NWMA pamphlet, "Care and Finishing of Wood Doors".
   2. Store doors in accordance with manufacturer's instructions.
   3. Store doors in clean, dry area indoors, protected from damage and direct sunlight.
   4. Store doors flat on level surface.
   5. Do not store doors directly on concrete.
   6. Keep doors completely covered. Use covering which allows air circulation and does not permit light to penetrate.
   7. Store doors between 50 and 90 degrees F (10 and 32 degrees C) and 30 to 60 percent relative humidity.
C. Handling:
   1. Handle doors in accordance with manufacturer’s instructions.
   2. Protect doors and finish during handling and installation to prevent damage.
   3. Handle doors with clean hands or clean gloves.
   4. Lift and carry doors. Do not drag doors across other doors or surfaces.

1.05 GUARANTEE
A. Furnish wood doors with the door manufacturer’s warranty covering defects in materials and workmanship. Duration of warranty shall be as follows: solid core doors, interior - lifetime.
B. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
C. Failures include, but are not limited to, the following:
   1. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section of a 1-3/4 inch thick door.
   2. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.

PART 2 - PRODUCTS

2.01 MATERIALS
A. Wood doors shall be custom grade in accordance with the Architectural Woodwork Institute brochure, "Flush Doors," and the National Woodwork Manufacturers Association Publication I.S.1, "Wood Flush Doors." The pre-approved manufacturers are VT Industries, Oregon Door, Vancouver, and Eggers Hardwood Products Corp. All of the doors furnished on the Project shall be by one manufacturer.

2.02 FIVE-PLY FLUSH SOLID-CORE HIGH-PRESSURE DECORATIVE LAMINATE DOORS
A. Basis of Design: VT Industries Heritage Model 707H - 5 Ply Construction
   1. Compliance: WDMA I.S.1-A.
   3. Duty Level: Heavy duty
   4. PC-HPDL-5
   6. STC Rating: STC 30
   7. Plastic-Laminate faces shall be high-pressure decorative laminates complying with NEMA LD 3, Grade HGS.
   8. Stiles:
      a. 1-3/8 inches wide, before pre-fitting.
      b. Structural composite lumber (SCL).
      c. Painted edges to match face laminates
   8. Rails:
      a. Structural composite lumber (SCL).
   9. Core:
      a. Material: Stave Lumber
      b. Stave Lumber Core Compliance: Blocks and strips not more than 2-1/2 inches wide, one species of wood.
   10. Composite Cross-band:
       a. Apply to core in hot press using Type I, exterior, water-resistant adhesive.
       b. Exposed Cross-banding: Not allowed along stile edges.
   11. Door Assembly:
       a. Stiles and rails bonded to core.
       b. Monolithically sand core assembly to ensure minimum telegraphing of core components.
       c. Apply laminates to core in hot press using Type I, exterior, water-resistant adhesive.
2.03 FIVE-PLY FLUSH BONDED WOOD VENEER DOORS

A. Basis of Design: VT Industries Heritage Model 5507H - 5 Ply Construction
   1. Compliance: WDMA I.S.1-A.
   3. Duty Level: Heavy duty
   4. Type: SLC-5
   6. STC Rating: STC 32
   7. Stiles:
      b. Structural Composite Lumber (SCL) With Outer Stile: Same species as face veneer.
      c. Outer Stile: Apply after beveling and before face application.
      d. Painted edges to match veneer faces.
   8. Rails:
      a. Structural composite lumber (SCL).
   9. Core:
      a. Material: Stave Lumber
      b. Stave Lumber Core Compliance: Blocks and strips not more than 2-1/2 inches wide, one species of wood.
   10. Door Assembly:
      a. Stiles and Rails: Bonded to core.
      b. Sand entire assembly flat as a unit to ensure minimal telegraphing of core components through face veneers.
   11. Composite Cross-band:
      a. Apply to core in hot press using Type I, exterior, water-resistant adhesive, before application of hardwood edges.
      b. Exposed Cross-banding: Not allowed along stile edges.
   12. Veneers:
      a. Apply to cross-banded core in hot press using Type I, exterior, water-resistant adhesive.
      b. Species: Birch
      c. Cut: Plain Sliced
      d. Match: Book
      e. Assembly: Running Match

2.04 Special Features

A. Fire rated doors shall be Underwriters' Laboratories labeled fire doors as follows for the label scheduled on the Drawings: (Except pairs of 1/3 hour labeled doors shall have Warnock Hersey Fire Laboratories' Labels.)
   1. Fore "B" label (1 hour rating) - Use FD 1.
   3. For "20 Minute" label (1/3 hour rating) - Use FD 1/3.
   4. Pairs of doors shall have fire retardant treated wood edges to meet Warnock Hersey label requirements.
   5. Sixty and ninety minute fire rated doors in corresponding fire rated frames shall have producer's standard UL stiles for flush type, full mortise hinges and shall be installed in accordance with the requirements of NFPA Publication NO. 80, "Standard for Fire Doors and Windows."

B. Sound insulating doors shall be SR with face veneer to match that of solid core flush doors. The thickness shall be 1-3/4 inches (45 mm) with a sound transmission class of 36.

C. Dutch doors shall be of the same construction as solid core flush doors specified hereinbefore. Form counter shelf of 1-1/8 inch (30 mm) thick hardwood to match face veneer of doors, with proper jamb clearances and substantial supports. Shelf to project 8 inches (200 mm) unless otherwise indicated by Contract Documents.
2.05 DOOR ACCESSORIES
A. Provide 18-gauge steel moldings for all doors with vision panels. Assembly shall be two-piece construction. Moldings shall be field installed. Moldings shall have baked-enamel- or powder-coated finished matching the color of the door. Installation of vision panels shall not diminish the required fire rating of the doors.
B. Cutouts shall be provided for louvers where indicated by Contract Documents. Provide fire rated louvers in fire rated doors to maintain rating required for door.

2.06 FABRICATION
A. Colors, Patterns, and Finishes: As indicated on Drawings.
B. Edges shall have sanded eased edge at intersections of edges and faces.
C. Stiles shall have a 1/8" in 2" beveled edge.
D. Hardwood edges for painting or staining.

PART 3 - EXECUTION

3.01 INSPECTION
A. Verify the frames are of the correct type and have been installed as required for proper hanging of corresponding doors. Contractor shall notify Designated Representative in writing of conditions detrimental to the installation of wood doors. Hanging of doors shall not proceed until unsatisfactory conditions exist, as required for proper hanging of door.

3.02 PREPARATION
A. Carefully prepare doors as required for all finish hardware. Obtain templates for use during machining. Verify hardware location and core type of door prior to machining.
B. Acclimatize doors to the average prevailing humidity in the installation area prior to hanging wood doors.

3.03 INSTALLATION/APPLICATION/PERFORMANCE/ERECTION
A. Condition doors to average prevailing humidity in installation area prior to hanging. Relative humidity should not be less than 30 percent or more than 60 percent.
B. Install wood doors in accordance with manufacturer's instructions, finish hardware requirements and as indicated by Contract Documents.
C. Align doors to frame for proper fit and uniform clearance at each edge. Fitting clearance shall not exceed 1/8 inch at sides and top. Coordinate door bottom fit with threshold requirements and adjacent flooring material heights.
D. Comply with NFPA 80 for fire-rated doors.
E. Drill pilot holes for all screws that act as hardware attachments. Full threaded screws are preferable for fastening hardware to non-rated doors and are required on fire-rated doors. Self-tapping and combination wood/metal screws are prohibited.
F. Doors and frames should be installed plumb, square and level.
G. Field repairs and touchups are the responsibility of the installing contractor upon completion of initial installation. Field touchup shall include the filling of exposed nail or screw holes, re-finishing of raw surfaces resulting from job fitting, repair of job inflicted scratches and mars, and final cleaning of finished surfaces.

3.04 ADJUSTING
A. Ensure that all doors swing freely and do not bind in their frame. Adjust the finish hardware for proper alignment, smooth operation and proper latching with- out unnecessary force or excessive clearance.
B. Rehang or replace doors that do not swing or operate freely as determined by the Owner’s Representative.

3.05 PROTECTION
A. Comply with door manufacturer’s recommended procedures to protect installed wood doors from damage or deterioration until acceptance of work. Remove protection at completion of project work.

END SECTION