NON-PROPRIETARY GUIDE SPECIFICATON FOR SECTION 08210 - ARCHITECTURAL HOT PRESS FLUSH WOOD DOORS

SECTION 08210 - FLUSH WOOD DOORS (ARCHITECTUAL HOT PRESS)

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract including General and Supplementary Conditions and Division 1–Specification sections, apply to work specified in this Section.

1.2 REFERENCE STANDARDS (most recent edition)

A. WDMA IS 1A - Window and Door Manufacturers Association (WDMA)

B. AWS - Quality Standards of the Architectural Woodwork Institute (AWI) & Woodwork Institute (WI)

C. NFPA 80 - Fire Doors and Windows

D. NFPA 252 - Standard Methods of Fire Tests for Door Assemblies

E. Underwriters' Laboratories - UL 10B (neutral pressure) and UL 10C (positive pressure) - Fire Tests of Door Assemblies

F. ITS (Warnock Hersey) - Certification Listings for Fire Doors

G. ASTM E90-90 - Measurement of Airborne Sound Transmission Loss of Building Partitions

H. FSC - Forest Stewardship Council guidelines for environmentally certified wood doors

I. USGBC/LEED – US Green Building Council/Leadership in Energy and Environmental Design

1.3 SUMMARY

This section includes:

A. Solid-core flush wood doors with wood-veneer, medium density overlay (MDO), paint-grade faces, HPDL (plastic laminate).

B. Factory pre-fitting, pre-machining for hardware, detailing, glazing and factory prefinishing.

1.4 SUBMITTALS

A. **Product Data:** Submit door manufacturer's product construction data, hardware attachment performance data, specifications and installation instructions for each type of wood door, including details of core and edge construction, trim for lite openings and similar components.

B. **Specific Product Warranty:** The interior doors shall be warranted by the manufacturer to be free of manufacturing defects for the life of the original installation. Warranty shall provide for repair or replacement of the defective door(s) as originally furnished at manufacturer option. Manufacturer will assume reasonable costs associated with same, including rehanging. Manufacturer may, per its discretion, elect to use either its own or third party resources to resolve warranty claims.

C. **Shop Drawings:** Provide the following information:
   1) Door type.

   2) Door size.

   3) Fire Rating.
      a) Neutral pressure - UL 10B/UBC43-2 or 7-2-94.
      b) Positive pressure - UL 10C/UBC7-2-97.

   4) Hardware types and locations.

   5) Hardware blocking requirements and location.

   6) Vision panel or louver cutout size and location.

   7) Prefinish system type and approved color(s).

D. **Samples:**
   1) Color samples for factory prefinishing. Manufacturer must submit samples of not less than 6" x 6" size on representative veneer or paintable surface, with sample date indicated.

   2) Construction samples. Corner sections with door faces, edges, and core representative of the specified door type(s). Corner samples to be not less than 6" x 6".

1.5 QUALITY AND ENVIRONMENTAL ASSURANCE

A. **Manufacturer:** Company specializing in manufacturing products specified in Section 8210 with a minimum of five years documented experience. All doors must be supplied through one Company.

B. **Quality Standard:** Doors to comply with WDMA IS 1A04 (Window and Door Manufacturers Association), AWS Section 9 (Architectural Woodwork Institute), or AWI with quality certification program (QCP).

Quality Standard: *Click Here For Std Selection*

C. **Fire Ratings Compliance:** Fire-rated wood doors to comply with NFPA-80 requirements according to building code standards having local jurisdiction.

   1) Neutral Pressure Testing - UBC 43-2 or 7-2-94; or UL10B.

   2) Positive Pressure Testing UBC 7-2-97 or UL10C.

D. **Label Certification:** All doors requiring fire-rating will carry either UL or ITS (Warnock Hersey) label. Manufacturer's certification labels may be used for door size variations if approved by AHJ (Authority Having Jurisdiction).

E. **Environmental Certification:** All doors requiring environmental certification will be marked with Forest Stewardship Council (FSC) authorized certificate. Environmental certification ensures that wood components come from certified forests and are processed by certified chain-of-custody manufacturers.

F. **LEED Certification:** All doors manufactured under guidelines of LEED will be built to the USGBC standards for contributing to LEED point calculations.

G. **Delivery/Storage/Handling:** Store and protect doors in accordance with manufacturer's recommendations and WDMA or AWS Standards. Following are general guidelines.

1) Store doors flat and off the floor on a level surface in a dry, well-ventilated building. Do not store on edge. Protect/cover doors from dirt, water and abuse.

2) Certain wood species are light sensitive. Protect doors from exposure to light (artificial or natural) after delivery.

3) Do not subject interior doors to extremes in either heat or humidity. HVAC systems must be operational and balanced, providing a temperature range of 50 to 90 degrees Fahrenheit and 25% to 55% relative humidity.

4) When handling doors, always lift and carry. Do not drag across other doors or surfaces. Handle with clean hands or gloves.

5) Each door will be marked on top rail with opening number.

1.6 WARRANTY

Manufacturer's signed warranty covering manufacturing or material defects for life of original installation, including repair, replacement, machining, detailing glazing and/or prefinishing, as well as rehanging, is a required part of the manufacturer's warranty for interior doors.

Part 2 - PRODUCTS

2.1 MANUFACTURERS

Manufacturers are subject to evaluation and inclusion by architect/specifier. Listed below are primary manufacturers of Architectural Hot Press wood doors:

Algoma Hardwoods, Inc.
Eggers Industries
Marshfield Door Systems
VT Industries, Inc.

2.2 DOOR CONSTRUCTION, GENERAL

A. LEED Accreditation – LEED specified wood doors will be manufactured under the guidelines developed by the USGBC. Standard door constructions contribute to LEED point calculations. Additional contributions may be specified/earned by electing UF Free (see drop down below) or FSC (see paragraph B) certifications and constructions.

LEED Specified Project: *Click Here For LEED specification*

UF Free: *Click Here For UF Free*

B. **ENVIRONMENTALLY CERTIFIED DOORS -** Environmentally certified doors may carry a certification authorized under authority of the Forest Stewardship Council (FSC) requirements as pertaining to certified sourcing, recycled material content and chain-of-ownership requirements for materials used in construction of the door.

Certification Specified: *Click Here For Environmental Certification*

C. **SPECIAL FUNCTION DOORS –**

Special Function Doors Specified: *Click Here For Special Function Doors*

1) **Sound Transmission Class (STC) -** As identified by door schedule, doors to carry an acoustical rating for sound transmission class. STC ratings are determined through testing to comply with ASTM E90-90 methods. All accessories required for acoustical rating compliance supplied by door manufacturer with door.

STC Rating Specified: *Click Here For STC Certification*

2) **Lead-Lined –** As identified by door schedule, doors to have continuous lead sheeting from edge to edge between the cross banding and the core. Lead thickness as specified below.

Lead-Lined Doors Specified: *Click Here For Lead-Lined Doors*

3) **Bullet Resistant –** Bullet resistant doors to be manufactured with special ballistic rated materials within the core assembly per door manufacturer's construction. Protection levels per UL752 Bullet Resisting Equipment as specified below.

Bullet Resistant Doors Specified: *Click Here For Bullet Resistant Doors*

D. **NON-FIRE-RATED AND1/3 HOUR FIRE-RATED DOORS –**

General Grade Specification – WDMA & AWS standards identify a performance standard as well as an Aesthetic grade. Aesthetic grades in both AWS and WDMA are premium and custom. In WDMA and AWS performance (duty levels) are Extra Heavy Duty, Heavy Duty and Standard Duty.

Aesthetic Grade

Premium - The highest grade commercially available in both material and workmanship. Intended for the finest commercial, industrial and institutional buildings.

Custom - The typical and normal grade in both material and workmanship. This grade is intended for high-quality work.

Aesthetic Grade Specified: *Click Here For Grade*

Preformance Standards (Duty Levels)

Extra Heavy Duty – This duty level typically involves doors where use is considered heavy and frequent, and requires the highest minimum performance standards.

Heavy Duty – This duty level typically involves doors where usage is moderate, and requires intermediate minimum performance standards.

Standard - This duty level typically involves doors where frequency of use is low, and requires the lowest minimum performance standards.

Performance Duty Level: *Click Here For Duty Level*

Door Construction

1) Construct using Hot Press method for laminating face veneers and crossbanding to the core. Cold pressing is not acceptable. Select construction (refer to Section (2) for specific information). Stiles and rails must be securely bonded to the core and then abrasively planed prior to veneering.

2) Core is one of the following three types:
   a) **Particleboard Core** (PC-5) to comply with ANSI Stnd. A208.1- 1989 LD-2, with screw holding power of 125 lbs., modulus of rupture of 800 psi, modulus of elasticity of 150,000 psi and density of 30-35 lbs. per cubic foot. Screw holding is particular to duty level specified.
   b) **Structural Composite Lumber Core** (SCLC-5) is an engineered hardwood composite sometimes referred to as LSL (Laminated Strand Lumber). The material complies with WDMA/AWS minimum performance levels for interior applications with screw holding power of 540 lbs., modulus of rupture of 6,500 psi, modulus of elasticity of 1,300,000 psi and density of 38 lbs per cubic foot.

c) **Stave Lumber Core** (SLC-5) may be a combination of solid, low-density hardwood lumber blocks or strips not more than 2-1/2" wide of one species of wood between 6% to 9% moisture content. Joints to be tight and staggered in adjacent rows. Lumber density is 25 to 27 lbs. per cubic foot.

Core Materials Specified: *Click Here For Core Materials*

3) **Crossbands** are wood-based composites of a minimum thickness of 1/16". Crossbands and face veneers are laminated to the core with Type 1 interior use glue using the Hot Press method. Crossbands must extend the full width of the door. Minimum properties include internal bond of 100 psi and density of 50 lbs. per cubic foot.

4) **Stiles (Vertical Edges) -** Stiles are hardwood (one piece, laminated or veneered). Constructions with laminated or veneered edges may use structural composite lumber as an inner stile component when WDMA standards are specified. If AWS is required a 1" minimum hardwood inner must be used for veneer/HPL edges.
   a) **Compatible -** Similar in overall color, grain, character and contrast as the face veneer.
   b) **Matching -** Same species as face veneer.
   c) **Closed Grain Hardwood -** Manufacturer's option for painted stile edges.

   Stile Type Specified: *Click Here For Stile Type*

5) **Rails (Horizontal Edges) -** Rails are solid wood or structural composite lumber meeting the minimum requirements of WDMA, or medium density fiberboard meeting requirements of ANSI 208.2 (Medium Density Fiberboard for Interior Use).

6) **Hardware Blocking** (eliminates through-bolting and improves screw withdrawal resistance for heavy-use areas) - Specify minimum 5" top rail for specialized hardware and/or 5" bottom rail for specialized hardware or undercutting flexibility.

   Blocking Requirements Specified: *Click Here For Blocking Requirements*

7) **Veneers -** There are five aspects of veneer selection which must be specified. The aspects are (1) face grade, (2) cut, (3) veneer species (4) match between veneer leaves, (5) assembly of veneer leaves on face. Refer to designated quality standards for specific definitions and attributes.

   Face Grade Specified: *Click Here For Face Grade*

   Veneer Cut Specified: *Click Here For Veneer Cut*

   Veneer Species Specified: *Click Here For Veneer Species*

   Veneer Match Specified: *Click Here For Veneer Match*

   Veneer Assembly Specified: *Click Here For Veneer Assembly*

8) **Pair and Set Match**
For openings with more than one door, door faces must be pair or set matched. This includes doors separated by a mullion.

Matching Requirements: *Click Here For Matching Needs*

9) **Transom and Side Panels**
Fabricate matching panels with same construction, exposed surfaces, and finish specified for associated doors.

Matching Requirements : *Click Here For Matching Needs*

10) **Glazing –** Doors may be factory glazed or job site glazed. Wood beads or metal vision panels and glazing to comply with designated fire ratings.

Glazing Specified: *Click Here For Glazing*

11) **Surface Applied Mouldings -** Factory applied moulding frames to be compatible with face veneer. Profile and configuration per door manufacturers standard. Moulding frames to be applied with both glue and nail(s).

Surface Applied Mouldings Specified: *Click Here For Applied Moulding*

D. **FIRE-RATED DOORS**

1) Construct using Hot Press method for laminating face veneers and crossbands to the core. Cold press is not acceptable. Select construction (refer to Section (2) for specific information):

Fire Rating Specified: *Click Here For Fire-Ratings*

Category A Positive Pressure openings have all the intumescent required for compliance contained within the door and require no additional installation of intumescent strips.
Category B Positive Pressure openings require the addition of intumescent strips to the door and/or frame.

Neutral/Positive Pressure Specified: *Click Here For Neutral or Positive Pressure*

2) **Mineral Core** is a non-combustible mineral composite material that is necessary for 45, 60, and 90 minute ratings per manufacturer's approval(s).

3) **Crossbands** are wood-based composites of a minimum thickness of 1/16". Crossbands and face veneers are laminated to the core with Type 1 interior use glue using the Hot Press method. Crossbands must extend the full width of the door. Minimum properties include internal bond 100 psi and density of 50 lbs. per cubic foot.

4) **Stiles (Vertical Edges) -** Provide manufacturer's standard laminated edge construction with

improved screw-holding capability and split resistance. Both inner and outer stiles cannot contain salt treating.

a) **Compatible -** Similar in overall color, grain, character and contrast as the face veneer.
b) **Matching -** Same species as face veneer.
c) **Closed Grain Hardwood -** Manufacturer's option for painted stile edges.

Stile Type Specified: *Click Here For Stile Type*

5) **Rails (Horizontal Edges) -** Rails are solid wood or other material contained in manufacturer's fire door approvals.

6) **Hardware Blocking** (eliminates through-bolting and improves screw withdrawal resistance for heavy-use areas) **-** Specify minimum 5" top rail for specialized hardware and/or 5" bottom rail for specialized hardware or undercutting flexibility and/or blocking for lockset installation.

Blocking Requirements Specified: *Click Here For Blocking Requirements*

7) **Veneers -** There are five aspects of veneer selection which must be specified. The aspects are (1) face grade, (2) cut, (3) veneer species (4) match between veneer leaves, (5) assembly of veneer leaves on face. Refer to WDMA IS 1A (G-11) for specific definitions and attributes. Select from each of appropriate boxes:

Face Grade Specified: *Click Here For Face Grade*

Veneer Cut Specified: *Click Here For Veneer Cut*

Veneer Species Specified: *Click Here For Veneer Species*

Veneer Match Specified: *Click Here For Veneer Match*

Veneer Assembly Specified: *Click Here For Veneer Assembly*

8) **Pair and Set Match**
For openings with more than one door, door faces must be pair or set matched. This includes doors separated by a mullion.

Matching Requirements: *Click Here For Matching Needs*

9) **Transom and Side Panels**
Fabricate matching panels with same construction, exposed surfaces, and finish specified for associated doors.

Matching Requirements: *Click Here For Matching Needs*

10) **Glazing –** Doors may be factory glazed or job site glazed. Wood beads or metal vision panels and glazing to comply with designated fire ratings.

Glazing Specified: *Click Here For Glazing*

11) **Surface Applied Mouldings -** Factory applied moulding frames to be compatible with face veneer. Profile and configuration per door manufacturers standard. Moulding frames to be applied with both glue and nail(s).

Surface Applied Mouldings Specified: *Click Here For Applied Moulding*

2.3 DOOR FABRICATION

A. **Factory-prefit and bevel doors** (3°) to suit frame sizes indicated, with 1/4" prefit in width, +/- 1/32", tolerances. Prefit top of door 1/8" +/- 1/16", and undercut as designated by floor condition. For fire-rated doors comply with NFPA 80 for prefits and undercuts.

B. **Factory pre-machine doors for hardware** that is not surface applied. Locations and hole patterns to comply with specified hardware requirements as per NFPA 80 standards for doors specified; and to maintain door manufacturer's warranty.

1) Specific locations for hardware will be coordinated between frame and door manufacturers.

2) Specific hardware preps will be per hardware schedule(s) provided. Hardware preps to be neatly and cleanly squared as required per hardware templates.

3) Metal astragals and channels to be supplied where fire-ratings will not allow metal-free edge(s).

C. **Factory Preparation for Light Openings and Louvers -** Cut and trim openings through doors to comply with NFPA 80 requirements where indicated; and to maintain door manufacturer's warranty.

1) **Wood beads and wood louvers** to be compatible with face veneer. Profiles and installation per door manufacturer's standard(s).

2) **Metal vision panels and louvers** supplied primed and/or painted.

Vision Panels/Louvres Specified: *Click Here For Vison Panels/Louvres*

D. **Glazing –** Doors may be factory glazed or job site glazed. Wood beads or metal vision panels and glazing to comply with designated fire ratings.

Glazing Specified: *Click Here For Glazing*

E. **Surface Applied Mouldings -** Factory applied moulding frames to be compatible with face veneer. Profile and configuration per door manufacturers standard. Moulding frames to be applied with both glue and nail(s).

Surface Applied Mouldings Specified: *Click Here For Applied Moulding*

2.4 FACTORY FINISHING

A. **Finish Location**

1) **Factory Finishing –** All doors (including beading and mouldings) to be finished at the factory, with UV cured system with performance properties equivalent to TR-6 or OP-6 Catalyzed Polyurethane (WDMA) and system 10 (AWS). Factory pre-finished doors to be individually protected with either transparent or opaque (cherry, mahogany, teak, walnut) poly-wrap at the factory. Final color, build, and sheen to be approved by architect based on actual review samples.

2) **Field Finishing –** All doors (including beading and mouldings) to be field finished. Proper procedures are critical to ensure satisfactory results. Additional preparatory work is required and should be in compliance with Industry Standards. Final appearance of field finished doors is not warranted by the door manufacture.

Finish Location Specified: *Click Here For Finish Loaction*

B**. Finish Type**

1) **Transparent -** Transparent finishes provide a clear protective coating over the wood, allowing the natural color and grain of the selected wood species to provide the appearance desired by the specifier and owner. Stain is often applied to the wood surface underneath the transparent clear finish to add more color and design flexibility.

2) **Opaque -** Opaque finishes are essentially solid painted colors used over paint grade veneers or medium density overlay.

3) **Factory Priming -** A solid color priming coat for doors that will be painted in the field.

Finish Type Specified: *Click Here For Finish Type*

Part 3 - EXECUTION

3.1 EXAMINATION

A. Confirm that frames comply with type, size, location and swing requirements and that they are installed plumb and square.

B. Inspect doors for any damage, manufacturing defects or prefinish inconsistency prior to installation, e.g. wrong color or poor finish.

C. If frames and doors pass inspections (see A and B above), proceed to installation. If there are any issues in either frames or doors, do not proceed to installation. Contact appropriate supplier to correct unsatisfactory conditions, and proceed with installation only after corrections have been made.

3.2 INSTALLATION

Installation of wood doors to comply with WDMA or AWI, specific door manufacturers instructions, and NFPA 80.

3.3 ADJUSTING AND PROTECTING

A. After installation of door in frame, operate door to ensure that the door swings freely and that all hardware functions correctly. If not, make adjustments as required to provide an operable opening.

B. If required, protect doors following installation from damage that may occur as a result of project completion.

END OF SECTION 08210

NON-PROPRIETARY GUIDE SPECIFICATON FOR SECTION 08210 – COMMERCIAL COLD PRESS FLUSH WOOD DOORS

SECTION 08210 - FLUSH WOOD DOORS (COMMERCIAL COLD PRESS)

Part 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract including General and Supplementary Conditions and Division 1–Specification sections, apply to work specified in this Section.

1.2 REFERENCE STANDARDS (most recent edition)

A. WDMA IS 1A - Window and Door Manufacturers Association (WDMA)

B. AWS - Quality Standards of the Architectural Woodwork Institute (AWI)

C. NFPA 80 - Fire Doors and Windows

D. NFPA 252 - Standard Methods of Fire Tests for Door Assemblies

E. Underwriters' Laboratories - UL 10B (neutral pressure) and UL 10C (positive pressure) - Fire Tests of Door Assemblies

F. ITS (Warnock Hersey) - Certification Listings for Fire Doors

G. ASTM E90-90 - Measurement of Airborne Sound Transmission Loss of Building Partitions

1.3 SUMMARY

This section includes:

A. Solid-core flush wood doors with wood-veneer and paint-grade faces.

B. Factory pre-fitting, pre-machining for hardware, detailing, glazing and factory prefinishing.

1.4 SUBMITTALS

A. **Product Data:** Submit door manufacturer's product construction data, hardware attachment performance data, specifications and installation instructions for each type of wood door, including details of core and edge construction, trim for lite openings and similar components.

B. **Specific Product Warranty:** The interior doors shall be warranted by the manufacturer to be free of manufacturing defects for the life of the original installation. Warranty shall provide for repair or replacement of the defective door(s) as originally furnished at manufacturer option. Manufacturer may, per its discretion, elect to use either its own or third party resources to resolve warranty claims.

C. **Shop Drawings:** Provide the following information:
   1) Door type.

   2) Door size.

   3) Fire Rating.
      a) Neutral pressure - UL 10B/UBC43-2 or 7-2-94.
      b) Positive pressure - UL 10C/UBC7-2-97.

   4) Hardware types and locations.

   5) Hardware blocking requirements and location.

   6) Vision panel or louver cutout size and location.

   7) Prefinish system type and approved color(s).

D. **Samples:**
   1) Color samples for factory prefinishing. Manufacturer must submit samples of not less than 6" x 6" size on representative veneer or paintable surface, with sample date indicated.

   2) Construction samples. Corner sections with door faces, edges, and core representative of the specified door type(s). Corner samples to be not less than 6" x 6".

1.5 QUALITY ASSURANCE

A. **Manufacturer:** Company specializing in manufacturing products specified in Section 8210 with a minimum of five years documented experience. All doors must be supplied through one Company.

B. **Quality Standard:** Doors to comply with WDMA IS 1A (Window and Door Manufacturers Association), AWS Section 9 (Architectural Woodwork Institute), or AWI with quality certification program (QCP).

Quality Standard: *Click Here For Std Selection*

C. **Fire Ratings Compliance:** Fire-rated wood doors to comply with NFPA-80 requirements according to building code standards having local jurisdiction.

   1) Neutral Pressure Testing - UBC 43-2 or 7-2-94; or UL10B.

   2) Positive Pressure Testing UBC 7-2-97 or UL10C.

D. **Label Certification:** All doors requiring fire-rating will carry either UL or ITS (Warnock Hersey) label. Manufacturer's certification labels may be used for door size variations if approved by AHJ (Authority Having Jurisdiction).

E. **Delivery/Storage/Handling:** Store and protect doors in accordance with manufacturer's recommendations and WDMA or AWI Standards. Following are general guidelines.

   1) Store doors flat and off the floor on a level surface in a dry, well-ventilated building. Do not store on edge. Protect/cover doors from dirt, water and abuse.

2) Certain wood species are light sensitive. Protect doors from exposure to light (artificial or natural) after delivery.

3) Do not subject interior doors to extremes in either heat or humidity. HVAC systems must be operational and balanced, providing a temperature range of 50 to 80 degrees Fahrenheit and 25% to 55% relative humidity.

4) When handling doors, always lift and carry. Do not drag across other doors or surfaces. Handle with clean hands or gloves.

5) Each door will be marked on top rail with opening number.

1.6 WARRANTY

Manufacturer's signed warranty covering manufacturing or material defects for life of original installation, including repair or replacement.

Part 2 - PRODUCTS

2.1 MANUFACTURERS

Manufacturers are subject to evaluation and inclusion by architect/specifier. Listed below are primary manufacturers of Commercial Cold Press wood doors:

Algoma Hardwoods, Inc.
Graham Manufacturing
Marshfield Door Systems

2.2 DOOR CONSTRUCTION, GENERAL

A. **SPECIAL FUNCTION DOORS –**

Special Function Doors Specified: *Click Here for Special Function Doors*

1) **Sound Transmission Class (STC) -** As identified by door schedule, doors to carry an acoustical rating for sound transmission class. STC ratings are determined through testing to comply with ASTM E90-90 methods. All accessories required for acoustical rating compliance supplied by door manufacturer with door.

STC Rating Specified: *Click Here for STC Certification*

2) **Lead-Lined –** As identified by door schedule, doors to have continuous lead sheeting from edge to edge between the cross banding and the core. Lead thickness as specified below.

Lead-Lined Doors Specified: *Click Here for Lead-Lined Doors*

B. **NON-FIRE-RATED AND1/3 HOUR FIRE-RATED DOORS –**

General Grade Specification – WDMA & AWS standards identify a performance standard as well as an aesthetic grade. In both standards performance duty levels are Extra Heavy Duty, Heavy Duty, and Standard Duty.

Aesthetic Grade

Custom - The typical and normal grade in both material and workmanship. This grade is intended for high-quality work.

Performance Standards (Duty Levels)

Extra Heavy Duty – This duty level typically involves doors where use is considered heavy and frequent, and requires the highest minimum performance standards.

Heavy Duty – This duty level typically involves doors where usage is moderate, and requires intermediate minimum performance standards.

Standard - This duty level typically involves doors where frequency of use is low, and requires the lowest minimum performance standards.

Performance Duty Level: *Click for Duty Level*

Door Construction

1) Construct using Cold Press method for laminating door skin to the core. Select construction (refer to Section (2) for specific information). Stiles and rails must be securely bonded to the core and then abrasively planed prior to pressing.

2) Core is particleboard to comply with ANSI Stnd. A208.1- 1989 LD-1, with screw holding power of 90 lbs., modulus of rupture of 435 psi and modulus of elasticity of 79,800 psi. Screw holding is particular to duty level specified. Not relevant here.

3) Door skins are comprised of crossbands which are wood-based composites of a minimum thickness of 1/16" and face veneers, that are laminated to the core with Type 1 interior use glue. Minimum properties of the crossband include internal bond of 100 psi and density of 50 lbs. per cubic foot.

4) **Stiles (Vertical Edges) -** Stiles are hardwood (one piece, laminated or veneered). Constructions with laminated or veneered edges may use structural composite lumber as an inner stile component when WDMA standards are specified. If AWS is required a 1" minimum hardwood inner must be used for veneer/HPL edges.
   a) **Compatible -** Similar in overall color, grain, character and contrast as the face veneer.
   b) **Matching -** Same species as face veneer.
   c) **Closed Grain Hardwood -** Manufacturer's option for painted stile edges.

   Stile Type Specified: *Click Here for Stile Type*

5) **Rails (Horizontal Edges) -** Rails are solid wood or structural composite lumber meeting the minimum requirements of WDMA, or medium density fiberboard meeting requirements of ANSI 208.2 (Medium Density Fiberboard for Interior Use).

6) **Hardware Blocking** (eliminates through-bolting and improves screw withdrawal resistance for heavy-use areas) - Specify minimum 5" top rail for specialized hardware and/or 5" bottom rail for specialized hardware or undercutting flexibility.

   Blocking Requirements Specified: *Click Here for Blocking Requirements*

7) **Veneers -** There are five aspects of veneer selection which must be specified. The aspects are (1) face grade, (2) cut, (3) veneer species (4) match between veneer leaves, (5) assembly of veneer leaves on face. Refer to designated quality standards for specific definitions and attributes.

   Face Grade Specified: *Click Here for Face Grade*

   Veneer Cut Specified: *Click Here for Veneer Cut*

   Veneer Species Specified: *Click Here for Veneer Species*

   Veneer Match Specified: *Click Here for Veneer Match*

Veneer Assembly Specified: *Click Here for Veneer Assembly*

8) **Pair and Set Match**
For openings with more than one door, door faces must be pair or set matched. This includes doors separated by a mullion.

Matching Requirements: *Click Here for Mathcing Needs*

9) **Glazing –** Doors may be factory glazed or job site glazed. Wood beads or metal vision panels panels and glazing to comply with designated fire ratings.

Glazing Specified: *Click Here for Glazing*

10) **Surface Applied Mouldings -** Factory applied moulding frames to be compatible with face veneer. Profile and configuration per door manufacturers standard. Moulding frames to be applied with both glue and nail(s).

Surface Applied Mouldings Specified: *Click Here for Applied Moulding*

C. **FIRE-RATED DOORS**

General Grade Specification – WDMA & AWS standards identify a performance standard as well as an aesthetic grade. In both standards performance duty levels are Extra Heavy Duty, Heavy Duty, and Standard Duty.

Aesthetic Grade

Custom - The typical and normal grade in both material and workmanship. This grade is intended for high-quality work.

Performance Standards (Duty Levels)

Extra Heavy Duty – This duty level typically involves doors where use is considered heavy and frequent, and requires the highest minimum performance standards.

Heavy Duty – This duty level typically involves doors where usage is moderate, and requires intermediate minimum performance standards.

Standard - This duty level typically involves doors where frequency of use is low, and requires the lowest minimum performance standards.

Performance Duty Level: *Click for Duty Level*

Door Construction

1) Construct using Cold Press method for laminating skin to the core per manufacturer approvals to the applicable rating.

Fire Rating Specified: *Click Here for 3/4, 1 or 1-1/2 Hour*

Category A Positive Pressure openings have all the intumescent required for compliance contained within the door and require no additional installation of intumescent strips. **Category B Positive Pressure** openings require the addition of intumescent strips to the door and/or frame.

Neutral/Positive Pressure Specified: *Click Here for Neutral or Positive Pressure*

2) **Mineral Core** is a non-combustible mineral composite material that is necessary for 45, 60, and 90 minute ratings per manufacturer's approval(s).

3) Door skins are comprised of crossbands which are wood-based composites of a minimum thickness of 1/16" and face veneers, that are laminated to the core with Type 1 interior use glue. Minimum properties of the crossband include internal bond of 100 psi and density of 50 lbs. per cubic foot.

4) **Stiles (Vertical Edges) -** Provide manufacturer's standard laminated edge construction with improved screw-holding capability and split resistance. Both inner and outer stiles cannot contain salt treating.

   a) **Compatible -** Similar in overall color, grain, character and contrast as the face veneer.
   b) **Matching -** Same species as face veneer.
   c) **Closed Grain Hardwood -** Manufacturer's option for painted stile edges.

   Stile Type Specified: *Click Here for Stile Type*

5) **Rails (Horizontal Edges) -** Rails are solid wood or other material contained in manufacturer's fire door approvals.

6) **Hardware Blocking** (eliminates through-bolting and improves screw withdrawal resistance for heavy-use areas) **-** Specify minimum 5" top rail for specialized hardware and/or 5" bottom rail for specialized hardware or undercutting flexibility and/or blocking for lockset installation.

   Blocking Requirements Specified: *Click Here for Blocking Requirements*

7) **Veneers -** There are five aspects of veneer selection which must be specified. The aspects are (1) face grade, (2) cut, (3) veneer species (4) match between veneer leaves, (5) assembly of veneer leaves on face. Refer to WDMA IS 1A for specific definitions and attributes. Select from each of appropriate boxes:

   Face Grade Specified: *Click Here for Face Grade*

   Veneer Cut Specified: *Click Here for Veneer Cut*

   Veneer Species Specified: *Click Here for Veneer Species*

   Veneer Match Specified: *Click Here for Veneer Match*

   Veneer Assembly Specified: *Click Here for Veneer Assembly*

8) **Pair and Set Match**
For openings with more than one door, door faces must be pair or set matched. This includes doors separated by a mullion.

Matching Requirements: *Click Here for Matching Needs*

2.3 DOOR FABRICATION

A. **Factory-prefit and bevel doors** (3°) to suit frame sizes indicated, with 1/4" prefit in width, +/- 1/32", tolerances. Prefit top of door 1/8" +/- 1/16", and undercut as designated by floor condition. For fire-rated doors comply with NFPA 80 for prefits and undercuts.

B. **Factory pre-machine doors for hardware** that is not surface applied. Locations and hole patterns to comply with specified hardware requirements as per NFPA 80 standards for doors specified; and to maintain door manufacturer's warranty.

1) Specific locations for hardware will be coordinated between frame and door manufacturers.

2) Specific hardware preps will be per hardware schedule(s) provided. Hardware preps to be neatly and cleanly squared as required per hardware templates.

3) Metal astragals and channels to be supplied where fire-ratings will not allow metal-free edge(s).

C. **Factory Preparation for Light Openings and Louvers -** Cut and trim openings through doors to comply with NFPA 80 requirements where indicated; and to maintain door manufacturer's warranty.

1) **Wood beads and wood louvers** to be compatible with face veneer. Profiles and installation per door manufacturer's standard(s).

2) **Metal vision panels and louvers** supplied primed and/or painted.

Vision Panels/Louvres Specified: *Click Here for Vision Panels/Louvers*

D. **Glazing –** Doors may be factory glazed or job site glazed. Wood beads or metal vision panels and glazing to comply with designated fire ratings.

Glazing Specified: *Click Here for Glazing*

E. **Surface Applied Mouldings -** Factory applied moulding frames to be compatible with face veneer. Profile and configuration per door manufacturers standard. Moulding frames to be applied with both glue and nail(s).

Surface Applied Mouldings Specified: *Click Here for Applied Moulding*

2.4 FACTORY FINISHING

A. **Finish Location**

1) **Factory Finishing –** All doors (including beading and mouldings) to be finished at the factory, with UV cured system with performance properties equivalent to TR-6 or OP-6 Catalyzed Polyurethane (WDMA), AWS System 10. Factory pre-finished doors to be individually protected at the factory. Final color, build, and sheen to be approved by architect based on actual review samples.

2) **Field Finishing –** All doors (including beading and mouldings) to be field finished. Proper procedures are critical to ensure satisfactory results. Additional preparatory work is required and should be in compliance with Industry Standards. Final appearance of field finished doors is not warranted by the door manufacture.

Finish Location Specified: *Click Here for Finish Location*

B**. Finish Type**

1) **Transparent -** Transparent finishes provide a clear protective coating over the wood, allowing the natural color and grain of the selected wood species to provide the appearance desired by the specifier and owner. Stain is often applied to the wood surface underneath the transparent clear finish to add more color and design flexibility.

2) **Factory Priming -** A solid color priming coat for doors that will be painted in the field.

Finish Type Specified: *Click Here for Finsih Type*

Part 3 - EXECUTION

3.1 EXAMINATION

A. Confirm that frames comply with type, size, location and swing requirements and that they are installed plumb and square.

B. Inspect doors for any damage, manufacturing defects or prefinish inconsistency prior to installation, e.g. wrong color or poor finish.

C. If frames and doors pass inspections (see A and B above), proceed to installation. If there are any issues in either frames or doors, do not proceed to installation. Contact appropriate supplier to correct unsatisfactory conditions, and proceed with installation only after corrections have been made.

3.2 INSTALLATION

Installation of wood doors to comply with WDMA or AWS, specific door manufacturers instructions, and NFPA 80.

3.3 ADJUSTING AND PROTECTING

A. After installation of door in frame, operate door to ensure that the door swings freely and that all hardware functions correctly. If not, make adjustments as required to provide an operable opening.

B. If required, protect doors following installation from damage that may occur as a result of project completion.

END OF SECTION 08210