



ARCHITECTURAL FLUSH WOOD DOORS

Detailed product and construction specification

MANUFACTURER	Boreal Architectural Products Ltd.
PRODUCT SCOPE	Interior non-fire-rated and neutral-pressure fire-rated architectural flush wood doors
MARKETS	Canada and United States
CONTACT	Unit 2, 78 Trowers Road, Woodbridge, Ontario L4L 7K5 905-265-7677 info@borealarchitectural.ca

SECTION 08 14 10

ARCHITECTURAL FLUSH WOOD DOORS**PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes: Factory-fabricated interior architectural flush wood doors, complete with faces, cores, stiles, rails, edge construction, factory finishing where specified, fire-door labeling, and factory preparation for hardware, glazing, and louvers.
- B. Product Types:
 - 1. Non-fire-rated particle-core flush wood doors.
 - 2. 20-minute particle-core flush wood fire doors.
 - 3. 45-minute agrifiber-core flush wood fire doors.
 - 4. 45-minute agrifiber-core flush wood fire doors with mineral stiles and rails.
 - 5. 60-minute agrifiber-core flush wood fire doors.
 - 6. 90-minute mineral-core flush wood fire doors.
- C. Related work specified in other Sections includes frames, door hardware, glazing, field-applied coatings, sealants, and access-control components.

1.2 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Blocking and opening preparation.
- B. Section 08 11 13 - Hollow Metal Doors and Frames: Frames receiving wood doors.
- C. Section 08 71 00 - Door Hardware: Hardware, templates, schedules, reinforcement requirements, and installation.
- D. Section 08 80 00 - Glazing: Glass, glazing compounds, and glazing accessories for vision openings.
- E. Section 09 91 00 - Painting: Field finishing of unfinished or primed paint-grade doors.
- F. Division 28 Sections: Electrified hardware, access control, and security interfaces where applicable.

1.3 REFERENCE STANDARDS

- A. General: Comply with the latest edition adopted by the authority having jurisdiction or stated in the Contract Documents, including published amendments and errata. Where requirements conflict, the applicable fire-door listing and governing code take precedence for rated construction; obtain Architect's interpretation for other conflicts before fabrication.
- B. ANSI A135.4 - Basic Hardboard.
- C. ANSI A208.1 - Particleboard.
- D. ANSI/BHMA A156.115W - Hardware Preparation in Wood Doors with Wood or Steel Frames.
- E. ANSI/WDMA I.S.1A - Interior Architectural Wood Flush Doors.
- F. ANSI/AWI 0400-2022 - Factory Finishing.
- G. ANSI/AWI 0620-2024 - Finish Carpentry/Installation.
- H. Architectural Woodwork Manufacturers Association of Canada (AWMAC), North American Architectural Woodwork Standards (NAAWS), Edition 5.0, including applicable errata.
- I. ASTM D5456 - Standard Specification for Evaluation of Structural Composite Lumber Products.
- J. CAN/ULC-S104 - Standard Method for Fire Tests of Door Assemblies.
- K. NEMA LD 3 - High-Pressure Decorative Laminates.
- L. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.
- M. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.
- N. UL 10B - Fire Tests of Door Assemblies.
- O. Intertek certification directory and the current listing applicable to the selected fire-door construction.

1.4 DEFINITIONS

- A. Architectural Flush Wood Door: Door having wood or wood-composite faces applied over a solid core and edge construction, with faces substantially flush and free of applied mouldings unless specifically indicated.
- B. Crossband: Intermediate ply located between the core assembly and decorative face material in a five-ply construction.
- C. Door Leaf: A single swinging panel; dimensions stated for pairs are overall opening dimensions unless noted otherwise.
- D. Neutral-Pressure Fire Door: Fire-door assembly evaluated with the neutral-pressure plane established in accordance with the applicable fire-test method and listing.
- E. SCL: Structural composite lumber, including laminated-strand-lumber components evaluated for their intended use.
- F. Listed Assembly: Door, frame, hardware, glazing, louver, edge, and installation configuration identified in the applicable Intertek certification listing.

1.5 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate door sizes, thicknesses, swings, undercuts, frame profiles, hardware preparations, electrical raceways, glazing, louvers, and fire ratings before preparation of shop drawings.
- B. Hardware Coordination: Obtain final approved hardware schedule, hardware templates, and written installation instructions before fabrication. Resolve conflicts between hardware preparation and listed fire-door construction before machining.
- C. Opening Verification: Do not release doors for fabrication until dimensions and conditions affecting fabrication are verified or responsibility for stated dimensions is accepted in writing.
- D. Preinstallation Conference: When required by the Contract Documents, review storage, environmental conditions, frame readiness, fire-door limitations, hardware coordination, field modifications, finishing, and protection with affected trades.

1.6 ACTION SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each specified model, including core, edge construction, faces, available sizes, fire-rating limitations, fabrication, finishing, storage, handling, installation, maintenance, and warranty requirements.
- B. Shop Drawings: Prepare specifically for the Project. Identify each opening by mark and indicate door model, quantity, leaf size, thickness, handing, swing, pair condition, core, fire rating, face material, veneer species, veneer cut and leaf match, HPL selection, edge treatment, factory finish, hardware machining, undercut, glazing, louvers, blocking, and special construction.
- C. Shop Drawings for Fire Doors: Identify certification label, rating, maximum listed size, pair limitations, hardware, glazing, louver, edge, and field-modification restrictions. Do not show a construction outside the applicable Intertek listing.
- D. Samples: Submit two 12 by 12 inch (305 by 305 mm) samples of each selected veneer, HPL, and factory paint or stain finish. Show face appearance and proposed edge treatment. Approved samples establish the standard for colour, sheen, grain, figure, pattern, and workmanship.
- E. Finish Samples: Where a custom colour or stain is specified, submit samples on the actual specified face material and species. Resubmit until approved; do not begin production finishing before approval.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: Submit evidence of manufacturer's experience when requested.
- B. Fire-Door Documentation: Submit evidence that each specified rated construction is eligible for labeling under the current applicable Intertek listing.
- C. Product Certificates: Submit statements of compliance for specified door construction and applicable referenced standards.
- D. Composite-Wood Emissions Documentation: For products supplied into Canada or the United States, submit available documentation demonstrating compliance of applicable composite-wood components with governing formaldehyde-emission requirements.
- E. Certified-Wood Documentation: Where certified forest content is specified, submit documentation identifying the certified components and applicable chain-of-custody claim for the product supplied.
- F. Sustainable-Design Documentation: Where the Project pursues LEED or another rating system, submit available product-specific information requested to evaluate potential contribution. Submission of information does not constitute a guarantee that a credit will be achieved.

1.8 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Submit cleaning, touch-up, repair, and protection recommendations for inclusion in operation and maintenance manuals.
- B. Warranty Documentation: Submit executed manufacturer's standard two-year limited warranty.
- C. Record Information: Submit final door identification and fire-label information when requested by the Contract Documents.

1.9 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Firm regularly engaged in fabrication of architectural flush wood doors of the types and scope specified.
- B. Quality Standard: Fabricate doors to the applicable requirements of NAAWS 5.0 and ANSI/WDMA I.S.1A, except where the approved product data or applicable fire-door listing establishes a more restrictive requirement.
- C. Fire-Rated Doors: Manufacture under an Intertek inspection and labeling program. Provide permanently labeled doors conforming to NFPA 80 and the applicable neutral-pressure listing.
- D. Neutral-Pressure Limitation: Specified fire-rated models are neutral-pressure constructions. Do not use where positive-pressure labeling is required by the governing code or authority having jurisdiction.
- E. Regulatory Compliance: Provide products complying with codes and regulations applicable at the Project location. Approval of shop drawings does not relieve the supplier from compliance with the applicable listing.
- F. Single-Source Responsibility: Obtain specified wood doors from Boreal Architectural Products Ltd. for consistent construction, appearance, fabrication, and finish.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver doors after spaces are enclosed and conditions permit immediate protected storage. Retain protective packaging and identification until required for installation.

- B. Inspect doors promptly on receipt. Record concealed or transit damage before removing packaging and notify responsible parties in accordance with delivery requirements.
- C. Store doors flat on level supports in a clean, dry, well-ventilated, secure area. Support the full width of the door and place supports to prevent bowing or localized loading.
- D. Protect doors from moisture, direct sunlight, dirt, impact, sparks, excessive heat, and abrupt changes in temperature or relative humidity.
- E. Do not store doors standing on edge, leaning against walls, or in direct contact with concrete, masonry, or damp surfaces.
- F. Handle doors with clean gloves and lifting methods that avoid damage to faces, edges, corners, labels, and factory preparation.

1.11 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until the building is enclosed, wet work is complete and dry, and permanent environmental-control systems maintain conditions representative of normal occupancy.
- B. Acclimatization: Condition doors in the installation area for the period and under the conditions stated in Boreal's written instructions. Keep doors packaged as recommended during conditioning.
- C. Interior Use: Do not install products where exposed to exterior weather, uncontrolled moisture, standing water, or conditions outside the intended interior application.
- D. Maintain environmental conditions during installation and through Substantial Completion to prevent dimensional movement and finish damage.

1.12 WARRANTY

- A. Manufacturer's Limited Warranty: Provide written warranty covering specified Boreal door products and face options against manufacturing defects, delamination, and excessive warpage under conditions of normal interior service.
- B. Warranty Period: Two years commencing on the date of Substantial Completion.
- C. Remedy: At Boreal's option, repair or replace a door determined to be defective under the warranty.
- D. Exclusions: Improper storage, handling, installation, field finishing, or maintenance; field alteration outside permitted limits; moisture exposure; unsealed field cuts, edges, or hardware preparations; abuse; impact; incompatible hardware; and environmental conditions outside manufacturer's requirements.
- E. Unless approved in writing by Boreal, the warranty remedy excludes labour, refinishing, removal, reinstallation, loss of use, and incidental or consequential costs.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design and Acceptable Manufacturer: Boreal Architectural Products Ltd., Unit 2, 78 Trowers Road, Woodbridge, Ontario L4L 7K5; telephone 905-265-7677; email info@borealarchitectural.ca; website www.borealarchitectural.ca.
- B. Substitutions: Not permitted.
- C. Product Selection: Provide the Boreal model corresponding to each door's required core and fire rating. Select face collection and factory finish independently as specified, subject to the applicable model and listing limitations.

2.2 PERFORMANCE AND DESIGN REQUIREMENTS

- A. General: Provide complete architectural flush wood door leaves capable of receiving specified hardware and performing under normal interior service without delamination, telegraphing, open joints, or other defects prohibited by the referenced quality standards.
- B. Door Configuration: Heights, widths, thicknesses, handing, pairs, ratings, glazing, louvers, and other requirements as indicated in the Contract Documents and approved shop drawings.
- C. Door Thickness: 1-3/4 inches (44 mm).
- D. Application: Interior locations protected from exterior weather and uncontrolled moisture.
- E. Fire Performance: Where a fire rating is indicated, provide a neutral-pressure door bearing an Intertek label for the rating, size, configuration, hardware, and opening features specified.
- F. Listed Construction: Do not modify core, stile, rail, edge, face, blocking, hardware preparation, glazing preparation, or louver preparation in a manner that invalidates the applicable fire-door listing.
- G. Dimensional and Appearance Quality: Comply with NAAWS 5.0 and ANSI/WDMA I.S.1A for the specified construction, grade, and service conditions.
- H. Compatibility: Confirm compatibility of adhesives, face materials, factory coatings, edge treatments, glazing materials, and hardware preparations as a complete door construction.

2.3 MATERIALS

- A. Particleboard Core: Solid particleboard complying with ANSI A208.1, Grade 1-LD-1 minimum, at non-fire-rated and 20-minute models.
- B. Agrifiber Fire-Door Core: Proprietary agrifiber particleboard core forming part of the applicable Intertek-listed assembly.
- C. Mineral Fire-Door Core: Proprietary mineral core forming part of the applicable Intertek-listed assembly.

- D. Structural Composite Lumber: Laminated-strand-lumber or other SCL suitable for door stile, rail, and reinforcement service and complying with ASTM D5456 where applicable.
- E. Solid-Wood Edges: Sound kiln-dried wood, free of defects affecting machining, bonding, appearance, or performance. At transparent-finish veneer doors, match edge species to face veneer.
- F. Hardboard and HDF: Smooth, dense panels suitable for the specified face and coating system; hardboard complying with ANSI A135.4 where applicable.
- G. Crossbands: 2.5 mm (0.098 inch) beneath wood veneer and HPL on all models. Use HDF at fire-rated doors and MDF at non-fire-rated doors; materials, density, listing eligibility and complete face assembly shall conform to the applicable construction requirements. Do not substitute paint-grade face skins for crossbands.
- H. Wood Veneer: Premium Grade A veneer of species, cut, match, and finish specified; free of defects not permitted for the grade and intended transparent finish.
- I. High-Pressure Decorative Laminate: HPL complying with NEMA LD 3 and suitable for bonded architectural door-face application.
- J. Adhesive: Water-based (aqueous) adhesive, applied in accordance with the adhesive manufacturer's written requirements for substrate preparation, spread, assembly, pressure, temperature, and cure.
- K. Factory Finishing Materials: Coating system compatible with the specified face, adhesive, edge construction, and intended interior service.

2.4 DOOR CONSTRUCTION - GENERAL

- A. Assembly: Bond core, stiles, rails, crossbands where required, and faces into a balanced, dimensionally stable assembly. Maintain continuous bonds without voids, blisters, telegraphing, or delamination.
- B. Paint-Grade Construction: Three-ply construction consisting of core assembly and hardboard faces, except use HDF face construction required by the applicable Intertek listing for fire-rated products.
- C. Wood-Veneer and HPL Construction: Five-ply construction consisting of core assembly, 2.5 mm (0.098 inch) crossbands on both sides, and specified finish faces. Use the materials and assembly permitted by the applicable Intertek listing at fire-rated doors.
- D. Stiles and Rails: Provide materials, widths, reinforcement, and jointing specified for each model. At fire-rated doors, provide only construction permitted by the applicable Intertek listing.
- E. Edges: Bond vertical edges securely to the stile assembly. Provide edge condition selected for the face collection. Maintain edge dimensions required by the specified model and fire-door listing.
- F. Lock Blocks: Separate lock blocks are not provided. Coordinate lock and other hardware preparation with the stile/core construction and applicable listing.
- G. Hardware Preparation: Factory machine for mortised, concealed, or otherwise templated hardware shown in the approved hardware schedule. Comply with ANSI/BHMA A156.115W where applicable and with hardware manufacturers' templates.
- H. Electrical Preparation: Where indicated and permitted by the applicable listing, provide factory preparations for listed electrified hardware based on approved templates and coordination drawings.
- I. Glazing and Louvers: Factory prepare openings only where indicated and only within limitations of the selected model and applicable Intertek listing. Coordinate cutout dimensions, location, glazing system, louver type, and required label before fabrication.
- J. Factory Identification: Mark doors in a location concealed after installation, or as otherwise accepted, to correspond with approved shop drawings. Do not obscure, remove, or alter certification labels.

2.5 FACE MATERIALS AND FINISHES

- A. Canvas Collection - Paint Grade:
 - 1. Face Construction: Three-ply door with 3 mm (1/8 inch) hardboard faces at non-fire-rated doors; HDF faces at fire-rated doors as required by the applicable listing.
 - 2. Supply Condition: [Unfinished] [Factory primed] [Factory painted].
 - 3. Factory Paint Colour, Sheen, and Appearance: Match Architect's approved sample. Apply a compatible coating system uniformly to both faces and exposed vertical edges.
 - 4. Unfinished or Primed Doors: Prepare surfaces for field-applied coating specified in Section 09 91 00. Seal all edges and factory or field preparations as required to maintain warranty coverage.
- B. Timberline Collection - Wood Veneer:
 - 1. Face Construction: Five-ply door with 2.5 mm (0.098 inch) crossbands and 1 mm (0.039 inch) premium Grade A wood veneer. Crossbands shall be MDF at non-fire-rated doors and HDF at fire-rated doors, subject to the applicable listed face construction.
 - 2. Species: [White Oak] [Red Oak] [White Maple] [White Birch] [Walnut] [Cherry].
 - 3. Cut: [Plain sliced/flat cut] [Quarter cut] [Rift cut] [Rotary cut].
 - 4. Leaf Match: [Book match] [Slip match]. When leaf match is not specified, provide random match.
 - 5. Finish: [Unfinished] [Clear factory finish] [Factory stain matching Architect's approved sample].
 - 6. Colour, Stain, Sheen, and Finish Appearance: Match Architect's approved sample.
 - 7. Vertical Edge Species: Match selected face veneer.

8. Natural Variation: Variations in grain, figure, mineral streaks, and colour inherent in natural veneer are acceptable within the specified grade and approved sample range.
- C. Everguard Collection - High-Pressure Decorative Laminate:
 1. Face Construction: Five-ply door with 2.5 mm (0.098 inch) crossbands and 1 mm (0.039 inch) HPL finish. Crossbands shall be MDF at non-fire-rated doors and HDF at fire-rated doors, subject to the applicable listed face construction.
 2. Preferred Manufacturers: Formica, Wilsonart, Cleaf, Tafisa, Uniboard, and EGGER. Other Architect-specified HPL is acceptable subject to fabrication requirements.
 3. Colour, Pattern, Finish, and Pattern Direction: Selected by Architect. Coordinate sheet availability and door size before approval.
 4. Vertical Edges: [Unfinished wood] [Stained to match face] [HPL laminated to match face].
 5. Fabrication: Apply HPL with balanced construction and accurately aligned pattern. Provide tight, clean, chip-free transitions at edges and cutouts.

2.6 FACTORY FINISHING

- A. General: Factory finish doors where indicated. Comply with ANSI/AWI 0400-2022 and coating manufacturer's written instructions, except where approved samples establish more specific appearance requirements.
- B. Preparation: Sand and clean substrates to receive finish. Remove dust, oil, adhesive residue, handling marks, and other contaminants that would impair appearance or adhesion.
- C. Application: Apply finish in a controlled factory environment to achieve uniform colour, sheen, film formation, and appearance. Finish both faces and exposed vertical edges consistently.
- D. Edge and Cutout Sealing: Seal top and bottom edges and factory cutouts with a compatible sealer. Clearly identify any areas requiring sealing after field modification.
- E. Colour Matching: Match approved Architect's sample. Minor variations resulting from natural wood characteristics are acceptable when within the approved sample range.
- F. Protection: Allow finishes to cure before packaging. Use interleaving and packaging materials that do not imprint, abrade, stain, or react with the finish.

2.7 NON-FIRE-RATED PARTICLE-CORE FLUSH WOOD DOOR

- A. Basis-of-Design Product:
1. Model: 260693-0.
 2. Classification: Non-fire-rated.
 3. Nominal Thickness: 1-3/4 inches (44 mm).
 4. Maximum Single-Leaf Size: 5 feet by 10 feet (1524 by 3048 mm) per leaf.
 5. Maximum Pair Size: 10 feet by 10 feet (3048 by 3048 mm) overall.
 6. Core: Solid particleboard complying with ANSI A208.1, Grade 1-LD-1 minimum.
 7. Vertical Edges: 15/16 inch (24 mm) solid wood; species matched to selected face veneer.
 8. Stiles: Two-piece laminated-strand-lumber vertical stile assembly, 3 inches (76 mm) total width.
 9. Top and Bottom Rails: Two-piece laminated-strand-lumber top and bottom rail assembly, 3 inches (76 mm) total width.
 10. Face Options: Canvas Paint Grade, Timberline Grade A Wood Veneer, or Everguard HPL, as specified.
 11. Adhesive: Water-based (aqueous) adhesive.
 12. Hardware Preparation: Factory machine in accordance with approved templates, coordinated shop drawings, model construction, and the applicable fire-door listing.
 13. Glazing and Louvers: Provide factory preparation only where indicated and, for rated doors, only within the limitations of the applicable Intertek listing.
 14. Hardware preparation shall be completed at the factory in accordance with approved shop drawings.
 15. Identification: Mark each leaf in a concealed location to correspond with approved shop drawings.
- B. Fabrication Requirements:
1. Fabricate as a balanced bonded assembly using specified core, stile, rail, edge, and face materials.
 2. Maintain straight, square edges and accurately sized leaves suitable for the indicated frame and operating clearances.
 3. Coordinate hardware locations and reinforcement before machining. Do not make unapproved substitutions to hardware or preparation after fabrication.
 4. Package completed doors individually or in protected groups with door marks visible without exposing finished surfaces.

2.8 20-MINUTE PARTICLE-CORE FLUSH WOOD FIRE DOOR**A. Basis-of-Design Product:**

1. Model: 260693-20.
2. Classification: 20 minutes; neutral-pressure listing only. Positive-pressure construction is not offered.
3. Nominal Thickness: 1-3/4 inches (44 mm).
4. Maximum Single-Leaf Size: 4 feet by 9 feet (1219 by 2743 mm).
5. Maximum Pair Size: 8 feet by 9 feet (2438 by 2743 mm) overall.
6. Core: Solid particleboard complying with ANSI A208.1, Grade 1-LD-1 minimum.
7. Vertical Edges: Maximum 1/2 inch (12.7 mm) solid wood edge; species matched to selected face veneer.
8. Stiles: Hinge and latch stiles: structural composite lumber, 0.847 inch (21.5 mm) nominal component width, with SCL edge up to 1/2 inch (12.7 mm); minimum remaining dimension after trim: 0.847 inch (21.5 mm).
9. Top and Bottom Rails: Top rail: structural composite lumber, 3 inch (76 mm) nominal component width, Increase top rail to 4 inches (101.6 mm) for concealed closer, concealed stop or hold-open device. Bottom rail: structural composite lumber, 3 inch (76 mm) minimum width after trim; increase to 4 inches (101.6 mm) for a mortised door bottom.
10. Face Options: Canvas Paint Grade, Timberline Grade A Wood Veneer, or Everguard HPL, as specified.
11. Fire-Rated Face Construction: Veneer and HPL doors have 2.5 mm (0.098 inch) HDF crossbands. Paint-grade doors use the separate hardboard/HDF skin construction required by the applicable listing.
12. Adhesive: Water-based (aqueous) adhesive.
13. Hardware Preparation: Factory machine in accordance with approved templates, coordinated shop drawings, model construction, and the applicable fire-door listing.
14. Glazing and Louvers: Provide factory preparation only where indicated and, for rated doors, only within the limitations of the applicable Intertek listing.
15. Labels and Identification: Provide permanent Intertek fire label at rated doors and concealed project identification corresponding to approved shop drawings.
16. Glazing, louvers, hardware preparation, and field modification shall remain within the applicable Intertek listing limitations.

B. Fabrication Requirements:

1. Fabricate as a balanced bonded assembly using specified core, stile, rail, edge, and face materials.
2. Provide only configurations represented by the current applicable Intertek neutral-pressure listing, including size, pair, hardware, glazing, louver, and edge limitations.
3. Maintain straight, square edges and accurately sized leaves suitable for the indicated frame and operating clearances.
4. Coordinate hardware locations and reinforcement before machining. Do not make unapproved substitutions to hardware or preparation after fabrication.
5. Package completed doors individually or in protected groups with door marks visible without exposing finished surfaces.

2.9 45-MINUTE AGRIFIBER-CORE FLUSH WOOD FIRE DOOR

A. Basis-of-Design Product:

1. Model: 260693-45A.
2. Classification: 45 minutes; neutral-pressure listing only. Positive-pressure construction is not offered.
3. Nominal Thickness: 1-3/4 inches (44 mm).
4. Maximum Single-Leaf Size: 4 feet by 8 feet (1219 by 2438 mm).
5. Maximum Pair Size: Pairs are not available.
6. Core: Proprietary agrifiber particleboard fire-door core.
7. Vertical Edges: 1/2 inch (12.7 mm) solid wood edge; species matched to selected face veneer.
8. Stiles: 1-1/2 inch (38 mm) structural-composite-lumber vertical stiles.
9. Top and Bottom Rails: 3 inch (76 mm) structural-composite-lumber top and bottom rails.
10. Face Options: Canvas Paint Grade, Timberline Grade A Wood Veneer, or Everguard HPL, as specified.
11. Fire-Rated Face Construction: Veneer and HPL doors have 2.5 mm (0.098 inch) HDF crossbands. Paint-grade doors use the separate hardboard/HDF skin construction required by the applicable listing; the crossband thickness does not apply to those skins.
12. Adhesive: Water-based (aqueous) adhesive.
13. Hardware Preparation: Factory machine in accordance with approved templates, coordinated shop drawings, model construction, and the applicable fire-door listing.
14. Glazing and Louvers: Provide factory preparation only where indicated and, for rated doors, only within the limitations of the applicable Intertek listing.
15. Labels and Identification: Provide permanent Intertek fire label at rated doors and concealed project identification corresponding to approved shop drawings.
16. Glazing, louvers, hardware preparation, and field modification shall remain within the applicable Intertek listing limitations.

B. Fabrication Requirements:

1. Fabricate as a balanced bonded assembly using specified core, stile, rail, edge, and face materials.
2. Provide only configurations represented by the current applicable Intertek neutral-pressure listing, including size, pair, hardware, glazing, louver, and edge limitations.
3. Maintain straight, square edges and accurately sized leaves suitable for the indicated frame and operating clearances.
4. Coordinate hardware locations and reinforcement before machining. Do not make unapproved substitutions to hardware or preparation after fabrication.
5. Package completed doors individually or in protected groups with door marks visible without exposing finished surfaces.

2.10 45-MINUTE AGRIFIBER-CORE FLUSH WOOD FIRE DOOR WITH MINERAL STILES AND RAILS**A. Basis-of-Design Product:**

1. Model: 260693-45M.
2. Classification: 45 minutes; neutral-pressure listing only. Positive-pressure construction is not offered.
3. Nominal Thickness: 1-3/4 inches (44 mm).
4. Maximum Single-Leaf Size: 4 feet by 10 feet (1219 by 3048 mm).
5. Maximum Pair Size: 8 feet by 8 feet (2438 by 2438 mm) overall.
6. Core: Proprietary agrifiber particleboard 45-minute fire-door core, with mineral stiles and rails in accordance with the applicable Intertek listing.
7. Vertical Edges: 1/2 inch (12.7 mm) solid wood edge; species matched to selected face veneer.
8. Stiles: High-density mineral-composite backers: 1-1/2 inches (38.1 mm) wide at hinge and latch edges of singles and hinge edges of pairs; 5 inches (127 mm) wide with listed intumescent at meeting edges of pairs. Wood edge facing: maximum 1/2 inch (12.7 mm), additional to backer width.
9. Top and Bottom Rails: Top and bottom mineral-composite rails: 2 inches (50.8 mm) nominal component width before trim for listed singles and standard pairs. Will provide top-edge or top-rail intumescent at neutral-pressure doors over 8 feet high. Increase top mineral rail to 5 inches (127 mm) where required for a listed concealed closer. Other hardware preparations remain subject to the applicable listing.
10. Face Options: Canvas Paint Grade, Timberline Grade A Wood Veneer, or Everguard HPL, as specified.
11. Fire-Rated Face Construction: Veneer and HPL doors have 2.5 mm (0.098 inch) HDF crossbands. Paint-grade doors use the separate hardboard/HDF skin construction required by the applicable listing; the crossband thickness does not apply to those skins.
12. Adhesive: Water-based (aqueous) adhesive.
13. Hardware Preparation: Factory machine in accordance with approved templates, coordinated shop drawings, model construction, and the applicable fire-door listing.
14. Glazing and Louvers: Provide factory preparation only where indicated and, for rated doors, only within the limitations of the applicable Intertek listing.
15. Labels and Identification: Provide permanent Intertek fire label at rated doors and concealed project identification corresponding to approved shop drawings.
16. Glazing, louvers, hardware preparation, and field modification shall remain within the applicable Intertek listing limitations.

B. Fabrication Requirements:

1. Fabricate as a balanced bonded assembly using specified core, stile, rail, edge, and face materials.
2. Provide only configurations represented by the current applicable Intertek neutral-pressure listing, including size, pair, hardware, glazing, louver, and edge limitations.
3. Maintain straight, square edges and accurately sized leaves suitable for the indicated frame and operating clearances.
4. Coordinate hardware locations and reinforcement before machining. Do not make unapproved substitutions to hardware or preparation after fabrication.
5. Package completed doors individually or in protected groups with door marks visible without exposing finished surfaces.

2.11 60-MINUTE AGRIFIBER-CORE FLUSH WOOD FIRE DOOR

A. Basis-of-Design Product:

1. Model: 260693-60.
2. Classification: 60 minutes; neutral-pressure listing only. Positive-pressure construction is not offered.
3. Nominal Thickness: 1-3/4 inches (44 mm).
4. Maximum Single-Leaf Size: 4 feet by 8 feet (1219 by 2438 mm).
5. Maximum Pair Size: Pairs are not available.
6. Core: Proprietary mineral fire-door core.
7. Vertical Edges: Up to 1/2 inch (12.7 mm) solid wood edge; species matched to selected face veneer.
8. Stiles: Hinge and latch mineral-composite components: 2 inches (50.8 mm) nominal width by 1-1/2 inches (38.1 mm) nominal thickness before trim, with wood edge up to 1/2 inch (12.7 mm). Concealed stile intumescent is not required for the listed neutral-pressure construction.
9. Top and Bottom Rails: Top mineral-composite rail: 2 inches (50.8 mm) minimum component width after trim; neutral-pressure overall width up to 2-1/2 inches (63.5 mm). Bottom mineral-composite rail: 2 inches (50.8 mm) minimum component width; listed 5 inch (127 mm) wide construction also permitted.
10. Face Options: Canvas Paint Grade, Timberline Grade A Wood Veneer, or Everguard HPL, as specified.
11. Fire-Rated Face Construction: Veneer and HPL doors have 2.5 mm (0.098 inch) HDF crossbands. Paint-grade doors use the separate hardboard/HDF skin construction required by the applicable listing; the crossband thickness does not apply to those skins.
12. Adhesive: Water-based (aqueous) adhesive.
13. Hardware Preparation: Factory machine in accordance with approved templates, coordinated shop drawings, model construction, and the applicable fire-door listing.
14. Glazing and Louvers: Provide factory preparation only where indicated and, for rated doors, only within the limitations of the applicable Intertek listing.
15. Labels and Identification: Provide permanent Intertek fire label at rated doors and concealed project identification corresponding to approved shop drawings.
16. Glazing, louvers, hardware preparation, and field modification shall remain within the applicable Intertek listing limitations.

B. Fabrication Requirements:

1. Fabricate as a balanced bonded assembly using specified core, stile, rail, edge, and face materials.
2. Provide only configurations represented by the current applicable Intertek neutral-pressure listing, including size, pair, hardware, glazing, louver, and edge limitations.
3. Maintain straight, square edges and accurately sized leaves suitable for the indicated frame and operating clearances.
4. Coordinate hardware locations and reinforcement before machining. Do not make unapproved substitutions to hardware or preparation after fabrication.
5. Package completed doors individually or in protected groups with door marks visible without exposing finished surfaces.

2.12 90-MINUTE MINERAL-CORE FLUSH WOOD FIRE DOOR

A. Basis-of-Design Product:

1. Model: 260693-90.
2. Classification: 90 minutes; neutral-pressure listing only. Positive-pressure construction is not offered.
3. Nominal Thickness: 1-3/4 inches (44 mm).
4. Maximum Single-Leaf Size: 4 feet by 9 feet (1219 by 2743 mm).
5. Maximum Pair Size: As permitted by the applicable Intertek configuration table. Standard-pair configurations up to 8 feet wide by 9 feet high (2438 by 2743 mm) require the specified core density, hardware, reinforcement, rails, edge treatment and thermal-pin conditions; this size is not a universal approval.
6. Core: Proprietary mineral fire-door core.
7. Vertical Edges: 1/2 inch (12.7 mm) solid wood edge; species matched to selected face veneer.
8. Stiles: Mineral-composite components, 1 15/32 inches (37.3 mm) thick. Singles: 1.5 inches (38.1 mm) minimum width. Pairs: hinge stile 5 inches (127 mm) minimum and latch stile 5 inches (127 mm) minimum. Dimensions exclude edge facing and intumescent.
9. Top and Bottom Rails: Mineral-composite components, minimum 1 15/32 inches (37.3 mm) thick. Single-door top rail: 3 inches (76.2 mm) minimum width. Single-door bottom rail: 3 inches (76.2 mm) minimum. Pair top and bottom rails: 3 inches (76.2 mm) minimum; increase both to 5 inches (127 mm) where required by the listed configuration.
10. Face Options: Canvas Paint Grade, Timberline Grade A Wood Veneer, or Everguard HPL, as specified.
11. Fire-Rated Face Construction: Veneer and HPL doors have 2.5 mm (0.098 inch) HDF crossbands. Paint-grade doors use the separate hardboard/HDF skin construction required by the applicable listing; the crossband thickness does not apply to those skins.
12. Adhesive: Water-based (aqueous) adhesive.
13. Hardware Preparation: Factory machine in accordance with approved templates, coordinated shop drawings, model construction, and the applicable fire-door listing.
14. Glazing and Louvers: Provide factory preparation only where indicated and, for rated doors, only within the limitations of the applicable Intertek listing.
15. Labels and Identification: Provide permanent Intertek fire label at rated doors and concealed project identification corresponding to approved shop drawings.
16. Glazing, louvers, hardware preparation, and field modification shall remain within the applicable Intertek listing limitations.

B. Fabrication Requirements:

1. Fabricate as a balanced bonded assembly using specified core, stile, rail, edge, and face materials.
2. Provide only configurations represented by the current applicable Intertek neutral-pressure listing, including size, pair, hardware, glazing, louver, and edge limitations.
3. Maintain straight, square edges and accurately sized leaves suitable for the indicated frame and operating clearances.
4. Coordinate hardware locations and reinforcement before machining. Do not make unapproved substitutions to hardware or preparation after fabrication.
5. Package completed doors individually or in protected groups with door marks visible without exposing finished surfaces.

2.13 FACTORY FABRICATION

- A. Fabricate doors to net dimensions indicated, allowing only the fitting permitted by Boreal's written instructions and the applicable fire-door listing.
- B. Bevel lock and hinge edges only where indicated or required for the hardware and frame condition. Coordinate bevel before hardware machining.
- C. Provide clearances, undercuts, meeting-stile conditions, and astragal preparation indicated in approved shop drawings and permitted by the applicable listing.
- D. Machine accurately for hardware. Pilot-drill fastener locations where required by the hardware manufacturer. Keep mortises and preparations clean, square, and free of breakout.
- E. Coordinate concealed closers, pivots, power transfers, electric locks, door-position switches, raceways, and other special preparations before fabrication; provide only where compatible with the specified construction and listing.
- F. Factory prepare vision-panel and louver openings. Reinforce and seal cutouts as required by the specified model and applicable listing.
- G. Do not install hardware, glazing, louvers, or light kits at the factory unless specifically included in the approved shop drawings and permitted by the applicable listing.
- H. Inspect completed doors for dimensions, squareness, surface defects, edge integrity, machining accuracy, finish quality, identification, and label condition before packaging.

2.14 SOURCE QUALITY CONTROL

- A. Maintain manufacturing controls appropriate to the specified construction and quality standard.
- B. For fire-rated doors, maintain records and inspections required by the Intertek labeling program.
- C. Reject or repair units exhibiting delamination, open joints, face damage, unacceptable finish defects, inaccurate machining, dimensional nonconformance, or damaged certification labels.
- D. Do not ship repaired fire-rated doors unless the repair is permitted by the labeling program and the completed unit remains eligible for labeling.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Examine doors, frames, wall construction, floor conditions, hardware, and environmental conditions with the Installer present before installation.
- B. Verify that frames are securely anchored, plumb, square, aligned, and within tolerances required for proper door operation.
- C. Verify that opening dimensions, jamb depth, head condition, floor elevation, threshold, seals, and hardware preparations correspond with approved shop drawings.
- D. Confirm that doors are free of shipping or storage damage and that identification and fire labels are intact.
- E. Verify that permanent environmental controls are operating and that conditions comply with Boreal's written requirements.
- F. Do not begin installation until unsatisfactory conditions have been corrected. Commencement of installation constitutes acceptance of conditions affecting the Work.

3.2 PREPARATION

- A. Acclimatize doors in the installation area in accordance with Boreal's written instructions while maintaining required storage and protection.
- B. Match doors to openings and verify marks, handing, face orientation, edge condition, hardware preparation, and fire rating before hanging.
- C. Verify hardware locations against approved schedules and templates. Report incompatible or missing preparation before modifying a door.
- D. For unfinished doors, coordinate sealing and field finishing so that all required surfaces, edges, and permitted cutouts are protected without delay.

3.3 INSTALLATION

- A. Install doors by qualified installers in accordance with Boreal's written instructions, approved shop drawings, ANSI/AWI 0620-2024, and hardware manufacturers' instructions.
- B. Install each leaf in its designated opening with correct handing and face orientation. Do not install visibly damaged or nonconforming doors.
- C. Fit non-fire-rated doors within limits permitted by Boreal and the referenced installation standard. Trim equally from both vertical edges where width fitting is permitted.
- D. Install fire-rated doors in labeled frames in accordance with NFPA 80, the applicable Intertek neutral-pressure listing, approved shop drawings, and the requirements of the authority having jurisdiction.
- E. Maintain clearances required by the applicable fire-door listing and NFPA 80. Do not use nonlisted edge treatments, fillers, fasteners, protection plates, seals, or hardware preparations.
- F. Hang doors without twist or binding. Install hardware to maintain alignment and avoid localized crushing, splitting, or loosening of door components.

- G. Seal permitted site-cut surfaces immediately after cutting and before installation of hardware, glazing, louvers, or accessories.

3.4 FIELD MODIFICATIONS

- A. General: Do not make field modifications until their effect on door construction, appearance, hardware operation, and warranty has been reviewed.
- B. Fire-Rated Doors: Perform field cutting, machining, drilling, and trimming only where permitted by NFPA 80 and the applicable Intertek listing. When a modification exceeds permitted jobsite work, return the door to an authorized facility or follow an approved field-label procedure.
- C. Non-Fire-Rated Doors: Perform fitting and field machining only within Boreal's written limitations and without impairing stile, rail, edge, core, face, or bond integrity.
- D. Do not cut through or remove certification labels, concealed reinforcement, electrical raceways, or listed edge construction.
- E. Seal exposed wood, composite material, and field-cut surfaces immediately with a compatible sealer. Restore finish at modified areas to match adjacent surfaces.

3.5 ADJUSTING

- A. Adjust doors and hardware for smooth, quiet operation without binding, rubbing, excessive play, or unintended movement.
- B. Adjust self-closing and latching hardware so fire doors close completely from the fully open position and latch without manual assistance.
- C. Correct misalignment and clearance conditions by approved adjustment methods. Do not warp, spring, or force doors into alignment.
- D. Replace doors that are damaged, delaminated, excessively warped, improperly machined, or unable to operate within specified requirements.

3.6 CLEANING

- A. Remove protective materials at the time recommended for the selected finish and before they become difficult to remove.
- B. Clean exposed surfaces using nonabrasive methods and products recommended for the face material and finish.
- C. Remove labels, adhesive residue, pencil marks, and construction soil without damaging certification labels or finished surfaces.
- D. Do not use cleaners, solvents, pads, or tools that alter sheen, soften coatings, scratch HPL, raise veneer grain, or stain exposed edges.

3.7 PROTECTION

- A. Protect installed doors from moisture, impact, abrasion, paint overspray, welding damage, and construction traffic until Substantial Completion.
- B. Do not use installed doors as supports for temporary barriers, wiring, tools, signage fastened through faces, or construction materials.
- C. Maintain required environmental conditions after installation.
- D. Repair minor finish damage using methods accepted by Boreal and the Architect. Replace doors that cannot be restored to the approved appearance and specified performance.

END OF SECTION