KAROINA®

ARCHITECTURAL GUIDE

THANK YOU FOR YOUR INTEREST IN KARONA, INC.

Included in this catalog are standard product designs. A large number of doors are offered in our catalog, but these designs are not the only products Karona can manufacture. The majority of our architectural projects are custom in nature, which provides you confidence that Karona can manufacture the unique design that will set your project apart.

Karona manufactures with wood species including Red Oak, Poplar, Maple, White Birch, Natural Birch, Cherry, Pine, Hickory, Walnut, Alder, Knotty Alder, and many more, plus MDF.

Through product innovation and manufacturing flexibility, Karona offers additional value added products and services.

Karona manufactures its products using Old World craftsmanship, while using today's most sophisticated technology.

Visit JELD-WEN.com for the latest product information and updates.

Thank you again for your interest, and we look forward to a long, successful relationship.

The Karona Team

DIFFERENTIAL ADVANTAGE

- Assembled in the USA
- Limited Lifetime Warranty on all interior doors
- The industry's finest "furniture quality" interior doors backed by today's most sophisticated machinery
- Online quote tool with the ability to quote specials and CAD drawings for architectural approval
- In-house veneer processing and selection to ensure uniformity of raw material
- Top-tier lead times, including quick ship program
- Price competitiveness due to extensive use of engineered components
- Industry's widest range of standard door designs and inventoried veneers
- Competitively priced door options for meeting 20-, 45-, 60-, and 90-minute fire ratings; fire doors available in most styles and veneers, including glass options, custom designs, and custom machining options
- Jambs non-rated and rated
- WDMA and AWI custom grade product specifications compliance
- Specials/Custom capabilities in terms of door design and wood species
- Custom color matching
- Water-based prefinish system
- Pre-machining for hardware
- Online product information and design tools
- Responsive, extensively knowledgeable in-house sales support coordinators



All Karona® interior doors are UL® GREENGUARD® Gold certified, which means they meet higher standards for releasing low chemical emissions into indoor air during use. For more information, visit ul.com/gg



DOORS OF DISTINCTION

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KARONA.



K5810 WALNUT, 8-PANEL, SHOWN IN CLEAR FINISH



K5310 ALDER, SHOWN IN CUSTOM PAINT

1-3/8" INTERIOR DOORS

Our door panels provide structural stability with tighter tolerances and superior strength, while eliminating shrinkage.

DOOR STILES, RAILS, AND MULLIONS

- Face veneers are "A" grade
- Veneers are glued with type 2 adhesive
- Solid edgebands are electronically glued to the inner core
- Stiles and rails use stable core material
- Stiles/rails are glued and doweled

DOOR PANELS

- Stable core, typically MDF or particle board
- Face veneers are "A" grade
- Raised panels are bladder pressed
- Flat panels are 3/8" thick laminated particle board
- Raised panels are 5/8" MDF or particle board

1-3/4" INTERIOR DOORS

These doors feature durable stile and rail construction and are available with one panel or multiple panels to suit your style.

DOOR STILES, RAILS, AND MULLIONS

- Face veneers are "A" grade
- Veneers are glued with type 2 adhesive
- Solid edgebands are electronically glued to the inner core
- Stiles and rails use stable core material
- Stiles/rails are glued and doweled

DOOR PANELS

- Stable core, typically MDF or particle board
- Face veneers are "A" grade
- Raised panels are bladder pressed
- Panels are 1-1/8" MDF or particle board
- Fire doors meet 20-minute fire ratings, neutral or positive pressure; doors that meet 45-, 60-, and 90-minute fire ratings available
- Fire doors available in most styles and veneers, including glass options, custom designs, and custom machining options



K5310 RIFT CUT WHITE OAK
4-LITE WITH CLEAR GLASS,
SHOWN IN CLEAR FINISH



K5310 RIFT CUT WHITE OAK
4-LITE WITH CLEAR GLASS,
SHOWN IN CLEAR FINISH

1-3/8" AND 1-3/4" FRENCH DOORS

An interior French door consists of stiles, top and bottom rails and divided glass panels or lites used as singles and pairs.

- Stiles and rails use stable core material
- Stiles/rails are glued and doweled using vertical-grooved hardwood dowels
- A protective film is applied to most glass prior to assembly; this film eliminates the need to mask the glass prior to finishing and protects the pane from scratching during the installation process
- Muntin bars are solid with a standard 1/2" face (customizable sizes upon request)
- Some doors are compression glazed, which eliminates glazing compound, squeeze out, and nail holes



VENEER SPECIES


Primed MDF


Knotty Pine


Pine

White Poplar


Paint Grade Poplar


Poplar


White Ash

Rustic Maple

Maple


Red Oak

Quarter Sawn Red Oak

Rift Cut Red Oak


White Oak


Rustic White Oak


Rift Cut White Oak


Quarter Sawn White Oak

White Birch


Natural Birch


Hickory


Cherry


Quarter Sawn African Mahogany


Alder


Knotty Alder

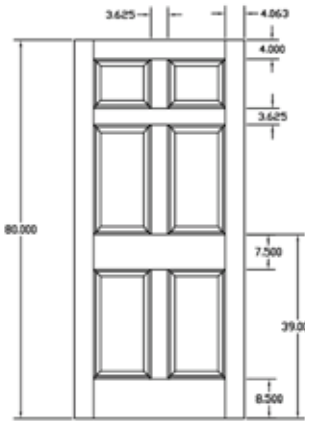

Walnut

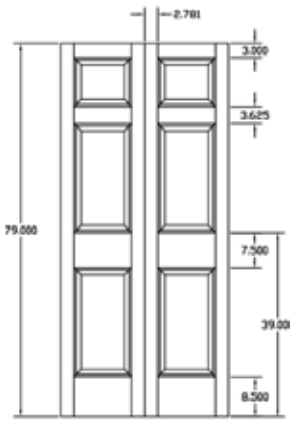

Rustic Walnut

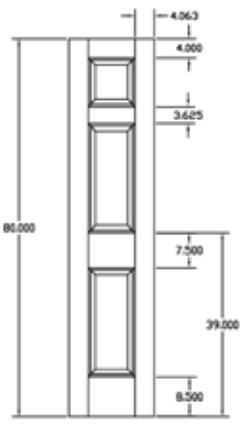
Other species available upon request.
Actual colors may vary from samples shown due to printing process and/or differing monitor calibrations.

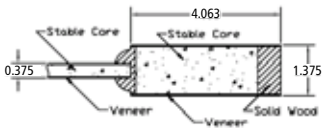
DOOR STANDARD DIMENSIONS

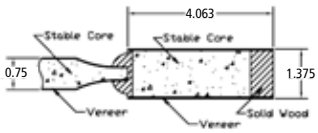
DESIGNER LINE CONSTRUCTION 1-3/8"



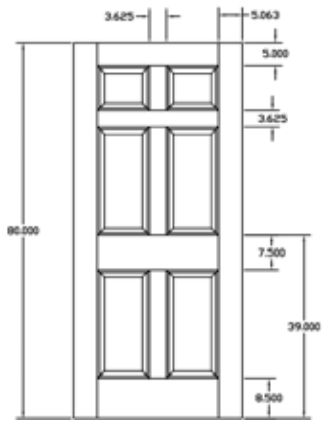


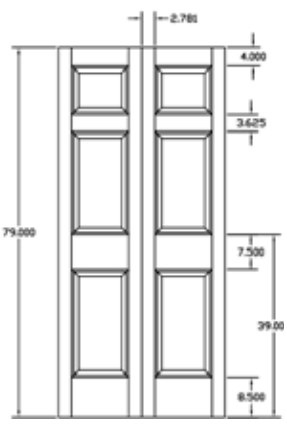


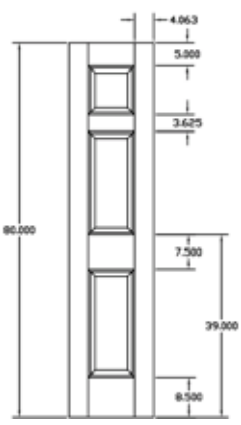


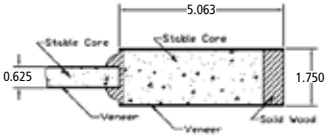


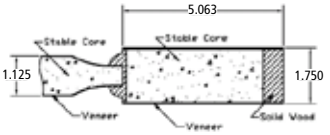
DESIGNER LINE CONSTRUCTION 1-3/4"











KARONA

FACTORY FINISHING

Karona's factory finishing utilizes the advanced technology of 100% waterborne stains and lacquers. Ultraviolet (UV) technologies are employed in both the coating and process to ensure a durable yet environmentally conscious finish.





BENEFITS OF KARONA'S ADVANCED UV FACTORY FINISHING

- Clarity of finish
- Cost effective
- Consistency of final finish quality
- Consistent topcoat material thickness
- Flat line processing, eliminates chance of topcoat runs
- Reduced project time, regardless of project size
- Aligns with many project objectives as it relates to environmental stewardship
- Reduction of job site use of harmful finishing materials
- No Added Urea Formaldehyde

PER AWI QUALITY STANDARDS SECTION 1500

Referring to AWI Factory Finishing Specialty Finish (UV Cured, Water-Based, and Urethane)

- AWI Custom Grade
- AWI Excellent Rating: #5 UV Urethane
- Water reducible, urethane based, acrylic lacquer

PER WDMA I.S. 6A – 08 STANDARDS

- WDMA Custom Grade
- WDMA TR-6 Rating
- Water reducible, urethane based, acrylic lacquer
- Meets extra heavy duty standards

MATERIAL TECHNICAL DATA

- Sheen 35 dry, (+ - 5), 40 Sheen wet*
- Effect – Open Pore
- Some cross grain scratches may remain evident
- Does not contain urea formaldehyde

*Customizable sheen upon request

CONSTRUCTION DETAILS

COMPONENT STANDARDS & SPECIFICATIONS

PART TYPE	MIN/MAX	WIDTH	HEIGHT
STILES	Min	2	5
	Max	18	120
RAILS	Min	4	3
	Max	96	96
DOOR	Min	8	5
	Max	60	120

PART TYPE	MIN/MAX	WIDTH	HEIGHT
RAISED PANELS	Min	4	4
	Max	60	96
FLAT PANELS	Min	3	3
	Max	60	96
ARC/RADIUS PANELS (INCLUDES LAFAYETTE)	Min	5	5
	Max	60	96
MITERED RIM-BAND	Min	6	6
	Max	67	96

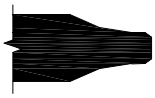
PART TYPE	MIN/MAX	WIDTH	HEIGHT
MUNTIN BARS	Min	3/8	4
	Max	3	96
SLAT LOUVERS	Min	3	1-1/8
	Max	48^	4
CHEVRON LOUVERS	Min	3	Fixed
	Max	96	Fixed

These specifications are Karona standards. Consult your sales representative when deviating from these guidelines.
Warranty may be limited based on door or part size.

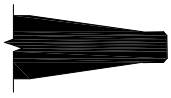
^ Slat louvers 36" and over are recommended to receive an anti-sag bar. Customers can select as an option.

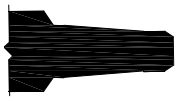
PANEL OPTIONS

PROFILE


Std Raised (P5)


Std Raised (flat back) (P5)


Custom Raised (CS15882)


Custom Raised (CS18636) (P1)


Custom Raised (CS19010) (P2)


Std Flat (P6)

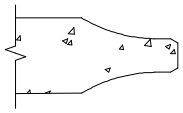

Std Step

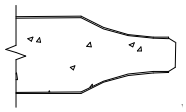

Custom Raised (CS18637) (P3)


Custom Raised (CS18638) (P4)

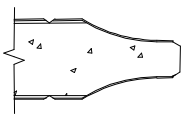
Other custom profiles are available. Some profiles only available as MDF. Tooling charges may apply.

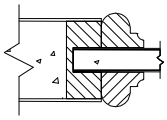
CONSTRUCTION


MDF


Veneered

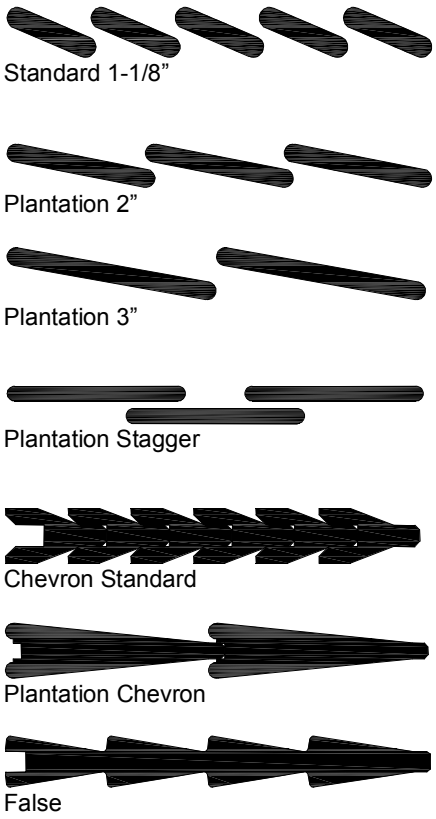
FEATURES


V-Groove


Applied Molding

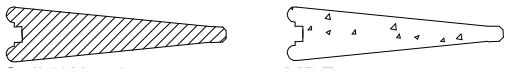
LOUVER OPTIONS

PROFILES



Other custom profiles are available.
Tooling charges may apply.

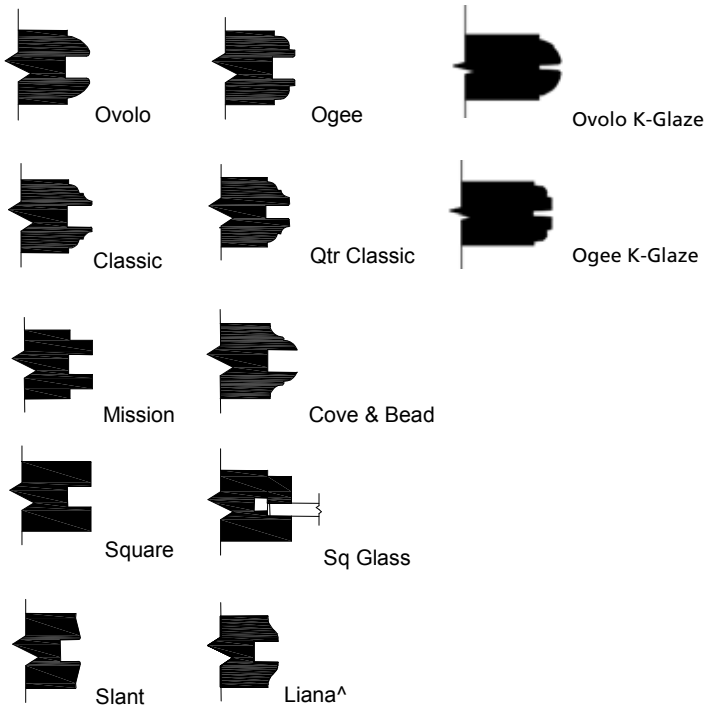
CONSTRUCTION



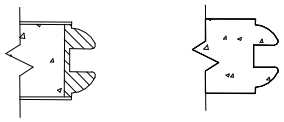
Solid Wood MDF

STICKING OPTIONS

PROFILE

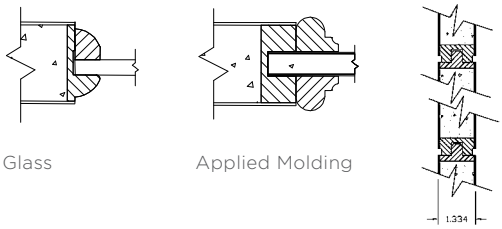


CONSTRUCTION



Edge-Banded MDF

FEATURES

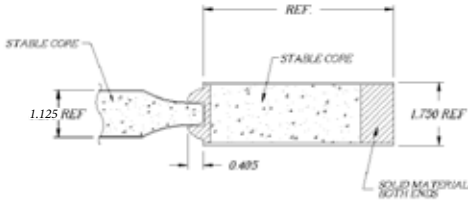


Glass Applied Molding Plank Construction

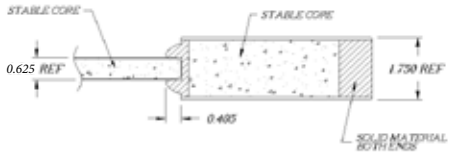
Other custom profiles are available.
Tooling charges may apply.

STICKING, MOULDING, AND JAMBS

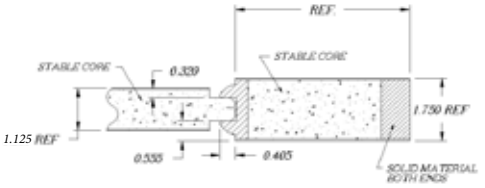
8/4 OVOLO STICKING



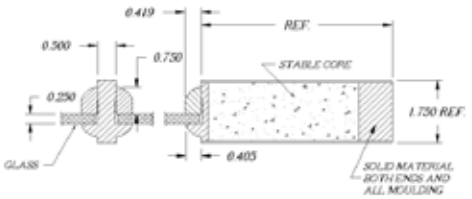
Raised Panel



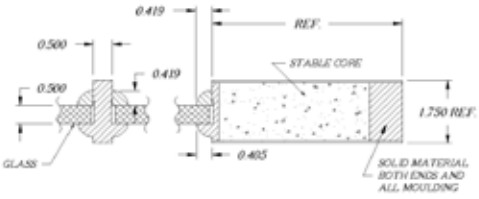
Flat Panel



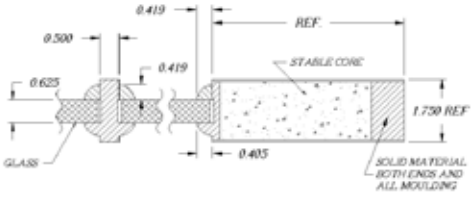
Step Panel



1/4" Glass

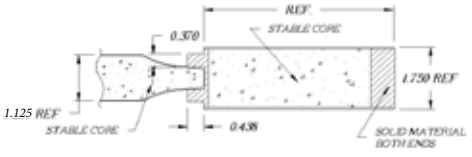


1/2" Glass

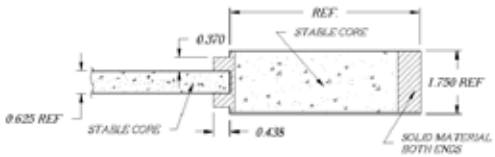


5/8" Glass

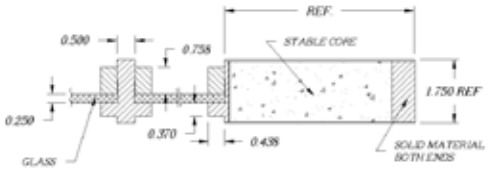
8/4 MISSION STICKING



Raised Panel

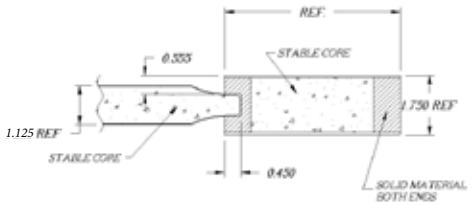


Flat Panel

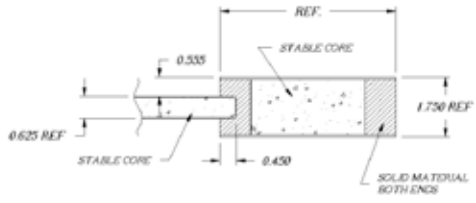


1/4" Glass

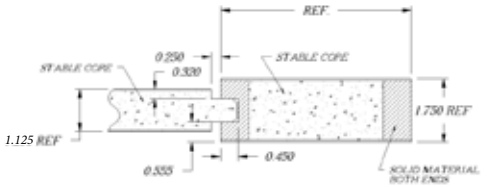
8/4 SQUARE STICKING



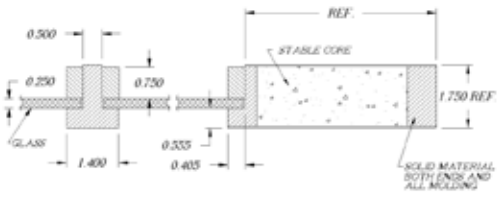
Raised Panel



Flat Panel

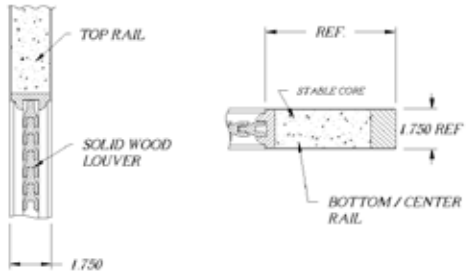


Step Panel

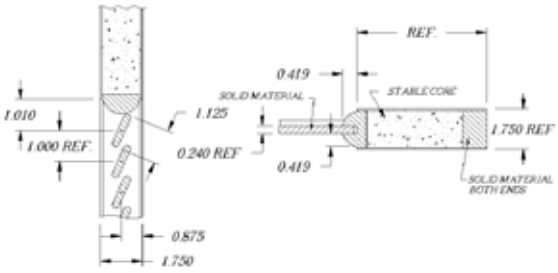


1/4" Glass

8/4 OVOLO STICKING - LOUVERS

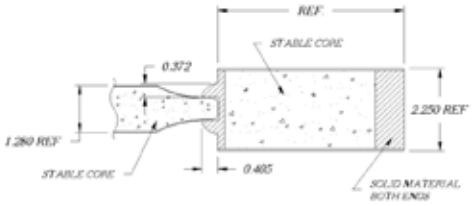


Louvers

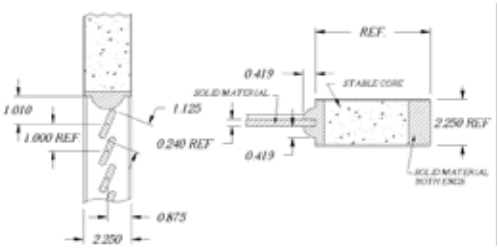


Chevron Louvers (non-venting)

10/4 OVOLO STICKING

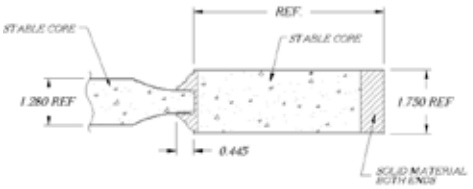


Raised Panel

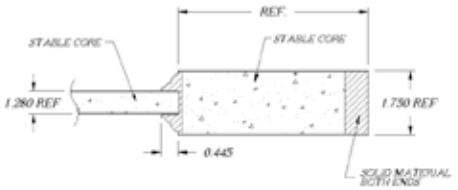


Louvers

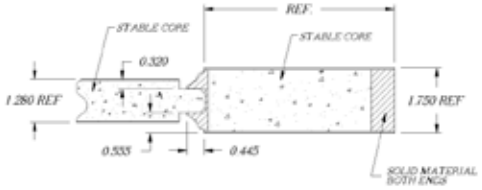
8/4 CLASSIC STICKING



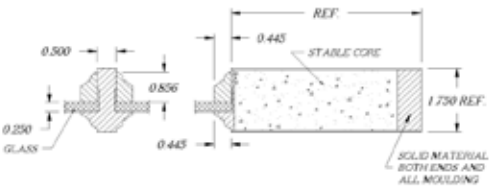
Raised Panel



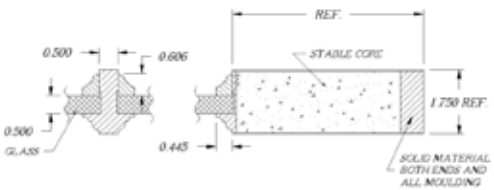
Flat Panel



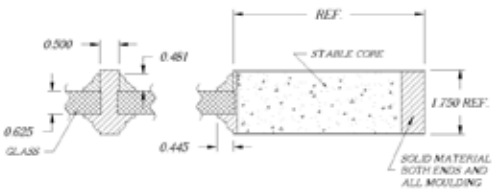
Step Panel



1/4" Glass

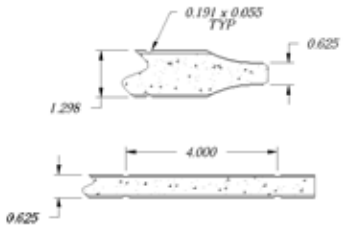


1/2" Glass



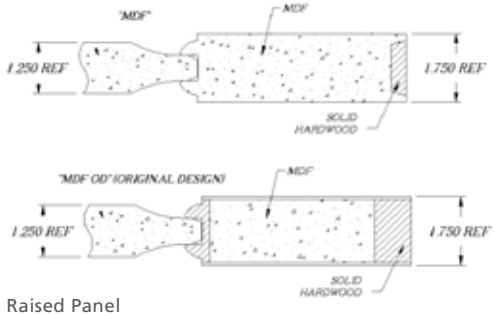
5/8" Glass

8/4 V-GROOVE PANELS



8/4 OVOLO STICKING

MDF CONSTRUCTION OPTIONS



Raised Panel

MOULDING OPTIONS

PROFILES


CS8026


CS17004


CS16439


CS13935


CS15269 (M1)


Quirk (M5)


CS13090 (M4)

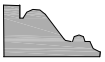

CS15055


CS17445 (M2)


CS12932


CS16507


CS 14373


CS17328


CS14374


CS16506


CS14116


CS17056


CS16612


CS15619


CS17058


CS17055


CS16189


CS15719

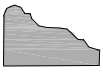

CS15777


CS15310


CS13768


CS16922


CS15493


CS14900


CS13 894


CS15547

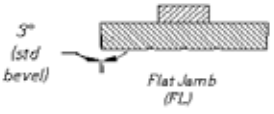

CS15550

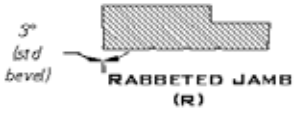
Other custom profiles are available. Tooling charges may apply.

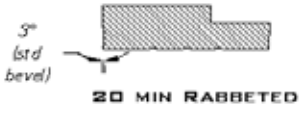
CONSTRUCTION

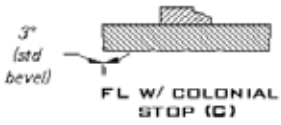

Solid Wood

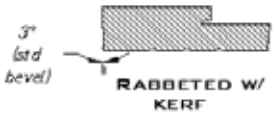
JAMB OPTIONS









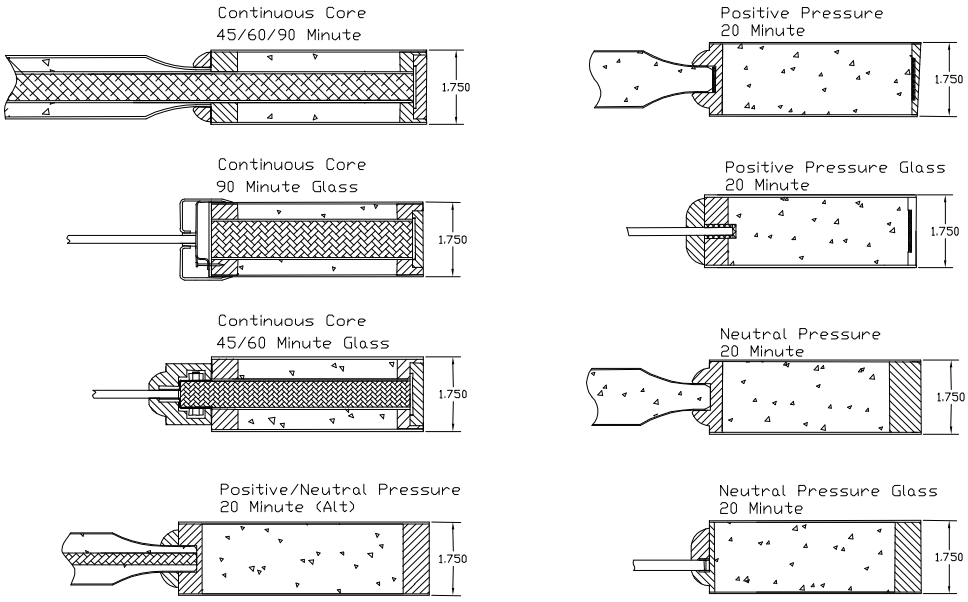






PERFORMANCE DETAILS

FIRE DOOR CROSS SECTION EXAMPLES



STC TESTING DATA

Test Date	STC Rating (Operable)	STC Rating (Sealed)	Door Model	Door Seals	Test Lab	Construction Method
1/24/96	NA	32	K4030	Dense Mastic	Riverbank	Std construction - painted
7/24/07	39	NA	K4010	Krieger (422N) Pemko (S88),	Intertek	CC 90 minute fire door construction 1.75" thick - laquered
7/24/07	36	NA	K4010	Krieger (422N) Pemko (S88),	Intertek	Tectonite 90 minute fire door construction 2.25" thick - laquered
2/7/11	31	33	K5610	Pemko (Q102D & 234A)	Stork	Std construction with silicone caulk around panels - painted
2/7/11	32	34	K3820	Pemko (Q102D3684 & 234APK36)	Stork	Std construction with 1/8" tempered, 1/4" air, 1/4" laminated glass, silicone caulk around panels - painted
10/15/11	26	33	K5610	Pemko (234A & 2005GV + Zero sound trap)	Stork	Standard construction with stave core and weather seals around panels (EPDM bulb) - painted
11/17/11	33	33	K5610	Pemko (234A & Q102D + Zero sound trap)	Stork	Continuous core construction with 5/8" MDF CC core - painted (non-rated door)
11/17/11	34	NA	K5610	Pemko (234A & 102D + Zero Sound Trap)	Stork	Extera panel core with weather striping around panels (EPDM bulb) - painted

Sound transmission class data was collected using specific seals, hardware, and construction. To obtain similar results, the seals, hardware and construction must be as close to the tested door as possible.



GLASS OPTIONS


Clear


Beveled


Bronze Tint


Antique


V-Groove


Flemish


Glacier


Minster


Reeded


Thin Reeded


Yacare


Glue Chip


Rain


Austral Cross Reeded


Obscure


Velour


White Hue Opaque


Mirror

More glass options available upon request.

Glass Name	Thickness (inches)
ANTIQUE	1/4 or 1/8
BEVELED	1/4
BRONZE TINT	1/8
CLEAR	1/4 or 1/8
AUSTRAL CROSS REEDED	5/32
FLEMISH	5/32
GLACIER	5/32
GLUE CHIP	1/8 or 3/16
MINSTER	5/32
OBSCURE	3/16
RAIN	3/16
REEDED	1/4 or 5/32
THIN REEDED	5/32
VELOUR	1/4 or 1/8
V-GROOVE	1/4
WHITE HUE OPAQUE	1/4
YACARE	5/32

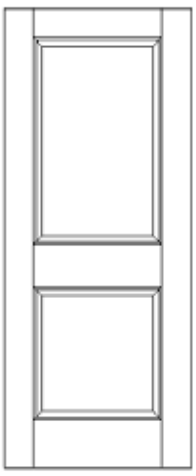




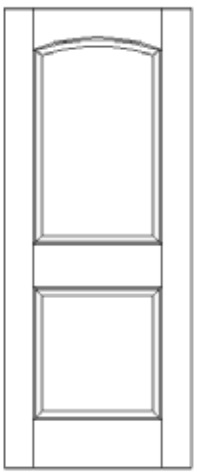




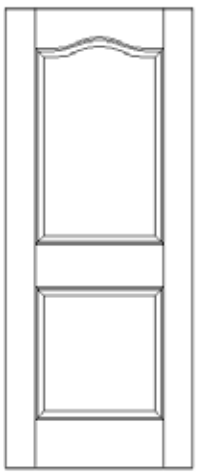
DOOR TOP OPTIONS



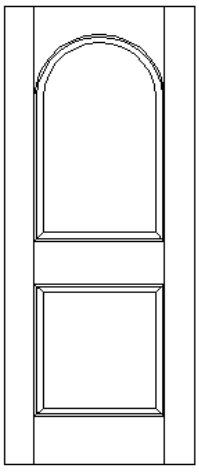
K
Square Top,
Square Panel



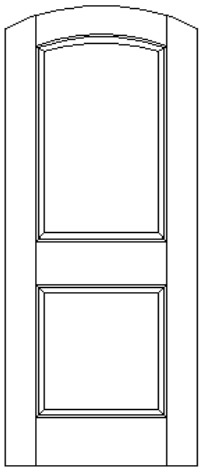
A
Square Top,
Arch Panel



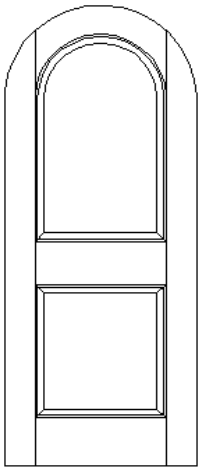
L
Square Top,
Lafayette Panel



R
Square Top,
Radius Panel



AA
Arch Top,
Arch Panel



RR
Radius Top,
Radius Panel

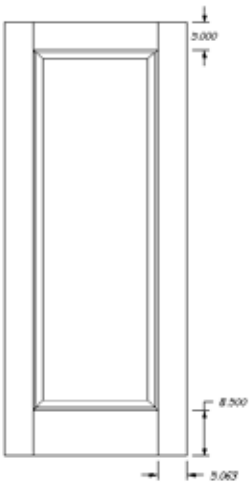
All doors also available with flat panels or glass.



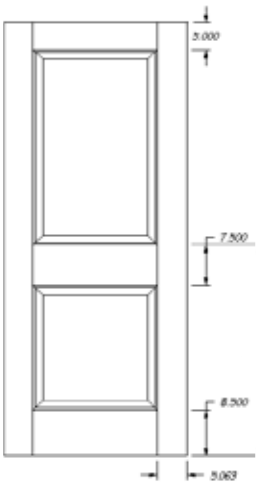




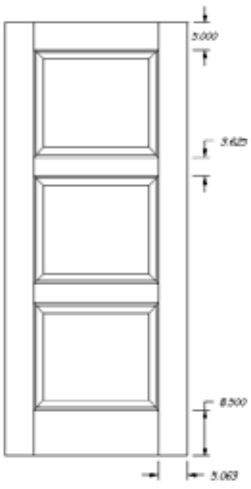
RAISED PANEL DOORS



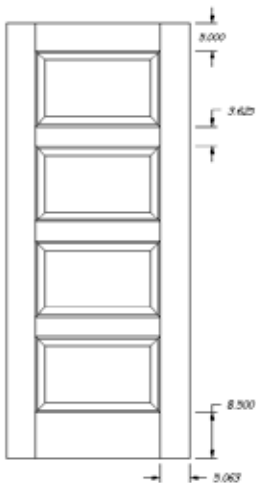
K6000



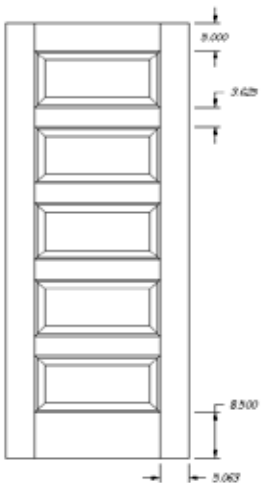
K4010



K5300

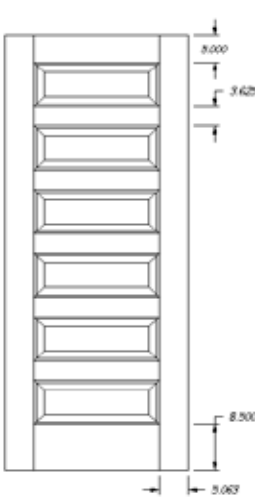


K3040

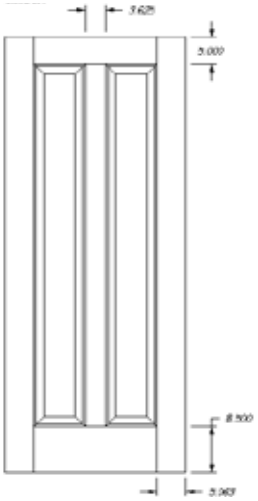


K3050

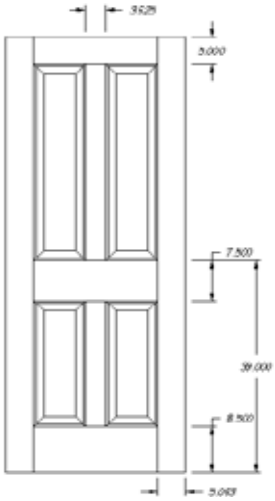
All doors also available with flat panels or glass.



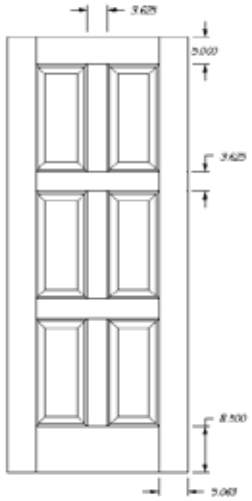
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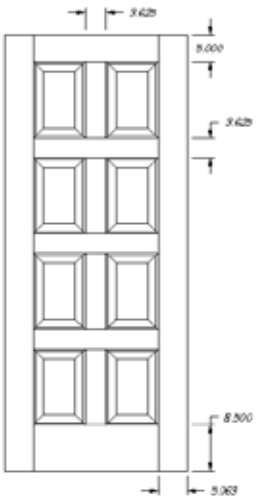
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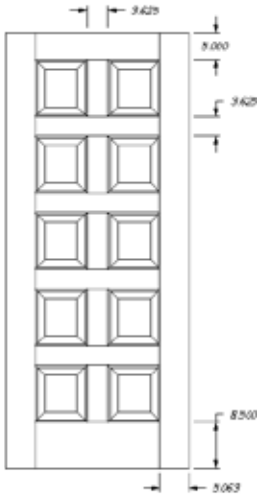
K5400



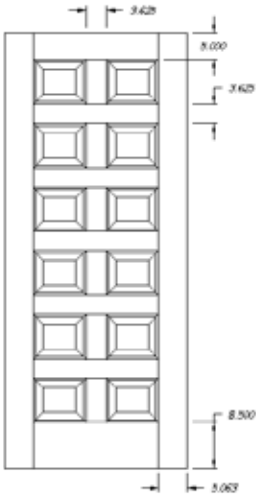
K5660



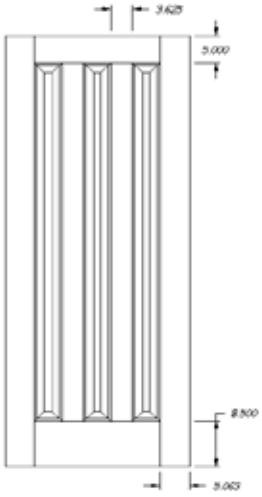
K5810



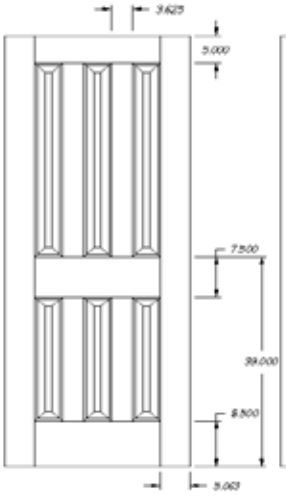
K3210



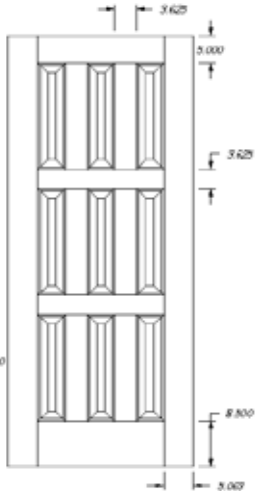
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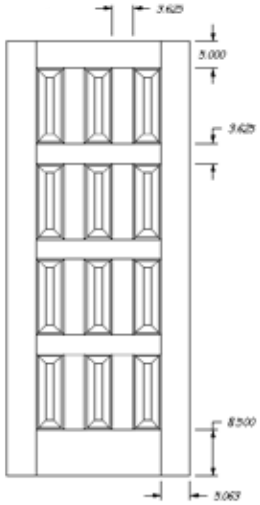
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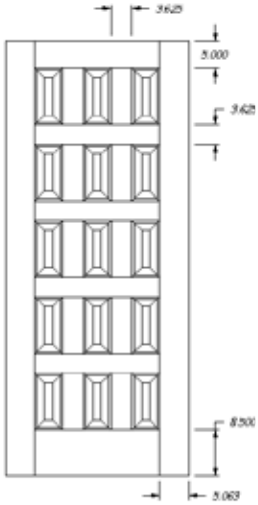
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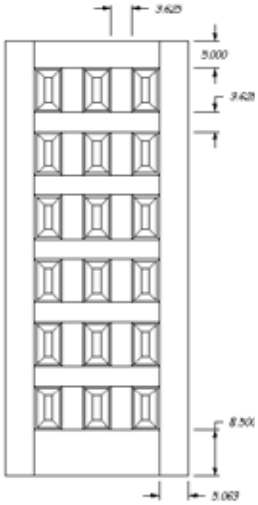
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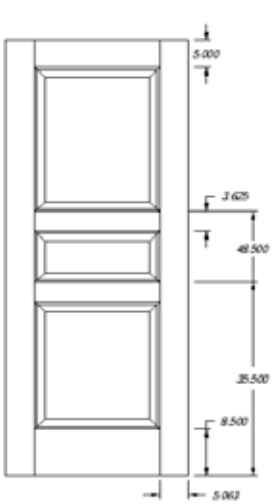
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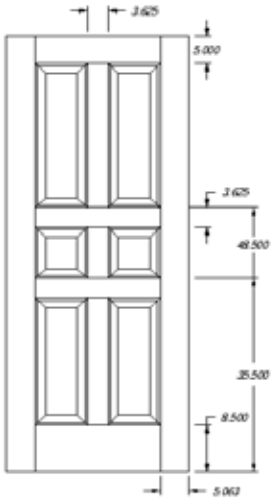
K5930



K3180

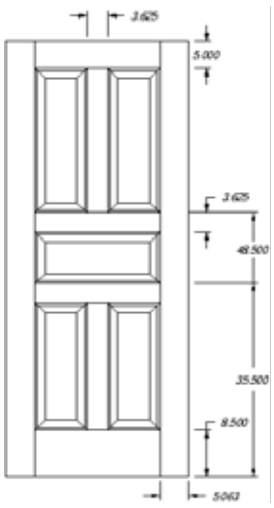


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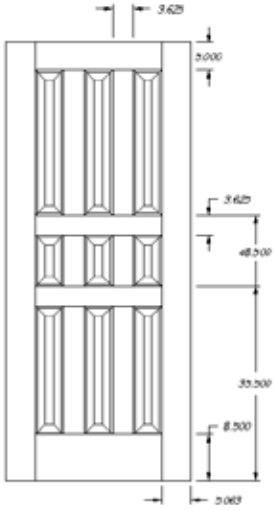


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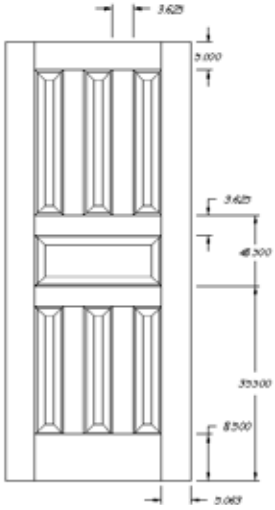
All doors also available with flat panels or glass.



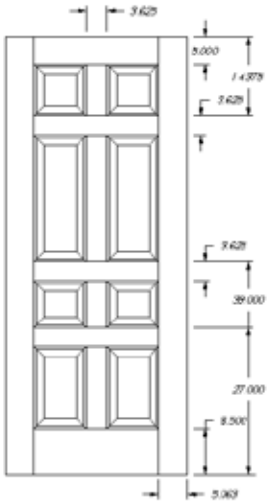
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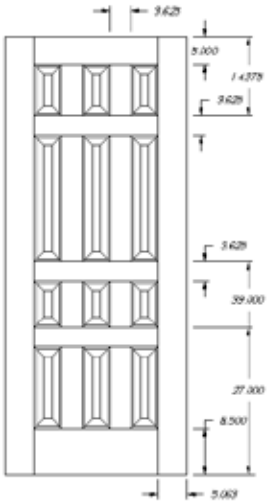
K3190



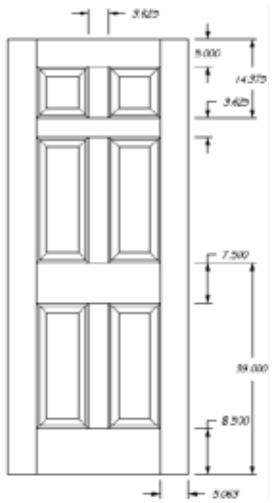
K3070



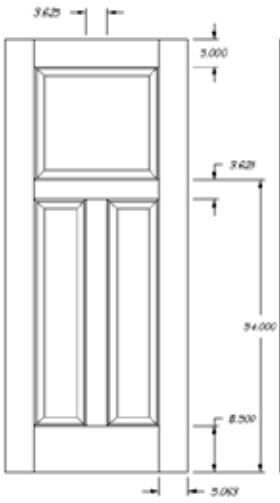
K3080



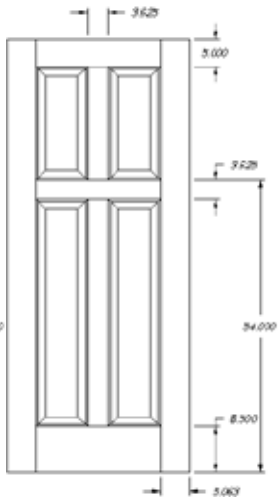
K3320



K5610



K5320



K5410

All doors also available with flat panels or glass.





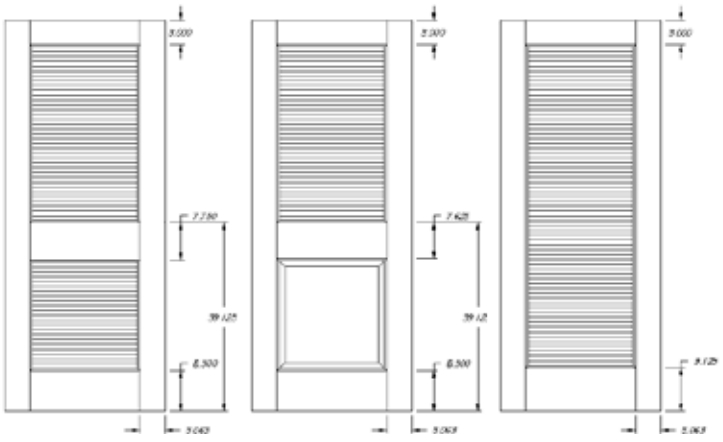






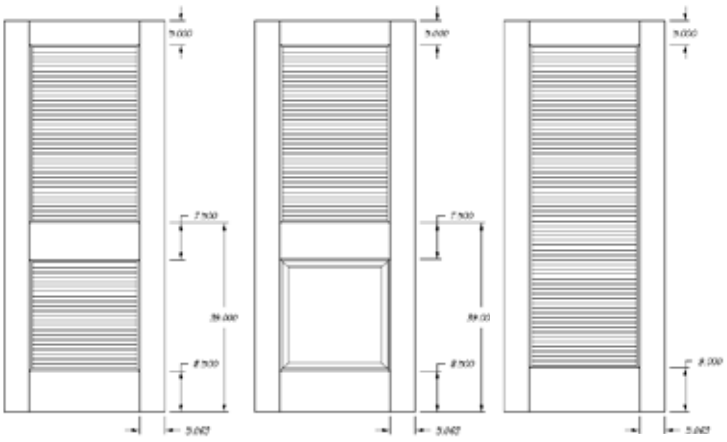
LOUVER DOORS

VENTING LOUVER SLATS



K7300 K7320 K7330

NON-VENTING CHEVRON LOUVER



K7300 K7320 K7330

Factory requires louver opening to end with 7/8" measurement. Factory recommends anti-sag bar on doors wider than 36", included only if requested.

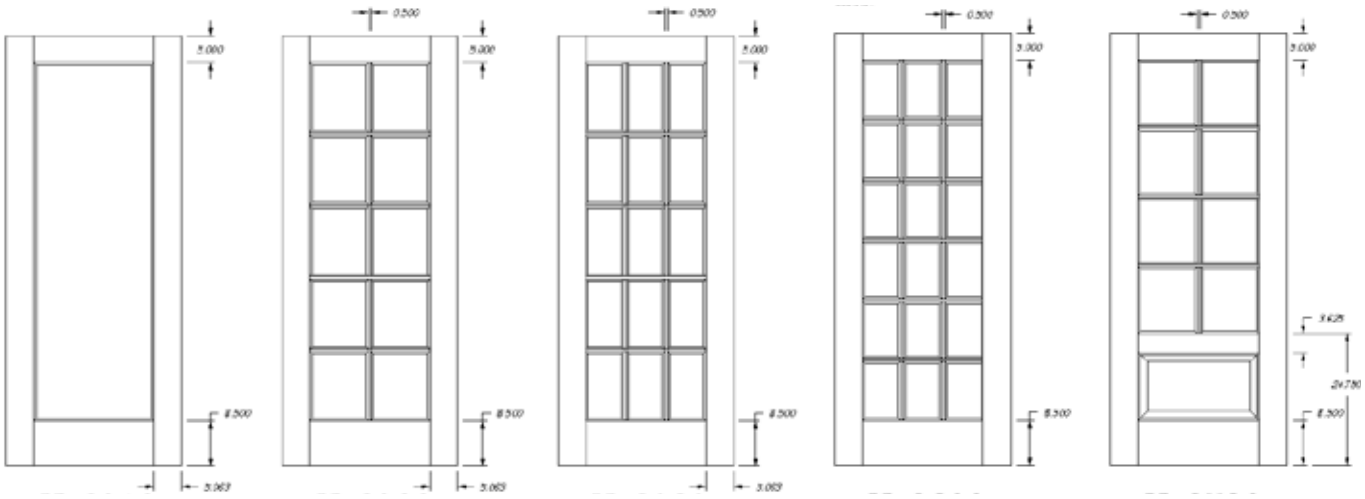
Factory requires chevron opening to end with whole number.





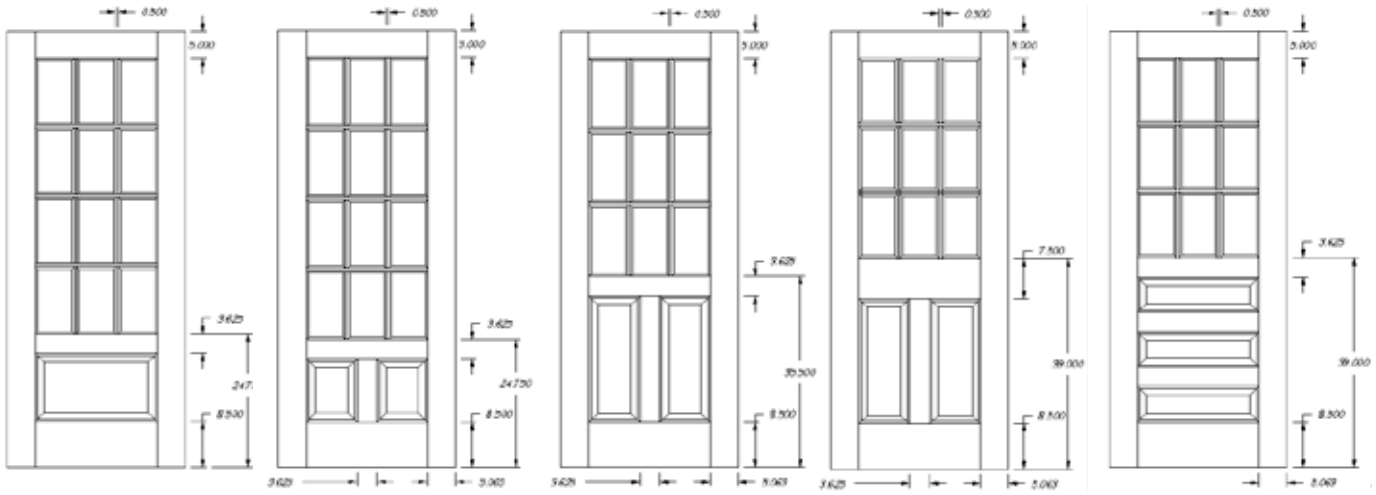


FRENCH DOORS

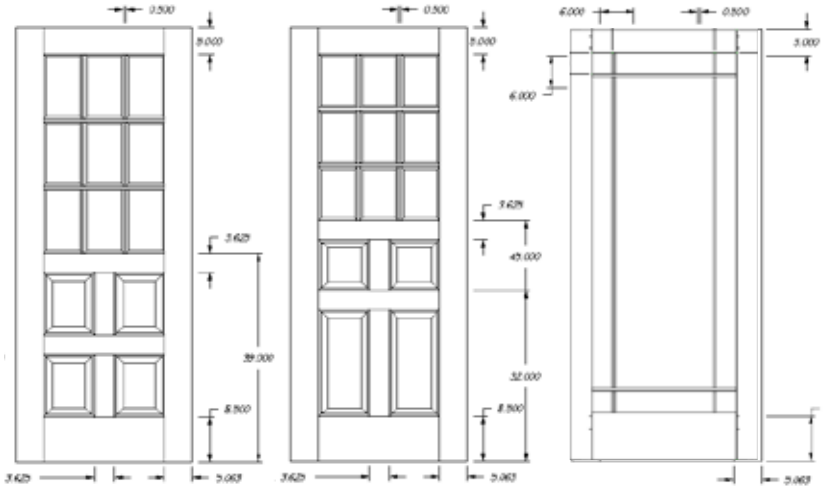


K6010 K6020 K6080 K3600 K3580

Available in clear tempered, beveled, V-groove, white hue opaque, and insulating glass



K3700 K3800 K3820 K3750 K3830



K3840 K6510 K6090

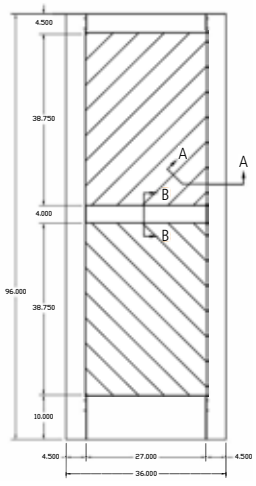
Available in clear tempered, beveled, V-groove, white hue opaque, and insulating glass



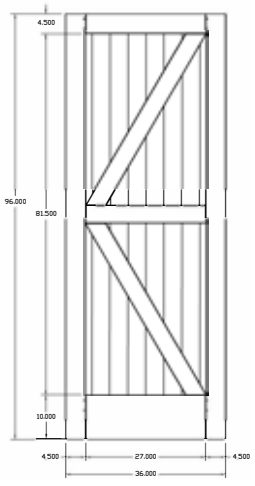




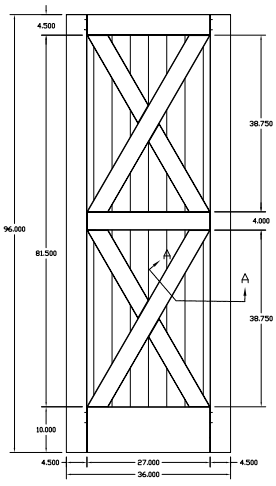
BARN DOORS



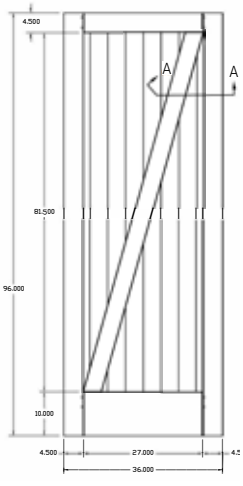
2-Panel Diagonal
Plank Veneer



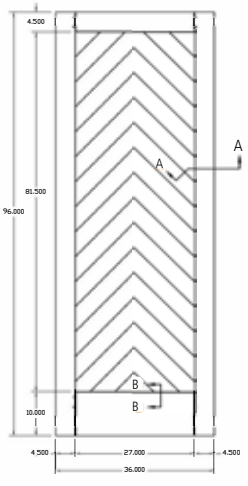
K On Vertical Plank



Double X On
Vertical Plank



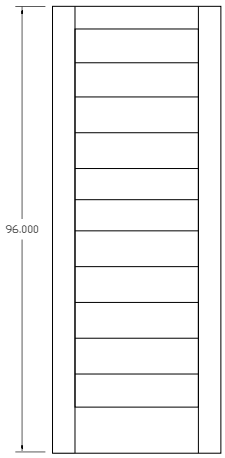
Diagonal On
Vertical Plank



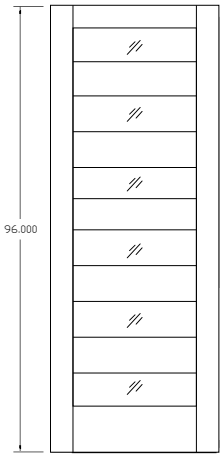
V-Groove Chevron

KARONA

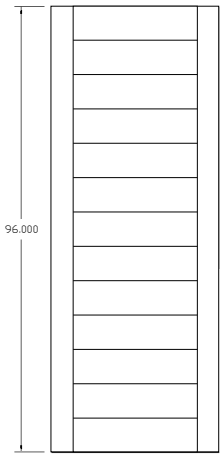
V-GROOVE & PLANK DOORS



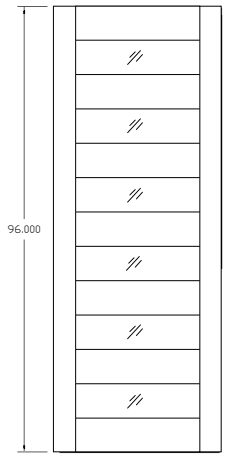
K8000



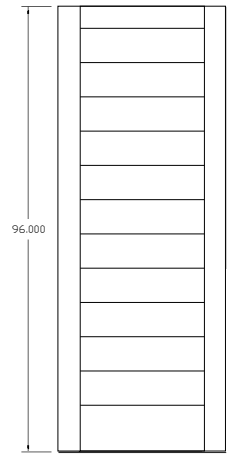
K8001



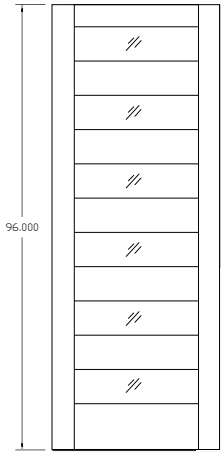
K8002



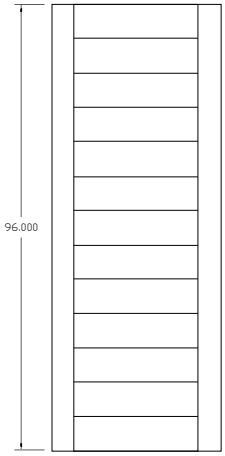
K8003



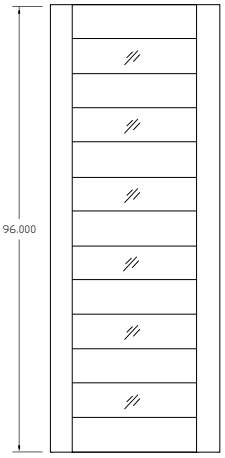
K8010



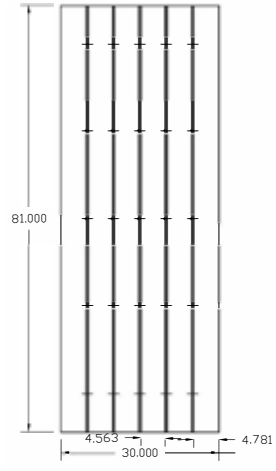
K8011



K8012



K8013



K8100





SECTION 08 1433

STILE AND RAIL WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Interior wood doors, stile and rail design.

B. Matching wood panels.

C. Wood door frames.

D. [Factory] [Shop] finishing.

1.02 RELATED REQUIREMENTS

A. Section 06 2000 - Finish Carpentry: Wood door frames.

B. Section 08 1213 - Hollow Metal Frames.

C. Section 08 1416 - Flush Wood Doors.

D. Section 08 7100 - Door Hardware.

E. Section 08 8000 - Glazing.

F. Section 09 9123 - Interior Painting: Field finishing doors.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.

B. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.

C. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass.

D. ICC (IBC) - International Building Code.

E. ITS (DIR) - Directory of Listed Products.

F. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; National Fire Protection Association.

G. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives.

H. UL (DIR) - Online Certifications Directory.

I. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies.

J. UL 1784 - Standard for Air Leakage Tests of Door Assemblies and Other Opening Protectives.

K. WDMA I.S.6A - Interior Architectural Wood Stile and Rail Doors; Window & Door Manufacturers Association; 2013. (ANSI/WDMA I.S.6A)

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the work with door opening construction.
   2. Coordinate with [door frame and] door hardware installation.
   3. Coordinate installation of glazing.

1.05 SUBMITTALS

A. Product Data: Indicate stile and rail core materials and construction[; veneer species, type and characteristics].

B. Shop Drawings: Illustrate applicable door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, factory machining criteria, factory finishing criteria[, and cutouts for glazing and other openings].

C. Samples: Submit two samples of door construction, minimum 12 by 12 inch in size, cut from typical top corner of door.

D. Samples: Submit two samples of door veneer, minimum 12 by 12 inch in size, illustrating wood grain, stain color, and sheen.

E. Manufacturer's Installation Instructions: Indicate special installation instructions.

F. Warranty; executed in Owner's name.

1.06 [LEED] [SUSTAINABLE DESIGN] SUBMITTALS

Retain this article for LEED or other sustainable design projects.

A. Comply with applicable product requirements and volatile organic compound (VOC) content restrictions specified in Division 01.

B. Report: Submit data for wood products made from sustainably harvested wood and regionally-sourced wood. Include statement indicating costs for each different wood material made of sustainably harvested wood[and regionally-sourced wood].
   1. Provide documentation for composite wood products indicating that bonding agents and adhesives used contain no added urea formaldehyde resins.
   2. Provide documentation of VOC content of all interior adhesives actually used.

1.07 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum 5 years of documented experience.
   1. Accredited participant in the specified certification program prior to commencement of fabrication and throughout duration of the project.

B. Quality Certification: Comply with WDMA I.S.6A quality certification requirements for completed work.
   1. Provide labels or certificates indicating that the work complies with specified requirements.
   2. Provide labels on each product when required by certification program.
   3. Upon completion of installation provide certificate certifying that installations and products meet specified requirements.
   4. Replace, repair, or rework all work for which certification is refused.

1.08 REGULATORY REQUIREMENTS

A. Conform to applicable Building Code for fire rated assemblies.
   1. Fire rated assembly construction to conform to UL 10C, unless otherwise required by applicable Building Code.
   2. Installed Frame and Door Assemblies: Comply with NFPA 80 for fire rated class indicated.
   3. Installed Smoke Control Frame and Door Assemblies: Comply with NFPA 105.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver, and store doors in accordance with WDMA quality standard specified.

B. Do not deliver or install doors until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during remainder of construction period.

C. Prior to installation, protect doors with resilient packaging. Do not store in damp or wet areas; or in areas where sunlight might adversely affect door finish. Seal top and bottom edges if stored more than one week. Break seal on packaging on the site to permit ventilation.

1.10 WARRANTY

5-year warranty is standard. Life of installation warranty requires extra cost.

A. Interior Doors: Provide manufacturer's warranty for [5 years] [the life of the installation] from Date of Substantial Completion.

B. Warranty: Manufacturer’s standard form, signed by manufacturer, installer, and Contractor, in which manufacturer agrees to repair or replace doors that are defective in materials or workmanship, and which have warped (bow, cup or twist) more than 1/4 inch (6.4mm) over any 42 by 84 inch (1067 by 2134 mm) section of door face.
   1. Include coverage for delamination of veneer and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Manufacturer:
   1. Karona by Jeld-Wen: www.karonadoor.com.
      a. Door Style: [Custom as indicated] [(*Specify Karona's door model number (ie., K3030 - 3 Raised Panels*))].
   2. Substitutions: See Division 01 for substitution procedures, if permitted.

B. Other Acceptable Manufacturers:
   1. Karona, Inc.: www.karonadoor.com.
   2. Maiman Company: www.maiman.com.
   3. Marshfield DoorSystems, Inc.: www.marshfielddoors.com.
   4. Oshkosh Door Company: www.oshkoshdoor.com.
   5. Substitutions: See Division 01 for substitution procedures, if permitted.

C. Obtain all doors from a single manufacturer to assure uniformity of appearance and construction.

2.02 WOOD-BASED DOOR COMPONENTS

A. Provide all core, lumber, and veneer materials with chain of custody certification provided by the Forest Stewardship Council® (FSC®).

B. Provide all core and veneer materials that are defined as regionally sourced according to applicable sustainable design certification requirements.

C. Wood doors fabricated from old growth timber are not permitted.

D. Provide doors manufactured with composite wood materials and components using bonding agents that contain no added urea formaldehyde resins, and that otherwise comply with specified VOC content restrictions.

2.03 STILE AND RAIL DOORS

A. Quality Level: [Custom] [Premium] Grade, [Standard] [Heavy] [Extra Heavy] Duty performance, in accordance with WDMA I.S.6A.

B. Interior Doors: [1-3/8 inches] [1-3/4 inches] thick unless otherwise indicated; [solid lumber] [veneer and lumber stile and rail] construction; [mortise and tenon] [dowel] joints.

C. Door Finishing: Wood veneer facing for field transparent finish at scheduled locations.

D. Door Finishing: Wood veneer facing for field opaque finish at scheduled locations.

2.04 DOORS [AND PANELS]

Rift cut may only allow limited species selections; verify with manufacturer.

A. Veneer Facing for Transparent Finish: [(Insert desired species)], veneer grade in accordance with quality standard indicated, [plain sliced (flat cut)] [quarter cut] [rift cut], with [book match] [slip match] [random matched (mis-matched)] [plank match] between leaves of veneer, [running match] [balance match] [center balance match] of spliced veneer leaves assembled on door or panel faces.
   1. [Transom Panels: [Continuous match to door] [End match to door].]
   2. [Pairs: Pair match each pair; set match pairs that are within 10 feet of each other when doors are closed.]

B. Facing Materials for Opaque Finishes: Manufacturer's standard mill option species and cut for stiles and rails; panels of same species or wood-based composite materials.

C. Adhesive: WDMA Type II - Water Resistant.

2.05 ACCESSORIES

A. Glazed Openings:
   1. Heat-Strengthened and Fully Tempered Glass: ASTM C1048.
   2. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
   3. Laminated Safety Glass: Comply with 16 CFR 1201 test requirements for Category II.
   4. Fire-Protection-Rated Glass: Safety Certification, 16 CFR 1201, Category II.
   5. Glazing: Sealed insulating units, 1 inch thick, made of 1/4 inch glass.
   6. Glazing: Single vision units, 1/4 inch glass.
   7. Tint: [Clear] [Frosted] [Gray] [(*Insert description*)].
   8. Coating: Low-E type, on #2 surface.

-OR-

B. Glazing: As specified in Section 08 8000.

C. Panel or Glass Retention Molding: Wood of same species as door facing, manufacturer's standard molding profile and style according to specified door style, mitered corners[; prepared for countersink style tamper proof screws].

D. Louvers: Wood, of same species as door facing; style and configuration as indicated on Drawings.

2.06 DOOR CONSTRUCTION

A. Vertical Exposed Edge of Stiles: Of same species as veneer facing.
   1. Fit door edge trim to edge of stiles after applying veneer facing.
   2. Bond edge banding to cores.

B. Door Fabrication:
   1. Factory machine doors for finish hardware in accordance with hardware requirements and dimensions. Do not machine for surface hardware.
   2. Fabricate stile and rail wood doors in sizes indicated for Project site fitting.
   3. Factory fit doors to suit frame opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting and edge clearances.
   4. Transom and Side Panels: Fabricate panels to match adjoining doors in materials, finish, and quality of construction.

C. Glazed Openings: Factory glaze doors with glass of type and thickness specified.
   1. Non-Rated and 20 Minute Rated Doors: Solid wood moldings.
   2. 45 and 60 minute Rated Doors: Compression glazed construction with applied wood stops.

D. Exterior Doors:
   1. Provide aluminum flashing at the top and bottom rail for full thickness and width of door.
   2. Cut and configure door edges to receive recessed weather stripping devices. Provide edge clearances in accordance with referenced quality standards.

E. Fire Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

   -OR-

F. Fire Rated Doors: Tested to ratings indicated on Drawings in accordance with ICC (IBC) - Positive Pressure; listed in UL (DIR) or ITS (DIR) and without any visible seals when door is open.

G. Smoke and Draft Control Doors: In addition to required fire rating, provide stile and rail door assemblies tested in accordance with UL 1784 with maximum air leakage of 3.0 cfm per sq. ft. of door opening at 0.10 inch w.g. pressure at both ambient and elevated temperatures for "S" label; if necessary, provide additional gasketing or edge sealing.

   -OR-

H. Smoke and Draft Control Doors: In addition to required fire rating, provide stile and rail door assemblies in compliance with WDMA I.S.6A requirements for "S" label; if necessary, provide additional gasketing or edge sealing.

2.07 FACTORY FINISHING

A. Finish work in accordance with WDMA I.S.6A for Grade specified and as follows:
   1. Transparent:
      a. Manufacturers standard, in compliance with performance duty level indicated.
      b. Stain: As selected by Architect.
      c. Sheen: [Satin] [Semi-gloss].
   2. Opaque:
      a. Manufacturers standard, in compliance with performance duty level indicated.
      b. Color: As selected by Architect.
      c. Sheen: [Satin] [Semi-gloss].

B. Factory finish doors in accordance with approved sample.

C. Exterior Doors: Seal door top edge with[color] sealer to match door facing.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable to door manufacturer.

C. Do not install doors in frame openings that are not plumb or are out of tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standards.
   1. Install fire-rated doors in accordance with NFPA 80, Intertek/Warnock Hersey (WHI), and UL requirements as applicable.
   2. Install smoke and draft control doors in accordance with NFPA 105 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Field-Finished Doors: Trimming to fit is acceptable, subject to approval of door manufacturer.

D. Adjust width of non-rated doors by cutting equally on both jamb edges.

E. Trim door height by cutting bottom edges to a maximum of 3/4 inch.

F. Trim fire-rated doors in strict compliance with fire rating limitations.

G. Machine cut and prepare doors[and frames] for specified hardware.

3.03 TOLERANCES

A. Conform to specified quality standard for fit, clearance, and joinery tolerances.

B. Maximum Width Distortion (Cup): 1/4 inch measured with straight edge or taut string, edge to edge, over any 42 by 84 inch (1067 by 2134 mm) section of door face.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

3.05 SCHEDULE

A. Refer to Door and Frame Schedule on the Drawings.

END OF SECTION

DEFINITION OF TERMS

Bar: A narrow rabbeted horizontal or vertical sash or door member extending the total length or width of the glass opening; extends from rail to rail or stile to stile; also called "light bar" or "glass bar'. Diagonal bars may extend from stile to rail or vice versa.

Bead, Glass: A small wood moulding applied to sash door openings to secure the glass, hence "glass bead."

Bedding: Glazing whereby a thin layer (approx. 3/16") of putty or bedding compound is placed in the glass rabbet, the glass inserted and pressed into this bed, glazier's points driven, or beading placed.

Back Bedding: Glazing whereby a thin layer of putty or bedding compound is placed on both sides of the glass perimeter.

Check (Season Check): A lengthwise separation of the wood that usually extends across the annual growth rings and commonly results from stresses set up in wood during seasoning.

Cope: To cut or shape the end of a moulded wood member so that it will cover and fit the contour of an adjoining moulded wood member.

Door: A millwork assembly of stiles, rails, and panels that swings, slides, tilts up, or folds in order to close an opening in a wall or cabinet; may be exterior or interior, flush or panel type.

A. **Dutch Door:** A door, usually exterior, with an upper and lower section that can be opened separately.
B. **Entrance Door:** A door on the front entrance of a structure; also "front" or "main" entrance door; may be single or pairs.
C. **Fire Door:** A door certified and labeled by a recognized testing agency to pass defined fire resistance tests for a specified length of time.
D. **French Door:** An interior or exterior door consisting of stiles, top and bottom rails, and divided glass panels or lights; often used in pairs.
E. **Panel Door:** Consists of stiles, rails, and one or more panels, the stiles and rails, forming the frame around the panel; "stile and rail" door.
F. **Rim Door:** Consists of stiles and top and bottom rails and usually containing a single or divided glass light(s); "store" door; French door.
G. **Flat Panel Door:** A door in which panels have no bevel or hip raise.

Door Bevel: The bevel on the stile edge (lock edge) or a door, usually 1/16" for doors and 2" in thickness, so that the door may swing free of the door frame; bevel is approximately 3 degrees toward door.

Door Clearance: The space between the edge of a door and the door frame which enables the door to properly operate.

Door Frame: A group of wood parts machined and assembled to form an enclosure and support for a door; door frames are classified as exterior and interior door frames.

Door Jamb: The part of a door frame which surrounds and contacts the edges of the stiles and top rail of a door.

Door Panels: A sheet of thin lumber, plywood, or composition material inserted into the frame formed by the stiles, rails, and mullions of a door.

A. **Composition Door Panel:** A panel of material other than solid wood or plywood.
B. **Flat Door Panel:** A panel consisting of a flat piece of plywood, solid wood, or other material; contrasted to "raised door panel."

Dowel: A wood peg or pin used to strengthen a wood joint; doweled construction.

Eased Edge: A corner rounded or shaped to a slight radius to lessen splintering and paint failure; is not machined from an appearance standpoint, but rather from a utility standpoint.

Glass:

A. **Diffused Glass:** Glass that is figured, Florentine, hammered, obscure opaque.

B. **Insulating Glass:** Two or three (generally two) pieces, lights, or panes of glass separated by a hermetically sealed air space 3/16" to 1" in thickness.

C. **Safety Glass:** Glass so constructed, treated, or combined with other materials as to minimize the likelihood of cutting and piercing injuries resulting from human contact with this glazing material. Safety glazing material must conform to ANSI Z 97.1.

D. **Tempered Glass:** Consists of a single sheet of specially heat or chemically treated plate glass. It cannot be cut, drilled, ground, or polished after treatment. When broken at any point, the entire piece immediately breaks into innumerable small, granular pieces.

Glazing: Inserting glass into sash and doors.

Glazing Compound: A plastic substance of such consistency that it tends to remain soft and rubbery when used in glazing sash and doors; unlike putty, it resists hardening, cracking, and eventual failure; sometimes refers to putty.

Glass Bead: A small wood moulding applied to sash door openings to secure the glass.

Mullion: The upright or vertical member dividing the panel in a door; the vertical member of a sash, window, or door frame between openings in a multiple opening frame; the mullion is known as the "mullion center."

Muntin: A short "bar" (horizontal or vertical) extending from a bar to a stile, rail, or another bar.

Ovolo: A convex profile; usually a quarter section of a circle and similar to the profile of "quarter round."

Rail: The cross or horizontal members of the framework of a sash, door, blind, or other panel assembly.

A. **Bottom Rail:** The bottom rail of a sash, door, blind, or other panel assembly.

B. **Diagonal Rail:** A diagonal rail of crossbuck or sawbuck of a panel or sash door.

C. **Intermediate Rail:** A rail of a door located between the top and bottom rails.

D. **Lock Rail:** The intermediate rail of the door at lock height.

E. **Top Rail:** The top rail of a sash, door, blind, or other similar panel.

Stile: Upright or vertical outside pieces of a sash, door, blind, or screen.

A. **Stile - Solid:** A door stile of solid lumber (one piece or edge glued).

B. **Stile - Veneered:** A door stile of composite core and face veneers.

Warp: Any variation from a true plane surface. Includes bow, crook, cup, and twist or any combination.

Veneer: A thin layer of fine wood used in covering the surface of a lesser grade or composite material.

WARRANTY COVERAGE

All doors manufactured by Karona, Inc. ("Karona") (except those doors specifically excluded below from the warranty) are warranted by Karona to the Original Purchaser to be free from defects that would render those doors unserviceable or unfit for the ordinary purposes for which doors of that kind are recommended. The term "Original Purchaser" as used in this warranty means the individual or entity that purchases the door from Karona or the owner(s) of the residential dwelling or commercial structure in which the door was originally installed.

LIMITED LIFETIME COVERAGE.

Commercial and residential interior doors are covered under this limited warranty beginning on the date that the doors are originally purchased and continuing for as long as the doors remain in use at the residential dwelling or commercial structure where, and as, originally installed.

CLAIM PROCEDURES

Since Karona cannot control the handling or exposure of doors after shipment, the Original Purchaser must inspect the doors when received. If, at the time a door shipment is received, a door has a defect that can be reasonably discovered by inspection of that door, the Original Purchaser must, prior to hanging or fitting the door and within 30 days of the date shipment is received, send written notice of the defect to Karona, Inc. P.O. Box 888410, Grand Rapids, Michigan 49588-8410.

If a defect is discovered or occurs after a door is hung, written notice of the defect must be sent by the Original Purchaser to Karona, at the address listed above, within 30 days of discovery of the defect. The Original Purchaser shall not return any goods to Karona until Karona has been provided a reasonable opportunity to inspect the goods at the Original Purchaser's premises to determine whether a defect exists. Karona shall not be liable for any doors repaired, returned, or replaced without its written consent.

EXCLUSIVE REMEDY

If warranted doors contain defects covered under this limited warranty, Karona's obligation shall be limited to repairing or replacing the doors (not including labor costs to re-finish or re-hang the doors) or to refunding the purchase price Karona received for the doors to the Original Purchaser at Karona's option. THIS LIMITED WARRANTY IS THE SOLE AND EXCLUSIVE REMEDY OF ANY PURCHASER AGAINST KARONA, INC.

EXCLUSIONS FROM COVERAGE

This limited warranty does not apply to any of the following:

A. Any condition or appearance caused by a failure to follow Karona's written Handling, Installation and Finishing Instructions.

B. Any exterior door in a non-single family dwelling.

C. Any interior door used as an exterior door.

D. Natural variations in the color or texture of wood.

E. Warp which does not exceed 1/4 inch in the plane of the door. Warp is any distortion in the door itself and does not refer to the relationship of the door to the frame or jamb in which it is hung. The term "warp" shall include bow, cup, and twist. In measuring the amount of warp in a door, the following method shall be used: Bow, cup, and twist shall be measured by placing a straightedge on the suspected concave face of the door at any angle (i.e., horizontally, vertically, or diagonally) with the door in its installed

position. The measurement of bow, cup, and twist shall be made at the point of maximum distance between the bottom of the straightedge and the face of the door.

. If the claimed defect is warp, Karona may defer repairing or replacing the door for a period of up to twelve (12) months from the date of claim or the date when the door was installed, in order to permit conditioning and equalizing to humidity and temperature conditions.

F. Small checks and surface imperfections that may appear over time. Karona's products are produced with hardwood veneers. However, because of the nature of wood, small checks and surface imperfections may appear over time, especially those subjected to severe climatic conditions such as exposure to sunlight or extreme variations in moisture, humidity, and dryness. These small checks and surface imperfections as well as the shrinking or swelling of the wood surfaces are not considered defects. They are part of the natural weathering process of wood. These occurrences may best be minimized by proper finishing and adequate climatic conditions. (See Karona's Handling, Installation and Finishing Instructions for more detail).

G. Any condition arising from any purchaser's neglect or failure to properly maintain the door.

H. Any leakage around a glazed portion of a door that has been glazed by someone other than Karona.

I. The appearance of any field-finished door (except for specific manufacturing defects). Certain species of wood, particularly oak, contain chemicals that react unfavorably with certain finishes. Where possible, the surface should be tested for such an unfavorable reaction.

J. All doors 1-1/4" and under in thickness

K. All doors that are wider than 3'0", higher than 8'0", or thicker than 1-3/4"

L. All doors with face veneers of different species. (E.g., oak interior / maple exterior).

M. Doors prefinished at the factory and meeting the criteria of the approved finish sample prior to hanging. Installation of prefinished doors shall constitute acceptance of finishing (including color and feel) of the door.

N. Normal wear and tear or deterioration for reasons other than material and workmanship of the door.

O. Incompatibility of hardware with a particular door construction.

P. Any condition or work completed on the door that results in the stripping of hinge screws.

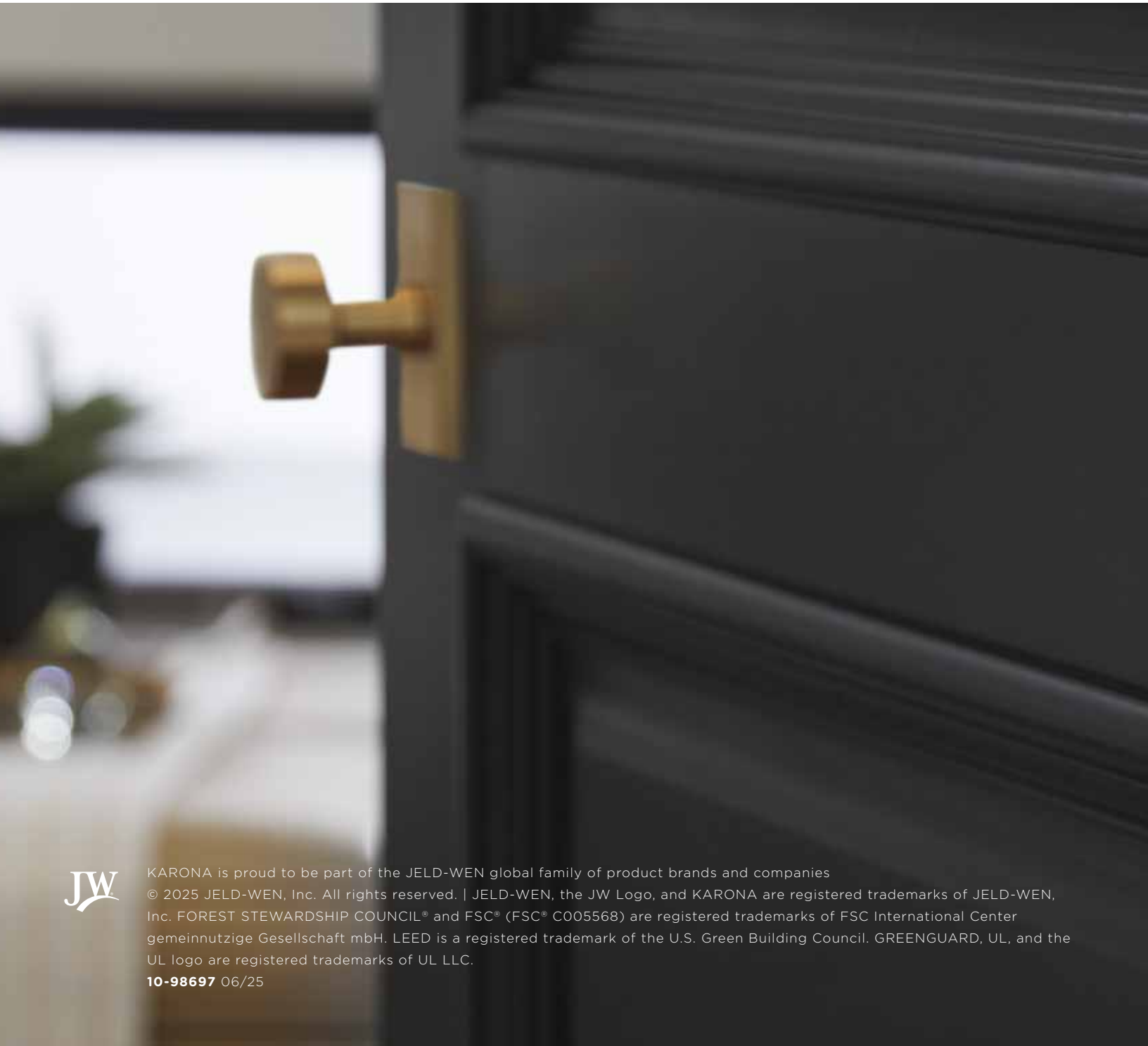
Q. Trimming of cross rails by more than twenty percent (20%) of their width. Pre-fitting width of Designer Series doors by more than 3/16" width. Pre-fitting width of Builders series doors by more than 1/16" width.

R. Any field modification of a door (removal of panels, glass, etc.).

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KARONA.

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