A1 DOORS

PRODUCT CATALOG

IRON · MAHOGANY · FIBERGLASS

INTERIOR · COMMERCIAL · STOREFRONT · HARDWARE

Every door in this catalog is measured, supplied and fitted by our own crew — lock set, frame made right. One visit.

A1DOORSERVICES.COM

Texas · Connecticut · Alabama

(855) 676-0881

Prices on request. Every quote follows a site measure.

A1 Doors Services
Your best door partner

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Prices are not shown in this catalog.

Every opening differs, so we quote after a free site measure.

ENTRY DOORS / 01

IRON ENTRY DOORS

Forged and built to be seen. The heaviest and most secure door we fit, and the one that changes the front of a house.

Glass options	Low-E / Water / Flemish / Sandblast / Water Cubic / Clear
Sizes	36x80 36x96 60x96 60x108 72x80 72x96 72x108
Configurations	Single and double, in-swing or out-swing
Finish	Hand-applied, factory sealed

SBS1900

SBS2100

SBS2500

Turn the page for the full range.

IRON ENTRY DOORS

SBS1900

36X80 · Low E Glass
36X96 · Low E Glass
also SBS2000

SBS2100

72X80 · Low E Glass
72X96 · Low E Glass
also SBS2300

SBS2500

36X80 · Water Glass
36X96 · Water Glass
also SBS2600

SBS2700

72X80 · Water Glass
72X96 · Water Glass
also SBS2800

SBS2900

36X80 · Low E + Flemish Glass
36X96 · Low E + Flemish Glass
also SBS3000

SBS3100

72X80 · Low E + Flemish Glass
72X96 · Low E + Flemish Glass
also SBS3200

SBS3300

36X80 · Low E + Clear Glass
36X96 · Low E + Clear Glass
also SBS3400

SBS3500

72X80 · Low E + Clear Glass
72X96 · Low E + Clear Glass
also SBS3600

SBS3700

36X80 · Low E - Sandblast Glass
36X96 · Low E - Sandblast Glass
also SBS3900

IRON ENTRY DOORS

SBS4100

72X80 · Low E - Sandblast Glass
72X96 · Low E - Sandblast Glass
also SBS4300

SBS4500

36X80 · Low E + Water Cubic Glass
also SBS4600

SBS4700

72X80 · Low E + Water Cubic Glass
72X96 · Low E + Water Cubic Glass
also SBS4800

SBS4902

60X108 · Low E - Sandblast Glass
72X108 · Low E - Sandblast Glass
also SBS4906, SBS4904

SBS5000

36X80 · Water Glass
36X96 · Water Glass
also SBS5100

SBS5200

72X80 · Water Glass
72X96 · Water Glass
also SBS5300

SBS5400

36X80 · Water Cubic Glass
36X96 · Water Cubic Glass
also SBS5500

SBS5600

72X80 · Water Cubic Glass
72X96 · Water Cubic Glass
also SBS5700

MAHOGANY ENTRY DOORS

Real hardwood with the grain showing. Warm, traditional, and it takes any stain you want.

Glass options	Equal lite / Frosted / Rain / Beveled
Sizes	36x80 36x96 72x80 72x96
Configurations	3-lite, 4-lite, 5-lite and 6-lite; single and double
Finish	Supplied ready to stain, or finished to your color

MAG36803LITE

MAG36804LITE

MAG36805LITE

Turn the page for the full range.

MAHOGANY ENTRY DOORS

MAG36803LITE

MAG36804LITE

36X80 · Beveled Frosted Glass

MAG36805LITE

also MAG36965LITE

MAG36964LITE

MAG72805LITE

also MAG72965LITE

MAG72806LITE

also MAG72966LITE

FIBERGLASS ENTRY DOORS

The most popular choice. It will not dent, warp, rot or need repainting, and it holds heat better than wood or steel.

Panel styles	Flush, raised panel, shaker, craftsman, full-lite, half-lite
Sizes	32x80 32x96 36x80 36x96 60x80 64x80 72x80 72x96
Configurations	Single and double door, with or without sidelites
Finish	Paint or stain grade, smooth or woodgrain texture

1001

1004

1006

Turn the page for the full range.

FIBERGLASS ENTRY DOORS

1001

36X80
36X96
also 1051, 1000

1004

36X80
60X80 · Double door
also 1074, 1005

1006

36X96 · Double door

1007

72X96 · Double door

1008

36X80
36X96
also 1009

1010

72X80
72X96
also 1011

1015

36X80
36X96
also 1016

1021

36X96

1022

36X80

FIBERGLASS ENTRY DOORS

1050
36X80
36X96
also 1023

1026
36X80

1027
36X80
64X80
also 1071

1028
36X80 · Double door
36X96
also 1029, 1034

103
36X80

1030
36X80

1084
32X80
36X80
also 1067, 1031

1032
64X80 · Double door

1036
32X96

FIBERGLASS ENTRY DOORS

1037

72X80 · Double door
72X96 · Double door
also 1040

1065

32X80
36X80
also 1038, 1064

104

36X80

1041

36X80
36X96
also 1044

1056

32X80

1054

36X80

1069

36X80

1080

72X80
72X96
also 1085

107

36X80
60X80
also 202

FIBERGLASS ENTRY DOORS

1072

36X80
36X96
also 1073

1076

72X80
also 1077

1078

64X80

1079

36X80
36X96
also 1081

1091

36X96

GLASS OPTIONS

Every glazing option below is photographed from a door we have fitted.
Any pattern can be specified on any design in the ranges that follow.

Low-E
e.g. SBS1900

Water
e.g. SBS2500

Low-E + Flemish
e.g. SBS2900

Low-E + Clear
e.g. SBS3300

Low-E Sandblast
e.g. SBS3700

Low-E + Water Cubic
e.g. SBS4500

Water Cubic
e.g. SBS5400

Beveled Frosted
e.g. MAG36804LITE

ALSO AVAILABLE

Rain / Aquatex / Linen / Reed / Equal lite / Frosted / Beveled
Obscure and privacy ratings on request. All insulated units are dual glazed.
Tempered safety glass is standard in every door and sidelite we fit.

SIZES & CONFIGURATIONS

The sizes below are what we hold as standard. Openings outside this range are made to measure — we size every door to the opening we surveyed.

MATERIAL	IN THIS BOOK	STANDARD SIZES (WIDTH x HEIGHT, INCHES)
IRON *Single and double, in-swing or out-swing*	17 designs	36×80 36×96 60×108 72×80 72×96 72×108
MAHOGANY *3, 4, 5 and 6 lite; single and double*	6 designs	36×80 36×96 72×80 72×96
FIBERGLASS *Single and double, with or without sidelites*	32 designs	32×80 32×96 36×80 36×96 60×80 64×80 72×80 72×96

ROUGH OPENING
Allow 2 in over the door width and 2 in over the height for a standard prehung unit. We confirm on site.

HANDING
Stated as viewed from outside. Left hand or right hand, in-swing or out-swing — tell us or we will note it at survey.

SIDELITES & TRANSOMS
Available on most designs. Widths from 12 in; transoms rectangular or arched.

FRAMES
Supplied prehung in a new frame, or fitted to your existing frame where it is sound.

THRESHOLDS
Adjustable aluminum as standard. ADA-compliant low-rise thresholds on request.

INTERIOR DOORS

Panel, flush and glazed interior doors, hung and trimmed to the opening - including pocket, bifold and barn hardware.

Six panel

PANEL & FLUSH

- Two, four and six panel
- Flush hardboard and hollow core
- Solid core for sound control
- Shaker and craftsman profiles

French / glazed

GLAZED

- French doors, single and pair
- Half-lite and full-lite
- Frosted, reeded and clear glass
- Pantry and office doors

Bifold

SPACE SAVING

- Bifold and bypass
- Pocket door frames and kits
- Sliding barn door and track
- Louver and vented doors

Sliding barn

FITTING

- Hung to existing frames
- New frame and casing
- Rehang and easing
- Sizing to non-standard openings

INTERIOR DOORS - FULL RANGE

Beyond the four on the previous page, these are the interior types we supply and hang as standard work.

POCKET
Slides into a wall cavity. Frame kit supplied and set before boarding.

BYPASS
Two panels on a top track for closets and storage.

FLUSH SLAB
Plain face, hollow or solid core. Paint or veneer.

SOLID CORE
Dense core for sound control between rooms.

LOUVER
Vented for utility rooms, linen closets and plant.

HALF LITE
Glazed upper, paneled lower. Borrows light to a hallway.

FULL LITE

Glazed through, clear or reeded.
Pantry and office.

DUTCH

Split leaf, top opens alone. Kitchens
and utility.

PATIO, STORM & SCREEN

Glazed openings to a garden or deck, and the secondary doors that go in front of an entry door for weather, air and security.

SLIDING PATIO
Two panels, one fixed one sliding. Widest glass for the opening.

FRENCH PATIO
Hinged pair opening in or out, with divided lites.

MULTI-SLIDE
Three or four panels stacking to one side for a wide opening.

STORM DOOR
Fits over the entry door. Glass and screen interchange by season.

SECURITY SCREEN
Steel mesh in a reinforced frame, keyed lock.

RETRACTABLE SCREEN
Pleated mesh rolls into a slim cassette when not in use.

WINDOWS

Replacement and new-build windows, measured and fitted by the same crew that hangs the doors. Dual glazed with a Low-E coating as standard, and the old units taken away.

DOUBLE HUNG

CASEMENT

BAY

GLAZING	Dual glazed sealed unit; triple on request
COATING	Low-E as standard, argon fill on request
SPACER	Warm-edge spacer on the standard unit
FRAMES	Vinyl, wood, aluminum clad and fiberglass
COLORS	White, almond, painted; bronze anodized commercial
FITTING	Insert, full-frame or new-build with a nailing fin

> Every opening is measured on site, three ways, before anything is ordered. Tempered glass goes wherever the code calls for it, and we clear and take away the units we remove.

WINDOWS / THE RANGE

Twelve window types, all available dual glazed with a Low-E coating and in any of the frame materials overleaf.

DOUBLE HUNG

Two sashes, both tilt in for cleaning. The standard replacement window.

CASEMENT

Side hinged, cranks open. Best seal and the widest clear opening.

SLIDER

Sashes glide sideways. Good where a casement would foul a walkway.

PICTURE

Fixed, no opening sash. Maximum glass and the best thermal figure.

BAY

Three sections angled out to add floor area and light.

BOW

Four or five equal sections in a gentle curve. Wider sweep than a bay.

AWNING

Top hinged, opens outward. Can stay open in light rain.

HOPPER

Bottom hinged, opens inward. Basements and above-door openings.

GARDEN

A glazed box projecting out with a shelf. Kitchens and plant windows.

ARCHED TOP

A fixed arch over a sash. Gable ends and feature elevations.

STOREFRONT WALL

Aluminum framed glazed wall for retail and office frontage.

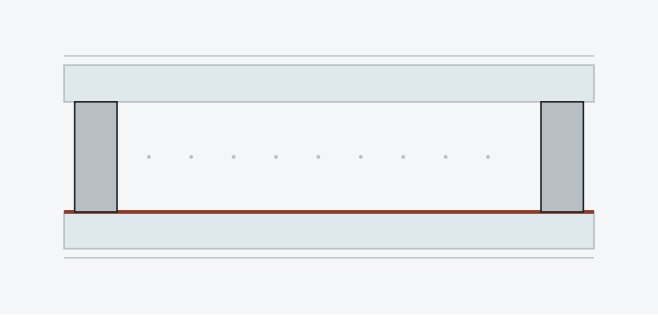
CURTAIN WALL

Structural glazing with slim mullions for larger elevations.

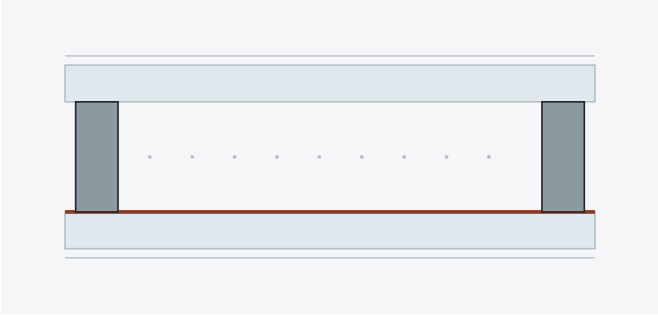
WINDOWS / GLASS

What is inside the sealed unit, what it does for the room, and the patterns available where privacy matters.

THE SEALED UNIT



ALUMINUM SPACER
The older edge. Conducts, so the perimeter of the glass runs colder and can show condensation.



WARM-EDGE SPACER
What we fit as standard. A low-conductivity spacer keeps the glass edge nearer room temperature.

The accent line on both diagrams is the Low-E coating; the dots are the cavity, air as standard or argon on request.

WHAT THE NUMBERS MEAN

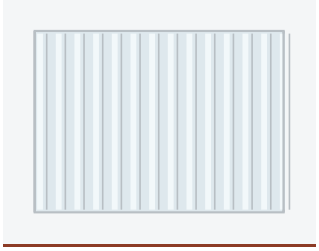
	MEASURES	TYPICAL DUAL LOW-E	BETTER IS
U-FACTOR	Heat lost through the window	0.25 to 0.32	Lower
SHGC	Solar heat let in	0.20 to 0.40	Lower in the south
VT	Daylight let in	0.45 to 0.60	Higher
AIR LEAKAGE	Air passing the seals	0.10 to 0.30	Lower

Ranges are what a dual glazed Low-E unit usually lands in. The figures that count are the ones on the NFRC label of the unit we quote, and we hand that over with the paperwork.

OBSCURE & PRIVACY PATTERNS

FROSTED
Even etch, full privacy, still passes daylight.

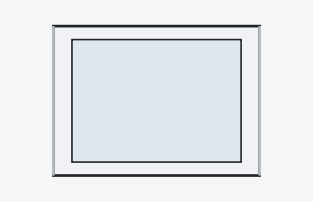
RAIN
Rippled face. Heavy distortion, common in bathrooms.



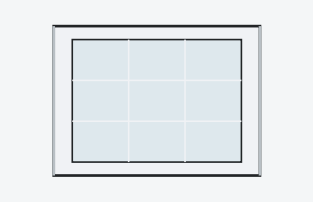
REEDED
Vertical flutes. Privacy with a strong vertical line.

SANDBLAST
A blasted panel inside a clear border.

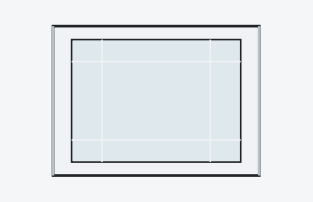
GRILLE PATTERNS



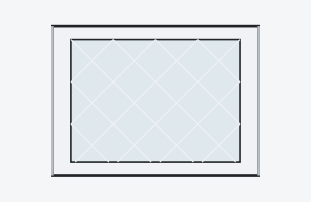
OPEN GLASS



COLONIAL



PRAIRIE



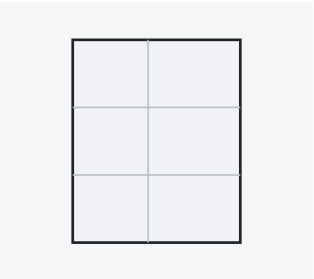
DIAMOND

Grilles sit between the panes, so there is nothing on the glass to dust.

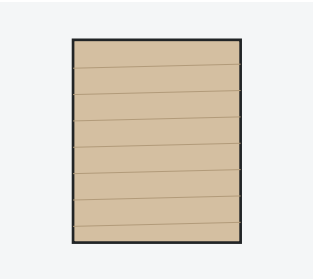
WINDOWS / FRAMES & FITTING

What the frame is made of, how the window goes into the opening, and what comes with it.

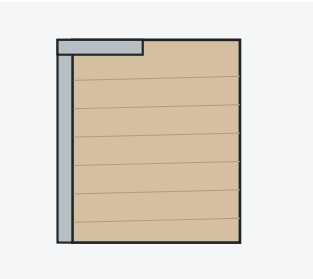
FRAME MATERIALS



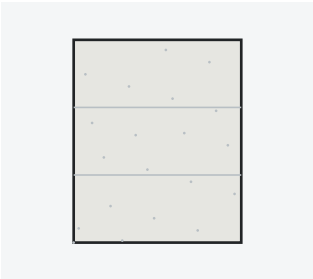
VINYL
Multi-chamber extrusion. Warm, low upkeep and the usual replacement frame.



WOOD
Wood inside, painted or stained. Best match in an older house.

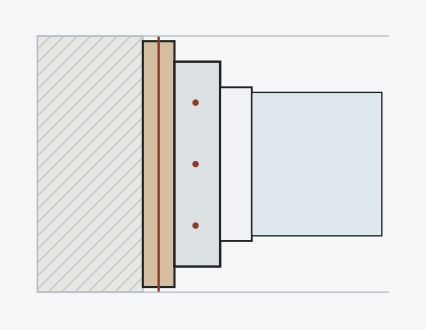


ALUMINUM CLAD
Wood inside, an aluminum skin outside. No painting on the weather face.

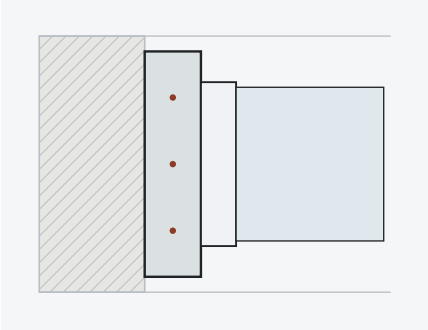


FIBREGLASS
Moves with the glass, so the seals stay tight. The most stable of the four.

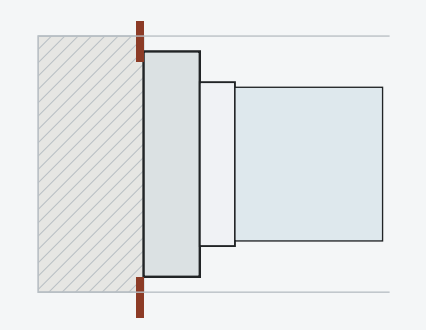
HOW IT GOES IN



INSERT REPLACEMENT
The old frame stays, a new window goes inside it. No disturbance to the trim or the siding. Costs a little glass area.



FULL-FRAME REPLACEMENT
Everything comes out back to the rough opening. More work, but the sill, the trim and any rot get dealt with.



NEW CONSTRUCTION
A nailing fin fixes to the sheathing before the siding goes on. Only where the wall is open.

WHAT COMES WITH IT

SASHES AND HARDWARE
- Tilt-in sashes so both faces clean from inside
- Cam locks and keepers, two across a wide sash
- Folding crank handles on casement and awning
- Limit stops where an upper floor calls for them

SCREENS AND EXTRAS
- Full or half insect screens in a matching frame
- Heavier mesh where pets are a factor
- Obscure or tempered glass to order
- Exterior trim, sill nosing and interior casing

MEASURE & AFTERCARE
Every opening measured three ways at survey, because a rough opening is rarely square.
Sealed unit failures, sash and balance replacement and hardware changes handled after fitting.

COMMERCIAL DOORS

Hollow metal doors and frames for offices, retail, schools, healthcare and industrial units. Supplied with the frame, the hardware and the label, hung by our own crew and left working.

HOLLOW METAL

FIRE RATED

DOUBLE EGRESS

LEAF THICKNESS	1-3/4 in standard; 1-3/8 in where specified
WIDTHS	2 ft 0 in to 4 ft 0 in single; pairs to 8 ft 0 in overall
HEIGHTS	6 ft 8 in, 7 ft 0 in, 8 ft 0 in and made to measure
FACE SHEETS	20, 18 and 16 gauge, galvannealed available
FRAMES	16 and 14 gauge, welded or knock-down
FIRE LABELS	20, 45, 60 and 90 minute openings

> Rated openings are hung to the label and checked before we leave. Frames, leaves and hardware are ordered as one set, so nothing on site turns out to be a mismatch.

COMMERCIAL DOORS / THE RANGE

Twelve leaf configurations, all on the same hollow metal frame family and all available with a fire label.

FLUSH

Plain faces, no cut-outs. The default for offices, stores and back-of-house.

NARROW VISION LITE

A tall narrow lite on the lock side. Staff see through before pushing.

HALF GLASS

A wide lite across the upper half. Reception, corridors, anywhere sightlines matter.

FULL GLASS

Glazed to within a stile of the edge, in a steel frame. Storefront look, steel duty.

EMBOSSED PANEL

Stamped panel faces on a steel leaf. Reads residential, wears commercial.

DUTCH

Split leaf with a shelf. Stores, dispensaries and service hatches.

FIRE RATED

Carries its label on the hinge edge, hung with rated frame and hardware.

DOUBLE EGRESS PAIR

Both leaves swing clear of the corridor. Hospitals, schools, long circulation.

PAIR WITH ASTRAGAL

Two leaves closing on an overlapping astragal. Wide openings and deliveries.

DOOR WITH SIDELITE

Leaf and glazed sidelite in one welded frame. Widens a narrow entry.

TRANSOM OVER

A glazed or paneled head above the leaf, framed in the same profile.

STAINLESS WASH-DOWN

Stainless faces and frame for kitchens, plant rooms and wash-down areas.

COMMERCIAL DOORS / SPECIALIST

Openings that carry a rating, a code requirement or heavy traffic. Supplied with matched frames and hardware.

INSULATED EXTERIOR

Foam-cored steel for perimeter doors, with a thermally broken frame option.

SOUND RATED

STC-rated assembly with an automatic drop seal. Studios, plant, meeting rooms.

LOUVERED

Fixed or adjustable blade louver for plant, switch and refuse rooms.

COOLER & FREEZER

Insulated leaf, heavy latch, heated frame on the freezer sets.

LEAD LINED

Lead sheet shielding for imaging suites, with a leaded vision panel.

BULLET RESISTANT

Rated core and glazing for cash handling and secure entries.

SECURITY GRILLE

Rolling link grille for mall units and service counters.

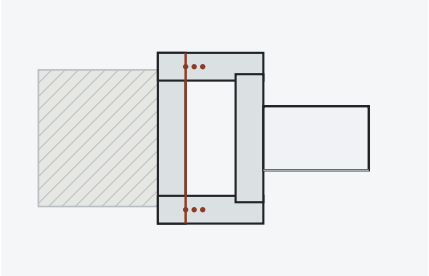
IMPACT TRAFFIC

Double-acting leaves with port windows for back-of-house routes.

COMMERCIAL DOORS / TECHNICAL

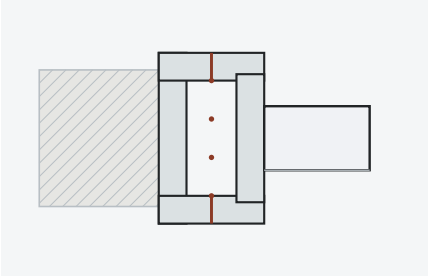
How the frame is made, how it is fixed, what is inside the leaf, and the gauges we work to.

FRAME TYPES



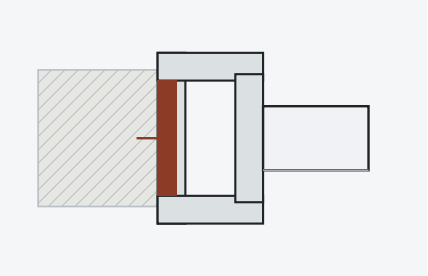
WELDED

Corners welded and ground before finishing. Set before the wall closes. The stiffer frame, and what we fit on rated openings.



KNOCK-DOWN

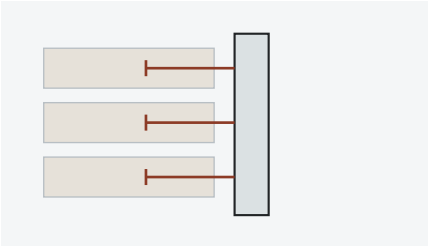
Three pieces that interlock on site. Goes into a finished opening without disturbing the wall around it.



SLIP-ON

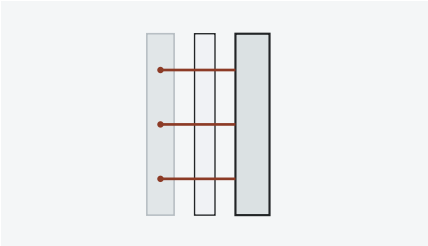
Wraps a finished stud partition from one side. The fastest fit in an occupied building.

FRAME ANCHORS



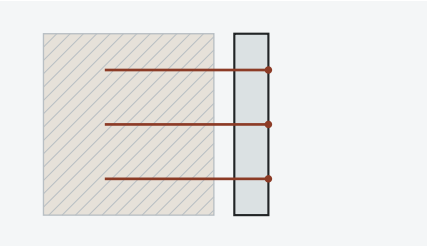
MASONRY

Wire tee anchors built into the block courses as the wall goes up.



STEEL STUD

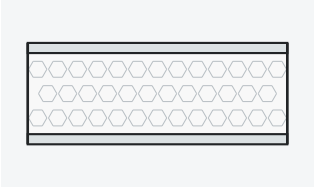
Anchors screwed through the frame return into the stud behind the board.



EXISTING OPENING

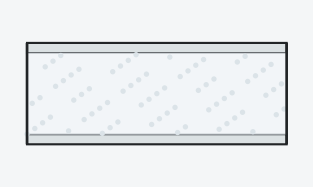
Through-bolted or compression fixed into the opening we find on site.

CORE CONSTRUCTION



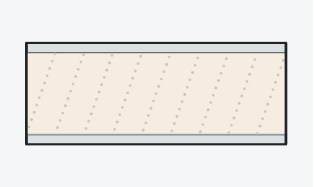
HONEYCOMB

Kraft honeycomb bonded to both faces. The standard interior core.



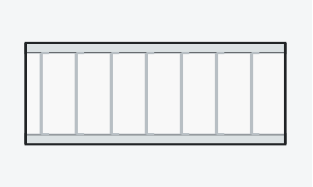
POLYSTYRENE

Expanded bead board. Adds insulation on perimeter doors.



POLYURETHANE

Poured in place. The highest insulation value of the four.



STEEL STIFFENED

Vertical steel ribs, spaces insulated. Heavy traffic and impact.

STEEL GAUGES

	LIGHT DUTY	STANDARD	HEAVY DUTY
FACE SHEETS	20 gauge	18 gauge	16 gauge
FRAMES	18 gauge	16 gauge	14 gauge
TYPICAL USE	Interior, low traffic	Most openings	Industrial, impact

Leaf thickness is 1-3/4 in as standard. Galvannealed where the opening sees weather or wash-down.
We confirm the gauge against the opening and the code that applies before anything is ordered.

RETAIL FRONTAGE / 08

STOREFRONT & ALUMINUM

Aluminum entrances and glazed storefronts for stores, offices and restaurants, with the closers, pivots and locks that keep them working through a full day of public traffic.

STOREFRONT BAY

ENTRANCE PAIR

CONCEALED CLOSER

LEAF THICKNESS	1-3/4 in aluminum entrance stile and rail
STILE WIDTHS	Narrow, medium and wide; pairs to 6 ft 0 in
FRAMING	1-3/4 in and 2 in face, 4-1/2 in depth typical
GLASS	1/4 in tempered, laminated, or a 1 in sealed unit
FINISHES	Clear and dark bronze anodized, black, custom paint
OPERATION	Offset pivot, butt hung, closer or powered operator

> Broken frontage is boarded the same day and glazed as soon as the unit is cut. We hold closer and pivot stock for the systems we fit, so most callouts finish on the first visit.

STOREFRONT / THE RANGE

Entrances and frontage, all on the same aluminum framing family and all available in any of the finishes overleaf.

NARROW STILE

The slimmest sightline, most glass. Shops and offices with light traffic.

MEDIUM STILE

A wider stile for a mortise lock. The usual choice for a busy entrance.

WIDE STILE

Deep stiles and bottom rail. Takes a panic device and heavy daily use.

ENTRANCE PAIR

Two leaves under a glazed transom, in one framed opening.

DOOR WITH SIDELITES

A leaf flanked by fixed glazing, so the opening reads full width.

STOREFRONT BAY

Framed storefront glazing with the entrance built into the run.

VESTIBULE

Two sets in line with a lobby between, to hold the heat in.

AUTOMATIC SLIDING

Powered sliding leaves on a header track. Hands-free, high traffic.

AUTOMATIC SWING

A powered operator on a standard swing leaf, with actuators.

PANIC EXIT PAIR

Glazed pair with touch bars, for a required means of egress.

ALL-GLASS ENTRANCE

Tempered glass on patch fittings, top and bottom rails only.

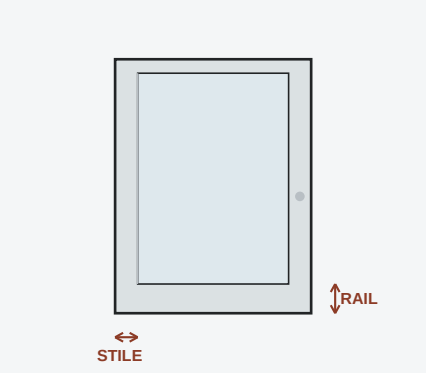
FLUSH ALUMINUM

A solid aluminum leaf in the same frame, for service and back doors.

STOREFRONT / FRAMING & GLASS

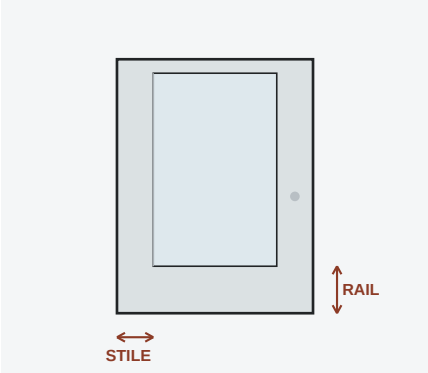
Stile widths, where the glass sits in the frame, and the make-ups we glaze into it.

STILE WIDTHS



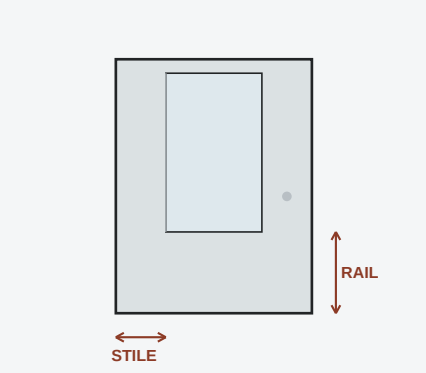
NARROW STILE

About 2-1/8 in stile and bottom rail. Maximum glass, minimum frame.



MEDIUM STILE

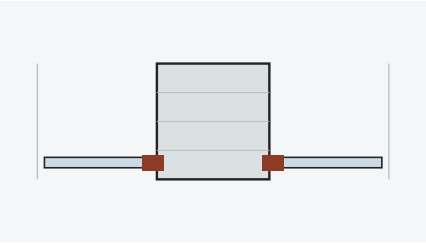
About 3-1/2 in. Room for a mortise lock and a deadbolt.



WIDE STILE

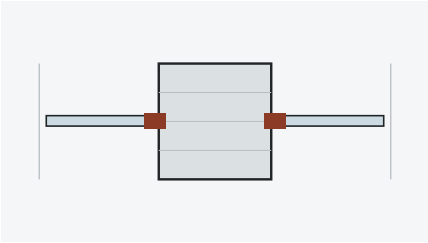
About 5 in stile on a 10 in bottom rail. Takes a panic device.

GLAZING POSITION



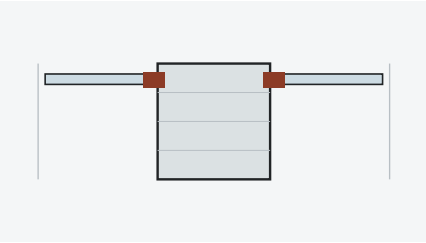
FRONT GLAZED

Glass and stop go in from outside. Fastest to reglaze on a callout.



CENTER GLAZED

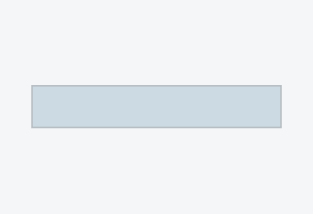
Glass sits mid-depth in the pocket. The stiffest of the three.



INSIDE GLAZED

Stops are on the inside. Nothing to remove from the street.

GLASS MAKE-UP

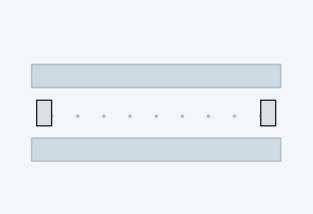


TEMPERED

A single toughened pane. Breaks into blunt pieces.

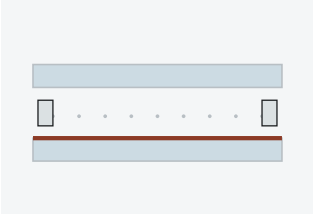
LAMINATED

Two panes bonded to an interlayer. Holds together when hit.



SEALED UNIT

Two panes with a sealed cavity between them.



LOW-E UNIT

A sealed unit with a coating that turns back radiant heat.

FRAMING SIZES

	FACE WIDTH	DEPTH	TYPICAL USE
STOREFRONT FRAMING	1-3/4 in	4-1/2 in	Most retail runs and returns
HEAVY FRAMING	2 in	4-1/2 in	Tall bays and wide spans
ENTRANCE FRAME	1-3/4 in	4-1/2 in	Around the door itself

Sizes above are the common ones. We measure the opening and confirm the system before ordering.

STOREFRONT / OPERATION & HARDWARE

What hangs the leaf, what closes it, what locks it, and the finishes it all comes in.

HANGING & CLOSING

OFFSET PIVOT

Top and bottom pivots carry the leaf. The standard aluminum hanging.

BUTT HUNG

Hinges on the jamb where a pivot will not suit the frame.

CONCEALED CLOSER

Closer hidden in the head, adjusted through the transom bar.

SURFACE CLOSER

Arm and body on the face. Easiest to service and to replace.

LOCKING & EGRESS

HOOK BOLT

A hooking deadbolt for a narrow stile, where a normal bolt will not fit.

MORTISE LOCK

Lever and cylinder in the stile. Keyed to the rest of the site.

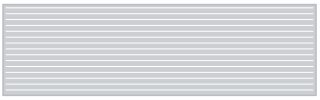
EXIT DEVICE

Touch bar that releases under pressure, for a required exit.

POWERED ACTUATOR

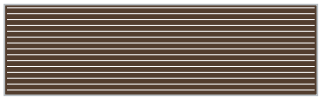
Wall or jamb switch that drives the operator on the leaf.

FINISHES



CLEAR ANODIZED

The default. Silver, hard wearing.



DARK BRONZE

Anodized, the common retail choice.

BLACK

Anodized or painted to match a storefront.

CUSTOM PAINT

Powder coat to a brand color on request.

WHAT WE CHECK ON A SERVICE VISIT

CLOSER, PIVOT AND LEAF

- Closing speed, latch speed and backcheck set to the leaf
- Pivot wear, floor plate fixing and top pivot alignment
- Sweep and threshold seal making contact along its length
- Leaf square in the frame and closing without drag

GLASS, FRAME AND LOCKING

- Glass checked for edge chips and stress cracks
- Stops, gaskets and wet seals sound and continuous
- Frame joints and anchors still tight in the opening
- Lock alignment, strike engagement and operator sensors

REPAIR & SERVICE

Board-up the same day, glass cut and glazed as soon as the unit arrives, pivots and closers from stock. Threshold and sweep renewal, frame straightening, lock and cylinder changes, operator servicing.

AUTOMATIC DOORS

Powered entrances for buildings the public walks into: shops, clinics, care homes, offices and plant. Sold on the operator and its controls as much as on the leaf, and signed off against the standards below.

AUTOMATIC SLIDING

AUTOMATIC SWING

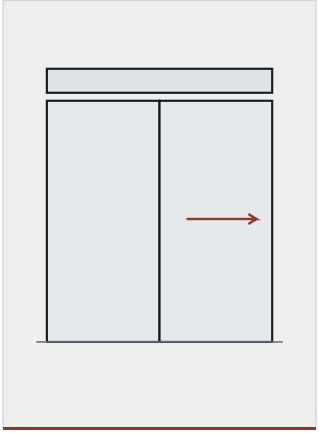
VESTIBULE

OPERATOR TYPES	Full power sliding, full power swing, low energy swing, revolving
CONFIGURATIONS	Single slide, bi-part, telescopic, ICU breakout, folding, balanced
ACTIVATION	Motion and presence sensors, push plates, mats, card readers, keypads
SAFETY	Presence sensors in the door path, guide rails, breakout leaves, signage
STANDARDS	ANSI/BHMA A156.10, A156.19 and A156.27, and the ADA
SERVICE	Commissioning, a daily check the site can run, planned maintenance

> An automatic entrance is a machine on a building, and it is inspected as one.
> We commission it, hand over the daily check, and carry the operator on service.

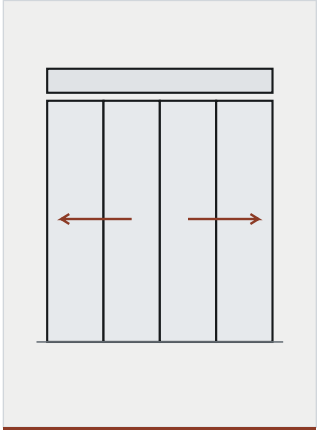
AUTOMATIC DOORS / THE RANGE

Twelve configurations. Which one fits is decided by the opening, the traffic through it, and the way out in a fire.



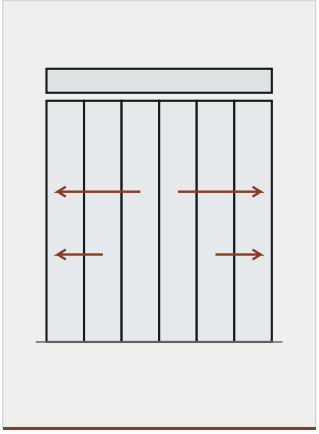
SINGLE SLIDE

One moving leaf against a fixed sidelite. The narrowest opening.



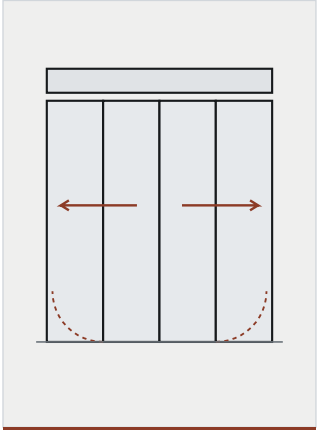
BI-PARTING SLIDE

Two leaves part from the center. The usual retail entrance.



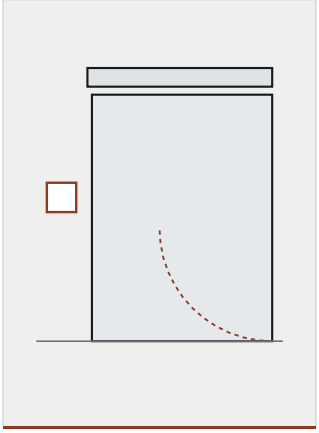
TELESCOPIC SLIDE

Two leaves a side, stacked. Wide opening from a narrow pocket.



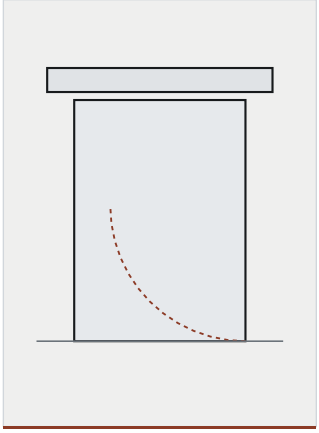
ICU / HOSPITAL

Bi-part with breakout leaves, for bed and trolley traffic.



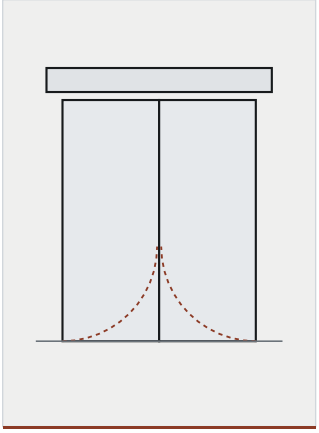
LOW ENERGY SWING

Opens slowly, and only after a knowing act: a plate or a switch.



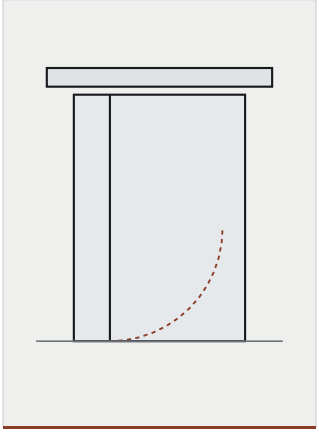
FULL POWER SWING

Sensor-driven swing leaf, with guide rails and presence sensors.



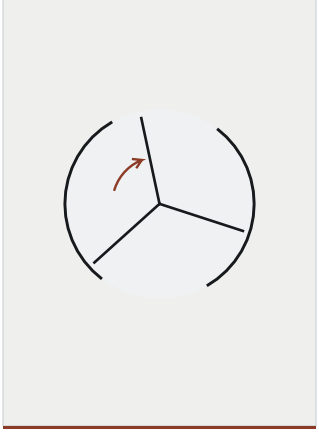
SWING PAIR

Two powered leaves in one frame, sequenced to close in order.



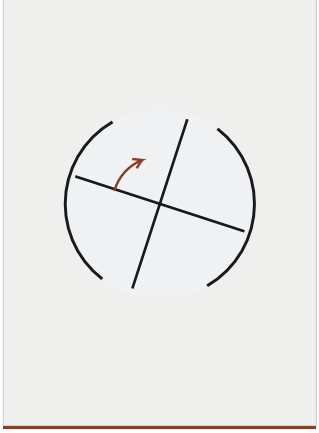
BALANCED

Offset pivot, so wind and stack pressure work with the leaf.



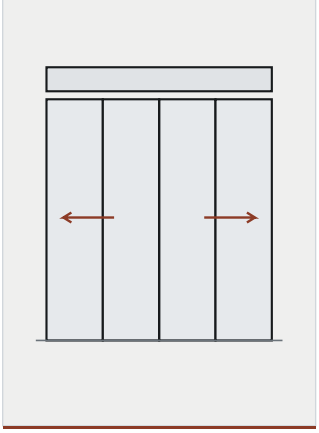
REVOLVING - 3 WING

Always-closed entrance. Holds conditioned air in the building.



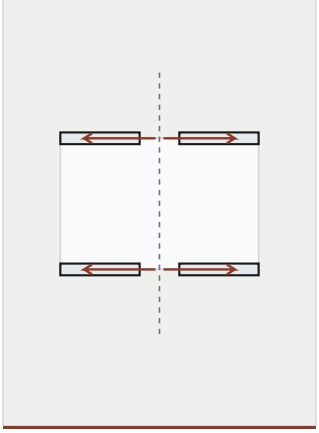
REVOLVING - 4 WING

Four wings for heavier flow, with a lockable night position.



AUTOMATIC FOLDING

Leaves fold back in pairs where there is no room to slide.



VESTIBULE PAIR

Two automatic sets in line with a lobby between them.

AUTOMATIC DOORS / THE RANGE IN USE

The six arrangements we fit most often, photographed as supplied.

SLIDING, SWING AND REVOLVING

SINGLE SLIDE

One moving leaf against a fixed sidelite. The narrowest opening and the shallowest header.

BI-PARTING SLIDE

Two leaves part from the center. The usual retail entrance and the fastest clear opening.

TELESCOPIC SLIDE

Two leaves a side, stacked as they open. A wide clear opening out of a narrow pocket.

LOW ENERGY SWING

Opens slowly and only on a knowing act. Push plate on a bollard, or a wave switch or reader.

FULL POWER SWING

Sensor driven leaves with guide rails. Opens on approach, so it falls under A156.10.

REVOLVING - 4 WING

Always closed entrance. Holds conditioned air in and cuts the draft on a busy door.

THE DIAGRAMS OVERLEAF STILL MATTER

A photograph shows what a door looks like. It cannot show which way the leaves travel, how far they stack, or where the breakout swings. That is what the movement diagrams on the previous page are for.

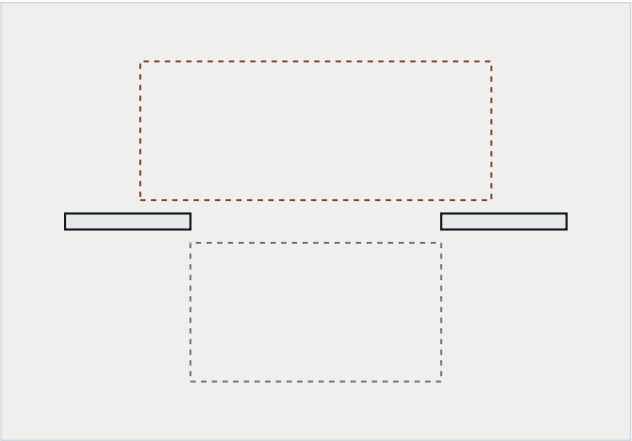
AUTOMATIC DOORS / OPERATORS & ACTIVATION

The operator decides how the door behaves. The controls decide when.

THE FOUR OPERATOR FAMILIES

TYPE	WHAT IT DOES	WHERE IT GOES	STANDARD
FULL POWER SLIDING	Drives the leaves along a header track	Retail, clinics, lobbies	A156.10
FULL POWER SWING	Opens a hinged leaf under sensor control	Where there is no room to slide	A156.10
LOW ENERGY SWING	Opens slowly, only after a knowing act	Accessible doors inside a building	A156.19
REVOLVING	Always closed; turns on demand	High-rise and hotel entrances	A156.27

WHAT WATCHES THE DOORWAY



PLAN OF ONE OPENING
Approach side dashed in red, door path in gray.

ACTIVATION SENSOR
Sees someone approach and calls the door open. Motion, or presence held on the approach side.

SAFETY SENSOR
Watches the path the leaf sweeps and holds it open while anyone is still in it.

PUSH PLATE
The knowing act a low energy operator waits for. Hard-wired or radio, at an accessible height.

GUIDE RAILS
Keep people out of the swing path on a full power swing door, and carry the safety sensor.

BREAKOUT
Lets the leaves swing out of the way, so the opening can be a means of egress.

> Activation and safety are separate jobs and separate devices.
> A door that opens reliably is not the same as a door that is safe to stand in.

WHAT COMMISSIONING SETS

Speed and force	Opening and closing speed, and the force the leaf can apply.
Hold open	How long the door stays open after the last person clears it.
Sensor fields	The approach field and the door path field, walked and adjusted.
Breakout	The force to push the leaves clear, where the opening is an exit.
Signage	The decals the standard calls for, on the face the user sees.

AUTOMATIC DOORS / SAFETY & COMPLIANCE

Which standard applies follows from the operator, not from the leaf.

THE STANDARDS THAT APPLY

ANSI/BHMA A156.10	Power operated pedestrian doors: sliding, swinging and folding, under full power. Covers activation, safety sensing and signage.
ANSI/BHMA A156.19	Power assist and low energy power operated doors. Swing operators only, and activation requires a knowing act.
ANSI/BHMA A156.27	Power and manual operated revolving pedestrian doors. Covers speed, sensing and the collapse of the wings.
ADA	Where a building uses power assist or low energy swing doors, the hardware is required to comply with A156.19.

THE DAILY CHECK WE HAND OVER

- ☐ The activating sensor opens the door as someone approaches, every time.
- ☐ The safety sensor holds the door open while anyone is still in its path.
- ☐ The door opens and closes without striking anything.
- ☐ Guide rails, threshold and glass are sound and fixed.
- ☐ The safety signage is on the door and readable.
- ☐ Nothing is stored or parked in the swing or slide path.

WHAT WE NEED TO QUOTE

The opening	Structural width and height, and the depth available above for a header.
The traffic	Roughly how many people an hour, and whether trolleys or beds pass.
The way out	Whether the opening is a required means of egress, which decides breakout.
The controls	Whether the door has to answer an access system, a fire alarm, or both.
The site	Power at the header, and what is either side of the door when it opens.

> Prices are not shown in this catalog. An automatic entrance is quoted after a site survey, because the header, the power and the egress duty decide the price.

AUTOMATIC DOORS / POWER CLASS

Which standard an opening falls under is decided by the operator, not by the leaf.

THE TWO CLASSES

FULL POWER

ANSI/BHMA A156.10. Sliding, swinging and folding doors driven at full speed. The door opens on approach, so the standard requires activation sensors, presence sensors that hold the door open, guide rails on swing doors and signage.

LOW ENERGY

ANSI/BHMA A156.19. Power assist and low energy operators, swing only. Activation requires a knowing act - a push plate, a wave switch or a card reader. Slower opening and closing, so presence sensors are not mandated.

THE LINE BETWEEN THEM

If an opening needs higher speed, shorter hold-open, or an activation sensor that opens the door on approach, it is a full power opening under A156.10 - a low energy operator cannot be used to meet it. We size the operator to the standard the opening actually needs.

WHAT THE STANDARDS SET

REQUIREMENT	A156.10 FULL POWER	A156.19 LOW ENERGY
Activation	Sensor on approach	Knowing act only
Presence sensing	Required in the path	Not mandated
Cycle test	Full duty	300,000 cycles
Opening time	By leaf width and weight	By leaf width and weight, longer
Guide rails	Required on swing	Not required
Typical use	Retail, hospital, airport	Offices, restrooms, care homes

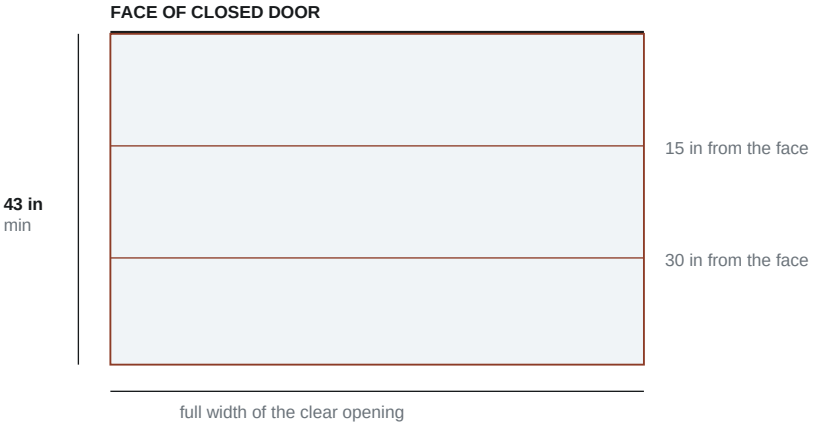
CYCLE TESTING

A low energy operator is cycle tested to 300,000 cycles under A156.19. The standard also sets a minimum opening time for each combination of leaf width and leaf weight, so a heavy wide leaf is required to open more slowly than a light narrow one.

AUTOMATIC DOORS / SENSORS & DETECTION

What opens the door, what keeps it open, and the floor area each one has to cover.

THE DETECTION ZONE ON A SLIDING DOOR



WHAT A156.10 REQUIRES The activating detection area must be at least as wide as the clear opening, measured at both 15 in and 30 in perpendicular from the face of the closed door. Measured at the center of the clear opening, the zone must extend a minimum of 43 in out from the door.

SENSOR TYPES WE FIT

MOTION	Microwave. Sees movement toward the door and starts the open cycle.
PRESENCE	Active infrared. Holds the door open while anything stands in the path.
COMBINED	One head carrying both, mounted on the header. The usual choice on new work.
SAFETY BEAM	Photo eyes across the opening as a second line for the closing edge.

AUTOMATIC DOORS / EGRESS & LIFE SAFETY

What has to happen at the door when the power fails, the alarm sounds, or somebody needs out.

WHEN THE DOOR IS ON A MEANS OF EGRESS

SENSOR RELEASE
A sensor on the egress side must detect an occupant approaching within 5 ft of the door and unlock it. The same unlock must happen on activation of the building fire alarm or sprinkler system, and on loss of power to the sensor itself.

LISTING
The access control system is required to be listed to ANSI/UL 294.

MANUAL RELEASE
A manual release labeled PUSH TO EXIT, mounted 40 to 48 in above the floor and within 5 ft of the door. Operating it must keep the door unlocked for at least 30 seconds.

BREAKOUT
Sliding and folding leaves on an egress path swing out under push to give the full clear opening if the operator fails. We test breakout force at handover.

DELAYED EGRESS

SIGNAGE
A durable sign on the leaf beside the release, readable in the direction of egress:

PUSH UNTIL ALARM SOUNDS, DOOR CAN BE OPENED IN 15 SECONDS
for a leaf that swings in the direction of egress travel; PULL UNTIL ALARM SOUNDS on a leaf that swings against it. The wording is set by code, not by preference.

POWER FAILURE
Fail-safe on egress. We agree the fail state in writing before the operator is ordered, because it decides the lock, the wiring and the fire alarm interface.

AUTOMATIC DOORS / SAFETY CHECK & SERVICE

The check the building owner runs daily, and the inspection we run every year.

THE DAILY SAFETY CHECK

WHO

The owner or a person the owner appoints. It takes a couple of minutes and needs no tools. Keep the result in a log; an inspector or an insurer will ask for it.

- Walk at the door at a normal pace. It should start opening before you reach it.
- Stop in the opening. The door must hold open and must not start to close.
- Check the door opens and closes smoothly, with no grinding and no hesitation.
- Check the guide rails, the signage and the glass are all in place and undamaged.
- Check nothing on the floor or in the ceiling blocks a sensor head.
- On a swing door, check it does not strike anything through its full arc.

THE ANNUAL INSPECTION

WHAT WE CHECK

Sensor pattern against the standard, hold-open and closing times, opening and closing force, breakout force where the door is on an egress path, the fire alarm interface, the emergency release, the drive belt or chain, the carriers, the guide rails and the floor track.

WHAT WE LEAVE

A dated report listing every measured value against the figure the standard requires, and a note of anything that needs work before the next visit.

IF THE DOOR IS NOT RIGHT, TAKE IT OUT OF SERVICE

A door that does not hold open on a person standing in it, or that closes on somebody, must be shut down and left manual until it is repaired. Call us and we will attend.

DOOR HARDWARE

Locks, exit devices, hinges, closers and the trim that goes with them, specified to the door, the traffic through it and the code that applies to the opening. Supplied, fitted and keyed to your system.

MORTISE LOCKSET

EXIT DEVICE

SURFACE CLOSER

GRADES	ANSI/BHMA Grade 1, 2 and 3 to the duty
BACKSET	2-3/4 in standard commercial; 2-3/8 in residential
BORE	2-1/8 in cross bore, 1 in edge bore, cylindrical
LOCK HEIGHT	38 in to 44 in to the center line, per the opening
FINISHES	Satin stainless, chrome, bronze, black and brass
KEYING	Keyed alike, keyed different or master keyed

> On a rated opening every piece has to carry a label and match the rest of the set. We order the leaf, the frame and the hardware together so nothing on site turns out to be the wrong grade.

DOOR HARDWARE / LOCKING & ACCESS

What holds the door shut, what lets people out, and what decides who gets in.

CYLINDRICAL LOCKSET

Bored through the leaf. The quickest to fit and the easiest to swap.

MORTISE LOCKSET

A lock case pocketed into the edge. Heavier, longer lived, more functions.

DEADBOLT

A separate throw with no spring. Fitted above the lockset.

INTERCONNECTED

Lever and deadbolt in one unit, both released by the inside lever.

RIM EXIT DEVICE

Push bar with the latch on the face of the leaf. The usual single-door exit.

VERTICAL ROD DEVICE

Rods latch top and bottom. Used on pairs and where no mullion is wanted.

FLUSH BOLT

Holds the inactive leaf of a pair shut, top and bottom, flush in the edge.

COORDINATOR

Holds the active leaf back so the pair closes in the right order.

ELECTRIC STRIKE

Releases the latch on a signal, so the door stays locked and still opens.

KEYPAD LOCK

Code entry, no key to lose. Codes changed without re-keying anything.

CARD READER

Credential at the wall, release at the strike. Logs who went through.

KEYING

Keyed alike, keyed different or master keyed to one system across a site.

DOOR HARDWARE / HANGING, CLOSING & PROTECTION

What carries the leaf, what brings it back, and what keeps it from being wrecked by daily traffic.

BUTT HINGE

Three or four per leaf, ball bearing on anything that sees traffic.

CONTINUOUS HINGE

A geared hinge the full height. Spreads the load, no sag, long life.

SPRING HINGE

Self-closing without a closer. Adjustable tension in the barrel.

SURFACE CLOSER

Arm and body on the face. The easiest to adjust and to replace.

CONCEALED CLOSER

Hidden in the head or the leaf. Nothing on show, more work to service.

FLOOR CLOSER

Cement case in the floor. Carries heavy and all-glass leaves.

AUTOMATIC OPERATOR

Powered opening on a switch or a sensor, with a low-energy setting.

KICK PLATE

Sheet across the bottom rail where trolleys and feet land.

EDGE GUARD

A channel over the lock edge, for doors that get pushed open hard.

ASTRAGAL

Closes the gap down the meeting edge of a pair. Needed on rated pairs.

THRESHOLD

Saddle across the opening. Seals the gap and takes the wear.

DOOR HARDWARE / GRADES, PREPS & FINISHES

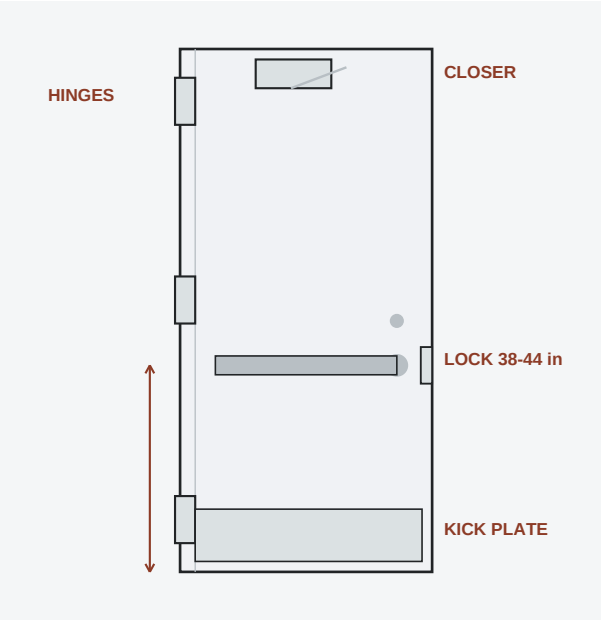
How hardware is graded, where it lands on the leaf, and the finishes it comes in.

ANSI / BHMA GRADES

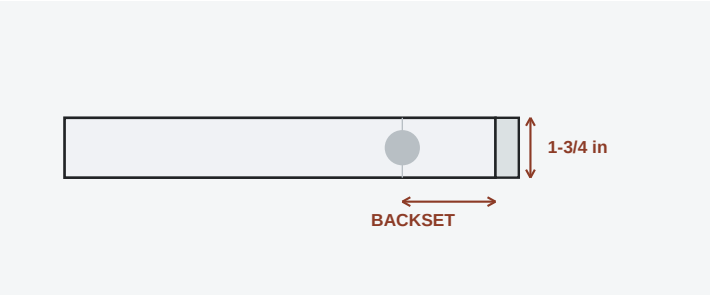
	DUTY	CYCLES TESTED	WHERE IT GOES
GRADE 1	Heaviest	1,000,000	Schools, healthcare, main entrances
GRADE 2	Medium	800,000	Offices, retail, light commercial
GRADE 3	Light	400,000	Residential and low traffic openings

Cycle figures above are the lockset standard. Closers, hinges and exit devices are each graded against their own test, so a Grade 1 set means every piece in it has passed the Grade 1 test for its own type.

WHERE IT LANDS ON THE LEAF



PREP HEIGHTS



BACKSET & THICKNESS

Backset is the center of the lock to the edge of the leaf: 2-3/4 in on commercial, 2-3/8 in on most residential. We confirm it against the existing prep before ordering, because a mismatch means a new leaf, not a new lock.

THE PREPS WE ASK FOR

161	Cylindrical, 2-1/8 in cross bore
86	Mortise pocket in the leaf edge
ANSI STRIKE	4-7/8 in face in the frame
HINGE	4-1/2 in standard, 5 in on heavy leaves

FINISHES

630	626	625	613	622	605
Satin stainless	Satin chrome	Bright chrome	Oil-rubbed bronze	Flat black	Bright brass

Numbers are the BHMA finish codes, so a set specified on one door matches anything ordered later.

WHAT WE NEED TO KNOW

Hand and swing of the door, the leaf thickness, the existing backset and bore, and the frame type.
Whether the opening is rated, whether it is a required exit, and who needs to get through it.

HARDWARE PREPARATION / STANDARDS

The prep is not ours to invent. Each cut-out is drawn by a published standard.

WHAT GOVERNS EACH PREP

A156.115	Hardware preparation in steel doors and steel frames. The reference for every hollow metal opening in this catalog: hinge, lock, strike, closer and electric preparations.
A156.115-W	Hardware preparation in wood doors with wood or steel frames. Same cut-outs, different tolerances, because wood moves and steel does not.
A115 SERIES	The prep drawings themselves, one document per device family: cylindrical locks, mortise locks and exit devices. A115.1 is the mortise prep, A115.2 the bored prep.
A156.1	Butts and hinges. Sets the grades, the sizes and the load the hinge has to carry.

THE MANUFACTURER TEMPLATE STILL WINS
Where a device maker publishes its own template, that template governs and we work to it. The figures on the following pages are the industry standard positions we use when no template has been issued, and what we check a delivered door against.

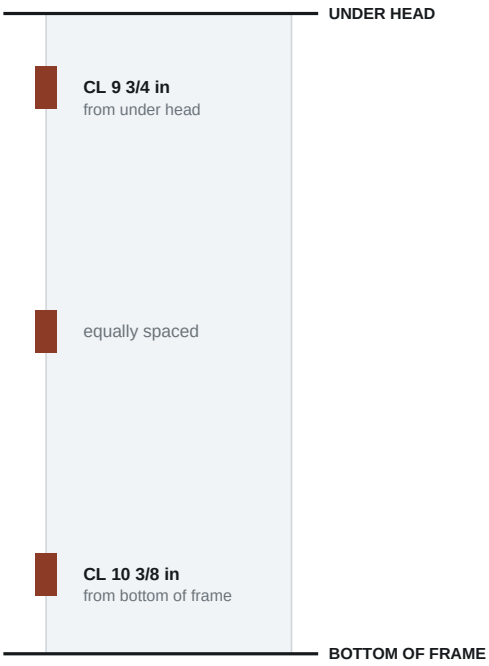
HOW WE ORDER A PREPPED DOOR

WHAT WE SEND	Handing, door and frame material, wall condition, the hardware schedule by device number, and the prep standard each device is to be cut to. Anything electric is called out with the raceway and the transfer location.
WHAT WE CHECK ON ARRIVAL	Every cut-out against the schedule before the door leaves the truck. A door prepped to the wrong standard is a door that goes back.

HARDWARE PREPARATION / HINGES

Where the hinges land, how many the leaf needs, and the backset on each side.

STANDARD HINGE POSITIONS



TOP OF DOOR

Where the figure is taken from the top of the door rather than from under the head, the top hinge centerline is 9 5/8 in.

HOW MANY HINGES

DOOR HEIGHT	HINGES	NOTE
3 ft 0 in to 4 ft 11 15/16 in	One pair	Two hinges
5 ft 0 in to 7 ft 6 in	One and a half pairs	Three hinges, center one equally spaced
7 ft 6 1/16 in to 10 ft 0 in	Two pairs	Four hinges, equally distributed

BACKSET

Hinge backset is 5/16 in on the frame and 1/4 in on the door. Sizes on this catalog run 4 1/2 in and 5 in full mortise butts unless the schedule says otherwise.

HARDWARE PREPARATION / LOCKS & STRIKES

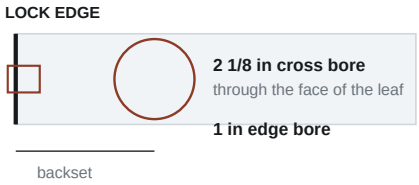
Bore sizes, backsets and the centerline height each lock family is cut to.

LOCK CENTERLINE HEIGHT

DEVICE	CENTERLINE	MEASURED FROM
Strike, ASA type	40 5/16 in	Bottom of frame
ANSI A115.2 bored (161 / 61L)	39 9/16 in	Bottom of door
ANSI A115.1 mortise (86 type)	39 3/16 in	Bottom of door
Doors under 5 ft 0 in	Centered	In the door height, not the frame

MORTISE SITS LOWER A mortise lock is positioned 3/8 in lower than a bored lock in the same leaf. Worth knowing before a door is cut for one family and hung with the other.

BORED LOCK PREPARATION



BACKSETS 2 3/4 in is the commercial backset and what we specify by default. 2 3/8 in is the residential figure and is available on most bored families.

STRIKE The ANSI strike is 4 7/8 in by 1 1/4 in with a square or radius corner to match the frame. A deadlatch has to land on the strike lip, not on the frame face, or the latch will not deadlock.

HARDWARE PREPARATION / EXIT DEVICES & CLOSERS

The two devices that most often arrive prepped wrong, and what we check.

EXIT DEVICES

PREP STANDARD
Cut to the A115 series prep for the device family, or to the device maker template where one is issued. Rim, surface vertical rod, concealed vertical rod and mortise exit all have different cut-outs and are not interchangeable once the leaf is cut.

WHAT WE CONFIRM
Device family and handing, the rail length against the leaf width, whether the leaf is fire rated, and whether the device is dogged. A fire rated leaf cannot carry a dogged device.

ON A PAIR
Which leaf is active, whether an astragal is fitted, and how the inactive leaf is held - flush bolts, an auto flush bolt or a second device. This decides the prep on both leaves.

CLOSERS

SURFACE
Reinforced on the leaf or the frame face. The most common prep and the easiest to change later, which is why we specify it unless the opening asks for something else.

CONCEALED
In the head of the frame or in the top rail of the leaf. Nothing on show, but the reinforcement and the pocket must be cut at manufacture - it cannot be added on site.

FLOOR
A cement case set into the floor. Carries heavy and all-glass leaves and needs the case set before the floor finish goes down.

REINFORCEMENT IS ORDERED, NOT ADDED
Closer and device reinforcement is welded into the leaf at manufacture. If the hardware schedule changes after the doors are ordered, tell us before they ship - after that the choice is a surface mounted device or a new leaf.

HARDWARE PREPARATION / ELECTRIC & ACCESS

Everything that needs a wire has to be decided before the leaf is cut.

WHAT NEEDS A PREP

ELECTRIC STRIKE A pocket in the frame jamb plus a raceway to the head. The strike model decides the pocket, so the model has to be fixed before the frame is made.

ELECTRIFIED LOCK Power crosses at the hinge, so an electric hinge or a door loop is prepped with it. The raceway runs from the lock case to the hinge edge inside the leaf.

POSITION SWITCH A concealed switch in the head of the frame with its own raceway. Tells the access system whether the leaf is actually shut, which a lock status alone does not.

DELAYED EGRESS Device, sign, alarm and the fire alarm interface. All four are part of the same prep, and the sign wording is set by code.

WHAT WE NEED FROM THE ACCESS CONTRACTOR

- Device schedule with model numbers, not descriptions.
- Voltage and current at each opening, and whether it is fail safe or fail secure.
- Where the power supply and the controller sit relative to the door.
- Which openings sit on a means of egress, and the fire alarm interface for each.
- Whether the system is listed to ANSI/UL 294.

FAIL SAFE OR FAIL SECURE IS A LIFE SAFETY DECISION
It decides what the door does when the power drops. We put it in writing at survey and confirm it again before the frames are ordered, because it cannot be changed once the pocket is cut.

FRAMES / TYPES & PROFILES

What the frame is made of, how it arrives, and the profile it presents to the wall.

HOW THE FRAME ARRIVES

WELDED
Corners welded and ground at the factory, shipped as one piece. The stiffest option and the one we specify for new openings and for anything carrying a closer or an exit device.

KNOCK DOWN
Three pieces assembled on site, held by a compression fit into a finished opening. Goes into an existing wall without disturbing the wall face. Slip-on drywall frames are the same idea for stud partitions.

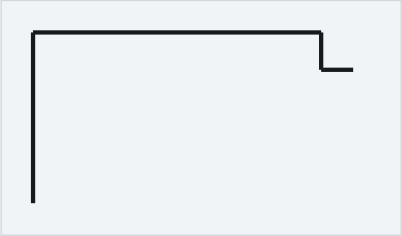
SLIP ON
Wraps a finished stud partition from both sides. No anchors into the stud, so it suits a fit-out where the partition is already boarded and decorated.

THE THREE THINGS THAT DEFINE A PROFILE

THROAT
The clear dimension between the two returns. It has to match the wall thickness, including the finish on both faces, or the frame will not sit flat.

FACE
How much of the frame shows on the wall. 2 in is the usual commercial face.

RABBET
The recess the leaf closes into. Single rabbet takes one leaf, double rabbet takes a pair or a leaf and a screen.



SINGLE RABBET

DOUBLE RABBET

DOUBLE EGRESS

GAUGE
Frames are made in 16 and 18 gauge. Heavier gauge for exterior openings, for anything rated, and for openings that see traffic. We confirm the gauge on the schedule at survey.

FRAMES / ANCHORING BY WALL TYPE

The anchor is chosen by what the wall is made of, not by what the frame is.

ANCHOR BY WALL CONSTRUCTION

WALL	ANCHOR	HOW IT WORKS
Masonry, frame set first	Wire or strap	Built into the bed joints as the wall goes up
Masonry, existing opening	Expansion bolt	Through the frame soffit into the jamb
Steel stud partition	Stud anchor	Screwed or welded to the stud each side
Wood stud partition	Wood stud anchor	Screwed through the return into the stud
Finished opening	Compression	Knock down frame clamps the finished reveal
Any wall, at the floor	Floor anchor	Fixed through the base of each jamb

HOW MANY

Anchors are spaced up the jamb, not just at top and bottom. The taller the opening the more it takes. A floor anchor at the base of each jamb is standard on every frame we fit.

WHAT GOES WRONG

- Frame set out of plumb, then anchored. Nothing downstream will fix it.
- Throat wrong for the finished wall, so the return sits proud.
- Grout poured into an ungrouted frame, or left out of one that needed it.
- Anchors fixed only top and bottom, so the jamb bows under a closer.
- A rated frame anchored with a method the label does not cover.

GROUT IS PART OF THE SPECIFICATION

A grouted frame is stiffer and quieter, and some rated assemblies require it. It also has to be the right mix - a wet mix rusts the frame from the inside. We call the grout out on the schedule.

FRAMES / INSTALLATION DETAILS

Head, jamb and sill at each wall condition, and the tolerance we hold.

WHAT WE HOLD ON SITE

CHECK	TOLERANCE	WHY
Frame plumb	Within 1/16 in over the height	A leaf will swing open or shut on its own
Frame square	Diagonals equal	The leaf will bind on one corner
Frame twist	Both jambs in one plane	The leaf will not seal against the stop
Hinge to strike	Consistent gap	Latch throw and deadlatch depend on it
Head clearance	Even across the leaf	Shows up as a light gap and a draft

THE THREE CONDITIONS

NEW MASONRY

Frame is set, braced and plumbed before the wall goes up around it. Wire anchors are built into the bed joints. The most accurate way to hang a door and the least common on refits.

EXISTING OPENING

Opening is measured three ways, the frame is made to suit, and it is fixed through the soffit. Where the reveal is sound we use a knock down frame and leave the wall face alone.

STUD PARTITION

Frame anchors to the stud each side before boarding, or wraps the finished partition as a slip on. Which one depends on how far the partition has already gone.

FINISHES / PAINT, STAIN & METAL

What the door arrives in, and what it can be finished to.

STEEL AND HOLLOW METAL

PRIMED	Doors and frames arrive in a rust inhibiting primer. Primer is a base for a finish coat, not a finish. Left unpainted it will not hold up outside.
FACTORY FINISH	Powder coat or baked enamel applied before delivery. Harder than a site coat and even across the whole leaf. The right answer where the opening is exposed.
SITE FINISH	Painted after hanging, so the color can be matched to the room. Needs the primer to be sound and the leaf to be dry.

ALUMINIUM

ANODIZED	Clear and dark bronze are the two standard anodized finishes. The color is in the oxide layer, so it does not chip.
POWDER COAT	Any color, applied over a prepared surface. Wider color range than anodized and the usual choice where a storefront has to match a brand color.

WOOD AND FIBERGLASS

STAIN GRADE	Supplied ready to stain, or finished to a color we agree. Fiberglass takes a stain like wood and holds it far longer outdoors.
PAINT GRADE	Smooth face, primed, ready for a finish coat. Woodgrain texture is available where the door has to read as wood.

FINISH DECIDES THE LEAD TIME
A factory finished door is ordered finished. Changing the color after the order is placed means a new leaf, not a repaint. We fix the color in writing before anything is ordered.

GLAZING / LITES, KITS & LOUVERS

The cut-out, the kit that holds the glass, and what goes in the opening instead of glass.

WHAT THE CUT-OUT IS CALLED

LITE The glazed opening in the leaf. Named by shape and position: narrow lite, half lite, full lite, vision lite.

GLAZING KIT The two frames that trap the glass in the cut-out. Screwed from one face, so the glass can be changed later without taking the leaf off.

LOUVER A vented insert in the same cut-out. Used where a room needs air rather than sight.

WHAT GOES IN A LITE

GLASS	WHAT IT IS FOR	NOTE
Tempered	Safety, breaks into blunt pieces	Standard in every door and sidelite we fit
Laminated	Safety and security, holds together	Also cuts sound
Insulated unit	Thermal, two panes and a spacer	Low-E as standard, argon on request
Wire or ceramic	Fire rated openings	Size limited by the rating on the leaf
Obscure	Light without sight	Rain, water cubic, Flemish, sandblast

LOUVERS

FIXED BLADE The standard louver. Free area is roughly half the cut-out, so size the cut-out for the air the room needs, not for the look.

FUSIBLE LINK Blades held open by a link that melts, closing the louver in a fire. Required where a louver sits in a rated leaf and the rating allows one at all.

A LITE OR A LOUVER CHANGES THE LEAF
Both are cut and reinforced at manufacture. On a rated leaf the maximum size and the position are fixed by the label, and a cut-out made on site voids it.

FIRE RATED / RATINGS & LABELS

What the rating means, where the label lives, and what voids it.

THE RATINGS

RATING	TYPICALLY USED ON	WHAT IT MEANS
20 minute	Corridor and smoke partitions	Smoke and draft control, light fire duty
45 minute	One hour partitions	Three quarter hour opening protective
60 minute	One hour partitions and shafts	One hour opening protective
90 minute	Two hour walls, stair enclosures	One and a half hour opening protective
180 minute	Three hour walls, area separation	Three hour opening protective

THE LABEL

WHERE IT IS

Permanently attached to the hinge edge of the leaf and to the frame rabbet. It carries the rating, the listing agency and whether the assembly is fire rated or also smoke rated.

IT MUST STAY LEGIBLE

Painted over, ground off or removed and the assembly is no longer a labeled assembly, whatever the leaf is actually made of.

THE WHOLE ASSEMBLY IS RATED

Leaf, frame, hinges, latch, closer and any glazing are rated together. Swapping one part for an unlabeled equivalent breaks the rating of the opening, not just of that part.

WHAT WE CONFIRM BEFORE WE QUOTE A RATED OPENING

The rating the wall requires, whether the opening also needs smoke and draft control, and which labeled assembly the manufacturer will certify for it. We do not fit a rated opening on a verbal rating - it goes on the schedule with the listing.

FIRE RATED / GLAZING & HARDWARE

The two places a rated opening is most often built wrong.

GLAZING IN A RATED LEAF

FIRE PROTECTIVE

Wired glass and ceramic products. Limited to 100 sq in per light in doors rated 45 minutes and above. In a 90 minute leaf the limit is 100 sq in with no dimension over 10 in. In a 3 hour leaf glazing cannot exceed 100 sq in unless further testing permits it.

FIRE RESISTIVE

Tested to hold back heat as well as flame. NFPA 80 limits each light to 1296 sq in with no dimension over 54 in, unless the manufacturer has tested a larger light.

THE PRACTICAL POINT

A big vision panel in a rated leaf is a fire resistive product, and it costs a multiple of the protective one. Decide the glass before the leaf is ordered, not after.

A GLAZING CHANGE VOIDS THE ASSEMBLY
Re-glazing a rated leaf with a product the label does not cover, or cutting a new lite on site, ends the rating. Replacement glass has to match the listing.

HARDWARE ON A RATED OPENING

- Self closing. A closer or a spring hinge on every leaf.
- Positive latching. The latch must throw and hold under pressure.
- No dogging. An exit device on a rated leaf cannot be held retracted.
- Labeled components only, including hinges, closer and any electric strike.
- Coordinator on a pair, so the inactive leaf closes first.

FIRE RATED / ANNUAL INSPECTION

NFPA 80 requires it every year. This is what the inspection covers.

THE REQUIREMENT

NFPA 80

Fire door assemblies are to be inspected and tested not less than annually, and a written record kept. The record is what an inspector or an insurer asks for.

WHAT IS CHECKED

- Labels present, legible and not painted over, on leaf and frame.
- No holes or breaks in the leaf or frame faces.
- Glazing, vision light frames and glazing beads intact and secure.
- Door and frame not bowed, twisted or misaligned.
- Clearances at head, jambs and meeting stiles within tolerance.
- Self closing device operates and closes the leaf fully.
- Latch throws and holds; the leaf cannot be pushed open when latched.
- No field modification that the listing does not cover.
- Coordinator, astragal and flush bolts on a pair all working.
- Nothing blocking or wedging the opening.

WHAT WE LEAVE

A dated record per opening listing each item, the result, and any defect found. Defects are quoted separately so the record and the repair are never the same document.

PERFORMANCE / WEATHER & EXPOSURE

What an exterior opening has to resist, and how it is measured.

WHAT GETS TESTED

PROPERTY	WHAT IT MEASURES	WHERE IT MATTERS
Air infiltration	Air passing the seals	Every exterior opening
Water penetration	Water driven through under pressure	Exposed elevations
Structural load	Deflection under wind pressure	Tall and wide openings
Impact	Resistance to wind borne debris	Coastal and high wind zones
Thermal	U factor and solar heat gain	Conditioned buildings
Forced entry	Resistance to attack at the lock	Ground floor openings

WHAT WE DO ABOUT IT

SEALS
Perimeter weatherstrip in the frame rabbet, a door bottom or sweep, and an adjustable threshold. All three, or the opening will leak air even with a perfect leaf.

DRAINAGE
Sill pan, membrane turned up at the jambs, and weep holes left clear. Water that gets in has to have somewhere to go. This is what fails on most leaking patio doors.

THRESHOLD
Adjustable aluminum as standard. ADA compliant low rise thresholds where the opening is on an accessible route.

WIND AND IMPACT RATINGS ARE PRODUCT SPECIFIC
Where an opening needs a wind or impact rating, the number belongs to a tested assembly and comes with an approval listing. We confirm the listing for the exact unit before it is quoted, and it goes on the schedule.

SPECIFICATION / HOW TO SPECIFY A1

Written so an architect or a contractor can paste it into a project specification.

GENERAL

SCOPE
Supply and installation of door and window assemblies, frames, glazing and finish hardware, complete with anchors, seals, thresholds and operating hardware, measured on site.

QUALITY ASSURANCE
Openings measured on site before fabrication. Assemblies installed plumb, square and true within the tolerances stated in this catalog. Rated assemblies installed to the listing.

SUBMITTALS
Door and hardware schedule by opening, frame elevations and profiles, glazing schedule, finish samples where a color is specified, and listing documentation for rated openings.

PRODUCTS

DOORS
Iron, mahogany, fiberglass, interior, hollow metal, aluminum storefront, and automatic entrances as scheduled.

FRAMES
Welded or knock down as scheduled, gauge and throat to suit the wall construction, anchored by the method appropriate to the wall.

HARDWARE
Prepared to the applicable ANSI/BHMA standard or to the device maker template. Grade to suit the duty of the opening.

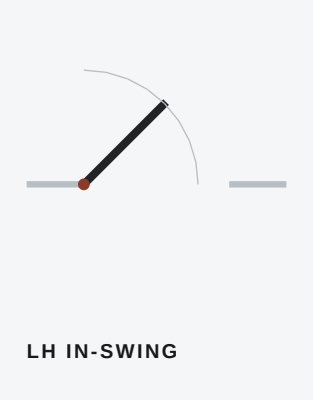
EXECUTION

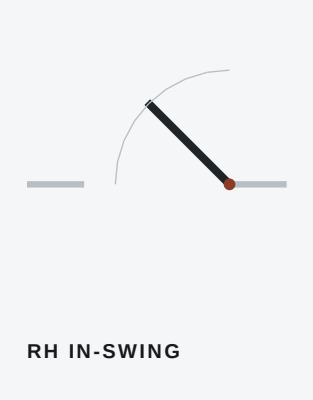
INSTALLATION
Set frames plumb and square, anchor at the spacing appropriate to the wall, hang and adjust leaves, fit and adjust hardware, seal the perimeter and clear the drainage.

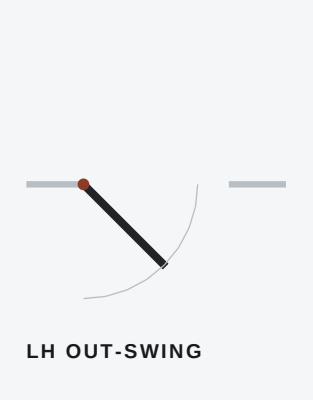
HANDOVER
Demonstrate operation, hand over keys and any listing documentation, and remove the old assemblies from site.

HANDING & SWING

Handing is always stated as you stand outside the building looking in.
If you are not sure, leave it - we record it at the survey.







LEFT HAND IN-SWING
Hinges on the left, door opens away from you

RIGHT HAND IN-SWING
Hinges on the right, door opens away from you

LEFT HAND OUT-SWING
Hinges on the left, door opens toward you

RIGHT HAND OUT-SWING
Hinges on the right, door opens toward you

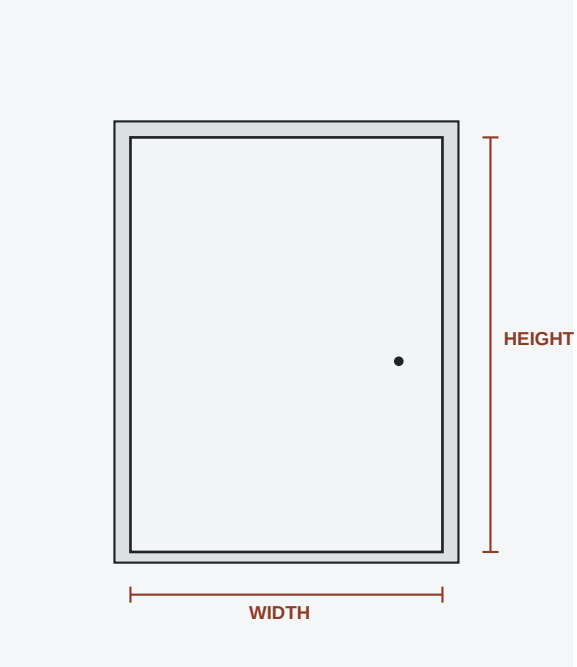
WHY IT MATTERS

Handing sets which way the lock, the hinges and the weather seal are cut. A door made to the wrong hand cannot be reversed on site, so we confirm it in writing before anything is ordered.

REFERENCE / MEASURING

HOW TO MEASURE

You do not need to measure - we do it free, and we are responsible for the numbers we take. This is here so you know what we are looking at.



01 WIDTH

Measure the finished opening at the top, the middle and the bottom. We use the smallest of the three.

02 HEIGHT

Measure from the finished floor to the underside of the head, on both sides. Again, smallest wins.

03 DEPTH

Measure the jamb depth through the wall, including any casing. This sets the frame we order.

04 SQUARE

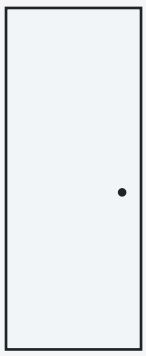
Measure both diagonals. If they differ, the opening is out of square and the frame is packed to suit.

05 THRESHOLD

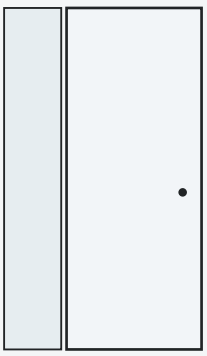
We check the sill and the floor finish, so the door clears carpet, tile or a mat well.

FRAMES & SIDELITES

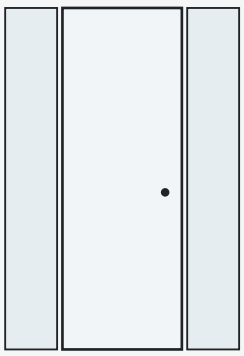
Most designs in this catalog can be built as any of the four arrangements below. Sidelites and transoms are glazed to match the door.



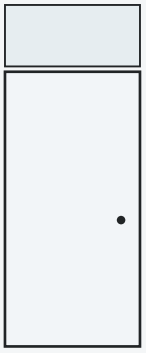
SINGLE DOOR



ONE SIDELITE



TWO SIDELITES



WITH TRANSOM

SINGLE DOOR
The door leaf on its own, in a new or existing frame

ONE SIDELITE
A glazed panel to one side, widening the opening

TWO SIDELITES
Glazed panels both sides, for a symmetrical entrance

WITH TRANSOM
A glazed head above the door, rectangular or arched

SIDELITE WIDTHS
From 12 in. Fixed as standard; venting sidelites available on most ranges.

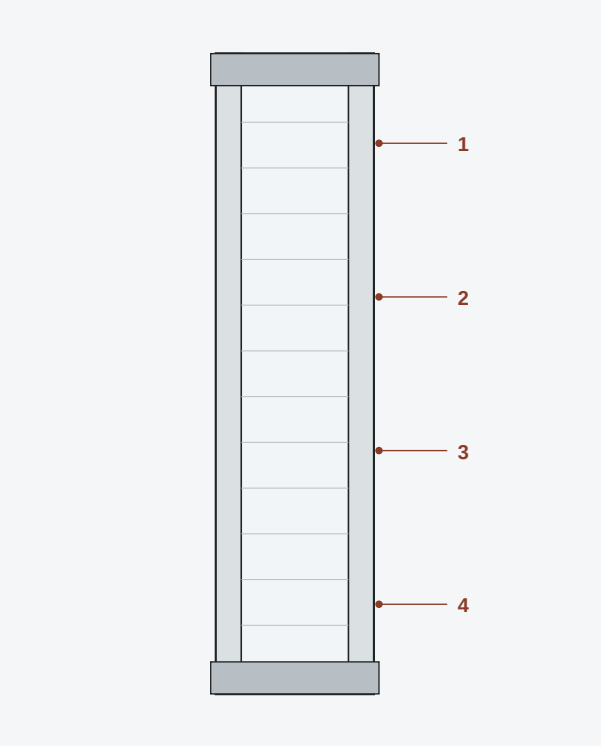
TRANSOMS
Rectangular, segment or full arch. Glazed to match the door or left clear.

MULL POSTS
Removable mull posts let a large item pass through the full opening.

STRUCTURAL
Wide multi-panel openings are checked for head load before we order.

HOW A DOOR IS BUILT

A section through a fiberglass slab. Iron and mahogany differ in the core, but the frame, seal and threshold are common to every door we fit.



1. Outer skin - molded fiberglass, woodgrain or smooth
2. Insulating core - CFC-free polyurethane foam
3. Stile and rail - engineered wood, edge banded
4. Inner skin - matched to the outer face

SLAB THICKNESS	1 3/4 in standard on entry doors
WEATHER SEAL	Compression bulb seal to head and jambs
THRESHOLD	Adjustable aluminum with a composite sub-sill
GLAZING	Dual glazed, tempered, warm-edge spacer
FRAME	Composite or engineered wood, rot resistant
FINISH	Factory primed, painted or stained to order

PERFORMANCE & CARE

What the glazing does, how the door is protected, and what looking after it actually involves once we have gone.

GLAZING PERFORMANCE

- Low-E coating reflects heat back into the room in winter and out in summer
- Dual glazed units as standard, argon filled on request
- Warm-edge spacer to cut condensation at the glass edge
- Tempered safety glass throughout, to code

WEATHER AND SECURITY

- Compression seals to head and both jambs
- Adjustable threshold takes up seasonal movement
- Multi-point locking available on most ranges
- Reinforced strike area on steel and fiberglass slabs

LOOKING AFTER IT

- Wash painted and fiberglass faces with mild soap and water
- Do not use solvent or abrasive cleaners on the finish
- Oil hinges and adjust the closer once a year
- Re-coat stained mahogany when water stops beading

WHAT WE STAND BEHIND

- Our labor on every installation we carry out
- Manufacturer warranty passed through in full
- Adjustments in the first season at no charge
- Parts and service on everything we have fitted

REFERENCE / MODEL NUMBERS

What the code on each product page tells you, and what it does not.

THE THREE FAMILIES IN THIS CATALOG

SBS	Iron entry doors. The number rises with the design, not with the size. A single and a double of the same design carry different numbers.
MAG	Mahogany entry doors. The digits after MAG carry the leaf size and the lite count, so MAG36804LITE is a 36 by 80 leaf with four lites.
FOUR DIGIT	Fiberglass entry doors. A design reference only. Sizes and glass are listed against it.
THREE DIGIT	Fiberglass doors carried over from the earlier range. Same treatment, shorter code.

A MODEL NUMBER IS NOT AN ORDER
The number fixes the design. The order also needs the size, the handing, the glass, the finish and the hardware. Every one of those is confirmed at the site measure before anything is ordered.

WHERE THE ALTERNATIVES COME IN

ALSO	Where a product page shows "also" and a second number, that is the same design in another size or another glass. Quote either number and we will confirm which one fits the opening.
IF A NUMBER IS NOT LISTED	The range moves. If you have a number that is not in this book, send it to us - it is usually a design we still supply under a different code.

REFERENCE / MODEL INDEX

Every model number printed in this catalog, with the page it appears on.

103	10
104	11
107	11
1001	8
1004	8
1006	8
1007	9
1008	9
1010	9
1015	9
1021	9
1022	9
1026	10
1027	10
1028	10
1030	10
1032	10
1036	10
1037	11
1041	11
1050	10
1054	11
1056	11
1065	11
1069	11
1072	12
1076	12
1078	12
1079	12
1080	11
1084	10
1091	12
MAG36803LITE	6
MAG36804LITE	6
MAG36805LITE	6
MAG36964LITE	7
MAG72805LITE	7
MAG72806LITE	7
SBS1900	3
SBS2100	3
SBS2500	3
SBS2700	4
SBS2900	4
SBS3100	4
SBS3300	4
SBS3500	4
SBS3700	4
SBS4100	5
SBS4500	5
SBS4700	5
SBS4902	5
SBS5000	5
SBS5200	5
SBS5400	5
SBS5600	5

The words that appear on a door schedule, in plain terms.

ACTIVE LEAF	The leaf of a pair that carries the lock and is used day to day.
ASTRAGAL	A molding on the meeting stile of a pair that closes the gap between leaves.
BACKSET	From the edge of the leaf to the center of the lock bore.
BREAKOUT	A sliding or folding leaf that swings out under push to give full clear opening.
CLEAR OPENING	The usable width with the leaf fully open. Always less than the frame width.
COORDINATOR	On a pair, the device that makes the inactive leaf close before the active one.
DEADLATCH	A small plunger beside the latch that stops the latch being carded back.
DOGGING	Holding an exit device retracted so the door pushes freely. Not on a rated leaf.
FULL MORTISE	A hinge with both leaves let into the door and the frame.
HANDING	Which side the hinges are on and which way the leaf swings, seen from outside.
HOLLOW METAL	A door or frame of formed steel sheet over a core or over reinforcement.
INACTIVE LEAF	The leaf of a pair held shut by flush bolts, opened only when needed.
KNOCK DOWN	A frame shipped in pieces and assembled in the finished opening.

The words that appear on a door schedule, in plain terms.

LITE	A glazed opening in a leaf, named by its shape and where it sits.
LOW ENERGY	A power operator that opens slowly and only on a knowing act.
MULLION	A vertical member between two openings, fixed or removable.
PREHUNG	A leaf already hung in its frame, delivered as one unit.
RABBET	The recess in the frame that the leaf closes into.
ROUGH OPENING	The hole in the wall before the frame goes in.
SIDELITE	A fixed glazed panel beside a door, in the same frame.
STILE	The vertical edge member of a leaf. Lock stile and hinge stile.
THRESHOLD	The member across the sill that the leaf closes onto.
THROAT	The clear dimension between the two returns of a frame.
TRANSOM	A fixed panel above a door, in the same frame.
UNDERCUT	The gap left under a leaf, for clearance or for air transfer.
WEEP HOLE	A drilled hole that lets trapped water out of a sill or frame.

REFERENCE / ACCESSIBLE OPENINGS

What changes when the opening sits on an accessible route.

WHAT THE OPENING HAS TO DO

CLEAR WIDTH	Measured with the leaf open, from the face of the leaf to the opposite stop - not the frame width and not the leaf width. A 36 in leaf is the usual way to get there.
HARDWARE	Operable without tight grasping, pinching or twisting of the wrist. Levers, push plates and panic hardware pass; round knobs and thumb turns generally do not.
THRESHOLD	Low rise, with any change in level beveled. This is why we specify an ADA compliant threshold rather than a standard one on an accessible route.
OPENING FORCE	A closer set light enough to be pushed by anyone, and slow enough that the leaf does not strike. The two pull against each other and the adjustment is a service item, not a one off.
POWER OPERATION	Where a manual door cannot meet the force, a low energy operator with a push plate is the usual answer. Actuator height and its distance from the swing are both set by code.

ACCESSIBILITY IS DECIDED AT SURVEY, NOT AT HANDOVER
Clear width, approach space and threshold height all depend on the opening as built. We measure them before the door is ordered, because none of the three can be fixed with hardware afterwards.

REFERENCE / SOUND, HEAT & SECURITY

Three things an opening is asked to do beyond keeping the weather out.

SOUND

WHERE IT LEAKS
Almost always at the perimeter and under the leaf, not through it. A solid core leaf with a poor seal performs worse than a lighter leaf sealed properly.

WHAT HELPS
Solid core or mineral core leaf, full perimeter seals, an automatic door bottom, and laminated glass where there is a lite.

HEAT

WHERE IT LEAKS
Air infiltration around the leaf, then conduction through the frame, then the glass. In that order, which is why seals matter more than the leaf on most jobs.

WHAT HELPS
Insulated core, thermal break in an aluminum frame, insulated glass with a Low-E coating, and a threshold with a working seal.

SECURITY

WHERE IT FAILS
The strike and the frame, not the lock. A good cylinder in a soft frame buys nothing.

WHAT HELPS
A reinforced strike fixed into the framing, a deadbolt with a full throw, a deadlatch that actually lands on the strike lip, laminated glass in any lite beside the lock, and hinges with non removable pins on an out-swing leaf.

THE WEAKEST PART DECIDES THE OPENING
Sound, heat and security are all chain problems. Upgrading the leaf while leaving the seal, the strike or the glass alone moves the failure somewhere else rather than removing it.

REFERENCE / STANDARDS IN THIS CATALOG

Every standard referenced in these pages, and what it governs.

OPENINGS AND HARDWARE

STANDARD	GOVERNS
ANSI/BHMA A156.1	Butts and hinges - grades, sizes and load
ANSI/BHMA A156.10	Power operated pedestrian doors, full power
ANSI/BHMA A156.19	Power assist and low energy power operated doors
ANSI/BHMA A156.27	Power and manual operated revolving pedestrian doors
ANSI/BHMA A156.115	Hardware preparation in steel doors and steel frames
ANSI/BHMA A156.115-W	Hardware preparation in wood doors
ANSI A115 series	Prep drawings by device family
ANSI/UL 294	Access control system units

LIFE SAFETY AND BUILDING

STANDARD	GOVERNS
NFPA 80	Fire doors and other opening protectives, and their annual inspection
NFPA 101	Life Safety Code - egress, door locking and release
ADA	Accessible route, clear width, hardware and opening force
SDI	Steel Door Institute manufacturing tolerances for steel doors and frames
NFRC	The label that carries the U factor and solar heat gain on a glazed unit

WHY THESE ARE LISTED
So that anyone specifying against this catalog can check the figure against the source rather than take our word for it. Where a manufacturer listing governs instead, the page says so.

IRON ENTRY DOORS / CONSTRUCTION

What is behind the scrollwork, and why an iron door behaves differently to every other leaf.

THE LEAF

FRAME	Welded steel tube section, ground at the joints. The scrollwork is welded to the frame, not screwed, so it cannot work loose.
GLASS	Set behind the grille from the inside, in a removable stop so it can be changed without cutting the ironwork. Dual glazed on any exterior leaf.
INSULATION	Polyurethane in the tube section on insulated models. An uninsulated iron leaf will hold the outside temperature and will sweat in a humid climate.
WEIGHT	The heaviest leaf in this catalog by a wide margin. It decides the hinge count, the frame gauge and the anchoring - an iron door is a structural decision, not a finish one.

WHAT THAT MEANS ON SITE

- The opening carries real load. We check the header before we quote.
- Four hinges as standard on a full height leaf, ball bearing, heavy weight.
- The frame is welded and anchored into structure, not into a stud.
- A closer sized for the weight, or the leaf will slam and eventually drop.
- Threshold and sill detail matter more, because the leaf is not going to move.

FINISH IS THE WHOLE JOB ON IRON
The hand applied finish is what stops the leaf rusting, and it is applied and sealed at the works. Touching it up on site never matches. We inspect the finish before the leaf leaves the truck.

IRON ENTRY DOORS / SIZING & OPTIONS

Sizes we hold, what can be made to measure, and the options that change the price.

STANDARD SIZES

CONFIGURATION	WIDTHS	HEIGHTS
Single	36 in	80 in, 96 in
Single with sidelites	60 in, 72 in	80 in, 96 in, 108 in
Double	72 in	80 in, 96 in, 108 in

MADE TO MEASURE Anything outside the table. Every iron door is fabricated to the opening we surveyed, so a non standard size costs lead time rather than a premium.

OPTIONS

SWING In-swing or out-swing, single or double. Out-swing needs non removable hinge pins.

GLASS Low-E, Water, Flemish, Sandblast, Water Cubic or Clear, behind any design.

OPERABLE GLASS Where the grille allows, the glass panel can be hinged for ventilation.

TRANSOM Rectangular or arched, in the same frame and the same finish.

FINISH Hand applied and factory sealed. Color is agreed before fabrication.

LEAD TIME IS THE REAL CONSTRAINT
An iron door is made for the opening. Confirm the survey, the design and the finish, and we can give a firm date - but the date starts when the last of those three is signed off, not before.

MAHOGANY ENTRY DOORS / CONSTRUCTION

How a solid wood leaf is built, and what keeps it straight.

THE LEAF

STILES AND RAILS	Engineered core with a solid mahogany face and lipping. The core is what keeps a wide leaf from twisting; solid through-and-through wood does not stay flat.
PANELS	Raised or flat, floating in the frame so the wood can move without splitting.
GLASS	Set in a removable wood bead. Equal lite, frosted, rain or beveled.
EDGE	Lipped on all four edges so the leaf can be trimmed on site within limits and still present solid wood at the edge.

WHAT WOOD DOES

- It moves with humidity. A 36 in leaf can change measurably between seasons.
- It needs all six faces finished, including the top and bottom edges.
- An unfinished top edge is how most exterior wood doors start to fail.
- Direct sun and no overhang is the hardest case; expect to refinish.
- A storm door in front of it traps heat and can lift the finish.

FINISH ALL SIX FACES BEFORE HANGING
If the door is supplied ready to stain, the top and bottom edges must be finished too, before it is hung. It is the single most common cause of a warped exterior wood leaf.

MAHOGANY ENTRY DOORS / SIZING & CARE

Sizes, configurations, and what keeps a wood door looking new.

STANDARD SIZES

CONFIGURATION	WIDTHS	HEIGHTS
Single	36 in	80 in, 96 in
Double	72 in	80 in, 96 in

LITE COUNT 3, 4, 5 and 6 lite arrangements, single and double.

FINISHING

READY TO STAIN Supplied bare. Stain and a UV stable exterior topcoat, all six faces.

FINISHED TO COLOR Finished at the works to a color we agree, sealed and delivered ready to hang.

CARE

- Wash with mild soap and water twice a year. No solvent, no abrasive.
- Inspect the topcoat annually, especially the bottom rail and the top edge.
- Recoat before the finish breaks, not after. Bare wood takes on water fast.
- Keep the threshold seal working - standing water at the bottom rail is fatal.
- Do not fit an unvented storm door over a dark stained leaf in full sun.

FIBERGLASS ENTRY DOORS / CONSTRUCTION

Why this is the door we fit most often, and what is inside it.

THE LEAF

SKIN
Molded fiberglass, smooth or woodgrain textured. It does not dent like steel and does not swell like wood.

CORE
Polyurethane foam, poured and cured in the leaf. It carries the insulation value and stiffens the skins so the leaf stays flat.

EDGE
Composite stile, so the lock and hinge screws bite into something that will not rot and will not corrode.

BOTTOM RAIL
Composite. This is the part that sits in the water, and it is why fiberglass outlasts wood on an exposed opening.

HOW IT COMPARES

	FIBERGLASS	STEEL	WOOD
Dents	No	Yes	No
Rots or swells	No	No	Yes
Rusts	No	Yes, at damage	No
Holds insulation	Best	Good	Least
Takes a stain	Yes	No	Yes
Needs repainting	Rarely	Yes	Yes

FIBERGLASS ENTRY DOORS / SIZING & OPTIONS

The widest size range in this catalog, and how the options combine.

STANDARD SIZES

CONFIGURATION	WIDTHS	HEIGHTS
Single	32 in, 36 in	80 in, 96 in
Single with sidelites	60 in, 64 in	80 in
Double	72 in	80 in, 96 in

PANEL STYLES

FLUSH No cut lines. Reads modern and is the easiest to keep clean.

RAISED PANEL Traditional. Two, four and six panel arrangements.

SHAKER Square edged flat panel. The most requested style on new work.

CRAFTSMAN Shaker below, a horizontal band of lites above.

FULL AND HALF LITE Glass over most or half the leaf, with the glass set in a removable frame.

SIDELITES ARE PART OF THE FRAME
A door with sidelites is ordered as one unit with one frame. Adding a sidelite later means a new frame and a new opening, so it is decided at survey.

INTERIOR DOORS / CORES & HARDWARE

What is inside an interior leaf, and what that decides.

CORES

HOLLOW CORE	Cardboard honeycomb between two skins. Light, cheap, and fine on a closet. It carries no sound and it will not take a heavy handle.
SOLID CORE	Particle or mineral core. Heavier, quieter, and what we fit between rooms that need any privacy at all.
MINERAL CORE	Used where the leaf has to be rated. Heavy, and the frame and hinges are sized for it.

HOW IT HANGS

HINGED	The default. Needs the swing space and a stop.
POCKET	Slides into the wall. The frame kit goes in before the wall is boarded, so it is a build decision rather than a door decision.
BIFOLD AND BYPASS	For a wide opening with no swing space, usually a closet.
BARN	Face fixed track above the opening. No pocket, but it does not seal and it needs clear wall to slide onto.

A SOLID CORE LEAF NEEDS THE RIGHT FRAME
It is two to three times the weight of a hollow core leaf. Hanging one on a frame and hinges sized for hollow core is the most common reason an interior door starts to drop.

PATIO DOORS / DRAINAGE & SEALS

The detail that decides whether a patio door leaks, and it is not the glass.

WHY THEY LEAK

THE SILL
A patio door sits at the bottom of a wall with a wide horizontal joint. Wind driven rain gets in there on every exposed elevation - the design assumes it will.

WHAT STOPS IT
Not the seal. The sill pan under the frame, the membrane turned up at the jambs, and weep holes that let the water back out. All three, in that order.

WHAT WE FIT

- Sill pan with end dams and a back leg, sloped out.
- Membrane lapped over the pan and up both jambs, shingled with the wall.
- Frame set in a continuous bed of sealant, except across the weeps.
- Weep holes left open and checked at handover.
- Perimeter seal on the outside, air seal on the inside.

NEVER SEAL THE WEEPS
The most common well meant mistake. Sealing the bottom of the frame traps every drop that gets past the outer seal and holds it against the sill until it finds the floor.

THRESHOLD HEIGHTS

STANDARD
Adjustable aluminum, weathertight, with a raised outer leg.

LOW RISE
ADA compliant. Less upstand, so the drainage detail has to do more work.

FLUSH
No upstand at all. Only viable with a drained channel outside the opening.

COMMERCIAL DOORS / SERIES DATA

The numbers a specifier asks for, in one place.

LEAF

PROPERTY	STANDARD	HEAVY DUTY
Face sheet	18 gauge	16 gauge
Core	Honeycomb or polystyrene	Polyurethane or mineral
Edge	Seamless, welded	Seamless, welded
Thickness	1 3/4 in	1 3/4 in
Reinforcement	Lock, hinge, closer	Lock, hinge, closer, exit device

FRAME

PROPERTY	STANDARD	HEAVY DUTY
Gauge	18 gauge	16 gauge
Assembly	Knock down or welded	Welded
Face	2 in	2 in
Throat	To suit wall	To suit wall
Anchors	By wall type	By wall type, closer spaced

WHERE EACH ONE GOES Standard duty for offices and back of house. Heavy duty for exterior openings, anything rated, and anywhere the door is used all day.

STOREFRONT / SYSTEM DATA

Framing sizes, glazing and what the system will and will not carry.

FRAMING

MEMBER	TYPICAL FACE	TYPICAL DEPTH
Storefront framing	2 in	4 1/2 in
Entrance door stile, narrow	2 1/2 in	1 3/4 in
Entrance door stile, medium	3 1/2 in	1 3/4 in
Entrance door stile, wide	5 in	1 3/4 in

WHICH STILE

Narrow looks lightest and takes the least hardware. Wide carries a full size lock, a concealed closer and heavy traffic. Medium is the usual compromise.

GLAZING

POSITION

Front glazed, center glazed or inside glazed. Inside glazing is the only one that lets glass be replaced from inside the building.

MAKE-UP

Single tempered, laminated, or an insulated unit. Insulated needs the deeper pocket, so it is a framing decision, not a glass decision.

A STOREFRONT IS NOT A CURTAIN WALL

Storefront framing carries its own weight and the wind on it. It does not carry floor loads and it is not a spanning system. Where the opening is taller than a single story, that is curtain wall.

HARDWARE / KEYING & ACCESS PLANNING

Decide the key plan before the cylinders are ordered, not after.

THE OPTIONS

KEYED ALIKE	One key opens every door in the group. Simple, and the right answer for a house or a single tenancy.
KEYED DIFFERENT	Every door its own key. No hierarchy, and it stops being workable past a few doors.
MASTER KEYED	Each door has its own key, and a master opens them all. The standard arrangement for a building with more than one occupier.
GRAND MASTER	A second level above the masters, for an estate or a multi building site.
CONSTRUCTION KEYING	A temporary key for the build, voided by the first turn of the permanent key. Worth having on any project where trades need access before handover.

WHAT WE NEED TO SET IT UP

- A door schedule with every opening numbered.
- Which openings belong in which group.
- Who holds a master, and how many masters are issued.
- Whether the cylinders are restricted, and who can cut keys.
- Whether any opening is going on an access control system instead.

A KEY PLAN IS A SECURITY DOCUMENT
It shows exactly which key opens what. We hand it over on completion and we do not keep a copy of a restricted key plan on file unless you ask us to.

HARDWARE / THRESHOLDS & SEALS

The cheapest part of the opening, and the one that decides how it performs.

PERIMETER

STOP APPLIED	Seal fixed to the frame stop. Easy to fit and easy to replace, and it shows.
KERF	Seal pushed into a slot in the frame. Neater, replaceable, and the usual choice on a new frame because the kerf is cut at manufacture.
ADJUSTABLE	Seal on a slotted carrier so the compression can be set after the leaf settles.

AT THE BOTTOM

SWEEP	Surface fixed to the face of the leaf. Simplest, and visible.
DOOR BOTTOM	Fitted into or under the bottom rail. Neater and more durable.
AUTOMATIC	Drops as the leaf closes and lifts as it opens. Best seal, no floor drag, and the answer where the leaf has to clear a floor finish.

THRESHOLD

ADJUSTABLE ALUMINUM	The default. Height can be set to suit the leaf and the floor.
ADA LOW RISE	Where the opening is on an accessible route.
THERMAL BREAK	Where the threshold would otherwise conduct cold straight through the floor line.

SEALS ARE A SERVICE ITEM
They compress, harden and tear. Budget to replace the perimeter seal and the door bottom every few years on a busy exterior opening; it costs a fraction of what the heat loss does.

HARDWARE / CLOSERS & ADJUSTMENT

Four adjustments, and what each one is actually for.

THE ADJUSTMENTS

CLOSING SPEED
The main sweep, from fully open down to about 10 degrees. Set it so the leaf takes a few seconds - fast enough to close, slow enough not to catch anyone.

LATCH SPEED
The last few degrees. Enough to throw the latch, no more. A closer that bangs is almost always latch speed set too high, not closing speed.

BACKCHECK
Cushions the leaf near fully open so it does not slam into a wall or a person.

DELAYED ACTION
Holds the leaf open at the start of the cycle. Useful on an accessible opening and anywhere people carry things through.

SIZING

BY LEAF WIDTH
A closer is sized to the leaf, and on an exterior door to the wind on it as well. An undersized closer will not shut the door; an oversized one makes it hard to open.

ADJUSTABLE POWER
Most commercial closers cover a range of sizes. We set the power at handover and again at the first service, because a new leaf settles.

SEASONS CHANGE THE SETTING
Closer fluid thickens in the cold and thins in the heat. A door set perfectly in August will be slow in January. It is an adjustment, not a fault.

HOW WE WORK / THE SITE SURVEY

What we measure and what we ask, before anything is quoted.

WHAT WE MEASURE

- Width at three heights, height at three widths. We work to the smallest.
- Diagonals, to find out whether the opening is square.
- Wall thickness including both finishes, for the frame throat.
- Floor level across the opening, and the finished floor height each side.
- Headroom and backroom on a rolling or a sliding opening.
- Swing space, and what the leaf will hit through its full arc.

WHAT WE LOOK AT

- Whether the existing frame is sound enough to hang a new leaf on.
- What the wall is made of, because it decides the anchor.
- Whether the opening is on a means of egress or an accessible route.
- Whether it is a rated opening, and what the wall rating is.
- Where power is, if anything is going to be electric.
- How the door gets to the opening - stairs, elevators and corners.

THE SURVEY IS FREE AND IT IS NOT A SALES VISIT
We measure, we photograph, and we tell you what the opening needs. The quote follows in writing with the schedule attached, and it is priced against what we measured, not against an estimate.

HOW WE WORK / ORDERING & HANDOVER

From a signed quote to a working door, and what we leave behind.

THE SEQUENCE

1 SCHEDULE	Every opening numbered, with size, handing, material, glass, finish and hardware. Nothing is ordered until the schedule is signed.
2 ORDER	Doors, frames and hardware ordered together against the schedule. Anything prepped or factory finished is fixed at this point and cannot be changed later.
3 DELIVERY CHECK	Every item checked against the schedule before it comes off the truck. Wrong preps and wrong finishes go back rather than onto the building.
4 INSTALLATION	Frames set, leaves hung, hardware fitted and adjusted, seals and threshold set, drainage cleared.
5 HANDOVER	We demonstrate every opening, hand over keys, the key plan, listing documents for any rated opening, and take the old doors away.

WHAT SLOWS A JOB DOWN

- A finish color not agreed before the order.
- Hardware changed after the doors are prepped.
- Fail safe or fail secure not decided on an electric opening.
- A rated opening where the wall rating has not been confirmed.
- Floor finish not down, so the threshold height is still unknown.

STEEL ENTRY DOORS / THE RANGE

The fourth entry material. Strongest for the money, and the one most often specified on a budget.

WHY STEEL

STRENGTH A steel skin over a reinforced frame resists forced entry better than wood or fiberglass at the same price. This is the security choice on a back or side door.

COST The least expensive insulated exterior door we fit. A steel leaf with a good frame outperforms a cheap fiberglass one.

WHAT IT GIVES UP It dents, and a dent does not come out. It rusts wherever the skin is broken. It will not take a stain, so it is a painted door for its whole life.

CONSTRUCTION

PART	STANDARD	HEAVY DUTY
Skin	24 gauge galvanized	20 gauge galvanized
Core	Polystyrene	Polyurethane
Edge	Steel channel	Steel channel, seamless
Bottom rail	Composite	Composite
Finish	Primed	Prefinished or woodgrain

PANEL STYLES

FLUSH No cut lines. The cheapest and the easiest to keep clean.

RAISED PANEL Two, four and six panel embossed. The most common residential steel door.

HALF AND FULL LITE Glass over half or most of the leaf, in a removable frame.

WOODGRAIN EMBOSSED Steel engraved and finished to read as wood. Steel duty, wood look.

STEEL AND SALT DO NOT MIX
On a coastal opening we specify fiberglass rather than steel. A galvanized skin will hold up inland for decades and will start to bloom within a few years within sight of the water.

THE STEEL RANGE

FLUSH

SIX PANEL

WOODGRAIN HALF LITE

ENTRY DOORS / SPECIAL TYPES

Four entry arrangements that sit outside the standard single and double.

THE FOUR

DUTCH Split across the middle so the top half opens on its own. Air and a view without letting a child or a dog out. Supplied with a shelf and a lock that joins the halves.

PIVOT Hung on a top and bottom pivot rather than hinges, so the leaf turns about a point set in from the edge. Carries a very wide or very tall leaf that no hinge would hold. The modern statement entrance, and it needs a structural head.

DOUBLE WITH SIDELITES A pair in one frame with fixed glazed panels each side. The widest opening we fit without going to a folding or sliding system.

SINGLE WITH TRANSOM A fixed panel above the leaf, rectangular or arched, in the same frame. Adds height and daylight without widening the opening.

WOOD SPECIES BEYOND MAHOGANY

SPECIES	CHARACTER	BEST FOR
Mahogany	Fine even grain, deep red brown	Traditional and formal entries
Knotty alder	Open grain with sound knots	Rustic and craftsman
White oak	Strong straight grain, pale	Contemporary, light stains
Walnut	Dark chocolate, dramatic figure	High end statement doors
Douglas fir	Straight grain, honey tone	Craftsman and bungalow

A PIVOT DOOR IS A STRUCTURAL DECISION
The load goes into the floor and the head, not into the jamb. The opening has to be surveyed for it before the door is priced, and on a refit that often decides whether it is possible at all.

THE SPECIAL TYPES

DUTCH
Split leaf. The top half opens on its own.

PIVOT
Turns about a point set in from the edge.

DOUBLE & SIDELITES
A pair in one frame with fixed glass each side.

COMMERCIAL DOORS / RATED & PROTECTIVE

Assemblies tested against a specific threat. Each one is a listing, not a description.

TESTED AGAINST ATTACK

FORCED ENTRY
Heavy gauge skins, reinforced edges and tested hardware, in an assembly that looks like any other door. Tested for how long it holds against a determined attack.

BULLET RESISTANT
Rated assemblies for schools, banks and government buildings. The rating belongs to the whole opening - leaf, frame, glazing and hardware together.

BLAST
Assemblies that resist detonation from high explosive, vapor cloud or dust cloud. Specified on military, government and process industry work, and available with a fire or windstorm rating on the same leaf.

TESTED AGAINST WEATHER

TORNADO RESISTANT
Doors passing FEMA 361 and ICC 500. Rated to withstand winds up to 250 mph and the debris impact that comes with them. Storm shelters and safe rooms.

HURRICANE RESISTANT
Assemblies meeting ANSI A250.13, holding against wind and wind borne debris up to 170 mph. Gulf coast and coastal Texas work.

THE NUMBER BELONGS TO A TESTED ASSEMBLY
A 250 mph rating is not a property of steel. It is the result of one specific leaf, frame, anchor and hardware combination being tested together. Substitute any part and the rating is gone. We quote these openings against a listing and the listing goes on the schedule.

TESTED ASSEMBLIES

FORCED ENTRY
Heavy skins and reinforced edges in an ordinary shell.

BULLET RESISTANT
The rating belongs to the whole opening, not the leaf.

BLAST RESISTANT
Reinforced frame, multipoint hardware, structural anchors.

COMMERCIAL DOORS / PERFORMANCE & FINISH

Five more hollow metal variants, each solving one problem the standard leaf does not.

PERFORMANCE

TEMPERATURE RISE
A fire rated door that also limits how hot the unexposed face gets. Required in high rise stairwell enclosures, where people are still on the stairs while the fire burns on the other side of the door.

ENERGY EFFICIENT
Thermal break in the frame and an insulating core in the leaf, giving a lower U factor across the whole assembly. On an exterior opening the frame is usually the weak point, not the leaf.

ACOUSTIC
Rated by STC to ASTM E413. STC in the 40s suits most rooms; above STC 45 for anywhere sound control is critical. The seal set matters as much as the leaf.

FINISH AND MATERIAL

STAINLESS STEEL
Rust resistant and washable. Hospitals, kitchens, laboratories, pools and anywhere the opening is cleaned down or sits in moisture.

WOOD GRAIN FINISH
Steel engraved and stained to read as wood. Steel duty on a high use opening in a space that has to look residential.

PREFINISHED
Finished at the works in any color, so nothing is painted on site. Less schedule time, no jobsite VOCs and an even finish across every leaf.

CUSTOM
Non standard sizes, historic profiles and one off openings. Steel is formed, so a shape that does not exist can be made rather than found.

FINISH AND MATERIAL

STAINLESS STEEL
Rust resistant and washable. Kitchens, labs and pools.

ACOUSTIC
Perimeter gaskets and an automatic drop seal.

PREFINISHED
Finished at the works, so nothing is painted on site.

COMMERCIAL DOORS / CONTROLLED ENVIRONMENTS

Openings where what passes through the door matters more than who does.

THE FIVE

DETENTION & BEHAVIORAL	Built to resist sustained physical abuse and to remove ligature points. Correctional facilities, secure psychiatric and behavioral health units. Hardware is as much of the specification as the leaf.
CLEANROOM	Flush faces, coved or sealed edges and no ledges that hold particles. Gasketed all round so the pressure differential between rooms is held.
LEAD LINED	Sheet lead laminated into the leaf and the frame to block x-ray emission. Imaging suites, dental rooms and any space with a radiation source. The lead thickness is set by the physicist report, not by us.
RF SHIELDED	Continuous conductive seal around the perimeter so the opening does not leak radio frequency. MRI rooms, test chambers and secure communications spaces.
COLD STORAGE	Thick insulated leaf, heated frame to stop it freezing shut, and a sweep that seals against a cold floor. Coolers, freezers and chilled process rooms.

THESE OPENINGS ARE SPECIFIED BY SOMEBODY ELSE
A lead thickness comes from a radiation physicist. An RF attenuation figure comes from the test engineer. A detention grade comes from the facility standard. We build to the figure we are given and we put the source of it on the schedule.

CONTROLLED OPENINGS

CLEANROOM
Flush faces, sealed edges, gasketed all round.

COLD STORAGE
Thick insulated leaf and a heated frame.

DETENTION
Built to resist abuse and to remove ligature points.

AUTOMATIC DOORS / SECURITY ENTRANCES

Where the entrance has to control who passes, not just open for them.

THE RANGE

SECURITY REVOLVING	A revolving door with sensing that stops two people sharing one compartment. Keeps the air seal of a revolving door and adds access control.
SECURITY PORTAL	A two door interlock. The first door has to close before the second will open, and the compartment checks for a single occupant. Data centers, vaults and secure floors.
SPEED GATE	Optical lane with glass barriers, in a lobby line. Fast throughput with tailgating detection. The usual answer for a corporate reception.
FULL HEIGHT TURNSTILE	Floor to head rotor, unsupervised. Perimeter fences, parking garages and yard gates where nobody is watching the line.
TRIPOD TURNSTILE	Waist height three arm rotor. Counts and controls, but does not stop somebody climbing over. Supervised areas only.
SERVICE WINDOW	A powered transaction window rather than a door. Pharmacy counters, ticket booths, drive through and secure reception hatches.

A SECURITY ENTRANCE IS NOT A FIRE EXIT
Most of these are not on a means of egress, and where one is, it needs a separate release and a fire alarm interface. We map every opening against the egress plan before anything is ordered.

SECURITY ENTRANCES

SPEED GATE

Optical lane with glass barriers, in a lobby line.

FULL HEIGHT TURNSTILE

Floor to head rotor, for an unsupervised perimeter.

SECURITY REVOLVING

Revolving door with single occupancy sensing.

INDUSTRIAL DOORS / HIGH SPEED & LARGE SPAN

Openings measured in seconds per cycle, or in tens of feet of clear span.

HIGH SPEED

RIGID HIGH SPEED
Aluminum or stainless slats on a curved or flat profile, opening several times faster than a standard roller. Where traffic is constant and the cycle count is the thing that kills an ordinary door.

FABRIC ROLL UP
A reinforced fabric curtain that rolls at speed. Lighter, cheaper and self repairing after an impact. Warehouse aisles, cold store vestibules and clean process rooms.

STRIP CURTAIN
Overlapping PVC strips in a fixed opening. No mechanism at all. Holds temperature and keeps birds and dust out where a door would slow the work down.

LARGE SPAN

BI-FOLD HANGAR
Two horizontal leaves that fold up against the header on cables or straps. Clears the full opening height, and does not need the headroom a one piece door does.

HYDRAULIC ONE PIECE
A single leaf lifted by hydraulic cylinders to form a canopy over the opening. The fastest large span door and the simplest mechanically. Aviation and agriculture.

VERTICAL LIFT
The door rises straight up into the headroom above the opening. Needs the height, but leaves the ceiling clear of track.

LARGE SPAN DOORS ARE STRUCTURAL
A bi-fold or hydraulic door hangs its whole weight and its wind load on the header. The building has to be engineered for it, and on an existing structure that is the first thing we check, before size, before finish and before price.

HIGH SPEED AND LARGE SPAN

FABRIC ROLL UP
A reinforced curtain that rolls at speed.

BI-FOLD HANGAR
Two leaves fold up against the header on straps.

RIGID HIGH SPEED
Aluminum slats, several times an ordinary roller.

FIRE & SMOKE CURTAINS

What closes an opening that is too wide, too tall or too open for a door.

THE THREE

FIRE CURTAIN
A woven fire resistant curtain that drops from a housing in the ceiling on alarm. Closes an atrium, an escalator void or a wide opening that no fire door could span.

SMOKE CURTAIN
Drops partway to form a reservoir that holds smoke at high level so it can be extracted, keeping the layer above head height while people leave.

ROLLING FIRE DOOR
A coiling steel door held open by a fusible link or by the fire alarm, closing under gravity at a controlled speed. Where a rated opening has to stay clear day to day.

WHAT THEY HAVE IN COMMON

- They sit invisible until the alarm, so nobody works around them.
- They close under gravity, so they still work when the power is gone.
- They need a controlled descent, not a drop, if egress passes underneath.
- They are tied into the fire alarm, and that interface is part of the install.
- They are inspected and drop tested annually, like any other opening protective.

THE HOUSING IS DECIDED BEFORE THE CEILING
Every one of these needs a pocket in the structure and a power and alarm feed to it. Retrofitting one into a finished ceiling costs several times what building it in does.

WHAT CLOSES THE OPENING

ROLLING FIRE DOOR
Held open on the alarm, closing under gravity.

SMOKE CURTAIN
Drops partway to hold smoke above head height.

COUNTER SHUTTER
The rated version of a service counter closure.

ACCESS DOORS & HATCHES

The openings nobody walks through, and every building needs.

IN A WALL OR CEILING

ACCESS PANEL — A hinged steel panel giving access to valves, dampers and junctions behind a finish. Flush, recessed for tile or plaster, or surface mounted.

FIRE RATED ACCESS PANEL — The same thing in a rated wall or ceiling, insulated and self closing so the rating of the partition is not broken by the hole.

DUCT ACCESS DOOR — In the side of a duct, for cleaning and for damper inspection.

IN A ROOF OR FLOOR

ROOF HATCH — A hinged insulated cover over a ladder or stair to the roof. Gas spring assisted, with a fall protection rail where the code calls for one.

SMOKE VENT — A roof hatch that also releases on heat or alarm, venting smoke out of a space.

FLOOR DOOR — A flush hinged panel in a floor or sidewalk, over a basement stair, a pit or a vault. Rated for the traffic that crosses it - pedestrian, or vehicle.

CELLAR DOOR — The sloped exterior pair over an external basement stair. Steel, and the reason a basement stays dry.

AN ACCESS PANEL IS NOT AN AFTERTHOUGHT
In a rated wall it has to carry a label, in a wet room it has to be sealed, and in a ceiling it has to be reachable. All three are decided while the wall is open, not after it is boarded.

ACCESS PRODUCTS

ACCESS PANEL
Flush, recessed or surface mounted in wall or ceiling.

ROOF HATCH
Gas spring assisted, with a fall protection rail.

FLOOR DOOR
Rated for the traffic that crosses it.

RESIDENTIAL / SECURITY & ANCILLARY

Six residential openings that fall outside the entry, interior and patio ranges.

SECURITY

SECURITY SCREEN DOOR A stainless steel mesh in a heavy aluminum frame. Looks like a screen, resists a knife and a boot. Lets the entry door stand open in the heat without opening the house.

SECURITY STORM DOOR A heavy gauge storm door with a keyed lock and a laminated glass panel. Weather in winter, ventilation in summer, and a second lock all year.

ANCILLARY

STORM DOOR Full view, half view or self storing. Protects the entry door and adds an air gap. A vented model is essential over a dark stained leaf in full sun.

SCREEN DOOR Hinged or sliding, in aluminum or wood. Pet resistant mesh where there is a dog.

PET DOOR Fitted into a leaf, a sidelite or a wall. Flap or powered, with a locking cover. On an insulated leaf it is cut and framed at manufacture, not on site.

ATTIC ACCESS A hatch or a folding stair in the ceiling, insulated and weatherstripped so the attic does not vent the house.

A SECURITY SCREEN IS ONLY AS GOOD AS ITS FRAME
The mesh is rarely what fails. Fixing into a wood jamb with short screws is. We anchor the frame into structure and use tamper resistant fixings, or the whole unit levers out in one piece.

SECURITY AND ANCILLARY

SECURITY SCREEN
Stainless mesh in a heavy aluminum frame.

STORM DOOR
Protects the entry door and adds an air gap.

PET DOOR
Cut and framed at manufacture on an insulated leaf.

COMMERCIAL DOORS / FRP & ALUMINIUM

The third commercial leaf material. Where steel rusts and wood swells, this is what goes in.

THE LEAF

FRP FLUSH Fiberglass reinforced polymer skins over an aluminum stile and rail frame. Will not rust, dent or delaminate. Pools, plant rooms, schools, car washes.

ALUMINUM FLUSH Aluminum sheet on the same frame. Lighter than steel, no paint to fail, and the choice on a coastal or wash-down opening.

MONUMENTAL STILE Heavy extruded stile and rail with a glazed or paneled infill. The public entrance version, on a 3-1/2 in or 5 in stile.

HYBRID FRP face bonded to an aluminum perimeter. Takes the abuse on the face and the hardware on the edge.

WHERE IT EARNS ITS PLACE

TEXTURED FACE Pebble, sandstone or woodgrain molded into the skin, so scuffs do not show and graffiti comes off.

NON STANDARD SHAPE Arched heads, unequal pairs, odd sizes and monorail cutouts. The material is made to order, so a shape that does not exist can be built.

RESTROOM & PARTITION The same FRP in partitions, doors and pilasters for wet and high abuse rooms.

INTERIOR FRAMING Light aluminum framing for interior glazed screens, with swing or sliding leaves in the same run.

THIS IS THE COASTAL AND WET ROOM ANSWER
A galvanized steel leaf on a pool deck or within sight of salt water is a warranty claim waiting to be made. FRP costs more at order and less over the life of the opening.

THE MATERIAL IN USE

FRP FLUSH
Will not rust, dent or delaminate.

ALUMINUM FLUSH
Lighter than steel, and no paint to fail.

MONUMENTAL STILE
Heavy extruded stile and rail with a glazed infill.

FRAMES / TYPES & ELEVATIONS

A frame is not only a way of hanging a leaf. Most of what an opening has to do is decided here.

ELEVATIONS

SINGLE	One leaf in one frame. The base case everything else is measured against.
PAIR	Two leaves in one frame, equal or unequal, with or without a mullion.
DOUBLE EGRESS	A cross corridor pair with one leaf swinging each way, so the corridor is a means of egress in both directions. Hospitals, schools, long circulation.
TRANSOM	A glazed, paneled or louvered head above the leaf, split off by a transom bar.
SIDELITE	A fixed glazed panel beside the leaf, in the same welded frame.
BORROWED LITE	A glazed frame with no door in it at all, borrowing daylight from the room next door. Interior offices, meeting rooms and corridors.

SPECIAL FRAMES

CASED OPENING	A frame with no stop and no door. Finishes an opening that is never closed.
COMMUNICATING	Two frames back to back in one wall, for a pair of doors between adjoining rooms. Hotels and connecting suites.
STICK SYSTEM	Component lengths cut and assembled into large elevations on site, where a welded frame would be too big to deliver or to handle.

THE ELEVATION IS DECIDED BEFORE THE WALL
A welded sidelite, transom or double egress frame has to be set as the wall is built. Deciding it after the partition is boarded means cutting the wall open again, and on a rated wall it means a new label.

THREE ELEVATIONS

DOUBLE EGRESS

One leaf swings each way, so the corridor works both.

BORROWED LITE

A glazed frame with no door in it at all.

CASED OPENING

No stop and no door. Finishes an open opening.

ROLLING CLOSURES / THE FAMILY

Everything that rolls into a barrel above the opening, from a light shutter to a rated fire door.

SERVICE DOORS

ROLLING STEEL Interlocking slats in steel, aluminum or stainless. The default exterior service door on a loading bay or a yard.

ROLLING SHEET A single corrugated sheet rather than slats. Light, cheap, and the right answer on a small self storage or garage opening.

INSULATED ROLLING Foam filled slats with a perimeter seal set. Cuts air leakage and noise on a conditioned building, and the only rolling door that earns an energy credit.

STAINLESS ROLLING For wash-down, coastal and food areas where a galvanized slat will bloom.

RATED AND SPECIALIST

ROLLING FIRE DOOR Held open on a fusible link or the alarm, closing under gravity at a governed speed. Where a rated opening has to stay clear day to day.

COUNTER SHUTTER The short version over a service counter, in metal, wood or an integral frame. Available with the same fire rating as the full height door.

WIND RATED Tested to a design wind pressure and to debris impact. Gulf coast, coastal Texas and anywhere the shutter is part of the building envelope.

OPERATION Push up, chain hoist, crank, tube motor or jackshaft operator, with a manual release on every powered door.

HEADROOM AND SIDEROOM DECIDE THE DOOR
A rolling door needs a barrel above the opening and a guide each side. Where the headroom is not there, the answer is a low profile barrel, a bottom coil, or a different door type entirely. We measure first.

THE SERVICE DOORS

ROLLING STEEL
Interlocking slats. The default on a loading bay.

ROLLING SHEET
A single corrugated sheet. Light, cheap, small openings.

INSULATED ROLLING
Foam filled slats and a full perimeter seal set.

ROLLING CLOSURES / GRILLES & GATES

Closures you can see through. Retail units, malls, concourses, parking garages and anywhere air has to pass.

OVERHEAD ROLLING

STRAIGHT LATTICE Rods and links in a straight pattern. The most open of the grilles and the most common mall storefront closure.

BRICK PATTERN Links offset row to row. Stiffer than straight lattice on a wide opening.

SOLID PANEL INFILL Perforated or solid panels between the rods, where display has to be hidden but ventilation is still wanted.

ALUMINUM GRILLE Clear or bronze anodized, and the lighter unit on a manual storefront.

SIDE FOLDING

SIDE FOLDING GRILLE Stacks into a pocket at one or both jambs rather than rolling overhead. The answer where there is no headroom at all above the opening.

SIDE FOLDING CLOSURE The same carriage with solid panels instead of links, for a full visual and security barrier across a wide concourse opening.

SCISSOR GATE A folding steel lattice gate across a doorway or a window. Fixed track or removable, and the cheapest way to secure a small frontage.

CURVED AND ANGLED Grille track that follows a curved or angled storefront, so an irregular unit closes on one line.

A GRILLE IS A SECOND LINE, NOT THE FIRST
Grilles deter and delay. They do not stop a determined attack, and on a unit holding high value stock we specify a solid rolling shutter or a laminated glass line behind the grille as well.

SEEING THROUGH THE CLOSURE

STRAIGHT LATTICE
The most open grille and the usual mall closure.

SIDE FOLDING
Stacks into a jamb pocket. No headroom needed.

SCISSOR GATE
Top and bottom track. The small frontage answer.

HIGH PERFORMANCE DOORS / THE FAMILY

Doors bought on cycles per day and seconds per cycle, not on how they look.

BY CURTAIN

FABRIC ROLL UP A reinforced fabric curtain on a drive shaft. The cheapest high speed door and the lightest on the structure. Interior aisles and vestibules.

RUBBER A heavy rubber curtain that shrugs off impact and petrochemical splash. Exterior openings and the hardest duty inside.

RIGID SPIRAL Aluminum slats that coil into a spiral without touching each other. Full vision, low headroom, ventilated and hurricane rated variants.

HIGH SPEED SLIDING The same speed on a horizontal track, where there is no room above the head.

BY ENVIRONMENT

FREEZER & COOLER Heated frame and side seals so the door does not ice up, on a curtain that holds the temperature line while traffic passes.

CLEANROOM & PHARMA Smooth washable curtain, flush guides and no ledges. Pressure differential is held between graded rooms.

BREAKAWAY The curtain releases on impact and re-seats itself on the next cycle, instead of writing off the door and stopping the aisle.

INSECT & DUST Fast cycling with a mesh or clear curtain to keep flying insects and airborne dust out of a production room.

CYCLE COUNT IS THE SPECIFICATION
A standard roller rated for 20,000 cycles will fail inside a year on an aisle running 300 cycles a day. Tell us the traffic and we size the door to it, because the door that is cheap to buy is rarely cheap to run.

THE THREE CURTAINS

RUBBER
Shrugs off impact and petrochemical splash.

RIGID SPIRAL
Slats coil clear of each other. No slat wear.

HIGH SPEED SLIDING
The same speed where there is no headroom.

COLD STORAGE DOORS

Coolers, freezers, blast cells and chilled process rooms. The opening is where the money leaks out.

HOW IT MOVES

HORIZONTAL SLIDING A single insulated leaf on a top track, pulled clear of the opening. The standard cold room door, manual or power operated.

BI-PARTING SLIDE Two leaves parting from the center for a wide opening and constant pallet traffic. Full width access in half the travel.

VERTICAL LIFT The leaf rises straight into the headroom. Where there is no side room for a leaf to park, and the usual choice on a blast freezer.

SWING A hinged insulated leaf with a cam lift hinge and a heavy latch. Small openings, and the cheapest cold door there is.

WHAT MAKES IT A COLD DOOR

HEATED FRAME A heater cable in the jamb and sill so the gasket does not freeze to the frame. Without it a freezer door is torn off within a season.

SWEEP AND GASKET A full perimeter gasket and a sweep that seals against a cold, moving floor.

TRAFFIC PROTECTION Bumpers, guide posts and impactable panels, because the door will be hit.

STRIP CURTAIN Overlapping PVC strips in the opening behind the door, holding the line while the door itself is open.

THE FASTEST DOOR IS THE CHEAPEST DOOR
Every second a freezer door stands open is refrigeration paid for twice. On a busy cold store the case for a powered high speed door pays back on the energy bill alone, before the product loss is counted.

HOW THE COLD DOOR MOVES

HORIZONTAL SLIDING
One leaf pulled clear on a top track.

BI-PARTING
Full width access in half the travel.

VERTICAL LIFT
Rises into the headroom. No side room needed.

TRAFFIC & IMPACT DOORS

Double acting leaves that a person, a trolley or a pallet truck goes through without stopping.

BY FACING

ABS IMPACT	A tough molded facing over a rigid core. The default back-of-house door in kitchens, supermarkets and distribution.
ALUMINUM	Aluminum faces for the heaviest trolley traffic and the longest service life.
STAINLESS STEEL	Wash-down and food processing, where the door is hosed with the room.
HIGH PRESSURE LAMINATE	A finished decorative face for the front-of-house side of a service door.

CONFIGURATION

SINGLE & DOUBLE	One leaf on a light route, a pair where a pallet has to pass without turning.
PORT WINDOW	A vision port at eye height, because a double acting door with no window is an accident waiting to happen. Required on every route we fit.
INSULATED TRAFFIC	A cored leaf for a chilled room where a full cold store door is too much.
CAFE & GATE	Half height swinging leaves for a counter, a bar or a service run.

THE HINGE IS THE PART THAT WEARS
A double acting door is only as good as its gravity hinge. We fit a serviceable cartridge hinge and carry the spares, so a worn door is a fifteen minute job rather than a new leaf.

DOUBLE ACTING ARRANGEMENTS

ABS IMPACT PAIR

A pallet passes without turning. Ports both leaves.

STAINLESS

Wash-down and food processing rooms.

CAFE & GATE

Half height, for a counter or a service run.

FIRE & SMOKE / OPENING PROTECTIVES

Everything that closes a rated opening, beyond the labeled swinging door.

HORIZONTAL SLIDING & FOLDING

ACCORDION FIRE DOOR A folding leaf that parks in a pocket and closes across the opening on alarm. Closes an atrium, a wide corridor or a elevator lobby that no swing door could span.

MOVEABLE FIRE WALL The same principle on a full story height, dividing a floor plate into rated compartments only when the alarm calls for it.

SECURITY ACCORDION The non rated version, for closing a concourse or a wing out of hours, and available with a fire rating on the same track.

CURTAINS

VERTICAL FIRE CURTAIN A woven curtain dropping from a ceiling housing, rated for integrity and, with a water film, for radiation as well.

HORIZONTAL CURTAIN Closes a floor opening or an escalator void across, rather than down.

PERIMETER FIRE+SMOKE Wraps an atrium or a void on all sides, forming a rated enclosure on alarm.

DRAFT CURTAIN Fixed or deployable, forming a smoke reservoir at high level for extraction.

ELEVATOR SMOKE CONTAINMENT A gasketed screen across the elevator opening, so the shaft does not carry smoke from floor to floor. Retrofits to an existing elevator entrance.

ASK WHICH TEST THE PRODUCT PASSED
UL 10B and UL 10D are not the same thing, and a hose stream test is not always included. On a rated opening we quote the listing, the test standard and the rating in minutes, and it goes on the schedule.

HOW THE OPENING CLOSES

ACCORDION FIRE DOOR

Parks in a pocket, closes across on alarm.

ELEVATOR SMOKE SCREEN

Seals the elevator opening so the shaft carries nothing.

DRAFT CURTAIN

Holds smoke at high level for extraction.

PROTECTIVE & SHIELDED DOORS

Assemblies that hold back pressure, sound, water or radiation. Each one is a tested listing.

PRESSURE AND WATER

BLAST & PRESSURE Rated to a peak pressure and impulse, with a frame and anchors engineered to the same figure. Available with a fire or a windstorm rating on one leaf.

AIRTIGHT A sealed, inflatable or wedge gasketed leaf holding a pressure differential. Test chambers, hyperbaric rooms and pressurized plant.

WATERTIGHT & FLOOD Gasketed and dogged shut against a head of water. Basements, pump rooms, tunnels and any opening below a flood line.

TORNADO & HURRICANE Tested to FEMA 361 and ICC 500 for shelters, or ANSI A250.13 for coastal work.

SOUND, SIGNAL AND RADIATION

ACOUSTIC & SCIF STC rated to ASTM E413, with a full seal set. The SCIF version adds a conductive perimeter and a listed lock package.

RF SHIELDED A continuous conductive seal round the perimeter for MRI rooms, test chambers and secure communications spaces.

LEAD LINED Sheet lead in the leaf and the frame, in hollow metal or in wood, with a leaded vision panel. Thickness comes from the physicist report.

NEUTRON SHIELDED A borated or hydrogenous core for a linear accelerator vault. Sliding, and usually powered, because the leaf is measured in tons.

SUBSTITUTE NOTHING ON A TESTED ASSEMBLY
The rating belongs to one specific leaf, frame, anchor, gasket and hardware set tested together. Change a hinge, a closer or an anchor and the listing no longer applies to what is in the wall.

HOW THE SEAL IS MADE

WATERTIGHT
Dogged shut against a head of water.

ACOUSTIC
Deep gaskets and an automatic drop seal.

LEAD LINED SLIDING
Sheet lead in leaf and frame, leaded vision panel.

DETENTION & SECURITY GRADES

Correctional, behavioral health and secure holding. Graded by test, not by description.

THE GRADES

ASTM F1450	Four security grades for swinging hollow metal detention assemblies, Grade 1 the highest. The grade sets face gauge, reinforcement and hardware.
HMMA 863	The hollow metal industry specification for detention doors and frames, used alongside the ASTM grade on most US schedules.
COMMERCIAL SECURITY	Below Grade 4. Heavier than a standard leaf, lighter than a detention one. Holding rooms, evidence stores and secure back-of-house.

THE TYPES

SWINGING DETENTION	Hinged leaf with a detention lock, food pass and vision slot as required.
SLIDING DETENTION	Manual or power operated slider on a floor or wall track. Cell fronts and sally ports, where a swing leaf would be an assault risk.
BAR GRATE	An open bar or grate leaf for a corridor, a stair or a sally port that has to stay visible and ventilated.
SECURITY GRILLE DOOR	A grilled leaf in a detention frame, swinging or sliding, manual or powered.
BEHAVIORAL HEALTH	Anti ligature edges, hardware and vision frames, in a leaf built to take sustained abuse. Psychiatric and behavioral units.

THE HARDWARE IS HALF THE SPECIFICATION
A Grade 1 leaf on a commercial lock is a Grade 1 leaf on a commercial lock. Detention hardware, hinges, frames and anchors are ordered as one set against the facility standard, and we quote them that way.

THE THREE DETENTION TYPES

SWINGING

Vision slot and food pass in a hinged leaf.

SLIDING

Cell fronts and sally ports, manual or powered.

BAR GRATE

Stays visible and ventilated.

AUTOMATIC DOORS / HEALTHCARE & CLEAN

Powered openings in hospitals, laboratories and controlled process rooms.

HEALTHCARE

ICU & CT SLIDING A wide manual or powered slider giving full bed access, with a breakout leaf and a lead lined option for imaging rooms.

HERMETIC SLIDING A gasketed leaf that seals as it closes, holding the pressure regime in an operating room, an isolation room or a sterile corridor.

LOW ENERGY SWING Opens slowly on a knowing act. Wards, consulting rooms and accessible WCs, and the only powered door that does not need guide rails.

BARIATRIC & WIDE LEAF Heavy duty operators sized for an oversize leaf and constant bed traffic.

CONTROLLED ENVIRONMENTS

CLEANROOM SLIDING Flush faces, coved edges and no ledges, on an operator rated for the graded room it serves.

AIRTIGHT SLIDING The industrial version of a hermetic door, holding a differential across a process room boundary.

WASH-DOWN Stainless operator housing and leaf, for food and pharmaceutical areas that are hosed down with the room.

INTERLOCKED PAIR Two powered doors that cannot both be open, forming an airlock or a gowning vestibule between two graded spaces.

A HOSPITAL DOOR IS AN INFECTION CONTROL DEVICE
Hands-free operation, a flush washable leaf and a seal that actually closes are clinical requirements, not conveniences. We hand over the operator settings and the seal checks with the O&M file.

HOW THE CLEAN OPENING WORKS

ICU SLIDING

Full bed access, with a breakout leaf.

HERMETIC

Seals as it closes and holds the pressure regime.

CLEANROOM

Flush faces, coved edges, no ledges to hold particles.

AUTOMATIC DOORS / RATED & INDUSTRIAL

Powered openings that also have to carry a rating, or move something bigger than a person.

RATED AUTOMATIC

HURRICANE RATED A powered sliding or swing entrance tested to a design pressure and to large missile impact, so the lobby stays part of the envelope.

BLAST RATED Automatic leaves and framing engineered to a peak pressure, for government, transport and process buildings.

BALLISTIC Rated glazing and framing on a powered entrance, for banks, courts and secure reception lobbies.

SMOKE RATED SLIDING A powered slider tied to the fire alarm, closing and sealing on activation.

INDUSTRIAL AND TRANSPORT

INDUSTRIAL SLIDING A heavy powered slider for a plant opening, sized for forklift traffic rather than for people.

PLATFORM SCREEN DOOR Powered screens along a rail platform edge, synchronized with the train doors.

AUTOMATIC FOLDING Powered folding leaves where the side room for a slider does not exist.

EXIT BREACH CONTROL A powered entrance that locks down or alarms on a wrong way movement, without obstructing the required means of egress.

EVERY POWERED DOOR IS A CODE OBJECT
ANSI/BHMA A156.10 for full power, A156.19 for low energy, A156.27 for revolving, plus UL 325 and the egress plan. We survey, set the sensors, run the daily safety check with your staff and document it.

RATED AND HEAVY DUTY

HURRICANE RATED
Reinforced jambs and laminated glazing.

INDUSTRIAL SLIDING
Sized for forklifts rather than for people.

PLATFORM SCREEN
Synchronized with the train doors.

SECURITY ENTRANCES / GATES & LANES

The rest of the security entrance range, beyond the revolving door and the turnstile.

GATES

SWING GATE LANE A single powered glass leaf in a lobby line, for deliveries, luggage and anyone who cannot use an optical lane.

ADA GATE A wide lane, at least 32 in clear, alongside the standard lanes. Required, and the first thing an access audit looks for.

SLIDING BARRIER LANE Glass barriers that retract into the pedestal rather than swinging, for a narrow lobby where a swinging leaf would foul the line.

WAIST HIGH SWING GATE A simple controlled gate at a back door, a yard or a plant boundary.

COUNTING AND CROWDS

RETAIL TURNSTILE One way entry control at a supermarket or a warehouse club, mechanical and unpowered.

SPORTS & VENUE High throughput turnstiles with ticket and count integration for stadia, arenas and attractions.

DROP ARM & FLAP Low barrier lanes for gyms, transit and libraries, where speed matters more than stopping a determined intruder.

TAILGATE DETECTION Sensing across the lane that flags two people on one credential, on any of the lane types above.

COUNT THE LANES AGAINST THE PEAK, NOT THE AVERAGE
A lobby is sized by the busiest fifteen minutes of the day. Three lanes and an ADA gate handle a peak that two lanes will queue out of the door, and the queue is what people remember.

THE LANE TYPES

SWING GATE LANE

For deliveries, luggage and anyone with a case.

ADA GATE

At least 32 in clear. The first audit question.

TRIPOD TURNSTILE

Counts and controls in a supervised area.

TRANSACTION & SERVICE WINDOWS

Openings that pass a package, a payment or a prescription without letting anybody through.

HOW IT OPENS

SIDE SLIDING A single or bi-parting slider in a fixed frame. The standard drive-through and reception window, manual, self closing or fully automatic.

BI-FOLD PUSH BAR Folding leaves driven by a push bar, so a member of staff carrying a tray can open it hands free.

VERTICAL LIFT A sash rising into the head, for a walk-up counter or a concession opening.

PASS-THRU CABINET A double door cabinet through the wall, interlocked so both sides never open together. Laboratories, kitchens and secure reception.

WHAT GOES THROUGH IT

TRANSACTION DRAWER A steel drawer through the wall for cash and documents after hours.

DEAL TRAY A shaped tray under a fixed screen, for a counter that never opens at all.

PHARMACY WINDOW A slider or drawer with the storage and the counter built to the pharmacy layout, and bullet resistant glazing where the site calls for it.

TICKET & CONCESSION A speech transmission panel and a small pass opening, for a box office or a kiosk that has to be heard through the glass.

BULLET RESISTANT IS A GLAZING LEVEL, NOT A LABEL
UL 752 runs from Level 1 to Level 10. A Level 1 window will not stop what a Level 3 window stops, and the frame has to carry the same level as the glass or the opening is rated by its weakest part.

HOW THE WINDOW OPENS

SIDE SLIDING
Manual, self closing or fully automatic.

BI-FOLD PUSH BAR
Opens hands free with a tray in both hands.

PASS-THRU CABINET
Interlocked, so both sides never open together.

ACCESS PRODUCTS / ROOF & SAFETY

What gets a person or a plant item onto the roof, and what stops them falling off it.

ROOF OPENINGS

PERSONNEL HATCH	A single leaf over a ladder or a ship stair, gas spring assisted, insulated and weathered into the roof build-up.
SERVICE STAIR HATCH	A wider hatch over a stair, so a person can carry tools up in both hands.
EQUIPMENT HATCH	A large multi leaf or removable cover for lifting plant in and out. Sized to the biggest item that will ever have to pass, not the smallest.
AUTOMATIC FIRE VENT	A hatch that also releases on a fusible link or on alarm, venting heat and smoke out of the space below.

FALL PROTECTION

SAFETY POST	A telescopic grab post that rises from the ladder, giving a handhold at the point where a person steps off onto the roof.
HATCH RAILING	A fixed guard round the hatch opening with a self closing gate at the ladder.
SAFETY GRATING	A hinged grating under the cover, so an open hatch is not an open hole.
LADDER & CAGE	The fixed ladder itself, with a cage or a rail system where the climb needs one.

AN OPEN HATCH IS A HOLE IN THE ROOF
Every roof hatch we fit is quoted with a railing and a safety post as standard. Leaving them out saves a few hundred dollars once and puts an unguarded opening on the roof for the life of the building.

THE ROOF OPENING

SERVICE STAIR HATCH

Gas spring assisted over a ladder or ship stair.

RAILING & POST

Quoted with every hatch. An open hatch is a hole.

AUTOMATIC FIRE VENT

Releases on a fusible link or on alarm.

INTERIOR DOORS / CONSTRUCTION & INFILL

What an interior leaf is made of, and what can be dropped into a panel opening instead of wood.

CONSTRUCTION

MDF STILE & RAIL	A paint grade leaf with no grain to telegraph through the finish. The best painted door there is, and the reason most white doors are MDF.
STAIN GRADE WOOD	Solid wood stiles and rails with veneered panels, in twenty or more species, for a leaf that will be stained rather than painted.
SOLID CORE FLUSH	A particleboard or mineral core under a veneer or laminate face. The quiet, heavy interior door, and the base for most fire ratings.
HOLLOW CORE	A light framed leaf for closets and low traffic rooms. Cheapest by a long way.

PANEL INFILL

GLASS	Clear, frosted, reeded, seeded or laminated, in any panel opening of the door.
METAL & RESIN	Perforated or solid metal and translucent resin panels, for a modern leaf that still reads as a panel door.
LOUVER	Fixed or adjustable blades in one or both panels, for plant and laundry rooms.
ARCHED & PAIRS	Arched heads and common arch pairs, cut so the arch runs across both leaves.

RATE THE DOOR AND THE FRAME TOGETHER
Interior wood doors carry 20, 45 and 90 minute labels and STC ratings, but only in the frame, seal and hardware set they were tested in. A rated leaf in an unrated frame is an unrated opening.

THE PANEL AND WHAT FILLS IT

MDF STILE & RAIL

No grain to telegraph through the paint.

GLASS INFILL

Clear, frosted, reeded, seeded or laminated.

METAL INSERT

Perforated or solid metal in a panel opening.

CLOSET & ROOM DIVIDERS

Doors that save floor space, and doors that divide a room without building a wall.

CLOSET

BIFOLD Two or four leaves folding to the jambs on a top track. The standard US closet door, in wood, MDF, louver or mirror.

BYPASS SLIDING Two or three panels passing each other on a double track. Half the opening is always covered, and there is nothing to swing into the room.

MIRRORED A safety backed mirror in a bifold or bypass frame, in a wood, aluminum or steel surround.

PIVOT CLOSET A single pivoting leaf for a narrow reach-in, where a bifold track is overkill.

DIVIDING A ROOM

POCKET DOOR The leaf slides into a framed cavity in the wall and disappears. Single or converging pair, on a kit that goes in before the board.

SLIDING BARN Face fixed track above the opening. No wall surgery, but the leaf has to have a clear wall to park against and it does not seal.

ACCORDION PARTITION A folding panel wall on a ceiling track, dividing a hall, a classroom or a function room. Acoustic versions carry an STC rating.

GLASS ROOM DIVIDER Sliding or fixed glazed screens on slim framing, for offices and studies that need the light but not the noise.

A POCKET DOOR IS DECIDED BEFORE THE PLASTER
The cavity, the header and the position of every service in that wall are fixed at first fix. Retrofitting a pocket into a finished wall means opening it up, and on a load bearing wall it means a new header.

SAVING THE FLOOR SPACE

LOUVER BIFOLD
Folds to the jambs on a top track.

MIRRORED BYPASS
Nothing swings into the room, half always covered.

ACCORDION PARTITION
Divides a hall or a function room on a track.

BIG GLASS OPENINGS

Where a wall has to open. Folding, sliding and pocketing systems in aluminum, wood or clad.

THE SYSTEMS

FOLDING GLASS WALL Panels hinged in pairs, folding and stacking to one or both jambs. Opens the whole aperture, and stacks in front of the wall rather than inside it.

MULTI-SLIDE Large panels sliding on two, three or four tracks and stacking behind each other. Slimmer sightlines than folding, and easier to move.

POCKETING MULTI-SLIDE The same system running into a pocket in the wall, so the open aperture has no visible frame or stacked panels at all.

LIFT AND SLIDE The handle lifts the panel off its seals before it moves, so a very heavy leaf glides and then seats down onto a full compression seal.

SMALLER OPENINGS

SINGLE TRACK SLIDING Panels that slide and stack on one track, for a narrow head or a low budget.

CORNER OPENING A folding or sliding unit that meets at a corner with no post in it, so two walls open into one continuous opening. The panels carry the corner.

SWING PATIO PAIR A hinged pair or a single with a fixed panel. The simplest and the tightest sealing of all of them.

FOLDING WINDOW The same folding system at counter height, for a service counter, a bar or a pass.

THE SILL IS THE DECISION, NOT THE PANELS
A flush sill looks best and drains worst. A raised sill sheds water and trips people. On an exposed elevation we specify a drained flush sill with a heated or trench drain outside, or we raise it and say so.

THREE WAYS TO OPEN A WALL

FOLDING GLASS WALL
Stacks in front of the wall, opens the whole aperture.

MULTI-SLIDE
Panels stack behind one another on two to four tracks.

POCKETING MULTI-SLIDE
Panels run into a pocket in the wall and disappear.

STORM & SCREEN DOORS

The second leaf in front of the entry door. Weather in winter, air in summer, and a second lock all year.

BY GLASS AREA

FULL VIEW Glass over the whole leaf, with an interchangeable screen panel. Shows the entry door behind it, and the usual choice on a good front door.

SPLIT FULL VIEW Full glass split across the middle so the upper half vents behind the lower.

MID VIEW Glass over the upper two thirds and a solid kick panel below. Takes a knock from a boot or a vacuum without cracking.

HIGH VIEW A smaller upper light over a deep panel. The most durable, the least glass.

SCREENS AND EXTRAS

RETRACTABLE SCREEN The screen rolls into a cassette at the head and drops when the glass is raised. Nothing to store in the garage each season.

SELF STORING Glass and screen both live in the door and slide past each other.

PET READY A framed pet flap built into the kick panel, with a locking cover.

SECURITY STORM Heavy gauge frame, keyed multipoint lock and laminated glass. A storm door and a second security leaf in one unit.

A DARK ENTRY DOOR NEEDS A VENTED STORM DOOR
Full glass over a dark stained or dark painted leaf in full sun traps heat and can void the entry door warranty. Where the elevation faces the sun we fit a vented or a retractable screen model, or none at all.

BY GLASS AREA

MID VIEW
Solid kick panel takes the boot and the vacuum.

HIGH VIEW
The most durable and the least glass of the three.

SPLIT FULL VIEW
Full glass, split so the top half vents behind the lower.

LOADING DOCK EQUIPMENT

The door is half of a loading bay. This is the other half, and we supply and service both.

THE BAY

DOCK LEVELER Bridges the gap and the height difference between the dock floor and the trailer bed. Hydraulic, mechanical or air powered.

EDGE OF DOCK A short leveler bolted to the face of the dock, where the height difference is small and there is no pit.

VEHICLE RESTRAINT A hook or a wheel chock that holds the trailer to the dock, so it cannot creep away while a forklift is on the bed.

DOCK BUMPER Laminated rubber or steel faced blocks that take the impact of the trailer instead of the building.

SEALING AND SAFETY

DOCK SEAL Compressible foam pads that the trailer presses against. The tightest seal, on a fleet of consistent trailer sizes.

DOCK SHELTER A fabric hood over the opening for mixed trailer sizes and high vehicles.

SAFETY BARRIER A powered or manual barrier across the inside of the opening, so nothing rolls out of an open dock door.

LIGHTS & SIGNALS Dock lights, a communication light set inside and out, and the interlock that ties the restraint, the leveler and the door together.

THE DOOR AND THE DOCK ARE ONE SYSTEM
A high speed door on a bay with no seal is money spent on the wrong half of the problem. We survey the bay as a whole and quote the door, the leveler, the seal and the restraint against the traffic it takes.

THE OTHER HALF OF THE BAY

DOCK LEVELER

Bridges the gap and the height to the trailer bed.

DOCK SEAL

Compressible pads on a consistent trailer fleet.

VEHICLE RESTRAINT

Holds the trailer while a forklift is on the bed.

REFERENCE / CHOOSING THE OPENING

Start from what the opening has to do, and the product follows.

BY WHAT THE OPENING IS

THE OPENING	WHAT WE USUALLY FIT	WHY
Front door, exposed	Fiberglass	Will not rot, dent or need repainting
Front door, statement	Iron	Heaviest and most secure, changes the elevation
Front door, traditional	Mahogany	Real wood, takes any stain
Back or side door	Fiberglass or steel	Duty over looks
Room to room	Solid core interior	Sound and feel
Closet or storage	Hollow core, bifold, bypass	Weight and swing space
Garden or deck	Patio, sliding or folding	Glass area and drainage
Shop entrance	Aluminum storefront	Traffic and glass
Back of house, commercial	Hollow metal	Duty, and it can be rated
High traffic entrance	Automatic	Hands free and accessible
Vehicle opening	Rolling or high speed	Span and headroom

BY WHAT IT HAS TO RESIST

REQUIREMENT	WHAT CHANGES
Fire	Rated leaf, rated frame, self closing, positive latching, no dogging
Sound	Solid or mineral core, full perimeter seal, automatic door bottom
Heat	Insulated core, thermal break, Low-E insulated unit, working threshold
Forced entry	Reinforced strike, full throw deadbolt, laminated glass at the lock
Weather	Sill pan, membrane, clear weeps, three part seal
Wind and debris	Tested and listed assembly, heavier gauge, impact glazing
Accessibility	Clear width, lever hardware, low rise threshold, opening force

REFERENCE / WHAT DECIDES THE PRICE

No prices in this book. These are the things that move one.

THE BIG FOUR

THE OPENING
A door that fits an existing sound frame costs a fraction of one that needs the frame, the reveal and the threshold rebuilt. This is why we measure before we quote.

THE MATERIAL
Iron, wood, fiberglass, hollow metal and aluminum sit at very different points, and the gap between them is far wider than the gap between designs in one material.

THE GLASS
Clear tempered is the baseline. Decorative, obscure, laminated and fire rated glazing each step up, and fire resistive glazing is a multiple of everything else.

THE HARDWARE
A lever set and a closer, or a full commercial set with an exit device, an electric strike and an access reader. The leaf can be the smaller half of the bill.

WHAT ELSE MOVES IT

- Non standard size - everything is made to the opening rather than picked off a shelf.
- Factory finish in a specific color, rather than a standard one.
- A rated opening, because the whole assembly has to be listed.
- Anything electric, because it brings a supply, a controller and an interface.
- Access - stairs, elevators, tight corners and anything that needs two crews.
- Making good, where the old opening leaves the wall in a state.

WHY THERE ARE NO PRICES IN THIS CATALOG
Every opening differs, and a price against a photograph would be wrong more often than right. We measure on site at no charge, then quote in writing against a schedule you can check line by line.

COMMERCIAL / RATED OPENING CHECKLIST

Run this before ordering, and again before handover.

BEFORE ORDERING

- Wall rating confirmed, and the opening rating that follows from it.
- Whether the opening also needs smoke and draft control.
- The listed assembly named, with the listing agency.
- Glazing decided - type, area and maximum dimension against the rating.
- Hardware schedule checked: every item labeled and permitted on a rated leaf.
- Closer or spring hinge on every leaf, and a coordinator on any pair.
- Frame gauge, anchoring method and grout requirement all covered by the listing.
- Any electric device confirmed as permitted on the rated assembly.

BEFORE HANDOVER

- Labels present and legible on leaf and frame, not painted over.
- Clearances at head, jambs and meeting stiles within tolerance.
- Leaf closes fully from any position and latches without help.
- Latch cannot be pushed back when the leaf is closed.
- No holes, field cuts or site modifications outside the listing.
- Nothing wedging or holding the leaf open.
- Listing documentation handed over and the inspection record started.

A RATED OPENING IS ONLY RATED AS INSTALLED
The label covers an assembly built and fitted the way it was tested. One unlabeled hinge, one site cut lite or one anchor method the listing does not cover, and the opening is no longer rated.

WINDOWS / PERFORMANCE NUMBERS

What is on the label, what each figure means, and which way is better.

THE FOUR FIGURES

FIGURE	WHAT IT MEASURES	TYPICAL RANGE	BETTER
U factor	Heat lost through the window	0.25 to 0.32	Lower
SHGC	Solar heat let in	0.20 to 0.40	Lower in the south
VT	Daylight let in	0.45 to 0.60	Higher
AL	Air passing the seals	0.10 to 0.30	Lower

WHERE THE RANGE COMES FROM

These are the figures a dual glazed Low-E unit usually lands in. The numbers that count are the ones on the NFRC label of the unit we quote, and we hand that label over with the paperwork.

WHAT MOVES THEM

THE SPACER

A warm edge spacer keeps the glass edge nearer room temperature, so the perimeter runs warmer and shows less condensation. An aluminum spacer conducts and does the opposite.

THE FILL

Air as standard, argon on request. Argon buys a small improvement in U factor at almost no cost when the unit is being made anyway.

THE COATING

Low-E is a coating on one internal surface. Which surface it sits on decides whether the unit favors keeping heat in or keeping solar heat out.

THE FRAME

Vinyl and fiberglass insulate. Aluminum conducts unless it has a thermal break, which is why a bare aluminum frame can undo a good glass unit.

GRILLES BETWEEN THE PANES

Grilles sit inside the sealed unit, so there is nothing on the glass to clean around and nothing to come loose. They cost a little of the daylight figure and none of the durability.

HOW IT WORKS

01 WE MEASURE

We measure your opening and check the frame.
There is no charge for the visit.

02 YOU GET THE PRICE

You get the price in writing, for the door you picked - after we have seen the opening.

03 WE FIT IT

We fit it, set the lock and clean up.
One crew, one visit.

Price depends on the size of your opening and the state of the frame,
so we quote once we have seen it - never before.

TALK TO US

Website	**a1doorservices.com**
States	Texas / Connecticut / Alabama
Phone	**(855) 676-0881**

Every door in this catalog is fitted by our own crew.