Windows & Doors Specification and Procurement

A project guide to opening schedules, frame and glass choices, performance evidence, dimensional review, quotations and receipt records.



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Seven product applications

Aluminum windows, vinyl windows, entry doors, interior wood doors, sliding glass doors, folding glass doors and garage doors.

What this publication can establish

This book is for architects, developers, contractors and purchasing teams preparing a project window and door package. It follows a unit from its opening number through specification, evidence review, quotation and receipt. The paired workbook holds the project inputs and performs limited, visible arithmetic.

Evidence used

Evidence	Use in this book
GEORGE public product pages and photographs	Identify the named product description and visible construction or presentation. A marketing page is not a test report.
Regulators, rating bodies and standards organizations	Explain the scope of named US requirements, classifications and rating systems. Public summaries do not substitute for unread standard clauses.
Manufacturer instructions and technical pages	Show why details such as sill type, operator, preparation and track arrangement change the specification. These examples belong to the named manufacturers.
NOVARMIA editorial analysis	Compare choices and demonstrate calculations using explicitly stated assumptions. Teaching examples are not customer records.

NOVARMIA is a new brand within GEORGE Group. Group material keeps its original attribution. This edition does not claim original laboratory testing, engineering approval, a complete project release history or measured installation outcomes. No individual engineer, inspector or customer is named as a reviewer without a record of participation.

The workflow can serve international purchasing. US regulatory and accessibility examples are identified as such. The project team must establish the destination, applicable edition, occupancy and responsible review before those examples become project requirements.

Six decisions that determine the order

Decision	Consequence for the package
1. Use and exposure	Separate interior openings from the weather envelope. Establish accessible routes, escape requirements and special exposures before selecting a product.
2. Operation and passage	Choose fixed, hinged, sliding, folding or sectional operation. Draw the moving panels and the actual opening left for people, screens and service.
3. Frame, glass and hardware	Treat these as an assembly. A new glass thickness, finish, hinge, roller or lock may change weight, clearance and evidence coverage.
4. Performance evidence	Match each requirement to the correct document. Energy, safety impact, structural, air, water, acoustical and fire evidence answer different questions.
5. Opening and interface dimensions	Identify the measured opening, ordered outer frame, finished floor and allowance for the selected installation detail.
6. Commercial and delivery scope	Compare the same quantity, configuration, currency and delivery basis. Keep receipt acceptance separate from installation acceptance.

Assign the decisions

The purchaser owns the package list and commercial comparison. The designer or other designated professional establishes the performance and use requirements. The selected supplier identifies the proposed assembly and supporting documents. The site team confirms survey datums and the construction interface. A named reviewer resolves mismatches before release; a spreadsheet status cannot perform that role.

A useful release record

Opening ID + current revision + proposed system + glass and hardware codes + reviewed dimensions + applicable evidence + authorized decision. One missing link can leave an apparently complete quotation unsuitable for ordering.

Contents

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Define seven applications without mixing assemblies

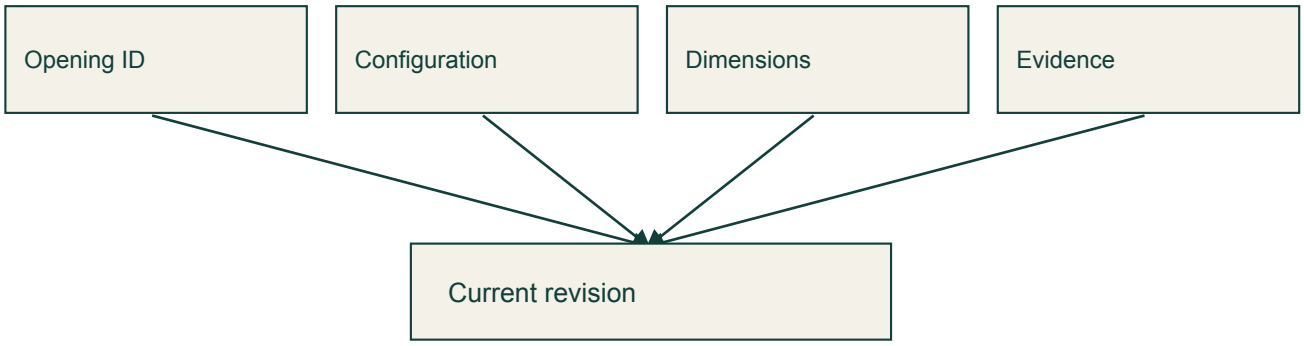
Application	Primary selection issue	Boundary to retain
Aluminum windows	Frame thermal path, operator, glass weight and exposure	Thermal break description does not establish a whole-window rating.
Vinyl windows / uPVC	Profile, reinforcement, joints, color and operator	A material name alone does not establish structural or thermal performance.
Entry doors	Weather seal, handing, threshold, lock and frame	A door slab is not the complete installed entrance.
Interior wood doors	Core, face, edge, frame and hardware preparation	A solid core is not automatically a fire-rated assembly.
Sliding glass doors	Panel travel, clear passage, tracks and sill	Nominal opening width is not clear passage.
Folding glass doors	Stack position, support, panel count and sill	A low threshold does not establish water or access compliance.
Garage doors	Door panels, tracks, space and operator compatibility	The operator and its entrapment protection need their own review.

Keep window-wall, curtain-wall, skylight, railing and shower systems outside this opening schedule unless they are deliberately added as separate engineered scopes. A glass material shared between products does not make their evidence interchangeable.

Count units, not pictures

Give every physical opening a stable ID. Repeated identical units can share a type code, but retain location and quantity. Use a new revision when dimensions or configuration change. Do not create a second active row for the same opening to preserve history; archive the superseded schedule and record the revision change.

Describe the complete unit before asking for a price



An opening record joins location, assembly and current revision. The drawing is a schematic, not a surveyed elevation.

Record	Information that changes the order
Opening identity	Building, level, room or grid, opening ID, quantity and schedule revision.
Assembly identity	Manufacturer and series, operator or panel arrangement, outside-view elevation and size basis.
Components	Frame/profile, finish and sample ID, glass makeup code, screen, handle, lock, closer or operator.
Interface	Wall build-up, frame position, sill/floor datum, mounting method, drainage route and responsibility.
Evidence	Document ID and edition, stated scope, applicable configuration and human review.

A type code such as W-A can group identical assemblies; it cannot resolve two rooms with different safety-glazing or acoustic requirements. Likewise, one entry-door price may cover only a slab, while another covers frame, threshold, hinges and lock preparation. Compare those scopes before comparing their totals.

Handing needs a drawing

Record the view direction, hinge or pivot position and swing arrow. Supplier abbreviations are acceptable only when both parties have agreed what they mean. An unlabeled left/right note is too easy to reverse.

Aluminum and vinyl: compare the assembly

A frame supports the glass and affects both sightlines and heat transfer. NFRC describes the frame, glazing and spacer as interacting constituents evaluated in its energy-rating system. Aluminum can form complex profiles; its thermal behavior depends on the assembled section, including any insulating break. [R02]

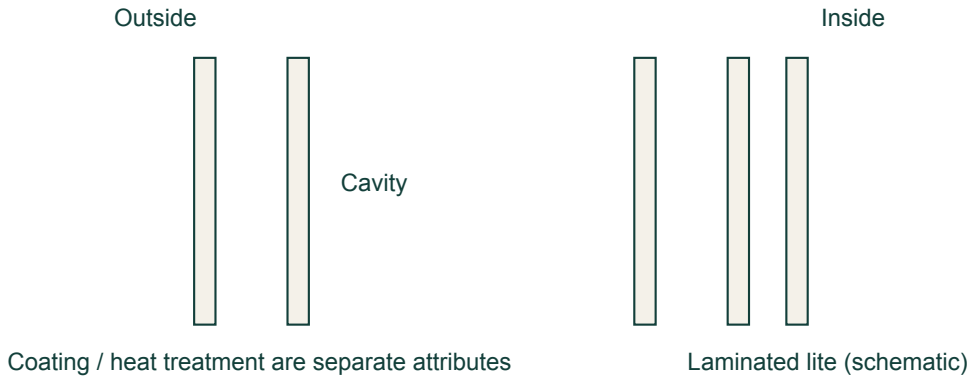
Choice	Reason to consider it	What can change the decision
Aluminum with no documented thermal break	A candidate where the required whole-product performance and exposure can be met	Do not use its slim appearance to infer suitability for a conditioned cold-climate envelope. Obtain the actual energy evidence.
Thermally broken aluminum	Interrupts the conductive path through a metal frame	The break, joints, glass edge and complete geometry still need an assembly rating. A cutaway photograph is not that rating.
Vinyl / uPVC	A nonmetal frame option with different profile and joint construction	Verify reinforcement, size, color, hardware and installation limits for the exact system. Do not transplant another profile series' report.

DOE identifies integrated thermal breaks as one way to reduce heat flow in mostly metal frames and explains that climate changes the appropriate U-factor and solar-gain choice. This does not establish a universal best frame material. [R01]

Choose after the constraints are known

For a large opening with a narrow sightline brief, compare the proposed aluminum section with the proposed vinyl section at that size. For a thermal brief, compare whole-product ratings on the same basis. If neither candidate supplies applicable evidence, retain both as unqualified proposals rather than awarding a material-based pass.

Read the glass makeup from outside to inside



An insulating glass unit can contain a laminated lite. Pane count, heat treatment, coating and lamination describe different attributes.

A useful glass code identifies each lite and cavity, the heat treatment of each lite, coating and surface position, spacer/gas description when specified, and the complete unit thickness. Record which side faces outdoors. Keep an opaque shorthand such as "double glass" out of an order that depends on safety, appearance or hardware weight. Annealed and heat-treated conditions are distinguished in the manufacturer explanation. [R11]

Attribute	What it describes	What it does not establish
Two or three panes	The number of lites and insulating cavities	An exact whole-window U-factor or safety classification.
Low-e coating	A coating selected to influence heat transfer and solar/light behavior	A single universal SHGC, tint or coating position.
Glass processing / condition	Annealed, heat-strengthened or fully tempered condition of each lite	The full scope of a safety, hurricane or security approval.
Lamination	Glass layers bonded through an interlayer	A complete installed system's forced-entry, acoustic or post-breakage capacity.

NFRC describes frames, glazing, coatings, gas fills and spacers as interacting parts of a window. Keep their selected identities together when requesting a revision. [R02]

Weight and compatibility

Changing from one makeup to another can affect hardware and glass support. Require the supplier to confirm the proposed system accepts the final makeup; the worksheet does not calculate glass strength or roller capacity.

Safety glazing needs traceable evidence

Heat-strengthened glass and fully tempered glass are both heat treated, but they have different breakage behavior. Vitro distinguishes heat-strengthened glass from safety glazing and discusses why retained fragments may call for a laminated construction. The required solution depends on the application and detailed design. [R11]

In the United States, 16 CFR Part 1201 has a defined architectural-glazing scope, including doors and sliding patio doors, with specific exceptions. It is not a universal specification for every window or every market. Its incorporated standard and test requirements must be read in the applicable current regulation. [T04]

Proposed evidence	Procurement response
"Tempered" in a quotation	Ask for the selected fabricator, applicable safety standard and classification, identification and traceability. The word alone is not the evidence.
A safety certification mark	Record the mark and number, then verify the plant/product coverage. Preserve photographs before protective labels are discarded.
A safety impact report	Do not extend it to hurricane debris, forced entry, fall protection or retained-load performance. Each claim needs its own basis.

SGCC explains how a mark can lead to a plant certificate. It also states that safety-glazing standards address safe breakage rather than post-breakage performance. This book has not verified an SGCC listing for a NOVARMIA or GEORGE opening. [R05]

A critical distinction

A pane may resist a specified impact yet still be unsuitable for the project's complete glazing system. Match the pane evidence, frame, retention detail and location requirements separately.

U-factor, SHGC and VT answer different questions

Metric	Interpretation	Comparison rule
U-factor	Rate of heat transfer. Lower values indicate less heat transfer under the rating conditions.	Keep the unit system and whole-product basis. A center-of-glass value is a different scope.
SHGC	Fraction of incident solar energy admitted as heat.	Use the project's climate/orientation brief. Lower is not automatically the best choice for every opening.
VT	Fraction of visible light transmitted.	Compare daylight with solar control and privacy needs. VT is not a direct measure of room illuminance.

NFRC provides standardized energy ratings and a directory route for checking rating information. Its label is not a structural, safety-impact or installation approval. Record the product identity and glazing configuration as well as the values. [R12]

NFRC separates current-certification searches from label verification, which can return historical or current records. Use the full CPD number for label verification, record the lookup date and configuration, and check current status separately. A historical label match alone does not establish current certification. [T15]

Reject an incomplete substitution

If a quotation offers "U = 1.4" without units or rating scope, the value is incomplete. Do not compare it numerically with an offer showing 0.28 in Btu/(h ft2 F). Ask for the original declaration with units and method. Converting units would still not make a glass-only result equivalent to a whole-window result.

An overall energy comparison also needs the relevant building use and location. This edition does not reproduce a nationwide mandatory U-factor or ENERGY STAR threshold table. A project requirement belongs in the schedule with its stated authority and edition.

A worked energy comparison: neither offer qualifies

Teaching assumptions

The following values are invented solely to explain a comparison. They do not describe GEORGE products, measured performance or market availability. Assume both offers use applicable whole-product ratings in the same US unit system.

Item	Project limit	Offer A	Offer B
U-factor, Btu/(h ft2 F)	Maximum 0.30	0.28	0.32
SHGC, dimensionless	Maximum 0.30	0.42	0.27
VT, dimensionless	Record for daylight review	0.58	0.48
Result against stated limits	Both limits required	U meets; SHGC exceeds by 0.12	SHGC meets; U exceeds by 0.02

Offer A cannot qualify by having the lower U-factor; it misses the stated solar-gain limit. Offer B cannot qualify by having the lower SHGC; it misses the stated U-factor limit. Averaging the two metrics, or assigning a general score, would conceal the missing requirement.

What changes the decision

Request an applicable alternative glass/frame combination from either proposer, or have the responsible designer revise the requirement with a recorded reason. A supplier cannot resolve the mismatch simply by changing the glass name in the quote. Review the revised rating and configuration together.

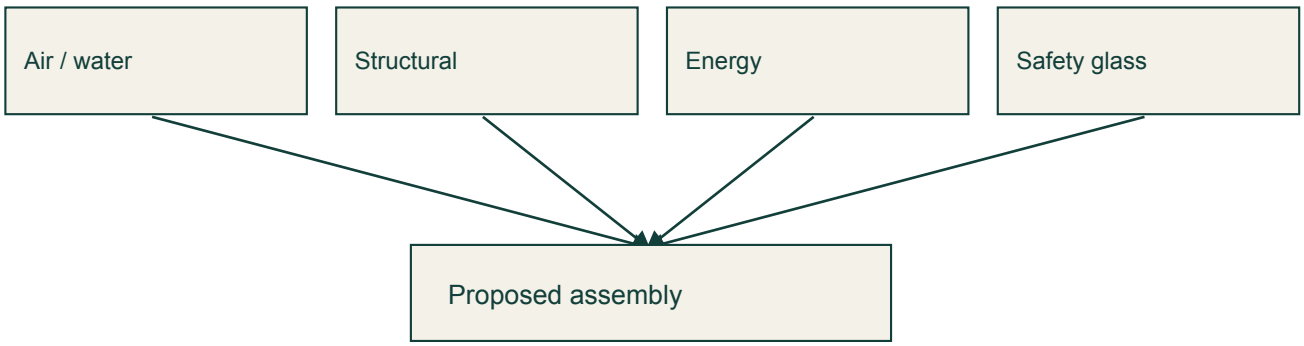
The lower VT of B belongs in the daylight discussion. It is not an automatic failure because this teaching brief has no VT acceptance limit. The result is therefore two technical nonconformities, plus a separately recorded daylight difference, rather than a fabricated overall ranking.

Separate air, water and structural evidence

Question	Document detail that matters	A common false inference
Air leakage	Method, pressure difference, leakage value and units, operator and specimen	A low energy U-factor proves low leakage.
Water penetration	Method, pressure, spray exposure, duration, specimen and sill configuration	Structural design pressure is also the water-test pressure.
Structural resistance	Positive/negative pressures, size, framing, reinforcement, anchors and test scope	A smaller tested unit automatically covers a larger or mulled unit.
NAFS classification	Product type, performance class/grade, test size and applicable edition	A single DP number describes all required performance.

FGIA describes Performance Grade as a set of applicable requirements, not a standalone structural-pressure claim. Its NAFS-22 public change summary expands limited-water (LW) designations for doors. Record the edition, classification, actual water-test pressure and any LW limitation for the proposed sill and configuration. Required loads remain project inputs. [T01] [T02]

FGIA announced NAFS-26 in June 2026; its summary makes positive and negative design pressure and water-test pressure mandatory in the secondary designator. The same announcement says the 2024 IBC/IRC reference NAFS-22. Keep publication, locally adopted and contractual editions separate; this summary is not a reading of the paid standard or a project compliance determination. [R08]



Independent evidence paths converge on one proposed assembly. A result on one path does not close the others.

Keep laboratory and installed field tests distinct. A field procedure can examine a different boundary, mounting and pressure sequence. State the agreed test method, responsible party and required response to a failure before manufacture; do not promise an unrecorded factory or field test.

Acoustic and special-exposure claims need their own scope

STC and OITC are separate classifications with different uses. FGIA's August 2026 announcement identifies an updated acoustical information report addressing that distinction. This publication uses the public announcement to establish the distinction, not to reproduce unreviewed report clauses. [R03]

Match the tested assembly

Record whether the acoustic result is for glass alone or a complete operable unit. Keep the opening size, frame, seals, glass makeup, operating type and test method attached to the rating. Do not average two STC or OITC numbers to predict a combined facade. The wall, adjacent openings and installation paths need their own design review.

Claim	Required separation
Acoustic glazing	A laminated makeup may be proposed, but obtain evidence for the claimed metric and applicable assembly. A makeup name is not a rating.
Hurricane or windborne debris	Keep impact evidence, pressure cycling, product approval and installation conditions distinct from ordinary safety glazing.
Forced entry / security	Define the threat, test method and complete frame/lock/glass scope. "Security glass" alone leaves the claim undefined.
Fire or smoke	Review the complete listed door/glazing/frame/hardware assembly and allowed preparation. A material description does not establish the rating.

Choose the requirement before choosing the glass

A road-noise brief, a hurricane opening and a fire separation are different assignments. Several requirements may apply to one opening; satisfying one does not remove the others.

Choose window operation around the actual use

Fixed units do not open. Casements rotate on side hinges, awnings on top hinges, and sliding units move sideways. These basic operating types alter the space available for operation and passage. [R07]

Operation	Useful when	Conflict to resolve
Fixed	A view or light opening does not require operable ventilation or passage	Cleaning access and any required escape/ventilation function need separate provision.
Casement / awning	A hinged sash arrangement suits the ventilation and facade layout	Plot projection near walkways, railings, screens and adjacent openings; establish handle reach.
Horizontal sliding	The brief limits sash projection into nearby space	The parked sash and meeting stile reduce available opening; show the open position.
Combined fixed + operable	Only part of an opening needs operation	The combination introduces joints and mull/support conditions that need their own scope.

Apply the same review to aluminum and vinyl

Select the operator first from the use constraints, then compare applicable systems in the chosen materials. An aluminum casement and a vinyl slider are not a clean material comparison: their operation, opening geometry and evidence may differ. Compare like-for-like proposals, or explicitly value the operational difference.

For aluminum, preserve the profile section, thermal-break identity if offered, corner/joint construction and finish code. For vinyl, preserve the profile series, reinforcement and allowed finish/color information. In either case, match the final sash size, glass makeup and selected hardware rather than relying on the generic frame material.

Three GEORGE frame records: what changes the choice

The following are public George Source catalog descriptions read from dated source records. They identify candidates for a project discussion, not current stock, approved order dimensions or certified performance.

Public record	Known construction	Selection consequence
65 Series thermal-break casement [G01]	6063-T5 aluminum; listed profile wall 1.6 mm; outward side-hinged operation; single/double tempered-glass options.	Consider when the brief requires a side-hinged window and thermally divided frame. The series number does not verify a 65 mm frame depth; the wall thickness is not a wind rating.
108 Series integrated-screen casement [G02]	6063-T5 aluminum; listed wall 1.4 mm; integrated fly screen; outward side-hinged operation.	Compare screen access, removal and handle clearance with the actual sash. Screen inclusion does not establish fall protection, security, escape capacity or a thermal break.
48 Series slim-frame slider [G04]	6063-T5 aluminum; listed wall 2.0 mm; multi-panel sliding format; powder-coated/anodized finish options.	Consider when projecting a sash into nearby space is undesirable. Obtain the panel/track drawing: slim appearance does not provide a sightline dimension or clear-passage result.

A useful comparison is conditional

If a walkway conflicts with an outward sash, a change of operating type may resolve the conflict; adding profile thickness will not. If the thermal brief is controlling, request whole-product evidence for the chosen system and size. Do not rank these records by wall thickness, series number or photographs.

Three GEORGE door records: retain the unresolved choices

Public record	Known construction	Selection consequence
68 Series non-thermal-break folding door [G03]	6063-T5 aluminum; listed wall options 1.6/2.0 mm; fold-in/fold-out; single/double tempered-glass options.	Double glazing does not turn this expressly non-thermal-break frame into a thermal-break frame. Compare the actual sill, stack, support and applicable evidence before order.
Modern Horizontal Groove HDF Interior Door [G05]	HDF named main material; white flush appearance and horizontal grooves; single swing; solid-core option available.	The selected core remains an order choice. Do not rename an HDF-faced description solid timber or infer fire/acoustic performance from the available core option.
Modern Geometric Cast Aluminum Entry Door [G06]	Cast aluminum named material; single solid-panel appearance; geometric lines; long vertical pull; dark-gray appearance.	Consider its visual privacy separately from locking and weather duty. A pull is a grip, not a latch. Record core/edge construction, lock, handing, threshold and seals.

A catalog choice becomes a defined purchase only when the opening, selected components, finish, dimensions, supply boundary and supporting documents are recorded together. These public descriptions do not establish a shared report covering all six products.

Vinyl is a separate system choice

George Buildings also presents a uPVC category with several operations. The category establishes a product route, not one common performance result. Record the quoted profile/reinforcement, operator, glass and finish at the proposed size. [G07]

Specify an entry-door assembly, including the threshold

Decision	Effect on the order
Single, pair or door with sidelites	Defines active/inactive leaves, frame joints, flush bolts or other hardware and the available clear passage.
Inswing, outswing and handing	Changes the moving envelope, hinges, weather details and interaction with a landing, screen or storm door.
Threshold and finished floor	Sets step/transition geometry, door-bottom relationship and the water-management interface.
Lock and access hardware	Requires coordinated preparation, handing, backset or other manufacturer dimensions, electrical needs and emergency-use requirements.
Slab, frame and installation scope	Separates a slab-only purchase from a prehung assembly, trim, anchoring, perimeter seals and site labor.

A finish sample cannot answer whether the door will latch after the finished floor rises. Likewise, a lock brand cannot determine which preparation the selected leaf and frame require. Make these interfaces part of the coordinated drawing, not a note to be interpreted after delivery.

Compare weather and access together

Where an accessible route applies, use the applicable clear-opening, maneuvering-space, threshold and operating requirements. A nominally wide door or a product marketed with an accessible sill is not enough to establish compliance. The US example in Section 07 illustrates why nominal and clear sizes must be separated. [T05]

Opening control

State the outside-view drawing and swing arrow in the order. List closer, latch, seals and electrical access components as separate included/excluded items when their supply or installation differs.

Choose the wood-door construction for its actual duty

Choice	Reason to choose it	Details that must travel with it
Flush hollow-core door	A candidate for an interior duty where its documented performance meets the brief	Core construction, face, edge/lipping, lock block and permitted hardware preparation.
Flush solid-core door	A candidate when a different core construction is needed for the specified duty	Core type and mass, hinge/fastener preparation, frame support and applicable acoustic/fire evidence.
Stile-and-rail door assembly	A candidate when the brief calls for that actual jointed construction	Stiles, rails, joints, panels and finish. A molded or routed panel appearance alone does not establish this construction.
Rated door assembly	Required where the project schedule calls for a listed separation	Door, frame, glazing, hardware, seals and permitted preparation under the listing.

WDMA publishes separate standards for interior architectural wood flush doors and interior architectural stile-and-rail doors; each addresses appearance and performance. [T07] A solid-core description does not mean solid wood: Masonite describes solid-core products using composite wood materials. Keep the proposed core, face and edge construction explicit. [T12]

A heavier leaf can change hinge and handling requirements. The purchasing response is to obtain the proposed leaf and hardware information and coordinate the assembly, rather than assume any solid-core slab can replace any hollow-core slab without consequences.

Fire performance belongs to the assembly

A thick leaf, veneer face or fire-retardant material description does not establish an opening-protective rating. Keep the authorized label/listing and compatible components together. Field machining and substitutions must stay within the applicable listing and manufacturer instructions. [T08]

Freeze preparation, edge details and site conditions

Order from coordinated leaf and frame information

Separate the leaf size from the outer frame and the wall opening. Show frame depth against the finished wall build-up. Identify the face and edge treatment, veneer or other finish, grain direction when required, hinge and lock preparation, undercut and any seals or grille. A finished-floor revision can affect both the bottom gap and access transitions.

Change after approval	What must be reconsidered
Different lockset or closer	Preparation template, reinforcement and compatible frame/leaf detail.
Higher floor finish	Undercut, frame/threshold relationship and the permitted modification of the selected door.
Louver, vision lite or new cutout	Structural and listing restrictions, edge distances and factory preparation.
Site trimming	Exact product instruction and allowed amount/location. No generic trimming allowance is provided in this book.

Keep product-specific handling and finishing instructions with the delivery. Confirm the enclosed storage conditions, support method, protection and finish timing before dispatch. Manufacturer guidance belongs to the selected door; a storage instruction for one wood-door construction is not evidence for every other construction. [T11]

Release the sample and preparation separately

A visual sample approval confirms only the recorded appearance scope. It does not approve lock machining, leaf clearances or a rated assembly. Link the sample ID and the preparation drawing revision to the same opening record.

Sliding or folding: choose the open position first

Requirement	Sliding arrangement	Folding arrangement
Keep the operating zone close to the opening	Leaves move along tracks; handles and any pocket still need space	Folded panels occupy a stack and swept zone on the selected side.
Create a large connected passage	Meeting stiles and parked panels limit the available clear width	A large part of the opening may become available, less jamb and stack restrictions.
Provide everyday access	Identify which leaf provides the normal route and locking sequence	Identify any traffic door and whether it works independently of the full stack.
Coordinate support and floor	Track, sill, recess and drainage depend on the selected system	Determine top- or bottom-supported arrangement, stack support and sill detail.

Start with the furnished plan and open-panel drawing. If the stack would occupy a circulation route, a nominally generous folding opening may be a poor choice. If sliding clear passage is insufficient, adding overall width or changing the panel arrangement may be more useful than changing the frame finish.

Performance follows the exact configuration

Request evidence for the selected panel arrangement, dimensions, glass and sill. Published manufacturer examples show that sill selection can materially change water performance within a product family. A visually continuous indoor-outdoor floor therefore needs a coordinated envelope detail. [R10]

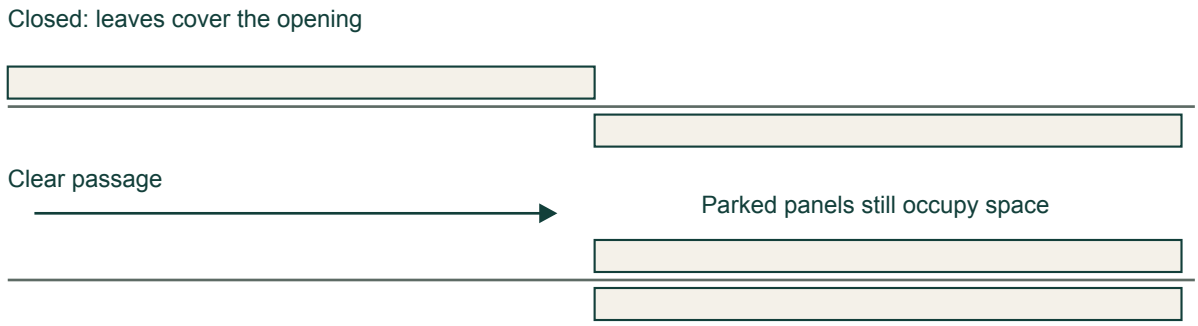
Avoid percentage promises

Do not calculate final clear passage by a universal "half open" or "90% open" rule. Use the selected frame, leaf, handle, stop and stack geometry.

Worked sliding-door clear-passage calculation

Teaching geometry, not a product specification

Assume a two-track, two-leaf arrangement with equal leaves, no pocket and an idealized overlap. Dimensions below are selected solely for this explanation. Real jambs, stops, handles and required opening angles must come from the supplier drawing.



Closed and open positions use the same assumed 2,400 mm span. The parked leaf still occupies part of the span.

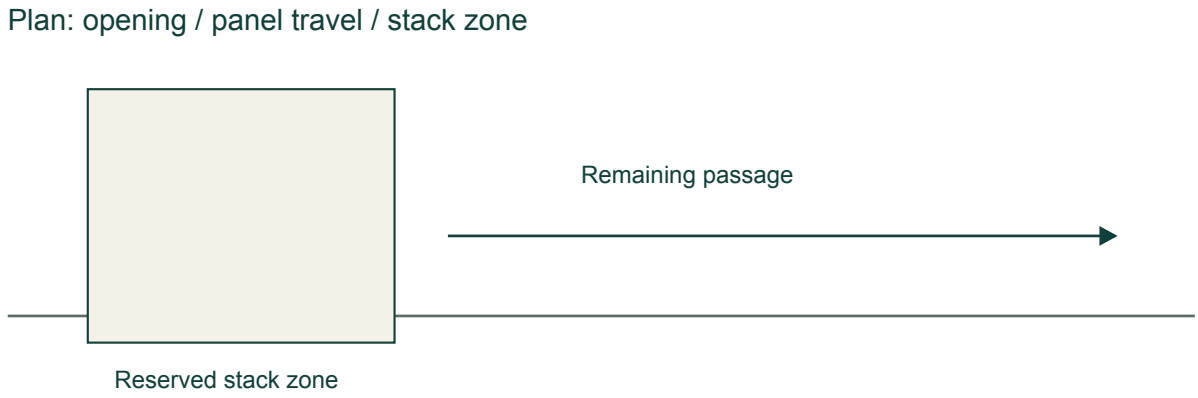
Assume the internal span between the modeled end limits is 2,400 mm. Each leaf is 1,240 mm wide and the closed overlap is 80 mm. The closed geometry is 1,240 + 1,240 - 80 = 2,400 mm. With the moving leaf fully parked over the fixed leaf, ideal unobstructed width is 2,400 - 1,240 = 1,160 mm.

If the brief asks for 1,200 mm clear, this arrangement is short by 40 mm before additional restrictions. For the same ideal equal-leaf overlap, clear width = (span - overlap) / 2. A 1,200 mm target therefore needs span = 2 x 1,200 + 80 = 2,480 mm, with each leaf 1,280 mm wide.

Decision

Reject the 2,400 mm arrangement for that stated target, or revise the arrangement/brief. The 2,480 mm result is only an ideal geometric candidate. It is not an order width or an accessible-route approval; actual end restrictions may require more space.

Folding stacks and low sills compete for space



Plan schematic: the panel stack and its swept area need reserved space. This is not a load or fabrication detail.

Record panel count, fold direction, stack side, traffic-door position and the open-stack envelope. A four-panel image does not establish the required number or arrangement for another opening. Ask for the actual closed and fully open plans, including handles and any supports.

A documented sill comparison

Solar Innovations publishes configuration-specific water information. For its SI3000 G3 outfold example, the top-load-only surface-mount ADA sill is described as having limited/no water performance, while its top-or-bottom-load standard sill lists separate lab and field values. These are manufacturer-published values for those details, not independent verification or NOVARMIA ratings. [R10]

The useful conclusion is that a low/accessible-sill description cannot stand in for a weather-performance requirement. First choose a detail that meets the project's access and exposure brief, then coordinate floor levels, drainage and support. Do not substitute a different sill after report review without reviewing its consequences.

Support is a separate approval

An operating plan can locate the stack but cannot size the header, support structure or anchors. Top-supported and bottom-supported arrangements need the supplier's loading information and the responsible designer's supporting detail.

Garage-door fit includes the space behind the opening

Space	Why a clear opening alone is insufficient
Opening width and height	Define the door size basis and the finished reference surfaces. A face view cannot show the tracks behind it.
Headroom	Track curve, springs, shaft or operator arrangement may compete with the soffit, ceiling or beam.
Sideroom	Track, brackets, hardware and access require space beside each jamb.
Backroom	The opened door, horizontal track and selected operator require room into the garage.
Services and obstructions	Lights, ducts, pipes, storage, vehicle clearance and electrical supply need coordinated locations.

Clopay distinguishes headroom, sideroom and backroom in its measuring guidance. The required dimensions depend on the selected track and operating arrangement. Use the selected product instruction rather than a universal allowance. [T09]

Worked space check

Teaching inputs: measured clear headroom = 260 mm; the proposed selected track/drive drawing calls for 300 mm. The shortfall is 300 - 260 = 40 mm. The proposal does not fit as drawn. An alternative low-headroom arrangement is only a candidate until its own documented requirements, opening height effects, side space and operator compatibility are checked.

This calculation is a comparison of stated inputs, not a spring, track or structural design. Do not alter spring or cable arrangements to make a purchasing worksheet show a fit.

Door selection and operator safety are separate reviews

A garage package may contain a door, tracks and counterbalance hardware, an electric operator, controls and entrapment-protection devices. Record which company supplies and installs each element. An operator model must be compatible with the door type and its intended installation, not selected from motor power alone.

The US safety standard for automatic residential garage door operators is 16 CFR Part 1211. Its entrapment provisions include defined protection paths; the rule should not be reduced to a statement that every installation simply needs the same photoeye accessory. Obtain the selected operator instructions and applicable product evidence. [T06]

Review	Required record
Operator identity	Exact model, electrical supply, compatible door/track arrangement and manufacturer instructions.
Protection arrangement	Inherent primary entrapment protection plus the applicable additional protection/control arrangement and compatible devices for the selected operator configuration.
Installation and commissioning	Qualified installation responsibility, setting and test procedure from the selected instruction, and a real completion record.
Handover	Controls, emergency operation, instructions, maintenance information and responsible recipient.

A receipt record cannot certify operation

Receiving an intact motor carton does not establish safe entrapment performance. Leave commissioning open until the required installed checks are actually completed and recorded. The workbook does not design or test those functions.

Survey the opening and identify the datum

Measure width at the top, middle and bottom, and height at the left, center and right. Record diagonals, level/plumb observations, obstructions and the wall/floor reference. The minimum width or height is useful for a first size comparison, but it does not prove an opening is square or that the unit can be installed. Record the actual points used rather than only a nominal plan dimension.

Dimension basis	Meaning
Structural / prepared opening	The site opening between the stated surfaces before or after the identified preparation.
Ordered outer frame	The complete ordered unit envelope under the supplier's size convention.
Finished opening / reveal	The visible finished construction dimensions; these may be smaller than the prepared opening.
Clear passage / ventilation	The available opening in the defined operating position, after frame and moving-panel restrictions.
Leaf / glass size	A component dimension, not the same as outer frame or wall opening.

Use one unit system per dimensional record. Do not enter inches in one measured position and millimeters in another. Survey date, survey drawing and unit must be visible beside the measurements. Re-survey affected openings when the wall build-up, floor level, support or preparation changes.

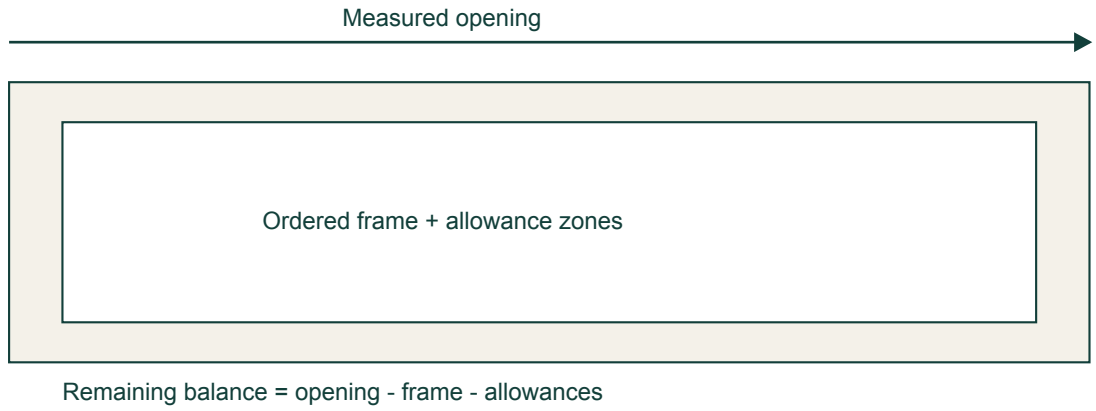
Stop a misleading fit result

A positive width balance does not approve anchors, drainage, glass, squareness, support or access. Dimensional arithmetic is one input to a named reviewer's decision.

Worked opening-to-frame size review

Teaching inputs

All dimensions below are in mm. The allowance values are assumed project inputs for this example, not NOVARMIA tolerances or manufacturer instructions. The bottom zone includes the selected preparation once; do not deduct the same pan twice.



Available opening less ordered frame and stated allowance zones gives a remaining dimensional balance.

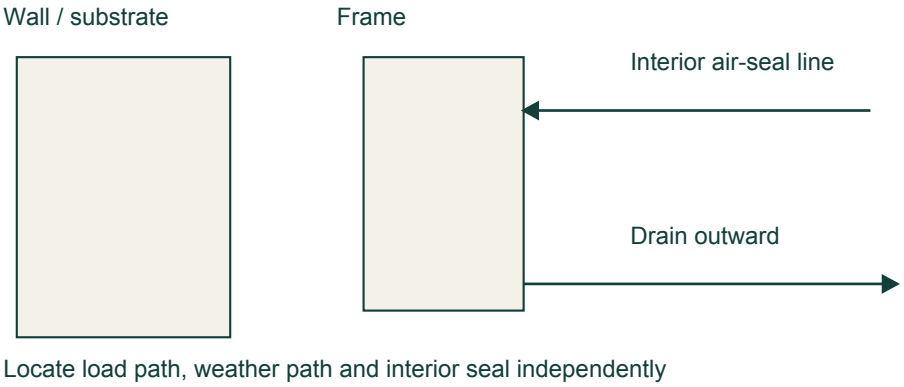
Calculation	Inputs	Result
Width	MIN(1,524; 1,520; 1,522) - 1,490 - 12 - 12	6 mm remaining
Height	MIN(1,222; 1,220; 1,221) - 1,190 - 12 - 18	0 mm remaining
Revised bottom zone	1,220 - 1,190 - 12 - 24	-6 mm; insufficient

The first width fits the stated allowance total with 6 mm remaining. The first height exactly uses the available space; it has no dimensional margin under these assumptions. A revised pan/preparation zone of 24 mm creates a 6 mm shortfall. The previous height review cannot stay valid after that change.

A geometry-only remedy would reduce the frame height to at most 1,184 mm under the revised assumptions, or increase the prepared opening. Either option needs supplier and project review of the actual section, adjustment needs, structural opening, floor and permitted dimensions.

Marvin's current Method A1 instructions explicitly note that panning affects height clearance. The lesson transfers; its particular detail and installation dimensions do not automatically transfer to another system. [R04]

Coordinate the wall, pan and interior air seal



Conceptual responsibilities across an opening. Arrows identify paths to coordinate; they are not a construction detail.

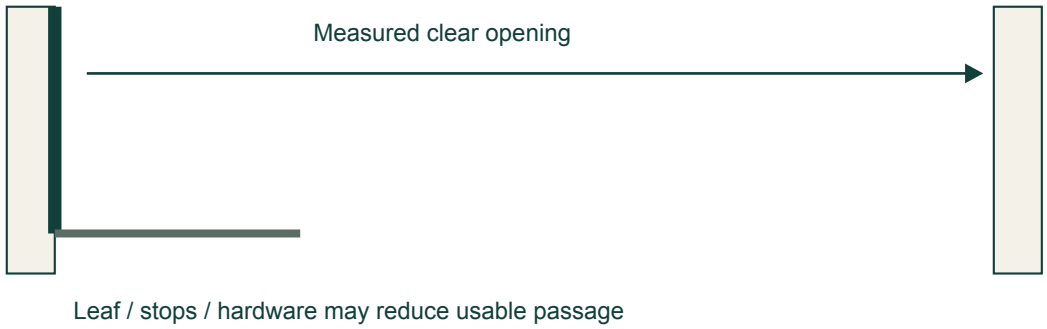
Marvin's 19913776 Method A1 document addresses specified window types in new wood-frame construction. It describes coordination of the window and wall, compatible materials, and continuous air/water-management functions; it warns that a nailing fin is not weatherproof flashing. Other walls and installation methods need their own detail. [R04]

Interface	Resolve before release
Water drainage	Connect head/jamb/sill treatment to the wall drainage plane and the intended exterior discharge. Identify who supplies each transition.
Air and insulation	Locate the perimeter air seal and insulation zone without obstructing the selected system's drainage.
Support and anchorage	Define substrate, frame position, loads and compatible fixing details through the responsible design.
Finish and service	Coordinate cladding/reveal depth, replacement access, protective-film removal and compatible sealants/cleaners.

Do not close a missing wall detail by writing "seal around all sides." The supplier drawing and site detail must identify the intended seals and drainage openings. Generic foam or sealant substitutions can change compatibility; keep the approved materials and installation instruction linked to the opening.

Clear passage is a measured operating condition

For doors within its applicable scope, the US ADA Standards specify a minimum 32 in (815 mm) clear width, measured between the face of a swinging door opened 90 degrees and the stop. Openings more than 24 in (610 mm) deep have a 36 in (915 mm) minimum under the stated provision. These are bounded US examples, not a global door schedule. [T05]



A nominal door leaf and a clear opening are different dimensions. Use the applicable measurement method for the selected arrangement.

A nominal-size substitution is incomplete

A proposal marked "36-inch door" does not disclose clear width. Frame stops, leaf position and hardware can reduce the usable opening. Request the actual section or measured clearance under the applicable rule, then review approach space, operating hardware and threshold provisions separately.

For sliding and folding units, obtain their own fully open drawing and applicable measurement method. Do not apply the ideal two-leaf calculation in Section 05 as an accessibility determination. A clear-width check alone also does not establish emergency escape suitability or fire/egress compliance.

The workbook records dimensions, not legal compliance

Enter the project-required clear passage in the design documents. The dimensional sheet compares the surveyed opening and ordered frame under entered allowances; it does not compute accessible routes or select governing codes.

Review report coverage before reading the headline number

Match	Compare with the proposed opening
Issuer and document	Original report, certificate, directory record or manufacturer declaration; document ID, date, edition and available pages.
Assembly	Manufacturer/site when relevant, series, operator, frame/reinforcement, glass, hardware, seals and sill.
Geometry and installation	Specimen/covered dimensions, panel arrangement, mull condition, anchorage, support and installation boundary.
Result and method	Metric, units, test/rating method, edition, conditions, acceptance basis and limitations.
Applicability decision	The reviewer's documented basis for applying the evidence to this opening and revision; any exception and its authorization.

Three outcomes are useful

Applicable: the reviewer has recorded the coverage basis and no unresolved mismatch remains within that review. Not applicable: a known difference prevents use of the document. More information required: the available pages or product identity are insufficient. A blank record is not an applicable result.

A raw test report and a certification listing serve different functions. A current-looking date or a laboratory logo cannot resolve missing assembly identity. Obtain the original document and the allowed coverage basis instead of inferring that a single tested size covers all smaller sizes, larger sizes or combinations.

Preserve review scope

The human decision should say which requirement it addresses. An energy applicability decision must not be treated as approval of structural, impact, fire or installed water performance.

Worked evidence mismatch: glazing matches, sill does not

Teaching review

The assembly names and revisions below are hypothetical. The exercise demonstrates document matching; it is not a GEORGE test record or a statement that a particular standard permits extrapolation.

Record	Proposed opening D-07 rev C	Provided document
Series / operation	Series S, two-panel sliding	Series S, two-panel sliding
Glass code	G-02	G-02
Sill	Low threshold L	Raised sill H
Size / installation	Project-specific	Coverage must be checked
Requested claim	Water performance with sill L	Result obtained with sill H

The shared series and glass do not resolve the sill difference. Record the document as insufficient for the requested sill-L water claim. Obtain the correct applicable evidence, change to an acceptable reviewed sill, or secure a documented project decision addressing the unresolved requirement. Do not copy the raised-sill result into the low-sill order.

Why the mismatch matters

A sill participates in water management and the threshold interface. Manufacturer-published sill comparisons show configuration-specific differences rather than one universal family value. [R10] The same review logic applies to a changed operator, added mull, different reinforcement or revised glass weight, although each needs its own technical basis.

The Report Scope worksheet records a document separately from the opening-specific review. When the opening revision changes, the previous review needs to be reconsidered. An old "Applicable" entry must not silently approve a new revision.

Normalize the scope before comparing totals

Quote line	Align the following
Unit / package	Same opening IDs, quantity, revision and unit of sale. An area price needs a defined chargeable area and minimum charges.
Assembly	Same operator, frame/finish, glass, hardware, screen, sill and performance evidence scope.
Supply boundary	Slab versus prehung unit; loose versus glazed assembly; operator/devices; trim, seals and installation materials.
Delivery and charges	Same currency, delivery term and named place, loading/unloading allocation, packing, freight, insurance, duties/taxes and site labor treatment.
Commercial conditions	Validity, payment milestones, sample/tooling charges, documented lead-time basis, replacement responsibility and exclusions.

A scope-normalized calculation

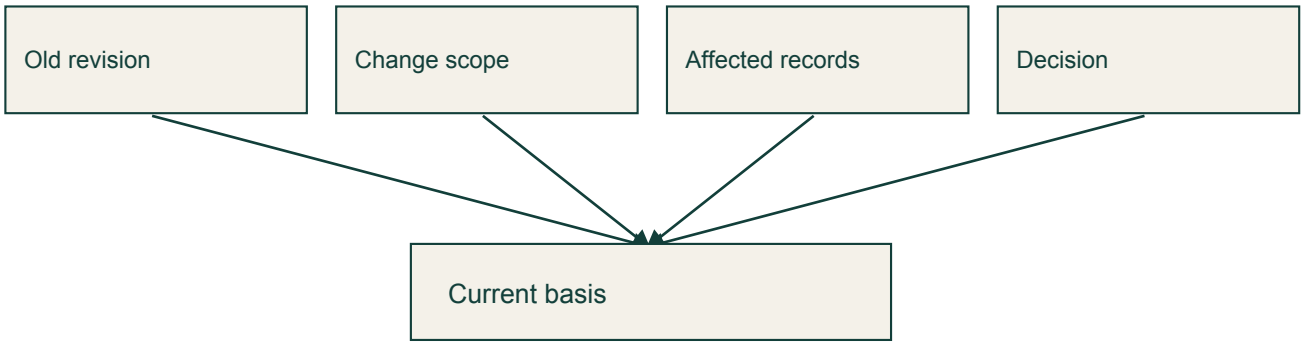
Suppose Quote A covers the reviewed unit package but excludes a required screen package and freight to the comparison place. Quote B includes both. Comparable A = quoted A + confirmed screen supplement + confirmed freight supplement. Comparable B = quoted B, provided every other scope and charge is aligned.

If either supplement is blank, A has no comparable total. A zero supplement is valid only when it is explicitly confirmed; blank is not zero. If the currency or delivery basis differs, resolve that difference first. Do not name the lower raw quotation a saving while its required scope remains unpriced.

Quantity changes the comparison

A change to opening quantity, glass or hardware can invalidate both price and performance review. Ask for a revised quote tied to the current schedule; do not leave an older low total next to a new configuration.

A revision changes more than one number



The current opening revision is the reference shared by dimensions, configuration, report review, quotation and shipment records.

Teaching change: W-04 moves from rev B to rev C after the prepared sill zone increases. Reducing frame height from 1,190 to 1,184 mm removes the 6 mm shortfall under Section 07 assumptions, but leaves zero height balance. The revised detail still needs review of adjustment space, drawings, hardware, glass, evidence coverage and commercial effects.

Action	Reason
Update the authoritative opening row	Avoid two competing active quantities or revisions. Keep the superseded record outside the active schedule.
Review all affected links	Dimensions, glass/hardware codes, report applicability and quote scope may depend on the previous assembly.
Record the decision	Decision reference, person, date, affected document revision and any price/time effects belong together.
Confirm the production/shipment basis	Labels and packing records must carry the current agreed identification. A stale carton label needs resolution.

Do not record a customer approval that has not occurred. A named decision and date confirm that an actual decision record exists; they do not turn an illustrative calculation into a released fabrication drawing.

What the workbook can detect

Its identifiers and revision comparisons can expose missing or stale links. They cannot read the attached drawing or determine whether a technically unsuitable change should be accepted.

Inspect dimensions, operation and identification separately

Inspection scope	Record the actual observation
Identity	Opening/type ID, current revision, quantity, system, glass/finish/hardware codes and labels against the order.
Dimensions	Actual outer frame or leaf dimension using the agreed datum, equipment and acceptance basis. Do not substitute carton dimensions.
Visible condition	Glass edge/surface damage, finish defects, corners/joints, hardware and protective condition; attach photographs with location.
Operation	Movement, latching and supplied components under the agreed inspection arrangement. Factory movement does not prove installed performance.
Documents	Applicable reports, selected installation/care instructions, component identification and outstanding deviations.

Agree tolerances, viewing conditions, inspection extent and response to nonconformities before manufacture. A scratch observation needs the agreed viewing and acceptance basis; a dimensional result needs the agreed datum and tolerance. Safety-critical and project-specific checks require their own inspection scope.

Make the deviation actionable

An observation needs an opening ID, description, photograph/measurement reference, quantity, responsible party and proposed disposition. Separate repair, replacement, concession and recheck. Keep the original defect visible until an authorized disposition and any required verification are recorded.

For glazed units, preserve the relevant identification and installation instructions through handover. Photograph visible labels before removal. A product photograph in a brochure is not a factory inspection record.

Pack and receive by opening, not just by crate count

List opening IDs and quantities inside each crate/package. Identify loose hardware, screens, tracks, operator accessories and separate glass. Record handling/storage instructions supplied for the selected product and the expected receiving equipment. A matching crate total can conceal a missing handle or a unit assigned to the wrong room.

Event	Record
Dispatch	Package ID, opening/revision, contents/quantity, packing-list reference and condition photographs.
Partial receipt	Receipt ID, package, opening/revision, date, received quantity and actual condition.
Damage or shortage	Affected quantity and location, photographs, immediate protection and notification under the agreed contract.
Resolution	Replacement/repair/authorized adjustment reference, recheck record, final receipt decision and responsible person/date.

Worked reconciliation

Teaching order: 14 units. First receipt: 8. Second receipt: 5. Received total = 13, leaving 1 unreceived. If 1 of those 13 is damaged, receipt quantity and accepted condition are two separate facts. Enter the damaged quantity and keep its resolution open. Changing the label to "Closed" cannot remove either the missing unit or the unresolved damage.

When the final unit arrives, append the new receipt instead of overwriting the earlier quantities. Avoid counting the same receipt twice. An authorized short-supply adjustment needs its own reference; it should not look like the missing unit physically arrived.

Keep installation open

Receipt reconciliation does not establish wall waterproofing, field testing, final adjustment or garage-operator commissioning. Those belong to actual installed records.

Showroom views: compare interfaces before finishes



GEORGE Group Foshan: door/window systems displayed together. The original category/video overlay remains in the source image.

The visible display allows a buyer to inspect how frames, operable leaves and adjacent systems occupy space. Its useful role is a physical comparison prompt: move the proposed leaf, locate the screen and handle, and compare the frame section with the corresponding catalog record. The photograph itself supplies none of those measurements.



GEORGE Group China: discussion at a frame/profile display. The source does not identify an approved configuration or completed project.

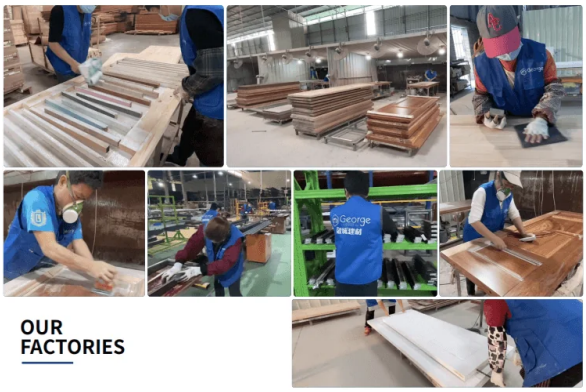
A discussion photograph is an activity record, not an approval record. Tie any actual selection to the opening ID, section/glass/hardware codes, sample and reviewed drawing. A later frame or sill substitution needs its own review even if the visible finish remains similar.

Door displays and processing views have different evidence roles



GeorgeBuild official exhibition gallery: visible door-finish variety. No leaf construction or test classification is inferred.

These faces help distinguish appearance choices. The visible panel pattern cannot tell a buyer whether a leaf is hollow, composite solid core or stile-and-rail. Retain the face sample and obtain the actual core/edge/preparation record separately.



George Buildings factory-gallery montage: visible door/joinery work. The montage is an upstream publication asset, not a raw camera record.

The processing views document activity shown in the group gallery. They do not establish the machinery, calibration, inspection results or completion of a particular order. A manufacturing or acceptance claim needs the corresponding actual production/inspection record.

Start with the authoritative Opening Schedule

The companion workbook contains five worksheets and 12 linked work areas. It is a project record with limited dimensional, quotation and receipt calculations. Use one current row per Opening ID; the current revision is the common reference for the related reviews.

Work area / header row	Inputs and use
Opening Schedule / 7	Opening ID, location, application, manufacturer, physical quantity in each, current revision, glass/hardware codes and requirement reference.
Opening Schedule / 117	Same Opening ID; layout, handing/viewpoint, finish/sample, glass and hardware references, sill/detail and responsible person.

Enter the order basis once

Give each physical opening its own ID or a clearly defined quantity-bearing group. Keep quantity in each separate from price basis. Connect the configuration row to the same ID instead of copying the quantity into another active opening row. Correct a missing or duplicate identifier before reviewing linked results.

Use the current revision

When a dimension, glass or sill changes, update the opening revision and revisit the affected reviews. Preserve superseded files and the actual change decision outside the active schedule. The workbook compares references; it cannot read a drawing, verify authority or synchronize a CAD model.

Capacity and extension

Each work area provides 100 input rows. Review formula, validation and relationship ranges before extending beyond that capacity. The printed summaries here explain fields; the XLSX is the editable tool.

Compare dimensions without creating a false fit approval

Work area / header row	Actual fields
Dimension Review / 7	Opening ID/revision; minimum measured opening W/H, ordered frame W/H, common mm or in unit and survey reference.
Dimension Review / 117	Same Opening ID; left/right/top/bottom allowances, detail reference, residual width/height, manual review, reviewer/date and decision reference.

Record the detailed multi-point readings in the referenced survey and enter their minimum width and height here. Enter one unit for all dimensions on that record. Every allowance needs an explicit number; an agreed zero is different from a blank. The result subtracts the ordered frame and allowance zones from the minimum measured opening. It does not determine the correct allowances.

Repeat the teaching review

Using Section 07 inputs, minimum W 1,520 - frame W 1,490 - left 12 - right 12 gives 6 mm. Minimum H 1,220 - frame H 1,190 - top 12 - bottom 18 gives 0 mm. Changing only bottom to 24 gives -6 mm. Changing frame height to 1,184 returns the height balance to zero, leaving no height margin under these assumptions.

A negative result exposes a shortfall. A nonnegative result means only that the entered dimensions meet the entered allowance total. Squareness, anchorage, water/air paths, operating clearance and the actual detail still require review. Record that decision separately; do not treat the numeric result as a production release.

Match each evidence record to an opening and requirement

Work area / header row	Actual fields
Report Scope / 7	Review ID; Opening ID and revision; report ID/URL; manufacturer, configuration, size scope, limitation/page, market, method/edition.
Report Scope / 117	Same Review ID; requirement reference; configuration, size and market matches; suitability decision; reviewer/date, decision reference and limits.

One review has one scope

Create separate records when energy and water requirements use different documents or coverage decisions. Keep the full document identifier and the exact relevant page. The match fields record a human determination: the workbook cannot authenticate a report, search a certification directory or extrapolate tested dimensions.

Keep the mismatch visible

For D-07 rev C with sill L, a water document for sill H does not qualify merely because series and glass match. Record the mismatch and the resulting information request or revised proposal. Use a new review basis if the opening revision changes. An old decision tied to rev B cannot silently approve rev C.

Record current-certification checks separately from historical label verification when using NFRC. The directory route is described in Section 02; a URL alone is not proof of a matching product. Store the actual lookup record and reviewer decision with its date. [T15]

Build a comparable quote before calculating the difference

Work area / header row	Actual fields
Quote Comparison / 7	Offer ID; Opening ID/revision; supplier, currency, delivery/scope references; base, additions and signed adjustment; verifier/date.
Quote Comparison / 117	Same Offer ID; scope alignment/exclusions, physical quantity each, reviewer/date and comparable total.
Quote Comparison / 227	Two Offer IDs; B minus A only when opening, revision, currency, delivery basis, scope basis and physical quantity align.

Use additions for confirmed supplements required by the comparison scope; preserve any supplement detail in the scope record. Enter zero explicitly when confirmed, and keep unpriced work unresolved. A signed adjustment may be negative, zero or positive. The workbook does not supply market prices, exchange rates, tax treatment or freight estimates.

Interpret the result

For the same aligned quantity and basis, B minus A shows the difference between their comparable amounts. A positive difference means B costs more on that stated basis; it is not a general quality ranking or a proven saving. A mismatch or missing review should be resolved before using the numeric comparison.

Do not mix an each-price with a package total. If either quotation begins as an area rate or a different quantity, establish the complete comparable amount and documented chargeable basis before entering it here.

Reconcile receipt events and acceptable units separately

Work area / header row	Actual fields
Packing Receipt / 7	Unique Receipt ID; Opening ID/revision, crate, date, gross received quantity, acceptable/damaged condition, missing parts and photo reference.
Packing Receipt / 117	Same Receipt ID; disposition, correction/recheck person/date, returned quantity and return reference, net accepted quantity.
Packing Receipt / 227	Opening ID; final-delivery/closure person and date; aggregated gross/net accepted quantities compared with the authoritative order and outstanding amount.

Append a distinct event for each arrival. Do not duplicate an existing Receipt ID to represent another crate, and do not overwrite an earlier receipt when a replacement arrives. Returned quantity is recorded against the original receipt with a return reference; a physical replacement is a new arrival event.

Finish the example without hiding the damage

For an order of 14, arrivals of 8 and 5 give 13 gross received. If one is not acceptable, the accepted count is lower even though it has physically arrived. A later replacement changes the totals through its own receipt and any documented return/disposition. Closing the opening needs the recorded final-delivery and disposition basis, not only a matching crate count.

The workflow checks arithmetic and missing or stale records. It does not establish installed performance, garage-operator commissioning, legal acceptance or authorized contract concessions. The supplied template contains no customer or test inputs.

Working glossary

Term	Meaning in this publication
Opening ID / type code	Physical opening identifier / shared configuration identifier; they serve different purposes.
Revision	The current agreed document/configuration version attached to an opening.
Outer frame / leaf / clear passage	Assembly envelope / moving component / space available in the defined open position.
Glass makeup	Layer-by-layer identification, including heat treatment, cavities, coating and lamination where specified.
Whole-product rating	Rating for the relevant complete product scope, rather than a glass-center value.
U-factor / SHGC / VT	Heat-transfer rate / solar heat fraction / visible light fraction; retain units and applicable rating basis.
NAFS / PG / DP	North American Fenestration Standard / performance grade / design pressure; a DP claim alone is not the entire classification.
STC / OITC	Separate acoustical classifications. Preserve the selected metric and tested assembly scope.
Sill / pan / threshold	Related but distinct assembly or interface components. Their identities and dimensions matter.
Applicable evidence	A documented human determination for the named requirement, opening and revision.
Comparable total	A monetary total on aligned scope, currency, quantity and delivery basis with required supplements priced.
Receipt / installation acceptance	Physical receipt reconciliation / review of the actual installed work. One does not substitute for the other.

Sources and scope notes

[R02] NFRC Consumer Guide to Windows — Types and Parts

https://efficientwindows.org/types_parts/

Accessed October 29, 2026 | Whole-product constituent parts and frame/glass/spacer interaction. Consumer explanation, not product certification or glass structural design.

[R01] U.S. Department of Energy, FEMP — Purchasing Energy-Efficient Residential Windows, Doors, and Skylights

https://www.energy.gov/cmei/femp/purchasing-energy-efficient-residential-windows-doors-and-skylights

Acquisition guidance updated December 2021 | Frame heat flow, integrated thermal breaks, climate-dependent U/SHGC selection and residential acquisition scope. Do not reuse 2021 efficiency thresholds, costs, savings or federal requirements as current general buyer rules.

[R11] Vitro Architectural Glass — Heat-Treated Glass Processes

https://glassed.vitroglazings.com/heat-strengthened-vs-tempered-glass?hs_amp=true

December 7, 2018; accessed October 29, 2026 | Distinguishes annealed glass from the two heat-treated conditions and discusses breakage/retention implications. Qualitative manufacturer guidance. Its strength multiples, stress limits and application prescriptions are not adopted as NOVARMIA specifications.

[T04] U.S. Consumer Product Safety Commission; eCFR (Office of the Federal Register/GPO) — 16 CFR Part 1201: Safety Standard for Architectural Glazing Materials

https://www.ecfr.gov/current/title-16/chapter-II/subchapter-B/part-1201

eCFR displayed title up to date as of October 27, 2026; relevant §§1201.1, .3, .4, .5 | Scope names glazing used in doors, storm/combination doors, bathtub and shower doors/enclosures, and patio-type sliding glass doors, subject to stated exclusions.; The purpose addresses injury when glazing breaks from human contact.; Section 1201.4 incorporates applicable test provisions of ANSI Z97.1-2015, with stated exceptions. Section 1201.5 references CPSA certification obligations. Part1201 is not a catch-all rule for every window or every hazardous glazing location; local building-code requirements must also be established.; A newer voluntary ANSI edition must not silently replace the 2015 edition incorporated in this regulation.; Human-impact safety glazing evidence does not establish hurricane/debris-impact performance, window structure, security, or fire performance.; Do not make any order-specific legal compliance determination from this general procurement guide.

[R05] Safety Glazing Certification Council — Frequently Asked Questions

https://sgcc.org/f-a-q

Accessed October 29, 2026 | Safety mark/plant traceability; heat strengthened alone is not safety glass; safety tests do not address post-breakage performance. No inference that any GEORGE product holds SGCC certification; not a local hazardous-location schedule.

[R12] National Fenestration Rating Council — Window Ratings

https://efficientwindows.org/window-ratings/

Public guide accessed October 29, 2026 | Definitions and different roles of U-factor, SHGC and visible transmittance; climate and orientation affect selection. Consumer explanation, not a project threshold table or evidence of any NOVARMIA product rating.

[T15] National Fenestration Rating Council (NFRC) — Certified Products Directory: Search and Label Verification

https://search.nfrc.org/search/Searchdefault.aspx

Live directory search instructions | The directory distinguishes current-certified-product searches from label verification that can return historical or current labeled products.; Label verification uses a full CPD number and compares the label values with certified values.; Current certification status must be determined through the relevant current searches rather than inferred from a historical label verification result. This research read the search instructions, not an actualNOVARMIA record or a completed certification verification.; A parent brand/model name alone is insufficient to match all glazing/size/operator configurations.; Do not use a directory search link or a historical record as proof a proposed order is certified.

[T01] Fenestration and Glazing Industry Alliance (FGIA) — Frequently Asked Questions: North American Fenestration Standard and installation labels

https://fgiaonline.org/about/frequently-asked-questions/

Live FAQ; sections mix current concepts and historical NAFS editions | Performance Grade describes a defined set of NAFS performance requirements associated with a design-pressure range, rather than a structural-pressure number alone.; The FAQ identifies structural wind loading, water penetration resistance and air leakage among the applicable tests.; AAMA labeling addresses the construction and performance of the product when it leaves the factory; it does not certify installed performance. The FAQ explicitly discusses NAFS-05/-08/-11 in several answers. Its minimum gateway-size language must not be transferred to NAFS-22, whose official listing describes changes (T02).; Do not reuse the historical HC50/HC40 15-percent-water example as a universal current rule.; Does not establish any GEORGE or NOVARMIA certification or verify any actual project model.

[T02] FGIA Store (standard co-publisher) — AAMA/WDMA/CSA 101/I.S.2/A440-22: North American Fenestration Standard/Specification for windows, doors, and skylights

https://store.fgiaonline.org/101/I.S.2/A440-22/

2022 fifth edition; listing includes October 2023 Errata and Update #1 released May 2024 | The listing identifies the fifth edition, superseding the 2017, 2011, 2008 and 2005 editions.; Its public change summary says R-Class no longer has a minimum test size, LC-Class adds an alternate minimum test size, and the limited-water designation expands to all door classifications.; The listing identifies updated air leakage/operating-force harmonization, including exfiltration, and clarification after loading at 150 percent of ASD. Only the official public description was read, not paid clauses or numerical test tables. Do not claim this file reproduces the full standard.; A listed standard is not proof of local adoption, approval of any project configuration, or NOVARMIA compliance.; Use the actual project report and selected edition for water pressure, positive/negative DP, test size and permitted configuration; do not infer these solely from a PG label.

[R08] Fenestration and Glazing Industry Alliance — 2026 North American Fenestration Standard Published

https://fgiaonline.org/about/news-and-blogs/2026-north-american-fenestration-standard-published/

June 1, 2026 | Published NAFS-26 change and distinction from code-referenced NAFS-22. Public announcement, not paid standard clauses or a project adoption determination.

[R03] Fenestration and Glazing Industry Alliance — FGIA Updates Technical Information Report on Acoustical Performance

https://fgiaonline.org/about/news-and-blogs/fgia-updates-technical-information-report-on-acoustical-performance/

August 10, 2026 announcement | STC and OITC are separate classifications; 2026 AAMA TIR-A1 update exists. Announcement only; purchased technical report not read and no test clauses inferred.

[R07] National Fenestration Rating Council — Window Types

https://efficientwindows.org/window-types/

Public guide accessed October 29, 2026 | Operation descriptions only; no product-size, ventilation or escape approval. Consumer explanation; exact system geometry and project rules remain separate.

[G01] George Source — Modern Thermal Break Aluminum Casement Window

https://georgesource.com/product/thermal-break-aluminum-casement-window/

Public catalog description; source records dated October 28-29, 2026. Selected fields are compared in Section 03. Material/option descriptions are not stock, certified performance or approved project dimensions.

[G02] George Source — Integrated Fly Screen Aluminum Casement Window

https://georgesource.com/product/integrated-fly-screen-aluminum-casement-window/

Public catalog description; source records dated October 28-29, 2026. Selected fields are compared in Section 03. Material/option descriptions are not stock, certified performance or approved project dimensions.

[G04] George Source — 48 Series Slim Frame Sliding Door

https://georgesource.com/product/48-series-slim-frame-sliding-door/

Public catalog description; source records dated October 28-29, 2026. Selected fields are compared in Section 03. Material/option descriptions are not stock, certified performance or approved project dimensions.

[G03] George Source — 68 Series Non-Thermal Break Folding Door

https://georgesource.com/product/68-series-non-thermal-break-folding-door/

Public catalog description; source records dated October 28-29, 2026. Selected fields are compared in Section 03. Material/option descriptions are not stock, certified performance or approved project dimensions.

[G05] George Source — Modern Horizontal Groove HDF Interior Door

https://georgesource.com/product/modern-horizontal-groove-hdf-interior-door/

Public catalog description; source records dated October 28-29, 2026. Selected fields are compared in Section 03. Material/option descriptions are not stock, certified performance or approved project dimensions.

[G06] George Source — Modern Geometric Cast Aluminum Entry Door

https://georgesource.com/product/modern-geometric-cast-aluminum-entry-door/

Public catalog description; source records dated October 28-29, 2026. Selected fields are compared in Section 03. Material/option descriptions are not stock, certified performance or approved project dimensions.

[G07] George Buildings — uPVC Windows

https://georgebuildings.com/product/upvc-windows/

Public catalog description; source records dated October 28-29, 2026. Selected fields are compared in Section 03. Material/option descriptions are not stock, certified performance or approved project dimensions.

[T05] U.S. Access Board — ADA Accessibility Standards, Chapter 4: Accessible Routes, §404 Doors, Doorways, and Gates

https://www.access-board.gov/ada/chapter/ch04/

2010 ADA Standards technical provisions as hosted; §401 scope and §404 | Where scoped, §404.2.3 requires a minimum32in(815mm) clear opening; a swinging door is measured from its face to the opposite stop at90 degrees.; An opening more than24in(610mm) deep requires36in(915mm) clear; exceptions and permitted projections are stated.; Thresholds, maneuvering space, hardware, opening force and closing speed are separate requirements.; Automatic-door clear width is required in power-on and power-off modes; §404.3 distinguishes full-powered from low-energy/power-assisted doors. These provisions apply through the ADA scoping rules, not to every global residential opening.; Nominal leaf width and frame outside width are not measured clear opening; width alone does not establish accessible use.; The5lbf rule is not a universal force limit for exterior hinged or fire doors.; Use inch values as the source requirement; the parenthetical metric values are published approximations, not exact25.4 conversions. State the project unit basis.; Automatic operation does not erase threshold, maneuvering, controls, standby-power or emergency-opening conditions.

[T07] Window & Door Manufacturers Association (WDMA) — Architectural Door Standards: ANSI/WDMA I.S.1A-21 and I.S.6A-21

https://www.wdma.com/architectural-door-standards

I.S.1A-21 flush doors and I.S.6A-21 stile-and-rail doors; store states errata through July2022 | WDMA lists separate2021 industry standards for interior architectural wood flush doors and interior architectural wood stile-and-rail doors.; Its description separates aesthetic grades/veneer or laminate choices from structural performance and duty levels.; The scope is interior architectural wood doors and includes guidance on specifying, handling and storage. Public descriptions establish scope, not specific pass levels, hinge loads, tolerances or a particular supplier certificate.; Do not treat a raised-panel appearance as proof of stile-and-rail construction or a wood veneer as proof of solid-wood core.; Do not transfer interior door standards to exterior doors or infer fire/acoustic ratings from the core description.; The I.S.6A store paragraph contains a likely copied reference to flush doors; rely on its unambiguous title for product type.

[T12] Masonite — An Inside Look at Interior Doors: Choosing the Best One for Your Home

https://www.masonite.com/discover-and-learn/an-inside-look-at-interior-doors-for-your-home/

Live manufacturer guidance; publication date not displayed | The manufacturer distinguishes hollow-core, solid-wood and solid-core doors.; It describes solid core as often using composite wood materials, so the term does not itself mean solid wood.; It offers flush and molded faces within solid-core ranges, separating external style from internal structure. Marketing statements do not establish a numeric sound, fire, abuse, price or life-cycle result for NOVARMIA.; Do not treat this manufacturer preference as proof every solid-core product is better in every property.; Do not infer a tested acoustic rating from material density or core name.

[T08] UL Solutions — Doors, Windows and Related Hardware Application Guide

https://www.ul.com/thecodeauthority/knowledge/ul-fire-rated-doors-guide

Live UL Solutions application guide; Fire doors and frames sections | A fire-door assembly may be delivered complete or formed from separately supplied door, frame, glazing, hardware and accessories.; The guide identifies certification marks and individual certification/installation limits for components and sizes.; Fire exit hardware is distinct from panic hardware intended for nonrated openings; temperature-rise and other properties have their own marks/conditions.; The guide discusses field evaluation where labeling or modifications call certification into question. A leaf label alone does not authorize any frame, cutout, glazing or hardware combination.; A fire-protection rating does not establish energy, acoustic, weather or human-impact properties.; Do not reproduce numeric component-rating rules as a complete fire-door design recipe; use the actual listing and authority acceptance.; This is application guidance, not a NOVARMIA/GEORGE listing or a copy of NFPA80/UL10C full text.

[T11] JELD-WEN (manufacturer-authored PDF hosted by Lowe's) — Installation Instructions for Interior Pre-Hung Doors (JII109)

https://pdf.lowes.com/productdocuments/35474809-5bf7-4519-84d3-644ba3211dfa/69545753.pdf

JII109 5/24 printed onp5 | The manual distinguishes a prehung unit from a slab and tells recipients to inspect size, machining, finish, handing and damage before installation.; Its storage guidance calls for dry construction conditions, protection from extreme temperature/humidity and handling without stressing frames or joints.; It describes finishing all six slab sides and the frame, and keeping installed units protected during subsequent work.; This document prescribes its own rough-opening and fitting checks for its listed interior prehung products. This is a manufacturer-specific2024 manual, not a universal requirement or verified current2026 revision.; Do not transfer its numeric clearances, squareness, humidity or fasteners to NOVARMIA specifications.; The official S3 source now indexed as6pages was not readable in full because of file size; it is not asserted identical to this5page mirror.

[R10] Solar Innovations — Product Testing & Certifications: SI3000 G3 Folding Glass Wall - Water Performance

https://solarinnovations.com/information/testing/

Public manufacturer table accessed October 29, 2026 | Specific outfold sill alternatives have different manufacturer-published water descriptions and separate lab/field values. Not an independent test-report audit or NOVARMIA/GEORGE rating. No numerical value or scope is transferred to another assembly.

[T09] Clopay — Residential Garage Door Track Options

https://www.clopaydoor.com/buyingguide/garage-door-track-options

Live manufacturer buying guide, publication date not displayed | Defines headroom from the top of the closed door to the lowest overhead obstruction, sideroom from the opening to adjacent obstructions, and backroom into the garage.; Track choice changes the required space; standard, low-headroom and high-lift arrangements differ.; The guide directs attention to spring and opener space in addition to the door travel path. Use the definitions and dependency logic, not the generic dimensions as NOVARMIA order specifications.; The same manufacturer has other public guidance giving different generic backroom additions; a selected model/track/operator layout must resolve dimensions.; The source is not evidence that NOVARMIA supplies Clopay products or those track options.; No spring adjustment or track installation procedure is supplied by this whitepaper.

[T06] U.S. Consumer Product Safety Commission; eCFR (Office of the Federal Register/GPO) — 16 CFR Part 1211: Safety Standard for Automatic Residential Garage Door Operators

https://www.ecfr.gov/current/title-16/chapter-II/subchapter-B/part-1211

eCFR displayed title up to date as of October26,2026; §§1211.1-.8 | The standard covers defined residential garage-door operators manufactured on or after January1,1993 for sale in the United States.; The residential definition includes one-to-four single-family units,600V or less and ordinary locations.; Section1211.6 requires inherent primary entrapment protection plus one of the specified configurations; vertically moving and horizontally sliding systems have separate paths.; Specified paths include constant-pressure control, external secondary protection, or a qualifying combination sectional system; the actual configuration matters. Do not say that every garage door worldwide must have photo-eyes, or that visual presence of a sensor proves system compliance.; The operator standard is not a structural wind rating for the door, a track fit check, or approval for commercial/gate operators.; Matched operator/door/accessory instructions and commissioning by the appropriate installer remain necessary; this publication does not supply test-procedure shortcuts.

[R04] Marvin — Window Rough Opening Prep and Flashing, Method A1-Membrane Drainage System

https://www.marvin.com/f/1019562/x/f88293723e/window-rough-opening-prep-and-flashing-19913776.pdf

19913776, April 29, 2026 | Specific new wood frame Method A1; air/water continuity, pan consumes height, fin not weatherproof flashing, compatible materials. Not a universal installation detail. No fastener, sealant or membrane dimensions transferred to NOVARMIA.

Photo credits

George Group Foshan - showroom-windows

GEORGE Group Foshan: door and window systems displayed together. The existing video and category overlays belong to the source image.

Source: https://georgegroupfoshan.com/george-group-foshan/

Image: https://georgegroupfoshan.com/wp-content/uploads/2026/07/George-Group-China-Showroom-Doors-and-Windows.webp

GeorgeBuild - door-displays

GeorgeBuild: door finish panels in the official exhibition gallery. This photograph records visible finish variety; it does not identify a tested leaf construction.

Source: https://www.georgebuild.com/about-us/

Image: https://www.georgebuild.com/wp-content/uploads/2026/07/□□□□-02.webp

George Buildings - factory-doors-collage

George Buildings: original factory-gallery montage of door and joinery work. These scenes show visible processing, not a tested window line or a completed order.

Source: https://georgebuildings.com/about-george/factory/0/

Image: https://georgebuildings.com/wp-content/uploads/2024/06/13721718852298_.pic_.png

George Group China - profile-sample-review

GEORGE Group China: a discussion around frame and glass samples. The picture does not establish which configuration was approved.

Source: https://www.georgegroupchina.com/

Image: https://www.georgegroupchina.com/wp-content/uploads/2026/08/George-Group-China-Project-Tracking-Service-4.webp