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Genius® Architectural Walls

- Superior design
- Clever acoustics
- Environmentally friendly

Furnishing Knowledge®

Genius® Architectural Walls. The intelligent solution to room reconfiguration.

Superior Design.

From powerful to subdued, Genius walls can achieve any "look" without sacrificing flexibility. Unlimited aesthetic options let you design storefronts, private offices, conference rooms' dividing walls and more with sleek lines and beautiful finishes. Specify frames in anodized aluminum, veneer or powdercoat paint. Select single-glazed or double-glazed glass panels; add blinds for privacy. Finish the look with panels in fabric, vinyl, powdercoat paint, veneer or a writable/erasable surface. Genius walls can be rearranged at a moment's notice and removable shells offer easy access to electrical/data. It's flexibility without costly disruptions or the need for new materials.



Clever Acoustics.

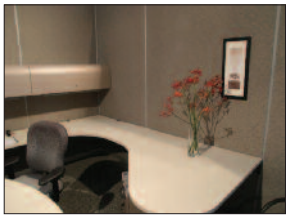
With an unprecedented Sound Transmission Class (STC) of 44-48 on solid panels, Genius walls control sound transmission and provide more effective acoustical privacy than standard drywall and comparable wall products.

Wall Construction Comparison	STC
1/4" Tempered Glass Panels	31
1/4" Laminate Glass Panels	34
4" Drywall Wall with 5/8" Gypsum Sheets on each side – no insulation	36
11 mm Laminate Glass Panels – Genius Option	36
Double-glazed Panel – 1/4" Tempered Glass – Genius Option	36
Other Wall Products (Solid Panels)	38-39
4" Drywall Wall with 5/8" Gypsum Sheets on each side – with insulation	42
KI Genius Wall Solid Panels	**44-48**
4" Face brick, mortared together	45
6" Lightweight concrete block, two coats of paint each side	46

Environmentally Friendly.

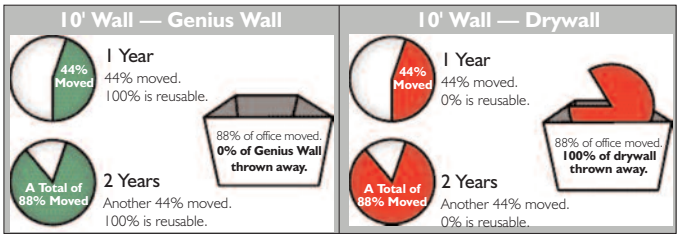
Genius walls comply with the U.S. Building Council's Green Building Design and LEED™ (Leadership in Energy and the Environment Design). Genius walls support your green design:

- Up to 99% recyclable, post-consumer (see chart)
- Up to 71% recyclable, pre-manufacturing
- Up to 99% reusable (see chart) – and, only 4.5 basic parts, the lowest of all wall products
- Inexpensive glass panels to maximize daylighting
- GreenGuard tested and approved for low VOC emissions (solid panel with vinyl or fabric, glass panel and transom door unit)
- Powdercoat paint and anodized finishes, which also emit low VOC levels
- Certified wood options
- Aluminum base covers replace non-friendly PVC
- Recyclable, inorganic gypsum-free steel shells that resist mold growth
- Built-in slotted standards for hang-on components reduce additional materials



- Removable shells extend the life cycle of the product and also allow easy finish changes in the field
- Movable walls produce less debris during initial construction and with each configuration, which saves the environment and money – no $1+/sq. ft. charge as with drywall disposal
- No dust issues as with drywall
- Compressed construction schedule means fewer commutes to the job site, lower power usage, etc.

Genius Wall is reusable.



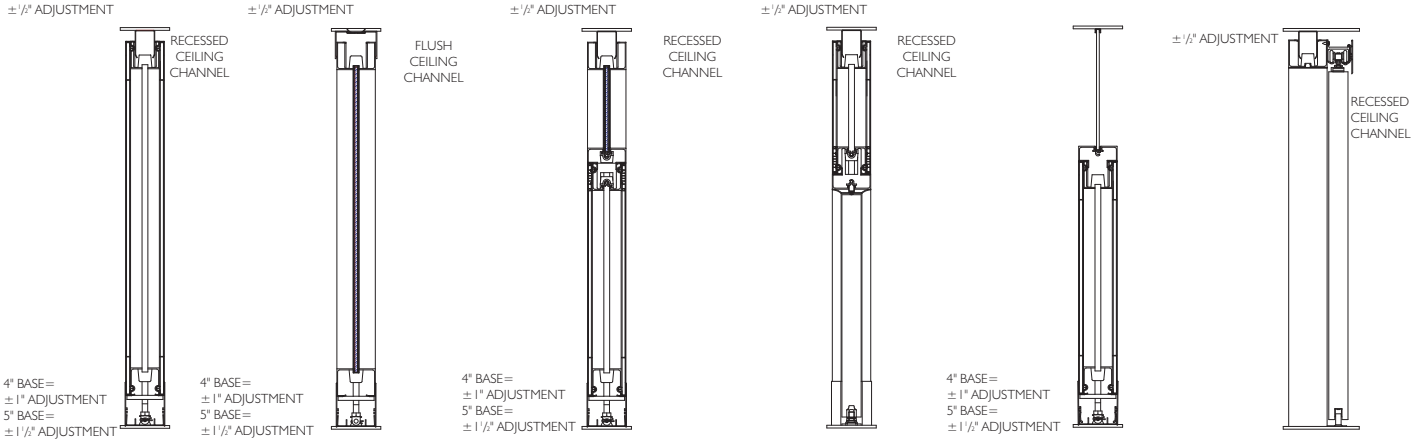
Genius Wall is recyclable.	Genius Wall Glass Panel	Genius Wall Glass Panel	Genius Wall Solid Panel (Powder Paint)	Genius Wall Solid Panel (Powder Paint)	Genius Wall Solid Panel (Fabric/Vinyl)	Genius Wall Solid Panel (Fabric/Vinyl)
	Percent of overall product weight	Recycling ability of product after use	Percent of overall product weight	Recycling ability of product after use	Percent of overall product weight	Recycling ability of product after use
Overall		99%		97%		93%
Aluminum	37%	100%	70%	100%	70%	100%
Steel	1%	99%	23%	99%	20%	99%
Tackable Surface	0%		0%		0%	
Panel Fabric	0%		0%		5%	0%
Corrugated Packaging	1%	100%	1%	100%	1%	100%
Plastic	0%		2%	0%	1%	0%
Paint	Less than 1%	0%	2%	0%	Less than 1%	0%
Fiberglass (Insulation)	0%		2%	100%	2%	100%
Glass Addition	60%	100%	0%		0%	

Architectural walls also enjoy a 7.5-year depreciation versus 39 years for drywall, leading to a lower life cycle cost.

Genius architectural walls. Easy on the eyes. Easy on the ears. Easy on the earth. Easy on the bottom line.

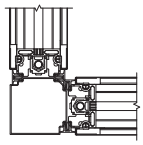
Panel/Door Details*

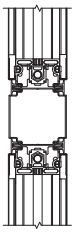
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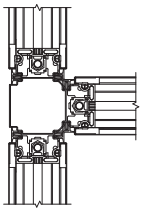


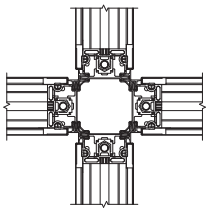
*All panels are 3 1/2" thick. Single–glazed glass can be 1/4" to 3/8" thick. Ceiling height up to 120", plus stackable above or below. Solid panels 7 1/2" to 60" (vinyl up to 48"). Glass panels 7 1/2" to 60".

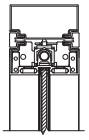
Post Details

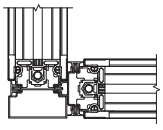

FM Corner

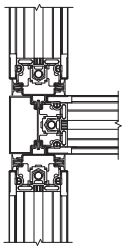

FM 2-way

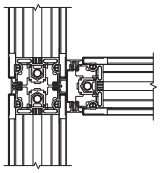

FM 3-way

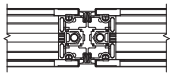

FM 4-way

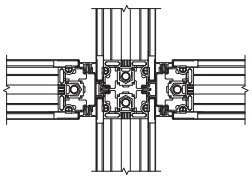

End Post

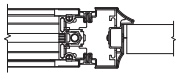

BM Corner

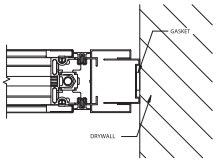

BM 3-way - A


BM 3-way - B

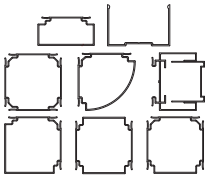

BM 2-way or Inline

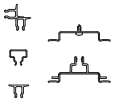

BM 4-way


Pivot Door/Panel Inline

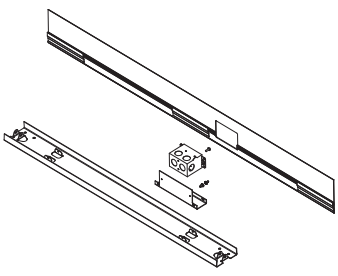


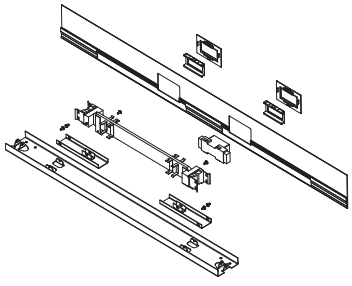
Wall Post
3 7/8" width, +/- 1"

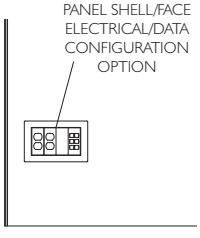

All Posts


Connections

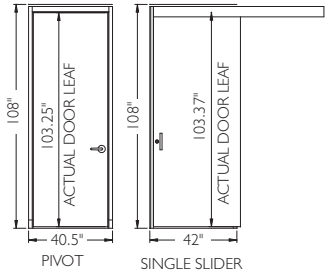
Miscellaneous


Hardwire Electrical


Pent Hardwire



Spider Electrical



Leaf Dimensions

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Specifications throughout all Divisions of the Project Manual are directly applicable to this Section, and this Section is directly applicable to them.

1.2 DESCRIPTION OF WORK

A. This Section includes the following:

1. The extent of the demountable unitized-panel partitions work as shown on the drawings, and as specified herein.
2. Provide all materials, labor, and equipment to install demountable or movable partitions. The movable wall system shall offer maximum flexibility and reusability to accommodate frequent and quick relocation work without loss of materials, damage or modification to panels or to adjoining structures such as ceilings, fixed walls and floors. The factory assembled system must be unitized (not stick built), non-progressive and modular, allowing the removal of individual panels from any location without disturbing adjoining units and providing interchangeability of panels and door units on the same module.
3. The system can offer a single center reveal design with optional concealed vertical slotting for wall-hung furniture components utilizing a pliable recessed panel connector. A shallow panel connector between panels provides a single center reveal design which matches the finish of the panel face, or a flush connector finished to match the panel to provide a monolithic aesthetic.
4. The head detail is either recessed or flush.
5. The base assembly with an integrated leveling system shall be permanently attached to the panel. Detached and loosely shipped floor tracks and leveling components shall not be permitted.
6. The solid panels shall be available in a choice of finishes and substrates to include marker board steel, wood veneer, powder coated steel, vinyl-covered steel or fabric-covered steel. (For acoustic purposes, no gypsum or melamine type product will be used.)
7. Panels are stackable (top or bottom) to accommodate ceiling height changes and panel type changes (i.e., solid/glass or glass/solid configurations).
8. Factory installed panel shells or faces shall be removable and interchangeable in the field without dismantling as complete units.
9. The factory assembled movable walls should be very flexible to accommodate the building conditions. The demountable wall should have flexible vertical adjustability. An adjustable, u-channel head assembly shall provide a ± 1/2" adjustment at the ceiling. At the floor, a self-contained leveling glide system and a flush 4"- or 5"-high base cover shall allow for an adjustment of ± 1" for a 4" base and ± 1 ½" for a 5" base. Combined, this shall provide an overall vertical adjustment of ± 1 1/2" for 4" and ± 2" for 5" to compensate for ceiling and floor irregularities. Where the wall system meets the building core walls, columns or window mullions, a telescopic, spring-loaded wall post or u-channel shall allow for a ±1" horizontal adjustment. All products shall be able to accommodate incremental sizes to a 1/16" increment.
10. Compatible modular power shall be available and can terminate within the solid wall panel and base areas of both glass and solid panels (overlapping 5" base only). All modular power connections within solid walls cavities and base areas shall be accessible and inspectable before, during and after installation. Owner will require open accessibility to power and data cabling disconnection and reconnection and pathways to accommodate wall disassembly + relocation. Walls shall be able to be field retrofitted to accept additional modular power outlets and conventional hardwired electrical outlets, fire + life safety, ADA strobes + devices, thermostats, and access security hardware and devices without complete wall section removal.

B. Related Sections include the following:

1. Wood Doors – Section 08 14 00
2. Door Hardware – Section 08 71 00
3. Glass and Glazing – Section 08 81 00
4. Acoustical Ceilings – 09 51 00
5. Wall Finishes – Section 09 70 00
6. Electrical and Lighting– Division 26
7. Communications – Division 27

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer who has successfully completed demountable partition installations similar in material, design, and extent to that indicated for this Project and is mutually accepted by the manufacturer and the customer.

B. Performance Bond: The successful demountable manufacturer should have the ability to provide a performance bond to insure Project completion.

C. Structural Performance: Provide demountable partitions capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Load-Bearing Capacity of Panel System: Not less than 7 lbs. / linear inch (3.175 kg/ 25.4 mm) distributed proof load when tested according to BIFMA X 5.6, Section 03, Table 06.
2. Transverse-Load Capacity of Panel System: Lateral deflection of not more than 1/240 of the overall span when tested under a uniformly distributed load of 5 lb/sq. ft. (24.4 kg/sq. m) according to ASTM E 72-98.
3. Seismic Performance: Provide demountable partitions capable of withstanding the effects of earthquake motions determined according to ICC Approval and compliance with 1997 Uniform Building Code and the 2000 International Building Code.

D. Sound Control: Solid panels shall provide an overall sound transmission class of not less than 44 STC rating in accordance with ASTM E-90, ASTM E412 when recessed ceiling channel, recessed panel connectors and wall posts are used. Solid panels shall provide an overall sound transmission class of not less than 48 STC rating in accordance with ASTM E-90, ASTM E412 when flush ceiling channel, flush panel connectors and U-channels are used.

E. Fire Retardancy: No flammable materials shall be used in the manufacture of the wall system. Provide independent laboratory tests for surface-burning characteristics of panel finishes in accordance with ASTM E-84. Flame Spread: Class A for powder coat finish and steel.

F. Indoor Air Quality: Demountable wall manufacturer's non-wood products must meet the GREENGUARD Standards for low-emitting products. The GREENGUARD Standards are based on low pollutant requirements of the State of Washington's Indoor Air Quality program, OSHA's Formaldehyde Rule, USEPA's office furniture specifications, the USEPA's National Ambient Air Quality Standard, and 1/10 of all regulated chemical exposure limits established by OSHA. Controlled pollutants include VOCs, respirable particles, formaldehyde, total aldehydes, ozone, and carbon monoxide. Specific chemicals, which are known irritants, odorants, or carcinogens, must meet certain criteria for some products.

G. Clean Room Approval: Demountable wall manufacturer must be approved for use in clean rooms. According to CSI Testing, the selected manufacturer met or exceeded the 10,000 clean area class conditions in accordance with Federal Standard 209E and ISO 14644 Part 1: Institute of Environmental Sciences RP-006.2 and/or the National Environmental Balancing Bureau Procedural Standards for Clean rooms.

H. Certification: Include supporting certified laboratory testing data indicating that material meets specified test requirements.

I. Mock up for Verification Purposes: In a location designated by the Architect, install a full scale installation incorporating at least one of each type of panel, and accessory required, illustrating each installation condition. Retain mock up installation until completion of total installation or dismantle earlier at the direction of the Architect. Materials used for the mock up installation will not be considered part of either the base contract materials or the attic stock materials. If life cycle costs of the product are important decision criteria, the mock up installation and reconfiguration should be timed, and the reuse of components should be evaluated.

1.4 SUBMITTALS

A. Product Data: Product data on physical characteristics, durability, resistance to fading, and flame spread characteristics for each type of partition and accessory.

B. Shop Drawings: Shop drawings showing location and extent of partitions. Include plans, elevations, sections, details, and attachments to other work.

C. Samples:

1. Samples for Initial Selection: Samples for initial selection purposes in form of manufacturer's standard color charts showing full range of colors, textures, and patterns available for each type of material exposed to view.
2. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
   a. Panel Finish Face: Manufacturer's standard-size unit, but not less than 3 inches (75 mm) square.
   b. Base Trim: 12-inch- (300-mm-) long Samples.
   c. Door Finish Face: Manufacturer's standard-size unit, but not less than 3 inches (75 mm) square.
   d. Glazing: Manufacturer's standard-size unit, but not less than 3 inches (75 mm) square.

D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of demountable partition.

E. Contract Closeout Information:

1. Warranty.
2. Maintenance Data: For demountable partitions to include in maintenance manuals.
   a. Recommended cleaning materials and warnings about cleaning methods that could be detrimental to finishes and performance.
   b. Installation manual detailing methods to move, reuse and adjust demountable product.

F. Environmental Information:

1. LEED Credit MR 4.1 or 4.2, Recycled Content: Product data indication percentages by weight of post-consumer and post-industrial recycled content for products having recycled content; includes statement indicating costs for each product having recycled content.
2. LEED credit MR 5.1, Local/Regional Materials: Manufacturer's certification indicating final point of assembly for products and materials located within 500 miles of Project Site. Include manufacturer's name, address and phone number.

1.5 PROJECT CONDITIONS

A. Delivery, Storage, and Handling: Deliver materials to Project Site in original factory wrappings and containers/skids, clearly labeled with identification of manufacturer, brand name, model number and order number. Store materials in original undamaged packages and containers, inside well ventilated area protected from weather, moisture, soiling, extreme temperatures, humidity; store product according to installation manual and away from other trades.

B. Environmental Limitations: Do not deliver or install demountable partition components until building is enclosed and finishing operations, including ceiling and floor-covering installation and painting, are complete.

C. Field Measurements: Indicate measurements on Shop Drawings.

D. Coordination of Work: Coordinate layout and installation of demountable partition components with other units of Work. Installation of ceilings, floor coverings, lighting fixtures, HVAC equipment, and fire-suppression systems should be completed before demountable partitions are installed.

E. Special Requirements: Comply with instructions and recommendations of manufacture for special delivery, storage, and handling requirements.

1.6 EXTRA MATERIALS

Deliver to the Owner, not less than three percent of the Project total for each component, panel and accessory of each type, color, and finish of demountable partition system exclusive of material required to properly complete installation. Furnish accessory components and installation tools as indicated on schedule. Furnish extra materials from same production run as materials installed. Package extra materials with protective covering, identified with appropriate labels.

1.7 WARRANTY

Demountable wall panels, glazed units, door frames, and related components to be without defects in mate-rial or workmanship for a period of ten (10) years from the date of delivery. Wood veneer wrapped parts shall be warranted to be without defects in material or workmanship for a period of five (5) years from the date of delivery. Wood doors shall be warranted for ten (10) years from the date of delivery, subject to the manufac-turer's terms and conditions.

This warranty does not cover defects or damage resulting from accidents, misuse, improper relocation meth-ods or transfer to storage. Vinyl and textile wall coverings, plastic laminates, and wood veneer finishes are not warranted against fading or wearing, or if improperly cleaned or treated by the Owner or by others.

PART 2 - PRODUCTS

2.1 DEMOUNTABLE UNITIZED-PANEL PARTITIONS

A. Products: Subject to compliance with requirements, provide the Basis-of-Design Product, or one of the following:

1. TBD
2. Other manufacturers desiring approval comply with Section 00440

B. Basis-of-Design Product: Subject to compliance with requirements, provide KI "Genius Architectural Wall".

C. Solid Panels With Steel Substrate: 8.89cm (3 ½") thick and consisting of an aluminum extruded frame construction, two removable panel shell assemblies each composed of one sheet of 22-guage steel glued to vertical / horizontal stiffeners and intermediate horizontal stiffeners, non-toxic fiberglass insulation, and the base assembly. Top of panel engages the ceiling channel. Aluminum frames (including glass panels) as a standard will have cavities on each side to accommodate cabling. Field notching the horizontal frame members will also allow easy cable access from the ceiling or the floor. As standard, solid panel vertical frame posts can be slotted for hang-on furniture and the slots concealed by a dual durometer PVC gasket which is 1" wide and recessed from panel face or by a flush-to-panel face connector. Component bracketry is optional. Panels to contain integral, adjustable bottom connectors, and the panel shells to be equipped with a mushroom-shaped extrusion that forms a compression fit with the vertical frame for easy removal from the frame structure.

1. Type: Factory finished.
2. Panel Thickness: Manufacturer's standard, 3 ½" thickness.
3. Panel Width: As indicated on drawings.
4. Panel Finish: [Powder-coat finish][Wallcovering][Steel Markerboard]
5. Panel Color and Pattern: [As selected by Architect from manufacturer's full range] <Insert color and pattern>
6. Magnetic Accessory: <Insert accessories such as picture hanger>

D. Solid Panels With Project Specific Substrate: 8.89cm (3 ½") thick and consisting of an aluminum extruded frame construction, two removable panel shell assemblies each composed of [Veneer][Plastic Laminate][Corkboard] [Other] face laminated to MDF, non-toxic fiberglass insulation, and the base assembly. Top of panel engages the ceiling channel. Aluminum frames (including glass panels) as a standard will have cavities on each side to accommodate cabling. Field notching the horizontal frame members will also allow easy cable access from the ceiling or the floor. As standard, solid panel vertical frame posts can be slotted for hang-on furniture and the slots concealed by a dual durometer PVC gasket which is 1" wide and recessed from panel face or by a flush-to-panel face connector. Component bracketry is optional. Panels to contain integral, adjustable bottom connectors, and the panel shells to be equipped with a mushroom-shaped extrusion that forms a compression fit with the vertical frame for easy removal from the frame structure.

1. Type: Factory finished.
2. Panel Thickness: Manufacturer's standard, 3 ½" thickness.
3. Panel Width: As indicated on drawings.
4. Panel Color and Pattern: [As selected by Architect from manufacturer's full range] <Insert color and pattern>

E. Aluminum Glass Framing:

1. Frame Finishes: [Factory-applied powdercoat paint][Clear Anodized][Paper-backed Veneer].
2. Frame Color: [As selected by Architect from manufacturer's full range] <Insert color and pattern>
3. Glass Frame Vertical Dimension: [1.9"][3.5"]
4. Glass Panel Configuration: [Single Center mounted][Edge mounted double glazed][2 Glass Panel Faces]

F. Panel Connector or Joint Closure:

1. Connector Type: [Pliable PVC recessed][Shallow][Flush][Seamless]
2. Finish: [As selected by Architect from manufacturer's full range] <Insert color and pattern>

G. Trim: Base trim is continuous, factory-finished, snap-on type or recessed; adjustable for variations in floor. Ceiling trim is continuous and compensates for ceiling irregularities.

1. Base Trim Profile: [Flush] [Recessed]
2. Flush Base Trim Height: [4"] [5" for base electrical]
3. Ceiling Trim Profile: [Flush] [Recessed][Cornice]
4. Exposed-Metal Trim Finish: [Factory-applied powdercoat paint][Clear Anodized][Paper-backed Veneer].
5. Trim Color: [As selected by Architect from manufacturer's full range] <Insert color and pattern>

H. Wood Door Leaves: Manufacturer's standard 5-ply construction and 1-3/4 inches (45 mm) thick. Leaves should be constructed with no visible stop. Standard core material is Timberstrand which is considered a rapidly renewable material.

1. Door Veneer Type: <Insert veneer type>
2. Door Veneer Finish: <Insert color and pattern>
3. Door Leaf Type: [Solid Core][Fully-Glazed][View-Lite Glazed][1/2 glazed]
4. FSC Veneer: [Yes] [No]

I. Aluminum Door Leaves: Manufacturer's standard aluminum extrusion and fully glazed.

1. Door Finish: [Factory-applied powdercoat paint][Clear Anodized][Paper-backed Veneer].

J. Door Frames: Manufacturer's standard aluminum extrusion, factory- machined to receive hardware, for 1-3/4-inch (45-mm) doors.

1. Frame Finishes: [Factory-applied powdercoat paint][Clear Anodized][Paper-backed Veneer].
2. Frame Color: [As selected by Architect from manufacturer's full range] <Insert color and pattern>
3. Frame Height: [Ceiling height][Transom-height]
4. Transom Height Finish (if applicable): <Insert solid or glass>
5. Frame Type: [Single Sliding][Double Sliding][Single Reversible Pivot][Single butt-hung][Double butt-hung]

K. Door Hardware: As specified in Hardware Section 08 71 00

L. Glass and Glazing: Safety glazing in compliance with Glass and Glazing – Section 08 81 00.

1. Single Glazed Thickness: [1/4" to 3/8"]
2. Double Glazed Thickness: [1/4"]
3. Glass Type: [Tempered][Laminate]

M. Electrical and Communications: As specified in Electrical – Division 26 and Communications – Division 27. All electrical components are UL listed and approved.

N. Solid Panel Acoustical Rating: [STC 48 – Flush Ceiling Channel, No Slotting][STC 44]

O. Seals: Manufacturer's standard.

2.2 FABRICATION

A. Demountable Unitized Panels: Factory-assembled, flush, hollow unit construction; with faces smooth and free of buckles, oil canning, and seams; and insulated with solidly packed, formaldehyde free insulation. Fabricate panels for installation with concealed fastening devices and pressure-fit components that will not damage ceiling or floor coverings. Fabricate panels with continuous light-and-sound seals at floor, ceiling, and other locations where panels abut fixed construction.

1. Factory glaze panels to the greatest extent possible.

B. Components: Fabricate components for installation with concealed fastening devices and pressure-fit members that will not damage ceiling or floor coverings. Fabricate for installation with continuous seals at floor, ceiling, and other locations where partition assemblies abut fixed construction and for installation of sound attenuation insulation in partition cavities.

2.3 FINISHES, GENERAL

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prior to installation of demountable partition system, clean floor to remove dust, debris, and loose particles.

B. Illuminate areas of installation to provide an ambient light level of at least 100 foot candles measured in the area where partitions are to be installed.

C. Maintain temperature in the area of installation at a constant minimum of 65 degrees F with relative humidity less than 70 percent for a period of 48 hours prior to installation and during installation process.

D. General Contractor will deliver all GWB construction interfacing with the demountable partition system in true and plumb condition.

E. For manufacturer to accept responsibility of dimensional compatibility between demountable partition wall system and GWB construction, manufacturer shall have access to the completed GWB for accurate field measuring eight weeks prior to requiring product on site to commence installation. If time line does not permit the eight weeks lead time, demountable manufacturer shall provide "hold-to" dimensions for the General Contractor. General Contractor then assumes responsibility that GWB construction delivers on "hold-to" dimensions.

F. Demountable manufacturer determines that conditions are acceptable to receive the work of this section. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to installer. Starting of work shall be construed as acceptance of conditions.

3.2 INSTALLATION

A. Install demountable partition systems rigid, level, plumb, and aligned. Install seals to prevent light and sound transmission at connections to floors, ceilings, fixed walls, and abutting surfaces.

1. Installation Tolerance: Install each demountable partition so surfaces vary not more than 1/8 inch (3 mm) from the plane formed by the faces of adjacent partitions.

B. Do not alter ceiling suspension system.

C. Install door-and-frame, solid panel and frame, and glazing-and-glazing-frame assemblies securely anchored to partitions and with doors aligned and fitted. Install and adjust door hardware for proper operation.

3.3 DEMONSTRATION

A. Engage a factory-authorized service representative to demonstrate and train Owner's maintenance personnel to adjust, operate, and maintain demountable partitions. Refer to Division 01 Section "Demonstration and Training."

END OF SECTION 102219

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Site Review Order Requirements

KI Movable Wall

October 2014



Furnishing Knowledge®

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REVIEW DELIVERY REQUIREMENTS

Loading Dock/Street Offload/Parking Lot Offload

Determine if there are any delivery requirements or special delivery methods to be included in project cost and can be executable.

- Can a 53' truck access the planned offload area?
- Does your city allow 53' trucks to deliver to site?
- Do we deliver to site or warehouse?

Freight Elevator/Crane Requirement/Stair Carry

During a site visit, determine the most appropriate delivery path from offload location to product staging area. Make sure the paths are sized adequately to accommodate the component or skid size; whatever the planned method. We'd all hate to experience the fate of delivering product to the 8th floor by stair because the elevator was too small or shut-down for service. On that note: check for any elevator booking requirements or restricted hours of delivery.

Staging Install – Product Placement

Review the floor-plate in the area of install, and/or talk to building officials, to determine the best staging areas and delivery routes for easy install. If security is an issue, the contracted installation company is responsible for providing a secure environment to house the KI Movable Wall product upon delivery until the project is complete; losses due to theft will be the responsibility of the contracted installation company.

OVERALL SITE REVIEW – "COLD SHELL" OR "WARM SHELL" STATUS

What is a Cold Shell?

A Cold Shell is defined as "An unfinished floor area: e.g. raw concrete, no ceiling grid." The following is a detailed list of items that will help you determine a Cold Shell site:

- Exterior cladding is either incomplete or not yet weatherproof. Glazing may or may not be installed.
- Floor surface is unfinished, such as raw concrete. It might need to be 'floated' to help get it level and smooth.
- Structural columns are unfinished and/or not furred out.
- Plumbing and other pipes are not furred out.
- The building's core walls have not been finished.
- Ceiling grid has not been installed.
- HVAC, sprinklers, lighting systems have not been completed.

In this condition we may build our product to 'Hold To' dimensions. The two most important conditions would be furring out and ceiling height.

What is a Warm Shell?

A Warm Shell is defined as "A floor space with finished exterior walls, all furring-out, flooring, and ceiling grid/tiles." The following will help you determine a Warm Shell site:

- Exterior cladding is complete and weatherproof. All glazing has been installed.
- All convector heating cabinets have been installed.
- All flooring has been installed.
- There may be more than one type of flooring .
- Is there raised flooring? If so, which type is it?
- The building's core walls have been finished
- Structural columns are finished and furred out.
- Ceiling grid has been installed.
- Ceiling tiles installed is an ideal condition; however, a site survey can still be carried out if they have not been. In this case, take note of the location and height of the HVAC diffusers and sprinkler heads.
- There may be more than one ceiling type and height. You will need to consider this when you survey the site.
- HVAC, sprinklers, lighting systems have been completed.

REVIEW INTERCONNECTING SITE CONDITIONS

Review Obstructions In Area Of Product Install

- Lights, HVAC vents, sprinkler heads/lines, wall power/data outlets, light switches, fire strobes/alarms, fire alarm pull stations, fire hose cabinets, etc.
- If available, always take a floor-plan of the layout design to confirm area of proposed install.
- Determine if any obstructions exist and where key intersections of KI Movable Wall product occurs with the base building (wall, ceiling, floor). Note the type of obstruction on the plan and elevation of the design drawing or sketch and locate by dimension; also take a photograph of the entire elevation noting the obstructions.
- Coordinate the relocation of the obstructions with the local design team and/or General Contractor or relocate KI Movable Wall products. Provide photos of such conditions.

Perimeter Building Section

While on-site, make a detailed sketch of the perimeter sections. It helps identify items like convectors, window sills, drapery fillers, and exterior bulkheads. This enables us to design the appropriate solution where KI Movable Walls meet the building perimeter.

Note: To promote reusability, support economies of scale, and reduce lead-time, have the General Contractor build-out or fill-in any non-flush conditions at the perimeter of the building.

Note: KI Movable Walls will not terminate directly into glass. If this request is made, please redirect the request to the General Contractor; have them provide a false mullion or build-out. Mounting anything to the face of glass changes the physical properties of glass and creates a potential cracking point as the temperature of the inside and outside of the glass will differ from the standard condition.

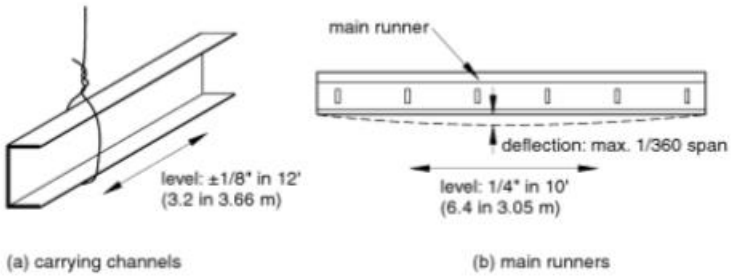
Please document any different termination details and submit with the Verified Field Dimensions (VFD).

Reminder: Regarding Services (Electrical, Plumbing or Data)
Depending on the KI Movable Wall selected Lightline (No) and Genius (Yes) may or may not be able to support routing of services such as electrical, plumbing or data. However, in either case it is still important to know the locations in order to ensure the services are coordinated properly with the KI Movable Wall product (floor, ceiling or wall fed locations). Define KI's role and responsibility with the GC to ensure all project requirements are covered. Know what KI Movable Wall product we will be providing, what the installation technicians' responsibilities are and what the responsibilities "by others" are. Do not make assumptions; if you must, assume they don't have a clue what you are bringing to the table and explain everything.

CONSTRUCTION TOLERANCE STANDARDS

A construction tolerance is the allowable deviation from a given dimension, location, line, grade, or other value given in the contract documents. Tolerances are necessary in construction because no manufacturing, fabrication, or construction process is perfect. There are only degrees of accuracy. Many building product manufacturers and trades have established tolerances that are published and generally accepted in the construction industry. These are based on past experience, professional judgment, and realistic expectations of the materials and construction processes involved.

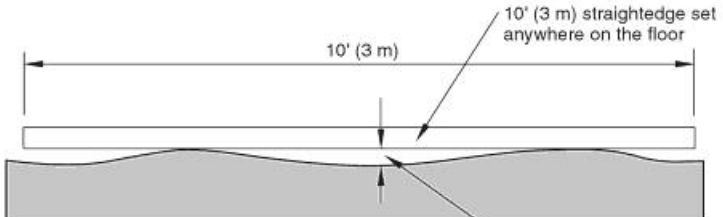
Acceptable Suspended Ceiling Variation: $+^{1}/_{8}$" to $-\ ^{1}/_{4}$" every 10'



(image from the Handbook of Construction Tolerance, 2nd Edition, David Kent Ballast)

Figure 1

Acceptable "Flat" Concrete Floor Variation Using Straightedge Method: $+^{1}/_{4}$" every 10'

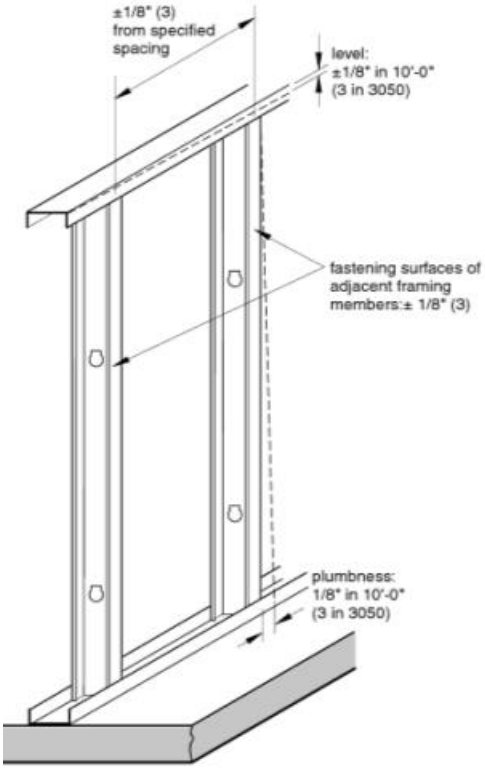


floor surface classification	90% compliance	100% compliance
conventional:	1/2" (13)	3/4" (19)
moderately flat:	3/8" (10)	5/8" (16)
flat:	1/4" (6)	3/8" (10)

(image from Architects Handbook of Construction Detailing, David Kent Ballast)

Figure 2
Acceptable Framing for Gypsum Wallboard Level: $\pm^{1}/_{8}$" to $-\ ^{1}/_{4}$" every 10'
Plumbness: $^{1}/_{8}$" in 10'

Metal Lath/Steel Framing Association (FM/SFA) also recommended the same tolerances.



(image from the Handbook of Construction Tolerance, 2nd Edition, David Kent Ballast)

Figure 3

SITE MEASUREMENTS

Important Overall Notes

- Take long dimensions first – using a 100' tape measure.
- Take measurements to the floor and ceiling in key locations where doors, glazed panels and curved panels are planned. Do this at structural columns and mid span of beams. Be sure to account for thickness of carpet and possible finished ceiling discrepancies based on tile type (e.g.: Tegular tile).
- Measure major elements first (column to column & mullion to mullion).
- Use progressive dimensions wherever possible .
- After the overall dimensions are taken, take dimensions of smaller details in between structural elements.
- Check the sum of the smaller dimensions to ensure they add up to the overall. If they don't re-measure.
- Do not take a series of short dimensions and add them together. This often leads to errors.
- If necessary (and it usually is) measure twice to be absolutely sure!
- Either use metric or imperial dimensions, but don't use both in the same survey
- Use different colored pens for the dimensions lines, arrows and numbers for easier understanding, rather than a single color for all information.
- Take photos. Once you leave the site they can help you remember certain details of the site conditions.

When taking dimensions measure from the face of mullions and finished walls avoid measuring from:

- Face of base trim. Do note the type and thickness of base building trim. It may affect our interaction with perimeter walls.
- Face of unfinished drywall stud. However, there may be occasions where we need to measure from raw studs. Note the thickness of drywall used and account for how it will affect your dimensioning.
- Face of glass.

Dimension Standards

- Measure from face of finished wall to face of finished wall.
- Measure from center of mullion to center of mullion.
- Take one long, then several small dimensions to confirm the long dimensions (check the math on-site before you leave).

Show Your Dimensions

- Over 24" as feet and inches – 2' 6"
- Under 24" as inches only – 24"
- Exception is the ceiling height which should always be in inches only – 108"

Draw a Cross Section

- Bulkhead details.
- Window details.
- A rough sketch that states "EQUAL" on the room sizes does not mean "equal centerlines" when building between drywall. "Equal" means room size; finish-to-finish.

Ceiling Heights

Ceiling Height is by far the most important measurement of all. If the ceiling height is incorrect the product won't fit. A grid of ceiling heights should be taken every 4' and at all base building intersections as well as KI Movable Wall intersections and at doorways. Even though we have vertical adjustment in the base of the glass panels, we have very little in our door units.

Ceiling heights should be taken from finished floor (carpet) to underside of finished ceiling grid. Any site measurement should be identified FROM where and TO where the dimensions were taken. If not; to a finished surface the finish and finish thickness is required to calculate the finished dimension. Example: If the ceiling grid is in, but not the ceiling tile (or finished ceiling), and the site measurement is taken from the concrete slab to the underside of the grid, we cannot use this figure as a finished ceiling height as the tile (if tegular) will decrease the ceiling height by the dimension of the tile groove. The floor finish decreases the ceiling height by the thickness of the carpet.

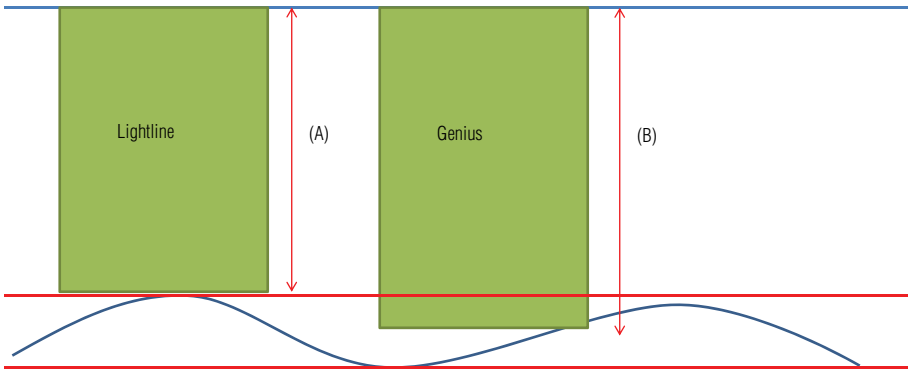
Legend Of Dimensional Terms

F.O. = Face Of
CL = Centerline
U/S = Underside
A.F.F. = Above Finished Floor

Usually ceilings are more level than the slab or floor as they are installed with a laser; however, both conditions may vary and must be understood. KI Movable Wall always tries to provide a single ceiling height solution for its panels and door units it provides the client with the most flexible product for future reconfigurations.

KI Movable Wall Ceiling Heights

KI Lightline and Genius Wall ceiling heights are determined differently (see graphic below) and the tolerance levels/ceiling height guarantee dimension requirements are unique to each product.



(A) Shortest, minimum or smallest ceiling height = Manufactured Ceiling Height
(B) Typically the difference between the maximum and minimum ceiling height = Manufactured Ceiling Height

Figure 4

KI Lightline has a ceiling height adjustability of:

Base Cover Height	Glass Panels Allowable Variation	Cutable Wood slider Cutable Wood Pivot Allowable Variation	Adjustable Glass Slider Adjustable Glass Pivot Allowable Variation	Frameless Glass Slider Frameless Glass Pivot Allowable Variation
2.5" (Note 1)	$+1/4$"	$+1\,3/4$"	$+1\,3/4$"	See Note 2
3.25"	+1"	$+1\,3/4$"	$+1\,3/4$"	See Note 2
4"	$+1\,3/4$"	$+1\,3/4$"	$+1\,3/4$"	See Note 2
Note 1: 2.5" Base Option-KI will not offer solution unless client is using the product on a level raised floor or the client is willing to float the floor to + ¼" tolerance or +/- 1/8" tolerance for frameless glass pivots.				
Note 2: Door leaves are special and are measured after door frames and glass panels are installed. Assumption ceiling heights are level or +1/8" to – ¼" every 10' per Construction Tolerance Standards. Extra lead-time and delivery/freight/installation costs are required.				

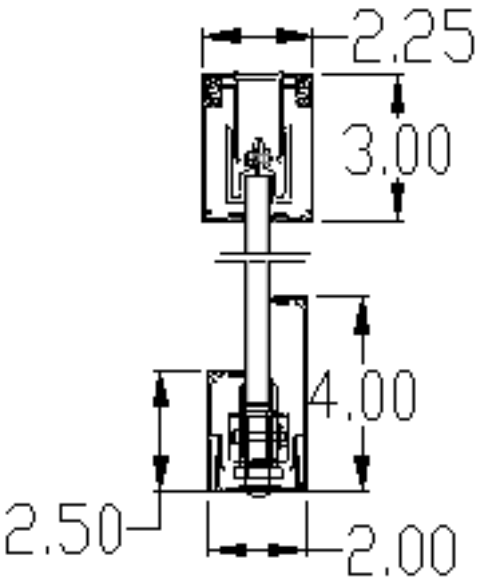


Figure 5

Lightline Standard Ceiling Height Determination Example

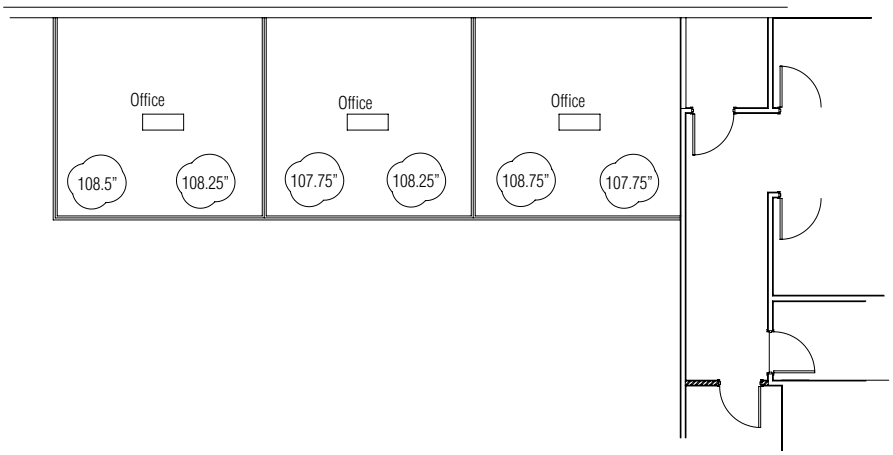
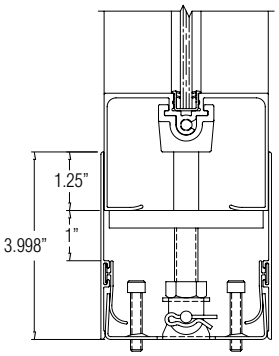


Figure 6

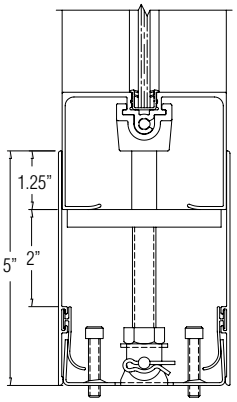
Shortest or Smallest ceiling height:	107.75"
Recommended panel manufacturing ceiling height:	107.75"
Recommended base heights:	Range: 108.75" - 107.75" = 1", 3.25" or 4"
Recommended door type (1 door leaf manf. height):	Cutable Wood Door or Adjustable Glass Door
# of Frameless pivot heights:	Special. Measure in field after panels/frames installed. Include extra lead-time and delivery/freight/install costs to the project price.

KI Genius has a ceiling height adjustability of:

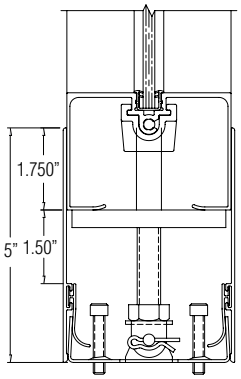
Base Cover Height	Panel Allowable Variation	Door Unit Allowable Variation
4" (Note 1)	± 1"	± 1/2"
5" (Note 2)	± 1 1/2"	± 1/2"
Recessed Base (Note 1)	± 1/2"	± 1/2"
Note 1: Do not specify electrical/data boxes in the base area with these base configurations. Note 2: Adjustment is less when you have electrical in the base cavity.		



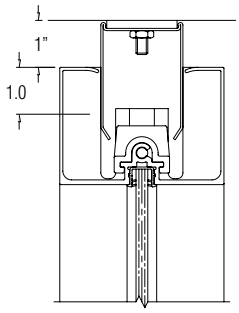
4" BASE
Standard base used when electrical is not in base ± 1"



5" BASE
Standard base used with electrical in the base ± 1" leaving room for electrical box/harness



5" BASE HYBRID
With no electrical in the base the 5" base cover can be used to increase the adjustment in both directions ± 1.50"



CEILING CHANNEL
The recessed ceiling channel allows for ± 1.00" of adjustment at ceiling

Figure 7
Genius Standard Ceiling Height Determination Example

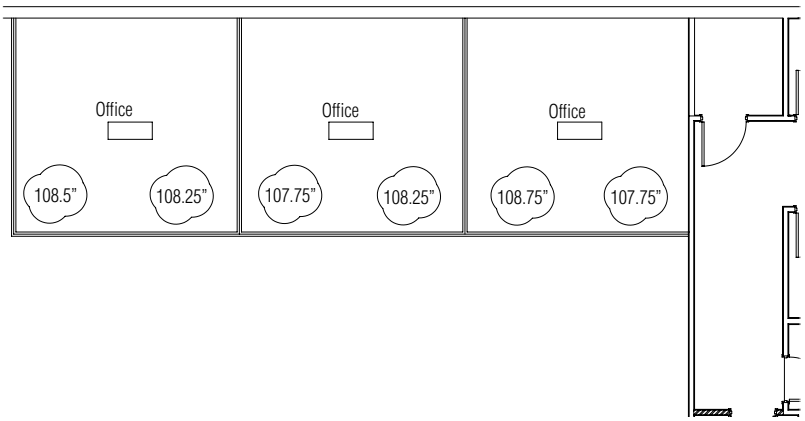


Figure 8

Shortest or Smallest ceiling height:	107.75"
Tallest or Largest ceiling height:	108.75"
Recommended panel manufacturing ceiling height:	(107.75" + 108.75") / 2 = 108.25"
Recommended base heights: (provided no electrical/data in base)	Range: 108.75" - 107.75" = 1", 4" or 5" recessed
Doors in the +/- $^{1}/_{2}$" range:	Yes

Precise Ceiling Height Determination Example

In order to specify KI Movable Wall options such as the Lightline 2.5" base and/or a frameless glass pivot door unit on a non-level raised floor, it is necessary we check the levelness of the floor and the ceiling prior to ordering. In order to determine levelness of the floor and ceiling, you must use a laser level in conjunction with spot measurements.

"Floor"

Is it flat and is it level?

To determine this, establish a 'level plane' by using a rotating laser beam device, (rent one for the survey or hire/schedule a KI technician to bring in survey equipment) and take vertical measurements from it to the floor in as many places as possible (minimum every 3'0"). If a laser is not available a level plane can be established by using a line of string stretched tight between two structural elements.

"Ceiling"

Is it flat and is it level?

It is essential that the vertical measurements from the 'level plane' be taken at the same places where you measured to the floor. This will help accurately establish any variations in the floor-to-ceiling dimension.

It is also important to locate and note the reflected ceiling plan:

- Changes in ceiling levels
- Ceiling grid and tile types
- Changes in ceiling grid and tile types
- Bulkheads
- Drywall and custom drywall ceiling areas
- Coffered ceiling areas
- Lighting units, especially ambient lighting units
- Radiant panels
- Plenum heights for suggested seismic details

If there is no ceiling grid installed you will need firm 'Hold-To' dimensions that we can manufacture from.

“Selection and Use of a Laser”

Selecting a Laser:
- Self-Leveling
- Includes a Tripod
- Rotates 360°
- Cost is between $150 and $400 USD

Set up and Use

Go to the outside wall, preferably at the outside corner. (Outside corners are generally the highpoints.) At this point, set the laser on the tripod. Turn it on and let it adjust itself. With a tape measure select an easy number to work with, say 40”. With the tape measure in front of the laser, crank the tripod up or down until the laser reads 40”, this is your benchmark. Walk away from the laser with the tape measure and spot-check the floor over the entire area where KI MOVABLE WALL is to be installed. As you walk away from the laser using a reader card or the red glasses that come with the laser - take notes as to where the floor changes.

- Use an imaginary grid on the floor to keep your bearings, approximately. 4' squares.
- As you spot-check the tape reading will change. For instance if you checked the tape 4' away from the laser and the tape now reads 40 3/4"” the floor is dropping away.
- At the 40 ¾” reading you now know that the floor dropped 3/4" in that distance. Keep checking the floor in a grid like pattern and keep noting the numbers.
- Numbers going up mean that the floor is dropping.
- Numbers going down mean that the floor is coming back up. In the example you see a few different numbers on the grid fluctuating up or down from 40.

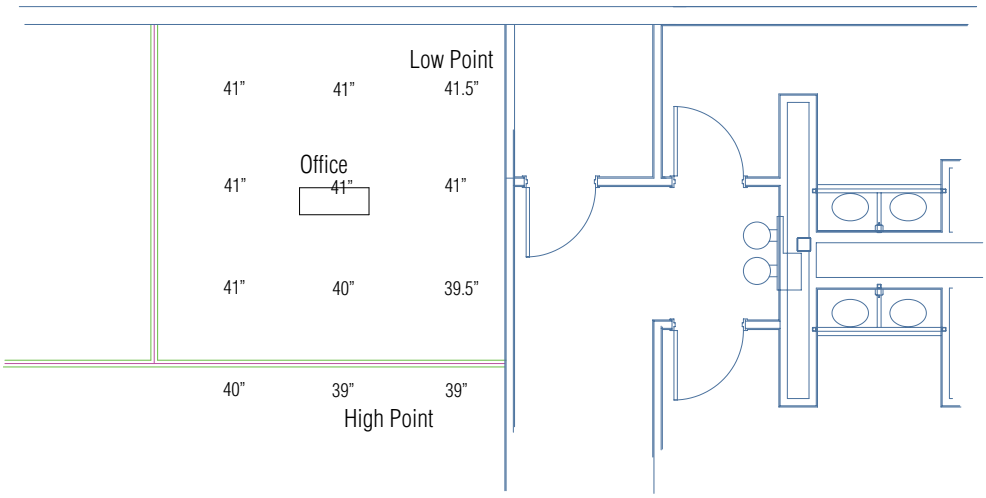


Figure 9

Take note of the highest number on the grid and the lowest number on the grid. In this example the highest number is 41 1/2" and the lowest number is 39”. Remember that the low number is the high point. With these two numbers you establish that the floor has a total drop in some places of 2 1/2". They also give you the median number to create the best module size for the walls.

In this example, the floor is very uneven and beyond even the 4" base of Genius Wall and Lightline. In these cases where it dips much lower you have to inform the client and General Contractor and have a floor floated to meet the requirements for the walls. If it humps up dramatically, the General Contractor will have to grind it down.

Key Horizontal Dimensions Guidelines

Whether it's window mullions, columns or openings in drywall; you need to take dimensions confirming exact locations where our product is meant to connect, align or fit between. It is also a good idea to include and locate building elements near the intended area of installation and verify all surfaces are plumb and square. This helps if future changes to the scope increase/decrease office sizes or front runs. Example: A simple office width change results in connecting to the next window mullion; OR the office is made wider and requires a termination into a column; if not located dimensionally during the site visit unnecessary costs could be incurred.

KI Lightline Walls have horizontal adjustability of: ± $^{3}/_{8}$"
KI Genius Walls have horizontal adjustability of: Varies by Connection Type

Note: The inside clear dimension shall be no more than ± $^{3}/_{8}$" where KI Lightline walls are located. This deviation must be met along all vertical planes of the hard walls, i.e., hard walls should be as plumb and true as possible to maintain the maximum deviation of ± $^{3}/_{8}$" overall.

To ensure surfaces are plumb and square, when measuring between permanent finished drywall partitions, KI requires 3 dimensions for each opening (see Figure 10 below showing locations of measurements).

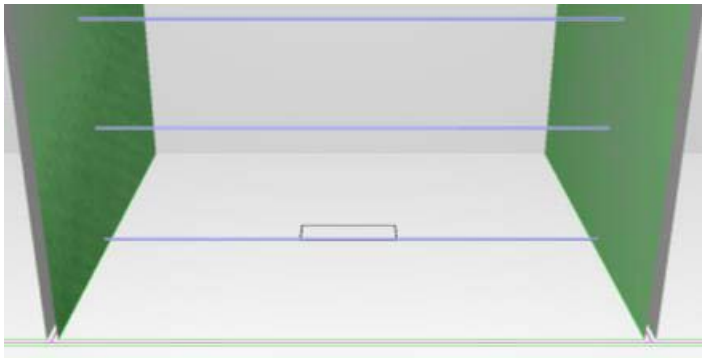


Figure 10

HOLD-TO DIMENSIONS

Hold-to dimensions are required when the base building is not completely ready for physical site measurements but product must be entered into production to meet deadlines. The dimensions must be agreed upon by the design Architect and the General Contractor. If the ceiling height is a Hold To dimension we must discuss the exact location where the ceiling height will be established and run a laser level referencing in that position to determine the floor levelness.

When possible, always deal with centerline dimensions; clear inside dimensions are generally easy to calculate as our walls are 2.25" thick (Lightline finished dimension) or 3.5" (Genius finished dimension). The GC/Architect signs-off on the KI Movable Wall approval shop drawings. It must be made clear that any additional product, due to the base building not being built to the agreed Hold To dimensions, will be considered a Change Order.

NOTES

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NOTES

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