



Large Doors

How to Select the Right Door

For the Indoor/Outdoor Aesthetic

Andersen Windows, Inc





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Course Overview

Modern design trends are favoring larger openings, and while this blank canvas offers the architect a wide-range of options, it can also pose a challenge. Because of the almost unlimited variations of different types, styles, and available options for large doors, it is often more important that the architect understands *how* to make the selection process, rather than which specific door to choose. The process for specifying should include client aesthetic expectations, environmental conditions, building performance, and durability concerns.

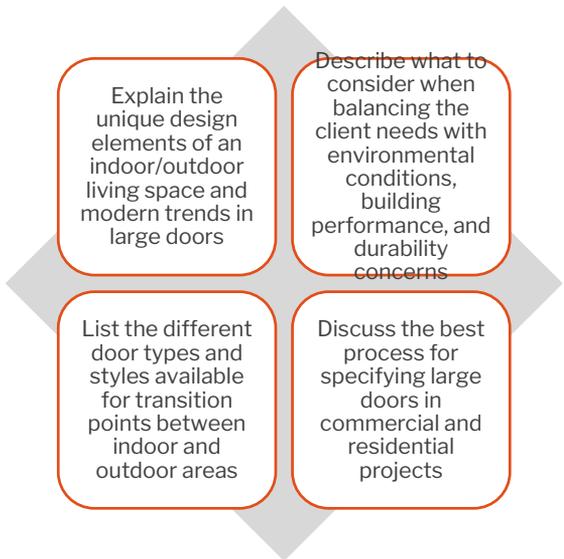
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Learning Objectives

At the end of this course, the participant will be able to:



Explain the unique design elements of an indoor/outdoor living space and modern trends in large doors

Describe what to consider when balancing the client needs with environmental conditions, building performance, and durability concerns

List the different door types and styles available for transition points between indoor and outdoor areas

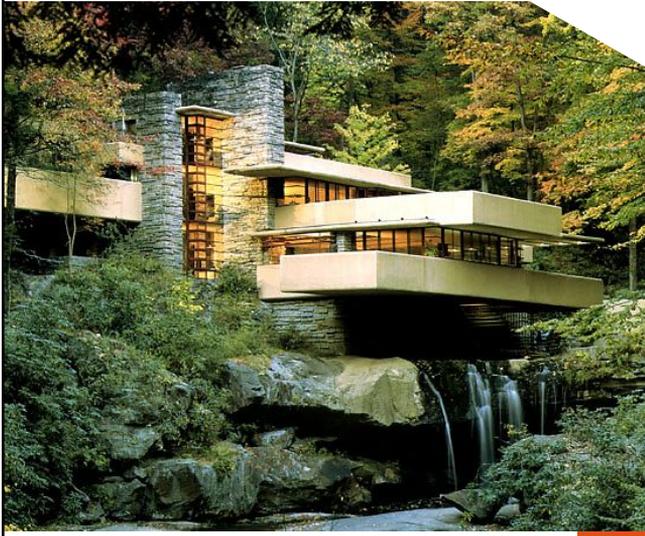
Discuss the best process for specifying large doors in commercial and residential projects

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- Describe what to consider when balancing the client needs with environmental conditions, building performance, and durability concerns
- List the different door types and styles available for transition points between indoor and outdoor areas
- Discuss the best process for specifying large doors in commercial and residential projects



This section will explore the design trend to include indoor/outdoor elements to residential and commercial projects. Included in this section will be a brief overview of new door types and styles available, and a quick historical review of how large doors have been increasingly popular design elements.



Historical Door Trends

Historical trends

- Open spaces have always been attractive for removing the distinction between indoors and outdoors resulting in pleasant environment filled with natural light and open air

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Though the movement is more popular now than ever, the concept of joining a building with its natural surroundings is nothing new. Eliminating a wall or a standard patio door results works to improving views, allowing for fresh air to freely flow through the living space, and ease of access to the outdoors are all timeless reasons to design spaces with large openings. The idea that living space should expand outdoors was also a core principle of Frank Lloyd Wright's "organic architecture." This is eloquently displayed in the 1935 design of The Kaufman Residence in Mill Run Pennsylvania, famously referred to as "Falling Water." There, indoor and outdoor spaces flow together at different levels and in different ways.



Innovative Door Trends

- Innovation has fueled the growth of indoor/outdoor architecture
- Window/door technology has allowed buildings to incorporate large glass walls
- Now big glass walls are movable and come in a wide-range of options



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But, as with other design concepts that have become a part of our culture, innovation has fueled the growth of indoor/outdoor architecture. In the last century, advances in window technology allowed buildings to incorporate large walls of glass that brought the outside in to homes and commercial spaces. Now, with advent of big doors, those massive glass walls have become moveable, allowing for a seamless transition from interior to exterior spaces.

Styles & Types



Although there are many styles and types available, large doors can be grouped into several main types:

- Gliding or Sliding
- Mult-Slide
- Liftslide
- Swinging
- Bifold or Folding
- Pivot

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The following slides will provide a brief overview of each of these door types.



Styles & Types – Gliding & Sliding

Gliding or sliding doors

- This is the door type that advanced the trend in the 20th Century
- Save space compared to swing doors
- First type developed for mass production

Sliding doors are designed to glide horizontally and were the first type of large opening doors created for mass production. There are three types of sliding glass doors and all share the advantage that they can fit into tighter spaces than hinged doors since they slide along the plane of the wall and don't swing into the space.

Styles & Types – Multislide

Multi-Slide

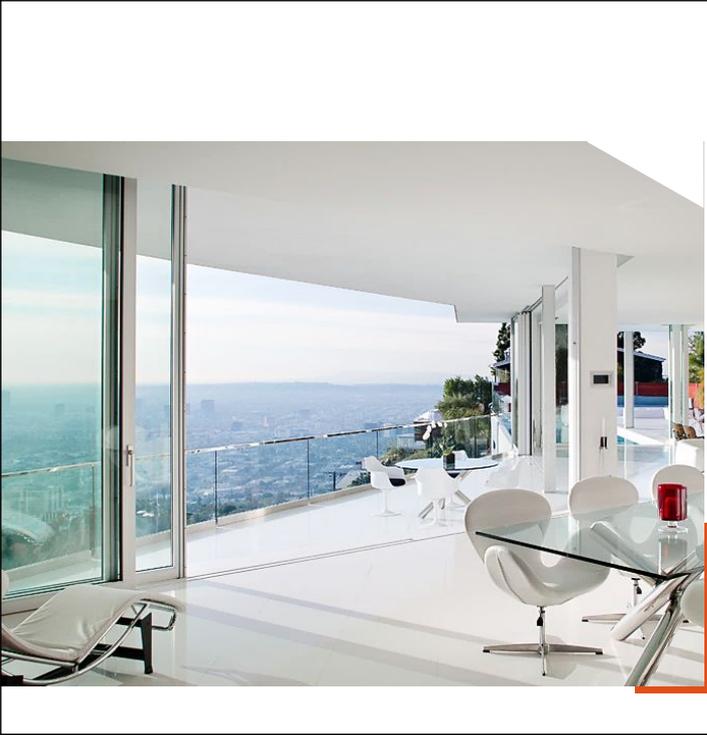
- Most common in residential buildings
- Sizes: available in a wide range of heights and widths. Customizable in 1/8" increments
- Material: wood, vinyl, composite, or aluminum



Multi-slide patio doors are often selected for luxury residential and commercial buildings. Gliding patio doors use wide aluminum sills that the doors roll along. Traditional gliding doors had one stationary or fixed panel and another that could be opened. These types often have screen covers as well and are very popular in residential settings where openings are typically smaller.

For larger openings multiple panels can be used and are either “stacked” when open or, if flooring and structure options permit, doors can be slid discreetly into wall pockets. Screens are also available for multiple panel gliding doors, however each panel will require an independent track on both the bottom and top of the panel.

One thing to consider is that the more panels that are incorporated, the heavier the overall door system and the more strength it will take by occupants to fully open and close the gliding panels.



Styles & Types – Liftslide

Liftslide Style

- Lift and slide hardware mechanism enhances easy operation and performance
- Clean, contemporary look possible
- Tend to have higher performance ratings

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Large, space saving sliding doors are also available that use an easy to operate “Liftslide” mechanism. This allows a person to easily turn a door handle which lifts the door panel up enough to slide easily along a minimal floor track. It frees up contact with the gaskets creating a clean, contemporary look with a very smooth transition along the floor between inside and outside. When the door is moved back into the closed position, the handle returns the door panels down to a weathertight and secure position. Some liftslides also have a near flush track without sacrificing performance.

Styles & Types – Liftslide Options



Liftslide options

- Size: Liftslides provide the largest door panel size and can reach heights around heights of 16 feet
- Operation: Lift slide with minimal floor track
- Material: All wood, all aluminum, wood clad

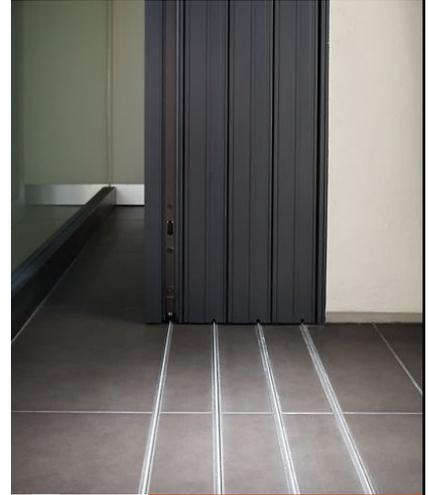
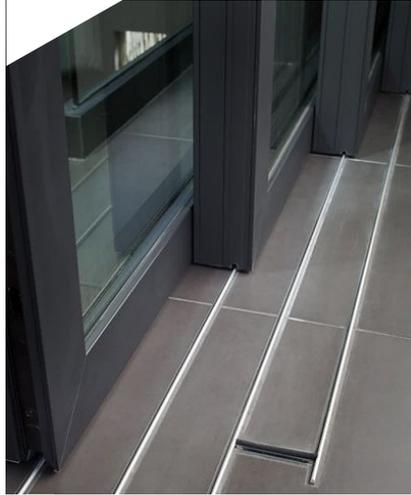
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Liftslide doors provide elegant design opportunities for both residential and commercial buildings. They are custom sized using multiple panels to create very large widths. The liftslide operation allows for the minimal floor track to be used instead of a full sill, and work well to maximize clear openings when designed to be concealed in a wall pocket. Configurations of liftslide door options can include stacking, pocketed, curved and even corners. Because of their unique design, liftslide doors can use larger panels, reducing the overall number of panels. With fewer panels, less discreet track are used and the opening can benefit from more glass to improve views. However, unless pocketed in the wall, larger stacked panels will equate to smaller clear openings. They are commonly available in materials made with all wood, all aluminum, or a combination wood / aluminum system.

Styles & Types – Liftslide Installation

Liftslide installation

- Floor Track:
 - Allows for continuity of flooring between inside and outside
 - Panels can stack to one or both sides
 - Door can disappear into a wall pocket



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The minimal floor track makes a cleaner indoor/ outdoor connection and does not impede accessibility requirements too. Exterior stacked is also an option, they can be designed to stack up on one or both sides of an opening.

Other elements to consider here is that the more panels you have the deeper the jamb depth could be. Again this depends on the sliding options one selects however it's a design element that will need to be considered. Also, make sure the flooring surface is level, especially when specifying a flush sill system and refer to appropriate stone or track infill for proper sealing and performance.



Styles & Types – Swinging

Simple swinging doors

- Simple hinges on sides and locking latch in center
- Often called “French Doors”
- Can be designed to swing either in or out depending on location and code requirements

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Simple swinging doors, also sometimes called “French doors”, are a simple way to double the entry and exit space of most transitions to the outside. These doors can be installed to either swing in or out depending on the design of the space, but be sure to check with local building code requirements related to safe egress.

Styles & Types - Folding & Bifold

Folding doors

- Allow large openings to create full indoor/ outdoor connection
- When open, can fold out of sight or stack neatly on side
- When closed, they create a full wall of daylight

Bifold (Folding Outswing Doors)

- Used in residential and commercial buildings
- Size: Built to fit openings up to 48 feet wide by 10 feet tall
- Operation: Top hung allows for easy operation



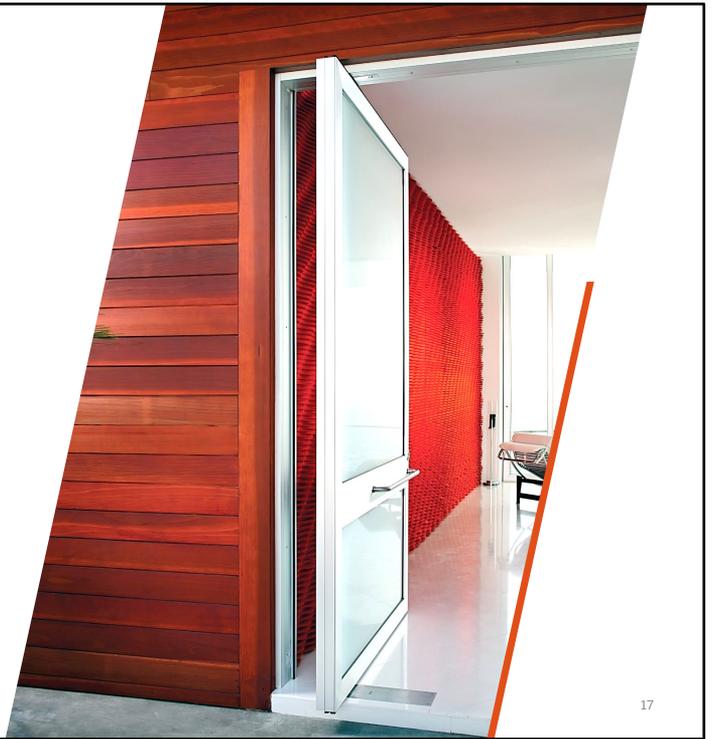
Large folding or bifolding patio doors are a common, attractive, and effective way to achieve the full indoor/ outdoor architectural experience. When they are folded open, the door panels can stack neatly to the side or even fit into a planned recess to be completely out of sight. Some options allow for only one door to open, which can allow the client more options for a fully open or closed space.

Bi-fold or folding doors, sometimes called bi-fold doors, provide dramatic design solutions for both residential and commercial buildings. Bifolds are advantageous in scenarios where you want to maximize your opening and don't have the space to pocket. They are commonly custom sized using multiple panels to fit large openings up to 48 feet wide and 10 feet tall. While they have a sill along the floor for weather protection, they are typically top hung making them very easy to operate. However it make take a little time to learn as these doors tend to be less intuitive to operate in comparison to a multiglide or liftglide door. It is important to note that bi-fold doors cannot have as large of a panel size in comparison to a sliding door typically. So more panels may be required to fill the opening which may result in more of an interrupted view when closed. For this door style it is important to discuss the options and comparisons with the client. While bifold doors will offer a maximum amount of clear space when open, when closed the glass to frame ratio reduces available view and light when compared to multiglide or liftslide style doors. Folding doors may fold to the exterior, interior, or may pivot in the center depending on the size of the door.

Styles & Types – Pivot

Pivot Doors

- Pivot doors use a mounting system on the floor and head instead of a hinge along the jamb
- Pivot location can vary to provide many swing options
- Allows for trimless opening and more elegant design



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Pivot doors are designed for large, spectacular openings. Think bold and non-traditional. Instead of hinging off of a jamb, pivot doors rotate on a pivot box and can open in, out or both in and out.



This section will lay the foundation for how you should approach a large door project. While the inclination is to find a product first, to successfully incorporate large doors into a project, the key is to first evaluate the space and needs of the project. This content will instruct the architect to inventory and evaluate at the entire design challenge and include structural considerations, width and span of opening, headers, environmental concerns, performance considerations, and visual aesthetics



Primary Considerations

Primary considerations:

- Design
- Function
- Structural
- Performance
- Budget

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When designing a large opening and selecting the appropriate door option, the main concern is to understand the client needs and balance those requests with the constraints of the physical space. To help tackle the design challenge it is helpful to break these variables down into four major groups: design, function, structural, and performance.



Design Considerations

Design considerations

- Basic aesthetics
- View
- Hardware
- Sill

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DOOR TEAM TO REFINE SPEAKING POINTS

The key to creating a functional, comfortable, and attractive inside to outside transition is unfettered access. At the same time, large doors are not always open, so care must be taken to specify frames, hardware, and mounting systems that are aesthetically appealing when doors are both open, and closed. For optimum aesthetics, panels should stack flush or flat with each other when open either in the stacked or pocketed option. Satisfying the basic aesthetic design requirements means that glass-to-frame ratios and frame materials section must be considered to maximize the line of sight in both the open, and closed positions. Understanding sill requirements is also important. The surface choice will often dictate what kind of sill, and ultimately what type and style of large door, is appropriate. Sills must work in unison with the space in terms of both function for the door, and also to ease transition for occupants. *Casing, finishes, flush to exterior or interior walls? Sill requirements/surface choice??*



Function Considerations

Function considerations

- Mounting and operational features
- Physical considerations of occupants
- Ease of access to outdoors

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Understanding the space, occupant needs, flooring type, and transition requirements is critical to evaluate the most appropriate large door type. The mounting and operational features of large glass doors will greatly impact the type and style of product specified. Rail systems can either be narrow and discreet, for instance bi-fold doors that have a single track, as in multiple-panel sliding doors. In addition, specific occupant needs must be considered. Sliding doors require more physical effort to open and close than lift slide doors or bi-fold doors. For aging populations that may be more challenged with physical exertion, door types should match occupant ability. Finally, it is important to remember that the open space is the main feature of the area, not the doors. Doors need to act as a pleasant and easy access point to and from the exterior of the space rather than the focal point.



Structural Considerations

Structural considerations

- Width of span of opening
- Header
- Thickness of wall
- Exposure to elements

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DOOR TEAM TO REFINE SPEAKING POINTS

The size of the opening will often dictate which types and styles of large glass door are available. For top hung doors the header and structural supports over the span of the opening needs to be designed to accommodate the load which may require additional materials. By contrast, folding doors can be either top or bottom supported, and sliding doors are generally bottom supported. Wall thickness should also be evaluated. In new projects designing thick walls to incorporate multi-slide pockets for doors may be possible, while a folding door with a single track is a more obvious choice for retrofitting an existing space where walls are traditionally thinner. However, there are tradeoffs with each choice. Pocketed panels create more wall depth that is needed and may mean additional interior finish work. Also, live and dead loads must be included when altering existing spaces or designing new projects. A further consideration of the structure is if there are overhangs that will help shield the door from weather. In areas of extreme precipitation and high wind, the lack of deep eaves could require specifying a door system that can provide a higher amount of protection from the elements.



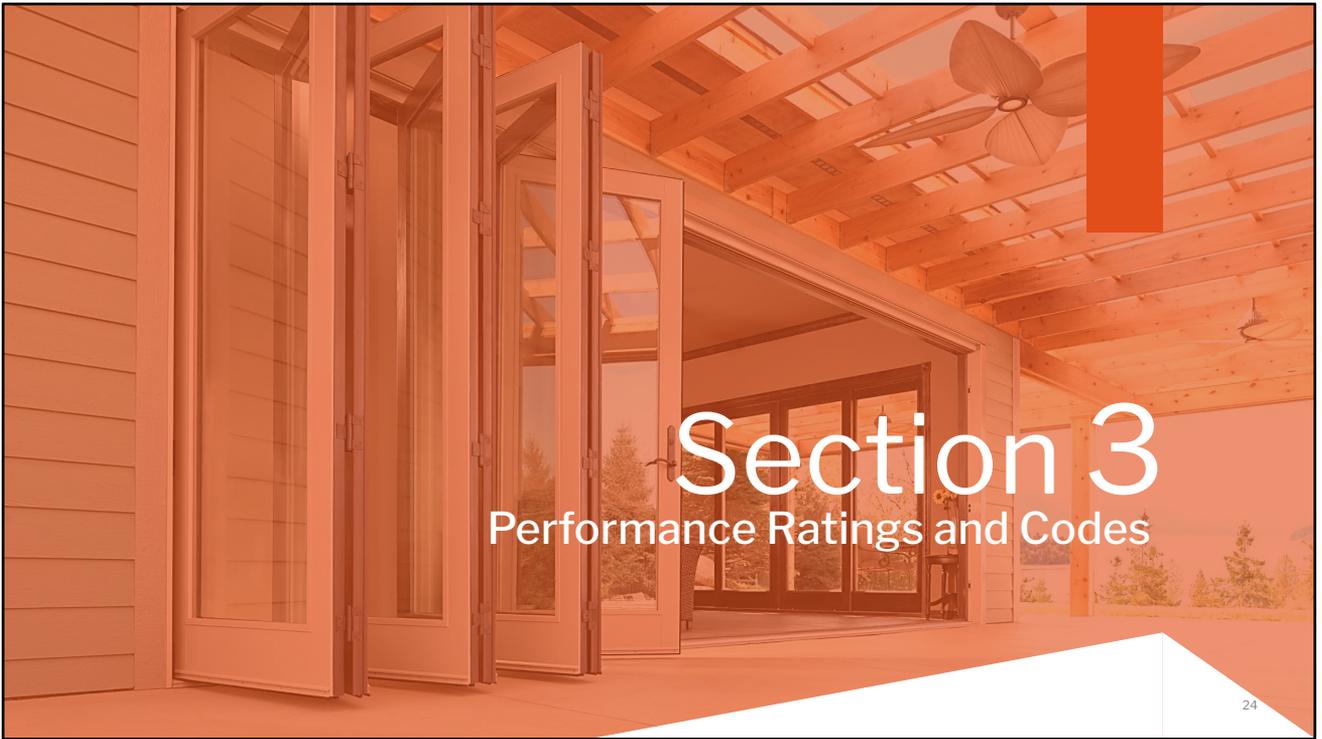
Thermal Performance

Performance

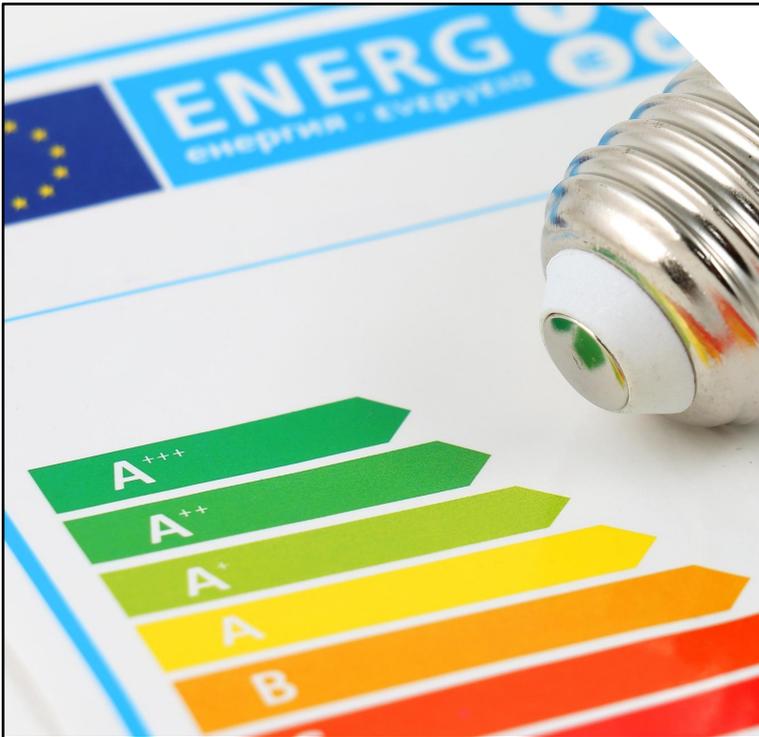
- Local climate
- Efficiency and comfort
- Extreme weather events
- Codes



Thermal performance is one aspect to evaluate when designing a door solution for large openings. Local climate will greatly impact the decision-making process, as will energy efficiency goals of the client. Daylighting, UV radiation, glare, solar gain and U-factor are all important to understand and address when choosing windows. Also of importance is the performance of the window and frame system in relation to safety and security. Commercial buildings may require additional safety considerations which need to be resolved when specifying door types. Finally, projects in high velocity wind areas or hurricane prone regions will require doors and framing materials to be code compliant, which may limit certain door and glazing options. Laminated glass may also be an option to help reduce the risk from windblown debris. Local building codes, especially in high velocity wind areas, are also important to consider before selecting a specific door type and style. To understand the importance of code and large glass doors, the following section will provide more information.



This section will discuss the performance ratings and codes associated with large glass door, codes and compliance certifications related to thermal performance, wind loads, and thermal breaks of large glass doors.



Performance Ratings

Performance ratings

- Ratings are used to compare different products
- Most major aspects of doors are rated
- Rating systems offer a way to fairly evaluate expected door performance

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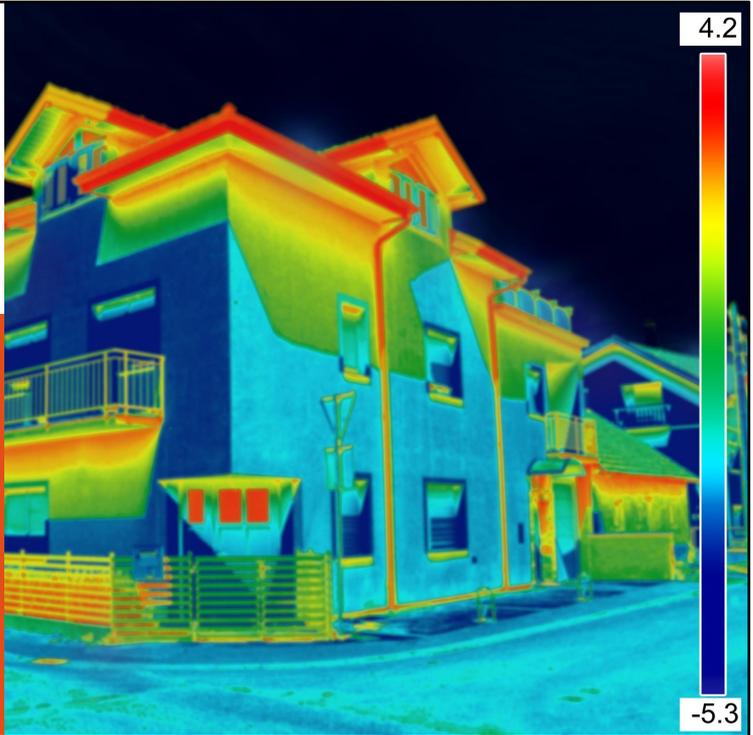
There are several specific rating mechanisms used to evaluate the overall performance of doors. These ratings range from basic insulation or heat transfer properties to storm impact resistance. Innovations in glass technology today continues to advance at a rapid pace, so often the main performance variables will include, or be focused on the substrate material.

When evaluating an expansive door system, it is important to understand these ratings and be comfortable using them to compare different products. As always, consult your local building official for specific interpretations and executions of building codes. The following slides provide the most commonly used rating systems available today for doors.

U-Factor

U-Factor

- U-factor is the rate of non-solar heat gain
- Rating determines basic insulation quality of unit
- Lower ratings equate to better performing doors
- It is good practice to confirm that the U-factor provided is for the entire unit and not just the center of glass performance



When trying to determine how well a door unit works to resist basic heat transfer, doors are given a U-factor. *U-factor* is the rate at which a window, door, or skylight conducts non-solar heat flow. It is usually expressed in units of BTU/hr-ft²-°F. For windows, skylights, and glass doors, a U-factor may refer to just the glass or glazing alone. National Fenestration Rating Council (NFRC) U-factor ratings, however, represent the entire unit performance, including frame and spacer material. Unlike an R-value where higher rating numbers indicate better insulation properties, the lower the U-factor, the more energy-efficient the window, door, or skylight

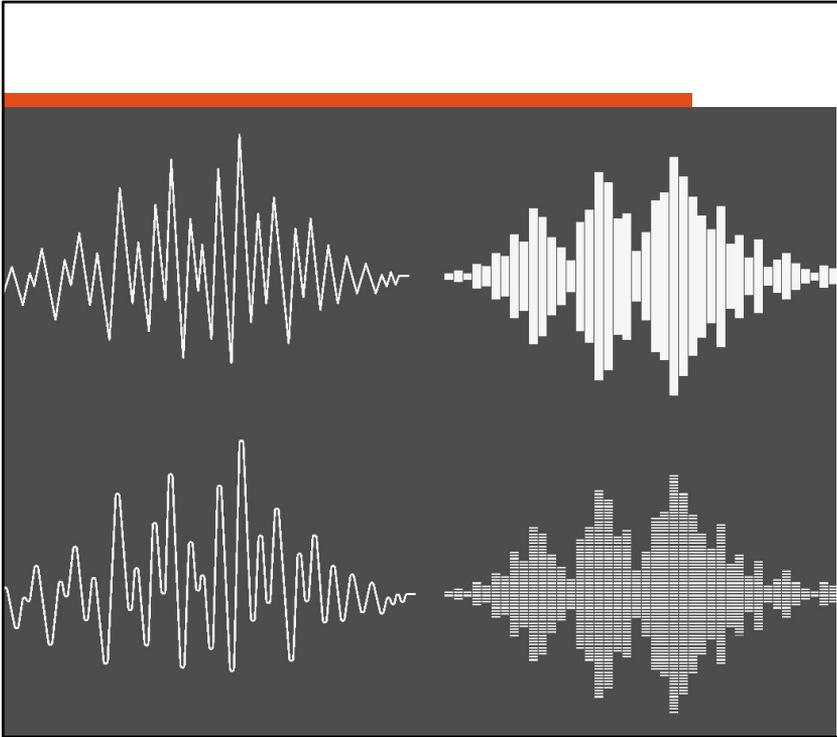
Solar Gain

- **Solar gain**
- Solar heat gain coefficient (SHGC)
- This rating indicates amount of heat transferred into the home
- High ratings collect more heat, low ratings block heat gain



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The second evaluation of energy efficiency for windows is how well the product performs at blocking solar radiation, from passing through the glazing. This rating is called solar heat gain coefficient (SHGC). The SHGC is the amount of solar radiation admitted through a window, door, or skylight, which is transmitted directly and/or absorbed, and subsequently released as heat inside a home. The lower a product's SHGC, the less solar heat it transmits and the greater its shading ability. A product with a high SHGC rating is more effective at collecting solar heat during the winter. A product with a low SHGC rating is more effective at reducing cooling loads during the summer by blocking heat gain from the sun. Also, when evaluating low-e doors for expansive openings is the UV, or ultraviolet, protection the window coatings offer. UV light is a significant issue with expansive openings because furniture, art, and carpeting can all fade and be damaged by excessive exposure to UV rays from the sun. Ultimately it is important to consider how the door system will be oriented within the project. Even areas with high solar gain capacity can have door systems installed with a high SHGC rating. Be sure to evaluate all options with clients and set realistic expectations about window options. While low SHGC tends to be easier on hardwoods, interior finishes and paintings as it blocks UV light, it can make it difficult for plants to photosynthesize.



Sound Attenuation

Sound attenuation

- Large openings can allow for excessive noise
- OITC and STC standards are used to quantify sound transfer from outdoors to indoors
- OITC is measured in dB reduction, STC uses a single-number rating system

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With large openings, all the elements can freely enter the space, including sound. To help quantify the amount of noise entering the building there are two standards to consider. The Outdoor–Indoor Transmission Class (OITC) standard is used for indicating the rate of transmission of sound between outdoor and indoor spaces in a structure. OITC is based on the ASTM E-1332 Standard Classification for the Determination of Outdoor–Indoor Transmission Class and is measured in decibels (dB) is more atuned to lower frequencys, like jets and traffic sounds. An alternative similar standard for determining the rate of acoustic isolation of a separation between spaces is Sound transmission class (STC). STC is a single-number rating of a material's or an assembly's ability to resist airborne sound transfer. Higher STC numbers offer greater noise reduction. The type and thickness of the glass selected, the width of the airspace, combined with advanced glazing systems can offer solutions to traffic and other urban noise, including noise pollution from airports.

High Wind Danger

High wind danger

- 75% of homes in coastal areas are impacted by storms
- Stricter building codes are designed to protect buildings
- Wind-borne debris can threaten expansive door openings



According to FEMA (Federal Emergency Management Agency), 75% of all US homes are in coastal areas that are often affected by hurricanes, flooding, and wind-born debris. Historical storm evidence has pushed the demand for enhanced building products that protect the home and occupants. Hurricane Andrew's devastation of the Florida coastline in 1992 forced governments, manufacturers, and insurance companies to re-evaluate building products and construction methods. As a result, stricter codes were implemented that raised the level of construction, building materials, and standards for maximum protection against severe weather conditions such as hurricanes, tropical storms, high winds, driving rain, and wind-borne debris.

Impact Resistance

Impact resistance

- Traditional protection methods are inadequate against storm winds
- New test methods for doors have been developed
- Modern doors can be certified to protect against wind-borne debris



Shutters were traditionally the most common means of storm protection. Panels of plywood, metal, or plastic were/are also used. These options are less than ideal because they are unattractive, require installation and removal, and during times of crisis or evacuation, broadcast to the neighborhood that the building is unoccupied, increasing the risk of theft and vandalism.

To enhance building protection without additional buffers such as plywood or metal, window and door manufacturers created products specifically designed to withstand the direct impact of debris during even the most violent storms. As a result, hurricane-prone areas such as Dade County, Florida, began requiring that these impact-resistant windows be installed in new homes. There are two tests used to determine if windows can withstand wind-blown debris common in high wind areas: a C-Missile test and a D-Missile test.

C-Missile certified products are tested to withstand impact from a 4 ½ pound 2 x 4 stud, 4 feet in length, at an impact speed of 40 feet/second. Products are then tested to withstand 4,500 positive and 4,500 negative pressure cycles.

D-Missile certified products are tested to withstand impact from a 9 pound 2 x 4 stud, 8 feet in length, at an impact speed of 50 feet/second. Products are then tested to withstand 4,500 positive and 4,500 negative pressure cycles.



This section will provide different scenarios where big door types and styles are best applied. Using regional and environmental considerations we will first introduce a set of design criteria and then match the opening to a specific door style and mounting type to best address the performance and aesthetic challenges of the project.

High Mountain Brewery & Restaurant

High mountain brewery and restaurant

- New construction
- 48 feet wide opening Height: 10'
- Must provide thermal protection during cold winter months

Initial questions

- What is the maximum amount of space the client needs
- Are walls thick enough for pockets
- Budget considerations



In this example the new construction project is a high-altitude brewery and restaurant located near a ski-lodge. The sweeping views and local attractions make this a popular year-around venue, and the client has asked that a potentially 48-foot opening have large glass doors that can be removed to allow diners to access a deck with additional outside seating during warmer months. Maximizing the line-of sight and available opening is important to the client, but the doors must also be able to provide thermal protection during the harsh cold winter months.

To begin the evaluation process, ask how much of the opening has to be accessible. While the space is 48" wide, does all of that need to be fully open? The functional open space requirement will help guide other structural considerations like headers and floor type. Also, can the space be designed for walls thick enough to pocket the doors in when open? If not, can some of the originally designed open space be used to create pocket walls? Another large consideration would be budget constraints. Generally large doors are more expensive than walls, so designing to a smaller opening can help reduce the overall budget.

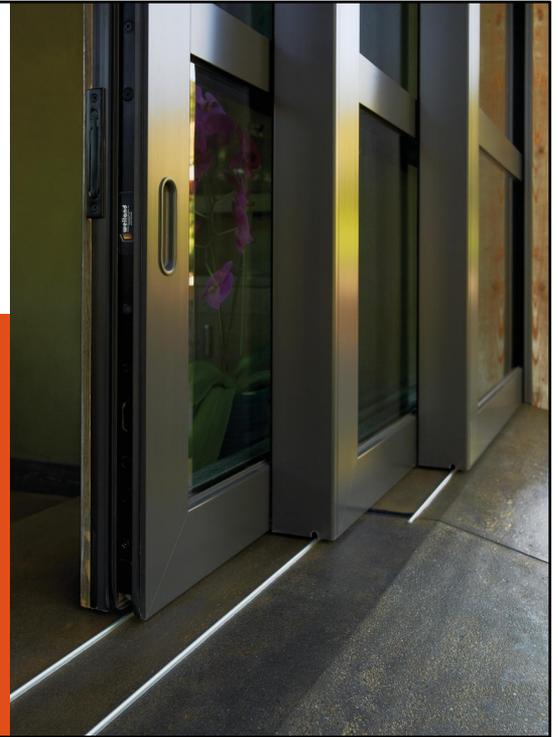
High Mountain Brewery & Restaurant

Client considerations

- 32 feet of accessible space is required for opening
- Wall thickness will not allow for pockets
- Budget concerns limit major structural changes

The verdict

- Two options available – lift slide and multiglide
- Given financial considerations, multiglide is more reasonable
- Other door types likely will have performance issues over time in this setting



For this example the client has specific needs for the project. Of the 48 available feet in the opening, 32 must be accessible. A check with the preliminary plans shows that the walls are not thick enough for pockets. Finally, like most clients, the project has a tight budget, so major structural changes or overbuilding of headers and walls will not work within the financial constraints.

In this example, given the potential opening size and wall thickness, the two possible options are liftslide or multiglide styles doors. When budget considerations are factored in, the most practical solution would be multiglide style doors. While liftslide doors will generally provide larger sizes and higher performance, these options come at a higher cost. Other door types like bi-fold will not work as well as multiglide because operating an folding door tends to be less intuitive than a sliding door and in a commercial application. The ones using the door are not the ones who bought the door and may be rougher with it. A common issue in commercial applications is that employees and customers operating the door may not exercise the same care as a homeowner would, exposing a folding door to potentially more damage over time.



Midwest Home Retrofit

Midwest home retrofit

- Minor retrofit to aging home
- 12 feet opening to pool and patio, height 8'
- Older occupants

initial questions

- What door style is easy to operate and has a low threshold
- Is there an overhang
- How much of the opening needs to be clear and accessible

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In this example the remodeling project asks for an exterior wall be transformed into a large opening that leads to a patio and swimming pool area. The potential space is 12 feet wide and the client does not have the resources to rebuild existing walls or structure. The occupants are recently retired and plan on aging in place in the home.

For this project, there are several key questions to consider. First, given the aging in place needs of the client, what door style will be easy to operate. Along the same lines, what door system provides a low threshold to reduce the chance of a tripping hazard. Structurally, is there an overhang above the door, and what are the expectations about water performance and durability for the doors. Finally, inquire how critical is it to the clients that the doors maximize a clear and accessible opening.

Midwest Home Retrofit

Client considerations

- Current and future needs must be evaluated
- Ample overhangs provide adequate weather protection
- Maximize accessible opening space is a must

The verdict

- Folding door is best option
- Ease of use and low sill both help with aging clients
- Option works well for retrofit projects provided header is sized appropriately



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For this example the physical needs of the client, both today and in the future, must be considered a higher priority than other design options. With that in mind, ease of use and low thresholds will quickly remove several door types and styles from consideration. Structurally, the home already has wide overhangs that provide ample protection from expected weather conditions, allowing for a more forgiving durability standard for the door. Finally, the client plans on entertaining friends and family often and requires the maximum amount of available opening be accessible.

For this Midwest family, the best choice is a folding door. The smooth operation requires little effort to open or close and the existing overhang will help protect the door. Also, folding doors offer a low profile sill or flush sill. Because the project is a retrofit application, there can be minimal concerns about jamb depth, however it is important to make sure the header is sized appropriately for the weight of the door.

Delray Beach Florida Clubhouse

Delray Beach Florida Clubhouse

- New construction
- 52-foot opening, 12' tall
- Hurricane prone region

Initial questions

- Hurricane prone region – code and durability concerns
- Ease of access with unobtrusive threshold
- Maximize visibility in both open and closed positions



This final example is a new clubhouse on an ocean-facing golf course located in Delray Beach, Florida. The large facility would like to have an expansive 52-foot opening facing the water that can easily be opened or closed. The design offers very little overhang protection from the sun, and the location is in a hurricane prone region, but elevated up the danger of storm surge potential.

In this example project, the proximity to the ocean and building in a hurricane prone region should be your primary concern. Durability of the structure and safety of the occupants will depend upon the type of and style of door. With this in mind, investigating the local code requirements for doors is a good place to start. After that, be mindful of client concerns related to threshold type for easy access. A final thought would be to the practical use of the building. How often will the doors be open? Will they often remain closed to create a comfortable conditioned space within the building, and if so what style of door will maximize the view?

Delray Beach Florida Clubhouse

Client considerations

- Impact rated glass is required by code
- Low thresholds are a must
- Maximize view when in the closed position

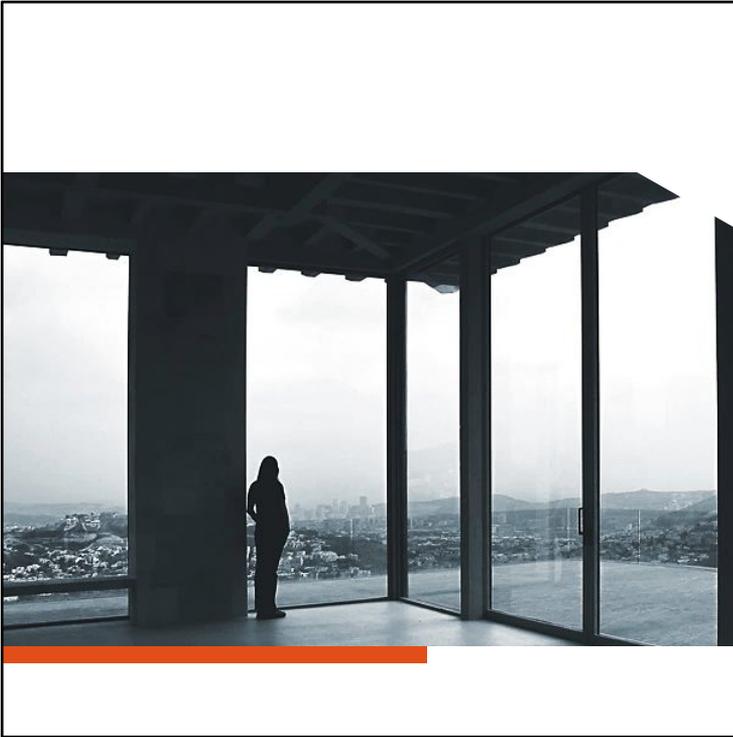
The verdict

- Liftslide doors are best solution
- Glass can be specified for high velocity wind area
- Low threshold and maximum view combination is available



In this example, code considerations require that the doors be impact rated to a minimum of PG45, * **DOOR TEAM – should we be this specific? **** which will impact both the design and budget of the project. However, these codes are non-negotiable, so adjustments to design and material selection may have to be made in other parts of the project. Because the expectation is that the space will be used on a regular basis as a dining room, a low-profile threshold with minimal tripping hazard is requested. Finally, hot temperatures and high humidity levels will mean that the doors are likely to only be opened a few times a week, so maximizing the view through them in the closed position is a critical need for the client.

For the golfing community in Florida, the best answer is a lift slide style door. Liftslide will provide fewer panels with more glass per panel ensuring maximum view potential. At the same time, the low threshold rail system will accommodate occupants who move from interior to exterior spaces. It is critical to note though, that while some manufacturers may not be able to provide impact glass with the appropriate rating, so it is important to investigate performance capabilities and review test reports prior to making the final selection.



Conclusion

Presentation Conclusion

While the trend for large glass doors continues to grow and dominate the creative minds of architects, it is important to remember that there are many variables involved with the project. The unique challenges and needs of the clients, combined with local code considerations and performance demands requires that each design project be evaluated independently.

This presentation was created to help prepare architects for how to evaluate and ask the needed questions prior to specifying a large door. Thank you for your time, and if you have any questions about the information presented here, please feel free to ask the presenter for more information.

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Thank you for your time!



This concludes The American Institute of Architects
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