



## DESIGN. VERSATILITY. PERFORMANCE.

### SYSTEM 4500 WINDOW AND DOOR DESIGNS





**Top Performance, Intelligent Design, Timeless Style**

These are the window and door designs by REHAU. They are engineered to perform. They are beautiful, durable, energy efficient and available in an extensive variety of styles, colors and configurations.

**uPVC Delivers Where Others Fail**

A REHAU-designed window and door resists fading or corrosion. Our proprietary unplasticized polyvinyl chloride (uPVC) formulation and extrusion process result in superior profiles that outlast and outperform materials like aluminum or wood. Plus, uPVC is a natural insulator. It resists heat loss in winter and heat gain in summer.

**Less Stress on the Environment**

Our windows and doors offer long service life and excellent thermal performance that minimizes energy use. We can point to installations now exceeding 50 years in Europe and 30 years in North America – still performing strong. This conserves raw materials and prevents pollution associated with manufacturing and disposing of other, shorter-life alternatives.

Welcome to the world of windows and doors designed by REHAU.



# TILT-TURN WINDOWS 4500

## FOR THOSE WHO WANT THE BEST

The dominant window style in Europe, tilt-turns are gaining popularity in North America as more stringent energy performance targets become the norm.



The System 4500 design produces some of North America's highest performing window and door units. This versatile design can be configured into tilt-turn and fixed windows as well as inward and outward opening single entry, French and atrium doors.

Tilt-turn hardware allows the sash to tilt inward at the top for secure ventilation or turn inward providing a wide opening for ease of cleaning the glass

surface and for emergency egress. When closed, this compression-seal design provides outstanding thermal and acoustical performance.

System 4500 windows have also passed Miami-Dade County hurricane protocol tests, allowing them to be specified for projects that reference this standard in all coastal regions, from Texas and Florida all the way to Long Island, NY.

Types	Fixed, tilt-turn (dual action), hopper and awning windows; hinged and sliding doors
Material	Cadmium- and lead-free RAU-PVC
Sealing System	Twin compression seals
System Depth	3 1/4 in (82.5 mm) typical residential; 2 3/8 in (60 mm) commercial applications
Frame / Sash Overlap	5/16 in (8 mm)
Seal Gap	1/8 in (3 mm) nominal
Hardware Axis	1/2 in (13 mm)
Max. Glass Thickness	1 3/8 in (35 mm)
Sightlines Frame / Sash	4.724 to 6.535 in (120 to 166 mm)
Colors	White, beige and clay + solid color and woodgrain foils
STC	Up to 41 dB
U-values	Down to 0.18*
Structural Tests	Tilt-turn: up to CW-PG90
	Fixed: up to CW-PG75
	Hopper: up to LC-PG75

Testing on our window and door systems is ongoing. Contact your REHAU representative for the latest test results.

### Performance Summary

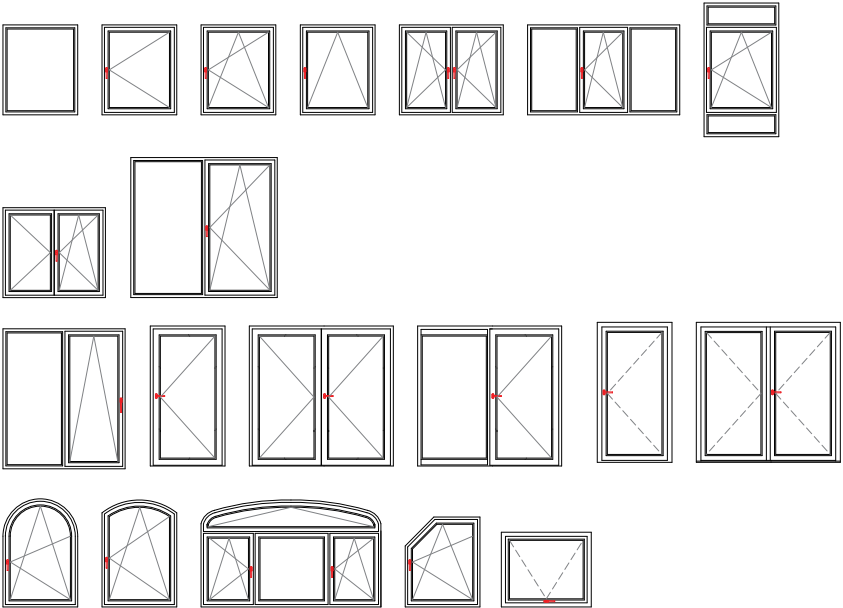
NAFS: up to Class CW-PG75

ASTM E90 Acoustical (STC): up to 41 dB

U-factor down to 0.18\*

ASTM + TAS: Impact Resistant DP-65 (HVHZ)

\* based on simulation

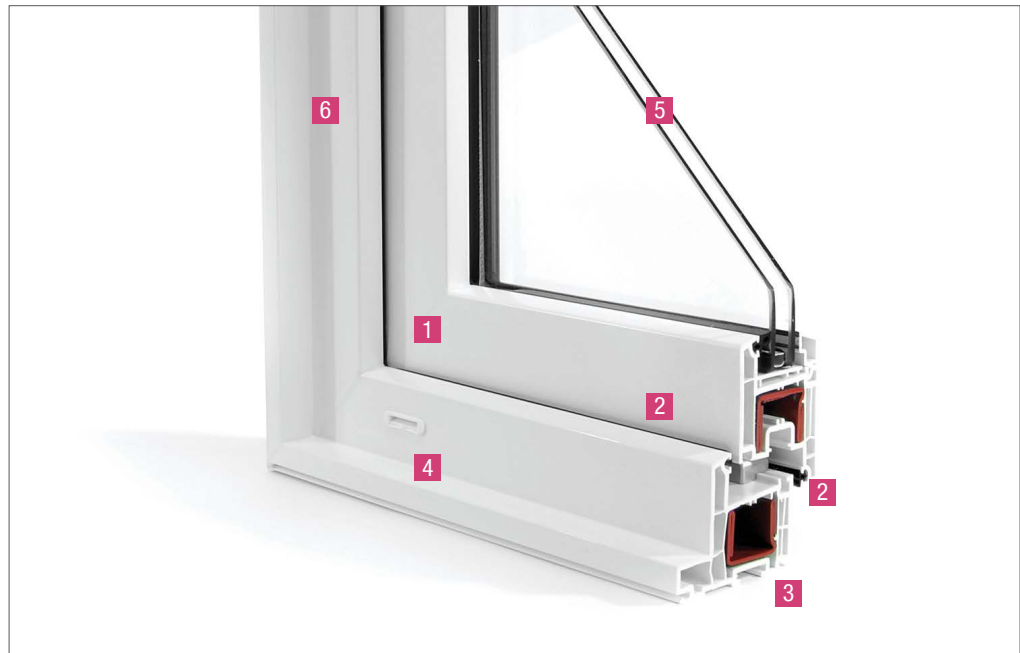


### Available Colors

- White
  - Beige
  - Clay
- Ask about solid color and woodgrain foil options.

# TILT-TURN WINDOWS 4500

REACHING TOP PERFORMANCE  
WITH OPERATING AND FIXED DESIGNS



- 1 Unique tilt-turn hardware** operates in both top-venting and inward-swinging positions
- 2 Multiple locking points and dual weather seals** provide optimal air and water tightness
- 3 Large chambers** accommodate reinforcements required for large openings in heavy commercial applications
- 4 Accessory groove** accepts a variety of accessories such as brickmolds, extension jambs and for profiles to couple window elements
- 5 Up to 1 3/8 in (35 mm) glass** increases energy efficiency and acoustical properties
- 6 3 1/4 in (83 mm) North American frame depth** allows for hassle-free replacement installation; we also offer the 2 3/8 in (60 mm) European frame



Tilt-turn designs are three window styles in one: a secure top venting hopper in the tilt position, an inward opening casement in the turn position and a tightly-sealed fixed window when closed.



**A uPVC window that can achieve a CW-DP75 rating – impossible! Or is it?**

The outstanding performance of the System 4500 window design is one of North America's best-kept fenestration secrets. uPVC windows not only far exceed aluminum on thermal performance; they can also meet the highest available structural standards.

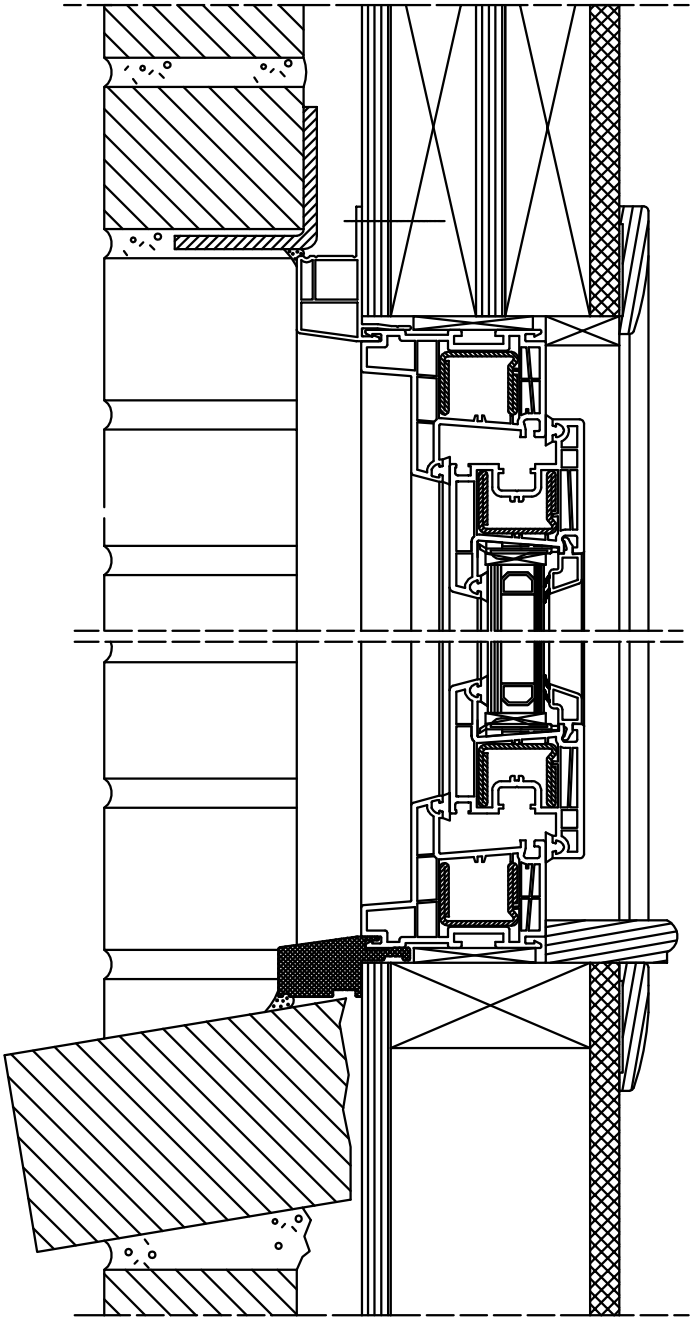
- Fusion-welded corners enhance structural strength and offer a cleaner finish
- Dual overlapping compression seals resist air and water infiltration
- Specific chambers on main profiles (frames, sashes and mullions) accept galvanized steel reinforcement
- Insulated glass up to 1 3/8 in (35 mm) thick achieves U-factors down to 0.18
- Multi-point locking system increases security
- ADA-compliant hardware solutions achieve disability design goals



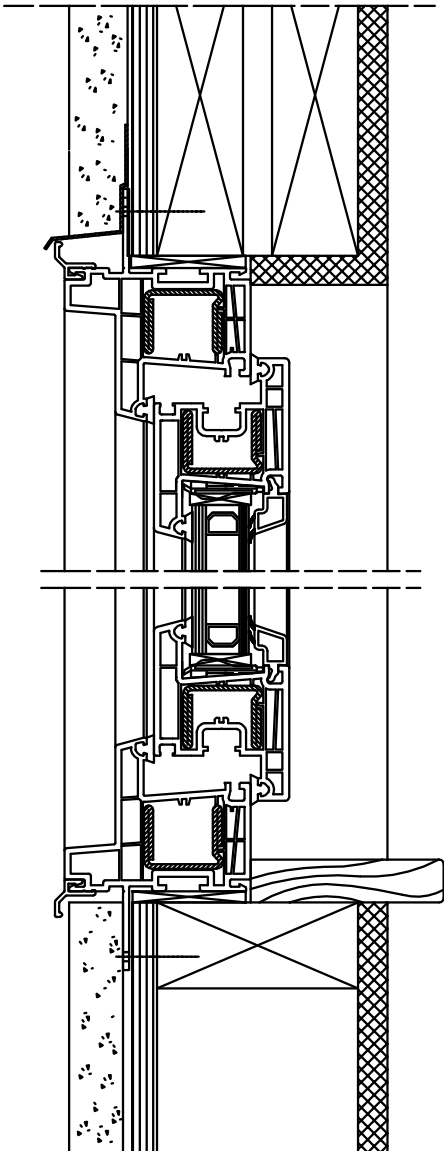
TILT-TURN WINDOWS 4500

INSTALLATION DRAWINGS

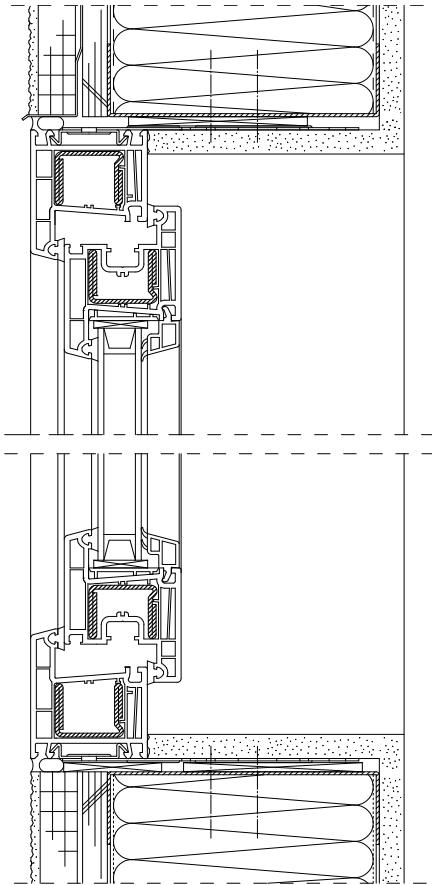
2 x 4" Wall with Brick New Construction (NA Frame)



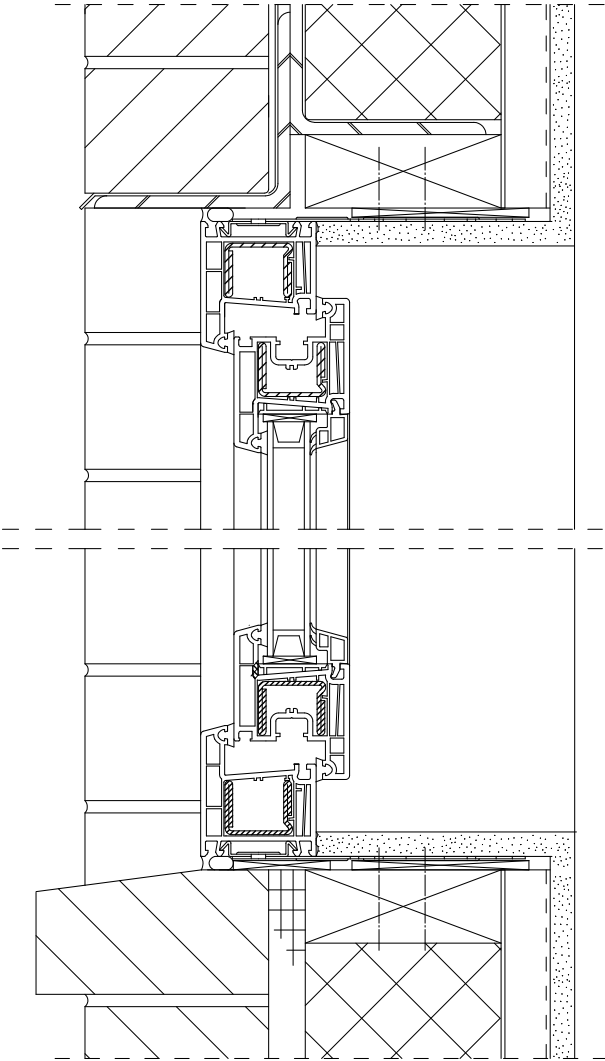
2 x 4" New Construction (NA Frame)



2 x 6" Wall with Stucco New Construction (Euro Frame)



Brick and Block Construction (Euro Frame)





## TILT-SLIDE DOOR DESIGN

REHAU SYSTEM 4500



The REHAU System 4500 tilt-slide door design provides secure ventilation with space-saving functionality – a perfect solution in spaces where traditional in-swing doors are less than ideal or not desired.

The design allows the operable sash of the door to easily tilt and smoothly slide parallel in front of the fixed side unit, not into the room. Optimal profile design and compression-seal technology contribute to outstanding performance.



# TILT-SLIDE DOOR 4500

MAXIMIZE THE PERFORMANCE OF YOUR PATIO DOOR

Several different sash designs optimize performance and maximize the daylight opening.



## Compression-seal Technology

This door utilizes special hardware, which actually compresses rubber seals between the frame and the sash, when the operating panel is being closed. As locking points all around the sash perimeter are engaged, an exceptional barrier to air, water and sound is created.

## Tilt Sash Function for Ventilation in a Secured Position

High-quality tilt-slide hardware allows a vent position, where the top of the sash tilts toward the inside of the room, but cannot be opened from the outside, providing security on the inside.

# TILT-SLIDE DOOR 4500

UNCOMPROMISING PERFORMANCE:  
KEY FEATURES AND BENEFITS

Special hardware allows the sash to slide parallel in front of a fixed panel. Structural T-mullions allow doors to be configured with up to four panels and an overall width of 15 ft (4.5 m).



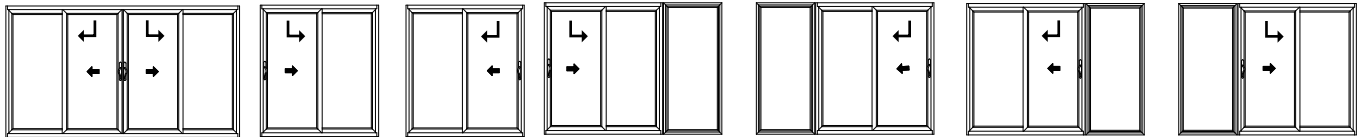
- 1 Large glazing capacity, including special high performance glass up to 1 3/8 in (35 mm) in thickness** improves energy efficiency and acoustical properties
- 2 Four-chambered sashes and frames** provide high energy efficiency
- 3 Large reinforcement chambers in the sash** allow for sash sizes as large as 8 ft (2.4 m) high and 5 ft (1.5 m) wide up to a weight of 260 lbs (120 kg)
- 4 High quality hardware** operates effortlessly and quietly
- 5 Multiple locking points and compression seals all around the sash perimeter** provide high water performance, minimal air infiltration, security and good sound insulation
- 6 Frame profiles with different depths** provide flexibility for new construction and replacement applications



Large chambers accommodate robust reinforcements required in heavy commercial applications.



Innovative runner mechanism provides smooth projection of the sash which easily and precisely slides to any desired position.



### Available Colors

- White
- Beige
- Clay
- Ask about solid color and wood-grain foil options.



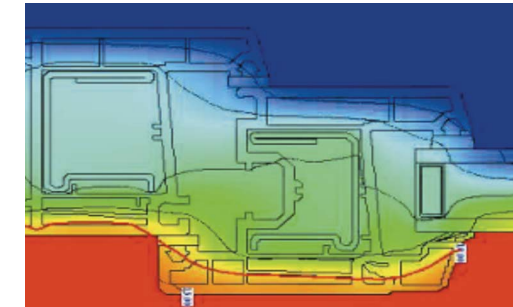
# TILT-SLIDE DOOR 4500

OFFERING SECURED VENTILATION



Robust uPVC profiles combined with special hardware allow you to safely ventilate or close out severe weather.

With insulated glass unit (IGU) thickness of 3/4 to 1 3/8 in (19 to 35 mm), this system accommodates special glass packages to achieve your thermal as well as your acoustical requirements.



Thermal image of REHAU System 4500 tilt-slide door demonstrates how effectively this design separates warmer air and cooler air to achieve optimal energy efficiency.

## Performance Summary

NAFS: up to CW-PG55

U-factor down to 0.20\*

ASTM E90 Acoustical (STC): up to 40 dB

ASTM + TAS: Impact Resistant DP-80

\* based on simulation

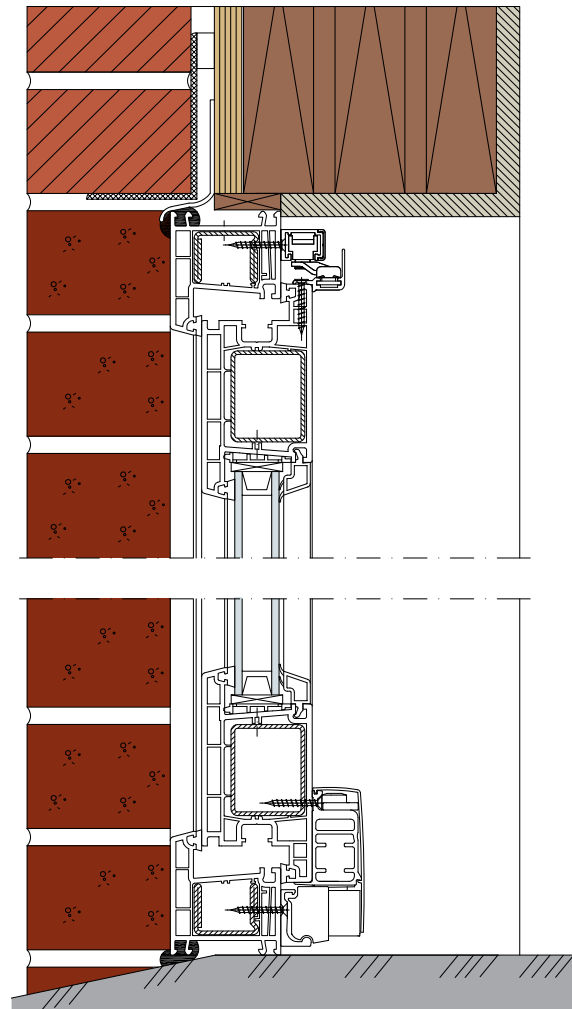
Testing is ongoing; contact your REHAU sales representative for the latest test reports.



# TILT-SLIDE DOOR 4500

## INSTALLATION DRAWING

2 x 6" Sill Section



Not to scale

This illustration depicts suggested installation of the System 4500 tilt-slide door design.

The 2 x 6 vertical section shows a wood frame wall with brick on the exterior and a 2 3/8 in (60 mm) European frame.

*System 9000 Supplementary Profiles* brochure contains more than 30 REHAU accessory profiles that are available for use with this system when using a 3 1/4 in (83 mm) North American frame.





## BI-FOLD DOOR DESIGN

REHAU SYSTEM 4500



The REHAU System 4500 bi-fold door design is a premium solution for spaces that need a wide, unobstructed opening. This unique door design allows up to four sash panels to fold to either side, creating a wide opening without any interruption. This design can be easily matched with a variety of window and door configurations.



# BI-FOLD DOOR 4500

STEP-BY-STEP, FOLDING SASHES MAXIMIZE OPENING WIDTH

Special hardware allows the sash panels to be folded one-by-one to the side of the opening, leaving no post in the middle, to create a full opening to the outdoors.



## Design a Door to Your Own Specifications

Choose the opening width of your patio door with a configuration of up to four separate sash panels. All panels can be folded to one side, or they can be divided in any combination and stacked up against both sides of the opening.

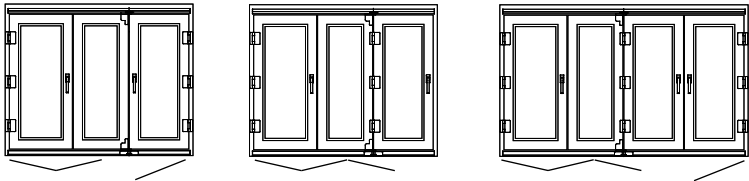
## Compression-seal Technology

Compression seals on frame and sashes in combination with multi-point locking hardware keep dust and dirt out and assure optimal water and air tightness.



# BI-FOLD DOOR 4500

BOASTS SUPERIOR DESIGN AND ENGINEERING:  
KEY FEATURES AND BENEFITS



- 1 Large glazing capacity of up to 1 3/8 in (35 mm) in thickness** improves energy efficiency and acoustical properties
- 2 Large reinforcement chambers in the sash** allow for sash sizes as large as 7.5 ft (2.4 m) high and 3 ft (0.9 m) wide, weighing up to 175 lbs (80 kg)
- 3 Four-chambered sashes and frames** provide high energy efficiency
- 4 High-quality hardware** operates quietly and effortlessly
- 5 Lever-locking mechanism** securely closes the end panel of the bi-folding sashes
- 6 Multiple locking points and compression seals all around the sash perimeter** provide water tightness, minimal air infiltration, security and good sound insulation



Robust profiles handle the weight of wide openings and triple glazing option.



Load bearing rolling gear mounts through steel reinforcement for long-lasting, smooth operation.



- Available Colors
- White
  - Beige
  - Clay



# BI-FOLD DOOR 4500

OFFERING EXCELLENT SECURITY FOR YOUR PROPERTY



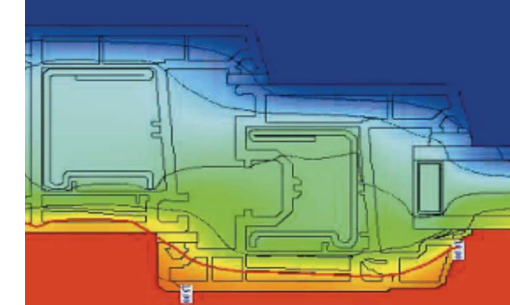
Multi-locking mechanisms on the folding sash panels and smooth riding rollers on the top and bottom running tracks protect against intrusion while still allowing for complete clearance when sash panels are opened to the side.

Allowing glass thicknesses from 3/4 to 1 3/8 in (19 to 35 mm), the System 4500 bi-fold door can accept a broad range of specialty glazing options to fulfill energy saving needs, including Energy Star requirements.

## Performance Summary

NAFS: up to LC-PG25

Testing is ongoing; contact your REHAU sales representative for the latest test reports.



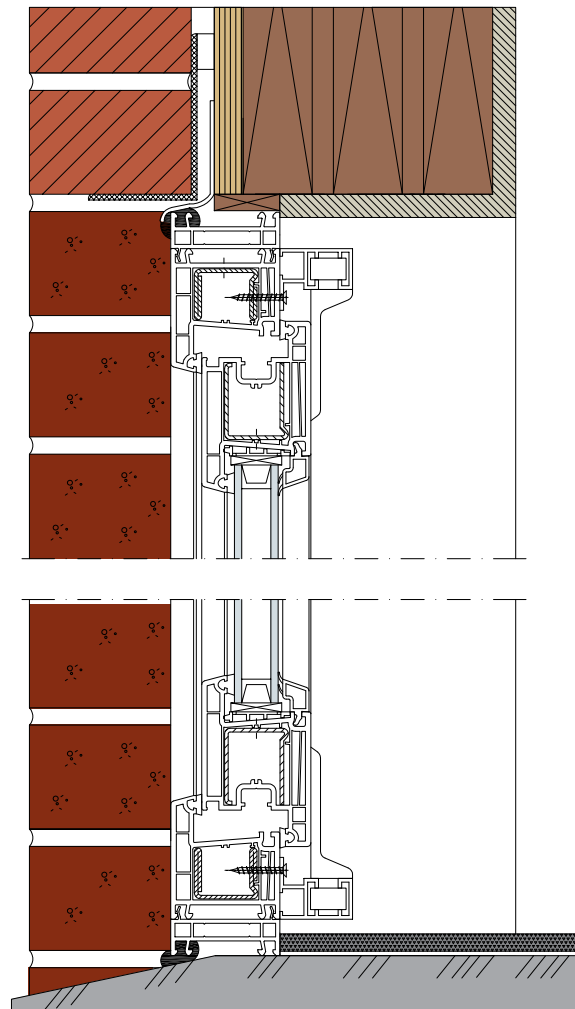
Thermal image of REHAU System 4500 bi-fold door demonstrates how effectively this design separates warmer air and cooler air to achieve optimal energy efficiency.



# BI-FOLD DOOR 4500

## INSTALLATION DRAWING

2 x 6" Sill Section



*Not to scale*

This illustration shows suggested installation of the REHAU System 4500 bi-fold door design.

The 2 x 6 vertical section shows a wood frame wall with a brick veneer exterior finish. The threshold

shows the load bearing running tracks, which are supporting the weight of the door sashes, and the head view shows the guide track for the roller/pivot mechanisms.





## HINGED DOOR DESIGN

REHAU SYSTEM 4500



The REHAU System 4500 hinged door design is offered as a single sash creating a beautiful main entrance or as a dual sash, also referred to as French doors, connecting the indoors with the outdoors. This versatile door system can be used for patio, deck or balcony access and is a popular choice among designers as an attractive alternative to sliding doors.



# HINGED DOOR 4500

MAXIMIZE INTERIOR SPACE

Out-swinging sashes leave all the room you need to best utilize the interior space.



## Compression-seal Technology

When the wind is blowing strong, the sash is pushed against the compression seals optimizing the air and water performance of the door. This door qualifies for coastal applications even in hurricane-prone areas. Multi-point locking hardware assures consistent compression on the seals all around the perimeter of the sash and frame.

## Style Options

Hinged doors can be built as single as well as French doors, either inward or outward opening. They can easily be combined with top and side lites or even operable windows, providing the utmost design flexibility.

## Low Maintenance

Only occasional cleaning with soap and water is needed to keep the surfaces looking like new, even years after installation. Heavy-duty hinges have passed cycle testing of up to 100,000 opening and closing cycles without any need for adjustments.



# HINGED DOOR 4500

A VERSATILE, HIGH-PERFORMANCE STYLE:  
KEY FEATURES AND BENEFITS

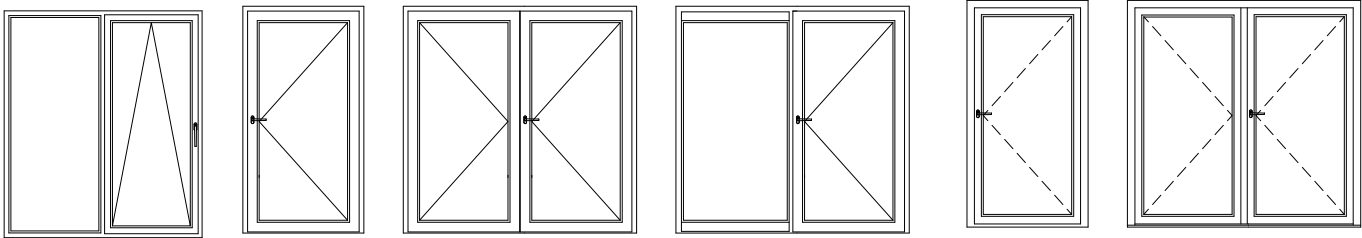
Compression-seal technology contributes to the outstanding performance of this door. Matching fixed and operable windows can be paired with this door as top and side lites.



- 1 Frame profiles with different depths** provide flexibility for new construction and replacement applications
- 2 Multiple locking points and compression seals all around the sash perimeter** provide high water performance, minimal air infiltration, security and good sound insulation
- 3 Large reinforcement chambers in the sash** allow for sash sizes as large as 8 ft (2.4 m) high and 3.5 ft (1.1 m) wide for single doors and 3 ft (0.9 m) wide for French doors
- 4 High quality hardware** operates quietly and effortlessly
- 5 Large glazing capacity, including special high-performance glass of 1 3/8 in (35 mm) in thickness**, improves energy efficiency and acoustical properties
- 6 Weldable corner joints in the sash profiles** strengthen the door panel against distortion and provide long-term, smooth operation



Unique PVC corner blocks connect steel reinforcement keeping hinged door corners in-square for long-term, trouble-free operation. Outward opening (left) and inward opening (right) styles meet a variety of design requirements.



- Available Colors**
- White
  - Beige
  - Clay
- Ask about solid color and wood-grain foil options.



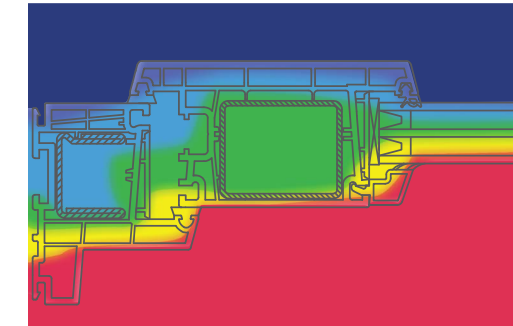
# HINGED DOOR 4500

## ACHIEVING OPTIMAL ENERGY EFFICIENCY



Multi-point locking hardware and heavy duty hinges provide the longevity and security you want.

With insulated glass unit (IGU) thickness of 3/4 to 1 3/8 in (19 to 35 mm), the System 4500 hinged door is suitable for all Energy Star zones in the United States and Canada.



Thermal image of REHAU System 4500 hinged door demonstrates how effectively this design separates warmer air and cooler air to achieve optimal energy efficiency.

### Performance Summary<sup>6</sup>

#### Outward Opening – Single Door

NAFS: up to LC-PG80

ASTM E90 Acoustical (STC): up to 38 dB

U-factor down to 0.24\*

#### Outward Opening – French Door

NAFS: up to LC-PG35

ASTM + TAS: Impact Resistant DP-65 HVHZ

ASTM E90 Acoustical (STC): up to 38 dB

U-factor down to 0.23\*

#### Inward Opening – Single Door

NAFS: up to LC-PG40

ASTM E90 Acoustical (STC): up to 40 dB

U-factor down to 0.23\*

#### Inward Opening – French Door

NAFS: up to LC-PG40

ASTM E90 Acoustical (STC): up to 40 dB

U-factor down to 0.23\*

\* based on simulation

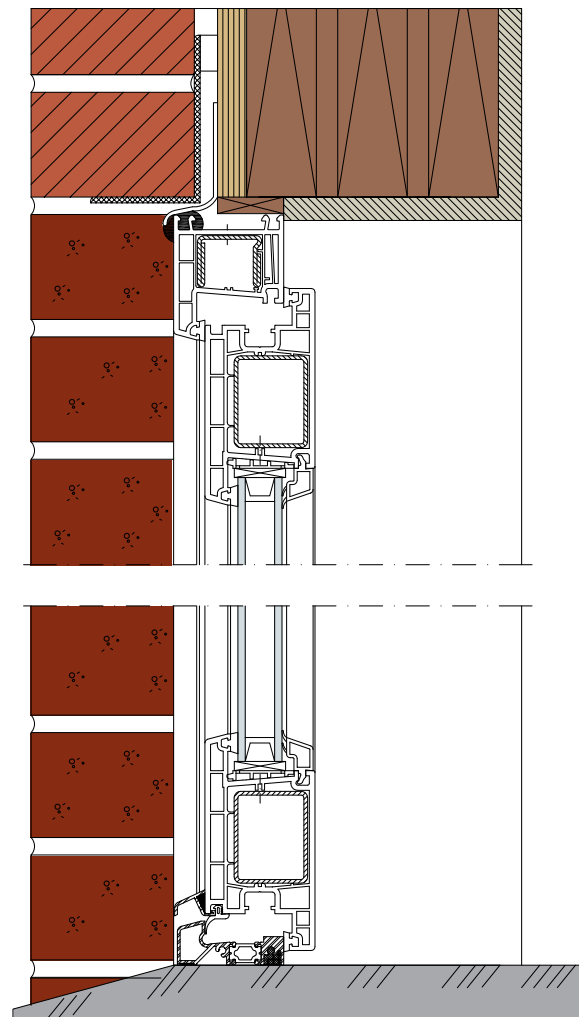
Testing is ongoing; contact your REHAU sales representative for the latest test reports.



# HINGED DOOR 4500

## INSTALLATION DRAWING

2 x 6" Sill Section



Not to scale

This illustration depicts suggested installation of the REHAU System 4500 hinged door design, inward opening style, using a 2 3/8 in (60 mm) European frame.

The 2 x 6 vertical section shows a low profile thermally broken aluminum threshold to minimize step-over.

*System 9000 Supplementary Profiles* brochure contains more than 30 REHAU accessory profiles that are available for use with this system when using a 3 1/4 in (83 mm) North American frame.







For updates to this publication, visit [na.rehau.com/resourcecenter](http://na.rehau.com/resourcecenter)

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