PASSIVE MAGNUS

WINDOW & DOOR

ULTIMATE PASSIVE HOUSE SOLUTION

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About Crystal

Crystal Window & Door Systems is an award-winning national manufacturer of quality, energy efficient vinyl and aluminum windows, and high-end fenestration systems for residential, commercial and institutional buildings. With industry proven quality and state-of-the-art manufacturing, Crystal offers a wide array of fenestration solutions that include high performance systems for green and sustainable design.

Celebrating more than 30 years of operations, Crystal has grown from startup in 1990 to one of the top window manufacturers in the nation. Crystal products are distributed in more than 40 states and the extended Crystal family of companies includes not only fenestration manufacturing, but also aluminum extrusion.

Crystal and its subsidiaries operate more than 400,000 square ft of manufacturer space at four plants and employ over 400 people at its main factory, regional branches, subsidiaries , and affiliate firms. The main production facility and corporate headquarters are in Queens, NY. Additional Plants are in Chicago, I; St. Louis, MO; and Riverside, CA. Branch offices are in Scranton, PA and Cleveland, OH.

Crystal Window & Door Systems is a proud long-term partner of REHAU, a global manufacturer of polymer-based solutions for construction, automotive and industry. Founded in Germany more than 70 years ago, REHAU is known for delivering high-performance window and door solutions, with uncompromising attention to detail from design to profile extrusion to service. REHAU offers a variety of styles from typical residential hung-slider, casement and patio door to the most advanced European-style tilt-turn windows that achieve the highest structural, thermal and acoustical performance ratings.

Welcome to the world of Passive Housing

Magnus 4700

Ultimate Passive Design & Performance

Magnus 4700 windows and doors are designed and engineer to be beautiful, versatile, highly energy efficient, and extremely durable. They are available in a variety of styles and configurations.

Unique Combination of Fiberglass & uPVC

The MAGNUS 4700 system uses RAU-FIPRO™, which results in superior profiles that outlast and outperform alternative materials.

Less Stress on the Environment

Due to their high energy performance, low energy costs and support for sustainability, MAGNUS 4700 windows and doors are approved for net-zero energy and passive housing.

cool, temperate climate

phB

CERTIFIED COMPONENT

Passive House Institute

THE FORMULATION

The Future of Windows and Doors

The Magnus 4700 system does not rely on steel reinforcements for strength. Instead, it relies on RAU-FIPRO™, a proprietary high-tech fiber composite material that is specifically used as profile core.

The material is similar to those used in aeronautics and racing vehicles for outstanding strength and load capacities, and its lighter weight. Comparable fenestration systems with steel reinforcements up to 40% heavier.

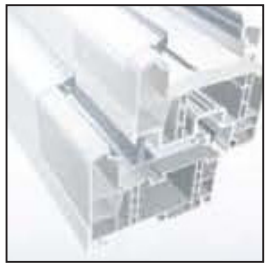
RAU-FIPRO™ achieves excellent stability and torsional rigidity making it possible to build larger windows without the typical steel reinforcement that compromises thermal insulation.

Together, the MAGNUS 4700 system and RAU-FIPRO™ reduce expansion and contraction with enhanced structural rigidity while maintaining advantageous weld and bend capabilities.

MAGNUS 4700

Unmatched Structural and Energy Performance

Features



RAU-FIPRO™ Formulation

Groundbreaking formula combining best of fiberglass and uPVC to create innovative material for super energy efficiency and structural strength.

Optimal Compression

Innovative compression-seal technology reduces closing pressure significantly, resulting in ease of operation, product longevity, and optimal performance.

Integral Reinforcement

The patented integrated reinforcement system ensures the highest degree of strength at all critical points by using unique screw channels and additional lateral stiffening.

Multiple locking points

High-quality multi-point locking hardware assures consistent compression on the seals to optimize sound, air, and water performance.

Superior Thermal Insulation

The sophisticated six-chambered frame design provides superior thermal insulation making net zero energy and passive housing requirement requirement possible housing requirement possible to achieve.

Long-Lasting System

RAU-FIRPO™ allows for fusion-welded corners and a high-definition finish that protect against water, fading, corrosion and dirt.

Benefits

Save Energy

MAGNUS 4700 provides the optimal conditions for saving energy. It can aide in achieving energy targets as stringent as those required by the Passive House standard.

Reduce Noise

Noise can be disturbing and over time, unhealthy. Reducing noise can increase the feeling of well-being. MAGNUS 4700 reduces unwanted noise with optimal acoustic insulation.

Minimize Maintenance

Thanks to the high-definition finish, smudges can be quickly and easily removed with conventional cleaning. And the occasional application of quality lubricant to moving parts is all that is needed.

Get Creative

Choose between white or high-performance decorative finishes that will enhance any color scheme. Brilliant solid colors and luxurious wood grain patterns are available.

Color shown are not exact and may vary.
Please see available color samples.

MAGNUS Passive Windows

Unmatched Structural and Energy Performance

Performance Summary

NAFS: up to CW-PG70

STC: up to 45 dB

U-factor: down to 0.13*

* based on simulation

Tilt-Turn & Hopper Windows

Ultimate Energy & Structural Performance

Tilt

Turn

Closed

Hopper

Fixed

MAGNUS 4700 tilt-turn window is unique and versatile with its three-windows-in-one design: A secure top venting hopper in the tilt position, an inward opening casement in the turn position and a tightly sealed picture window when closed.

Tilt-turn hardware allows the sash to tilt inward at the top for secure ventilation or turn inward providing a wide opening for easy cleaning and emergency egress. When closed the compression-seal design provides outstanding thermal and acoustic performance.

Tilt-turn window also available as a turn, hopper or fixed window. Matching doors in a variety of configurations are available.

Get Creative with high-performance decorative finishes that will enhance any color scheme. Brilliant solid colors and luxurious wood grain patterns are available.

Tilt-Turn & Hopper Windows

Ultimate Energy & Structural Performance

RAU-FIPRO™ Profile Core
Ensures excellent stability and torsional rigidity making it possible to build larger windows without steel reinforcement

Multiple Locking Points
And dual weather seals provide optimal compression and performance against sound, air and water infiltration

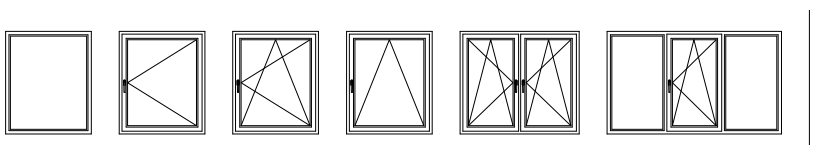
Six-chambered frame
Produces superior thermal insulation making net zero energy and passive housing requirements possible to achieve

Integrated reinforcement system
Provides stability and secure hardware attachment by utilizing unique screw channels and additional lateral stiffening

High Performance Glass
Increases energy efficiency and acoustical performance

Frame Depths
3 3/8" (86 mm)

Overall Glass
Up to 2 3/32" (53 mm)



MAGNUS Passive Doors

Ultimate Energy & Structural Performance

Performance Summary

NAFS: up to CW-PG70

STC: up to 45 dB

U-factor: down to 0.13*

* based on simulation

Swing Doors

Ultimate Energy & Structural Performance

MAGNUS 4700 swing doors are an attractive solution for both residential and commercial projects. Few designs are more classic or versatile as in-swing and out-swing doors.

They can be built as single or double doors, also referred to as hinged or French doors. They can be used for patio, deck or balcony access, as well as entry doors.

Matching fixed and operable windows can be paired with these doors as side-lites allowing for design flexibility.

Get CREATIVE with high-performance decorative finishes that will enhance any color scheme. Brilliant solid colors and luxurious wood grain patterns are available.

Compression-Seal Technology allows MAGNUS 4700 swing doors to qualify for coastal and hurricane prone areas. Adjustable multi-point locking hardware assures consistent compression on the seal optimizing the sound, air and water performance.

Performance Summary

In-swing Doors
NAFS: up to CW-PG70, double PG55
STC: up to 45 dB
U-factor: down to 0.13*

Out-swing Doors
NAFS: up to CW-PG45
STC: up to 45 dB
U-factor: down to 0.13*

* based on simulation

Swing Doors

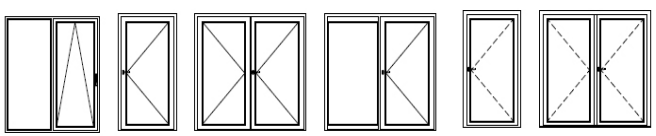
Ultimate Energy & Structural Performance

RAU-FIPRO™ Profile Core
Ensures excellent stability and torsional rigidity without the need for steel reinforcement

Six-chambered frame
Produces superior thermal insulation making net zero energy and passive housing requirements possible to achieve

Integrated Reinforcement System
Provides stiffness, stability and secure hardware attachment by utilizing unique screw channels and additional lateral stiffening

High-Performance Glass
Increases energy efficiency and acoustic performance



Frame Depths	Overall Glass
3 3/8" (86 mm)	Up to 2 3/32" (53 mm)

Tilt-Slide Doors

Ultimate Energy & Structural Performance

MAGNUS 4700 tilt-slide door is an innovative door solution that provides outstanding performance with optimal design.

The high quality hardware system operates quietly and easily. With just a simple turn of a handle, the operating panel can be tilted providing secure ventilation. With another turn, it slides open parallel to the fixed side, not into the room, for space-saving functionality.

Matching fixed and operable windows can be paired with these doors as side-lites allowing for design flexibility.

Get CREATIVE with high-performance decorative finishes that will enhance any color scheme. Brilliant solid colors and luxurious wood grain patterns are available.

Compression-Seal Technology allows special hardware to compress rubber seals when the operating panel is closed. When locking points all around the sash perimeter are engaged, an exceptional barrier to sound, air and water is created.

Performance Summary

NAFS: up to CW-PG70
STC: up to 45 dB
U-factor: down to 0.13*

* based on simulation

Tilt-Slide Doors

Ultimate Energy & Structural Performance

RAU-FIPRO™ Profile Core
Ensures excellent stability and torsional rigidity without the need for steel reinforcement

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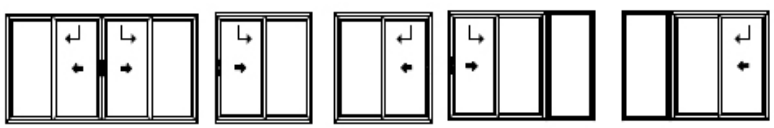
High-Performance Glass
Increases energy efficiency and acoustic performance



Frame Depths	Overall Glass
3 3/8" (86 mm)	Up to 2 3/32" (53 mm)

Passive House Certified

Transparent Components

Passive House (Passivhaus) is a voluntary standard for energy efficiency in a building, which reduces the building's ecological footprint. It results in ultra-low energy buildings that require little energy for space heating or cooling.

Frame with insulation filling of expanded polystyrene.

The **Passive House Institute (PHI)** is an independent research institute that plays a crucial role in the development of Passive House standard in construction. They have defined international component criteria for seven climate zones. In principle, components which have been certified for climate zones with higher requirements may also be used in climates with less stringent requirements.

They have introduced efficiency classes for windows and other transparent building components in order to help set highly energy efficient products apart at a glance. The efficiency classes are based on heat losses through the frame and glass edge of the window. For good efficiency ratings, windows should have low frame U-values, low glass edge thermal bridge losses and narrow frames to allow high solar gains from large glass surfaces. This scale is also useful in cool climates because a minimized frame, with the same glass surface and the same U-values reduces the cooling load.

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