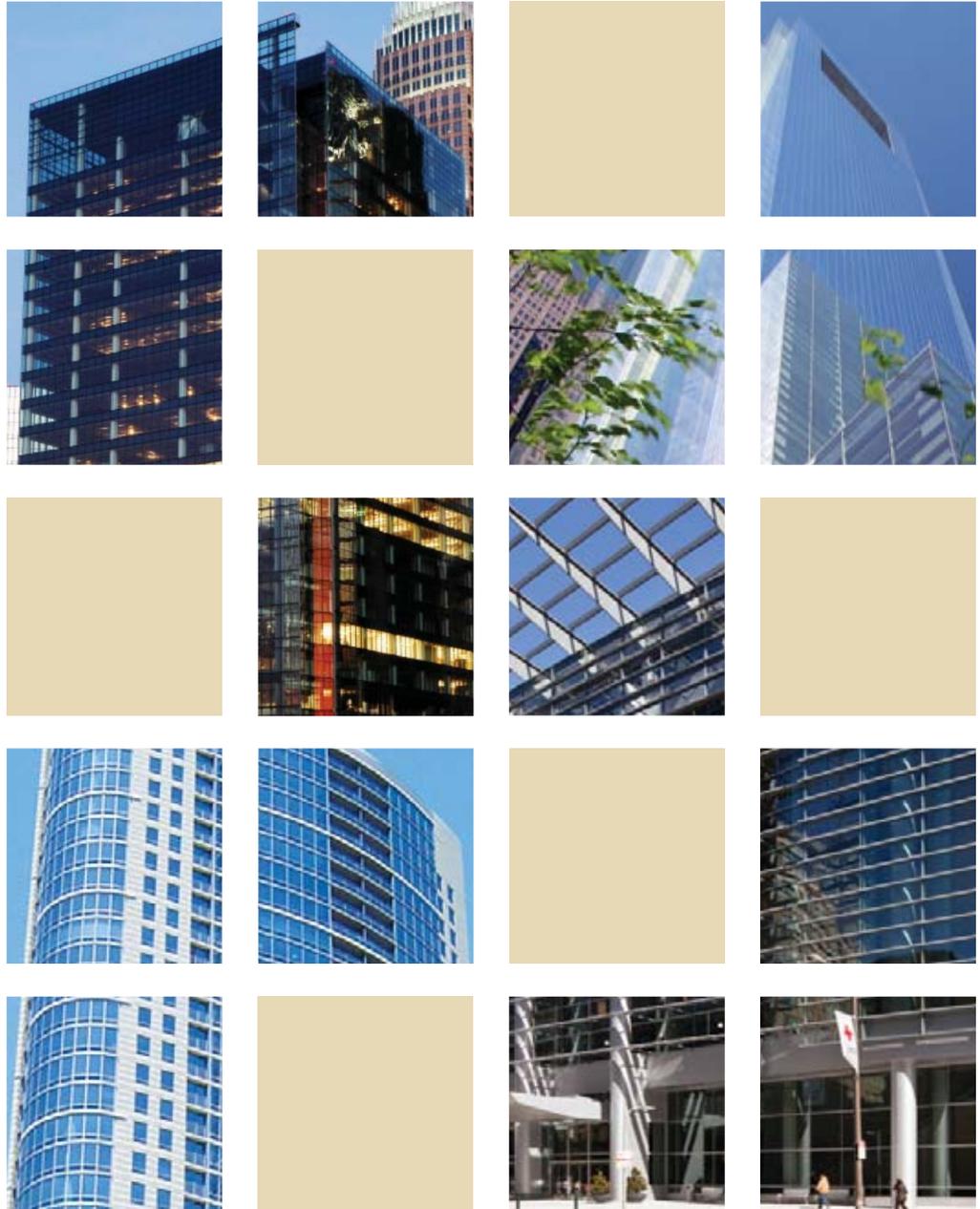


**JEBERKOWITZ, L.P.**

ARCHITECTURAL GLASS SINCE 1920

# JEB WINDUO<sup>®</sup>

*Insulating Glass*



# JEB WINDUO®

## *Energy Efficient Insulating Glass Units*

**W**ith over 92 years of glass fabrication and 33 years of insulating experience, JE Berkowitz, LP (JEB) is the premier high quality architectural insulating glass fabricator in the United States. As an **ISO 9001 certified company**, JE Berkowitz is committed to excellence and quality in the processing and distribution of glass products to its customers.

JEB WINDUO® units are used in many commercial curtain wall, window and skylight applications for office buildings, hotels, condominiums, casinos, restaurants, hospitals, schools, libraries, museums and shopping malls to enhance a building's beauty and utility. Available in many sizes, shapes, colors and coatings, these insulating glass units allow controlled natural daylighting while reducing solar heat gain, thereby improving occupant comfort. For building owners, WINDUO® insulating units can decrease heating and cooling costs, reduce energy consumption costs for lighting and create a beautiful appearance.

With a modern 200,000 square foot plant, on a 23-acre site, JE Berkowitz's Pedricktown facility utilizes the newest fabrication equipment available in the industry today.



Three vertical automated Lisec insulating glass lines are equipped with robotic sealing, treated water for washing, on-line argon gas filling capability, on-line edge deletion for coated products and continuous bent spacer frame manufacturing for both aluminum and stainless steel frames. The lines are computer driven and all scheduling is synchronized by custom software programs to ensure accurate and consistent quality.



The insulating lines are supported by three automated XYZ cutting lines, three horizontal tempering convection ovens and an architectural laminating line. JEB produces Enviroscreen™ silk-screened glass and, for non-vision area applications, Envirospan™ ceramic frit spandrel. In addition, JEB offers 100% **heat soak testing**, processed in compliance with **European Standard EN 14179-1:2005**, for 1/4" through 3/4" uncoated or pyrolytic low-e fully tempered glass and select PPG Solarban® and Guardian Sunguard® products which are typically used in demanding or high risk glazing applications.

### ***Superior Quality and Performance***

WINDUO® units are fabricated to a high standard of quality. The annealed and heat-treated glass used in the insulating units is targeted to exceed the industry standards found in ASTM C1036 and ASTM C1048 by **limiting bow and warp. Roller-wave distortion**, which is inherent in heat-treated glass, is also controlled on a project basis with an internal quality targeted roller-wave distortion not to exceed **.003" peak to valley**, excluding lead and trail edges, based on ASTM C1651-11 methodology.

JEB utilizes **directional tempering** to accentuate uniformity and keep inherent distortion parallel to the horizontal plane, for minimal visual imperfection. JEB Winduo® insulating glass units meet ASTM E2189 and ASTM E2190. All Fusion™ laminated glass products, which can be fabricated into the IG unit, meet the quality requirements specified in ASTM C1172.



Aluminum spacers are available in both continuous bent and corner-keyed processes and carry a permanent certification on the spacer. They are available in either clear anodized or black anodized. A 100% molecular sieve desiccant is used inside the spacer to maximize the effective life of the IG unit.

**Warm edge spacers**, used in place of conventional aluminum spacers, can improve the overall thermal efficiency of the insulating unit when used in a thermally broken framing system. This improves the Condensation Resistance Factor (CRF), which helps prevent moisture build-up on the interior surface of the glass. IG units with warm edge spacers have been used successfully in hospitals, condominiums, schools and office buildings. Warm edge spacers include stainless steel, Azon Warm-Lite® (aluminum poured and debridged) and Technoform (hybrid). Spacers are available in two finishes: clear/silver or black.

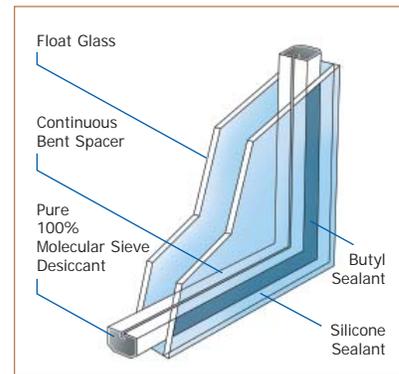
JEB is proud to offer a distinctive spacer system allowing the spacer to mechanically fasten into a structurally glazed curtainwall system on the jobsite without the need to shop glaze.

For all glazing applications, Winduo® insulating units are hermetically sealed, using a primary butyl sealant (PIB) that provides an effective moisture vapor transmission barrier. The secondary seal is a two-part silicone sealant. JEB can produce an increased secondary seal based upon wind loading and deflection analysis.

Both the PIB sealant and the silicone are **available in two colors: black and light grey**. The light grey color helps the sight-lines to be less obstructed for better viewing and blends effortlessly with the glass. JE Berkowitz, LP offers **on-line argon gas filling** for insulating glass units.



The argon-filled Winduo® IG units improve the insulating properties (reduce the U-Value) and improve the OITC (Outdoor Indoor Transmission Class) rating when used in place of air. The insulating units are filled with argon while being sealed without adding an entry gap in the spacer as in older methods. For quality assurance, the argon content can be accurately measured non-evasively using a Sparklike Gasglass instrument.



Today's changing energy codes demand greater performance values from insulated glass units. JEB meets these requirements by incorporating high performance glass products, technologically advanced spacers, argon gas and the use of double coatings on both encapsulated and exposed surfaces. Triple glazed units are also available. Once assembled, these units offer enhanced solar, optical and acoustical performance, while providing a thermal insulation barrier between the outdoor and indoor environments.

**J**E Berkowitz, LP offers **Invisiwall™ Insulating Glass Units for point-supported applications.**

Our fittings have an articulating head, helping to minimize glass stress at the holes. The fitting allows for field installation of the attachment bolts, permitting the IGU to be an efficient package for jobsite delivery.



Invisiwall™ IGUs can be constructed with tempered glass using clear, low-iron, pyrolytic or laminated glass. The holes for the fittings are cut with our precision CNC fabrication machine.

The IGUs are finished with ground or polished edges. Depending on the needs of the project, the fitting can be surface mounted or countersunk.

JE Berkowitz, LP is an **ISO 9001 certified company**. JEB has been successful in all our surveillance and recertification audits since our original audit in 1999. By following the ISO standards, we have a documented and proven quality management system in place for all aspects of architectural glass fabrication.

JEB also participates in two rigorous quality assurance programs through their suppliers: the **PPG Certified Fabricator Program** and **Guardian SunGuard Select Fabricator Program**. Each program requires a yearly audit of many of the manufacturing elements of JEB's glass fabrication.



Through strong relationships with domestic and international float glass suppliers, JE Berkowitz, LP continues to be at the forefront of new technology. JEB offers the newest "double stack" and "triple stack" low-emissivity post-temperable, reflective, ultra-clear low-iron and tinted glass products.

## Customer Support and Project Management

At JE Berkowitz, LP, we offer our customers a unique combination of **outside sales support** and **inside customer service**. Our highly trained customer service and technical representatives, product managers, estimators and architectural representatives are available to assist with your projects from start to finish.

Our **project management team** ensures your project is packaged, shipped and safely delivered to your specifications. Insulating glass units can be crated or racked, depending on job specifications and sizing. Plastic composite tape banding is used in lieu of steel banding for customer safety. JEB has a full-time private fleet of over 30 specialized glass-hauling trucks and trailers equipped for customer and jobsite deliveries. Reliable common carriers are contracted for deliveries outside the Mid-Atlantic region.

## LEED® “Leadership in Energy and Environmental Design”

Whether you are designing a sustainable “green” building or constructing a project to meet **US Green Building Council LEED®** requirements, JEB is able to assist. Winduo® insulating glass units can contribute towards helping your project attain the highest amount of credits possible. JEB is strategically located within 500 miles of many of the largest cities in the Mid-Atlantic region and some of the largest glass manufacturers in the country for regional material sourcing credits. Aluminum spacers used to manufacture Winduo® units are sourced with recycled content. JEB has the ability to help conserve natural resources by shipping on custom returnable steel racks versus wooden crates. A SmartWay™ Transport Partner since 2009, JEB is committed to improving the environmental performance of their transportation operations and, in turn, reduce negative emissions given off by its fleet.



Warm edge technology and double coatings incorporated into the insulating glass unit can help improve energy efficiency of the building envelope. **Give us a call for product selection assistance to maximize energy performance for your sustainable building project.**



## ***Technical Information and Specifications***

For more information visit our website:  
[www.jeberkowitz.com](http://www.jeberkowitz.com)



### ***Certifications***

Winduo® insulating glass units are tested and certified to meet ASTM E2189 and ASTM E2190 Industry standards. Dual hermetically sealed units are certified with a CBA rating by the Insulating Glass Certification Council (IGCC).

All safety glass used in Winduo® insulating glass units complies with CPSC 16 CFR 1201 and ANSI Z97.1. These products are tested and certified by the Safety Glass Certification Council (SGCC).

### ***Warranty***

Winduo® insulating glass units are warranted against obstruction of vision and seal failure for a period of 10 years from the date of manufacturing, limited to materials only. For additional information, refer to JEB's Limited Warranty and Terms and Conditions of Sale.

# Taking Glass Fabrication To The Next Level



## PHOTO CREDITS

Cover:

Various projects as described on the following pages (2 through 7 and back cover):

Pages 2-3:

**Virtua Voorhees Hospital, Voorhees, NJ**  
Architect: Hammel, Green & Ambramson, Inc.  
Product: PPG Solarban® 60

**Bank of America, Charlotte, NC**  
Architect: HOK  
Product: PPG Solarban® 70XL

Pages 4-5:

**The Sandler Center for Performing Arts  
Virginia Beach, VA**  
Architect: CMSS Architects  
Product: PPG Solarban® 70XL

**510 Madison Avenue, New York, NY**  
Architect: Moed de Armas and Shannon  
Product: Guardian SunGuard® AG-43

Pages 6-7:

**Four Seasons Hotel/Legg Mason Tower  
Baltimore, MD**  
Architect: Hill Glazier Architects  
Product: PPG Solarban® 60

**1000 Continental Avenue, King of Prussia, PA**  
Architect: SPG3 Architects  
Product: Pilkington Grey Eclipse Advantage

**Pennsylvania Convention Center  
Philadelphia, PA**  
Architect: Vitetta Group  
Product: PPG Solarban® 60

**Comcast Center, Philadelphia, PA**

Architect: Robert A. M. Stern Architects  
Products: PPG Starphire® Starphire® Ultra Clear

**The Grand and Kingsbury, Chicago, IL**

Architect: Solomon, Cordwell, Bunez and Associates  
Products: Guardian SunGuard® LE 40 on Clear (2)  
and LE-50 on Clear (2)

Back Cover:

**Omni Dallas Hotel, Dallas, TX**

Architect/Designer: 5G Studios, BOKA Powell  
Products: PPG Solarban® 70XL, Solarban® z50



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