NORTHWESTERN INDUSTRIES, INC.
QUALITY FABRICATED GLASS PRODUCTS

THE SKY'S THE LIMIT

ARCHITECTURAL GLASS SOLUTIONS

NORTHWESTERN INDUSTRIES, INC.
QUALITY FABRICATED GLASS PRODUCTS

NWI is proud to be a member of the following professional organizations:

- National Glass Association (NGA),
  Washington Glass Association (WGA)
- Glass Association of North America (GANA),
  Tempering Division
  Laminating Division
  Insulating Division
  Distribution Division

Front cover:
City Center, Bellevue, Washington
Glazing contractor: Walters and Wolf
Architect: SRG Partnership
Glass: PPG Solar Ban 70

Seattle Space Needle
Glazing contractor: All New Glass and Evergreen House
Architect: Callison Architectural Inc.
Glass: PPG Solar Ban 60
Photo by: Callison Architecture / Chris Eden

COMMITTED TO EXCELLENCE

Why Northwestern Industries Has Become One Of The Largest Glass Manufacturing Plants In North America

Founded and headquartered in Seattle, Washington, Northwestern Industries (NWI) has been proudly serving the glass fabrication needs of architects and contractors since 1975.

Much has changed since our founding, and many elements have contributed to our growth and reputation. Paramount among these is our embrace of innovation and technology, and how these factors translate directly in long-term benefits over a project's life cycle for our customers.

What has not changed is the commitment and service we bring to each project, large or small. From the outset, we have embraced a corporate culture based on providing the highest quality products and service at the most affordable prices.

Seattle, Washington Plant

Founded in 1974. Began production in February 1975. 300,000 square feet of manufacturing space.

Yuma, Arizona Plant

Began production in November of 2005. 100,000 square feet of manufacturing space.

NORTHWESTERN INDUSTRIES PRODUCT OFFERINGS

Inventory of Glass

Northwestern Industries inventories close to 150 different glass types ranging in thickness from 2.0mm to 19mm. Along with standard clear, tints, and reflectives we also inventory passive Low-E glass and high performance MSVD Low-E manufactured by Pilkington, Guardian, and PPG Industries. Northwestern Industries is a member of PPG's Certified Fabricator® Program (CFP), Certified Laminator™ Program (CLP) and Guardian's Select Fabricator Program.

Insulated Glass

Our state of the art insulating line equipped with an ISRA automated inspection system produces the highest quality units available on the market today. We exclusively provide a dual seal unit using silicone as a secondary seal. We bend all four corners for maximum strength and sealability. Argon gas is available.
All of our glass offerings can be combined in a wide variety of ways to satisfy your aesthetic and performance requirements.

Minimum size:	7″ x 14″
Maximum size:	90″ x 165″

Laminated Glass

Northwestern Industries can provide laminated glass to satisfy any number of your aesthetic and performance requirements. Besides stocking standard size billets of laminated glass, we have glass and PVB inventories that can be fabricated in just about any combination of glass and interlayer you may require. We stock Enhanced Sound Control Laminated™ (ESCL), the highest rated sound control laminated on the market today. Also available is rain edge for exposed edge laminated and DuPont's Sentry Glass PVB for hurricane and bomb blast specifications.

Overall Thickness	Minimum 9/64″	Maximum 2″
Dimensions	Minimum 12″ x 12″	Maximum 84″ x 174″

Heat Treated Glass

Today's high performance glass products require a state of the art forced air convection furnace to properly heat strengthen or temper glass. Northwestern Industries has two of these special furnaces and produces the highest quality heat treated glass on the market today. We have also installed a LiteSentry™ Distortion Measurement System that provides 100% surface inspection and quantified measurements of all tempered and heat strengthened glass. All measurements are recorded to disc after fabrication to provide you with assurance that every component is true to your specifications.

Minimum size	12″ diagonal
Maximum size	96″ x 192″

Spandrel

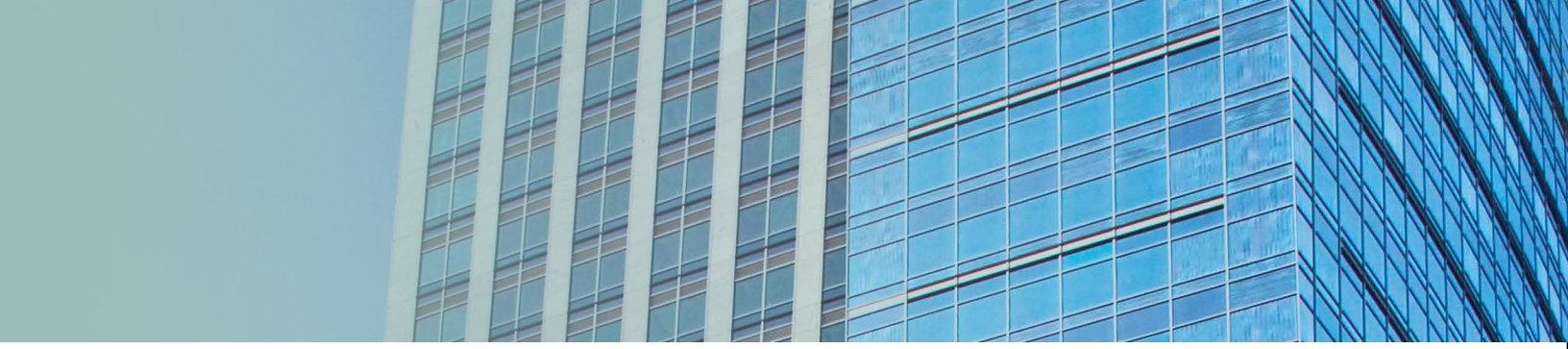
Northwestern Industries can provide Spandrel Glass in two distinctive types.

Ceramic Frit – An enamel that is applied directly to the glass surface and subjected to the heat treating process which permanently bonds the frit to the glass. This creates a very durable surface that is scratch resistant.

Opaci-Coat – A silicone paint that is applied after the heat treating process. A rubberlike elastomeric film is created that provides optimum glass opacification and also provides fallout protection.

Both Ceramic frit and Opaci-coat can be specified in standard colors or a wide variety of custom colors.

Minimum size	12″ x 12″
Maximum size	84″ x 168″



Silkscreen

Ceramic paint is applied directly to the glass surface in standard patterns or custom designs depending on the customer's requirements. The glass is then subjected to the heat treating process which permanently bonds the paint to the glass. Silkscreening can enhance the thermal performance of your glass by blocking heat gain, particularly in glass used in overhead applications. Wide varieties of standard and custom colors and screens are available.

Standard colors – Harmony Bronze, Harmony Grey, Harmony Solex, Harmony Black, Lo Fire White, Warm Grey, and Etched.

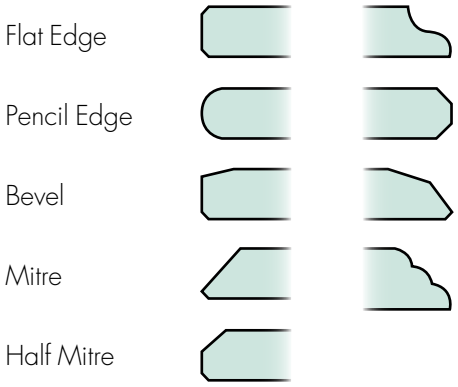
Standard Screens – All typical lines, dots, and holes.

Minimum size 12″ x 12″

Maximum size 80″ x 144″

Specialty Fabrication

Precision crafted glass is our goal in the Speciality Fabricated Glass Department. Along with specialty edgework we also offer hole drilling, shapes, and cut-outs. A unique waterjet cutting system cuts your specialty designs with the greatest precision. Each piece of glass will be delivered to your location protected by a film applied by our SPL 100 system. This film allows you to inspect your glass upon delivery and is easily reapplied so that the glass is protected on the way to your customer.



LEED®/Green Building Sustainability

Developed by the USGBC® (U.S. Green Building Council), LEED® (Leadership in Energy and Environmental Design) Green Building Rating System is a third party certification program that serves as the benchmark for design, construction, and operation of high performing green buildings. Although LEED does not certify any particular product or company to meet LEED requirements, it is designed to recognize that the proper selection of products and materials is essential in making a building LEED-compliant.

Northwestern Industries fabricates a broad range of products that can help architects and owners earn LEED credits for their projects. For 30 years NWI has provided building teams – including architects, designers, specification writers, engineers, building owners/developers, and glazing contractors – with technical assistance and services. Today more than ever, rely on the expertise of NWI to help in achieving the applicable LEED prerequisites and potential points towards LEED-certification.

PROJECT PROFILES

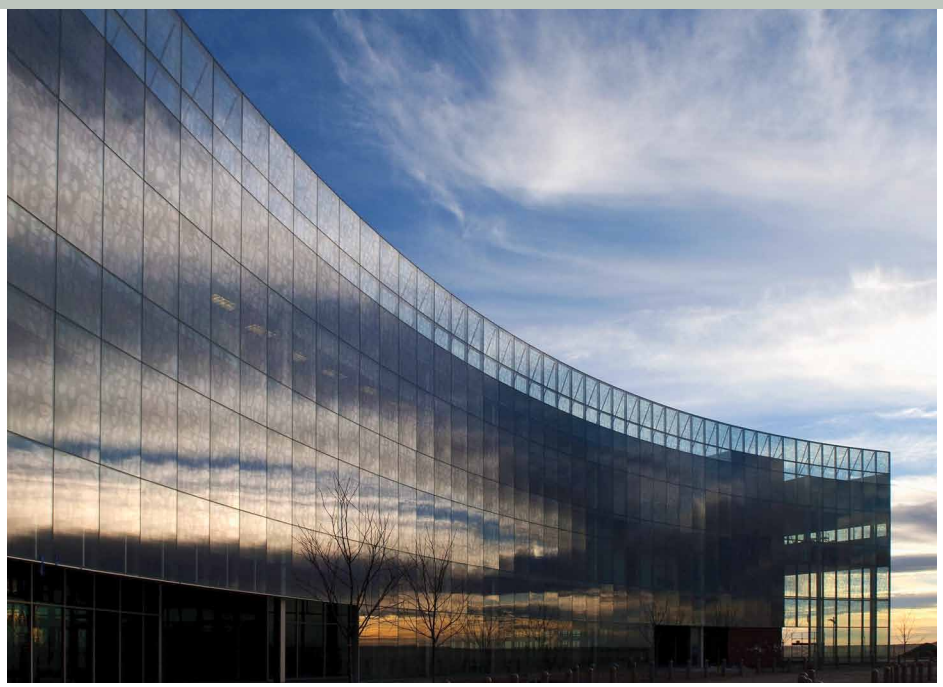
West 8th, Seattle, Washington
Glazing contractor: Walters and Wolf
Architect: Callison Architecture
Glass: PPG Solar Ban 70 and 80

Marina Point, Marina Del Ray, Calif.
Glazing contractor: Woodbridge Glass
Architect: GMT Architectural
Glass: 6mm PPG Solexia Laminated

Beautiful glass products that harmonize with the landscape

Lincoln Square, Bellevue, Washington
Glazing contractor: Walters and Wolf
Architect: Sclater Partners
Glass: Guardian AG43 on clear

Mesa Del Sol Town Center, Albuquerque, New Mexico
Glazing contractor: Southwest Glass and Glazing
Architect: Antoine Predock Architects, PC
Glass: PPG Solar Ban 60 with custom silkscreen (Bone marrow)



Custom silkscreen designs that satisfy any imagination

St. Joseph Hospital of Orange Calif.
Glazing contractor: Model Glass
Architect: NBBJ
Glass: PPG Solar Ban 60 and 80 with custom silkscreen

Seattle Waterfront Marriott
Glazing contractor: Walters and Wolf
Architect: Jensen-Fey Architecture
Glass: PPG Atlantica with NWI Enhanced Sound Control Laminated (ESCL)

Specify ESCL by NWI when sound control matters

Panevino Restaurant, Las Vegas, Nevada
Glazing contractor: Sierra Glass
Architect: Marnell Architecture
Glass: PPG Caribia/500 low-e with NWI Enhanced Sound Control Laminated (ESCL)
Photo by Darius Kuzmickas

Salt Lake City Library
Glazing contractor: Steel Encounters
Architect: Moshe Sofdie and Associates
Glass: PPG Solar Ban 60

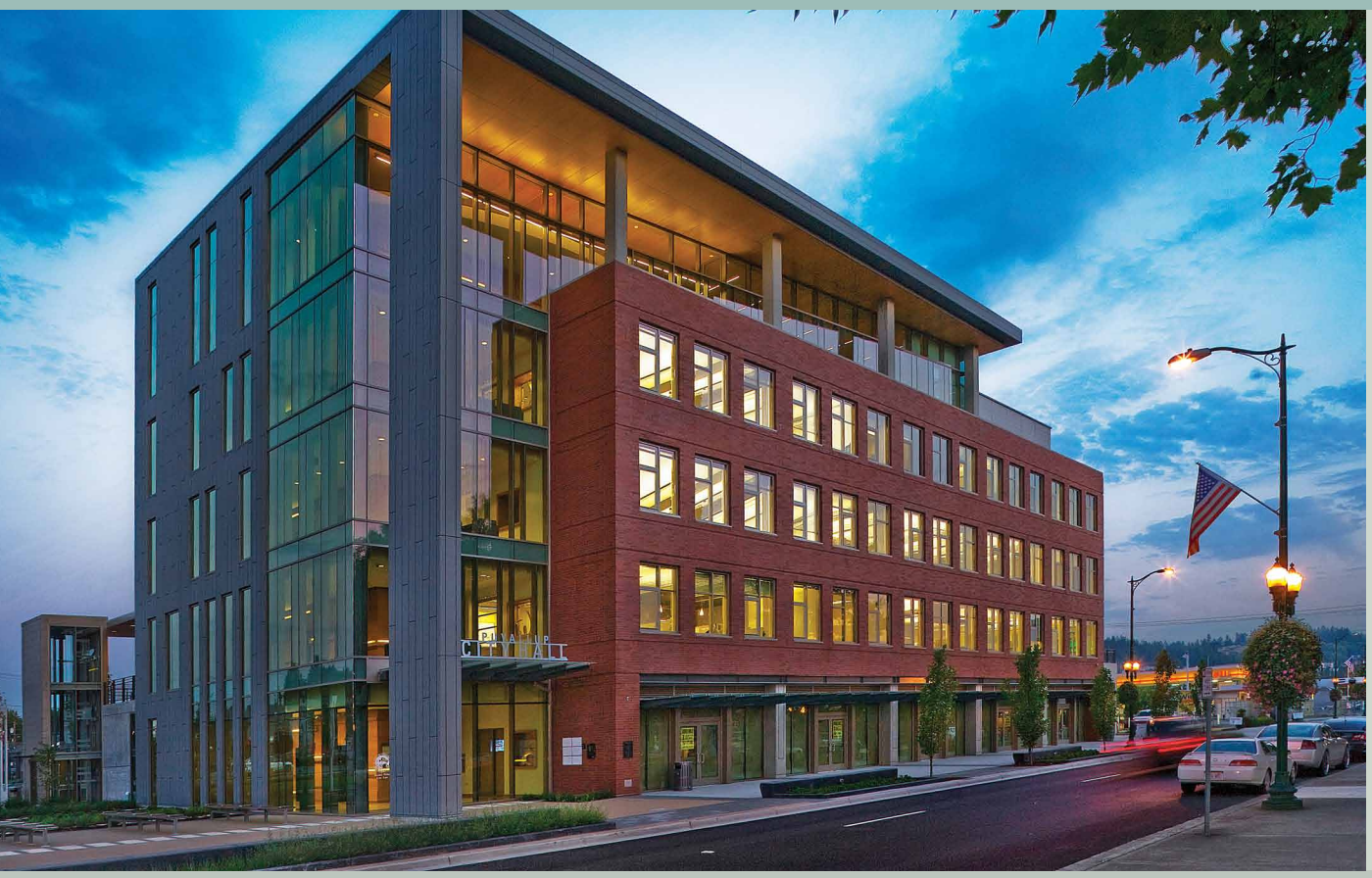
Anchorage Alaska International Airport
Glazing contractor: Commercial Contractors
Architect: McCool Carlson Green
Glass: Solar Ban 60 Laminated

Seattle Convention Center
Glazing contractor: Evergreen House
Architect: LMN Architectural
Glass: Clear custom silkscreen laminated

Big or small NWI is always right for the job

Metro Bus Station, Burien, Washington
Glazing contractor: Evergreen House
Architect: VIA Suzuki Architects
Glass: Clear custom silkscreen laminated

Burien, Washington Library
Glazing contractor: Eastside Glass
Architect: Ruffcorn, Mott, Hinthorne, Stine
Glass: PPG Starphire with white Opaci-coat



Puyallup City Hall, Washington
Glazing contractor: Larson Glass
Architect: Mithun
Glass: PPG Solar Ban 70

Tukwila Light Rail Station, Washington
Glazing contractor: Stephens Enterprises
Architect: Hewitt Architects
Glass: 6mm clear tempered/12mm clear laminated

Mt. Rainier High School, Des Moines, Washington
Glazing contractor: Pacific Window Systems
Glass: NWI Enhanced Sound Control Laminated (ESCL)

Public buildings turned cutting-edge

St. Regis Hotel and Condominiums, San Francisco, California
Glazing contractor: Architectural Glass
Architect: SOM Architecture
Glass: PPG Solar Ban 60

Enduring quality trusted by homeowners across the nation

Hyatt at Olive and 8th, Seattle, Washington
Glazing contractor: Advanced Glazing Systems
Architect: Mulvanny G2
Glass: PPG Solar Ban 60

Salmon Bay Landing, Seattle, Washington
Glazing contractor: Eastside Glass
Architect: Stuart Silk Architects
Glass: Guardian SunGuard AG 43

WaterPlace, Salem, Oregon
Glazing contractor: Dallas Glass
Architect: CB2 Architects
Glass: Guardian SN54 Crystal Grey/SN68 UltraWhite

Streeter Place, Chicago, Illinois
Glazing contractor: J&D Erectors
Window supplier: Custom Window Co.
Architect: SCB (Solomon Cordwell Buenz)
Glass: PPG Azuria Solar Ban 60

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Performance Comparisons for Insulated Glass

One Inch Insulating Glass Unit Comparisons with PPG Architectural Glass

	Transmittance			Reflectance		U-Value				
Glass Type	Ultra Violet %	Visable %	Total Solar Energy %	Visable Light %	Total Solar Energy %	Winter Night time	Summer Day-Time	Shading Coeffi-cient	Solar Heat Gain Coeffi-cient	Light to Solar Gain (LSG)
Sungate ® 500 Low-E Glass										
Sungate 500 (2) + Clear	42	74	52	17	14	0.35	0.35	0.71	0.62	1.19
Solexia + Sungate 500 (3) Clear	21	64	33	14	9	0.35	0.35	0.51	0.44	1.45
Atlantica + Sungate 500 (3) Clear	11	56	25	12	7	0.35	0.35	0.41	0.35	1.60
Caribia + Sungate 500 (3) Clear	17	56	24	12	7	0.35	0.35	0.40	0.34	1.65
Azuria + Sungate 500 (3) Clear	29	57	24	12	7	0.35	0.35	0.40	0.34	1.66
Pacifica + Sungate 500 (3) Clear	10	35	19	7	6	0.35	0.35	0.35	0.30	1.16
Solarblue + Sungate 500 (3) Clear	21	46	32	10	9	0.35	0.35	0.51	0.44	1.06
Solarbronze + Sungate 500 (3) Clear	18	44	33	9	9	0.35	0.35	0.53	0.46	0.96
Solargray + Sungate 500 (3) Clear	17	37	28	8	8	0.35	0.35	0.47	0.40	0.92
Optigray23 + Sungate 500 (3) Clear	6	19	13	6	6	0.35	0.35	0.28	0.24	0.80
Graylite + Sungate 500 (3) Clear	5	11	16	5	6	0.35	0.35	0.33	0.28	0.41
Solarban ® 60 Solar Control Low-E Glass										
Solarban 60 (2) Starfire + Starfire	25	74	38	11	43	0.29	0.27	0.46	0.40	1.85
Solarban 60 (2) Clear + Clear	19	70	33	11	29	0.29	0.27	0.44	0.38	1.85
Solarban 60 (2) Atlantica + Clear	5	54	20	8	7	0.29	0.27	0.31	0.27	1.98
Solarban 60 (2) Azuria + Clear	13	54	21	8	7	0.29	0.27	0.32	0.28	1.93
Solarban 60 (2) Caribia + Clear	8	54	20	8	4	0.29	0.27	0.31	0.27	1.99
Solarban 60 (2) Solexia + Clear	10	61	25	10	11	0.29	0.27	0.36	0.32	1.92
Solarban 60 (2) Pacifica + Clear	5	34	15	6	7	0.29	0.27	0.26	0.22	1.52
Solarban 60 (2) Solarblue + Clear	10	45	21	7	13	0.29	0.27	0.32	0.28	1.60
Solarban 60 (2) Solarbronze + Clear	8	42	20	7	16	0.29	0.27	0.31	0.27	1.56
Solarban 60 (2) Solargrey + Clear	8	35	17	6	12	0.29	0.27	0.28	0.24	1.47
Solexia + Solarban 60 (3) Clear	10	61	25	11	11	0.29	0.27	0.42	0.36	1.70
Caribia + Solarban 60 (3) Clear	8	54	20	9	7	0.29	0.27	0.35	0.31	1.74
Azuria + Solarban 60 (3) Clear	13	54	21	9	7	0.29	0.27	0.36	0.31	1.75
Pacifica + Solarban 60 (3) Clear	5	34	15	6	7	0.29	0.27	0.29	0.25	1.36
Solarblue + Solarban 60 (3) Clear	10	45	21	8	13	0.29	0.27	0.37	0.32	1.39
Solarban ® 70XL Solar Control Low-E Glass										
Solarban 70XL (2) + Clear	6	64	25	12	52	0.28	0.26	0.32	0.27	2.37
Solarban 70XL (2) Solexia + Clear	3	54	19	10	12	0.28	0.26	0.29	0.25	2.18
Solarban 70XL (2) Atlantica + Clear	2	48	16	9	8	0.28	0.26	0.26	0.23	2.07
Solarban 70XL (2) Caribia + Clear	2	48	16	9	7	0.28	0.26	0.27	0.23	2.07
Solarban 70XL (2) Azuria + Clear	4	48	17	9	7	0.28	0.26	0.27	0.23	2.09
Solarban 70XL (2) Solarblue + Clear	3	40	15	7	15	0.28	0.26	0.25	0.21	1.84
Solarban 70XL (2) Solarbronze + Clear	2	37	14	7	19	0.28	0.26	0.23	0.20	1.87
Solarban 70XL (2) Solargray + Clear	2	31	12	7	15	0.28	0.26	0.22	0.19	1.65
Solexia + Solarban 70XL (3)	3	56	20	11	13	0.28	0.26	0.37	0.32	1.74
Caribia + Solarban 70XL (3)	2	49	17	9	8	0.28	0.26	0.32	0.28	1.75
Azuria + Solarban 70XL (3)	4	49	17	10	8	0.28	0.26	0.33	0.29	1.70
Pacifica + Solarban 70XL (3)	2	31	12	6	7	0.28	0.26	0.26	0.22	1.30
Solarblue + Solarban 70XL (3)	3	41	16	8	16	0.28	0.26	0.32	0.27	1.48
Solarban ® 80 Solar Control Low-e Glass										
Solarban 80 (2) Clear + Clear	13	48	20	33	38	0.29	0.27	0.28	0.24	1.98
Solarban 80 (2) Optiblue + Clear	9	34	15	19	28	0.29	0.27	0.23	0.20	1.70
Solarban ® z50 Solar Control Low-E Glass										
Solarban z50 (2) Optiblue + Clear	14	51	26	8	23	0.29	0.27	0.36	0.31	1.64
Azuria + Solarban z50 (3) Optiblue	10	39	16	8	7	0.29	0.27	0.35	0.30	1.31
Atlantica + Solarban z50 (3) Optiblue	4	39	15	8	7	0.29	0.27	0.34	0.30	1.28
Caribia + Solarban z50 (3) Optiblue	6	39	15	8	7	0.29	0.27	0.34	0.30	1.29
Solexia + Solarban z50 (3) Optiblue	8	44	19	10	11	0.29	0.27	0.41	0.35	1.26
Pacifica + Solarban z50 (3) Optiblue	4	25	12	6	7	0.29	0.27	0.28	0.24	1.01
Solarblue + Solarban z50 (3) Optiblue	8	32	17	7	13	0.29	0.27	0.36	0.31	1.03

NORTHWESTERN INDUSTRIES, INC.
QUALITY FABRICATED GLASS PRODUCTS

Performance Comparisons for Insulated Glass

One Inch Insulating Glass Unit Comparisons with PPG Architectural Glass

	Transmittance			Reflectance		U-Value				
Glass Type	Ultra Violet %	Visable %	Total Solar Energy %	Visable Light %	Total Solar Energy %	Winter Night time	Summer Day-Time	Shading Coeffi-cient	Solar Heat Gain Coeffi-cient	Light to Solar Gain (LSG)
Solarban ® R100Solar Control Low-E Glass										
Solarban R100 (2) + Clear	12	42	19	32	41	0.29	0.27	0.27	0.23	1.79
Solarban R100 (2) Starphire + Starphire	16	44	21	33	57	0.29	0.27	0.27	0.23	1.87
Solarban R100 (2) Azuria + Clear	8	32	12	21	11	0.29	0.27	0.22	0.19	1.66
Solarban R100 (2) Atlantica + Clear	3	31	12	20	11	0.29	0.27	0.22	0.19	1.67
Solarban R100 (2) Caribia + Clear	5	32	12	20	11	0.29	0.27	0.22	0.19	1.67
Solarban R100 (2) Solexia + Clear	6	36	15	25	17	0.29	0.27	0.24	0.21	1.72
Solarban R100 (2) Optiblue + Clear	8	30	14	19	31	0.29	0.27	0.23	0.20	1.50
Solarban R100 (2) Pacifica + Clear	3	20	9	11	9	0.29	0.27	0.19	0.16	1.24
Solarban R100 (2) Solarblue + Clear	6	26	12	15	17	0.29	0.27	0.22	0.19	1.40
Vistacool ™ and Solarcool ® with Solarban ® 60 Solar Control Low-E Glass (3)										
Vistacool (2) Azuria +Solarban 60 (3) Clear	11	42	16	20	11	0.29	0.27	0.30	0.26	1.61
Vistacool (2) Caribia +Solarban 60 (3) Clear	7	42	16	20	11	0.29	0.27	0.29	0.25	1.66
Vistacool (2) Pacifica +Solarban 60 (3) Clear	4	26	12	11	9	0.29	0.27	0.24	0.21	1.23
Vistacool (2) Solargray + Solarban 60 (3) Clear	7	27	14	11	15	0.29	0.27	0.28	0.24	1.13
Solarcool (2) Pacifica +Solarban 60 (3) Clear	2	13	6	10	8	0.29	0.27	0.17	0.15	0.89
Solarcool (2) Solexia + Solarban 60 (3) Clear	3	24	10	24	15	0.29	0.27	0.22	0.19	1.26
Solarcool (2) Caribia + Solarban 60 (3) Clear	2	21	8	19	10	0.29	0.27	0.19	0.16	1.30
Solarcool (2) Azuria + Solarban 60 (3) Clear	4	21	8	19	10	0.29	0.27	0.19	0.16	1.31
Solarcool (2) Solarblue + Solarban 60 (3) Clear	3	17	9	14	15	0.29	0.27	0.21	0.18	0.97
Solarcool (2) Solarbronze + Solarban 60 (3) Clear	3	17	9	14	18	0.29	0.27	0.21	0.18	0.92
Solarcool (2) Solargray +Solarban 60 (3) Clear	2	14	7	11	14	0.29	0.27	0.19	0.16	0.86
Soalrcool (2) Graylite + Solarban 60 (3) Clear	<1	3	2	5	5	0.29	0.27	0.12	0.10	0.28
Vistacool™ and Solarcool ® with Solarban z50 Solar Control Low-E Glass										
Vistacool (2) Azuria + Solarban z50 (3) Optiblue	9	30	12	20	11	0.29	0.27	0.29	0.25	1.20
Vistacool (2) Caribia + Solarban z50 (3) Optiblue	5	30	12	20	11	0.29	0.27	0.29	0.25	1.20
Vistacool (2) Pacifica + Solarban z50 (3) Optiblue	4	19	9	11	9	0.29	0.27	0.24	0.21	0.91
Vistacool (2) Solargray + Solarban z50 (3) Optiblue	5	20	11	11	15	0.29	0.27	0.27	0.24	0.82
Solarcool (2) Pacifica + Solarban z50 (3) Optiblue	1	9	4	10	8	0.29	0.27	0.17	0.14	0.65
Solarcool (2) Solarblue + Solarban z50 (3) Optiblue	2	12	7	14	15	0.29	0.27	0.20	0.17	0.71
Solarcool (2) Graylite + Solarban z50 (3) Optiblue	<1	2	1	5	5	0.29	0.27	0.12	0.10	0.20
Vistacool™ and Solarcool ® with Solarban ® 70XL Solar Control Low-E Glass (3)										
Vistacool (2) Azuria + Solarban 70XL (3)	4	38	14	21	12	0.28	0.26	0.27	0.24	1.59
Vistacool (2) Caribia + Solarban 70XL (3)	2	38	13	20	11	0.28	0.26	0.27	0.23	1.65
Vistacool (2) Pacifica + Solarban 70XL (3)	1	24	9	11	9	0.28	0.26	0.22	0.19	1.24
Vistacool (2) Solargray + Solarban 70XL (3)	2	25	10	11	17	0.28	0.26	0.23	0.20	1.24
Solarcool (2) Solexia + Solarban 70XL (3)	1	22	8	24	16	0.28	0.26	0.20	0.17	1.28
Solarcool (2) Caribia + Solarban 70XL (3)	1	19	6	19	10	0.28	0.26	0.18	0.15	1.27
Solarcool (2) Azuria + Solarban 70XL (3)	1	19	7	19	10	0.28	0.26	0.18	0.15	1.27
Solarcool (2) Pacifica + Solarban 70XL (3)	1	12	4	10	8	0.28	0.26	0.15	0.13	0.89
Solarcool (2) Solarblue + Solarban 70XL (3)	1	16	6	14	16	0.28	0.26	0.18	0.15	1.03
Solarcool (2) Solarbronze + Solarban 70XL (3)	1	15	6	14	19	0.28	0.26	0.17	0.15	1.01
Solarcool (2) Solargray + Solarban 70XL (3)	1	13	5	11	15	0.28	0.26	0.16	0.14	0.89
Solarcool (2) Graylite + Solarban 70XL (3)	<1	3	1	5	5	0.28	0.26	0.11	0.09	0.27

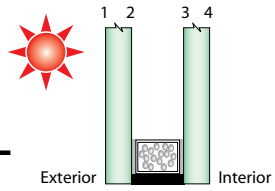
Solarban 70XL for annealed applications is applied to Starphire Glass; heat treated applications will require either clear or Starphire glass depending on the manufacturing process.

Performance data is based on representative samples of factory production. Actual values may vary due to the production process and manufacturing tolerances. All tabulated data is based on NFRC methodology using the LBNL Window 5.2 software.Variations from previously published data are due to minor changes in the LBNL Windows 5.2 software versus Version 4.1.

NORTHWESTERN INDUSTRIES, INC.
QUALITY FABRICATED GLASS PRODUCTS

Performance Comparisons for Insulated Glass

Insulating Glass Data with Guardian SunGuard® Advanced Architectural Glass



Appearance	Product	Outboard Substrate	Inboard Substrate	Transmission			Reflectance			U-Value		Relative Heat Gain	Shading Coefficient	**Solar Heat Gain Coefficient**	Light to Solar Gain (LSG)
				Visible Light %	Ultra-violet %	Total Solar Energy %	Visible Light Out %	Visible Light In %	Total Solar Energy %	Winter Nighttime	Summer Daytime				
SunGuard SuperNeutral				Coating #2 Surface								6 mm / 12 mm a.s. / 6 mm			
Ultra Clear	SN 68	UltraWhite	UltraWhite	**69**	32	36	11	12	39	0.29	0.28	93	0.44	**0.39**	1.79
Ultra Clear	SN 54	UltraWhite	UltraWhite	**55**	17	25	13	18	41	0.29	0.27	69	0.33	**0.28**	1.93
Clear	SN 68	Clear	Clear	**68**	29	33	11	12	32	0.29	0.28	90	0.43	**0.38**	1.80
Clear	SN 54	Clear	Clear	**54**	15	23	13	18	33	0.29	0.27	68	0.32	**0.28**	1.91
Green	SN 68	Green	Clear	**58**	14	24	9	11	9	0.29	0.28	73	0.34	**0.30**	1.90
Green	SN 54	Green	Clear	**46**	7	17	10	18	10	0.29	0.27	59	0.27	**0.24**	1.88
Light Gray	SN 68	CrystalGray	Clear	**49**	18	24	8	11	16	0.29	0.28	72	0.34	**0.30**	1.65
LightGray	SN 54	CrystalGray	Clear	**39**	9	17	9	17	17	0.29	0.27	57	0.26	**0.23**	1.68
	==========			Coating #3 Surface			==========								
Green	SN 68 (#3)	Green	Clear	**58**	14	24	10	10	10	0.29	0.28	84	0.40	**0.35**	1.64
Gray	SN 68 (#3)	Gray	Clear	**35**	13	18	6	9	15	0.29	0.28	71	0.34	**0.30**	1.20
Bronze	SN 68 (#3)	Bronze	Clear	**41**	12	20	7	9	16	0.29	0.28	75	0.36	**0.31**	1.30
Blue	SN 68 (#3)	Blue	Clear	**44**	17	21	8	9	13	0.29	0.28	78	0.37	**0.33**	1.33
Dark Green	SN 68 (#3)	SMG III	Clear	**51**	8	19	9	10	8	0.29	0.28	73	0.35	**0.30**	1.67
Light Gray	SN 68 (#3)	CrystalGray	Clear	**49**	17	24	9	10	17	0.29	0.28	85	0.41	**0.35**	1.39
SunGuard High Performance				Coating #2 Surface								6 mm / 12 mm a.s. / 6 mm			
Light Blue	Light Blue 63	Clear	Clear	**62**	39	43	15	12	15	0.34	0.35	122	0.59	**0.51**	1.20
Neutral Pewter	Neutral 61	Clear	Clear	**61**	27	34	20	15	31	0.30	0.29	95	0.45	**0.40**	1.53
Neutral Blue	Neutral 50	Clear	Clear	**50**	30	31	16	11	19	0.33	0.32	94	0.45	**0.39**	1.28
Neutral Gray	Neutral 40	Clear	Clear	**40**	26	25	20	12	22	0.33	0.33	78	0.37	**0.32**	1.25
Light Silver	AG 50	Clear	Clear	**50**	26	28	28	18	36	0.30	0.28	80	0.38	**0.33**	1.51
Light Silver	AG 43	Clear	Clear	**41**	23	24	30	15	33	0.31	0.30	71	0.33	**0.29**	1.39
Royal Blue	Royal Blue 40	Clear	Clear	**38**	21	24	24	18	24	0.31	0.31	76	0.36	**0.31**	1.21
Blue-Green	Light Blue 63	Green	Clear	**52**	18	26	12	12	8	0.34	0.35	84	0.39	**0.35**	1.51
Green	Neutral 61	Green	Clear	**51**	13	23	15	14	11	0.30	0.29	71	0.34	**0.30**	1.74
Green	Neutral 50	Green	Clear	**42**	14	20	13	10	9	0.33	0.32	69	0.32	**0.28**	1.49
Green	Neutral 40	Green	Clear	**34**	12	16	16	12	10	0.33	0.33	59	0.27	**0.24**	1.39
Green	AG 50	Green	Clear	**43**	12	19	21	18	14	0.30	0.28	62	0.29	**0.25**	1.67
Green	AG 43	Green	Clear	**35**	11	15	23	14	14	0.31	0.30	55	0.26	**0.23**	1.52
Aquamarine	Royal Blue 40	Green	Clear	**32**	9	15	19	17	12	0.31	0.31	56	0.26	**0.23**	1.40
Silver Gray	AG 50	CrystalGray	Clear	**36**	15	20	17	18	19	0.30	0.28	64	0.30	**0.26**	1.38
Silver Gray	AG 43	CrystalGray	Clear	**30**	13	16	18	14	18	0.31	0.30	58	0.27	**0.24**	1.25
Blue Gray	Royal Blue 40	CrystalGray	Clear	**27**	12	17	15	17	14	0.31	0.31	60	0.28	**0.25**	1.11
SunGuard Solar				Coating #2 Surface								6 mm / 12 mm a.s. / 6 mm			
Silver Blue-Gray	Silver 32	Clear	Clear	**29**	23	20	22	21	18	0.42	0.44	76	0.35	**0.31**	0.94
Silver	Silver 20	Clear	Clear	**18**	15	12	31	27	27	0.39	0.41	54	0.24	**0.21**	0.84
Blue-Green	Silver 32	Green	Clear	**24**	11	12	17	21	10	0.42	0.44	61	0.27	**0.24**	1.00
Green	Silver 20	Green	Clear	**15**	7	8	24	27	13	0.39	0.41	48	0.21	**0.19**	0.82
	==========			Solar Coating #2 Surface / SuperNeutral Coating #3 Surface						==========					
Silver Blue-Gray	Silver 32/SN 68	Clear	Clear	**24**	14	12	21	15	20	0.29	0.28	52	0.24	**0.21**	1.13
Silver	Silver 20/SN 68	Clear	Clear	**15**	9	7	31	19	28	0.29	0.27	39	0.17	**0.15**	0.99
Blue-Green	Silver 32/SN 68	Green	Clear	**21**	7	9	17	15	10	0.29	0.28	44	0.20	**0.18**	1.15
Green	Silver 20/SN 68	Green	Clear	**13**	4	5	24	19	13	0.29	0.27	35	0.16	**0.14**	0.93

NOTES:

- The performance values shown are nominal and subject to variations due to manufacturing tolerances.
- Guardian performance data are calculated in accordance with the LBNL Window 5.2 computer analysis using an air mass of 1.5.
- Outboard lite may require heat strengthening or tempering to resist potential thermal stresses. Please contact Guardian for assistance.
- A slight shift in visible light reflectance or transmission may be noticed after heat-treatment.
- Guardian recommends edge deletion for all commercial low-E coatings.
- Guardian reserves the right to change product performance characteristics without notice or obligation.
- Some product names have changed: Light Blue 63 (formerly LE-63), Neutral 61 (formerly NP-61), Neutral 50 (formerly LE-50) and Neutral 40 (formerly LE-40).

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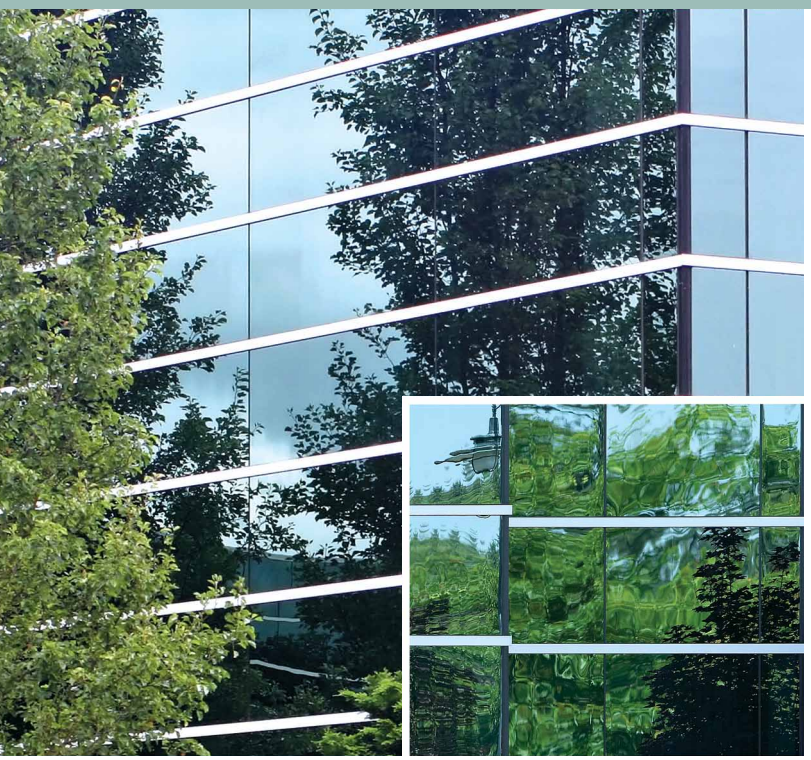

NWI's glass

Competitor's glass

Quality control at every stage

Consistency

All glass that is subjected to the heat treating process will have some degree of distortion. Poor control of this process can increase distortion significantly (see inset).

Northwestern Industries has invested in a Lite Sentry Distortion Measurement System that provides 100% surface inspection and quantified measurements of all tempered and heat strengthened glass. In fact, all measurements are recorded to disc after fabrication in order to provide you with the assurance that every component is true to your exact specifications.

Extensive training of personnel combined with our Lite Sentry Distortion Measurement System and standards developed over years of research and refinement guarantee a production system that defines, documents, and delivers the highest quality at every step in the process.

So, how does our system stack up against the competition? Take a look and see for yourself.

Intelligent Design

Before shipping, every insulated unit Northwestern Industries produces is subjected to the most rigorous inspection system available in the world today.

Our computerized state-of-the-art surface inspection system catches defects invisible to the naked eye of even the most skilled and experienced craftsman.

Using a unique network of customized and patented technologies, we continuously monitor each and every stage of the process. This diligence allows us to catch, and contain, even the most minute imperfections and naturally occurring abnormalities, while instituting quality improvements across every step of the production.

For our customers, this means savings where it counts: the highest quality glass, efficiently produced, which reduces costs and time associated with defects and replacement.

When quality matters and consistency is critical,
the right solution should be as clear as glass.

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QUALITY FABRICATED GLASS PRODUCTS

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PPG CLP CERTIFIED LAMINATOR™ PROGRAM

GUARDIAN SUNGUARD SELECT™ FABRICATOR

TECHNICAL SUPPORT

Contact your Northwestern Industries Sales Representative or our Management and Sales personnel to assist you with your design considerations. Together we can help you select the desired aesthetic and high performance glass products for your project.

- Performance values
    - Visible light transmission
    - Shading Coefficient
    - Solar heat gain coefficient (SHGC)
    - Safety and code requirements
- Wind and snow loads
- Acoustical performance