



GREENSTRUCT
Integrating the future

**YOU LIVE YOUR LIFE ADAPTING TO ALWAYS SHIFTING CONDITIONS
YOUR GLASS SHOULD TOO!**

dynaShade™

Variable Transmission Windows

Forget windows with fixed properties you can't control!

Imagine glass that could reversibly change its performance values, including U-Value, Solar Factor, and/or Visible Light Transmission over a large operating range.



Variable Transmission Windows are now a reality!

It's like having all the best Low-e glasses combined in a single IGU



dynaShade™

is the FIRST 100% heat-activated, powered and controlled glass, designed to, dynamically and continuously, auto-respond to the environment



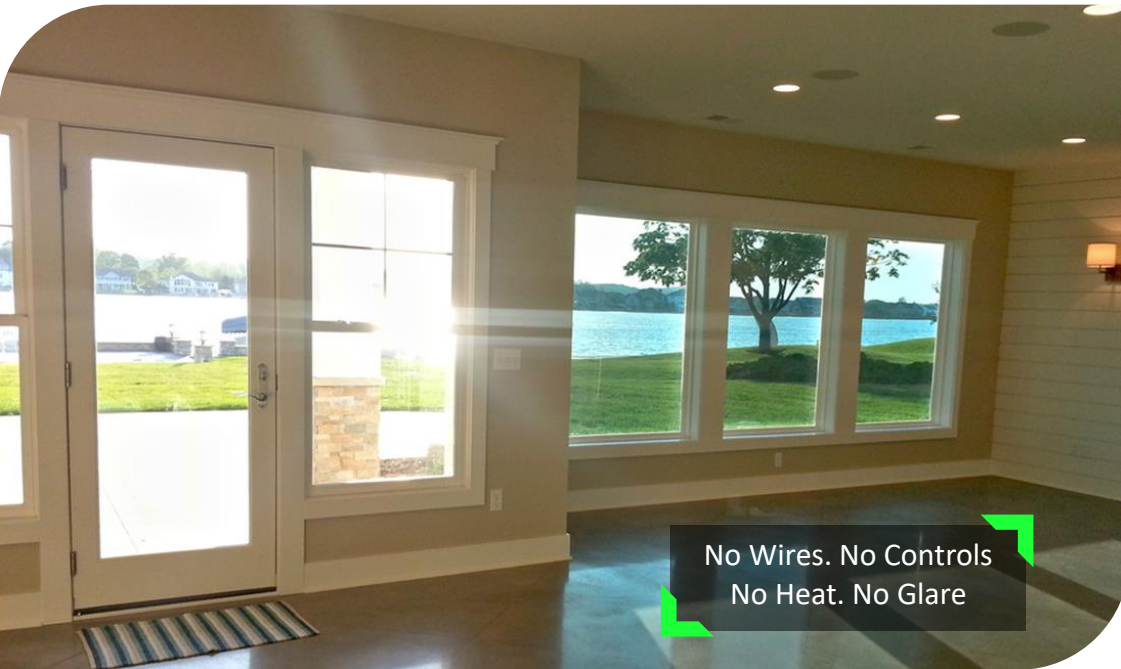
Our technology allows buildings with extensive glazing to automatically respond to the ever changing climatic conditions, providing optimal comfort, and minimizing energy requirements.

HOW IT WORKS

dynaShade™ auto-tints, without any mechanical intervention, in response to rising temperatures caused by sunlight on the window

The more direct and intense the heat, the darker it will gradually become.

As the sun moves across the sky, dynaShade™ will cool and return to its clear state



No Wires. No Controls
No Heat. No Glare

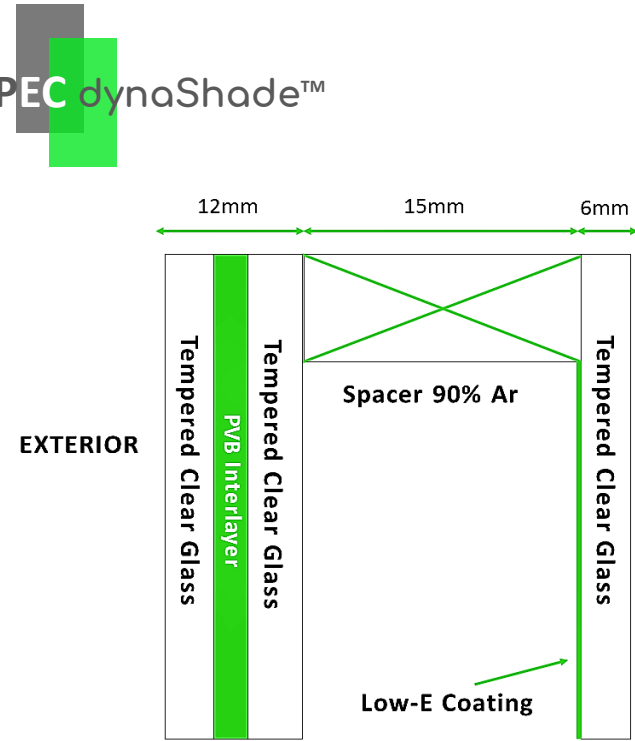
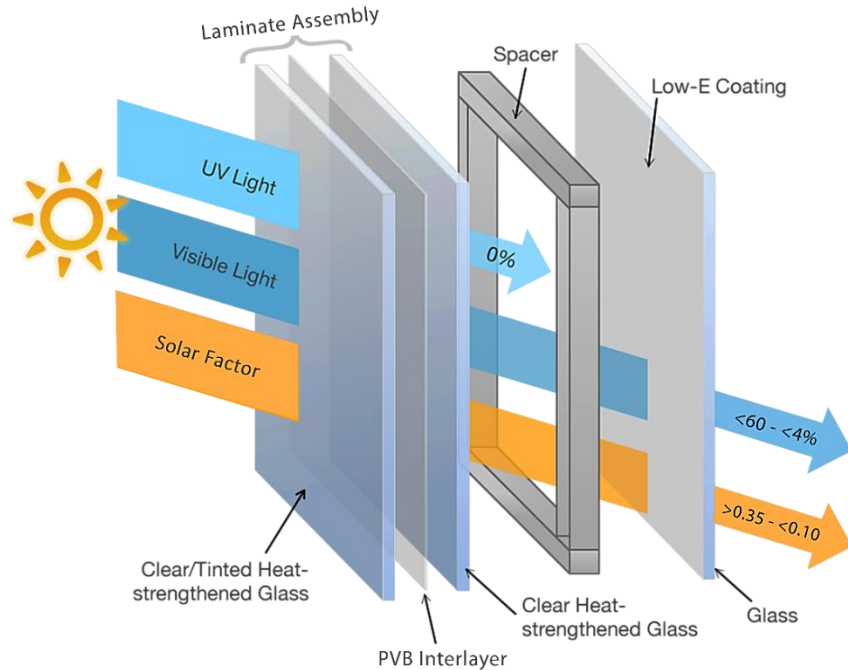
dynaShade™ provides a more consistent level of daylighting than traditional glass, reducing the need for curtains, blinds or other shading devices that block your views.

It remains clear during the cold winter, allowing the sun to enter and warm the building, and auto-tints during the hot summer to block all the unwanted heat and glare, while maintaining your outside views



**GLASS
ENERGIZED™**

HOW TO SPEC **dynaShade™**



1. dynaShade™ can be configured as a standard / double / triple laminate IGU
2. dynaShade™ IGU can be assembled with all kinds of glass, from extra clear to mirror glass, and paired with every Low-e coating, delivering a wide range of performance values.
3. Glass Standard Size: 1,6 x 3,5 (m). On a project basis: 1,6 x 6 (m)

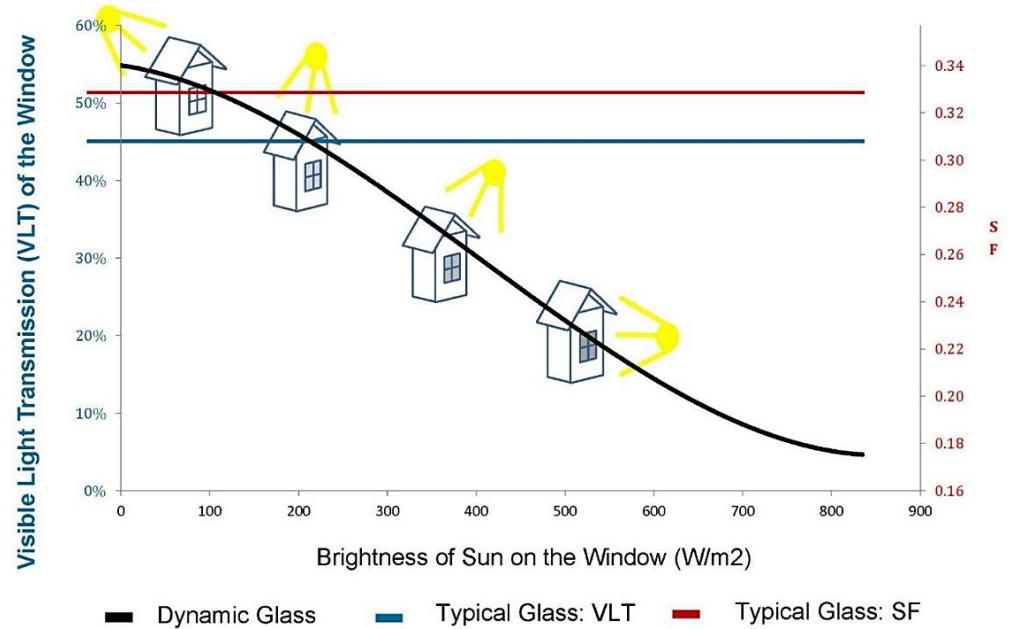
So far,
Glass Technology aiming to reduce the energy needs of a building has largely used passive materials (tinted glass), with fixed properties and poor balance between heat loss, solar energy gain, and outside views

But now, dynaShade™, makes possible to create auto-regulated cover heating for “Near Zero Energy” buildings, with even larger glazing areas you ever thought possible

Even on the brightest hottest day, you can enjoy unobstructed views with zero glare or heat

Truly Dynamic Glazing!

Indicative Glass Performance Metrics



a glass that turns from clear (morning)
to fully tinted (afternoon)
and all the way back to clear (evening)

Configuration dynaShade™ assembly:
6mm (clear/colored glass) + PVB Interlayer + 5mm clear + 11mm 90%A + 6mm low-e
Clear values represent 10°C and tinted values represent 65°C.
Center of Glass calculated with LBNL Optics 6.0 and LBNL Window 7.3.4.0 at NFRC
Standard Conditions
The exterior glass tints and low-e coatings mentioned in the chart above are
registered trademarks of PPG Industries, Inc.

dynaShade™ Performance		Visible Light Transmission (VLT)		Solar Factor (SF)		Total Solar Transmission		Reflectance In		Reflectance Out		U Value
Exterior Tint	Low-e	Clear ↔ Tinted	Clear ↔ Tinted	Clear ↔ Tinted	Clear ↔ Tinted	Clear ↔ Tinted	Clear ↔ Tinted	Clear ↔ Tinted	Clear ↔ Tinted	Clear ↔ Tinted		
Starphire®	SN 68	55%	8%	0.39	0.17	27%	8%	0.10	0.09	0.10	0.05	0.24
	SNX 62/27	50%	8%	0.32	0.13	18%	3%	0.10	0.09	0.10	0.05	0.23
Clear	SN 68	54%	8%	0.37	0.16	26%	7%	0.10	0.09	0.10	0.05	0.24
	SNX 62/27	49%	7%	0.31	0.13	18%	3%	0.10	0.09	0.09	0.05	0.23
Azuria®	SN 68	42%	6%	0.25	0.11	15%	3%	0.10	0.09	0.07	0.04	0.24
	SNX 62/27	38%	6%	0.23	0.10	13%	2%	0.10	0.09	0.07	0.04	0.23
Optiblue®	SN 68	39%	6%	0.31	0.15	20%	6%	0.09	0.09	0.07	0.04	0.24
	SNX 62/27	35%	5%	0.25	0.11	13%	2%	0.10	0.09	0.07	0.04	0.23
Solarbronze®	SN 68	32%	5%	0.26	0.13	16%	4%	0.09	0.09	0.07	0.05	0.24
	SNX 62/27	29%	4%	0.22	0.11	11%	2%	0.10	0.09	0.06	0.05	0.23
Solargray®	SN 68	27%	4%	0.23	0.12	14%	4%	0.09	0.09	0.06	0.05	0.24
	SNX 62/27	25%	4%	0.20	0.10	9%	2%	0.10	0.09	0.06	0.05	0.23

dynaShade™
Benefits

Building Performance

Energy Efficiency — HVAC / Lighting / Greenhouse Gas Emissions Reduction

Indoors Environmental Quality

Thermal Comfort
Preserved Quality Views
Natural Lighting

LEED Certifications

Cost Savings

— Lower Operational Costs

Lower Energy Consumption (HVAC/Lighting)
Shading Devices Purchase / Maintenance
UV Fading Protection

Consistent Daylighting

Corporate Sector
Healthcare Sector
Education Sector

Increased Productivity, Optimism
Improved Health, Well-Being

EASE OF INSTALL



NO WIRES. NO EXTERNAL CONTROLS



- ✓ Standard/Double/Triple IGU's
- ✓ Any type of thickness/tint/color
- ✓ Any type of low-e glass

Advance your LEED category with dynaShade™

INNOVATION

Building Innovation | 5 Credits

dynaShade™ allows building designers to improve the comfort and well-being of occupants while managing daylight, glare, thermal comfort, and energy use.

The world's only truly smart dynamic glass, dynaShade™ automatically responds to heat from direct sunlight and adapts by tinting in direct proportion to the sun's heat without the need for remote or manual control.

ENERGY & ATMOSPHERE

Optimize Energy Performance | 18 Credits

By automatically adapting to heat from the sunlight, dynaShade™ reduces heat loads in winter and cooling loads in summer. Compared to other solar control systems it also reduces the need for artificial lighting by preserving daylight autonomy, even further away from the windows. It is a passive technology that requires no wiring or electrical input in order to function.

INDOOR ENVIRONMENTAL QUALITY

Thermal Comfort | 1 Credit

On gloomy or winter days, it maximizes solar energy and light, allowing more sunshine in while blocking excess solar energy.

On a hot summer day, dynaShade™ mitigates glare and overheating as the glass adapts and automatically tints to block up to 90% of the sun's heat, always providing optimal comfort.

Interior Lighting | 2 Credits

Automatically adjusting dynamic glass optimizes daylighting and contributes to daylight autonomy in spaces behind the glass

Daylight | 3 Credits

It is the only dynamic glass that works with sunlight to provide consistent daylighting throughout the day, connecting building occupants with the outdoors and reinforcing circadian rhythms

Quality Views | 1 Credit

dynaShade™ reduces the need for blinds or shading devices to establish direct views to the outdoors without compromising energy-efficiency or occupant comfort.

Acoustic Performance | 1 Credit

Through its laminated IG design, dynaShade™ offers lower noise levels for those behind the glass.



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