The state of the art in energy saving daylighting systems.

08 45 00/CPI BuyLine 0595









TODAY'S MOST VERSATILE • HIGH PERFORMING • COST EFFECTIVE ARCHITECTURAL TRANSLUCENT INSULATING DAYLIGHTING SYSTEM

CPI — The Architect's Daylighting Choice

Many of the world's top architects have chosen CPI translucent daylighting systems to support their most notable designs: ranging from military facilities, schools, universities and athletic facilities, to airports, corporate headquarters, hotels, hospitals and shopping malls. These diverse buildings all share the benefits of quality natural light from CPI - a world class leader in translucent daylighting.

CPI's unique glazed panel system, enhanced for performance and appearance, provides more value for your construction dollar than any other translucent system available.



Quality Comes to Light

Natural light is one of the most important design elements in architecture today. CPI's unique technology gives a designer more control over light than other daylighting systems, while providing stunning designs that will remain contemporary for years to come. No other daylighting company offers the selection of colors, light transmission levels and configurations available from CPI.

Green Construction

CPI Daylighting Systems provide superior insulation and unparalleled energy saving options for use on projects requiring sustainable construction. Significant LEED™ points can be achieved by the introduction of natural daylight into an interior space using CPI Daylighting systems. Contact CPI for assistance with your Green Construction project needs.

ON THE COVER...

Top left: ID 27205 - Third & Pine Parking Garage, Seattle WA Architect: Sienna Architecture, Portland, OR

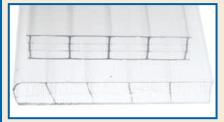
Top right: 24863 Univ. North Florida Student Ctr Architect: Rink Design, Jacksonville, FL

Bottom: 17456 University of IL, Champaign — PE Bldg Architect: VOA Associates, Chicago, IL



Pentaglas® Systems are made with Nano-Cell® technology, the latest and most advanced system for architectural daylighting applications. CPI Daylighting products ensure that your building envelope is covered by a daylighting system that provides unequaled durability and life safety performance

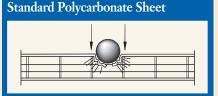
WHAT IS NANO-CELL® TECHNOLOGY?



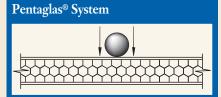


Wide Cell Technology

Wide Cell Technology



Nano-Cell® Technology



- Nano-Cell® technology provides precision engineered extrusions with cell sizes smaller than 0.18", up to ten times more cell structure than standard wide cell panels!
- Like a roof with smaller spans between truss supports, the Nano-Cell® panel provides superior long term performance.

What Makes Pentaglas® Nano-Cell® a Unique Architectural Panel?

- Long term resistance to impact and wind loading due to the small cell structure and tightly spaced rib supports
- Superior light diffusion capabilities ensuring excellent quality of natural light
- Refined contemporary look with aesthetic appeal
- Optional Matte Finish for elegant appearance and improved light diffusion
- Environmentally friendly, non toxic 100% recyclable material for Green projects
- Advantages of nature's honeycomb structure
- Internal flexibility to absorb thermal expansion across the panel and in all directions (on the X, Y and Z axis)
- CPI's special heavy duty co-extruded UV protection, not available in other panels
- Single source warranty for a complete translucent dry glazed panel system

Revolutionary Technology - from a Highly Focused Company...

CPI pioneered the use of polycarbonate translucent panels for architectural use two decades ago and has followed up this drive toward innovation by developing specialized architectural products such as standing seam translucent systems, hurricane endurance designs, Class A fire-resistant roof construction panels, the new Pentaglas® honeycomb panel and CPI's latest design - the new ControLite® intelligent daylighting system. Offering comprehensive daylighting solutions from production of raw material to the installation of fabricated systems, CPI can be the sole source for all your daylighting requirements.



CPI Daylighting Plant, Lake Forest, IL A variety of Quadwall® systems have been integrated into the building to bring quality light to all work stations and production facilities.

Call 800-759-6985 www.cpidaylighting.com

The Best, Most Versatile and Designer-Friendly Translucent System Available Today

The CPI Danpalon® standing seam, dry-glazing system is available in a variety of daylighting systems suitable for different requirements and applications as illustrated below:



Homogeneous insulating single panel with *three layers of isolated air spaces* and tight honeycomb cell spacing due to smaller spans between rib supports. Insulating values are comparable to 1" insulated glass but at a reduced cost and weight.



Homogeneous insulating panel with *five layers of isolated air spaces* and tight multicell spacing due to smaller spans between rib supports. Extraordinary insulation value comparable to bulky insulated fiberglass panels. Offers improved spanning capabilities and unequaled architectural appeal.

Quadwall® System 2.75" (70mm)

The preferred system for monumental daylighting, Quadwall® is an assembly of two Pentaglas® panels containing a total of seven isolated air spaces. Quadwall® provides superior performance for the cost over any competitive material. The patented standing seam connector allows the efficient addition of the second layer at marginal extra cost. The two-layer design also empowers the architect with increased control over light, solar transmittance, colors and insulation levels.

In addition, the second layer strengthens the system's capabilities for protection and durability. The interior and exterior layers are separate skins, facilitating easy replacement of any damaged exterior panels without exposing the building's interior. In comparison, adding or replacing a double layer to other glazing systems requires significant extra cost, and any damage to the exterior face requires intensive repairs that interrupt the building's function.

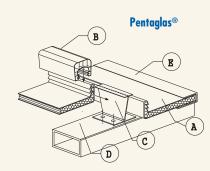
The Heart of the System — the Danpalon® Difference

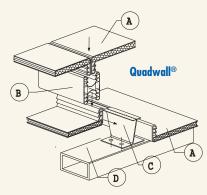
What makes the Danpalon® system's performance unique and effective is the heart of the system. The Danpalon® system by CPI consists of:

- A. Main polycarbonate panels 2' nominal widths, extruded with standing seam, 5/8" (15mm) upstands protruding 90° to the panel face
- **B.** A variety of snap-on and interlocking dry-glazed profiles
- **C.** Concealed heavy duty metal retention clips
- **D.** Structural supporting systems
- **E.** A Variety of perimeter aluminum engagement profiles

The fully assembled system is free-floating. Every component is free to thermally expand or contract at its own rate along both the X & Y axis, eliminating oil canning and delamination difficulties and allowing the material to retain structural properties over the life of the skylight. Structural movement is absorbed within the flexible nature of the honeycomb structural core, making skinning directly to steel or wood structures possible.

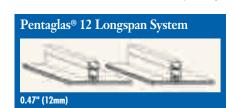
The entire assembly uses no caulking or adhesives, eliminating the difficulty of sealant and adhesive bond failure common in traditional systems. The Danpalon® system connection and weather seal is mechanical, dry, and 100% effective.





Quadwall® Longspan System 4" (102mm)

All of the advantages of the Quadwall® system with the addition of aluminum H connectors, allowing the greatest spanning capability. Available in Class "A", Class "B" and Class "C" fire rated roof assembly listings.



All of the advantages of the Pentaglas® system with the addition of aluminum battens, allowing increased spanning capability. Choice of batten accent finishes are available to enable a variety of designs.

Call 800-759-6985 www.cpidaylighting.com

The System May Be Panelized



Quadwall® Panelized Unit

- Standing seam dry-glazed joint eliminates need for adhesive bond
- Co-extruded super-weathering architectural face – eliminates need for periodic resurfacing
- 3. Prismatic honeycomb "Smart" design eliminates need for insulation batts
- 4. O.4" self-supporting face eliminates need for internal aluminum grid supports

Architects Discover the Pentaglas® Advantage

Code Compliance — Meets requirements of The International IBC code as well as regional UBC and BOCA codes for approved light transmitting materials and/or roof covering systems. Other approvals are available.

Fire Retardant — Danpalon® is a non-aggressively burning material with low smoke development and density, available as CC1 or CC2 classification, and in Class A, B or C flame spread. The material will melt away when subjected to fire, forming venting holes through which smoke, gases and heat are released. During tests, no adverse sheet burning effects were noticed, such as fire spread or burning droplets.

Class "A" Roofing System — (U.S. patented) Fire Rated Quadwall® is the only system of its kind that meets Class "A", "B" or "C" roof covering system requirements (UL790, E-108), and is listed and labeled as a fire rated panel by a recognized independent laboratory. Unlike other Class "A" panels, Pentaglas® maintains excellent weathering properties.

Hurricane Endurance Design — CPI offers an innovative design that complies with Florida codes for hurricane conditions including resistance of impact, cyclic and windload, and air/water infiltration.

Visual Appeal — The honeycomb panel technology provides a visually pleasing glazing surface that is divided into small modules. The standing seam is an excellent design alternative to large, monotonous glazing fields. Quadwall® also offers a flat surface with 2' module panels. In addition, a choice of polycarbonate or aluminum standing seam battens can be accented by a selection of colors.

Stunning Light Quality — The Pentaglas® honeycomb structure diffuses a greater quantity of pleasing light over a broader area with no glare or hot spots.

High Light Levels — A wide range of light levels, from 3% to 80%, with a broad range of shading coefficients. *Pentaglas® delivers more light per insulation level than traditional composite systems*.

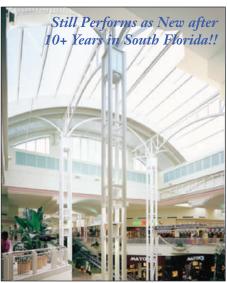
High Insulation — High levels of insulation are achieved without use of fiberglass batts, which compress, lose values and reduce light transmission. Pentaglas® exhibits improved condensation resistance due to an inherent thermally broken structure. The high thermal transfer occurring at the aluminum grid in fiberglass composite panel systems is also eliminated.

Glazing Options — A wide selection of colors are available in standard or matte finish to allow complementary exterior and interior panels. Allows optimizing of Light and Solar transmission and aesthetic appeal.

Metallic Reflective — Colors offer a perfect blend with other modern materials and enhance solar performance.

Color Stability — The high quality polycarbonate UV composition and co-extruded technology delivers a color-stable panel that will not delaminate, discolor, craze, or fiberbloom.

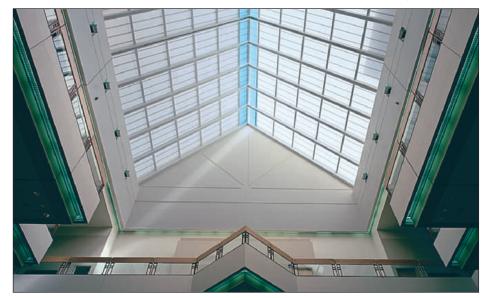




ID 661 - Seminole Town Center, Sanford, FL Architect: William Graves Architects, Inc., Dallas, TX



ID 9036 - American Hebrew Academy, Greensborough, NC Skylight with Class A Roof Construction configuration Architect: Aaron G Green Associates, San Francisco, CA



ID 373 - Brook Army Medical Center, Fort Sam Houston, TX Architect: HKS, Dallas, TX

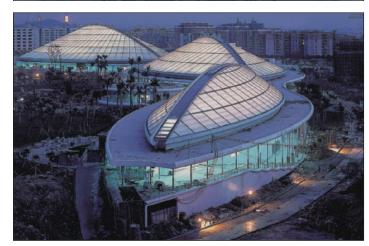






ID 6028 — JFK Airport AirTrain Stations, New York, NY Architect: STV Inc., New York, NY Contractor: Sordoni Skanska, New York, NY

Quadwall® structural half-round barrel vault skylights totaling over 60,000 SF cover 9 terminals served by the new JFK Airport AirTrain system. CPI met the complex design and installation challenge of lifting the fabricated barrel vaults to a high structure in a very busy construction environment under severe time constraints. CPI's seamless translucent system with no internal grid complements the "tech look" of the JFK terminal design, and provides excellent natural light and thermal protection. Glazing: Quadwall® white over white.





ID 7331 — Guangzhou Stadiums, China Architects & Engineers: ADPi Paul Andreu, Architect, Paris France

CPI met the international design challenge of three gigantic translucent oval shaped domes, built for the Chinese National Games. Over 300,000 SF of Danpalon® Quadwall® glazing system provides a perfect soft quality of light to suit athletic events and television broadcasting requirements.





Clearspan Canopies and Walkway Covers

Single source responsibility for entire system from the ground up





ID 18212 - Springfield Urgent Care Center, Springfield, IL Architect: John Shafer & Associates, Springfield, IL

LiteBrow TM Suspended Translucent Sun Screens





ID 20809 - Moanalua Shopping Center, Honolulu, HI Architect: Design Partners Inc., Honolulu, HI

U-Lite TM Transparent or Translucent Monolithic Polycarbonate Panel System for Low Slope Canopy Applications (less than 2:12 pitch).





Custom CPI Canopies & Walkway Covers



ID 28138 - Transparent Walkway Cover for an amusement park, Orlando, FL
Architects: Gwathmey Siegel & Associates, New York, NY; Glover-Smith-Bode, Inc., Oklahoma City, OK
CPI used U-Lite[™] to construct this self-supporting aluminum skylight. This challenging project links old and new
hotels with a winding walkway.



ID 15987 - Amarillo Airport, Amarillo, TX Architect: Reynolds, Smith and Hills Inc, Jacksonville, FL CPI provided the entire system from the ground up.



ID 24359 - UPMC Passavant Hospital, Pittsburgh, PA Architect: Burt Hill Kosar Rittlemann Architects, Butler, PA CPI provided the entire structure from the ground up. The various monumental aluminum self-supporting entrance canopies span 20 feet wide by 500 feet long.



ID 17988 - Speed School, Chicago Heights, IL Architect: Detella Planera Paukner Architects, Olympia Fields, IL CPI self-supporting drop-off canopy.



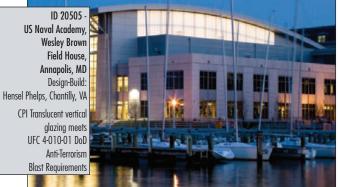
ID 24112 - Murray Medical Center, Chatsworth, GA Architect: Estopinal Group Inc., Jeffersonville, IN



ID 13279 - Mission Valley East Light Rail Station, San Diego, CA Architect: Parson Architects This light rail drop-off canopy consists of 9,000 SF of Pentaglas® 12.

LiteWall and Vertical Glazing Systems







ID 663 - Stevenson High School, Lincolnshire, IL
Architect: OWP&P Architects, Chicago, IL
Designed as a panelized Quadwall® Vertical Glazing system in 8' modules, the
panels introduce natural daylight into the school gym and corridors.

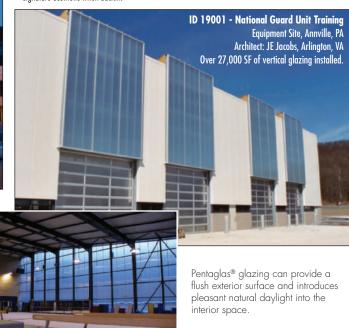




ID 22759 - JQH Arena, University of Missouri, Springfield, MO

Architect: Ellerbe Becket, Inc., Kansas City, MO

CPI designed and manufactured a flush look system with 22,000 SF of reflective gray translucent Quadwall® glazing. The glazing system blends seamlessly with the building envelope during the day and provides a signature aesthetic when backlit.







Architect: Lavelle Bresinger Architects, Manchester, NH
CPI provided 6,400 SF of Quadwall® LiteWall™ panelized in 6' modules.



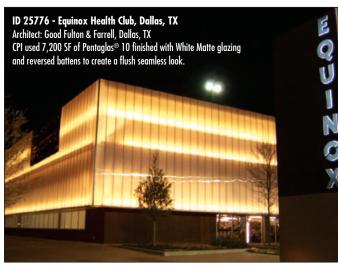


ID 27205 - Third & Pine Parking Garage, Seattle WA
Architect: Sienna Architecture, Portland, OR
CPI provided 24,000 SF of Pentaglas® 10 finished with Ice White Matte glazing to clad
an existing 8-story open parking garage. The glazing system and use of reversed battens
created an aesthetically pleasing flush look to compliment the heart of downtown Seattle.



ID 20272 - Ferris High School, Ferris, TX Architect: Rabe & Partners Architects, Austin, TX CPI provided 7,000 SF of panelized Quadwall® glazing system in 4' modules that were integrated with CPI's glass windows.





Retrofit Systems for Overglazing, Replacement and Reglazing

Exciting and Intelligent Systems to Bring CPI's Modern Technology to Yesterday's Buildings

Now there are simple and effective systems designed to replace or envelop dated or damaged daylighting systems. CPI retrofit systems can be used to:

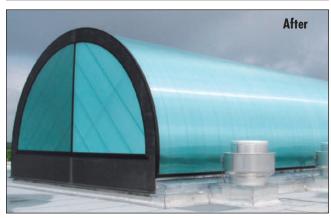
- Eliminate leakage in old skylighting systems.
- Improve insulation in older single-glazed daylighting systems.
- Significantly reduce air infiltration in old glazing systems.
- Reclaim light that has been lost due to aging fiberglass systems.
- Improve security in old vertical and sloped systems.

Overglaze - Enveloping Leaking Skylights or Vertical Glazing

Pentaglas® systems can be designed to envelop leaking acrylic or glass systems. The source of the leakage is removed from the elements by floating a new skin over the existing structure and glazing. The new light-transmitting skin creates a complete and permanent waterproof membrane, ensuring a leakproof seal and an affordable solution.

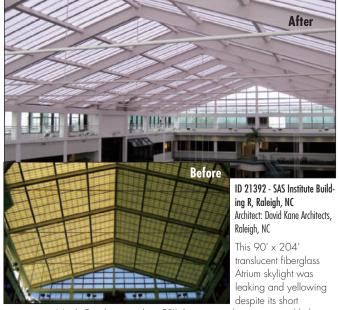






ID 14649 - University of Texas Pan AM, Edinburg, TX Architect: Architect Mida, McAllen, TX CPI used 34' long panels of dry-glazed Quadwall® system to replace an old deteriorated glazing system and eliminate previous horizontal joints causing leakage.

Replacement of Deteriorated Fiberglass Sandwich Panels After



existence in North Carolina weather. CPI's long-term solution improved light levels, quality of light and appearance by providing a 4" panelized Quadwall® system without horizontal transverse connections from the sill to the ridge.

Replacement of Deteriorated Glass Monitor Skylights



Replacement of Failed Vertical Glass Systems





ID 13242 - Prime Osborne Convention Ctr., Jacksonville, FL Architect: Manausa Lewis & Dodson Architects, Tallahassee, FL CPI replaced an old failed leaking glass skylight with a Quadwall® system and retrofitted the existing structure. Skinning the structure with one continuous panel system from the sill to the apex eliminated any transverse connections.

Replacement of Deteriorated Acrylic/Plastic Skylights

A retrofit bronze Pentaglas® glaze skylight measuring 20' x 113' was used by Meharry Medical College to replace a 20 year old skylight which was leaking and dark. The bronze Pentaglas®

provides significantly more light than the previous dark bronze acrylic panels and the watertight design prevents future leaks.





ID 3062 - Meharry Medical College, TN Moody & Noland LTD, Inc. Architects

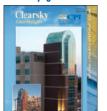


ID 9228 - Hazlewood East High School, St. Louis, MO CPI provided a solution to two clusters of leaking acrylic skylights by creating a heat-bent ridge skylight over one flat area of the skylight clusters and a single slope skin system over the other existing skylight clusters.





Clearsky Glass Skylights



Translucent Canopies & Walkway Covers



U-Lite™/Solarview LRV Solid Plastic Systems



LiteBrow™ Suspended Translucent Sun



Translucent Fire Rated



Class A Roof System



Find us on the web at: www.cpidaylighting.com

IntelaSun **Daylighting Systems**



Standard Products/ MegaSky & Fastrak



CPI
Daylighting
Programs —
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Test Data and Technical Summary

Since CPI Pentaglas® and Quadwall® systems provide great design flexibility, test data shall be interpreted in the final configuration. Please consult our Technical Service Department for clarification on your specific design requirements. Test reports are available upon request.

Thermal and Light Performance

The following data is for combinations shown. Many others are available. Light transmission, color tints, and insulation levels may be provided to achieve other desired values.

Pentaglas® 12mm/ 0.47" Panels "U" factor per NFRC 100 = 0.48 "U" per European Calc. = 0.32			Quadwall® 70mm/2.75" Panels "U" factor per NFRC 100 = 0.24 "U" per European Calc. = 0.17		
			Color	LT% ²	SC ₃
Clear	71%	0.80	Clear/Clear Matte	52%	0.48
Ice White	66%	0.75	Ice White/Clear Matte	44%	0.43
White	38%	0.48	Ice White/IW Matte	38%	0.40
Green	64%	0.78	Clear/White Matte	19%	0.21
Blue	60%	0.77	Ice White/White Matte	17%	0.20
Bronze	57%	0.74	White/White Matte	7%	0.16
Dk Reflective	20%	0.55	Green/IW Matte	37%	0.40
Gray			Refl Gray/Clear Matte	16%	0.18
Pentaglas® 16mm/ 0.63" Panels			Ice White/IW Matte*	20%	0.35
"U" factor per NFRC 100 = 0.38 "U" per European Calc. = 0.27			*Class A with batt insulation to "U" = 0.15		
Color	LT% ²	SC ³	(1)* Exterior - 0.40" thick panels over Interior 0.32" or 0.40" thick panels		
Clear	58%	0.62			
Ice White	47%	0.53	(2) IT per ASTM E972-88 (3) SC=Shading Coefficient per NFRC/ASTM Calorimeter Standard Data for some configurations are calculated based on te		
White	24%	0.37			
Green	41%	0.56			
Blue	41%	0.58			

This data provides a relative indication, for comparison purposes only, of the various glazing combinations. For Additional Thermal & Light Performance Data Visit WWW.CPIDAYLIGHTING.COM

Ask about CPI's New Low-E Glazing



Class "A" Burning Brand Test-Burning Brand (12" x 12" x 2 1/4" Lumber per ASTM E-108), placed on the surface of CPI Quadwall® Class "A" Panel.

No adverse burning effects, such as fire spread or burning droplets were noticed.







Test Description Test Procedure **Results & Comments** 1. Flammability Self-Ignition ASTM 1929-3 1000°F • Smoke Density of Plastic ASTM D-2843 54% • Burning Extent ASTM D-635 CC1 rating Interior Flame Spread ASTM E-84,UL 723 Class A rating is standard CAN/ULC, \$102.2-M88 Class B,C (I, II, III) is available and Smoke Development A special Quadwall® configuration is listed and labeled for Exterior Class "A" ASTM E-108, Class "A" rating by independent recognized laboratory‡ Roof Construction—Optional UL 790/UBC 32-7 Class "B" or "C" are available 2. Weathering 10 Yrs Actual Florida ASTM F330 & F695 No Failures - Weathered Panels Performed as new ASTM E1886 & E1996 **Exposure Evaluation** in all testing including impact and wind loading Weathering Evaluation ASTM D4364-84 Successful exposure to concentrated natural sunlight radiation of 56000 MJ/M² (1540MJ/M² of U.V.) at New River Site, Arizona • Color Change ASTM D2244 No more that 3.0 units Delta E after 60 months Yellowing Index **ASTM D1925** No more than 10 points after 60 months **ASTM D1003** Light Transmission Shall not decrease more than 6% after 10 years Heat Exposure Evaluation 300°F, 25 mins. The interior and exterior faces do not darken more than 0 units Delta (weathering effect - tendency L/ASTM D2244, 0 units yellowing index/ASTM D1925 and 0% for potential failure) light transmission/ ASTM D 1003 3. Water Penetration ASTM E-331 No penetration of dry glazed joint at test pressure of 12 psf 0.042 SCFM/ft. of dry glazed joint at test pressure of 12 psf 4. Air Infiltration ASTM E-283 5. Impact and Cyclic Loading ASTM E-1996-02 & ASTM E-1886-97 Successfully tested at missile level D and cyclic wind loading Panel repels hailstones of 1-3/16" at velocity 82'/sec. - No penetration ASTM E-822-81 SPI method B 6. Accelerated Delamination 300°F, 25 mins. & The faces do not become readily detached (Chapter 42 of UBC Code) sub-zero temp. No delamination occurs under load 7. "U" Factor ASTM C-236/NFRC 0.48 to 0.10 (as required)* per NFRC 100-91. 8. Shading Coefficient ASTM/ASHRAE/NFRC 0.10 to 0.85 (as required)* 0.0000375 in/in/°F 9. Expansion/Contraction Linear thermal expansion 10. Code Compliance ICC Evaluation See ICC Reports #ER-4798 and #94160A UBC/BOCA Various other local approvals available Approvals #FL6475, FL6599, FL6600, Dade County #05-1207.01 Florida Building Code 29 CFR 1910, 23 (e) (8) 11. OSHA Compliance 300 Lb. point load with no damage 12. Impact Loading ASTM E 695-03 Danpalon® complies with Quality Management Standard SI ISO 9002 13. Quality Standard SI ISO 9002 certificate #10700* 14. UV Protection Pentaglas® glazing provides extruded UV protection on both sides of the panel. Does not require periodic re-coating to maintain performance. Modular width is 600mm/23 11/16" (2' nominal). Length - up to 13400mm/44' in a single panel 15. Panel Sizes & Weights Weight - 0.5-1.5 lb./ft² dependent upon final configuration

*Refer to technical information available on the CPI web site: WWW.CPIDAYLIGHTING.COM and consult our technical service department. Whenever reference is made to fire tests, the numerical rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

Hurricane Endurance Designs — (U.S. patented)

Durable Pentaglas® special assemblies feature an innovative design that complies with the Florida Building Code for hurricane conditions including resistance of impact, cyclic winds, wind loads, and air/water infiltration. (Florida Approval # FL6475 and Dade County NOA #05-1207.01)

Warranty Danpalon® FR provides a 10-year limited warranty against loss of light, color change, and penetration by hail as defined in the individual warranties. Details of limited warranty available upon request.

CPI Daylighting, Inc. is engaged in continuing research to improve its products. Therefore, the right is reserved to modify or change material in this brochure without notice. This is descriptive literature and does not constitute warranties, expressed or implied. For statement of warranty, contact CPI Daylighting, Inc.





Dade County Acceptance #05-1207.01 See ICC Reports #ER-4798 & #94160A



Custom Quadwall® assemblies conform to U.S. Government approvals:

Forced Entry Resistance per SD-STD-01.01 DoD Anti terrorism force protection per UFC-4-010-01



28662 N. Ballard Drive Lake Forest, Illinois 60045 TEL (847) 816-1060 FAX (847) 816-0425

E-MAIL cpi@cpidaylighting.com WWW.CPIDAYLIGHTING.COM

CPI Representatives throughout the USA and internationally are ready to serve your daylighting needs. For immediate assistance from your local sales representative call **1-800-759-6985**.