

# DANPALON® GLAZING MATERIAL

Translucent and Opaque  
Microcell Panels with  
Standing Seam Connection



FACADE



CLADDING



SKYLIGHTS



OUTDOOR



SHADING



INTERIOR



# SUPERIOR LIGHT TRANSMISSION FOR CUTTING-EDGE ELEGANCE



## THE ARCHITECTURE OF LIGHT

**The sun: the best natural source of light and energy**

Danpalon® harnesses this inexhaustible source, providing exceptional quality of light. Danpalon's glazing material features Microcell panels which offer customers the best combination of translucency and strength, transmitting an even diffusion of natural light, with superior durability and impact resistance.

## The optimal solar and thermal balance

Danpalon® provides exceptional quality of light, a rich non-industrial visual appeal and delivers thermal insulation and UV protection. By filtering the amount of light depending on the different daytime hours - Danpalon® contributes to optimal efficiency and significant savings in energy costs.

Centre Hospitalier Sud Francilien, France  
Glazing: Danpalon® 16mm | Architect: Groupe-6 Architectes

# THE DANPALON® MICROCELL STRUCTURE: 10 TIMES MORE CELLS FOR EXTRA INSULATION, IMPACT AND WEATHER RESISTANCE

## EXCEPTIONAL DURABILITY AND THERMAL INSULATION

Danpalon® Microcell panels are manufactured with unique and innovative extrusion technology, providing ten times more cells than the majority of other sheets on the market. The smaller spans between the rib supports give customers the best combination of translucency and strength. Danpalon® Microcell panels are 100% leakproof, offering superior impact resistance and thermal insulation.

## SUPERIOR LIGHT DIFFUSION

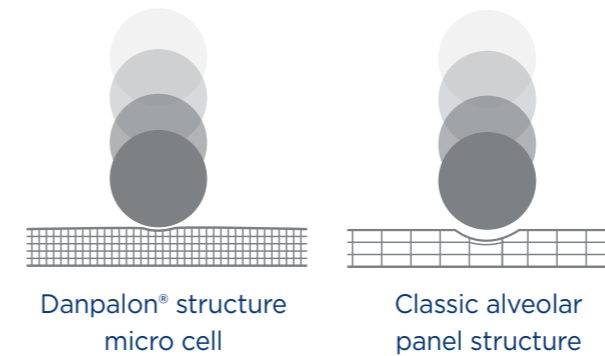
The Microcell structure transmits an even diffusion of natural light, producing a rich look. Specifically designed for architectural daylight applications, the tight spacing between the ribs produces a superior quality of light, offering unique iridescence - reflecting and dispersing light in a way unmatched by any other material. Danpalon® Microcell panels are available in a range of thicknesses and widths.

## SYSTEM BENEFITS

- 100% leakproof
- Free thermal movement
- Easy installation
- Superior impact resistance
- Exceptional thermal insulation
- Quality diffused daylight
- Cold bending of panels on site
- Reduced substructure
- Environmentally friendly product

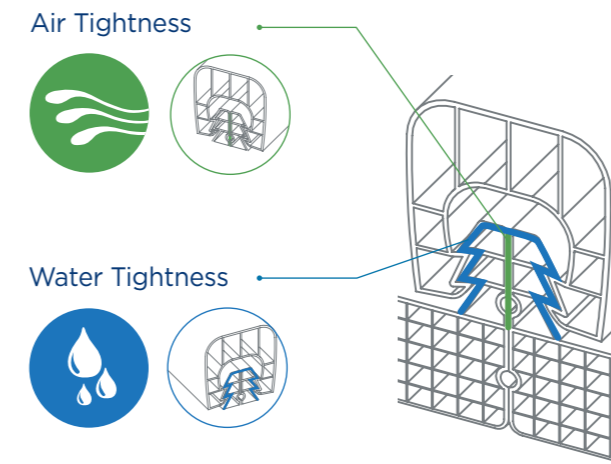
## HIGH THERMAL INSULATION

The Danpalon® Microcell design features more cells and layers, which gives the panel significantly lower thermal conductivity.



## HIGH IMPACT AND WEATHER RESISTANCE

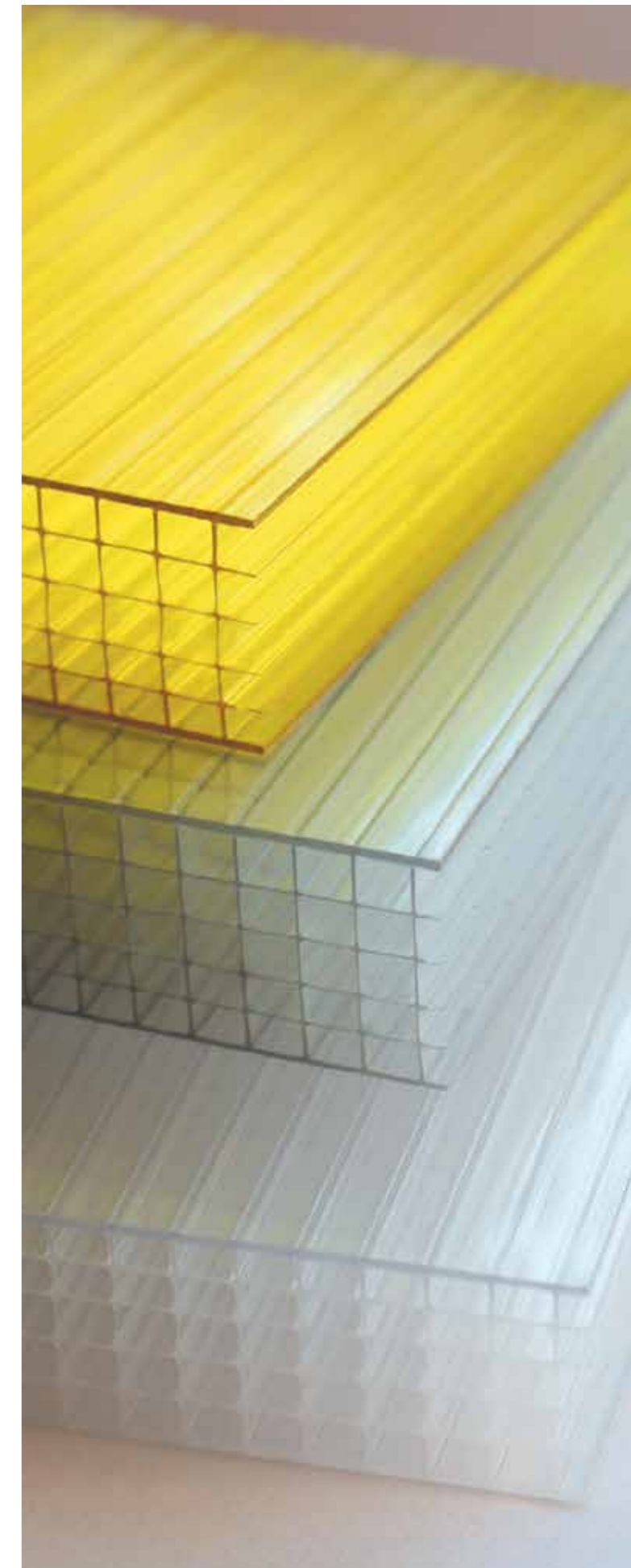
Due to the tightness between the vertical supports, Danpalon® Microcell offers the highest resistance to impact and hail damage. The high concentration of cells provides Danpalon® Microcell with improved mechanical properties and rigidity.



- Reinforced safety gauge
- Improved inertia for improved lightness
- The very best air and water tightness available



Gymnasium Posco, Korea | Danpal® Single Glazing, 16mm | Architect: Posco A&C



# DANPALON® 3DLITE

## BALANCE YOUR LIGHT

### Block direct heat and glare

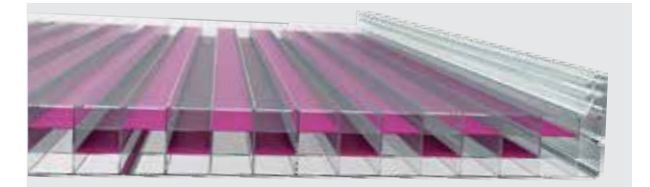
Optimizing natural light in buildings is an ongoing challenge. 3DLITE is an advanced, innovative product developed by Danpal®, enabling architects to design creatively while contributing to energy savings and increased lighting efficiency. 3DLITE contains alternating integrated shading louvres which selectively control the sunlight to penetrate evenly during the day while offering thermal insulation and a special dynamic look.

## 3DLITE STRUCTURE

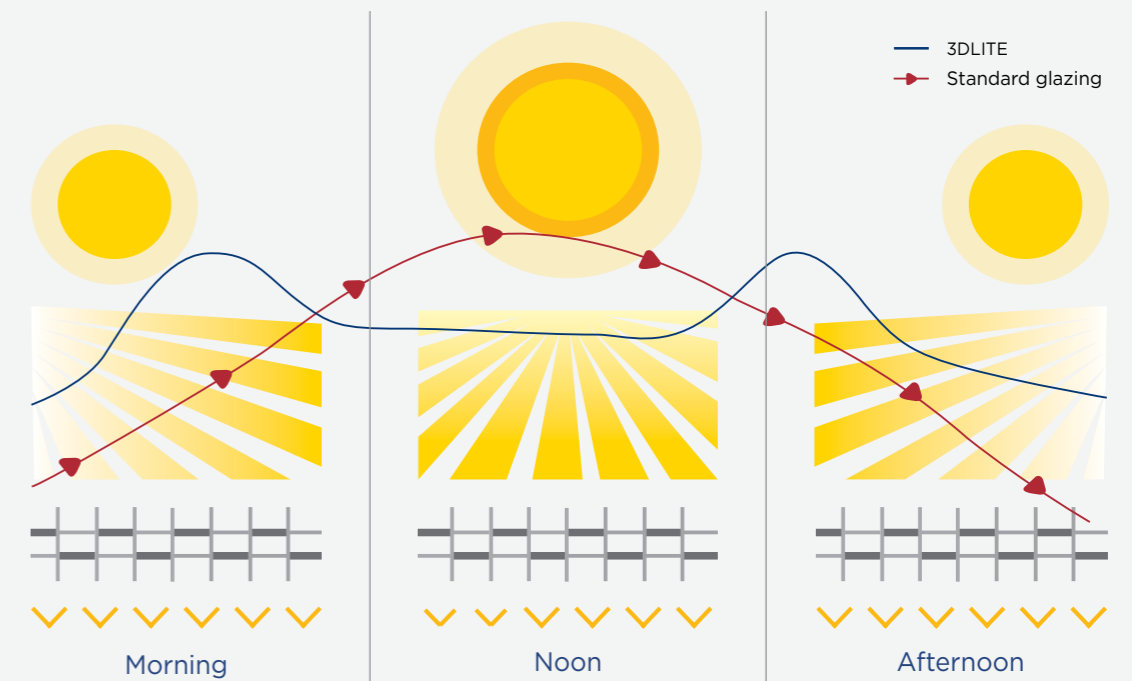
### Balancing daylight throughout the day

3DLITE presents a fixed, cost-effective solution for optimising daylight in office buildings, shopping malls, schools, libraries, stadiums, museums, and more. The alternating integral louvres are specially designed to balance the light throughout the day, reducing heat to the building and scattering the light.

3D LITE allows the sun's rays to penetrate through at higher levels during the morning and afternoon, while reducing heat in the middle of the day.



## LIGHT LEVELS DURING THE DAY



## BENEFITS

- Dynamic look
- Flexible solution for summer and winter
- Optimises daylight throughout the day
- Wide variety of colours
- Part of the Danpalon® System



# FINISHES

AT DANPAL®, WE OFFER A RANGE OF PANEL SURFACE FINISHES ACCORDING TO ENVIRONMENTAL CONDITIONS AND ARCHITECTURAL REQUIREMENTS

## SOFTLITE FOR VISUAL COMFORT

Softlite finishing greatly diminishes glare effects. Softlite is a 100% permanent matt finish applied by co-extrusion on Danpalon® panels of any thickness and colour. The Softlite finishing performance is independently validated to

ensure maximum visual comfort, regardless of the exposure and type of building.

- Reduce “neon” effect
- Increase light diffusion
- Increase feeling of comfort

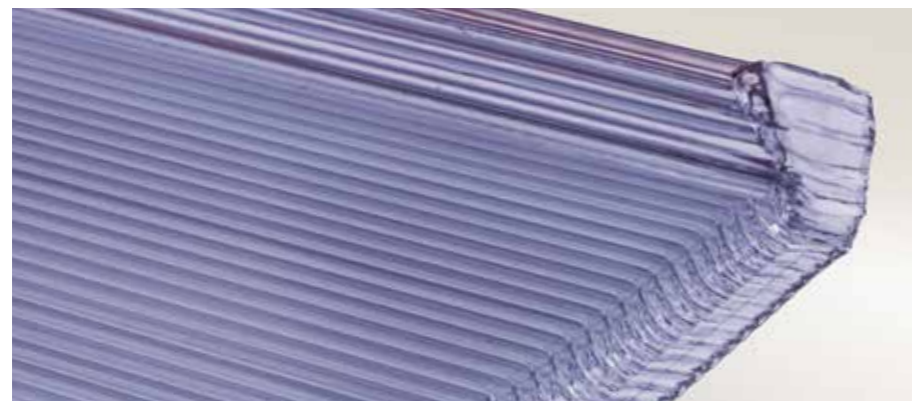
WITH SOFTLITE



WITHOUT SOFTLITE



## HEAT WELDED EDGES FOR PERFECT FINISHING



The welded edges provide a clean and effective solution that prevents water, dirt or insects from getting inside the microcells.

## HP - HIGH PROTECTION TREATMENT

Danpalon® HP is an advanced surface treatment that enables higher performance in areas of graffiti removal and protection against environmental pollution.

The Danpalon® HP surface treatment can be applied to most types of Danpalon® panels.



CHEMICAL DESCRIPTION	UNCOATED	COATED
Gasoline	L	L
Toluene	I	L
Acetone	I	L
5% Ammonia	M	L
10% Caustic Soda	M	L
50% Caustic Soda	S	M
GaffiGauard 2010 (Guard Industrie France)	M	L
GaffiGauard Decap Façade Guard (Guard Industrie France)	M	L
GaffiGauard 2030 (Guard Industrie France)	I	L

L - Long term contact      S - Short term contact  
M - Medium term contact      I - Immediate Attack

Medical Center, Joeuf, France | Danpalon® Clear, HP Finish, Architect: Mr Vincent



## THE DANPALON® HOT STAMP FOR FULL TRACEABILITY

Danpal® is unique in offering a stamp on the panel itself, with the panel details - enabling product traceability. The Danpal® hot stamp provides panel details for installation purposes and date of manufacture, enabling customers to easily see whether they are within their 10 year warranty period.

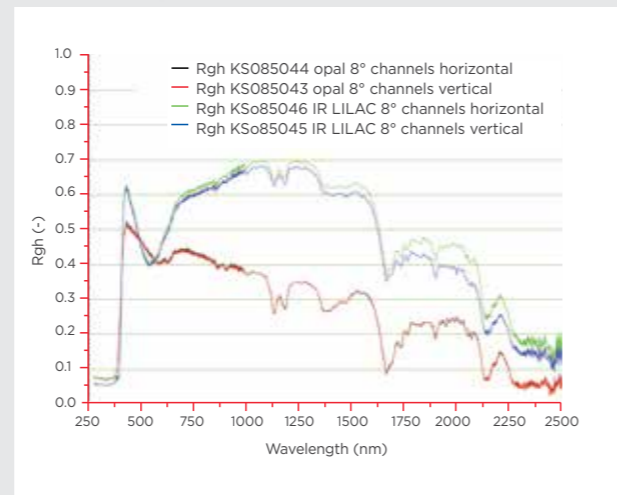
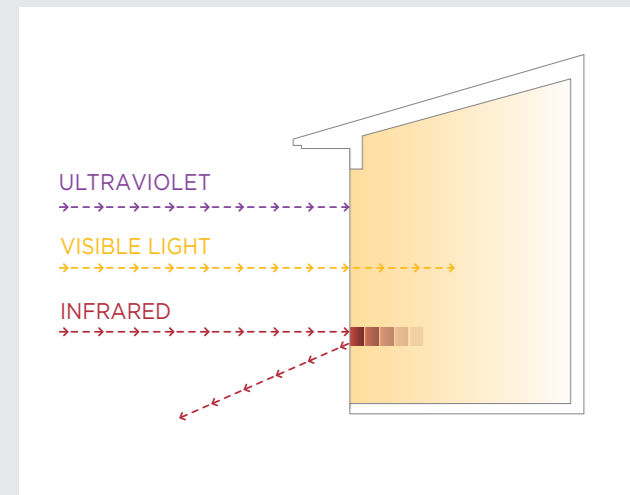
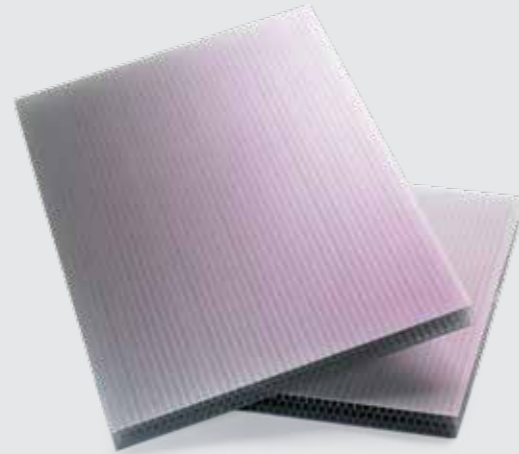


# COLOURS & TEXTURES

## LOW E

Infrared treatment is a co-extruded finish that can be applied in all panels. It can significantly limit solar heat gain without affecting light transmission levels.

It works by selectively blocking solar radiation that is part of the non visible range. This leads to a reduction in solar loads, enabling significant reductions in air conditioning costs and carbon emissions.



"PEARL LOWE" has improved IR reflectivity characteristics, compared to a similar panel without infrared treatment (as shown in the graph).

## OPAQUE AND TRANSLUCENT



For bright colours with a metallic, lacquered appearance, choose the opaque panels available in a wide range of tints. With Danpal's translucent range, the appearance of the building changes with the light and reflections projected onto the facade at different times of day.

## BICOLOUR FOR SPECIAL EFFECT

Our bicolour option enables you to perfectly adapt your facades to the effect you desire, both inside and outside. It is available in the colours of your choice for all Danpal® systems (subject to minimum quantities and lead times).



# DANPALON® TEXTURES



Nurcery School, France | Glazing: Danpalon® Printed, 16mm | Architect: Weber et Albrech



Oddo Nursery School, Marseille, France  
Glazing: Danpalon® Printed, 16mm  
Architect: Camille Richard Lenoble



Santoni School, La Garde, France  
Glazing: Danpalon® Printed, 16mm  
Architect: La Garde, Becker Sylvie

## UNLIMITED DESIGN OPTIONS AND STUNNING EFFECTS

As well as creatively playing with light in structures, with Danpalon® textures you can also play with different prints and designs.

Danpalon's textures and prints bring a wide array of design options for interior and exterior walls and ceilings. We provide high quality designs and stunning effects that are perfectly adapted and overlaid. This allows you to create any type of atmosphere or appearance, adding interest to structures and complementing the design.

**Add the beauty of texture to structures with Danpalon®.**



Secondary School P. Mendes, Arques, France  
Glazing: Danpalon® Printed | Architect: Soupey Toth Architecte



Exhibitions House, France | Glazing: Danpalon® Printed, 16mm | Architect: R+4 Architectes



Collège Bessou, Béziers  
Glazing: Danpalon® Printed, 16mm  
Architect: MPM Architectes



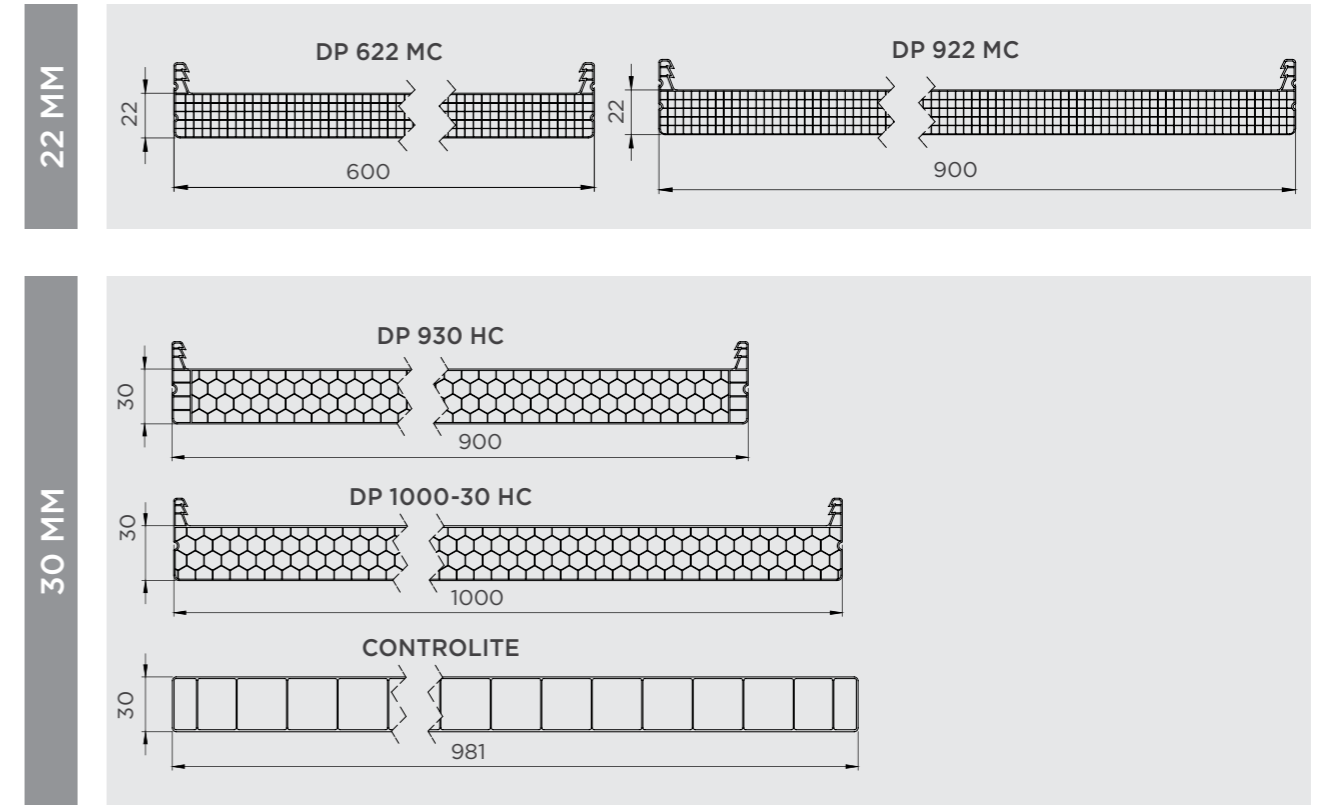
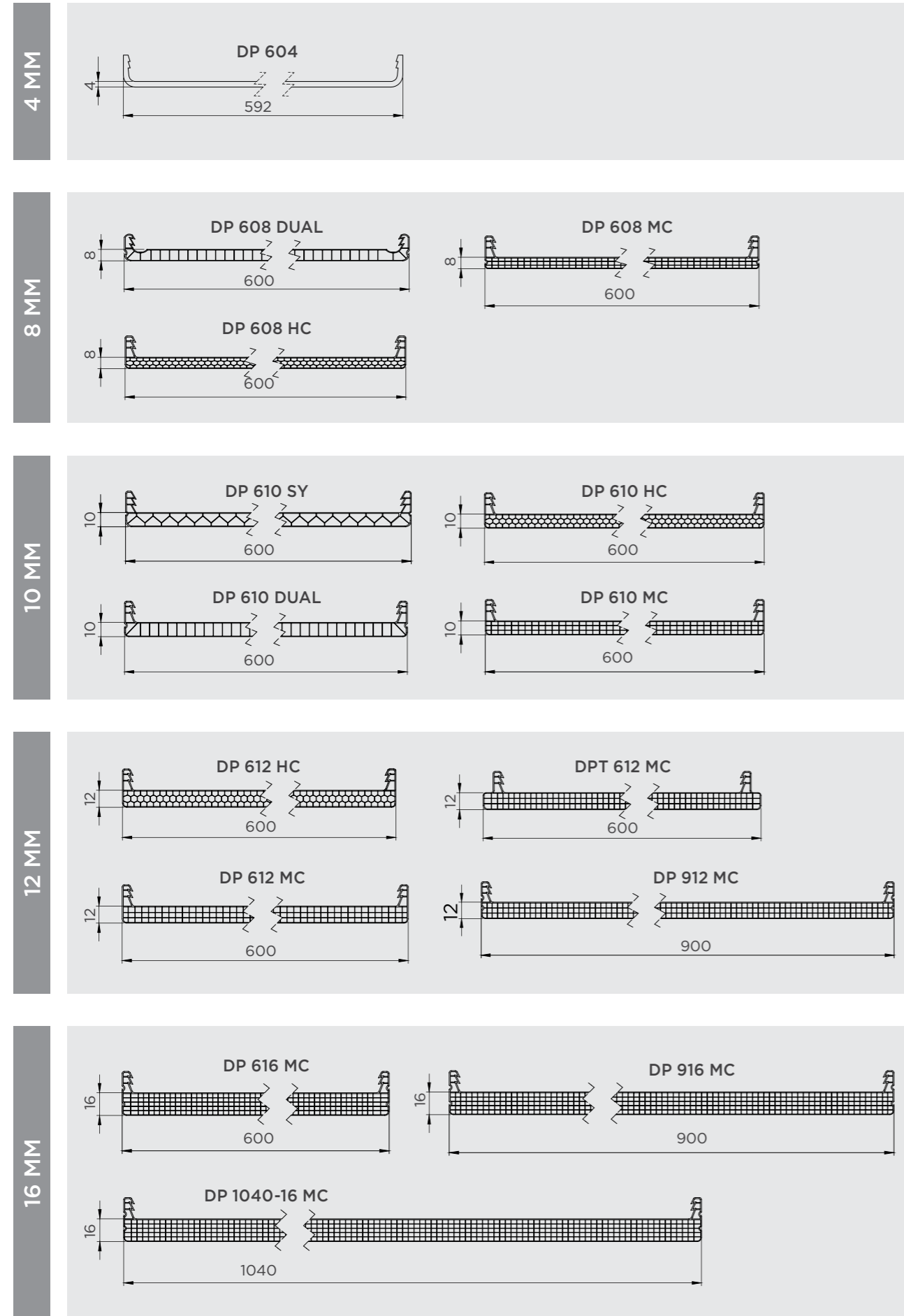
Liberty Creche, Le Petit Quevilly, France  
Glazing: Danpalon® Printed, 16mm  
Architect: Gérard Bourdon

# LET OUR COLOURS INSPIRE YOU





## PANELS



## TECHNICAL FEATURES

	DANPALON® 4mm	DANPALON® 8mm	DANPALON® 10mm	DANPALON® 12mm	DANPALON® 16mm	DANPALON® 22mm	DANPALON® 30mm	3DLITE
Number of walls		4	4	4	6	6	6	4
Structure	Solid 4mm	Multicell/ Honeycombe	Multicell/ Honeycombe	Multicell/ Honeycombe	Multicell	Multicell	Honeycombe	Multicell
Width (mm)	600	600	600	600 900	600 900 1040	600 900	900	600
U <sub>g</sub> (W/m².K) CSTB calculated values	5.2	3	2.6	2.4	1.9	1.5	1.4	1.76
Reaction to fire	B-s1,d0							B-s2,d0
Span between support		Up to 1.60m	Up to 2m	Up to 2m	Up to 2.5m	Up to 2.8m	Up to 3.2m	Up to 2m
Minimum slope specific test		5° (or 9%)						5° (or 9%)
Minimum radius for cold bending	3.2m	2.5m	2.7m	2.8	3.1m	3.5m	4m	5.0m
Manufactured according to certification	ISO 9001 ISO 14001							
Ten-year warranty	Yes							
Impact and shock resistance	SOFT AND HARD BODY IMPACT D1-10J - M50,300J - M50,400J							
Technical Book	Specialised reviews to EN standards throughout by SOCOTEC / CSTB Technical Assessment Department of cladding and roofing / Annual monitoring of the production factory by CSTB							

The values in this table are subject to change over time. Please contact Danpal® for more information [www.danpalon.com](http://www.danpalon.com).

Danpalon® panels are designed with multiple dimensions and cell structures, in order to offer solutions that match your requirements

## OPTICAL AND THERMAL PROPERTIES

		Compact 4mm	Multicell/Honycombe 8mm	Multicell/Honycombe 10mm	Multicell/Honycombe 12mm	Multicell 16/22mm	Honycombe 30mm
REF. GREY	LT %	20	20	20	20	20	20
	ST %	18	18	18	18	17	17
	SR %	33	33	33	33	29	27
	SHGC	0.28	0.28	0.28	0.28	0.28	0.28
BRONZE	LT%	38	25	25	25	35	30
	ST%	41	26	26	26	35	29
	SR%	12	18	18	18	30	19
	SHGC	0.50	0.37	0.37	0.37	0.42	0.39
GREY	LT %	41	30	30	30	31	On Request
	ST %	51	35	35	35	38	
	SR %	12	22	22	22	30	
	SHGC	0.58	0.44	0.44	0.44	0.44	
OPAL	LT %	40	35	35	35	22	32
	ST %	44	38	38	38	28	38
	SR %	35	40	40	40	51	40
	SHGC	0.48	0.42	0.42	0.42	0.32	0.42
GREEN	LT %	75	60	60	60	44	60
	ST %	69	52	52	52	42	49
	SR %	17	32	32	32	33	30
	SHGC	0.72	0.55	0.55	0.55	0.47	0.53
ICE	LT %	55	60	60	60	51	On Request
	ST %	58	54	54	54	50	
	SR %	26	32	32	32	38	
	SHGC	0.61	0.57	0.57	0.57	0.52	
BLUE	LT %	64	50	50	50	49	50
	ST %	69	57	57	57	51	53
	SR %	17	27	27	27	38	32
	SHGC	0.72	0.60	0.60	0.60	0.53	0.56
CLEAR	LT %	89	71	71	71	63	68
	ST %	80	60	60	60	51	58
	SR %	17	36	36	36	40	34
	SHGC	0.81	0.61	0.61	0.61	0.53	0.73

### LEGEND

LT - % of visible light transmission (400 - 700nm)

ST - % of total solar radiation transmission (300 - 2800nm)

SR - % of total solar reflection (300-2800nm)

SHGC - Solar Heat Gain Coefficient. Total solar energy transmitted through the panel = %ST+0.2x[1-(%st+%sr)].

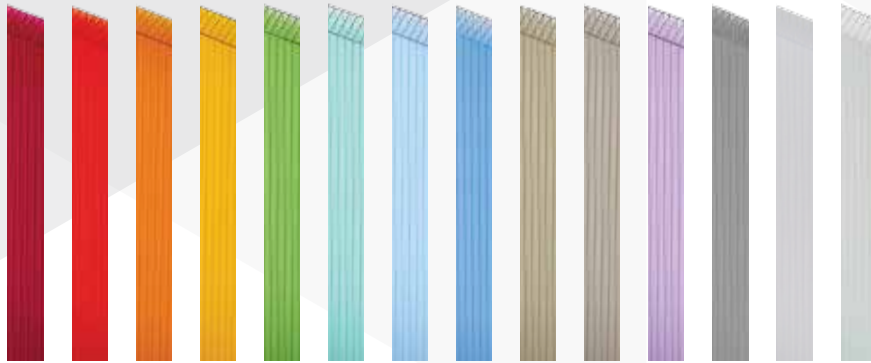
Tests were performed in accordance with ASHRAE 74-1988 procedures. Figures are indicative and may change within manufacturers' production tolerances.

## TEST DATA AND TECHNICAL SUMMARY

Test Description	Test Procedure	Results & Note
<b>1. Flammability</b> The data partially relates to flame retardant grades. European standards: <ul style="list-style-type: none"> <li>• Self - Ignition</li> <li>• Smoke Density of Plastic</li> <li>• Burning Extent</li> <li>• Interior Flame Spread and Smoke Development</li> </ul>	EN 13501 - 1:2002 ASTM 1929-3  ASTM D-2843 ASTM D-635 ASTM E-84.	B - S1, d0 1058°F (570°C)  54% CC1 rating - less than 1.0" burn extent Several ratings are available: Class B or C (I, II, III)
<b>2. Weathering</b> <ul style="list-style-type: none"> <li>• Weathering Evaluation</li> <li>• 110mo Florida Weathering Evaluation</li> <li>• Colour Change</li> <li>• Yellowing Index</li> <li>• Light Transmission</li> <li>• Heat Exposure Evaluation</li> </ul>	ASTM D4364-84  ASTM D2244 ASTM D1925 ASTM D1003 300°F, 25mins.	Successful exposure to concentrated natural sunlight radiation of 56000 MJ/M2(1540MJ/M2 of U.V.) at New River Site, Arizona  Impact, Cyclic wind loading shall not decrease after 110 months of exposure to Florida weather  No more that 3.0 units Delta E after 60 months  No more than 10 points after 60 months  Will not decrease more than 6% after 10 years  The interior and exterior faces do not darken more than 0 units Delta L /ASTM D2244, 0 units yellowing index/ASTM D1925 and 0% light transmission / ASTM D 1003
<b>3. Water Penetration</b>	ASTM E-331	No penetration at test or pressure of 15 psf
<b>4. Air Infiltration</b>	ASTM E-283	0.042 SCFM/ft. of dry glazed joint at test pressure of 15 psf
<b>5. Impact</b> <ul style="list-style-type: none"> <li>• Sandbag impact test</li> <li>• OSHA Compliance - Point Load</li> <li>• OSHA Compliance - Fall protection / Walk through</li> </ul>	ASTM E-822-81 AS/NZS 4040.4-1996 SPI (Method B) PA 201-94 29 CFR 1910.23 (e) (8) ASTM E 695-03	Panel repels hailstones of 25mm at velocity 21m/sec - no penetration  Pass  220ft. lbs. Successfully tested per S. Florida hurricane large missile cannon test at 350 Ft Lbs 300 lb. Point load with no damage 500 Ft. Lbs
<b>6. Accelerated Delamination</b> <ul style="list-style-type: none"> <li>• (Chaoter 42 of UBC Code]</li> </ul>	300°F, 25mins & sub - zero temp.	The faces do not become readily detached No delamination occurs under load
<b>7. Vicat Softening Temperature</b>	DIN 53460 Iso 306 VST/B	142°C
<b>8. Long Service Temperature</b>		-40°C to 120°C
<b>9. Expansion / Contraction</b>	Linear thermal expansion	0.065mm/m°C
<b>10. Code Compliance (USA)</b>	ICBD Evaluation UBC/BDCA/SBCCI	See ICBD Report#ER-4798; SBCCI - PSI & ESI# Report #9373 Dade County #93-0329.05. Several other approvals available
<b>11. U.V. Protection</b>	Occasional cleaning with mild soap	
<b>12. U.V. Filtration</b>	Australian Standard No.1067-1990	Transmission Less Than 0.1%
<b>13. ISO Quality Standard</b>	SI ISO 9001	Danpalon® complies with Quality Management Standard SI ISO 9001

\*Refer to technical information 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.

## COLOUR YOUR ATMOSPHERE WITH THE DANPAL® PALETTE



### ABOUT THE COMPANY

#### Innovative light architecture systems for building envelopes

Danpal® are creators of exceptional light-transmitting architectural systems for building envelopes, providing optimal solar and thermal comfort.

For over 30 years, our innovative systems have helped architects to transform light (both natural and artificial) into a powerful and versatile tool, for architectural creations that are internally and externally radiant.

An industry visionary, Danpal® are originators of the Danpalon® translucent panel standing seam system - a light architecture solution used around the world in commercial, education, transport, health, sports and high-tech projects.

Today, the company offers complete systems - providing total solutions for the building envelope. Danpal® designs, manufactures and distributes an unmatched range of daylighting systems for all types of building requirements - from facades, cladding, roofs, skylights, shading, to interior and outdoor applications.

Danpal® systems are built around innovative technologies, deep architectural know-how and the ever evolving needs of our clients. Operating in five continents, Danpal® inspires architectural creativity with its rainbow of light architecture solutions.

#### Danpalon® Glazing Material is an integral part of Danpal's range of systems - giving you a complete solution



FACADES



CLADDING



SKYLIGHTS



OUTDOOR



SHADING



INTERIOR

[www.danpal.com](http://www.danpal.com)

**Danpal®**  
Light Architecture