



glass

for International Markets
PPG Architectural Glass Performance

glass

Simply forged from basic ingredients such as silica sand, soda-ash and limestone, glass is a critical asset to architecture in any place and in any time. Our love for glass is not new; historically, we have always desired the light and transparency it offers. Today's glass can provide designers with even more reasons to love it. High performance low-e coatings mitigate the solar energy to reduce cooling loads and increase the comfort of the inhabitants. A varying palette of aesthetics, transparencies and reflectivities offer the designer more ways for the structure to interact with its environment.

For more than 130 years, PPG Industries has been a world-leader in manufacturing this multifaceted building product. PPG is headquartered in Pittsburgh, Pennsylvania (USA) and has more than 500 active patents for glass. The technological advancement of float glass is a legacy that continues in our glass formulation, engineering and design of new coatings and substrates. All over the world PPG glasses are transforming the landscape and improving the residents' indoor environment. Take a look at PPG glass.



ABOUT THE COVER:
THE SANDCRAWLER – LUCASFILM CAMPUS

Location: Fusionopolis, Singapore

Product: Solarban® 72 Starphire® glass

ICF: AVIC Sanxin

Architect: Aedas

Curtainwall: Permasteelisa

LEGARIA CORPORATE CENTER – PHASE 1

Location: Mexico City, Mexico

Product: *Solarban R100* on *Optiblu*® glass

ICF: Lindes (formerly Vidrios Marte)

Architect: ZVA Arquitectos

Curtainwall: HEG





(Left)

URBAN PLAZA TOWER

Location: Quito, Ecuador

Product: *Solarcool® Solargray®* glass

Fabricator: Fairis C.A.

Architect: Christian Wiese – Uribe & Schwarzkopf

Curtainwall: Faiquito Sistemas Integrales Con Vidrio S.A.



BUSAN BANK HEADQUARTERS

Location: Busan, Korea

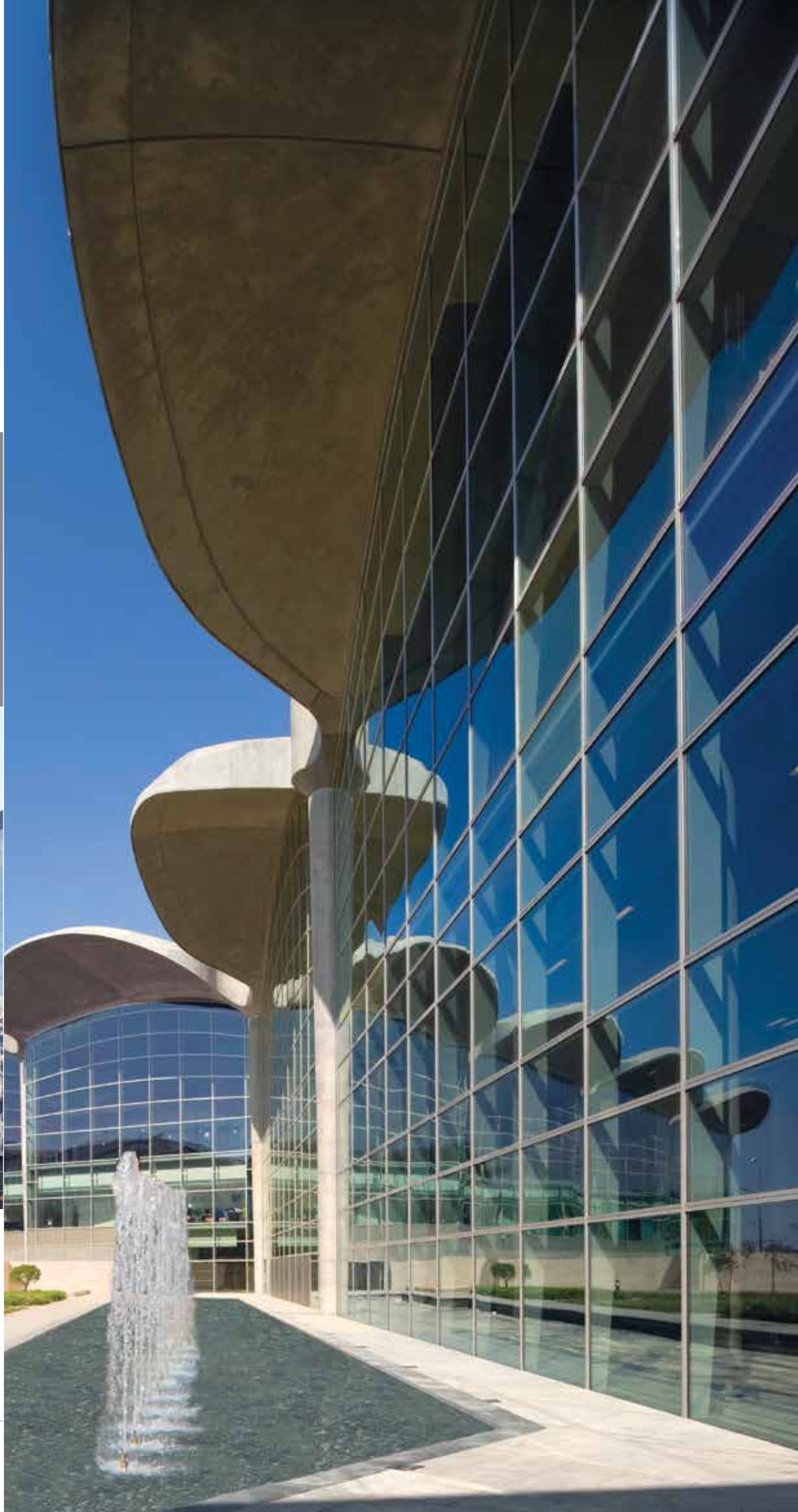
Products: *Solarban R100 on Pacifica®, Solarban 70XL on Pacifica and Solarban 70XL on clear glasses*

ICF: Jasan Glass

Architect: Ilshin Architecture and Engineering

(Right)
QUEEN ALIA
INTERNATIONAL AIRPORT
Location: Amman, Jordan
Product: *Solarban 70XL* glass
ICF: AVIC Sanxin
Architect: Foster + Partners
Curtainwall: Yuanda

(Below)
CAPITAL REFORMA
Location: Mexico City, Mexico
Product: *Solarban 60* on
Solargray glass
ICF: Millet
Architect: GICSA
Curtainwall: Grupo Aluvisa





(Left)

**KOMPLEKS KERJA RAYA 2
(KKR 2) TOWER**

Location: Kuala Lumpur, Malaysia

Product: *Solarban z50* glass

ICF: Ajiya Safety Glass

Architect: GDP Architects

(Below)

BEAUMONDE TOWERS

Location: Mumbai, India

Product: *Azuria*® glass

ICF: FG Glass

Architect: P & T Consultants

Curtainwall: Permasteelisa



ICHILOV HOSPITAL

Location: Tel Aviv, Israel

Product: *Solarban 70XL*
and *Solarban z50* glasses

ICF: Yildiz Cam

Architect: Ran Zis Arch

Curtainwall: Alumayer



INTERDISCIPLINARY SCIENCES BUILDING

Location: University of South Florida, Tampa, USA

Products: *Solarban 70XL* on *Solexia*®,
and *Optiblue* glasses

ICF: Tecnoglass

Architect: HOK

Curtainwall: West Tampa Glass

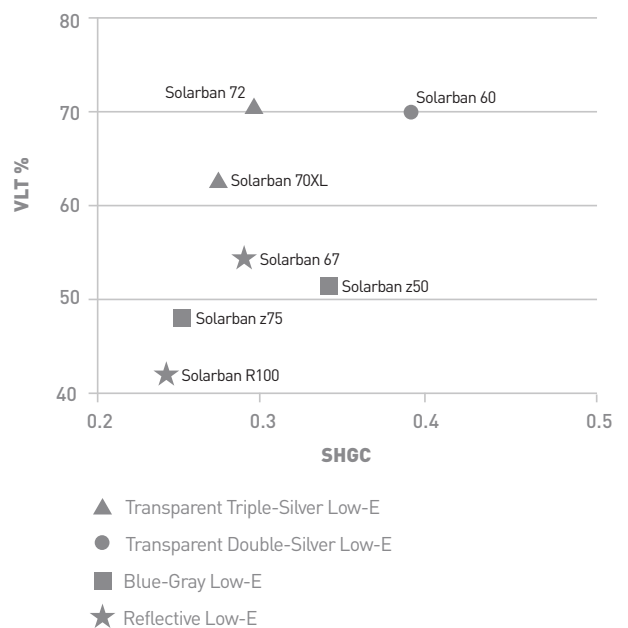


(Above)
**CLEVELAND CLINIC
 ABU DHABI**
 Location: Abu Dhabi, UAE
 Products: *Solarban 70XL* and
Solarban 60 on clear glasses
 ICFs: White Aluminium and AVIC Sanxin
 Architect: HDR and AEDAS
 Curtainwall: Yuanda and MERO

(Below)
**GLASS HALL at LEIPZIGER
 MESSE**
 Location: Leipzig, Germany
 Product: *Starphire* glass
 Architect: von Gerkan,
 Marg & Partners and Ian Ritchie



Solarban® Glass Comparison



PPG Glass Unit Comparisons 6mm + 12mm Air Gap + 6mm

Performance for Insulated Glass Units of 6mm Outer Lite + 12mm Airspace + 6mm Inner Lite												
	UV%	Visible Light		Solar Energy					U-Values W/m²*°K			LSG
		Trans%	Refl/Int	Refl%	Trans%	SF		Win-NFRC air/argon	Sum-NFRC air/argon	EN673 air/argon		
						EN410	SHGC				SC	
SOLARBAN® 72 Triple Silver Low Iron Low-e Glass												
SOLARBAN 72 [2] STARPHIRE® + STARPHIRE	9	71	13/13	53	28	0.34	0.30	0.34	1.63/1.34	1.57/1.23	1.6/1.2	2.37
SOLARBAN® 70XL Triple Silver Neutral Low-e Glasses												
SOLARBAN 70XL [2] + Clear	6	64	12/13	52	25	0.31	0.27	0.32	1.62/1.34	1.56/1.23	1.5/1.2	2.33
SOLARBAN 70XL [2] AZURIA® + Clear	5	52	9/12	7	18	0.27	0.25	0.29	1.62/1.34	1.56/1.23	1.5/1.2	2.06
SOLARBAN 70XL [2] ATLANTICA® + Clear	2	51	9/12	8	17	0.26	0.24	0.28	1.62/1.34	1.56/1.23	1.5/1.2	2.09
SOLARBAN 70XL [2] SOLEXIA® + Clear	4	58	10/13	13	21	0.29	0.27	0.31	1.62/1.34	1.56/1.23	1.5/1.2	2.14
SOLARBAN 70XL [2] PACIFICA® + Clear	2	32	6/12	7	12	0.20	0.20	0.23	1.62/1.34	1.56/1.23	1.5/1.2	1.64
SOLARBAN 70XL [2] SOLARBLUE® + Clear	4	42	8/12	15	17	0.25	0.23	0.26	1.62/1.34	1.56/1.23	1.5/1.2	1.84
SOLARBAN 70XL [2] SOLARBRONZE® + Clear	3	40	7/12	19	15	0.23	0.22	0.25	1.62/1.34	1.56/1.23	1.5/1.2	1.85
SOLARBAN 70XL [2] OPTIGRAY® + Clear	4	47	8/12	18	18	0.27	0.24	0.28	1.62/1.34	1.56/1.23	1.5/1.2	1.96
SOLARBAN 70XL [2] SOLARGRAY® + Clear	3	34	6/12	15	13	0.21	0.20	0.23	1.62/1.34	1.56/1.23	1.5/1.2	1.68
SOLARBAN® z75 Triple Silver Blue-Gray Low-e Glass												
SOLARBAN z75 [2] + Clear	6	48	9/12	29	19	0.27	0.24	0.28	1.62/1.34	1.56/1.23	1.5/1.2	1.98
SOLARBAN® R100 Triple Silver Reflective Low-e Glasses												
SOLARBAN R100 [2] Clear + Clear	12	42	32/14	41	19	0.25	0.23	0.27	1.66/1.38	1.61/1.29	1.6/1.3	1.78
SOLARBAN R100 [2] STARPHIRE + STARPHIRE	16	44	33/14	57	21	0.26	0.24	0.27	1.66/1.38	1.61/1.29	1.6/1.3	1.86
SOLARBAN R100 [2] AZURIA + Clear	8	32	21/13	11	12	0.21	0.20	0.23	1.66/1.38	1.61/1.29	1.6/1.3	1.63
SOLARBAN R100 [2] ATLANTICA + Clear	3	32	20/13	11	12	0.20	0.19	0.22	1.66/1.38	1.61/1.29	1.6/1.3	1.64
SOLARBAN R100 [2] SOLEXIA + Clear	6	36	25/13	17	15	0.22	0.21	0.25	1.66/1.38	1.61/1.29	1.6/1.3	1.69
SOLARBAN R100 [2] OPTIBLUE® + Clear	8	30	19/13	31	14	0.21	0.20	0.23	1.66/1.38	1.61/1.29	1.6/1.3	1.48
SOLARBAN R100 [2] PACIFICA + Clear	3	20	11/13	9	9	0.17	0.16	0.19	1.66/1.38	1.61/1.29	1.6/1.3	1.21
SOLARBAN R100 [2] SOLARBLUE + Clear	6	26	15/13	17	12	0.20	0.19	0.22	1.66/1.38	1.61/1.29	1.6/1.3	1.38
SOLARBAN R100 [2] SOLARBRONZE + Clear	5	25	15/13	20	11	0.19	0.18	0.21	1.66/1.38	1.61/1.29	1.6/1.3	1.36
SOLARBAN R100 [2] OPTIGRAY + Clear	6	29	18/13	20	13	0.21	0.20	0.23	1.66/1.38	1.61/1.29	1.6/1.3	1.48
SOLARBAN R100 [2] SOLARGRAY + Clear	5	21	12/13	16	10	0.17	0.17	0.20	1.66/1.38	1.61/1.29	1.6/1.3	1.21
SOLARBAN® 67 Double Silver Subtly Reflective Low-e Glasses												
SOLARBAN 67 [2] Clear + Clear	11	54	19/16	34	24	0.32	0.29	0.34	1.66/1.38	1.60/1.29	1.6/1.3	1.84
SOLARBAN 67 [2] STARPHIRE + STARPHIRE	15	57	20/16	49	28	0.33	0.30	0.35	1.66/1.38	1.60/1.29	1.6/1.3	1.89
SOLARBAN 67 [2] AZURIA + Clear	8	42	13/16	9	16	0.24	0.23	0.26	1.66/1.38	1.60/1.29	1.6/1.3	1.81
SOLARBAN 67 [2] ATLANTICA + Clear	3	41	13/16	9	15	0.23	0.23	0.26	1.66/1.38	1.60/1.29	1.6/1.3	1.81
SOLARBAN 67 [2] SOLEXIA + Clear	6	47	16/16	13	19	0.27	0.26	0.29	1.66/1.38	1.60/1.29	1.6/1.3	1.83
SOLARBAN 67 [2] OPTIBLUE + Clear	8	39	12/15	27	19	0.26	0.25	0.28	1.66/1.38	1.60/1.29	1.6/1.3	1.57
SOLARBAN 67 [2] PACIFICA + Clear	3	26	8/15	8	11	0.19	0.19	0.22	1.66/1.38	1.60/1.29	1.6/1.3	1.37
SOLARBAN 67 [2] SOLARBLUE + Clear	6	34	10/15	15	16	0.24	0.23	0.26	1.66/1.38	1.60/1.29	1.6/1.3	1.50
SOLARBAN 67 [2] SOLARBRONZE + Clear	5	32	10/15	18	15	0.22	0.22	0.25	1.66/1.38	1.60/1.29	1.6/1.3	1.48
SOLARBAN 67 [2] OPTIGRAY + Clear	6	38	12/15	17	17	0.26	0.24	0.27	1.66/1.38	1.60/1.29	1.6/1.3	1.60
SOLARBAN 67 [2] SOLARGRAY + Clear	5	27	8/15	14	13	0.20	0.20	0.23	1.66/1.38	1.60/1.29	1.6/1.3	1.34
SOLARBAN® z50 Double Silver Blue-Gray Low-e Glass												
SOLARBAN z50 [2] + Clear	14	51	8/11	23	26	0.35	0.33	0.37	1.66/1.38	1.60/1.29	1.6/1.3	1.56
SOLARBAN® 60 Double Silver Neutral Low-e Glasses												
SOLARBAN 60 [2] Clear + Clear	18	70	11/12	28	34	0.42	0.39	0.45	1.66/1.38	1.60/1.29	1.6/1.3	1.80
SOLARBAN 60 [2] STARPHIRE + STARPHIRE	24	74	11/12	41	39	0.45	0.41	0.48	1.66/1.38	1.60/1.29	1.6/1.3	1.80
SOLARBAN 60 [2] AZURIA + Clear	13	54	8/11	6	21	0.30	0.28	0.32	1.66/1.38	1.60/1.29	1.6/1.3	1.94
SOLARBAN 60 [2] ATLANTICA + Clear	5	53	8/11	7	20	0.29	0.28	0.32	1.66/1.38	1.60/1.29	1.6/1.3	1.94
SOLARBAN 60 [2] SOLEXIA + Clear	10	61	9/12	10	25	0.34	0.32	0.37	1.66/1.38	1.60/1.29	1.6/1.3	1.90
SOLARBAN 60 [2] PACIFICA + Clear	5	34	6/10	6	15	0.23	0.23	0.26	1.66/1.38	1.60/1.29	1.6/1.3	1.49
SOLARBAN 60 [2] SOLARBLUE + Clear	10	45	7/11	12	21	0.30	0.29	0.33	1.66/1.38	1.60/1.29	1.6/1.3	1.56
SOLARBAN 60 [2] SOLARBRONZE + Clear	8	42	7/11	15	21	0.29	0.28	0.32	1.66/1.38	1.60/1.29	1.6/1.3	1.51
SOLARBAN 60 [2] OPTIGRAY + Clear	10	50	8/11	14	23	0.33	0.30	0.35	1.66/1.38	1.60/1.29	1.6/1.3	1.64
SOLARBAN 60 [2] SOLARGRAY + Clear	8	35	6/10	12	18	0.26	0.25	0.29	1.66/1.38	1.60/1.29	1.6/1.3	1.40
VISTACOOl® Subtly Reflective Tinted Glasses												
VISTACOOl [2] AZURIA + Clear	29	47	21/32	11	22	0.34	0.34	0.39	2.70/2.54	2.84/2.71	2.8/2.7	1.39
VISTACOOl [2] AZURIA + SOLARBAN 60 [3] Clear	11	42	20/24	11	16	0.26	0.26	0.30	1.66/1.38	1.60/1.29	1.6/1.3	1.60
VISTACOOl [2] AZURIA + SOLARBAN 70XL [3] Clear	4	38	21/23	12	14	0.26	0.24	0.28	1.62/1.34	1.56/1.23	1.5/1.2	1.59
VISTACOOl [2] PACIFICA + Clear	10	29	11/31	7	19	0.31	0.32	0.37	2.70/2.54	2.85/2.71	2.8/2.7	0.92
VISTACOOl [2] PACIFICA + SOLARBAN 60 [3] Clear	4	26	11/23	9	12	0.21	0.22	0.25	1.66/1.38	1.60/1.29	1.6/1.3	1.20
VISTACOOl [2] PACIFICA + SOLARBAN 70XL [3] Clear	1	24	11/22	9	9	0.20	0.19	0.22	1.62/1.34	1.56/1.23	1.5/1.2	1.22
Uncoated Glasses												
STARPHIRE + STARPHIRE	77	84	15/15	14	80	0.82	0.82	0.94	2.70/2.55	2.85/2.72	2.8/2.7	1.02
Clear + Clear	50	79	15/15	12	61	0.71	0.70	0.81	2.70/2.55	2.85/2.72	2.8/2.7	1.13
AZURIA + Clear	34	61	11/14	7	28	0.41	0.39	0.45	2.70/2.55	2.85/2.72	2.8/2.7	1.55
ATLANTICA + Clear	13	60	11/14	6	29	0.41	0.41	0.47	2.70/2.55	2.85/2.72	2.8/2.7	1.48
SOLEXIA + Clear	25	69	13/13	8	39	0.50	0.50	0.57	2.70/2.55	2.85/2.72	2.8/2.7	1.38
OPTIBLUE + Clear	36	57	10/13	9	50	0.62	0.61	0.70	2.70/2.55	2.85/2.72	2.8/2.7	0.94
PACIFICA + Clear	12	38	7/13	6	23	0.35	0.36	0.41	2.70/2.55	2.85/2.72	2.8/2.7	1.06
SOLARBLUE + Clear	25	50	9/13	7	37	0.49	0.49	0.56	2.70/2.55	2.85/2.72	2.8/2.7	1.02
SOLARBRONZE + Clear	21	47	8/13	7	39	0.49	0.51	0.59	2.70/2.55	2.85/2.72	2.8/2.7	0.93
OPTIGRAY + Clear	27	56	10/13	8	41	0.53	0.52	0.60	2.70/2.55	2.85/2.72	2.8/2.7	1.07
SOLARGRAY + Clear	20	40	7/13	7	33	0.44	0.46	0.53	2.70/2.55	2.85/2.72	2.8/2.7	0.87
GRAYLITE II + Clear	2	8	4/12	4	7	0.19	0.22	0.25	2.70/2.55	2.85/2.72	2.8/2.7	0.36

PPG Glass Unit Comparisons 8mm + 12mm Air Gap + 8mm

Performance for Insulated Glass Units of 8mm Outer Lite + 12mm Airspace + 8mm Inner Lite													
	UV%	Visible Light		Solar Energy					U-Values W/m ² *°K			LSG	
		Trans%	Ext/Int	Refl%	Trans%	EN410	SHGC	SC	Win-NFRC air/argon	Sum-NFRC air/argon	EN673 air/argon		
SOLARBAN® 72 Triple Silver Low Iron Low-e Glass													
SOLARBAN 72 (2) <i>STARPHIRE</i> + <i>STARPHIRE</i>	9	71	13/13	51	28	0.34	0.30	0.34	1.62/1.34	1.56/1.24	1.5/1.2	2.35	
SOLARBAN® 70XL Triple Silver Neutral Low-e Glasses													
SOLARBAN 70XL (2) + Clear	6	63	12/13	51	24	0.31	0.27	0.32	1.61/1.33	1.55/1.23	1.5/1.2	2.29	
SOLARBAN 70XL (2) <i>AZURIA</i> + Clear	4	46	8/12	6	16	0.26	0.23	0.27	1.61/1.33	1.55/1.23	1.5/1.2	1.97	
SOLARBAN 70XL (2) <i>ATLANTICA</i> + Clear	1	45	8/12	6	15	0.23	0.22	0.25	1.61/1.33	1.55/1.23	1.5/1.2	2.02	
SOLARBAN 70XL (2) <i>SOLEXIA</i> + Clear	3	54	10/12	9	19	0.28	0.26	0.30	1.61/1.33	1.55/1.23	1.5/1.2	2.09	
SOLARBAN 70XL (2) <i>PACIFICA</i> + Clear	1	24	5/11	6	9	0.17	0.17	0.19	1.61/1.33	1.55/1.23	1.5/1.2	1.39	
SOLARBAN 70XL (2) <i>SOLARBLUE</i> + Clear	3	34	7/12	11	13	0.22	0.21	0.24	1.61/1.33	1.55/1.23	1.5/1.2	1.66	
SOLARBAN 70XL (2) <i>SOLARBRONZE</i> + Clear	2	32	6/11	13	12	0.20	0.19	0.22	1.61/1.33	1.55/1.23	1.5/1.2	1.65	
SOLARBAN 70XL (2) <i>OPTIGRAY</i> + Clear	2	38	7/12	12	14	0.23	0.21	0.24	1.61/1.33	1.55/1.23	1.5/1.2	1.78	
SOLARBAN 70XL (2) <i>SOLARGRAY</i> + Clear	2	25	5/11	10	10	0.18	0.17	0.20	1.61/1.33	1.55/1.23	1.5/1.2	1.43	
SOLARBAN® z75 Triple Silver Blue-Gray Low-e Glass													
SOLARBAN z75 (2) + Clear	5	41	7/12	23	16	0.25	0.23	0.26	1.61/1.33	1.55/1.23	1.5/1.2	1.82	
SOLARBAN® R100 Triple Silver Reflective Low-e Glasses													
SOLARBAN R100 (2) Clear + Clear	10	40	31/13	36	18	0.26	0.23	0.27	1.65/1.37	1.60/1.28	1.6/1.2	1.74	
SOLARBAN R100 (2) <i>STARPHIRE</i> + <i>STARPHIRE</i>	16	43	33/14	55	21	0.26	0.24	0.27	1.65/1.37	1.60/1.28	1.6/1.2	1.84	
SOLARBAN R100 (2) <i>AZURIA</i> + Clear	6	28	18/13	9	11	0.19	0.18	0.21	1.65/1.37	1.60/1.28	1.6/1.2	1.55	
SOLARBAN R100 (2) <i>ATLANTICA</i> + Clear	2	28	17/13	9	10	0.18	0.18	0.20	1.65/1.37	1.60/1.28	1.6/1.2	1.56	
SOLARBAN R100 (2) <i>SOLEXIA</i> + Clear	4	33	23/13	13	13	0.21	0.20	0.23	1.65/1.37	1.60/1.28	1.6/1.2	1.65	
SOLARBAN R100 (2) <i>OPTIBLUE</i> + Clear	7	26	15/13	24	12	0.20	0.19	0.22	1.65/1.37	1.60/1.28	1.6/1.2	1.34	
SOLARBAN R100 (2) <i>PACIFICA</i> + Clear	2	15	8/13	7	6	0.15	0.15	0.17	1.65/1.37	1.60/1.28	1.6/1.2	1.01	
SOLARBAN R100 (2) <i>SOLARBLUE</i> + Clear	5	21	12/13	12	10	0.18	0.18	0.20	1.65/1.37	1.60/1.28	1.6/1.2	1.22	
SOLARBAN R100 (2) <i>SOLARBRONZE</i> + Clear	3	20	11/13	14	9	0.17	0.17	0.19	1.65/1.37	1.60/1.28	1.6/1.2	1.18	
SOLARBAN R100 (2) <i>OPTIGRAY</i> + Clear	5	25	15/13	14	11	0.20	0.18	0.21	1.65/1.37	1.60/1.28	1.6/1.2	1.35	
SOLARBAN R100 (2) <i>SOLARGRAY</i> + Clear	3	15	9/13	11	7	0.15	0.15	0.18	1.65/1.37	1.60/1.28	1.6/1.2	1.00	
SOLARBAN® 67 Double Silver Subtly Reflective Low-e Glasses													
SOLARBAN 67 (2) Clear + Clear	10	52	19/16	29	23	0.32	0.29	0.33	1.64/1.37	1.59/1.28	1.6/1.2	1.81	
SOLARBAN 67 (2) <i>STARPHIRE</i> + <i>STARPHIRE</i>	15	56	20/16	47	27	0.33	0.30	0.35	1.64/1.37	1.59/1.28	1.6/1.2	1.88	
SOLARBAN 67 (2) <i>AZURIA</i> + Clear	6	37	12/15	7	13	0.23	0.21	0.24	1.64/1.37	1.59/1.28	1.6/1.2	1.75	
SOLARBAN 67 (2) <i>ATLANTICA</i> + Clear	2	36	11/15	7	13	0.21	0.20	0.23	1.64/1.37	1.59/1.28	1.6/1.2	1.76	
SOLARBAN 67 (2) <i>SOLEXIA</i> + Clear	4	43	15/15	10	16	0.25	0.24	0.28	1.64/1.37	1.59/1.28	1.6/1.2	1.81	
SOLARBAN 67 (2) <i>OPTIBLUE</i> + Clear	7	33	10/15	21	16	0.24	0.23	0.26	1.64/1.37	1.59/1.28	1.6/1.2	1.45	
SOLARBAN 67 (2) <i>PACIFICA</i> + Clear	2	19	6/15	6	8	0.17	0.16	0.19	1.64/1.37	1.59/1.28	1.6/1.2	1.17	
SOLARBAN 67 (2) <i>SOLARBLUE</i> + Clear	5	28	9/15	10	13	0.21	0.20	0.23	1.64/1.37	1.59/1.28	1.6/1.2	1.36	
SOLARBAN 67 (2) <i>SOLARBRONZE</i> + Clear	3	26	8/15	13	12	0.20	0.19	0.22	1.64/1.37	1.59/1.28	1.6/1.2	1.32	
SOLARBAN 67 (2) <i>OPTIGRAY</i> + Clear	5	32	10/15	12	14	0.24	0.22	0.25	1.64/1.37	1.59/1.28	1.6/1.2	1.49	
SOLARBAN 67 (2) <i>SOLARGRAY</i> + Clear	3	20	7/15	10	9	0.18	0.18	0.20	1.64/1.37	1.59/1.28	1.6/1.2	1.14	
SOLARBAN® z50 Double Silver Blue-Gray Low-e Glass													
SOLARBAN z50 (2) + Clear	11	44	7/11	18	22	0.32	0.30	0.34	1.64/1.37	1.59/1.28	1.6/1.2	1.47	
SOLARBAN® 60 Double Silver Neutral Low-e Glasses													
SOLARBAN 60 (2) Clear + Clear	16	69	11/12	24	31	0.42	0.38	0.44	1.64/1.37	1.59/1.28	1.6/1.2	1.80	
SOLARBAN 60 (2) <i>STARPHIRE</i> + <i>STARPHIRE</i>	24	74	11/12	39	39	0.45	0.41	0.47	1.64/1.37	1.59/1.28	1.6/1.2	1.79	
SOLARBAN 60 (2) <i>AZURIA</i> + Clear	11	48	8/11	6	18	0.27	0.25	0.29	1.64/1.37	1.59/1.28	1.6/1.2	1.90	
SOLARBAN 60 (2) <i>ATLANTICA</i> + Clear	3	47	7/11	6	17	0.26	0.24	0.28	1.64/1.37	1.59/1.28	1.6/1.2	1.92	
SOLARBAN 60 (2) <i>SOLEXIA</i> + Clear	7	57	9/11	8	22	0.32	0.30	0.34	1.64/1.37	1.59/1.28	1.6/1.2	1.92	
SOLARBAN 60 (2) <i>PACIFICA</i> + Clear	3	25	5/10	5	11	0.20	0.19	0.22	1.64/1.37	1.59/1.28	1.6/1.2	1.31	
SOLARBAN 60 (2) <i>SOLARBLUE</i> + Clear	7	36	6/10	9	17	0.26	0.25	0.29	1.64/1.37	1.59/1.28	1.6/1.2	1.45	
SOLARBAN 60 (2) <i>SOLARBRONZE</i> + Clear	6	34	6/10	11	16	0.25	0.24	0.28	1.64/1.37	1.59/1.28	1.6/1.2	1.39	
SOLARBAN 60 (2) <i>OPTIGRAY</i> + Clear	8	42	7/10	10	19	0.29	0.27	0.31	1.64/1.37	1.59/1.28	1.6/1.2	1.57	
SOLARBAN 60 (2) <i>SOLARGRAY</i> + Clear	5	26	5/10	8	13	0.22	0.21	0.24	1.64/1.37	1.59/1.28	1.6/1.2	1.23	

Performance data is based on representative samples of factory production. Actual values may vary slightly due to variations in the production process. This data is to be used for comparison purposes and should not be considered a contract. It is the recipient's responsibility to ensure the manufacturability of the glazing configurations as well as evaluating appropriate design considerations such as wind and snow load analysis, thermal stress analysis, and local building code compliance. PPG recommends that a full size mock-up be reviewed under the specific job-site conditions and retain the mock-up as a basis of acceptable product. For additional performance data visit <http://construct.ppg.com>. PPG reserves right to change the product performance without notification.

Simulations were ran using LBNL Windows 7.1 and Optics 6.0 software with version 33.0 of the International Glazing Database. Simulations for laminates are not NFRC approved. EN simulations were ran using WinDat WIS version 3.0.1 software.

PPG Glass Unit Comparisons for Laminates 6mm + 1.52 PVB + 6mm

Performance for Monolithic Laminates in 6mm Outer Lite + 1.52 PVB + 6mm Inner Lite												
	UV%	Visible Light		Solar Energy					U-Values W/m²**K			LSG
			Refl%			SF			Win-NFRC	Sum-NFRC	EN673	
				Trans%	Ext/Int	Refl%	Trans%					
SOLARBAN® Solar Control Low-E Glasses												
SOLARBAN 72 (2) STARPHIRE + STARPHIRE	0	69	15/17	54	26	0.36	0.32	0.37	5.40	4.91	5.4	2.12
SOLARBAN 70XL (2) + Clear	0	60	14/16	50	23	0.34	0.31	0.36	5.40	4.91	5.4	1.92
SOLARBAN 60 (2) STARPHIRE + STARPHIRE	0	76	9/10	40	38	0.48	0.45	0.51	5.41	4.91	5.4	1.69
SOLARBAN 60 (2) Clear + Clear	0	72	9/10	28	33	0.47	0.45	0.52	5.40	4.91	5.4	1.59
SOLARBAN z75 (2) + Clear	0	47	10/16	30	18	0.35	0.35	0.40	5.40	4.91	5.4	1.34
SOLARBAN z50 (2) + Clear	0	52	7/8	22	25	0.43	0.42	0.49	5.42	4.93	5.4	1.22
SOLARBAN R100 (2) STARPHIRE + STARPHIRE	0	44	29/11	58	20	0.29	0.27	0.31	5.41	4.92	5.4	1.66
SOLARBAN R100 (2) Clear + Clear	0	42	28/11	45	17	0.31	0.31	0.35	5.41	4.92	5.4	1.38
SOLARBAN R100 (2) OPTIBLUE + Clear	0	30	16/11	31	31	0.31	0.31	0.36	5.40	4.91	5.4	0.98
VISTACOOL® Subtly Reflective Tinted Glasses												
VISTACOOL (2) AZURIA + Clear	0	56	14/20	8	24	0.45	0.46	0.53	5.40	4.91	5.4	1.22
VISTACOOL (2) PACIFICA + Clear	0	35	8/19	6	20	0.42	0.44	0.51	5.40	4.91	5.4	0.79
Uncoated Glasses												
STARPHIRE + STARPHIRE	0	90	8/8	7	79	0.82	0.83	0.96	5.41	4.91	5.4	1.08
AZURIA + Clear	0	66	7/7	5	28	0.49	0.50	0.57	5.41	4.91	5.4	1.33
ATLANTICA + Clear	0	65	7/7	5	29	0.49	0.51	0.58	5.41	4.91	5.4	1.29
SOLEXIA + Clear	0	75	7/7	5	39	0.57	0.57	0.65	5.41	4.91	5.4	1.32
OPTIBLUE + Clear	0	62	6/6	5	49	0.66	0.64	0.73	5.41	4.91	5.4	0.97
PACIFICA + Clear	0	41	5/5	5	23	0.45	0.46	0.53	5.41	4.91	5.4	0.89
SOLARBLUE + Clear	0	54	6/6	5	37	0.54	0.56	0.64	5.41	4.91	5.4	0.98
SOLARBRONZE + Clear	0	52	6/6	5	39	0.56	0.57	0.65	5.41	4.91	5.4	0.91
OPTIGRAY + Clear	0	60	6/6	5	40	0.57	0.58	0.67	5.41	4.90	5.4	1.04
SOLARGRAY + Clear	0	43	6/6	5	33	0.50	0.53	0.61	5.41	4.91	5.4	0.81
GRAYLITE II + Clear	0	9	4/5	4	6	0.32	0.36	0.41	5.41	4.91	5.4	0.24

PPG Glass Comparisons for Monolithic Glasses

	Thickness mm	UV%	Visible Light		Solar Energy					U-Values W/m²*K			LSG
				Refl%			SF	SHGC	SC	Win-NFRC	Sum-NFRC	EN673	
				Trans%	Ext/Int	Refl%	Trans%						
Coated													
VISTACOOl (2) AZURIA	6	35	52	19/29	10	25	0.46	0.46	0.52	5.80	5.24	5.2	1.14
VISTACOOl (2) AZURIA	8	29	46	16/29	9	20	0.41	0.43	0.49	5.72	5.18	5.1	1.09
VISTACOOl (2) PACIFICA	6	12	32	10/28	7	22	0.42	0.44	0.51	5.82	5.27	5.2	0.73
VISTACOOl (2) PACIFICA	8	7	24	8/28	6	15	0.37	0.40	0.46	5.72	5.18	5.1	0.60
SOLARCOOl (2) AZURIA	6	12	26	19/36	9	13	0.35	0.38	0.44	5.85	5.30	5.2	0.68
SOLARCOOl (2) SOLEXIA	6	9	30	23/37	12	23	0.40	0.43	0.50	5.85	5.30	5.2	0.68
SOLARCOOl (2) PACIFICA	6	4	16	10/36	7	13	0.34	0.38	0.44	5.82	5.27	5.2	0.42
SOLARCOOl (2) SOLARBLUE	6	9	21	14/36	10	24	0.41	0.45	0.51	5.82	5.27	5.2	0.48
SOLARCOOl (2) SOLARBRONZE	6	7	21	13/36	11	27	0.42	0.47	0.53	5.85	5.30	5.2	0.44
SOLARCOOl (2) SOLARGRAY	6	7	17	11/36	9	23	0.40	0.44	0.51	5.85	5.30	5.2	0.39
Uncoated													
STARPHIRE Low Iron Ultra Clear Glass	6	87	91	8/8	8	89	0.90	0.90	1.03	5.82	5.27	5.2	1.01
STARPHIRE Low Iron Ultra Clear Glass	8	86	91	8/8	8	88	0.89	0.89	1.02	5.74	5.20	5.1	1.02
STARPHIRE Low Iron Ultra Clear Glass	10	85	91	8/8	8	87	0.89	0.89	1.02	5.69	5.16	5.1	1.02
Clear	6	66	89	4/9	7	77	0.82	0.82	0.94	5.82	5.27	5.2	1.08
Clear	8	61	87	4/8	7	72	0.79	0.79	0.90	5.74	5.20	5.1	1.11
Clear	10	58	87	4/8	7	69	0.77	0.77	0.88	5.69	5.16	5.1	1.13
AZURIA Aqua Blue Glass	6	42	68	4/7	5	32	0.52	0.52	0.59	5.82	5.27	5.2	1.32
AZURIA Aqua Blue Glass	8	35	61	4/6	5	26	0.48	0.48	0.55	5.74	5.20	5.1	1.28
ATLANTICA Emerald Green Glass	6	16	67	4/7	5	34	0.52	0.53	0.61	5.82	5.27	5.2	1.27
SOLEXIA Light Green Glass	6	31	77	4/8	6	47	0.61	0.62	0.71	5.82	5.27	5.2	1.25
OPTIBLUE Light Blue-Gray Glass	6	44	64	6/6	6	64	0.72	0.73	0.84	5.82	5.27	5.2	0.88
PACIFICA Deep Blue Glass	6	15	42	4/5	5	27	0.47	0.49	0.56	5.82	5.27	5.2	0.87
PACIFICA Deep Blue Glass	8	9	32	4/5	4	19	0.41	0.43	0.49	5.74	5.20	5.1	0.73
SOLARBLUE Blue Sky Glass	6	31	56	4/6	5	47	0.60	0.61	0.71	5.82	5.27	5.2	0.91
SOLARBRONZE Warm Bronze Glass	6	25	53	4/6	6	50	0.61	0.63	0.73	5.82	5.27	5.2	0.84
OPTIGRAY Light Gray Glass	6	33	63	4/6	5	51	0.31	0.65	0.74	5.82	5.25	5.2	0.97
SOLARGRAY Cool Gray Glass	6	24	44	4/6	5	42	0.56	0.58	0.67	5.82	5.27	5.2	0.76
SOLARGRAY Cool Gray Glass	8	17	33	4/6	5	31	0.48	0.51	0.59	5.74	5.20	5.1	0.65
GRAYLITE II Dark Gray Glass	6	2	9	4/5	4	8	0.31	0.36	0.41	5.82	5.27	5.2	0.25



PPG's mission is to provide unique commercial glass products and services to the global commercial construction industry. This is achieved through the PPG *International Certified Fabricator*™ Program (ICFP) and *International Certified Laminator*™ Program (ICLP).



The PPG ICFP/ICLP provides the building owner and architect with confidence that the glass product will meet both industry and PPG quality standards. In order to ensure this status remains, members must process PPG's *Solarban* low-e glass according to PPG's process requirements. The merging of technologies and processes with the members' entrepreneurial spirit and determination is creating a dynamic and formidable glass fabricating network.



As members of the Green City Alliance, PPG and local glass producers have joined together to provide cost-competitive manufacturing and fabrication of environmentally advanced *Solarban* low-e products to emerging markets around the globe.



A collection of energy efficient low-e glasses are available for Europe and conform with CE standards. The includes triple silver *Solarban 72 Starphire*, *Solarban 70XL* and *Solarban z75* glasses, as well as *Solarban 60* and *Solarban z50* glasses. The unparalleled clarity of *Starphire* low iron glass is also available coated and uncoated. For a complete list of products that conform with CE standards, visit www.ppgideascales.com.



PPG set an industry standard by becoming the first float glass manufacturer to have its products recognized by the Cradle to Cradle Certification program. Today, PPG offers more C2C-certified architectural glass than any float glass manufacturer.

To earn C2C certification, PPG glass products were independently evaluated to measure their total life-cycle impact on human health and environment. The assessment considered critical variables such as how efficiently water and energy are used in their manufacture, the sustainability and reusability of their material ingredients, and the commitment of PPG corporate management to socially responsible business practices, environmental stewardship, social fairness and ethical business standards. PPG products have been Cradle to Cradle certified since 2008.



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