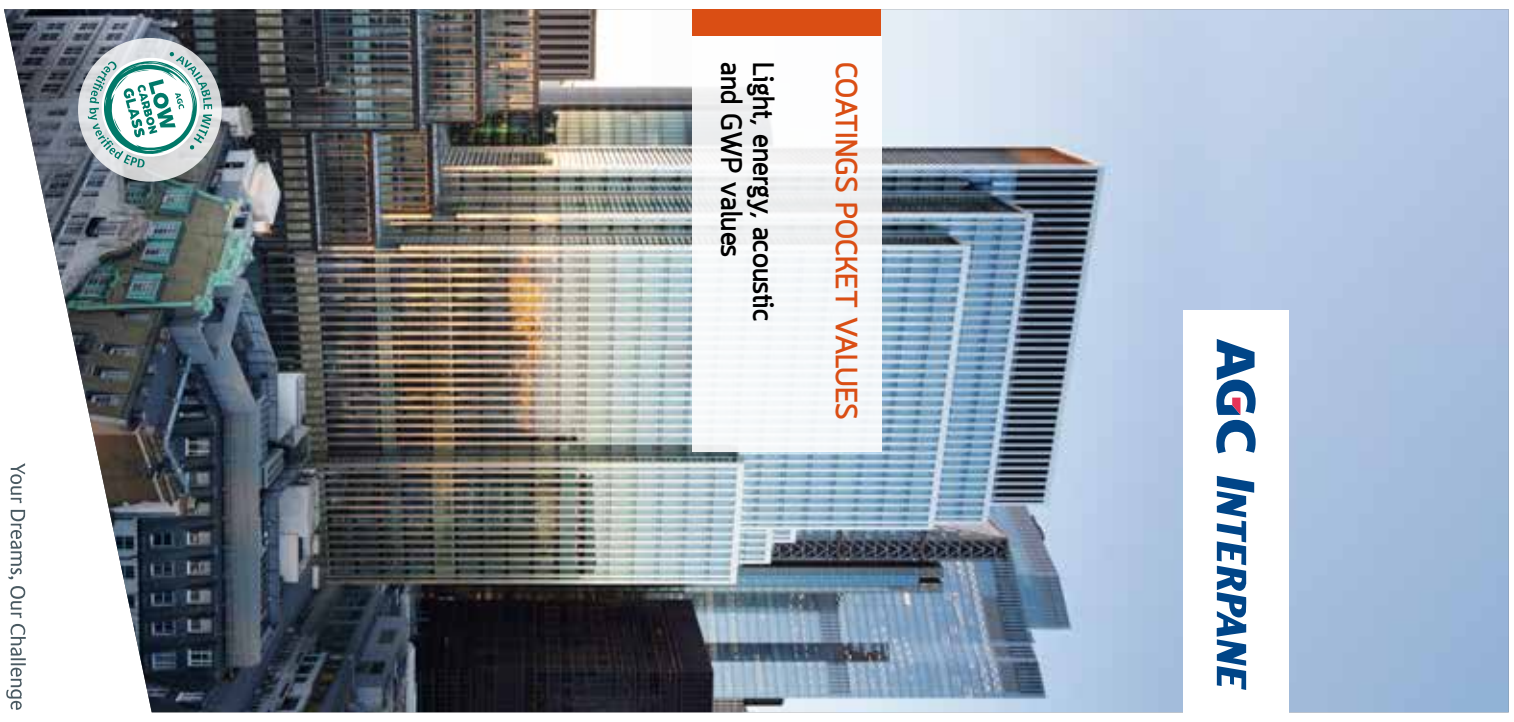

OPTO-ENERGETIC PERFORMANCES FOR SOLAR CONTROL AND LOW-E COATINGS

STOPRAY — STANDARD SOFT-COATED GLASS COMBINING SOLAR CONTROL AND LOW EMISSIVITY

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 (7)		GWP complete IGU Kg CO_2 eq./m^2 (8)	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K) (1)				Standard	Low-Carbon	Standard	Low-Carbon
Double glazing Thermobel 6-16-4 (with 90% Argon)															
Stopray Ultraselect 70/33 on Clearvision (4)	#2	Neutral	70	33	10	11	0.38	1.0	Yes	Yes	3 months	17.1	/	41.3	/
Stopray Ultraselect 70/33	#2	Neutral	67	32	10	11	0.37	1.0	Yes	Yes	3 months	17.1	8.0	41.3	23.1
Stopray Ultraselect 60/27	#2	Neutral	60	27	11	15	0.31	1.0	Yes	Yes	3 months	17.1	8.0	41.3	23.1
Stopray Ultraselect 51/23	#2	Neutral	51	23	16	15	0.26	1.0	Yes	Yes	3 months	17.1	8.0	41.3	23.1
Stopray Vision 70/35 (T (2))	#2	Neutral	70	35	14	15	0.40	1.0	Yes	Yes	3 months	17.1	8.0 (9.2)	41.3 (48.3)	23.1 (23.8)
Stopray Vision 62/33 (T (2))	#2	Neutral	61	33	15	13	0.38	1.0	Yes	Yes	3 months	17.1	8.0 (9.2)	41.3 (48.3	23.1 (23.8)
Stopray Vision 52/27 (T (2))	#2	Neutral	51	27	16	13	0.31	1.0	Yes	Yes	3 months	17.1	8.0 (9.2)	41.3 (48.3	23.1 (23.8)
Stopray Vision 40/21 (T (2))	#2	Neutral	40	21	19	15	0.24	1.0	Yes	Yes	3 months	17.1	8.0 (9.2)	41.3 (48.3	23.1 (23.8)
Stopray Grey 34/21T (2)	#2	Grey	34	21	6	13	0.24	1.0	No	Yes	3 months	17.1	8.0 (9.2)	41.3 (48.3	23.1 (23.8)
Stopray Silver 47/29	#2	Silver	47	29	40	30	0.33	1.0	Yes	Yes	3 months	17.1	8.0	41.3	23.1
Stopray Silver 25/17	#2	Silver	25	17	61	33	0.20	1.0	Yes	Yes	3 months	17.1	8.0	41.3	23.1

STOPRAY and IPASOL — NON-STANDARD SOFT-COATED GLASS COMBINING SOLAR CONTROL AND LOW EMISSIVITY

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 (7)		GWP complete IGU Kg CO_2 eq./m^2 (8)	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K) (1)				Standard	Low-Carbon	Standard	Low-Carbon
Double glazing Thermobel 6-16-4 (with 90% Argon)															
ipasol neutral 72/42	#2	Neutral	72	42	11	13	0.48	1.0	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol ultraselect 62/29	#2	Very neutral	62	29	9	11	0.34	1.0	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol light grey 60/33	#2	Neutral greyish	60	33	10	11	0.38	1.0	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol shine 59/32	#2	Silver blueish	59	32	21	21	0.37	1.0	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol platin 52/36	#2	Silver	52	36	30	16	0.42	1.1	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol neutral 50/27	#2	Neutral blueish	50	27	8	11	0.31	1.1	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol bronze 47/31	#2	Bronze	47	31	15	14	0.36	1.1	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol platin 47/27	#2	Silver	47	26	25	15	0.30	1.1	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol platin 46/31	#2	Silver	46	31	37	18	0.36	1.1	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol shine 40/22	#2	Silver	40	22	16	12	0.26	1.1	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol neutral 38/23	#2	Very neutral greyish	38	23	7	14	0.26	1.1	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol platin 35/26	#2	Silver	35	26	42	15	0.30	1.1	Yes	Yes	3 months	17.1	8.0	41.3	23.1
ipasol sky 30/17	#2	Neutral blueish	30	17	18	11	0.20	1.1	Yes	Yes	3 months	17.1	8.0	41.3	23.1

STOPRAY — STANDARD SOFT-COATED GLASS COMBINING SOLAR CONTROL AND LOW EMISSIVITY

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 (7)		GWP complete IGU Kg CO_2 eq./m^2 (8)	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K) (1)				Standard	Low-Carbon	Standard	Low-Carbon
Triple glazing Thermobel 6-16-4-16-4 (coating on #2 - Clearlite - iplus 1.1 on #5 - with 90% Argon)															
Stopray Ultraselect 70/33 on Clearvision	#2	Neutral	62	31	12	14	0.36	0.5	Yes	Yes	3 months	17.1	/	58.5	/
Stopray Ultraselect 70/33	#2	Neutral	61	30	12	14	0.34	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5
Stopray Ultraselect 60/27	#2	Neutral	54	25	13	18	0.29	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5
Stopray Ultraselect 51/23	#2	Neutral	46	21	18	17	0.24	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5
Stopray Vision 70/35 (T (2))	#2	Neutral	64	33	17	18	0.38	0.5	Yes	Yes	3 months	17.1	8.0	58.5 (65.4)	34.5 (35.2)
Stopray Vision 62/33(T (2))	#2	Neutral	55	30	17	17	0.34	0.5	Yes	Yes	3 months	17.1	8.0	58.5 (65.4)	34.5 (35.2)
Stopray Vision 52/27 (T (2))	#2	Neutral	46	25	17	16	0.29	0.5	Yes	Yes	3 months	17.1	8.0	58.5 (65.4)	34.5 (35.2)
Stopray Vision 40/21 (T (2))	#2	Neutral	37	19	20	18	0.22	0.5	Yes	Yes	3 months	17.1	8.0	58.5 (65.4)	34.5 (35.2)
Stopray Silver 47/29	#2	Silver	43	27	41	30	0.31	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5
Stopray Silver 25/17	#2	Silver	23	15	61	33	0.17	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5

STOPRAY and IPASOL — NON-STANDARD SOFT-COATED GLASS COMBINING SOLAR CONTROL AND LOW EMISSIVITY

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 (7)		GWP complete IGU Kg CO_2 eq./m^2 (8)	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K) (1)				Standard	Low-Carbon	Standard	Low-Carbon
Triple glazing Thermobel 6-16-4-16-4 (coating on #2 - Clearlite - iplus 1.1 on #5 - with 90% Argon)															
ipasol neutral 72/42	#2	Neutral	65	38	13	16	0.44	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol ultraselect 62/29	#2	Very neutral	56	27	11	14	0.31	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol light grey 60/33	#2	Neutral greyish	54	30	12	15	0.35	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol shine 59/32	#2	Silver blueish	53	30	23	24	0.34	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol platin 52/36	#2	Silver	47	32	31	19	0.36	0.6	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol neutral 50/27	#2	Neutral blueish	45	24	9	15	0.28	0.6	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol bronze 47/31	#2	Bronze	43	27	16	17	0.31	0.6	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol platin 47/27	#2	Silver	43	24	26	18	0.28	0.6	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol platin 46/31	#2	Silver	41	27	38	20	0.31	0.6	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol shine 40/22	#2	Silver	36	20	17	15	0.23	0.6	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol neutral 38/23	#2	Very neutral greyish	34	20	8	17	0.23	0.6	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol platin 35/26	#2	Silver	32	22	43	18	0.26	0.6	Yes	Yes	3 months	17.1	8.0	58.5	34.5
ipasol sky 30/17	#2	Neutral blueish	27	15	19	15	0.17	0.6	Yes	Yes	3 months	17.1	8.0	58.5	34.5

(1) Identical values for a 15 or 16 mm spacer for IGU

(2) This coating must be heat-treated to reach its final performances and aesthetics. It can not be used annealed

(3) Please follow the processing guidelines in general

(4) Inner pane Planibel Clearvision

(5) Single stock product: it can be used for both annealed and heat-treated glass applications, while offering similar aesthetics and performances

(6) AF: Anti-fog coating

(7) Global warming potential - Cradle to Gate : Module A1-A3 / Coated glass 4 mm Low E or 6 mm Solar Control - not tempered

(8) Global warming potential - Cradle to Gate : Module A1-A3 / Double or triple glazing Thermobel produced by AGC - Value including tempering, if relevant, is between ( )

NPD = No Performance Determined

/ = not available

ENERGY — SOFT-COATED GLASS COMBINING SOLAR CONTROL AND LOW EMISSIVITY

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 [7]		GWP complete IGU Kg CO_2 eq./m^2 [8]	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K) [1]				Standard	Low-Carbon	Standard	Low-Carbon
Double glazing Thermobel 6-16-4 (with 90% Argon)															
Energy 72/38 (T [2])	#2	Neutral	72	38	13	14	0.44	1.0	Yes	Yes	3 months	17.1	8.0 (9.2)	41.3 (48.3)	23.1 (23.8)
Energy 70/37	#2	Neutral	70	37	12	15	0.43	1.0	Yes	Yes	3 months	17.1	8	41.3	23.1

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 [7]		GWP complete IGU Kg CO_2 eq./m^2 [8]	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K) [1]				Standard	Low-Carbon	Standard	Low-Carbon
Triple glazing Thermobel 6-16-4-16-4 (coating on #2 - Clearlite - iplus 1.1 on #5 - with 90% Argon)															
Energy 72/38 (T [2])	#2	Neutral	65	35	15	17	0.40	0.5	Yes	Yes	3 months	17.1	8.0	58.5 (65.4)	34.5 (35.2)
Energy 70/37	#2	Neutral	64	34	15	18	0.39	0.5	Yes	Yes	3 months	17.1	8.0	58.5	34.5

IPASOL BRIGHT — REFLECTIVE COATED GLASS WITH SILVER AESTHETICS PROVIDING SOLAR CONTROL

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 [7]		GWP complete IGU Kg CO_2 eq./m^2 [8]	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K)				Standard	Low-Carbon	Standard	Low-Carbon
Single glazing 66.2 (coating on #2 against the PVB)															
ipasol Bright Neutral	#2	Shiny silver	73	68	23	23	0.78	5.4	Yes	No	Unlimited	38.9	19.5	NPD	NPD
ipasol Bright White	#2	Shiny silver	76	73	24	24	0.84	5.4	Yes	No	Unlimited	38.9	/	NPD	/

STOPSOL — REFLECTIVE COATED GLASS PROVIDING SOLAR CONTROL

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 [7]		GWP complete IGU Kg CO_2 eq./m^2 [8]	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K) [1]				Standard	Low-Carbon	Standard	Low-Carbon
Double glazing Thermobel 6-16-4 (iplus 1.0 on #3 - with 90% Argon)															
Stopsol Classic Clear	#2	Neutral	34	30	28	34	0.34	1.0	No	No	Unlimited	17.5	/	42.9	/
Stopsol Classic Grey	#2	Grey	16	17	10	34	0.20	1.0	No	No	Unlimited	17.5	/	42.9	/
Stopsol Classic Green	#2	Green	27	19	20	34	0.22	1.0	No	No	Unlimited	17.5	/	42.9	/
Stopsol Classic Bronze	#2	Bronze	19	19	12	34	0.22	1.0	No	No	Unlimited	17.5	/	42.9	/
Stopsol Supersilver Clear	#2	Neutral	54	42	37	36	0.48	1.0	No	No	Unlimited	17.5	/	42.9	/
Stopsol Supersilver Grey	#2	Grey	26	24	12	35	0.28	1.0	No	No	Unlimited	17.5	/	42.9	/

IPLUS / PLANIBEL LOW-E — THERMAL INSULATION, NEUTRAL AESTHETICS AND HIGH LIGHT TRANSMISSION

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 [7]		GWP complete IGU Kg CO_2 eq./m^2 [8]	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K) [1]				Standard	Low-Carbon	Standard	Low-Carbon
Double glazing Thermobel 4-16-4 (with 90% Argon)															
iplus 1.1T [2]	#3	Neutral	82	66	12	12	0.76	1.1	No	Yes	3 months	14.2	5.8	37.1	19.2
iplus 1.1	#3	Neutral	82	64	12	12	0.74	1.1	Yes	Yes	3 months	10.1	5.0	32.5	19.2
iplus 1.0	#3	Neutral	77	57	15	16	0.66	1.0	No	Yes	3 months	10.1	5.0	32.5	19.2
iplus 1.0NT [2]	#3	Neutral	77	57	15	16	0.66	1.0	No	Yes	3 months	14.2	5.8	37.1	19.2
iplus 1.1 -AF [6]	#1 #2	Neutral	75	55	15	14	0.63	1.1	Yes	Yes	3 months	NPD	/	NPD	/
iplus zero	#3	Neutral	73	53	13	11	0.61	1.0	Yes	Yes	3 months	12.0	5.4	34.7	19.6
iplus LS	#3	Neutral	81	72	13	13	0.83	1.3	Yes	Yes	3 months	NPD	NPD	NPD	NPD
Planibel A	#3	Neutral	73	75	17	15	0.86	1.4	No	No	Unlimited	11.9	/	NPD	/
Planibel G & Planibel G fasT	#3	Neutral	75	76	17	16	0.87	1.5	No	No	Unlimited	NPD	/	NPD	/

	Coating Position	Colour	EN 410 (2011)					EN 673	Cut size	Edge deletion	Shelf life	GWP coated glass only Kg CO_2 eq./m^2 [7]		GWP complete IGU Kg CO_2 eq./m^2 [8]	
			LT (%)	SF (%)	LR ext (%)	LR int (%)	SC	U_g value W/(m^2K) [1]				Standard	Low-Carbon	Standard	Low-Carbon
Triple glazing Thermobel 4-16-4-16-4 (Low-E on #2 - Clearlite - Low-E on #5 - with 90% Argon)															
iplus 1.1T [2]	#2 #5	Neutral	75	54	15	15	0.62	0.6	No	Yes	3 months	14.2	5.8	54.2	31
iplus 1.1	#2 #5	Neutral	74	52	15	15	0.60	0.6	Yes	Yes	3 months	10.1	5.0	49.7	30.6
iplus 1.0	#2 #5	Neutral	65	43	21	21	0.49	0.5	No	Yes	3 months	10.1	5.0	49.7	30.6
iplus 1.0NT [2]	#2 #5	Neutral	65	44	21	21	0.51	0.5	No	Yes	3 months	14.2	5.8	54.2	31.0
iplus 1.1-AF [6]	#1 #2 #5	Neutral	68	48	18	17	0.55	0.6	Yes	Yes	3 months	NPD	/	NPD	/
iplus zero	#2 #5	Neutral	66	39	13	16	0.45	0.5	Yes	Yes	3 months	12.0	5.4	51.9	31.0
iplus LS	#2 #5	Neutral	74	60	17	17	0.69	0.7	Yes	Yes	3 months	NPD	NPD	NPD	NPD

[1] Identical values for a 15 or 16 mm spacer for IGU

[2] This coating must be heat-treated to reach its final performances and aesthetics. It can not be used annealed

[3] Please follow the processing guidelines in general

[4] Inner pane Planibel Clearvision

[5] Single stock product: it can be used for both annealed and heat-treated glass applications, while offering similar aesthetics and performances

[6] AF: Anti-fog coating

[7] Global warming potential - Cradle to Gate : Module A1-A3 / Coated glass 4 mm Low E or 6 mm Solar Control - not tempered

[8] Global warming potential - Cradle to Gate : Module A1-A3 / Double or triple glazing Thermobel produced by AGC - Value including tempering, if relevant, is between ( )

NPD = No Performance Determined

/ = not available

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