



CSTC-WTCB

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Page : 1/3

LABORATORY :

Energy Aspects of Buildings
(EN)

STUDY REPORT

N° DE : 632xB688
N° Labo : EN454/c
N° Sample : -

REQUESTED BY : AGC Flat Glass Europe

Chaussée de la Hulpe 166
B-1170 Bruxelles

Contact persons :

- Client -

Mr. D. Raymaekers

- BBRI -

Mr. G. Flamant

Study : SUMMARY OF PRODUCT PERFORMANCES – “LOW-E” COATED GLASS

References : EN 410 (1998), EN 673 (1997), EN 1096-1 (1998)

Date and reference of the request : 2007.10.02

Date of receipt of the sample(s) : -

Date of the study : 2007.11.05

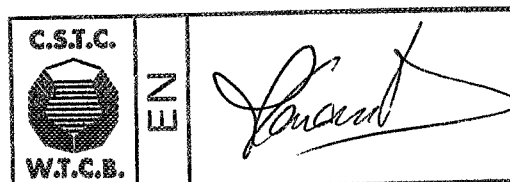
Drafting date of the report : 2008.01.23

This report contains 3 pages, numbered from 1/3 to 3/3; it may only be reproduced in its entirety. Each page of the original report has been stamped (in red) by the laboratory and initialled by the head of laboratory.

The results and findings are only valid for the tested samples.

- No sample
- Sample(s) submitted to a destructive test
- Sample(s) to be removed from our laboratories 60 calendar days after sending of the report, unless a written request is received from the client

Head of laboratory



G. Flamant, ir.

Technical assistance : -

1. SUBJECT

The declared photometric and thermal properties of low-e coated glass summarized on page 3 of this document have been attested by the BBRI (Belgian Building Research Institute) according to the specifications of the EN 1096-1 standard.

2. STANDARDS

- EN 410 (1998) : Glass in building – Determination of luminous and solar characteristics of glazing
- EN 673 (1997) + A1 (2000) + A2 (2002): Glass in building – Determination of thermal transmittance (U-value) – calculation method
- EN 1096-1 (1998) : Glass in building – Coated glass – Part 1 : definitions and classification

3. PHOTOMETRIC AND THERMAL PROPERTIES

The UV, light and solar properties are calculated according to the standard EN 410.
The thermal transmittance (U-value) is calculated according to the standard EN 673.

The solar factor, the shading coefficient and the U-value are calculated with the coated side of the glass placed in position 2 (interior side).

The following properties are given :

- τ_{UV} : UV transmittance [-]
- τ_v : light transmittance [-]
- ρ_v : light reflectance of the coated side [-]
- ρ'_v : light reflectance of the uncoated side [-]
- τ_e : solar transmittance [-]
- ρ_e : solar reflectance of the coated side [-]
- ρ'_e : solar reflectance of the uncoated side [-]
- g : solar factor (total solar energy transmittance or g-value) [-]
- SC : shading coefficient ($SC=g/0.87$) [-]
- ε_n : normal emissivity of the coated side [-]
- U : thermal transmittance [W/m^2K]

Product name	Coated on	Nominal thickness (mm)	UV range (EN410)	Visible range (EN410)			Solar range (EN410)					Thermal range (EN673)		Class	Glass substrate
			τ_{uv}	τ_v	ρ_v	ρ'_v	τ_e	ρ_e	ρ'_e	g	SC	ϵ_n	U		
Planibel G	2	4	0.45	0.82	0.12	0.11	0.70	0.12	0.11	0.73	0.84	0.15	-	A	EN 572-2
Planibel G FAST	2	4	0.46	0.81	0.12	0.11	0.69	0.13	0.11	0.73	0.84	0.15	-	A	EN 572-2
Top N	2	4	0.27	0.87	0.06	0.08	0.64	0.25	0.23	0.66	0.76	0.04	-	C	EN 572-2
Top N+	2	4	0.26	0.87	0.06	0.08	0.59	0.29	0.25	0.61	0.70	0.03	-	C	EN 572-2
Top NT *	2	4	0.35	0.88	0.06	0.06	0.67	0.21	0.17	0.69	0.79	0.05	-	C	EN 572-2
Energy N	2	4	0.08	0.79	0.06	0.07	0.44	0.38	0.29	0.48	0.55	0.03	-	C	EN 572-2
Energy N on Cv	2	4	0.10	0.80	0.06	0.07	0.46	0.38	0.35	0.48	0.55	0.03	-	C	EN 572-2
Energy NT *	2	4	0.17	0.83	0.07	0.07	0.48	0.38	0.29	0.51	0.59	0.02	-	C	EN 572-2
Energy NT on Cv *	2	4	0.20	0.84	0.07	0.07	0.50	0.39	0.35	0.52	0.60	0.02	-	C	EN 572-2

* The values for the toughenable coating (T) are those obtained after the toughening process

"Cv" refer to Clearvision

Table 1 : photometric and thermal properties

