



Planibel  
Anti-Fog



Planibel  
Clearlite  
4 mm  
Annealed



iplus 1.1



Argon 90%  
8-24 mm



Planibel  
Clearlite  
4 mm  
Annealed



① 4 mm iplus 1.1-AF Annealed ② 8 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Internal energy reflection : $\rho_{ei}$ [%]	29
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{uv}$ [%]	35
Selectivity	1.36

### 🌡 Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.7
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### 🔊 Acoustic properties

Direct airborne sound reduction - Interpolated : $R_w$ (C;Ctr) [dB]	28 (-1;-3)
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### 🛡 Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	16.0
Weight : [kg/m <sup>2</sup> ]	20

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +/- 2 dB.



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Report n° 2018B COU 35741



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① 4 mm iplus 1.1-AF Annealed ② 10 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Internal energy reflection : $\rho_{ei}$ [%]	29
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{uv}$ [%]	35
Selectivity	1.36

### 🌡 Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.4
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### 🔊 Acoustic properties

Direct airborne sound reduction - Interpolated : $R_w$ (C;Ctr) [dB]	28 (-1;-3)
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### 🛡 Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	18.0
Weight : [kg/m <sup>2</sup> ]	20

<sup>1</sup> The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +V/- 2 dB.



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① 4 mm iplus 1.1-AF Annealed ② 12 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀️ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Internal energy reflection : $\rho_{ei}$ [%]	29
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{uv}$ [%]	35
Selectivity	1.36

### 🌡️ Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.3
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### 🔊 Acoustic properties

Direct airborne sound reduction - EN 12758 : $R_w$ (C;Ctr) [dB]	29 (-1;-3)
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### 🛡️ Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	20.0
Weight : [kg/m <sup>2</sup> ]	20

1. The sound reduction indexes correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3 and are tested in laboratory conditions. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +/- 1 dB.



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① 4 mm iplus 1.1-AF Annealed ② 14 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Internal energy reflection : $\rho_{ei}$ [%]	29
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{UV}$ [%]	35
Selectivity	1.36

### 🌡 Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.1
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### 🔊 Acoustic properties

Direct airborne sound reduction - Interpolated : $R_w$ (C;Ctr) [dB]	30 (-1;-4)
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### 🛡 Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	22.0
Weight : [kg/m <sup>2</sup> ]	20

<sup>1</sup> The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +V/- 2 dB.



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① 4 mm iplus 1.1-AF Annealed ② 15 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{uv}$ [%]	35
Selectivity	1.36

### 🌡 Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.1
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### 🔊 Acoustic properties

Direct airborne sound reduction - Interpolated : $R_w$ (C;Ctr) [dB]	30 (-1;-4)
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### 🛡 Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	23.0
Weight : [kg/m <sup>2</sup> ]	20

<sup>1</sup> The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +V/- 2 dB.



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① 4 mm iplus 1.1-AF Annealed ② 16 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Internal energy reflection : $\rho_{ei}$ [%]	29
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{uv}$ [%]	35
Selectivity	1.36

### 🌡 Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.1
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### 🔊 Acoustic properties

Direct airborne sound reduction - EN 12758 : $R_w$ (C;Ctr) [dB]	30 (-1;-4)
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### 🛡 Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	24.0
Weight : [kg/m <sup>2</sup> ]	20

<sup>1</sup> The sound reduction indexes correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3 and are tested in laboratory conditions. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +/- 1 dB.



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① 4 mm iplus 1.1-AF Annealed ② 18 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀️ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Internal energy reflection : $\rho_{ei}$ [%]	29
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{UV}$ [%]	35
Selectivity	1.36

### 🌡️ Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.1
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### 🔊 Acoustic properties

Direct airborne sound reduction - Interpolated : $R_w$ (C;Ctr) [dB]	30 (-1;-4)
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### 🛡️ Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	26.0
Weight : [kg/m <sup>2</sup> ]	20

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +V/- 2 dB.



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① 4 mm iplus 1.1-AF Annealed ② 20 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Internal energy reflection : $\rho_{ei}$ [%]	29
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{UV}$ [%]	35
Selectivity	1.36

### 🌡 Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.1
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### 🔊 Acoustic properties

Direct airborne sound reduction - Interpolated : $R_w$ (C;Ctr) [dB]	31 (-1;-4)
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### 🛡 Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	28.0
Weight : [kg/m <sup>2</sup> ]	20

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +V/- 2 dB.



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① 4 mm iplus 1.1-AF Annealed ② 22 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Internal energy reflection : $\rho_{ei}$ [%]	29
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{uv}$ [%]	35
Selectivity	1.36

### 🌡 Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.2
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### 🔊 Acoustic properties

Direct airborne sound reduction - Interpolated : $R_w$ (C;Ctr) [dB]	31 (-1;-4)
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### 🛡 Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	30.0
Weight : [kg/m <sup>2</sup> ]	20

1. The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +V/- 2 dB.



Glass Configurator  
Calculation software verified by INISMa  
EN 410 and EN 673  
Report n° 2018B COU 35741



Several AGC products are now available in Low-Carbon Glass version. The Low-Carbon Glass version does not affect the properties of the above glass configuration. For more info about the AGC Low-Carbon Glass range, please visit our YourGlass page.

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① 4 mm iplus 1.1-AF Annealed ② 24 mm Argon 90% ③ 4 mm Planibel Clearlite Annealed

## Glass performance data simulation

### ☀️ Light properties - EN 410

Light transmittance : $\tau_v$ [%]	75
External light reflection : $\rho_v$ [%]	15
Internal light reflection : $\rho_{vi}$ [%]	14
Colour rendering index : Ra [%]	99

### 🔥 Energy properties - EN 410

Total solar energy transmittance : g [%]	55
External energy reflection : $\rho_e$ [%]	24
Internal energy reflection : $\rho_{ei}$ [%]	29
Direct energy transmission : $\tau_e$ [%]	52
Energy absorption glass 1 : $\alpha_{e1}$ [%]	22
Energy absorption glass 2 : $\alpha_{e2}$ [%]	2
Total energy absorption : $\alpha_e$ [%]	24
Shading coefficient : SC	0.63
UV transmission : $\tau_{uv}$ [%]	35
Selectivity	1.36

### 🌡️ Thermal properties - EN 673

Thermal transmittance (vertical glazing) : U value [W/(m <sup>2</sup> .K)]	1.2
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### 🔊 Acoustic properties

Direct airborne sound reduction - Interpolated : $R_w$ (C;Ctr) [dB]	32 (-1;-4)
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### 🛡️ Safety properties

Resistance to fire - EN 13501-2	NPD
Reaction to fire - EN 13501-1	NPD
Bullet resistance - EN 1063	NPD
Burglar resistance - EN 356	NPD
Pendulum body impact resistance - EN 12600	NPD / NPD
Explosion resistance - EN 13541	NPD

### 📏 Thickness and weight

Nominal thickness : [mm]	32.0
Weight : [kg/m <sup>2</sup> ]	20

<sup>1</sup> The sound reduction indexes are interpolated (no test available). They correspond to glazing with dimensions 1230 mm by 1480 mm according to EN ISO 10140-3. In-situ performances may vary according to the effective glazing dimensions, supporting system, installation, environment, noise sources etc. The accuracy of the given indexes is +V/- 2 dB.



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