DECLARATION OF PERFORMANCE

CE

Saint-Gobain Building Glass Europe

Tour Saint-Gobain 12 place de l'Iris 92400 Courbevoie France

EN 572-9:2004 - Basic soda lime silicate glass products intended to be used in buildings and construction works

PLANICLEAR 6 mm

M100008

NB: 0336, 0497, 0679, 0757, 0809, 1004, 1116, 1136, 1154, 1174, 1234, 1322, 1694, 1717, 1750, 1751

ESSENTIAL CHARACTERISTICS	AVCP SYSTEMS	PERFORMANCES
For uses relating to safety in case of fire:		
Resistance to fire	1	NPD
Reaction to fire	3,4	A1
External fire performance	3,4	NPD
For uses as anti-bullet or anti-explosion glazing		
Bullet resistance	1	NPD
Explosion resistance	1	NPD
For uses liable to present "safety-in-use" risks and subject to such regulations		
Burglar resistance	3	NPD
Pendulum body impact resistance	3	NPD
Resistance against sudden temperature changes and temperature differentials (K)	4	40
Wind, snow, permanent and imposed load resistance (N/mm^2)	4	45
For uses relating to noise reduction		
Direct airborne sound insulation (dB)	3	32(-1;-2)
For uses relating to energy conservation		
Emissivity ε_d	3	0.89
U-value ($W/(m^2.K)$)	3	NPD
Light transmittance τ_v	3	0.9
Light reflectance ρ_v/ρ'_v	3	0.08/0.08
Solar direct transmittance τ_e	3	0.85
Solar direct reflectance	3	0.08/0.08
g-value	3	0.87
Durability	3	NPD

NPD : No Performance Determined

The performance of the product is in conformity with the declared performances.
This declaration of performance is issued under the sole responsibility of the manufacturer.
Signed for and on behalf of the manufacturer by:

Fabrice Desmons — 03/10/2022

International Product Strategy Director Building Glass — Courbevoie - France

Digitally signed by Bezer Igor
Date: 2023.03.16 17:15:52 EET
Reason: MoldSign Signature
Location: Moldova

Nachweis

Widerstandsfähigkeit bei Windlast
Schlagregendichtheit
Luftdurchlässigkeit
Bedienkräfte

Prüfbericht 102 39008/1

ift ROSENHEIM

Auftraggeber	SARAY Aluminium Baglar Mahallesi Osmanpasa Cad. No.:89 Günesli / Istanbul Türkei
Produkt	Einflügeliges Drehkippfenster
System	EW 69
Außenmaß (B x H)	1200 mm x 1500 mm
Rahmenmaterial	Aluminium-Kunststoff-Verbundprofile
Besonderheiten	-/-

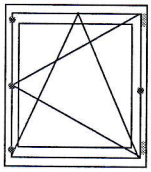
Grundlagen

EN 14351-1 : 2006-03

Prüfnormen:
EN 1026 : 2000-06
EN 1027 : 2000-06
EN 12211 : 2000-06
EN 12046-1 : 2003-11
EN 14609 : 2004-03

Entsprechende nationale Fassungen (DIN EN)

Darstellung



Widerstandsfähigkeit bei Windlast – EN 12210

Klasse C4 / B4

Schlagregendichtheit – EN 12208

Klasse 4A

Luftdurchlässigkeit – EN 12207

Klasse 4

Bedienkräfte – EN 13115

Klasse 0

Verwendungshinweise

Dieser Prüfbericht dient zum Nachweis der aufgeführten Eigenschaften für Fenster nach EN 14351-1 : 2006-03. Die ermittelten Ergebnisse können vom Hersteller als Grundlage für den herstellereigenen zusammenfassenden ITT-Bericht verwendet werden. Die Festlungen aus EN 14351-1 : 2006-03 sind zu beachten.

Gültigkeit

Die genannten Daten und Ergebnisse beziehen sich ausschließlich auf den geprüften und beschriebenen Probekörper.

Die Prüfergebnisse können nach EN 14351-1, unter Beachtung von Anlage E.1, in Eigenverantwortung des Herstellers übertragen werden.

Diese Prüfung ermöglicht keine Aussage über weitere Leistungs- und qualitätsbestimmenden Eigenschaften der vorliegenden Konstruktion; insbesondere Witterungs- und Alterungserscheinungen wurden nicht berücksichtigt.

Veröffentlichungshinweise

Es gilt **ift**-Merkblatt „Bedingungen und Hinweise zur Benutzung von **ift**-Prüfdokumentationen".

Das Deckblatt kann als Kurzfassung verwendet werden.

Inhalt

Der Nachweis umfasst insgesamt 8 Seiten

ift Rosenheim
24. September 2009

Jörn Peter Lass, Dipl.-Ing. (FH)
Prüfstellenleiter
ift Zentrum Fenster & Fassaden

Robert Kolacny, Dipl.-Ing. (FH)
Prüfingenieur
ift Rosenheim & Fassaden

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Notified Body Nr.: 0757
Anerkannte PÜZ-Stelle: BAY 18
Deutscher Akkreditierungs Rat
DAP-PL-0808.99
DAP-ZE-2265.00
TGA-ZM-15-93-00
TGA-ZM-15-93-80

Nachweis
Wärmedurchgangskoeffizient

Prüfbericht 422 39008/3

ift ROSENHEIM

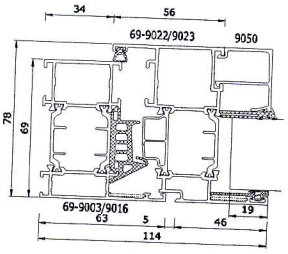
Auftraggeber	**SARAY Aluminium** Baglar Mahallesi Osmanpasa Cad. No:89 34540 Günesli / Istanbul Türkei
Produkt	Thermisch getrennte Metallprofile, Profilkombination: Flügelrahmen-Blendrahmen
Bezeichnung	EW 69
Bautiefe	Flügelrahmen: 78 mm Blendrahmen: 69 mm
Ansichtsbreite	114 mm
Material	Aluminiumprofil mit thermischer Trennung
Oberfläche	pulverbeschichtet / lackiert / anodisch oxidiert
Thermische Trennung / Dämmzone	Art: Stege durchgehend Material: Polyamid 6.6 mit 25% GF Metalloberflächen im Dämmzonenbereich: oxidiert/lackiert/pulverbeschichtet
Füllung	Dicke: 36 mm Einbautiefe: 19 mm
Besonderheiten	-

Grundlagen

EN ISO 10077-2 : 2003-10 Wärmetechnisches Verhalten von Fenstern, Türen und Abschlüssen - Berechnung des Wärmedurchgangskoeffizienten - Teil 2: Numerisches Verfahren für Rahmen

Darstellung

Probekörper 1:



Verwendungshinweise

Dieser Prüfbericht dient zum Nachweis des Wärmedurchgangskoeffizienten U_f.

Gültigkeit

Die genannten Daten und Ergebnisse beziehen sich ausschließlich auf den geprüften und beschriebenen Gegenstand.

Die Ermittlung des Wärmedurchgangskoeffizienten ermöglicht keine Aussage über weitere leistungs- und qualitätsbestimmende Eigenschaften der vorliegenden Konstruktion.

Veröffentlichungshinweise

Es gilt das **ift**-Merkblatt „Bedingungen und Hinweise zur Benutzung von **ift**-Prüfdokumentationen".

Das Deckblatt kann als Kurzfassung verwendet werden.

Inhalt

Der Nachweis umfasst insgesamt 6 Seiten

Wärmedurchgangskoeffizient

$U_f = 2{,}4\ W/(m^2 \cdot K)$

ift Rosenheim
Anerkannte Prüfstelle im bauaufsichtlichen Verfahren zur Bestimmung des Wärmedurchgangskoeffizienten
BAY 18

ift Rosenheim
18. Februar 2010

Klaus Specht, Dipl.-Ing. (FH)
Stv. Prüfstellenleiter
ift Zentrum Glas Baustoffe Bauphysik

Manuel Demel, Dipl.-Ing. (FH)
Prüfingenieur
ift Zentrum Glas, Baustoffe & Bauphysik

ift Rosenheim GmbH
Geschäftsführer:
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BLZ 711 500 00

Notified Body Nr.: 0757
Anerkannte PÜZ-Stelle: BAY 18
DAP-PL-0806.99
DAP-ZE-2266.00
TGA-ZM-18-93-00
TGA-ZM-18-93-80

DECLARATION OF PERFORMANCE

CE

Saint-Gobain Building Glass Europe
Tour Saint-Gobain 12 place de l'Iris 92400 Courbevoie France

EN 1096-4 - Coated glass
intended to be used in buildings and construction works

PLANITHERM 4S EVOLUTION 4 mm
M104947

NB: 0336, 0497, 0679, 0757, 0809, 1004, 1116, 1136, 1154, 1174, 1234, 1322, 1694, 1717, 1750, 1751

ESSENTIAL CHARACTERISTICS	AVCP SYSTEMS	PERFORMANCES
For uses relating to safety in case of fire:		
Resistance to fire	1	NPD
Reaction to fire	3,4	A1
External fire performance	3,4	NPD
For uses as anti-bullet or anti-explosion glazing		
Bullet resistance	1	NPD
Explosion resistance	1	NPD
For uses liable to present "safety-in-use" risks and subject to such regulations		
Burglar resistance	3	NPD
Pendulum body impact resistance	3	NPD
Resistance against sudden temperature changes and temperature differentials (K)	4	40
Wind, snow, permanent and imposed load resistance (N/mm^2)	4	45
For uses relating to noise reduction		
Direct airborne sound insulation (dB)	3	30(-2;-2)
For uses relating to energy conservation		
Emissivity ε_d	3	0.01
U-value ($W/(m^2.K)$)	3	NPD
Light transmittance τ_v	3	0.66
Light reflectance ρ_v/ρ'_v	3	0.19/0.22
Solar direct transmittance τ_e	3	0.41
Solar direct reflectance	3	0.36/0.45
g-value	3	0.44
Durability	3	C

F2=PLANITHERM 4S EVOLUTION
NPD : No Performance Determined

The performance of the product is in conformity with the declared performances.
This declaration of performance is issued under the sole responsibility of the manufacturer.
Signed for and on behalf of the manufacturer by:

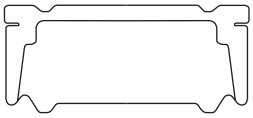
Fabrice Desmons — 03/10/2022
International Product Strategy Director Building Glass — Courbevoie - France

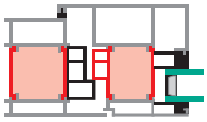
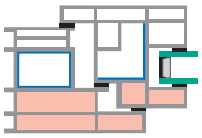
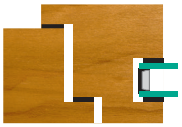
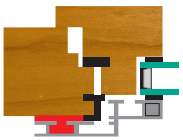
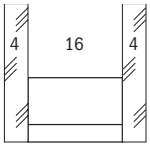
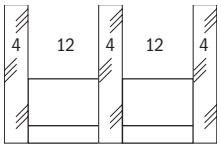
Data sheet Psi values for windows

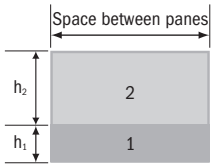
based on determination of the equivalent thermal conductivity of spacers by measurement

ROLLTECH A/S - an Alu-Pro Group Company
ROLLTECH A/S, W. Brüels Vej 20, DK - 9800 Hjørring

Alu-Pro S.r.l., Via A. Einstein 8, Z.I., IT - 30033 Noale

	Product name	Spacer height in mm	Material	Thickness d in mm
Profile description	**CHROMATECH ultra F / F1** 	6.9 Spacer category B	Stainless steel PVC	0.1 0.9

	Representative glass constructions	Metal with thermal break	Plastic	Wood	Wood/Metal
Representative frame profiles					
Representative psi value double-sheet thermally insulating glass W/mK	 Double-sheet insulating glass U_g=1.1 W/m²K	0.048	0.039	0.039	0.043
Representative psi value triple-sheet thermally insulating glass W/mK	 Triple-sheet insulating glass U_g=0.7 W/m²K	0.043	0.037	0.038	0.041

		Space between panes in mm	$\lambda_{eq,2B}$ in W/mK	
			Box 1 · h_1 = 3 mm	Box 2 · h_2 = 6.9 mm
Two Box model Characteristic values		Can be used for all spacer widths	0.40	0.28

Explanations

The equivalent thermal conductivity has been determined in accordance with the ift guideline WA-17engl/1 "Thermally improved spacers – Determination of the equivalent thermal conductivity by measurement". The representative linear heat transfer coefficients calculated in this way (representative psi values) apply to typical frame profiles and glazing for the determination of the heat transfer coefficient U_W of windows. They have been determined under the boundary conditions (frame profiles, glazing, glass mounting depth, back covering, primary and secondary sealant) defined in the ift guideline WA-08engl/3 "Thermally improved spacers – Part 1: Determination of the representative Psi value for window frame profiles". This guideline also governs the area of validity and application of the representative psi values. In order to avoid rounding errors, the psi values in the data sheet have been given at 0.001 W/mK. The method for the arithmetical determination of the psi values has an accuracy of ± 0.003 W/mK. Differences of less than 0.005 W/mK are not significant. For further information, refer to the Bulletin 004/2008 "Guide to Warm Edge" of Bundesverband Flachglas.

Characteristic values determined by:

ift ROSENHEIM

Certificate of Registration

nqa global assurance

This is to certify that the Quality Management System of

Saray Döküm ve Madeni Aksam Sanayi Turizm A.Ş.

Bağlar Mahallesi Osman Paşa Caddesi No 89 Güneşli , İstanbul , Turkey

(Central function listed above. See appendix for additional locations)

applicable to

Extrusion, anodization and powder coating of aluminium products

has been assessed and registered by NQA against the provisions of

ISO 9001:2015

This registration is subject to the company maintaining a quality management system, to the above standard, which will be monitored by NQA

Certificate No:	7433
ISO Approval Date:	30 January 1996
Reissued:	13 May 2021
Valid Until::	15 May 2024
EAC Code:	17

UKAS MANAGEMENT SYSTEMS 0015

Certificate of Registration

nqa global assurance

İşbu belge,

Saray Döküm ve Madeni Aksam Sanayi Turizm A.Ş.

Bağlar Mahallesi Osman Paşa Caddesi No 89 Güneşli , İstanbul ,Türkiye

(Merkez ofis bir üst satırda açıklanmıştır.Diğer Tesisler için Eke bakınız)

Kalite Yönetim Sisteminin

Aluminyum profil üretimi, eloksal kaplanması ve boyanması

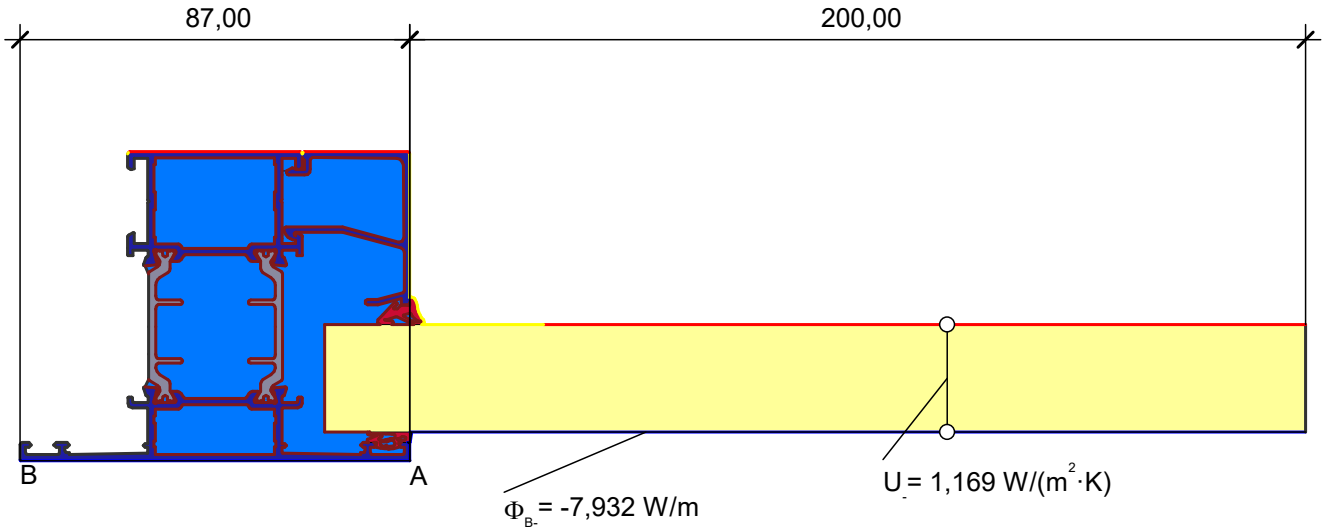
Uygulamasının

ISO 9001:2015

Hükümleri gereğince NQA tarafından denetlendiğini ve tescil edildiğini doğrular.
Bu tescil işlemi, kuruluşun kalite yönetim sistemini, yukarıda anılan standart uyarınca NQA'in denetimi altında sürdürmesine bağlıdır.
Uyuşmazlık halinde bu sertifikanın İngilizce dilindeki yorumu geçerli olacaktır

Sertifika No:	7433
ISO Onay Tarihi:	30 Ocak 1996
Yeniden Yayın:	13 Mayıs 2021
Geçerlilik Tarihi:	15 Mayıs 2024
EAC Kodu:	17

UKAS MANAGEMENT SYSTEMS 0015

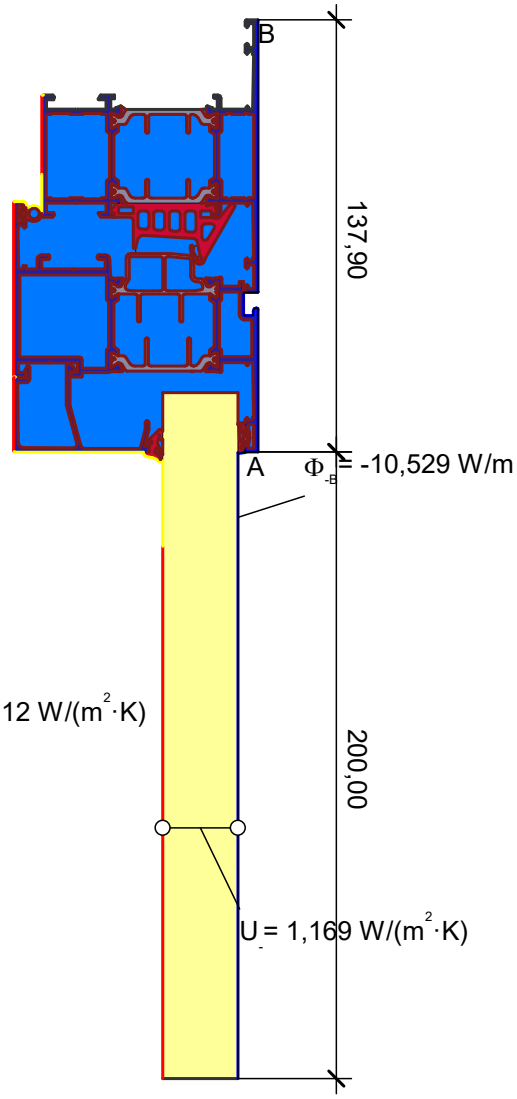


$$U_{f\,A,B} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_f} = \frac{\frac{7,932}{20,000} - 1,169 \cdot 0,200}{0,087} = 1,87\ W/(m^2 \cdot K)$$

Material	λ[W/(m·K)]	ε
Aluminium (Si Alloys)	160,000	0,900
EPDM (ethylene propylene diene monomer)	0,250	0,900
Panel	0,035	0,900
Polyamid 6.6 with 25% glass fibre	0,300	0,900
Unventilated air cavity	anisotropic	

Boundary Condition	q[W/m²]	θ[K]	R[(m²·K)/W]	ε
Epsilon 0.9				0,900
Exterior, frame		273,150	0,040	
Interior, frame, normal		293,150	0,130	
Interior, frame, reduced		293,150	0,200	
Symmetry/Model section	0,000			

$$U_{f\,A,B} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_f} = \frac{\frac{10{,}529}{20{,}000} - 1{,}169 \cdot 0{,}200}{0{,}138} = 2{,}12\ W/(m^2 \cdot K)$$



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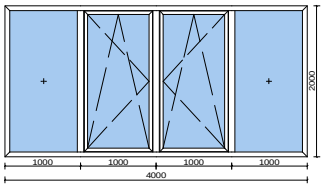
Exterior, frame		273,150	0,040	
Interior, frame, normal		293,150	0,130	
Interior, frame, reduced		293,150	0,200	
Symmetry/Model section	0,000			

Poz 001

138 Adet Pencere Elementleri 4000 mm x 2000 mm, Ünite içeriği:İki Sabit Alan ve İki Çift eksen pencere.



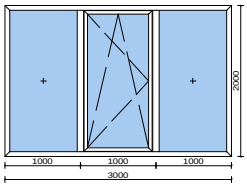
Ölçek %
Dıştan Görünüş
Sistem: Saray EW69 EW-69 2MM

Bölge	Alan/Uzunluk	U-değeri
Profiller (U_f) (Sistem tedarikçisi tarafından deklarasyon)	1.777 m²	2,20 W/(m²K)
Cam (U_g)	6.223 m²	0,90 W/(m²K)
Cam Arabağlantı (Psi)	21.402 m	0,045 W/(m K)
Toplam (U_w)	**8.000 m²**	**1,31 W/(m²K)**

Ünite, veritabanında ısı geçirgenliği değerleri olmayan profilleri içeriyor, bu yüzden yerine standart ısı geçirgenliği değerleri kullanıldı.

Poz 002

6 Adet Pencere Elementleri 3000 mm x 2000 mm, Ünite içeriği:İki Sabit Alan ve Çift eksen pencere.



Ölçek %
Dıştan Görünüş
Sistem: Saray EW69 EW-69 2MM

Bölge	Alan/Uzunluk	U-değeri
Profiller (U_f) (Sistem tedarikçisi tarafından deklarasyon)	1.214 m²	2,20 W/(m²K)
Cam (U_g)	4.786 m²	0,90 W/(m²K)
Cam Arabağlantı (Psi)	16.236 m	0,045 W/(m K)
Toplam (U_w)	**6.000 m²**	**1,28 W/(m²K)**

Ünite, veritabanında ısı geçirgenliği değerleri olmayan profilleri içeriyor, bu yüzden yerine standart ısı geçirgenliği değerleri kullanıldı.

Tüm ünitelerin toplamı (U_w)	**1140.000 m²**	**1,31 W/(m²K)**

Die Wärmedurchgangskoeffizienten Uw wurden für Einfachfenster nach EN ISO 10077-1:2017 bestimmt.Not: Uw Kernel V1.0

Calumen Pro

SAINT-GOBAIN

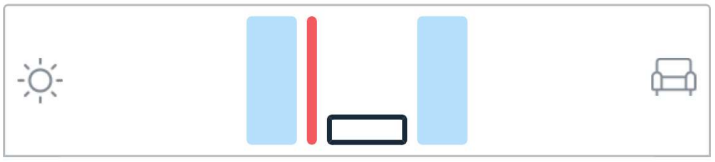
4(16 CHROMATECH ultra Argon 90)4

PLANITHERM 4S EVOLUTION #2

Calculat de: SGG RO

Calculat pe: 16/03/2023

Tip vitraj



Sticlă 1
PLANICLEAR (4mm) - Fără tratament termic
PLANITHERM 4S EVOLUTION

Cavitate 1
Argon 90% 16 mm

Sticlă 2
PLANICLEAR (4mm) - Fără tratament termic

Performanțe

Factori luminoși	**CIE (15-2004)**
Transmitanță luminoasă (TL)	61%
Reflexie externă (RLe)	22%
Reflexie internă (RLi)	26%
Factori energetici	**EN410 (2011-04)**
Transmitanța (TE)	37%
Reflexia externă (Ree)	38%
Reflexia internă (Rei)	42%
Absorbția A1 (AE1)	23%
Absorbția A2 (AE2)	1%
Factori solari	**EN410 (2011-04)**
Factor solar (g)	0.39
Coeficient de umbrire (SC)	0.45
Coeficient transmisie termică (Ug)	**EN673-2011**
Ug	0.9 W/(m².K)
Unghi raportat la verticală	0°
Coeficienți de reducție acustică	**EN 12758**
Valori acustice conform EN 12758 și de la Organism notificat	
Rw	31 (-1; -4) dB
STC (ASTM E413)	N/A
OITIC (ASTM E1332)	N/A
Redarea culorilor	**CIE (15-2004)**
În transmisie	97
În reflexie	98
Clasa de siguranță	**EN 12600**
Rezistența la impact cu pendulul	NPD
Anti-efracție	**EN 356**
Rezistență la efracție	NPD
Dimensiuni de producție	
Grosimea nominală	24 mm
Greutate	20.0 kg/m²

Sustenabilitate

Amprenta de Carbon

Valoarea este calculată în funcție de compoziția calculată pe baza standardului EN 15804+A2 (2019)

Potențialul de încălzire globală (GWP) (kg, CO_2 equiv/m²) Medie Europeană	33

TÜVRheinland CERTIFIED
Verified Results EN 410 EN 673
www.tuv.com ID 0000036859

Calumen calculează caracteristicile fotometrice și transmisia termică a sticlei folosind algoritmi de calcul care respectă următoarele standarde: standardele europene EN 410 și EN 673, standardul internațional ISO9050, standardul japonez JIS R 3106/3107 și standardul coreean KS L 2514/ 2525. Datele funcționale de ieșire și regulile de calcul ale Calumen pentru standardele EN 410 și EN 673 au fost validate de TÜV Rheinland (raport 11923R-11-33705). Performanțele tehnice obținute conform standardului NFRC-2010 sunt furnizate doar cu titlu informativ. Toate valorile certificate trebuie obținute cu software certificat NFRC.
Indicii de atenuare a sunetului sunt măsurați în condiții de laborator conform standardelor EN ISO 10140 și EN 12758. Reproductibilitatea indicelui măsurat este de +/-1dB (EN 12758).). Dacă nu există o valoare măsurată, Calumen poate propune un indice calculat. Indicii calculați sunt furnizați doar cu titlu informativ. Precizia pentru indicele Rw se află într-un interval de +/-2dB. NB: măsurătorile in situ pot diferi în funcție de dimensiunile sticlei, mediu, performanța cadrului, tipul de instalare, sursa de zgomot etc.
Rezistența la impact cu un corp este măsurată conform EN 12600 și rezistența la efracție este măsurată conform EN 356.
Valorile furnizate de Calumen III (EN 410, EN 673, ISO9050, JIS R 3106/3107, KS L 2514/2525, EN 356, EN 12600, NFRC)- sunt furnizate în scop informativ și pot fi modificate. Ele nu vor fi utilizate pentru a garanta performanța produsului. Sunt oficiale doar valorile înscrise în declarația de performanță disponibilă pe site-ul de marcare CE al Saint-Gobain Glass. UTILIZATORUL trebuie să verifice fezabilitatea produselor asociate, în special în ceea ce privește grosimile și aspectele estetice. Mai mult, UTILIZATORUL este responsabil să verifice dacă combinațiile de sticlă îndeplinesc cerințele legale naționale, locale sau legale.