

IV Product pass declaration of performance & CE marking

IV.1 GENERAL EXPLANATION

Following paragraphs indicate the performances which can be declared on the Declaration of Performance (DoP) in accordance with the Regulation EU 305/2011 of the European Parliament and of the Council of 9 March 2011.

The listed essential characteristics are the essential characteristics mentioned in hEN 14351-1+A1:2010: Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics.

All essential characteristics should be mentioned on the DoP. Where no performance is required, NPD (No Performance Declared) can be used.

The mentioned performances are performances which can be achieved for the given dimensions when the product is fabricated following the Reynaers instruction manual (catalogue). The performances as mentioned will meet the requirements of the majority of projects.

Higher performances for smaller dimensions or lower performances for larger dimensions might be possible. In this case contact your Reynaers office. For AWW performances, the maximum dimensions indicated in the system catalogue must be respected.

It is evident that it is allowed to declare lower performances than those mentioned in the product pass. E.g. when resistance to wind load of 1600 Pa was tested, also 1200 Pa can be declared.

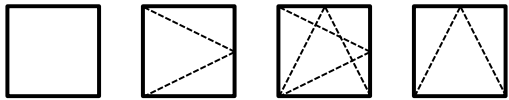
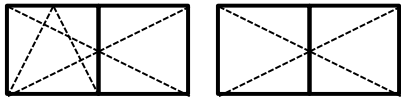
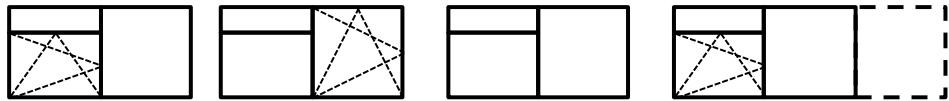
In the second part of the table the non essential characteristics are indicated. These are the characteristics which give information about the performance of a product, but which are not legally required in any European country and thus not mandatory to declare.

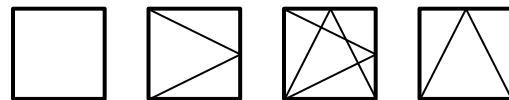
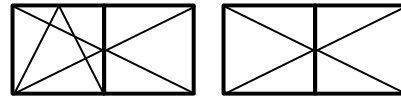
IV.2 NOTIFIED BODIES

No	Notified body	Name	Adress	Country
[1]	0960	SKG	Nieuwe Kanaal 9F 6700 AJ Wageningen	Netherlands
[2]	0757	IFT ROSENHEIM	Theodor-Gietl-Strasse 7-9 83026 Rosenheim	Germany
[3]	1488	INSTYTUT TECHNIKI BUDOWLANEJ (ITB)	ul. Filtrowa 1 00-611 Warszawa	Poland
[4]	1136	BELGIAN BUILDING RESEARCH INSITUTE (BBRI)	Lombardstraat 42 1000 Brussel	Belgium
[5]	1769	UNIVERSITY OF GENT	Sint-Pietersnieuwstraat 41 9000 Gent	Belgium
[6]	0432	MATERIALPRÜFUNGSAMT NORDRHEIN-WESTFALEN (MPA NRW)	Auf den Thränen 2 59597 Erwitte	Germany
[7]	1288	WINTTECH ENGINEERING LIMITED	Halesfield 2 Telford, Shropshire TF7 4QH	United Kingdom
[8]	0679	CENTRE SCIENTIFIQUE ET TECHNIQUE DU BÂTIMENT (CSTB)	84, Avenue Jean Jaurès Champs-sur-Marne F-77447 Marne-la-Vallée Cedex 2	France
[9]	0074	CENTRE D'EXPERTISE DU BÂTIMENT ET DES TRAVAUX PUBLICS (CEBTP)	Domaine De Saint-Paul – 102, Route de Limours 78471 Saint-Remy-Les-Chevreuse Cedex	France
[10]	0744	SOCOTEC	Les Quadrants – 3, Avenue du Centre – Guyancourt 78182 St-Quentin en Yvelines	France
[11]	1671	PEUTZ	Lindenlaan 41 – Molenhoek PO Box 66 6585 ZH Mook	Netherlands
[12]	1749	TNO DEFENCE, SECURITY AND SAFETY	Lange Kleiweg 137 Postbus 45 2280 AA Rijswijk	Netherlands
[13]	0749	BELGIAN CONSTRUCTION CERTIFICATION ASSOCIATION (BCCA)	Aarlenstraat 53 1040 Brussel	Belgium
[14]	1309	PRÜFINSTITUT SCHLÖSSER UND BESCHLÄGE, VELBERT (PIV)	Wallstrasse 41 42551 Velbert	Germany
[15]	0845	DANISH INSTITUTE OF FIRE AND SECURITY TECHNOLOGY (DBI)	Jernholmen, 12 2650 Hvidovre	Denmark

IV.3 VARIANTS

Different variants have been grouped based on similar design and following the guidelines of the harmonised standard.

Inward Opening	
IV.5.1	
IV.5.2	
IV.5.3	

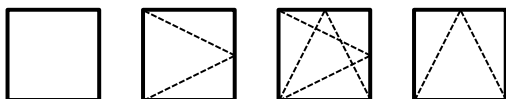
Outward opening	
IV.5.4	
IV.5.5	

IV.4 EXPLANATIONS AND SYMBOLS

H	Element Height
B	Element Width
Fh	Vent Height
Fb	Vent Width
npd	No Performance Declared

IV.5 PERFORMANCE

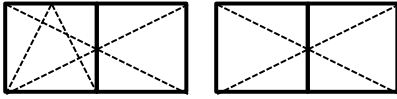
IV.5.1 Inward Opening



Characteristic	No	Classification	Notified body - Report	Limits (mm)
Essential characteristics				
Watertightness (EN 12208)	4.5	9A (600 Pa) 7A (300 Pa)	[3] – LK06-0948/12/R28NK [3] – LK08-0948/12/R28NK	FbxFh<1000x2000 FbxFh<1500x1700
Dangerous substances	4.6	In the materials delivered by Reynaers, no dangerous substances as indicated in hEN14351-1 are used		
Resistance to wind load (EN 12210)	4.2	CE2400 (2400 Pa) C5 (2000 Pa)	[3] – LK06-0948/12/R28NK [3] – LK08-0948/12/R28NK	FbxFh<1000x2000 FbxFh<1500x1700
Load-bearing capacity of safety devices (EN 14609)	4.8	Pass (350N/60s)	[3] – LK06-0948/12/R28NK [3] – LK08-0948/12/R28NK	FbxFh<1000x2000 FbxFh<1500x1700
Acoustic performance (EN ISO 140-3 & EN ISO 717-1)	4.11	Glass	Window	See also IV.6
		41 (-2;-6)	41 (-1;-5)	[3] – LA01-0948/12/R29NA BxH = 1230x1480
Thermal transmittance (EN ISO 10077-1)	4.12	Uw to be calculated in function of the project. Pre-calculated U-values for dimensions 1230*1480mm and 1480*2180 can be found in the Uf-value tables. Uf-values are calculated under certification of BCCA [13]. Certificate BPCB - 420 - 72 - 10077/2 REYN - 02.		
Radiation properties (EN 410)	4.13	These properties must be evaluated by the CE-label of the glass		
Air permeability (EN 12207)	4.14	4	[3] – LK06-0948/12/R28NK [3] – LK08-0948/12/R28NK	FbxFh<1000x2000 FbxFh<1500x1700
Non-essential characteristics				
Reaction to fire (EN 13501-1)	4.4	Painted alu. profile: A2 Gaskets: E	Certificate P155748 [6] – 230006500-6	
Impact resistance (EN 13049)	4.7	5⁽¹⁾ I3/E2⁽¹⁾	[3]–LK06im-0948/12/R28NK [3]–LK03im-0948/12/R28NK	FbxFh>1000x2000 FbxFh>900x1650
Operating forces (EN 13115)	4.16	1	[3] – LK06-0948/12/R28NK [3] – LK08-0948/12/R28NK	FbxFh<1000x2000 FbxFh<1500x1700
Mechanical strength (EN 13115)	4.17	4	[3] – LK06-0948/12/R28NK [3] – LK08-0948/12/R28NK	FbxFh<1000x2000 FbxFh<1500x1700
Ventilation (EN 13141-1)	4.18	npd		
Bullet resistance (EN 1522)	4.19	npd		
Explosion resistance (EN 13123-1 & EN 13123-2)	4.20	npd		
Resistance to repeated opening and closing (EN 12400)	4.21	npd		
Behaviour between different climates (ENV 13420)	4.22	npd		
Burglar resistance (ENV 1627)	4.23	npd		

(1): Impact resistance only valid with tubular or L-shaped glazing beads

IV.5.2 Inward Opening



Characteristic	No	Classification	Notified body - Report	Limits (mm)
Essential characteristics				
Watertightness (EN 12208)	4.5	4A (150 Pa) 9A (600 Pa) ⁽²⁾	[3] – LK03-0948/12/R28NK	FbxFh<900x1650
Dangerous substances	4.6	In the materials delivered by Reynaers, no dangerous substances as indicated in hEN14351-1 are used		
Resistance to wind load (EN 12210)	4.2	C3 (1200 Pa)	[3] – LK03-0948/12/R28NK	FbxFh<900x1650
Load-bearing capacity of safety devices (EN 14609)	4.8	Pass (350N/60s)	[3] – LK06-0948/12/R28NK [3] – LK08-0948/12/R28NK	FbxFh<1000x2000 FbxFh<1500x1700
Acoustic performance (EN ISO 140-3 & EN ISO 717-1)	4.11	npd	See IV.6	
Thermal transmittance (EN ISO 10077-1)	4.12	Uw to be calculated in function of the project. Uf-values are calculated under certification of BCCA [13]. Certificate BPCB - 420 - 72 - 10077/2 REYN - 02		
Radiation properties (EN 410)	4.13	These properties must be evaluated by the CE-label of the glass		
Air permeability (EN 12207)	4.14	3 4 ⁽²⁾	[3] – LK03-0948/12/R28NK	FbxFh<900x1650
Non-essential characteristics				
Reaction to fire (EN 13501-1)	4.4	Painted alu. profile: A2 Gaskets: E	Certificate P155748 [6] – 230006500-6	
Impact resistance (EN 13049)	4.7	I3/E2 ⁽¹⁾	[3] – LK03im-0948/12/R28NK	FbxFh>900x1650
Operating forces (EN 13115)	4.16	1	[3] – LK06-0948/12/R28NK [3] – LK08-0948/12/R28NK	FbxFh<1000x2000 FbxFh<1500x1700
Mechanical strength (EN 13115)	4.17	4	[3] – LK06-0948/12/R28NK [3] – LK08-0948/12/R28NK	FbxFh<1000x2000 FbxFh<1500x1700
Ventilation (EN 13141-1)	4.18	npd		
Bullet resistance (EN 1522)	4.19	npd		
Explosion resistance (EN 13123-1 & EN 13123-2)	4.20	npd		
Resistance to repeated opening and closing (EN 12400)	4.21	npd		
Behaviour between different climates (ENV 13420)	4.22	npd		
Burglar resistance (ENV 1627)	4.23	npd		

(1): Impact resistance only valid with tubular or L-shaped glazing beads

(2): with additional central gasket

IV.5.3 Inward Opening



Characteristic	No	Classification	Notified body - Report	Limits (mm)
Essential characteristics				
Watertightness (EN 12208)	4.5	9A (600 Pa) E900 (900 Pa) ⁽¹⁾	[3] – LK01-0948/12/R28NK	(3) (4)
Dangerous substances	4.6	In the materials delivered by Reynaers, no dangerous substances as indicated in hEN14351-1 are used		
Resistance to wind load (EN 12210)	4.2	C3 (1200 Pa) B5 (2000 Pa)	[3] – LK01-0948/12/R28NK	(2)
Load-bearing capacity of safety devices (EN 14609)	4.8	Pass (350N/60s)	[3] – LK01-0948/12/R28NK	(4)
Acoustic performance (EN ISO 140-3 & EN ISO 717-1)	4.11	npd	See IV.6	
Thermal transmittance (EN ISO 10077-1)	4.12	U _w to be calculated in function of the project. U _f -values are calculated under certification of BCCA [13]. Certificate BPCB - 420 - 72 - 10077/2 REYN - 02		
Radiation properties (EN 410)	4.13	These properties must be evaluated by the CE-label of the glass		
Air permeability (EN 12207)	4.14	4	[3] – LK01-0948/12/R28NK	(3) (4)
Non-essential characteristics				
Reaction to fire (EN 13501-1)	4.4	Painted alu. profile: A2 Gaskets: E	Certificate P155748 [6] – 230006500-6	
Impact resistance (EN 13049)	4.7	npd		
Operating forces (EN 13115)	4.16	See relevant test reports for opening parts		
Mechanical strength (EN 13115)	4.17	See relevant test reports for opening parts		
Ventilation (EN 13141-1)	4.18	npd		
Bullet resistance (EN 1522)	4.19	npd		
Explosion resistance (EN 13123-1 & EN 13123-2)	4.20	npd		
Resistance to repeated opening and closing (EN 12400)	4.21	npd		
Behaviour between different climates (ENV 13420)	4.22	npd		
Burglar resistance (ENV 1627)	4.23	npd		

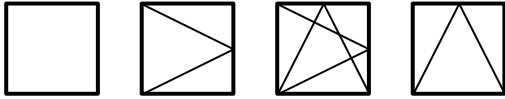
(1): With additional central gasket

(2): Deflection to be calculated in function of wind load and allowable deformation.

(3): Test report proves the watertightness and air permeability of a T-connection.

(4): For dimensions of the opening parts: see relevant section for the opening elements

IV.5.4 Outward opening



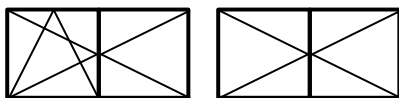
Characteristic	No	Classification	Notified body - Report	Limits (mm)
Essential characteristics				
Watertightness (EN 12208)	4.5	9A (600 Pa) E900 (900 Pa) ⁽²⁾	[3] – LK09-0948/12/R28NK	FbxFh<1200x1600
Dangerous substances	4.6	In the materials delivered by Reynaers, no dangerous substances as indicated in hEN14351-1 are used		
Resistance to wind load (EN 12210)	4.2	C4 (1600 Pa) C5 (2000 Pa) ⁽³⁾ CE2400 (2400 Pa)	[3] – LK09-0948/12/R28NK [3] – LK02-0948/12/R28NK	FbxFh<1200x1600 FbxFh<760x1600
Load-bearing capacity of safety devices (EN 14609)	4.8	Pass (350N/60s)	[3] – LK09-0948/12/R28NK	FbxFh<1200x1600
Acoustic performance (EN ISO 140-3 & EN ISO 717-1)	4.11	Glass	Window	See also IV.6
		41 (-2;-6)	42 (-2;-5)	[3] – LA02-0948/12/R29NA BxH = 1230x1480
Thermal transmittance (EN ISO 10077-1)	4.12	Uw to be calculated in function of the project. Pre-calculated U-values for dimensions 1230*1480mm and 1480*2180 can be found in the Uf-value tables. Uf-values are calculated under certification of BCCA [13]. Certificate BPCB - 420 - 72 - 10077/2 REYN - 02.		
Radiation properties (EN 410)	4.13	These properties must be evaluated by the CE-label of the glass		
Air permeability (EN 12207)	4.14	3	[3] – LK09-0948/12/R28NK	FbxFh<1200x1600
		4	[3] – LK02-0948/12/R28NK	FbxFh<760x1600
Non-essential characteristics				
Reaction to fire (EN 13501-1)	4.4	Painted alu. profile: A2 Gaskets: E	Certificate P155748 [6] – 230006500-6	
Impact resistance (EN 13049)	4.7	I3/E4 ⁽¹⁾ I2/E3 ⁽¹⁾	[3] – LK02im-0948/12/R28NK [3] – LK04im-0948/12/R28NK	FbxFh>760x1600 FbxFh>800x1450
Operating forces (EN 13115)	4.16	1	[3] – LK09-0948/12/R28NK	FbxFh<1200x1600
Mechanical strength (EN 13115)	4.17	4	[3] – LK09-0948/12/R28NK	FbxFh<1200x1600
Ventilation (EN 13141-1)	4.18	npd		
Bullet resistance (EN 1522)	4.19	npd		
Explosion resistance (EN 13123-1 & EN 13123-2)	4.20	npd		
Resistance to repeated opening and closing (EN 12400)	4.21	npd		
Behaviour between different climates (ENV 13420)	4.22	npd		
Burglar resistance (ENV 1627)	4.23	npd		

(1): Impact resistance only valid with tubular or L-shaped glazing beads

(2): with additional central gasket

(3): with additional locking points

IV.5.5 Outward opening



Characteristic	No	Classification	Notified body - Report	Limits (mm)
Essential characteristics				
Watertightness (EN 12208)	4.5	9A (600 Pa) E900 (900 Pa) ⁽²⁾	[3] – LK04-0948/12/R28NK	FbxFh<800x1450
Dangerous substances	4.6	In the materials delivered by Reynaers, no dangerous substances as indicated in hEN14351-1 are used		
Resistance to wind load (EN 12210)	4.2	C3 (1200 Pa)	[3] – LK04-0948/12/R28NK	FbxFh<800x1450
Acoustic performance (EN ISO 140-3 & EN ISO 717-1)	4.11	npd	See IV.6	
Load-bearing capacity of safety devices (EN 14609)	4.8	npd		
Thermal transmittance (EN ISO 10077-1)	4.12	Uw to be calculated in function of the project. Uf-values are calculated under certification of BCCA [13]. Certificate BPCB - 420 - 72 - 10077/2 REYN - 02		
Radiation properties (EN 410)	4.13	These properties must be evaluated by the CE-label of the glass		
Air permeability (EN 12207)	4.14	3 4 ⁽²⁾	[3] – LK04-0948/12/R28NK	FbxFh<800x1450
Non-essential characteristics				
Reaction to fire (EN 13501-1)	4.4	Painted alu. profile: A2 Gaskets: E	Certificate P155748 [6] – 230006500-6	
Impact resistance (EN 13049)	4.7	I2/E3 ⁽¹⁾	[3] – LK04im-0948/12/R28NK	FbxFh>800x1450
Operating forces (EN 13115)	4.16	1	[3] – LK09-0948/12/R28NK	FbxFh<1200x1600
Mechanical strength (EN 13115)	4.17	4	[3] – LK09-0948/12/R28NK	FbxFh<1200x1600
Ventilation (EN 13141-1)	4.18	npd		
Bullet resistance (EN 1522)	4.19	npd		
Explosion resistance (EN 13123-1 & EN 13123-2)	4.20	npd		
Resistance to repeated opening and closing (EN 12400)	4.21	npd		
Behaviour between different climates (ENV 13420)	4.22	npd		
Burglar resistance (ENV 1627)	4.23	npd		

(1): Impact resistance only valid with tubular or L-shaped glazing beads

(2): with additional central gasket

IV.6 INFORMATION ACOUSTIC PERFORMANCE

IV.6.1 Window Rw (C;Ctr) declaration based on tabulated values

According to annex B of EN 14351-1, when no test results are available, the determination of the acoustic performances can be done as following:

a) IGU Rw → Window Rw

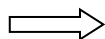
IGU Rw (dB)	Window Rw (dB)	Required seals
27	30	1
28	31	1
29	32	1
30	33	1
32	34	1
34	35	1
36	36	2
38	37	2
40	38	2

b) IGU Rw+Ctr → Window Rw+Ctr

IGU Rw+Ctr (dB)	Window Rw+Ctr (dB)	Required seals
24	26	1
25	27	1
26	28	1
27	29	1
28	30	1
30	31	1
32	32	2
34	33	2
36	34	2

c) C = -1 dB

d) $Ctr = (Window\ Rw+Ctr) - (Window\ Rw)$



CE marking Window: **Rw (C;Ctr)** based on steps a),c) and d)

Example:

IGU Rw = 34 (-1;-4)

(a) → Window Rw = 35 dB

(b) → IGU Rw+Ctr = 30 dB → Window Rw+Ctr = 31 dB

(c) → C = -1 dB

(d) → Ctr = 31 dB - 35 dB = -4 dB

→ CE marking Window: **35 dB (-1;-4)**, valid for window size 1.23 m x 1.48 m

IV.6.2 Extrapolation rules for different window sizes

For windows with other dimensions, the extrapolation rules for test results and tabulated values are indicated in following table:

Window size range		Sound insulation value for window
Test results for test specimen of any size (See IV.5)	Tabulated values (See IV.6.1)	
-100% to +50% of test specimen overall area	Overall area $\leq 2.7 \text{ m}^2$	Rw and Rw+Ctr are correct
+50% to +100% of test specimen overall area	$2.7 \text{ m}^2 < \text{Overall area} \leq 3.6 \text{ m}^2$	Correct Rw and Rw+Ctr with -1 dB
+100% to +150% of test specimen overall area	$3.6 \text{ m}^2 < \text{Overall area} \leq 4.6 \text{ m}^2$	Correct Rw and Rw+Ctr with -2 dB
>+150 % of test specimen overall area	$4.6 \text{ m}^2 < \text{Overall area}$	Correct Rw and Rw+Ctr with -3 dB