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 13830:2003 Curtain walling - Product standard.

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	WINTECH 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

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CW 86

IV.4 PERFORMANCE

IV.4.1   Classifications for CW86

Characteristic	No	Classification	Notified body - Report	Limits (mm)
Essential characteristics				
Resistance to wind load (EN 13116)	4.1	**2000 Pa**[(1)]	**[3] – NL-0652/P/LL-361/K/0**	Max. panel size[(2)]: 1500x3400 (5.1 m²) 2200x1800 (4.0 m²)
Dead load	4.2	See system catalogue for more detailed info about maximum weights for each type of glass support.		
Impact resistance (EN 14019)	4.3	**I5**[(3)] **I3** **E5**	**[3] – NL-0652/P/LL-361/K/0**	Minimum glass dimension 1200x800
Air permeability (EN 12152)	4.4	**A4** (600 Pa)	**[3] – NL-0652/P/LL-361/K/0**	
Watertightness (EN 12154)	4.5	**RE 1050** (1050 Pa)	**[3] – NL-0652/P/LL-361/K/0**	
Acoustic performance (EN ISO 140-3 & EN ISO 717-1)	4.6	npd		
Thermal transmittance (EN ISO 12631)	4.7	Ucw to be calculated according EN ISO 12631 (see also IV.5). The U-values of the different profiles are available in separate U-value tables. The U-values of the profiles are calculated under certification of BCCA [13]. Certificate BPCB - 420 - 72 - 10077/2 REYN - 02.		
Fire resistance (EN 13501-2)	4.8	npd		
Reaction to fire (EN 13501-1)	4.9	Painted alu. profile: **A2** Gaskets: **E**	**Certificate P155748 [6] – 230006500-6**	
Fire propagation	4.10	**EI60**	**[3] – NP-689/P/03/ZL**	
Thermal shock resistance	4.15	When requested, glass with thermal shock resistance conforming the appropriate standards has to be chosen.		
Resistance to horizontal loads	4.17	When requested, declare the value in kN at sill height. The loads have to be calculated according to national specifications.		
Non-essential characteristics				
Equipotentiality	4.13	All metal parts have to be conductively connected (see also examples in the catalogue and guidelines in Annex A of EN 13830). The electrical resistance has to be measured in compliance with Annex A of EN 13830.		

(1): Indicated wind load = design wind load
(2): Other dimensions and deformations to be calculated in function of the wind load (f_{max}< L/200, max 15 mm)
(3): Minimal three catches per panel height

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IV.5 THERMAL TRANSMITTANCE

The U-value of the complete curtain wall should be calculated according to EN ISO 12631.

The thermal transmittance U_{cw} of a typical curtain wall module should be declared, using the U value for the correct profile section (provided by Reynaers) and the U_g or U_p value for the used glazing or panel.

For **standard curtain walls**, U_{cw} can be calculated with following formula following the component assessment method from EN ISO 12631 with following formula:

$$U_{cw} = \frac{\Sigma A_g U_g + \Sigma A_p U_p + \Sigma A_f U_f + \Sigma A_m U_m + \Sigma A_t U_t + \Sigma l_{f,g}\psi_{f,g} + \Sigma l_{m,g}\psi_{m,g} + \Sigma l_{t,g}\psi_{t,g} + \Sigma l_p\psi_p + \Sigma l_{m,f}\psi_{m,f} + \Sigma l_{t,f}\psi_{t,f}}{A_{cw}}$$

where

U_g , U_p = thermal transmittances of glazing and panels;

U_f , U_m , U_t = thermal transmittances of frames, mullions and transoms;

$\Psi_{f,g}$, $\Psi_{m,g}$, $\Psi_{t,g}$, Ψ_p = linear thermal transmittances due to the combined thermal effects of

glazing unit or panel and frame or mullion or transom

$\Psi_{m,f}$, $\Psi_{t,f}$ = linear thermal transmittances due to the combined thermal effects of

frame, mullion and frame-transom

U_f , U_m , U_t can be derived from the U-value tables which were made up under certification of BCCA.

The Ψ-value can be calculated using the exact geometries of the connections or glass spacer or can be chosen from tables in Annex B from EN ISO 12631.

The area of the curtain walling can be calculated with formula:

$A_{CW} = A_g + A_p + A_f + A_m + A_t$

where

A_{CW} = area of curtain walling;

A_g = total area of glazing;

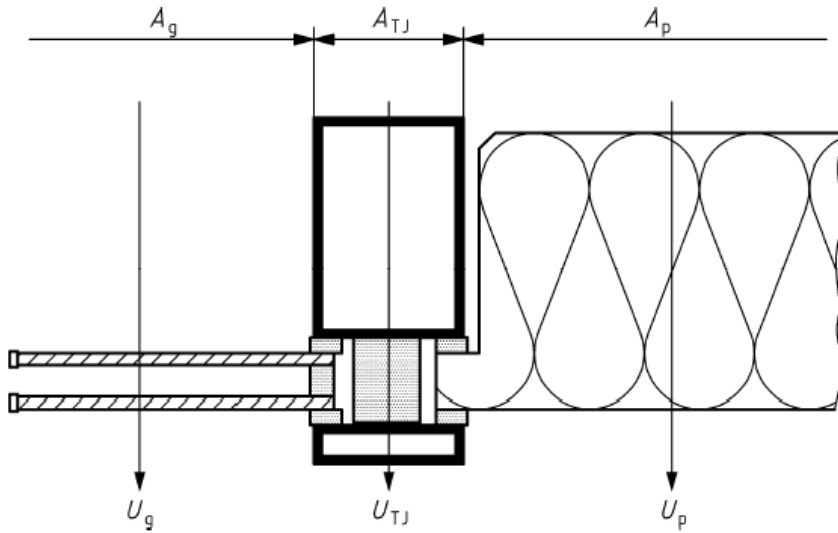A_p = total area of panels;

A_f = total area of frame;

A_m = total area of mullions;

A_t = total area of transoms.

For **structural clamped and structural glazing systems**, the single assessment method is used. The U-value of the curtain wall can then be calculated with following formula:

$$U_{cw} = \frac{\Sigma A_g U_g + \Sigma A_p U_p + \Sigma A_{TJ} U_{TJ}}{\Sigma A_g + \Sigma A_p + \Sigma A_{TJ}} \quad [W/m^2K]$$

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Where:

A   = area [m²]

U   = U-value (thermal transmittance) [W/m²K]

g   = glazing

p   = panel

TJ   = Thermal Joint

In the U-value of the profile section (U_{TJ} = U-value of Thermal Joint), the edge effect of the glass is already included and thus this must not be taken into account again.

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