CW 86

PRODUCT PASS

Date: **17-01-2024**

Language: **English**

Reynaers Aluminium

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1 GENERAL EXPLANATION

The performances indicated in this product pass can be used for a Declaration of Performance (DoP) in accordance with EU Regulation no. 305/2011. The characteristics are in accordance with the harmonized product standard EN 13830:2003 (Curtain walling - Product standard).

At least one performance of an essential characteristic shall be mentioned on the DoP. Non-essential characteristics are not legally required in any European country and thus not mandatory to declare. Where no performance is declared “NPD” (No Performance Declared) can be used.

The performances indicated can be achieved for the configuration and dimensions as tested and when the product is fabricated in accordance with the instructions of Reynaers (system catalogue). It is obviously allowed to declare lower performances; e.g. when resistance to wind load of 1600 Pa was tested, also 1200 Pa can be declared for the same configuration and dimensions.

Higher performances for smaller dimensions, lower performances for larger dimensions, or similar performances for larger dimensions but with the appropriate selection of profiles and/or reinforcements are possible. Validate your performances and deflections, adhering to the maximum admissible dimensions indicated in the system catalogue.

2 NOTIFIED BODIES

ID	Name	Address	Country
0074	CENTRE D'EXPERTISE DU BÂTIMENT ET DES TRAVAUX PUBLICS	Domaine De Saint-Paul – 102, Route de Limours 78471 Saint-Remy-Les-Chevreuse Cedex	France
0432	MATERIALPRÜFUNGSAMT NORDRHEIN-WESTFALEN	Auf den Thränen 2 59597 Erwitte	Germany
0679	CENTRE SCIENTIFIQUE ET TECHNIQUE DU BÂTIMENT	84, Avenue Jean Jaurès Champs-sur-Marne F-77447 Marne-la-Vallée Cedex 2	France
0744	SOCOTEC	Les Quadrants – 3,Avenue du Centre – Guyancourt 78182 St-Quentin en Yvelines	France
0749	BELGIAN CONSTRUCTION CERTIFICATION ASSOCIATION	Aarlenstraat 53 1040 Brussel	Belgium
0757	IFT ROSENHEIM	Theodor-Gietl-Strasse 7-9 83026 Rosenheim	Germany
0845	DANISH INSTITUTE OF FIRE AND SECURITY TECHNOLOGY	Jernholmen, 12 2650 Hvidovre	Denmark
0960	SKG-IKOB	Poppenbouwing 56 4191 NZ Geldermalsen	Netherlands
1136	BELGIAN BUILDING RESEARCH INSITUTE	Lombardstraat 42 1000 Brussel	Belgium
1234	EFECTIS NEDERLAND	Brandpuntlaan Zuid 16, Postbus 554 2665 ZN Bleiswijk	Netherlands
1288	WINTECH ENGINEERING LIMITED	Halesfield 2 Telford,Shropshire TF7 4QH	United Kingdom
1309	PRÜFINSTITUT SCHLÖSSER UND BESCHLÄGE, VELBERT	Wallstrasse 41 42551 Velbert	Germany
1488	INSTYTUT TECHNIKI BUDOWLANEJ	ul. Filtrowa 1 00-611 Warszawa	Poland
1671	PEUTZ	Lindenlaan 41, Molenhoek PO Box 66 6585 ZH MOOK	Netherlands
1749	TNO DEFENCE, SECURITY AND SAFETY	Lange Kleiweg 137, Postbus 45 2280 AA Rijswijk	Netherlands
1769	UNIVERSITY OF GENT	Sint-Pietersnieuwstraat 41 9000 Gent	Belgium
2211	INSTITUTO DE INVESTIGAÇÃO E DESENVOLVIMENTO TECNOLÓGICO PARA A CONSTRUÇÃO, ENERGIA, AMBIENTE E SUSTENTABILIDADE	Rua Pedro Hispano Pólo II da Universidade de Coimbra 3030-289 Coimbra	Portugal

3 EXPLANATIONS AND SYMBOLS

H: Element Height
B: Element Width
Fh: Vent Height
Fb: Vent Width
npd: No Performance Declared
CWFT: Classification Without Further Testing

(1) Indicated wind load = design load

(2) Other dimensions and deformations to be calculated in function of the wind load (fmax< L/200, max 15 mm)

(3) Minimal 3 catches per panel height

4 PERFORMANCE

4.1 Classifications for CW 86

	Characteristic		Performance	Notified body - Report	Tested size [mm]
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**2000 Pa** (1)	[1488] – NL-0652/P/LL-361/K/0	See report (2)
	4.2	Dead load	See system catalogue for more detailed info about maximum weights for each type of glass support.		
	4.3	Impact resistance	**I5** (3) **I3 / E5**	[1488] – NL-0652/P/LL-361/K/0	1200x800
	4.4	Air permeability	**A4** (600 Pa)	[1488] – NL-0652/P/LL-361/K/0	See report
	4.5	Watertightness	**RE 1050** (1050 Pa)	[1488] – NL-0652/P/LL-361/K/0	See report
	4.6	Airborne sound insulation	npd		
	4.7	Thermal transmittance	Ucw to be calculated according to EN ISO 12631 (see also 6). 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: certificate BPCB-420-72-10077/2.		
	4.8	Resistance to fire	npd		
	4.9	Reaction to fire	Anodized: **A1** Painted: **A2** Gaskets: **E**	EC decision 96/603/EC certificate P155748 [0432] – 230006500-6	
	4.10	Fire propagation	**EI60**	[1488] – NP-689/P/03/ZL	
	4.15	Thermal shock resistance	When requested, glass with thermal shock resistance conforming to the appropriate standards has to be chosen.		
	4.17	Resistance to live horizontal loads	When requested, declare the value in kN at sill height. The loads have to be calculated according to national specifications. The allowable loads per T-connection are given in 5.		
	Non-essential characteristics				
	4.13	Equipotentiality	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 accordance with Annex A of EN 13830.		

5 Thermal transmittance

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

The thermal transmittance Ucw of a typical curtain wall module should be declared, using the U value for the correct profile section (provided by Reynaers) and the Ug or Up value for the used glazing or panel.

For standard curtain walls, Ucw 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

Uf , Um , Ut 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;

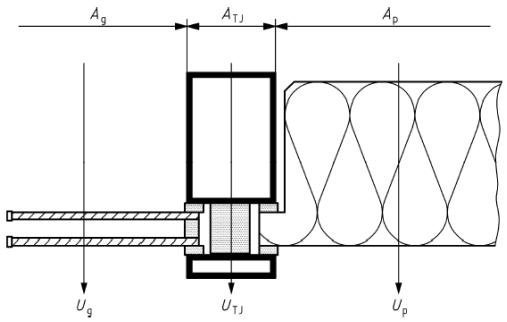
A_f = total area of frame;

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:

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



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 (UTJ = 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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UPDATES

17/01/2024

	VARIANTS	Characteristic
Text revision	GENERAL EXPLANATION	
Tested size [mm]	4.1	