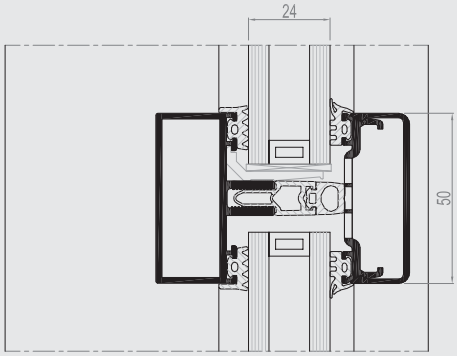
CW 50

Curtain Walls

REYNAERS
aluminium



CW 50 is a curtain wall façade and roof system that offers unlimited creative freedom and allows maximum entrance of light into the building. The system offers 11 individual styles with various outside appearances.

Any combination of vertical and inclined planes are possible together with the integration of different types of vents. The extensive range offers technical solutions for the different performance requirements of a façade such as fireproof and high insulating solutions.

TECHNICAL CHARACTERISTICS

				
Style variants	**CW 50**	**CW 50 SWISS SOLUTION**	**CW 50-FP**	**CW 50-HI**
	functional	rationalized system	Fire Proof EI 30 & EI 60	ultimate thermal comfort
Interior visible width	50 mm	50 mm	50 mm	50 mm
Depth mullions	from 42 mm to 230 mm	from 62.5 mm to 104.5 mm	from 63 mm to 105 mm	from 41.5 mm to 230 mm
Depth transoms	from 5 mm to 193 mm	from 62.5 mm to 104.5 mm	from 63 mm to 105 mm	from 4.7 mm to 193.2 mm
Inertia mullions (Ix: wind load)	min 14 cm^4 to max 1199 cm^4	min 36.5 cm^4 to max 119.5 m^4	min 37 cm^4 to max 123 cm^4	min 13.5 cm^4 to max 1199 cm^4
Inertia transoms (Ix: wind load)	min 4 cm^4 to max 535 cm^4	min 36.5 cm^4 to max 119.5 cm^4	min 34 cm^4 to max 107 cm^4	min 3.5 cm^4 to max 534.7 cm^4
Inertia transoms (Iy: glass load)	min 8 cm^4 to max 57 cm^4	min 16.9 cm^4 to max 25.4 cm^4	min 18 cm^4 to max 26 cm^4	min 7.9 cm^4 to max 57 cm^4
Exterior visible width	50 mm	50 mm	50 mm	50 mm
Exterior face caps	different shapes available	different shapes available	different shapes available	different shapes available
Glazing	fixing by pressure plates	fixing by pressure plates	fixing by pressure plates	fixing by pressure plates
Rebate height	20 mm	20 mm	20 mm	20 mm
Glass thickness	from 6 mm to 44 mm	up to 44 mm	33 mm	from 30 mm to 46 mm
Type of vents	all Reynaers systems top hung window (glass from 23-32 mm) POW window (glass from 22-28 mm)	all Reynaers systems top hung window (glass from 23-32 mm) POW window (glass from 22-28 mm)	CS 68-FP doors	all Reynaers systems vents of the CS 77 & CS 86-HI windows preferred
Roof application	yes	no	no	no

TECHNICAL CHARACTERISTICS

				
Style variants	**CW 50-SL**	**CW 50 ALU ON STEEL**	**CW 50-HL**	**CW 50-SG**
	slender appearance	designed for steel structure	aesthetical horizontal lining	structural sealed glazing
Interior visible width	15/50 mm	50 mm	50 mm	50/88 mm
Depth mullions	from 125.5 mm to 167.5 mm	67.5 mm	from 41.5 mm to 230 mm	from 41.5 mm to 230 mm
Depth transoms	from 99.4 mm to 172.2 mm	from 5 mm to 57 mm	from 4.7 mm to 193.2 mm	from 4.7 mm to 193.2 mm
Inertia mullions (Ix: wind load)	min 159.5 cm^4 to max 339.2 cm^4	not applicable	min 13.5 cm^4 to max 1199.4 cm^4	min 13.5 cm^4 to max 1199.4 cm^4
Inertia transoms (Ix: wind load)	min 71.5 cm^4 to max 387.5 cm^4	min 4 cm^4 to max 14.6 cm^4	min 3.5 cm^4 to max 534.7 cm^4	min 3.5 cm^4 to max 534.7 cm^4
Inertia transoms (Iy: glass load)	min 9.1 cm^4 to max 10.5 cm^4	min 2.9 cm^4 to max 12.5 cm^4	min 7.9 cm^4 to max 57 cm^4	min 7.9 cm^4 to max 57 cm^4
Exterior visible width	50 mm	50 mm	vertical: 30 mm joint horizontal: 50 mm pressure plate	EPDM gasket of 27 mm width
Exterior face caps	different shapes available	different shapes available	special pointed arch shaped face cap	not applicable
Glazing	fixing by pressure plates	fixing by pressure plates	fixing by horizontal pressure plates	structural glazing glued on cassettes
Rebate height	20 mm	20 mm	20 mm	structural sealed glazing
Glass thickness	up to 44 mm	up to 44 mm	from 22 to 44 mm	from 24 to 36 mm
Type of vents	all Reynaers systems top hung window (glass from 23 - 32 mm) POW window (glass from 22 - 28 mm)	all Reynaers systems top hung window (glass from 23 - 32 mm) POW window (glass from 22 - 28 mm)	structural top hung window (glass from 23 – 32 mm)	structural top hung window (glass from 24 - 36 mm)
Roof application	yes	yes	no	no

TECHNICAL CHARACTERISTICS



Style variants	**CW 50-SC**	**CW 50-RA**	**CW50 (TUTI HIDDEN VENT/ ACCESSORIES)**
	structural clamped glazing	designed for special constructions	extra opening types
Interior visible width	50 mm	50 mm	50/80 mm
Depth mullions	from 41.5 mm to 230 mm	from 41.5 mm to 230 mm	from 83.5 mm to 146.5 mm
Depth transoms	from 4.7 mm to 193.2 mm	from 4.7 mm to 193.2 mm	from 83.5 mm to 146.5 mm
Inertia mullions (Ix: wind load)	min 13.5 cm^4 to max 1199.4 cm^4	min 13.5 cm^4 to max 1199.4 cm^4	min 33.6 cm^4 to max 155.4 cm^4
Inertia transoms (Ix: wind load)	min 3.5 cm^4 to max 534.7 cm^4	min 3.5 cm^4 to max 534.7 cm^4	min 33.6 cm^4 to max 155.4 cm^4
Inertia transoms (Iy: glass load)	min 7.9 cm^4 to max 57 cm^4	min 7.9 cm^4 to max 57 cm^4	min 3.7 cm^4 to max 7 cm^4
Exterior visible width	joint: 20 mm	50 mm	50 mm
Exterior face caps	not applicable	different shapes available	different shapes available
Glazing	clamped solution	fixing by pressure plates	fixing by pressure plates structural sealed glazing
Rebate height	structural sealed glazing	20 mm	20 mm/structural sealed glazing
Glass thickness	from 27 mm to 40 mm	up to 44 mm	opening window 22-26 mm
Type of vents	structural top hung window (glass from 27-40 mm)	attic window	turn turn-tilt bottom-hung window
Roof application	no	yes	no

PERFORMANCES

ENERGY

Thermal Insulation(1) EN 10077-2	Specific test per profile combination – please contact your Reynaers Aluminium fabricator

COMFORT

Acoustic performance(2) EN ISO 140-3; EN ISO 717-1	Rw (C; Ctr) = 34 (-1; -4) dB / 48 (-2; -8) dB, depending on glazing type				
Air tightness, max. test pressure(3) EN 12153, EN 12152	A4				
Water tightness(4) EN 12155, EN 12154	R4 150	R5 300	R6 450	R7 600	RE 900
Wind load resistance, max. test pressure(5) EN12179, EN13166	1500 Pa				

This table shows possible classes and values of performances. The values indicated in red are the ones relevant to this system.

(1) The Uf-value measures the heat flow. The lower the Uf-value, the better the thermal insulation of the frame.
(2) The sound reduction index (Rw) measures the capacity of the sound reduction performance of the frame.
(3) The air tightness test measures the volume of air that would pass through a closed window at a certain air pressure.
(4) The water tightness testing involves applying a uniform water spray at increasing air pressure until water penetrates the window.
(5) The wind load resistance is a measure of the profile's structural strength and is tested by applying increasing levels of air pressure to simulate the wind force. There are up to five levels of wind resistance (1 to 5) and three deflection classes (A,B,C). The higher the number, the better the performance.

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PRODUCT PASS

1 GENERAL EXPLANATION

The following paragraphs indicate the performances which can be declared on the Declaration of Performance (DoP) in accordance with Regulation (EU) no. 305/2011 of the European Parliament and of the Council of 9 March 2011.

The listed characteristics are the essential characteristics for external pedestrian doorsets according to 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 obviously 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.

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) For multi level solution

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

(4) Impact resistance was only tested with screw connection between transom and mullion -> Also connections with additional T-connectors are approved

(5) Composition of the spandrel part: see test report

4 PERFORMANCE

4.1 Classifications for CW50

Characteristic			Performance	Notified body - Report	Limits (mm)
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**2000 Pa** (1) **2000 Pa** (1)	[0960] – 06.174 [0960] – 15.00669 (2)	Max. panel size (3): 1500x3000 (4.5 m²) 2000x2400 (4.8 m²)
	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 / E5**	[1136] – CAR 5010/1	Minimum glass dimension: 1500x1200 (4)
	4.4	Air permeability	**A4** (600 Pa) **AE750** (750Pa) **AE1200** (1200 Pa)	[0960] – 06.174 [0960] – 15.00669 (2) [0960] – 09.149	
	4.5	Watertightness	**RE950** (950 Pa) **RE1050** (1050 Pa) **RE1200** (1200 Pa)	[0960] – 06.174 [0960] – 09.149 [0960] - 15.00669 (2)	
	4.6	Airborne sound insulation	Glass **34 (-1;-4)** **40 (-2;-7)** **48 (-2;-8)** **48 (-2;-8)** + spandrel (5)	Curtain walling **34 (-1;-4)** **42 (-2;-6)** **47 (-2;-5)** **55 (-2;-7)**	[1488] – LA/1365a/06 [1488] – LA/1365b/06 [1488] – LA/1365c/06 [1488] – LA/1365d/06
	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] – 230006500-4	
	4.10	Fire propagation	**EI60**	[1488] – 1323/06	
	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.		

4.2 Classifications for CW50 with flat pressure plate

Characteristic			Performance	Notified body - Report	Limits (mm)
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**1200 Pa** (1)	[0960] – 13.00949	Max. panel size (3): 1500x3300 (4.95 m²)
	4.2	Dead load	See system catalogue for more detailed info about maximum weights for each type of glass support.		
	4.3	Impact resistance	**E5**	[1136] – CAR 5010/1	Minimum glass dimension: 1500x1200 (4)
	4.4	Air permeability	**A4** (600 Pa)	[0960] – 13.00949	
	4.5	Watertightness	**R5** (300 Pa)	[0960] – 13.00949	
	4.6	Airborne sound insulation	Glass **34 (-1;-4)** **40 (-2;-7)** **48 (-2;-8)** **48 (-2;-8)** + spandrel (5)	Curtain walling **34 (-1;-4)** **42 (-2;-6)** **47 (-2;-5)** **55 (-2;-7)**	[1488] – LA/1365a/06 [1488] – LA/1365b/06 [1488] – LA/1365c/06 [1488] – LA/1365d/06
	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] – 230006500-4	
	4.10	Fire propagation	**EI60**	[1488] – 1323/06	
	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.		

4.3 Classifications for CW50-HI

Characteristic			Performance	Notified body - Report	Limits (mm)
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**2000 Pa** (1) **2400/3000** (6) **Pa** (1)	[0960] – 15.00669 (2) [1488] – LK00-00948/14/R68NK	Max. panel size (3): 1850x3300 (6.1 m^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 / E5**	[1136] – CAR 5010/1	Minimum glass dimension: 1500x1200 (4)
	4.4	Air permeability	**AE750** (750Pa) **AE1950** (1950Pa)	[0960] – 15.00669 (2) [1488] – LK00-00948/14/R68NK	
	4.5	Watertightness	**RE1200** (1200 Pa) **RE1950** (1950 Pa)	[0960] – 15.00669 (2) [1488] – LK00-00948/14/R68NK	
	4.6	Airborne sound insulation	Glass **34 (-1;-4)** **40 (-2;-7)** **48 (-2;-8)** **Spandrel** (5)	Curtain walling **34 (-1;-4)** **42 (-2;-6)** **47 (-2;-5)** **54 (-2;-7)**	[1488] – LA/1365i/06 [1488] – LA/1365j/06 [1488] – LA/1365k/06 [1488] – LA/1365l/06
	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] – 230006500-4	
	4.10	Fire propagation	**EI60**	[1488] – 1323/06	
	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.		

(6) Reinforced fixation of pressure plates

4.4 Classifications for CW50-TT

		Characteristic	Performance	Notified body - Report	Limits (mm)
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**2000 Pa** (1)	[0960] – 15.00422	Max. panel size (3): 1500x2500 (3.75 m²)
	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 / E5**	[0960] – 15.00678	Minimum glass dimension: 735x1200
	4.4	Air permeability	**AE1200** (1200 Pa)	[0960] – 15.00422	
	4.5	Watertightness	**RE1200** (1200 Pa)	[0960] – 15.00422	
	4.6	Airborne sound insulation	Glass **34 (-1;-4)** **40 (-2;-7)** **48 (-2;-8)** **48 (-2;-8)** + spandrel (5)	Curtain walling **34 (-1;-4)** **42 (-2;-6)** **47 (-2;-5)** **55 (-2;-7)**	[1488] – LA/1365a/06 [1488] – LA/1365b/06 [1488] – LA/1365c/06 [1488] – LA/1365d/06
	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] – 230006500-4	
	4.10	Fire propagation	**EI60**	[1488] – 1323/06	
	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.		

4.5 Classifications for CW50-HL

Characteristic			Performance	Notified body - Report	Limits (mm)
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**1200 Pa** (1)	[0960] – 07.190	Max. panel size (3): 2500x2400 (6 m²)
	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 / E5**	[1136] – CAR 5010/1	Minimum glass dimension: 1500x1200 (4)
	4.4	Air permeability	**A4** (600 Pa)	[0960] – 07.190	
	4.5	Watertightness	**R7** (600 Pa)	[0960] – 07.190	
	4.6	Airborne sound insulation	Glass **34 (-1;-4)** **40 (-2;-7)** **48 (-2;-8)** **Spandrel** (5)	Curtain walling **33 (-1;-4)** **41 (-2;-5)** **43 (-1;-4)** **54 (-2;-7)**	[1488] – LA/1365e/06 [1488] – LA/1365f/06 [1488] – LA/1365g/06 [1488] – LA/1365h/06
	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] – 230006500-4	
	4.10	Fire propagation	**EI60**	[1488] – 1323/06	
	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.		

4.6 Classifications for CW50-SC (clamping profiles)

Characteristic			Performance	Notified body - Report	Limits (mm)
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**1600 Pa** (1) **2000 Pa** (1)	[0960] – 06.135 (6) [1136] – CAR 5010/2 (7)	
	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 / E5**	[0960] – 06.136	Minimum glass dimension 1525x1225 (4)
	4.4	Air permeability	**A4** (600 Pa)	[0960] – 06.135 (6) [1136] – CAR 5010/2 (7)	
	4.5	Watertightness	**RE1050** (1050 Pa) **RE1200** (1200 Pa)	[0960] – 06.135 (6) [1136] – CAR 5010/2 (7)	
	4.6	Airborne sound insulation	Glass **32 (-1;-5)** **40 (-2;-7)** **45 (-3;-8)** **Spandrel** (5)	Curtain walling **34 (-1;-3)** **42 (-1;-5)** **47 (-2;-6)** **56 (-1;-5)**	[1488] – LA/1220a/05 [1488] – LA/1220b/05 [1488] – LA/1220c/05 [1488] – LA/1220d/05
	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] – 230006500-4	
	4.10	Fire propagation	**EI60**	[1488] – LP-1331/07	
	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.		

(6) With 080.9850.04 and glass edge with silicone

(7) With 034.0100.17

4.7 Classifications for CW50-SC (butterfly)

Characteristic			Performance	Notified body - Report	Limits (mm)
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**2000 Pa** (1)	[1488] – LK01-00948/15/R94NK	Max. panel size (3): 1850x3300 (6.10 m²)
	4.2	Dead load	See system catalogue for more detailed info about maximum weights for each type of glass support.		
	4.3	Impact resistance	NPD		
	4.4	Air permeability	**AE1200** (1200 Pa)	[1488] – LK01-00948/15/R94NK	
	4.5	Watertightness	**RE1200** (1200 Pa)	[1488] – LK01-00948/15/R94NK	
	4.6	Airborne sound insulation	Glass **32 (-1;-5)** **40 (-2;-7)** **45 (-3;-8)** **Spandrel** (5)	Curtain walling **34 (-1;-3)** **42 (-1;-5)** **47 (-2;-6)** **56 (-1;-5)**	[1488] – LA/1220a/05 [1488] – LA/1220b/05 [1488] – LA/1220c/05 [1488] – LA/1220d/05
	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] – 230006500-4	
	4.10	Fire propagation	**EI60**	[1488] – LP-1331/07	
	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.		

4.8 Classifications for CW50-SG

	Characteristic		Performance	Notified body - Report	Limits (mm)
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**2000 Pa** (1)	[1136] – CAR 5010/3	
	4.2	Dead load	See system catalogue for more detailed info about maximum weights for each type of glass support.		
	4.3	Impact resistance	NPD		
	4.4	Air permeability	**A4** (600 Pa)	[1136] – CAR 5010/3	
	4.5	Watertightness	**RE1200** (1200Pa)	[1136] – CAR 5010/3	
	4.6	Airborne sound insulation	Glass **33 (-1;-4)** **40 (-2;-7)** **43 (-2;-6)** **Spandrel** (5)	Curtain walling **33 (-1;-3)** **41 (-2;-6)** **45 (-2;-6)** **60 (-2;-6)**	[1488] – LA/1220e/05 [1488] – LA/1220f/05 [1488] – LA/1220g/05 [1488] – LA/1220h/05
	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] – 230006500-4	
	4.10	Fire propagation	**EI60**	[1488] – LP-1331/07	
	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.		

4.9 Classifications for CW50-FP

	Characteristic		Performance	Notified body - Report	Limits (mm)
EN 13830:2003	**Essential characteristics**				
	4.1	Resistance to wind load	**1200 Pa** (1)	[0960] – 08.171	
	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 / E5**	[1136] – CAR 5010/1	Minimum glass dimension: 1500x1200 (4)
	4.4	Air permeability	**A4** (600 Pa)	[0960] – 08.171	
	4.5	Watertightness	**R7** (600 Pa)	[0960] – 08.171	
	4.6	Airborne sound insulation	Glass **33 (-1;-4)** **40 (-2;-7)** **43 (-2;-6)** **Spandrel** (5)	Curtain walling **33 (-1;-3)** **41 (-2;-6)** **45 (-2;-6)** **60 (-2;-6)**	[1488] – LA/1220e/05 [1488] – LA/1220f/05 [1488] – LA/1220g/05 [1488] – LA/1220h/05
	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	**EI60** **E30/EI30/EW30**	[1488] – 00948/16/R127NZP [1234] – 2017-Efectis-R000777	
	4.9	Reaction to fire	Anodized: **A1** Painted: **A2** Gaskets: **E**	EC decision 96/603/EC certificate P155748 [0432] – 230006500-4	
	4.10	Fire propagation	**EI60**	[1488] – LP-1331/07	
	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.		

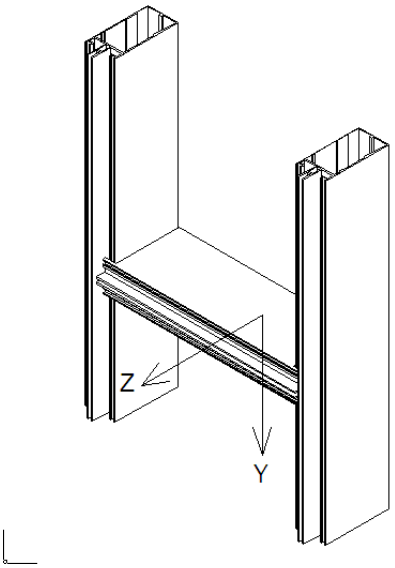
5 RESISTANCE TO HORIZONTAL LOADS

The maximum loads on each T-connection can be derived from following table which summarises the results from test report R-44-05-2 from PSP.

The result is each time for 1 connection.

Type of connection	Force direction	Xk/γM (kN)
1. Standard transom/mullion connection	Dead load	0.88
	Wind suction	3.02
	Wind pressure	3.45
	Combined (1)	2.53
2. Connection with with 021.0283 or 073.7000	Dead load	2.07
	Wind suction	2.93
	Wind pressure	4.46
	Combined (1)	2.59
3. Connection with with 073.7318 ~ 073.7324	Dead load	1.60
	Wind suction	2.28
	Wind pressure	5.00
	Combined (1)	1.59

(1) The force indicated in the table is the maximum force wind suction in combination with the maximum dead load as indicated in the table



Dead load +Y
Wind suction +Z
Wind pressure -Z
Wind suction + dead load +Y +Z

6 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;

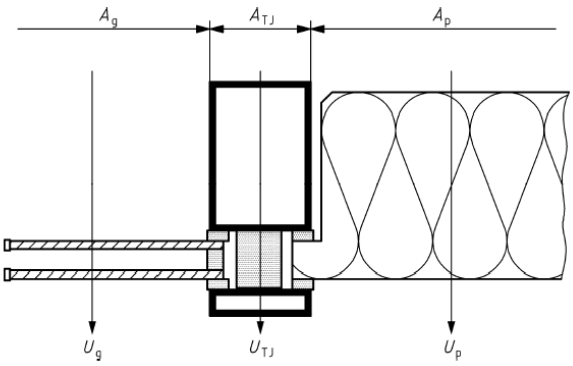
A_f = total area of frame;

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:

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



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.