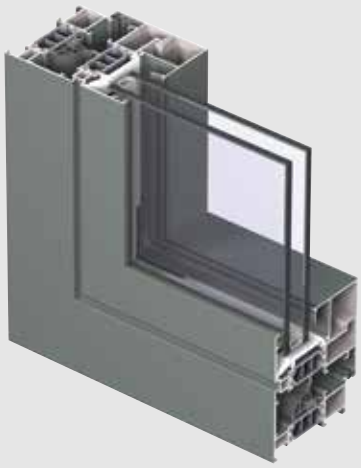
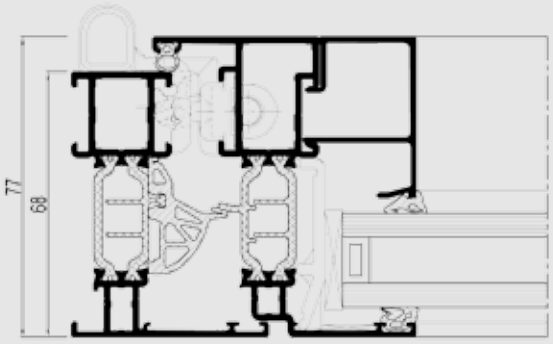
Punched window system

CS 77

Optimised safety and comfort

REYNAERS aluminium





Concept System® 77 is a high insulation window and door system that meets elevated requirements regarding thermal insulation, stability and security. The system's HI+ variant achieves Uf values down to 1.2 W/m²K. The Uf value of a frame/vent section with 115 mm visible width is 1.7 W/m²K.

CS 77 is available in a variety of aesthetic styles to match the current trends whilst offering all types of both inward and outward opening windows and doors. An additional asset is the possibility to combine this system with Ventalis®.

The system's performance regarding acoustics, water- and air tightness, but also for specific applications like Bullet - and Fire Resistance, meets the most severe European standards. Moreover, CS 77 is available in different burglar resistance levels (RC2 & RC3) making it an extremely secure system.

TECHNICAL CHARACTERISTICS



Style variants		FUNCTIONAL	RENAISSANCE	HIDDEN VENT
Min. visible width inward opening window	Frame	51 mm	51 mm	76 mm
	Vent	33 mm	33 mm	not visible
Min. visible width outward opening window	Frame	17.5 mm	-	-
	Vent	76 mm	-	-
Min. visible width inward opening flush door	Frame	68 mm	-	-
	Vent	76 mm	-	-
Min. visible width outward opening flush door	Frame	42 mm	-	-
	Vent	102 mm	-	-
Min. visible width T-profile		76 mm	76 mm	126 mm
Overall system depth window	Frame	68 mm	77 mm	68 mm
	Vent	77 mm	86 mm	72.5 mm
Rebate height		25 mm	25 mm	18.5 mm
Glass thickness		up to 53 mm	up to 53 mm	up to 48 mm
Glazing method		dry glazing with EPDM or neutral silicones		
Thermal insulation		32 mm omega and/or hollow chamber -shaped fibreglass reinforced polyamide strips		
High Insulation variant (HI)		Available	Available	Not Available
High Insulation Plus variant (HI+)		Available	Not Available	Not Available

PERFORMANCES

	ENERGY										
	Thermal insulation [1] EN ISO 10077-2	Uf-value down to 1.2 W/m²K depending on the frame/vent combination and the glass thickness.									
	COMFORT										
	Acoustic performance [2] EN ISO 140-3; EN ISO 717-1	Rw (C; Ctr) = 36 (-1; -4) dB / 42 (-2; -4) dB, depending on glazing type									
	Air tightness, max. test pressure [3] EN 1026; EN 12207	1 (150 Pa)		2 (300 Pa)		3 (600 Pa)		4 (600 Pa)			
	Water tightness [4] EN 1027; EN 12208	1A (0 Pa)	2A (50 Pa)	3A (100 Pa)	4A (150 Pa)	5A (200 Pa)	6A (250 Pa)	7A (300 Pa)	8A (450 Pa)	9A (600 Pa)	E900 (900 Pa)
	Wind load resistance, max. test pressure [5] EN 12211; EN 12210	1 (400 Pa)		2 (800 Pa)		3 (1200 Pa)	4 (1600 Pa)	5 (2000 Pa)		Exxx (> 2000 Pa)	
	Wind load resistance to frame deflection [5] EN 12211; EN 12210	A (≤ 1/150)			B (≤ 1/200)			C (≤ 1/300)			
	SAFETY										
	Burglar resistance [6] EN 1627-1630	RC 1			RC 2			RC 3			
	Fire resistance [7] - EN 13501-2, EN 1364-1, EN 1634-1 - NEN 6069	EI 30 EI 60, EI 45 EW 30									
	Bullet resistance [8] EN 1522	FB 1		FB 2	FB 3		FB 4	FB 5		FB 6	
					FSG			Kalashnikov			

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.
(6) The burglar resistance is tested by statistical and dynamic loads, as well as by simulated attempts to break in using specified tools.
(7) The performance is defined by directly exposing the construction to fire in order to determine the stability, thermal insulation and radiation insulation over a certain amount of time.
(8) The bullet resistance of the window or door is evaluated for different classes of weapons and ammunition: hand guns, (automatic) rifles and shot guns.

06/2017 - 0H0.08C2.00 - Publisher Responsible at Law: E. Fonteyne, Oude Liersebaan 266, B-2570 Duffel

Large format window system

MASTERLINE 8

Windows & Doors

REYNAERS
aluminium

MasterLine 8 is a unique windows and doors system that combines countless design possibilities with first in class performance and production speed.

This system gives you a wide design range, to perfectly fit any architectural style, while at the same time offering the ultimate performance regarding thermal insulation and air- and water tightness, with a limited system depth of 77 mm.

This new generation of innovative window and door solutions mirrors the current architectural trend towards maximising daylight while offering ultimate insulation levels. MasterLine 8 panel doors even come with passive house certification.

ENERGY EFFICIENCY

MasterLine 8 windows feature 3 different levels of insulation, offering solutions for high insulated, low energy and even passive houses. These different levels of insulation are achieved by the integration of new and clever materials.

For the High Insulating Plus (HI+) variant, innovative insulation bars are incorporated, which use a low-emission foil and thus improve the insulation value by reflecting and retaining heat.

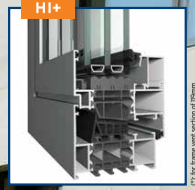
STANDARD

Uf = 1.9 W/m²K (*)

HI

Uf = 1.5 W/m²K (*)

HI+



Uf = 1.2 W/m²K (*)

(*): for frame/vent section of 115mm

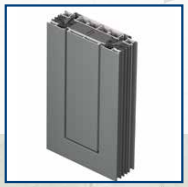
COMFORT

AIR- WIND- WATER TIGHTNESS

MasterLine 8 windows and doors allow for a water tightness of 900Pa, reduced air loss at 600Pa air pressure, and excellent sealing properties. These ultimate performances are achieved by the overall concept and the increased overlap of the central gasket in the windows, offering a guaranteed performance.

VENTILATION VENT

MasterLine 8 ventilation vents are available on 2 different levels of insulation for high insulated, low energy and even passive houses. These ventilation vents exist in 2 widths for optimal fresh air access: 185mm and 250mm. The vents are optimised for easy installation and aesthetics as the end pieces are adjustable for optimal fit and paintable to match the color of the profiles.



SAFETY

MasterLine 8 windows and doors ensure your safety as they comply to burglar resistance class RC2 or RC3. Reynaers Aluminium offers a wide range of compatible handles, locks and hinges to ensure your safety and comfort. To further enhance safety, MasterLine 8 is compatible with RB Glass: the add-on glass balustrade for larger window areas in high rise buildings. Even without balconies, RB Glass ensures you can safely open your windows and enjoy an unobstructed view. MasterLine 8 also offers single or double panic doors and Anti-Fingertrap doors.

TECHNICAL CHARACTERISTICS		WINDOWS				DOORS	
		FUNCTIONAL	RENAISSANCE	DECO	HIDDEN VENT	WINDOW DOORS	FLUSH DOORS
Min. visible width inward opening window or door	Frame	53 mm			80 mm	60 mm	68.5 mm
	Vent	37 mm			-	67 mm	78.5 mm
Min. visible width outward opening window or door	Frame	21 mm			n.a.	21 mm	42.5 mm
	Vent	113 mm			n.a.	113 mm	104.5 mm
Min. visible width T-profile		80 mm			107 mm	80 mm	80 mm
Overall system depth window or door	Frame	77 mm	87 mm	87 mm	77 mm	77 mm	77 mm
	Vent	87 mm			77 mm	80 mm	77 mm
Rebate height		27 mm					
Glass thickness	Frame	up to 62 mm					
	Vent	up to 72 mm	up to 62 mm	up to 62 mm	up to 57 mm	up to 72 mm	up to 62 mm
Glazing method		dry glazing with EPDM or neutral silicones					
Thermal break		omega-shaped glass fibre reinforced polyamide strips. HI+ version: glass fibre reinforced noryl strips. 40 or 37.8 mm depending on profile.					32 mm

ENERGY EFFICIENCY

MasterLine 8 doors are available in 2 levels of insulation for balcony, flush and pivot doors. For projects where extreme insulation is required, our MasterLine 8 range offers a panel door with excellent insulation values, that was awarded passive house certification by the renowned Passive House Institute.

HI

Uf = 2.2 W/m²K

HI+

Uf = 1.4 W/m²K

PASSIVE DOOR

Uf = 0.87 W/m²K

cool, temperate climate

CERTIFIED COMPONENT

Passive House Institute

DESIGN

MasterLine 8 doors offer a wide range of highly insulated and robust flush doors, which meet the modern requirements with regard to safety, thermal insulation and stability (class 8). This allows for the creation of entrance doors with large dimensions and weights up to 250 kg. MasterLine 8 doors are available as inward and outward opening glass or panel doors and pivoting doors are possible. All the doors can be fitted with a wide range of locks and hinges.

PIVOT DOOR

PANEL DOOR

BALCONY DOOR

DESIGN

The unique MasterLine 8 windows concept offers up to 4 design variants, each with their own distinct look and feel, which make MasterLine 8 suitable for any architectural style.

Needless to say, MasterLine 8 can easily be integrated with other Reynaers Aluminium systems, such as CP 130 and CP 155 sliding systems, the RB glass balustrade, the Mosquito system, and curtain wall system CW 50.

The unique concept makes it possible to combine an extensive range of window opening types, design variants, and different levels of thermal insulation.

FUNCTIONAL

The straightforward design of the MasterLine 8 Functional variant is beautiful in its simplicity, and is suitable for both modern and contemporary buildings.

RENAISSANCE

The MasterLine 8 Renaissance windows have been redesigned, more true to the traditional ogee detailing in heritage windows. The sash is recessed to the frame on the exterior side and the detailing is more refined.

DECO

MasterLine 8 Deco windows offer a modern, unique design that stands out and gives a contemporary feel. The sash is recessed to the frame on the exterior side and the sloped detailing brings a finepalette of reflections and shading.

HIDDEN VENT

For a modern minimalistic appearance MasterLine 8 offers the Hidden Vent system. With Hidden Vent profiles the vents are covered by the outer frames and transoms, which allows for a concealed install of the opening elements behind the window reveal.

PERFORMANCES

ENERGY

Thermal Insulation windows[1] EN ISO 10077-2	Uf-value down to 1.0 W/m²K depending on the frame/vent combination and the glass thickness.	
Thermal Insulation doors[1] EN ISO 10077-2	Uf-value down to 1.4 W/m²K depending on the frame/vent combination and the glass thickness.	

COMFORT

Acoustic performance windows[2] EN ISO 140-3; EN ISO 717-1	Rw(C;Ctr) = 45 (-1;-4) dB, Hidden Vent: Rw(C;Ctr) = 49 (-1;-5) dB, depending on glazing and opening type									
Acoustic performance doors[2] EN ISO 140-3; EN ISO 717-1	Rw(C;Ctr) = 43 (-1;-4) dB, depending on glazing and opening type									
Air tightness windows & doors, max. test pressure[3] EN 1026; EN 12207	1 (150 Pa)			2 (300 Pa)		3 (600 Pa)		4 (600 Pa)		
Water tightness windows[4] EN 1027; EN 12208	1A (0 Pa)	2A (50 Pa)	3A (100 Pa)	4A (150 Pa)	5A (200 Pa)	6A (250 Pa)	7A (300 Pa)	8A (450 Pa)	9A (600 Pa)	E1200 (1200 Pa)
Water tightness doors[4] EN 1027; EN 12208	1A (0 Pa)	2A (50 Pa)	3A (100 Pa)	4A (150 Pa)	5A (200 Pa)	6A (250 Pa)	7A (300 Pa)	8A (450 Pa)	9A (600 Pa)	E1200 (1200 Pa)
Wind load resistance windows, max. test pressure[5] EN 12211; EN 12210	1 (400 Pa)		2 (800 Pa)		3 (1200 Pa)	4 (1600 Pa)		5 (2000 Pa)		Exxx (› 2000 Pa)
Wind load resistance windows to frame deflection[5] EN 12211; EN 12210	A (≤ 1/150)			B (≤ 1/200)			C (≤ 1/300)			
Wind load resistance doors, max. test pressure[5] EN 12211; EN 12210	1 (400 Pa)		2 (800 Pa)		3 (1200 Pa)	4 (1600 Pa)		5 (2000 Pa)		Exxx (› 2000 Pa)
Wind load resistance doors to frame deflection[5] EN 12211; EN 12210	A (≤ 1/150)			B (≤ 1/200)			C (≤ 1/300)			

SAFETY

Burglar Resistance[6] EN 1627 - 1630	RC 1	RC 2	RC 3

This table shows possible classes and values of performances. The values indicated in orange 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 test 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.
(6) The burglar resistance is tested by statistical and dynamic loads, as well as by simulated attempts to break in using specified tools.

REYNAERS aluminium

TOGETHER FOR BETTER

REYNAERS ALUMINIUM NV/SA
Oude Liersebaan 266 • B-2570 Duffel
t +32 15 30 85 00 • f +32 15 30 86 00
www.reynaers.com • info@reynaers.com

06/2019 – 0H0.11C2.00 – Publisher Responsible at Law: Reynaers Aluminium NV, Oude Liersebaan 266, B-2570 Duffel