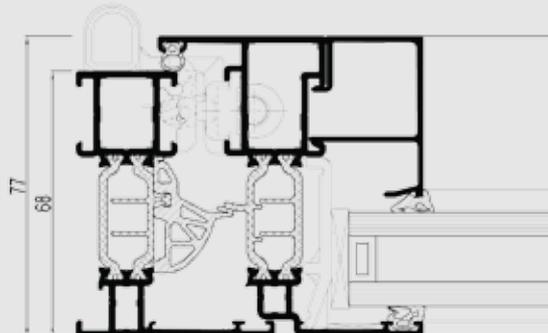
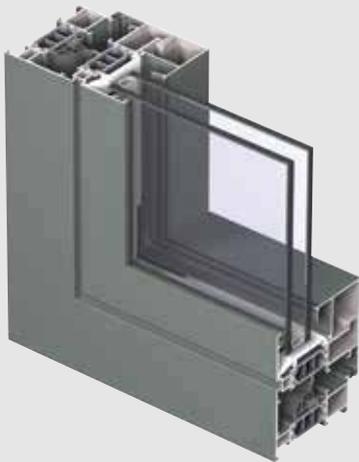




# CS 77

OPTIMISED SAFETY AND COMFORT



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  $U_f$  values down to  $1.2 \text{ W/m}^2\text{K}$ . The  $U_f$  value of a frame/vent section with 115 mm visible width is  $1.7 \text{ W/m}^2\text{K}$ .

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 Ventali®.

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 <sup>(1)</sup><br>EN ISO 10077-2                                | Uf-value down to 1.2 W/m <sup>2</sup> K depending on the frame/vent combination and the glass thickness. |               |                |                |                |                |                |                |                |                     |
| COMFORT   |  |  |               |                |                |                |                |                |                |                |                     |
|  | Acoustic performance <sup>(2)</sup><br>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 <sup>(3)</sup><br>EN 1026; EN 12207              | 1<br>(150 Pa)  |               | 2<br>(300 Pa)  |                | 3<br>(600 Pa)  |                | 4<br>(600 Pa)  |                |                |                     |
|  | Water tightness <sup>(4)</sup><br>EN 1027; EN 12208                                | 1A<br>(0 Pa)   | 2A<br>(50 Pa) | 3A<br>(100 Pa) | 4A<br>(150 Pa) | 5A<br>(200 Pa) | 6A<br>(250 Pa) | 7A<br>(300 Pa) | 8A<br>(450 Pa) | 9A<br>(600 Pa) | E900<br>(900 Pa)    |
|  | Wind load resistance, max. test pressure <sup>(5)</sup><br>EN 12211; EN 12210      | 1<br>(400 Pa)  |               | 2<br>(800 Pa)  |                | 3<br>(1200 Pa) |                | 4<br>(1600 Pa) |                | 5<br>(2000 Pa) | Exxx<br>(> 2000 Pa) |
|   | Wind load resistance to frame deflection <sup>(5)</sup><br>EN 12211; EN 12210      | A<br>(+1/150)  |               |                | B<br>(+1/200)  |                |                | C<br>(+1/300)  |                |                |                     |
| SAFETY  |  |  |               |                |                |                |                |                |                |                |                     |
|  | Burglar resistance <sup>(6)</sup><br>EN 1627-1630                                  | RC 1   |               |                | RC 2           |                |                | RC 3           |                |                |                     |
|  | Fire resistance <sup>(7)</sup><br>- EN 13501-2, EN 1364-1, EN 1634-1<br>- NEN 6069 | EI 30<br>EI 60, EI 45<br>EW 30   |               |                |                |                |                |                |                |                |                     |
|  | Bullet resistance <sup>(8)</sup><br>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.

- The Uf-value measures the heat flow. The lower the Uf-value, the better the thermal insulation of the frame.
- The sound reduction index (Rw) measures the capacity of the sound reduction performance of the frame.
- The air tightness test measures the volume of air that would pass through a closed window at a certain air pressure.
- The water tightness testing involves applying a uniform water spray at increasing air pressure until water penetrates the window.
- 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.
- The burglar resistance is tested by statistical and dynamic loads, as well as by simulated attempts to break in using specified tools.
- 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.
- The bullet resistance of the window or door is evaluated for different classes of weapons and ammunition: hand guns, (automatic) rifles and shot guns.