EN12101-2:2003 Tested Solutions

Manufacturers Guide

Reynaers Aluminium CS77
SE Controls NSHEV

It is a mandatory requirement under the Construction Products Regulations (Regulation (EU) No305/2011) for Natural Smoke and Heat Exhaust Ventilators (NSHEVs) to be UKCA and CE certified as conforming to the Harmonised Standard EN12101-2:2003.

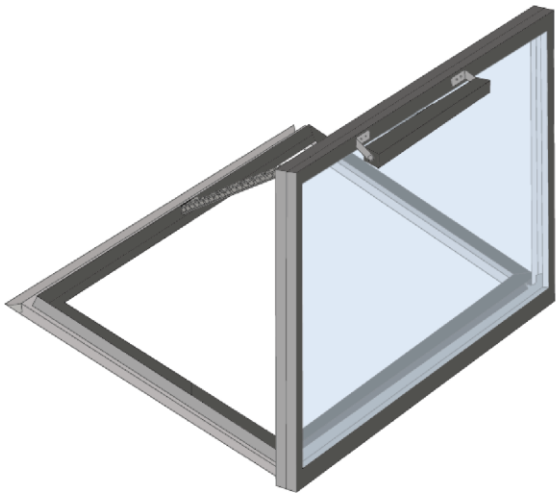
Reynaers Aluminium and SE Controls have collaborated on an extensive test and certification program with IFC a UKCA Notified Body (Notified Body Nr. 1720) to meet this requirement and ensure a seamless façade installation and performance can be provided.

Manufacturing

Prior to manufacturing an NSHEV it is important to seek guidance from SE Controls to ensure the NSHEV is manufactured under an annually audited EN12101-2 System 1 Factory Production Control process.

It is mandatory this is in place before manufacturing. Please register your interest at info@secontrols.com

If an NSHEV is not manufactured under an EN12101-2 System 1 Factory Production Control process, the product will not be certifiable by SE Controls.



Tested Solution

The following Reynaers Aluminium systems can be **UKCA certified** under SE Controls' Tested Solutions program:

Frame System	Applications (Open Out)
Reynaers CS77 Window	Side Hung, Top Hung, Bottom Hung
Reynaers CS77 Door	Side Hung

The information in this document is correct at the time of issue, however is subject to change.

1. Certification

1.1 Essential Characteristics

Essential Characteristics declared on the SE Controls NSHEV Declaration of Performance (DoP) as defined by EN12101-2:2003 Annex ZA.1.

CCP 1720-CPR 0085-CS77 Window and Door with Chain Actuator		
Essential Characteristics	**Clauses in This European Standard**	**Mandated Level(s) or Class(es)**
Nominal Activation Conditions/sensitivity	4.1 4.2	b) 24V dc.
Response relay (Time relay)	7.1.2	<60s
Operational Reliability	7.1 7.4	Re 1000 + 10000 (Dual Purpose) NPD Single Chain WL 1500 Twin Chain
Effectiveness of smoke/hot gas extraction	6.	Pass
Aerodynamic free area	6.	Pass
Performance parameters under fire conditions	7.5	B3000
Resistance to fire – Mechanical stability	7.5	B300 30
Ability to open under environmental conditions	7.2 7.3	SL0 T(00)
Fire reaction	7.5.2.1	NPD

"PASS"; Each NSHEV will have a specific aerodynamic free area based upon its dimensions, opening angle and applicable coefficient of discharge (Cv) of between 0.31 and 0.62.

CCP 1720-CPR-0244 – CS77 Door with Folding Arm Actuator		
Essential Characteristics	**Clauses in This European Standard**	**Mandated Level(s) or Class(es)**
Nominal Activation Conditions/sensitivity	4.1 4.2	b) 24V dc.
Response relay (Time relay)	7.1.2	<60s
Operational Reliability	7.1 7.4	Re 1000 NPD
Effectiveness of smoke/hot gas extraction	6.	Pass
Aerodynamic free area	6.	Pass
Performance parameters under fire conditions	7.5	B300
Resistance to fire – Mechanical stability	7.5	B300 30
Ability to open under environmental conditions	7.2 7.3	SL0 T(00)
Fire reaction	7.5.2.1	NPD

"PASS"; Each NSHEV will have a specific aerodynamic free area based upon its dimensions, opening angle and applicable coefficient of discharge (Cv) of between 0.31 and 0.62.

1.2 Factory Production Control

The vent is manufactured, the actuator installed and the NSHEV completed under SE Controls' System 1 Factory Production Control (FPC) process, audited by the Approved Body, IFCC in accordance with the requirements of the Construction Products Regulation *(EU) No 305/2011* and EN12101-2:2003 product standard.

The Certificate of Constancy of Performance (CoCoP) issued by IFCC and Declaration of Performance (DoP) issued by SE Controls confirms the audited system 1 FPC process is in place.

The NSHEV is certified and placed upon the market by SE Controls in the capacity of the manufacturer.

2. Reyaners CS77 SE Controls NSHEV Certifiable Parameters

2.1 CS77 Window

Orientation	Max. Outer Frame Width	Max. Outer Frame Height	Min. Outer Frame Width	Min. Outer Frame Height	Max. Outer Frame Weight	Hinges	Actuator
Side Hung	1050mm	1500mm	700mm	675mm	55KG	Sobinco 0656519	SECO Ni 24 40 Actuator Single
Side Hung	1050mm	1800mm	700mm	675mm	60KG	Sobinco 0656519	SECO Ni 24 40 Actuator Twin
Top Hung	1500mm	1100mm	675mm	750mm	55KG	Sobinco 0656519	SECO Ni 24 40 Actuator Single
Bottom Hung	1500mm	1100mm	675mm	750mm	65KG	Sobinco 0656519	SECO Ni 24 40 Actuator Single

2.2 CS77 Door

Orientation	Max. Outer Frame Width	Max. Outer Frame Height	Min. Outer Frame Width	Min. Outer Frame Height	Max. Outer Frame Weight	Hinges	Actuator
Side Hung	1200mm	1500mm	500mm	675mm	65KG	0656565.17 Butt Hinges	SECO Ni 24 40 Actuator Single
Side Hung	1200mm	2350mm	500mm	675mm	90KG	0656565.17 Butt Hinges	SECO Ni 24 40 Actuator Twin
Side Hung	1250mm	2350mm	900mm	900mm	75KG	0656565.17 Butt Hinges	SECO Ni 24 40 **Folding Arm Actuator**

Any make up of double-glazed unit or triple-glazed unit can be assessed providing the weight of the vent remains within maximum weight limitation stated above

Infill panels must have minimum classification certificates for combustibility and achieve Class A2,S1-d0 under EN13501-1. The panels must also be compatible with the System Company profiles (glazing clips etc.). Unless specifically tested as a combination, Reaction to Fire will be declared as NPD on the Declaration of Performance.

2.3 CS77 Window Sash/Frame Combinations

Frame Reference	Sash Reference	Prep Detail Reference (Single Chain)	Prep Detail Reference (Twin Chain)
008.3436	008.3412	SEF_2021	SEF_2034
008.3436	008.3492	SEF_2022	SEF_2033
008.3436	008.3421	SEF_2023	SEF_2035
008.3483	008.3412	SEF_2025	SEF_2037
008.3483	008.3492	SEF_2024	SEF_2036
008.3483	008.3421	SEF_2026	SEF_2038
008.3425	008.3412	SEF_2028	SEF_2040
008.3425	008.3492	SEF_2027	SEF_2039
008.3425	008.3421	SEF_2029	SEF_2041
008.3440	008.3412	SEF_2031	SEF_2043
008.3440	008.3492	SEF_2030	SEF_2042
008.3440	008.3421	SEF_2032	SEF_2044
008.3426	008.3421	SEF_2539	SEF_2540
008.3414	008.3492	SEF_2420	SEF_2532
008.3416	008.3412	SEF_2641	SEF_2642
008.3416	008.3492	SEF_2680	SEF_2681
008.3426	008.3412	SEF_2754	SEF_2755

2.4 CS77 Door Sash/Frame Combinations

Frame Reference	Sash Reference	Prep Detail Reference (Single Chain)	Prep Detail Reference (Twin Chain)	Prep Detail Reference (Folding Arm Actuator)
008.0469	008.2014	SEF_2197	SEF_2198	SEF_2646
008.3140	008.3052	SEF_2357	SEF_2358	N/A
008.3125	008.3052	SEF_2403	SEF_2404	N/A
008.3183	008.3052	SEF_2407	SEF_2408	N/A
008.0569	008.2014	SEF_2677	SEF_2678	SEF_2692

The information provided in this document must be used in conjunction with the Reynaers CS77 Technical Manual.

For access doors using the Reynaers CS77 system, installation is only permissible above ground floor level when the door is intended for podium access. Please note that the CS77 Door and Folding Arm Actuator has not been tested to any security standards i.e. PAS24.

The following hardware must be installed along with the Folding Arm Actuator during fabrication to ensure compliance.

Door Hinge Rollenband	656565.17	3 Pcs
Fixation Set Rollenband	0656569.--	3 Pcs
Door Closer "boxer	657446.14	1 Pcs
Guide - Rail "boxer	657456.14	1 Pcs

Prohibited hardware includes multi point locking (MPL) systems, latching handles and electric strikes. Only non-latching handles and mag locks may be used. The mag locks can be purchased from SE Controls under part number AFSI4000MAG.

Please contact info@secontrols.com for more information on permissible hardware.

3. System Design and Installation Considerations

3.1 Free Area

The free area essential characteristic of an NSHEV is declared on the Declaration of Performance as “Aerodynamic Free Area”. Often building codes do not specify aerodynamic free areas, but instead require a Geometric Free Area (e.g., 1.5m^2). The two methods should not be confused.

Refer to the applicable design standard BS 9991:2024 (Section 20.1. Table 3 - Summary of Smoke Control Provisions)

Top Of stair Vent for a building below 11 meters tall: 0.7m² (Aerodynamic Free Area)

Top Of stair Vent for a building above 11 meters tall: 0.7m² (Aerodynamic Free Area)

Lobby / Corridor vent for a building above 11 meters tall: 0.9m² (Aerodynamic Free Area)

3.2 Controls

NSHEVs must be operated by a compatible EN12101-10 compliant control system; SE Controls recommends its OS series of control systems.

3.3 Safety: Entrapment Protection

Consideration should be given to the installation of suitable measures to mitigate the risks of entrapment.

NSHEVs should be closed/ reset via a local Manual Control Point (MCP) with a ‘biased off principle’*, or alternative safety measures/ operational procedures should be considered.

*Smoke Control Association: Guidance on Smoke Control to Common Escape Routes in Apartment Buildings (Flats and Maisonettes) Revision 3.1: July 2020

3.4 Safety: Fall Restraint

Consideration should be given to the installation of suitable measures to mitigate the risks of falling through an NSHEV.

For advice on additional window restraint options, contact SE Controls.

3.5 Installation & Maintenance

A smoke ventilation system should be designed, installed and maintained by a suitably competent and trained smoke ventilation specialist.

4. Support

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