EN12101-2:2003 Tested Solutions

Manufacturers Guide

Russell Timber Technology Balcony Door SE Controls NSHEV

It is a mandatory requirement under the Construction Products Regulations (*Regulation (EU) No 305/2011)* for Natural Smoke and Heat Exhaust Ventilators (NSHEVs) to be UKCA certified as conforming to the Harmonised Standard EN12101-2:2003.

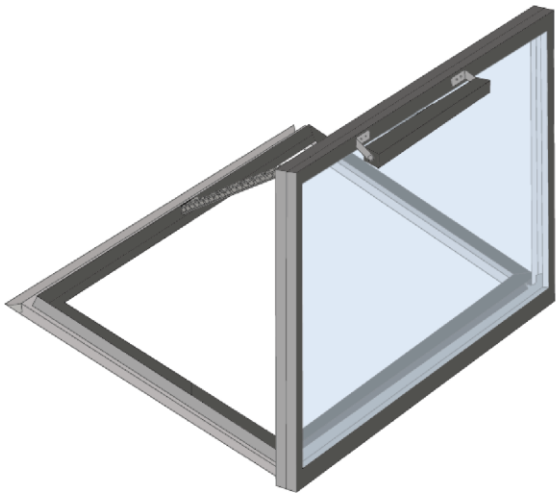
Russell Timber and SE Controls have collaborated on an extensive test and certification program with IFCC, a UK Notified Body (Notified Body Nr. 1720) to meet this requirement and ensure a seamless façade installation and performance can be provided.

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 Russell Timber frame systems can be **UKCA certified** under SE Controls' Tested Solutions program:

Frame System	Applications (Open Out)
Russell Timber Balcony Door	Side Hung

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-0210 With Single & Twin Chain Actuator		
Essential Characteristics	**Clauses in This European Standard**	**Mandated Level(s) or Class(es)**
Nominal Activation Conditions/sensitivity	4.1 4.2	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 A 1000 Twin Chain
Effectiveness of smoke/hot gas extraction	6.	Pass
Aerodynamic free area	6.	Pass
Performance parameters under fire conditions	7.5	30
Resistance to fire – Mechanical stability	7.5	B300
Ability to open under environmental conditions	7.2 7.3	T(00) SL(0)
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 0.32 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 confirm 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. Russell Timber Balcony Door SE Controls NSHEV Certifiable Parameters

2.1 Balcony 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	1090mm	1500mm	500mm	685mm	55KG	ASSA Abloy Lift Off Hinges 0809	SECO Ni 24 40 Actuator Single
Side Hung	1090mm	2488mm	500mm	1350mm	85KG	ASSA Abloy Lift Off Hinges 0809	SECO Ni 24 40 Actuator Twin

2.2 Sash/Frame Combinations

Frame Reference	Sash Reference	Prep Detail Reference (Single Chain)	Prep Detail Reference (Twin Chain)
RTT Balcony Door 349540	87mm Inc 9mm Alu Clad	SEF_2365	SEF_2140

The information provided in this document must be used in conjunction with the Russell Timber Technology Balcony Door Technical Manual.

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:

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

E:info@secontrols.com **Tel**: +44 1543 443060 **Website:** www.secontrols.com