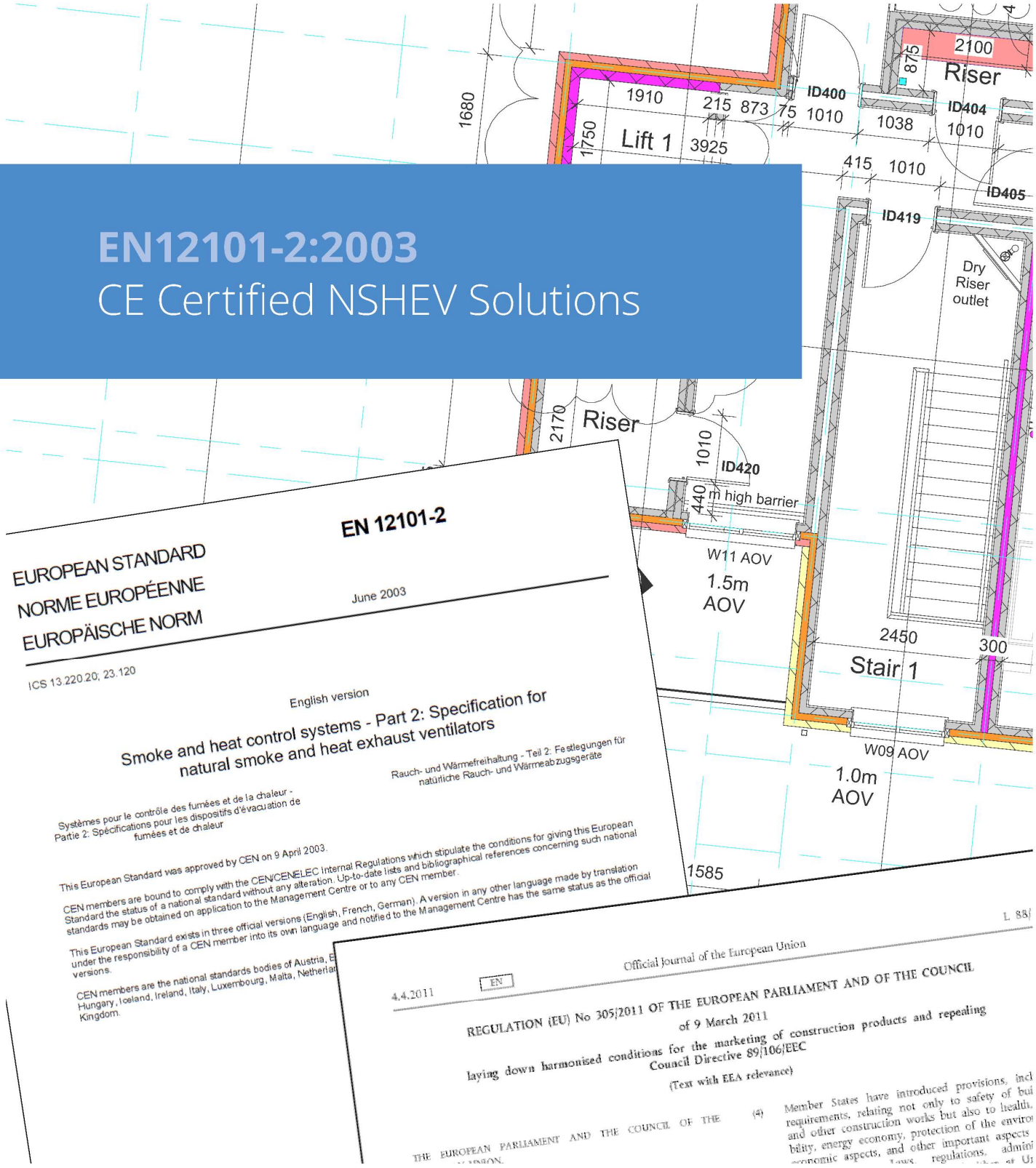
# EN12101-2:2003
## CE Certified NSHEV Solutions




EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

**EN 12101-2**

June 2003

ICS 13.220.20; 23.120

English version

**Smoke and heat control systems - Part 2: Specification for natural smoke and heat exhaust ventilators**

Rauch- und Wärmefreihaltung - Teil 2: Festlegungen für natürliche Rauch- und Wärmeabzugsgeräte

Systèmes pour le contrôle des fumées et de la chaleur - Partie 2: Spécifications pour les dispositifs d'évacuation de fumées et de chaleur

This European Standard was approved by CEN on 9 April 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, B... Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherla... Kingdom.

L 88/

4.4.2011 EN Official Journal of the European Union

**REGULATION (EU) No 305/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

of 9 March 2011

laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE ...

(4) Member States have introduced provisions, incl... requirements, relating not only to safety of bui... and other construction works but also to health, ... bility, energy economy, protection of the enviro... economic aspects, and other important aspects ... regulations, admini...

SE CONTROLS

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## Senior Architectural Systems SPW 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 Designated Standard EN12101-2:2003.

Senior Architectural Systems 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.

The following Senior Architectural Systems frame systems can be certified under SE Controls' Tested Solutions program.

| Frame System | Applications | Refer to |
|---|---|---|
| Seniors SPW600e | Side Hung, Top Hung Open Out | Section 4.1 |
| Seniors SPW600 AOV with BiFold Door Hinge and Heavy Sash | Side Hung, Top Hung, Bottom Hung Open Out | Section 4.1 |

## 2 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 to Façade.technical@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.

# 3 Certification

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

| CCP 1720-CPR-0178 | | |
|---|---|---|
| **Essential Characteristics** | **Clauses in This European Standard** | **Mandated Level(s) or Class(es)** |
| **Nominal Activation Conditions/sensitivity** | 4.1<br>4.2 | b)<br>24V dc. |
| **Response relay (Time relay)** | 7.1.2 | <60s |
| **Operational Reliability** | 7.1<br>7.4 | Re 1000 + dual purpose<br>WL1500 (Twin Chain Only SPW600)<br>WL A 1250 (Twin Chain Only SPW600 AOV)<br>NPD Single Chain |
| **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 | $B_{300}30$ |
| **Ability to open under environmental conditions** | 7.2<br>7.3 | SL0<br>T(00) |
| **Fire reaction** | 7.5.2.1 | A1 |

"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.

## 3.2 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.

# 4 Seniors SPW600 SE Controls NSHEV Certifiable Parameters

## 4.1 Seniors SPW600e

| Orientation | Maximum Width | Maximum Height | Minimum Width | Minimum Height | Maximum Weight | Hinges | Actuator |
|---|---|---|---|---|---|---|---|
| **Side Hung** | 1000mm | 1500mm | 442mm | 442mm | 60KG | Butt Hinge or Friction Stay* | SECO Ni 24 40 Actuator Single & Twin |
| **Top Hung** | 1500mm | 1200mm | 442mm | 442mm | 100KG | Butt Hinge or Friction Stay* | SECO Ni 24 40 Actuator Single & Twin |

*In line with System Company Technical Manual

Seniors SPW600 AOV with BiFold Door Hinge and Heavy Duty Sash

| Orientation | Maximum Width | Maximum Height | Minimum Width | Minimum Height | Maximum Weight | Hinges | Actuator |
|---|---|---|---|---|---|---|---|
| **Side Hung** | 1200mm | 1500mm | 442mm | 442mm | 60KG | PURA764HDB | SECO Ni 24 40 Actuator Single |
| **Side Hung** | 1200mm | 2500mm | 442mm | 442mm | 120KG | PURA764HDB | SECO Ni 24 40 Actuator Twin |
| **Top Hung** | 1500mm | 1200mm | 442mm | 442mm | 60KG | PURA764HDB | SECO Ni 24 40 Actuator Single |
| **Top Hung** | 2500mm | 1200mm | 442mm | 442mm | 120KG | PURA764HDB | SECO Ni 24 40 Actuator Twin |
| **Bottom Hung** | 1500mm | 1200mm | 442mm | 442mm | 60KG | PURA764HDB | SECO Ni 24 40 Actuator Single |
| **Bottom Hung** | 2500mm | 1200mm | 442mm | 442mm | 120KG | PURA764HDB | SECO Ni 24 40 Actuator Twin |

## 4.2 Sash/Frame Combinations

### SPW600e

| Frame Reference | Sash Reference | Prep Detail Reference (Single Chain) | Prep Detail Reference (Twin Chain) |
|---|---|---|---|
| SPW60102 | SPW68693 | SEF_1798 | SEF_1808 |
| SPW60106 | SPW68693 | SEF_1799 | SEF_1809 |
| SPW60506 | SPW68693 | SEF_1799 | SEF_1809 |
| SPW66902 | SPW68693 | SEF_1800 | SEF_1810 |

Contact Senior Architectural Systems for access to their technical manual.

### SPW600 AOV with BiFold Door Hinge and Heavy Duty Sash

| Frame Reference | Sash Reference | Prep Detail Reference (Single Chain) | Prep Detail Reference (Twin Chain) |
|---|---|---|---|
| SPW60102 | SPW6041040 | SEF_2395 | SEF_2396 |
| SPW60106 | SPW6041040 | SEF_2477 | SEF_2482 |
| SPW60506 | SPW6041040 | SEF_2429 | SEF_2432 |
| SPW66902 | SPW6041040 | SEF_2431 | SEF_2434 |
| SPW605043 | SPW6041040 | SEF_2430 | SEF_2433 |

Contact Senior Architectural Systems for access to their technical manual.

**The information provided in this document must be used in conjunction with Senior Architectural Systems SPW600 Technical Manual.**

# 5 System Design and Installation Considerations

## 5.1 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$^2$) and the two methods should not be confused.

A Geometric Free Area will be larger than the Aerodynamic Free Area for the same NSHEV, but they are not directly comparable.

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)**

## 5.2 Controls

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

## 5.3 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

For advice on further safety considerations contact SE Controls.

## 5.4 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.

## 5.5 Installation & Maintenance

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

# 6 Support

Contact the SE Controls Technical Façade Team – Façade.technical@secontrols.com

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