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**Title**

Resistance to fire and smoke classification report for the Falcon Panel Products, Stredor 44 EI30 FED, product family in accordance with BS EN 13501-2: 2016.

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**Classification Report No.:**

WF430132

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**Prepared for:**

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## 1 Introduction

This resistance to fire and smoke control classification report defines the classification assigned to the product family referenced: Stredor 44 EI30 FED in accordance with the procedures given in BSEN 13501-2: 2016.

## 2 Details of classified element

### 2.1 Type of function

The general technical specification for the Stredor 44 EI30 FED doorset construction being considered within this classification report is summarised as follows.

The door blank design for the Stredor 44 EI30 FED product family comprises two variations; Type A and Type B. The door blank types are summarised below:

Type A:

- (Inner Core Layer) – 4mm poplar ply (510kg/m<sup>3</sup>)
- (Outer Core Layers) – 15mm pine lamels (480kg/m<sup>3</sup>)
- (Surface Core Layer) – 4.6mm poplar ply (510kg/m<sup>3</sup>)
- Facing: 0.4mm EV (600kg/m<sup>3</sup>)

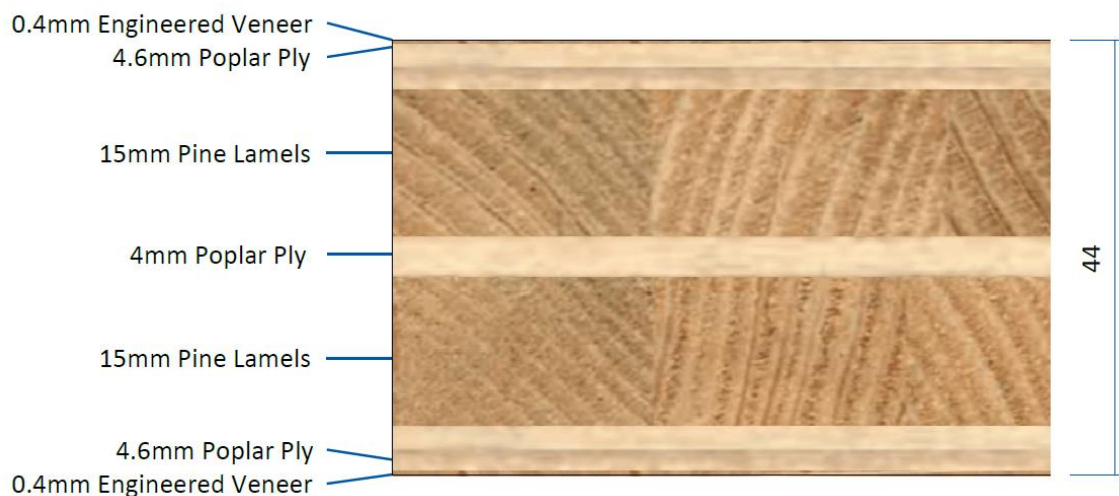
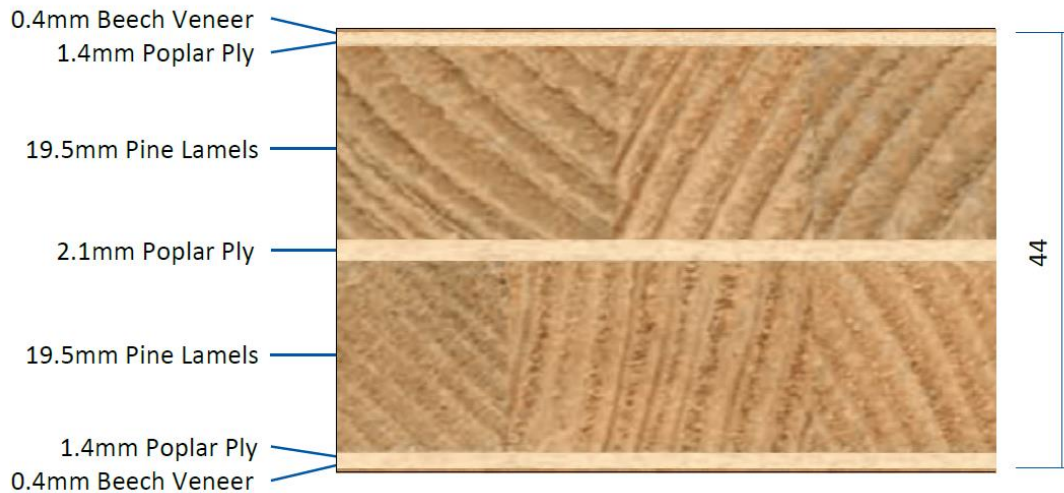


Fig. 1 – Cross section through Type A door blank design

Type B:

- (Inner Core Layer) – 2.1mm poplar ply (510kg/m<sup>3</sup>)
- (Outer Core Layers) – 19.5mm pine lamels (480kg/m<sup>3</sup>)
- (Surface Core Layer) – 1.4mm poplar ply (510kg/m<sup>3</sup>)
- Facing: 0.4mm beech veneer (600kg/m<sup>3</sup>)



**Fig.2 – Cross section through Type B door blank design**

The doorset design incorporates glazing, hardware, intumescent seals and non-intumescent seals (i.e. smoke and weather seals).

The Falcon Panel Products, Stredor 44 EI30 FED doorsets detailed in this classification report are defined as fire resisting and smoke control doorsets as described in in clause 7.5.5 and 7.5.6 of BS EN 13501-2, respectively. Their function is to:

1. resist fire in respect of the fire performance characteristics given in clause 5 of BS EN 13501-2: 2016 and
2. to reduce or eliminate the passage of smoke from one side of the door to the other in respect of the smoke control characteristics given in clause 5 of BS EN 13501-2: 2016.

This classification has been carried out in accordance with clause 7.5.5 and 7.5.6 of BS EN 13501-2: 2016 which is the classification of fire doors and shutters including their closing devices and smoke control doors. The product is to be classified for integrity (E) and insulation (I<sub>2</sub>) performance and ambient temperature smoke control (Sa) only.

## 2.2 Description

The Stredor 44 EI30 FED doorset design is fully described in the test reports and extended application reports in support of this classification, listed in clause 3.

## 3 Test reports and test results in support of this classification

### 3.1 Summary of reports

This classification report is supported by the following test reports and associated extended application (EXAP) reports:

Test laboratory	Test sponsor	Test/EXAP report ref	Test method/EXAP standard	Test/report date
Warringtonfire	Falcon Panel Products	WF 416690 – issue 2	BS EN 1634-1: 2014 + A1: 2016	8 <sup>th</sup> August 2019
Effectis France	Falcon Panel Products	EFR-18-H-003671	BS EN 1634-1: 2014 + A1: 2016	15 <sup>th</sup> November 2018
Warringtonfire	Falcon Panel Products	WF 426419	BS EN 1634-1: 2014 + A1: 2016	27 <sup>th</sup> February 2020
Warringtonfire	Falcon Panel Products	WF 421795	BS EN 1634-1: 2014 + A1: 2018	21 <sup>st</sup> November 2019
Warringtonfire	Falcon Panel Products	WYC 417497 Rev 1	BS EN 1634-3: 2004	7 <sup>th</sup> August 2019
Warringtonfire	Falcon Panel Products	WYC 426329	BS EN 1634-3: 2004	25 <sup>th</sup> February 2020
Warringtonfire	Falcon Panel Products	WF 428364	BS EN 15269-20: 2009	29 <sup>th</sup> June 2020
Warringtonfire	Falcon Panel Products	WF 428388	BS EN 15269-3: 2012	29 <sup>th</sup> June 2020

## 4 Results

### 4.1 Smoke Control

The following results are a summary of the smoke control performance of Stredor 44 EI30 FED designs contained within the EXAP report referenced WF 428364.

- The Stredor 44 EI30 FED product family and the extended scope of application given in report WF 428364 can be considered as capable of limiting the leakage rate (when measured at ambient temperature and at a pressure of up to 25Pa and tested to the requirements of BS EN 1634-3: 2004) to less than 3m<sup>3</sup>/h per metre length of gap between the fixed and movable components of the doorset (e.g. between the door leaf and door frame), including leakage at the threshold

### 4.2 Fire Resistance

The following results are a summary of the fire resistance performance of the Stredor 44 EI30 FED designs contained within the EXAP report referenced WF 428388:

<b>Integrity</b>	
Cotton pad	30 (Thirty) minutes
Continuous flaming	30 (Thirty) minutes
Gap gauges	30 (Thirty) minutes
<b>Insulation</b>	
Average	30 (Thirty) minutes
Maximum temperature rise (normal procedure for insulation 2)	30 (Thirty) minutes
Maximum temperature rise (supplementary procedure for insulation 1)	N/A
<b>Radiation</b>	30 (Thirty) minutes

## 5 Classification

### 5.1 Reference of classification

This classification has been carried out in accordance with clause 7.5.5 and 7.5.6 of BS EN 13501-2: 2016 which is the classification of fire doors and shutters including their closing devices and smoke control doors. The product is to be classified for integrity (E), insulation (I<sub>2</sub>) performance and ambient temperature smoke control (Sa) only.

#### Performance Criteria

##### Integrity (E)

The assessment of integrity shall be made on the basis of the following three aspects:

- a) cracks or opening in excess of given dimensions
- b) ignition of a cotton pad
- c) sustained flaming on the unexposed face

Classification of integrity shall be according to whether or not the element is also classified for thermal insulation.

Where an element is classified both for integrity E and thermal insulation I, the integrity value shall be that determined by whichever of the three criteria fails first. Where an element is classified E but without an I classification, the integrity value is defined as the time to failure using only the cracks/openings or sustained flaming criteria, whichever fails first.

The Stredor 44 EI30 FED product family is to be classified for integrity and insulation performance and therefore all three criteria listed above have been used to define the classification.

##### Thermal Insulation (I<sub>2</sub>)

In the specific case of doors and shutters two levels of the thermal insulation criterion are defined as specified in section 5.2.3.3 in BSEN 13501-2: 2016.

The thermal insulation criterion used for the Stredor 44 EI30 FED product is the I<sub>2</sub> criterion as defined in section 5.2.3.3 in BSEN 13501-2: 2016

The mean temperature rise on the unexposed face of the door leaf shall be limited to 140 °C above the initial mean temperature, with the maximum temperature rise at any point of the door leaf limited to 180 °C. No temperature measurements shall be taken into account on the door leaf within 100 mm from the border line of the visible part of the door leaf. The temperature rise at any point on the frame shall be limited to 360 °C, measured at 100 mm from the visible edge (on the unexposed face) of the door leaf, if the frame is wider than 100 mm, otherwise it shall be measured at the frame/supporting boundary.

## Smoke Leakage (S)

This is the ability of the element to reduce or eliminate the passage of smoke from one side of the door to the other. The smoke leakage criterion used for the Stredor 44 EI30 FED product is Sa criterion as defined in section 7.5.6.3 in BS EN 13501-2: 2016.

a) smoke leakage Sm - when the maximum leakage rate measured at both ambient temperature and 200°C and up to a pressure of 50 Pa does not exceed 20 m<sup>3</sup>/h for a single leaf doorset, or 30 m<sup>3</sup>/h for a double leaf doorset;

b) smoke leakage Sa - when the maximum leakage rate measured at ambient temperature, and at a pressure of up to 25 Pa only, does not exceed 3 m<sup>3</sup>/h per metre length of gap between the fixed and moveable components of the doorset (e.g. between the door leaf and door frame), excluding leakage at the threshold.

## 5.2 Classifications

The Stredor 44 EI30 FED product family may be classified to the following combinations of performance parameters and classes as appropriate:

R	E	I <sub>2</sub>	W		t	t	-	M	C	Sa	IncSlow	sn	ef	r
	✓	✓								✓				

Considering the test evidence submitted for classification, glazed, single leaf, single acting doorsets provides the following classifications:

**Fire resistance classifications:**  
**E15Sa, E20Sa, E30Sa**  
**EI<sub>2</sub>15Sa, EI<sub>2</sub>20Sa, EI<sub>2</sub>30Sa**

This classification has been carried out in accordance with clause 7.5.5 and 7.5.6 of BS EN 13501-2: 2016 which is the classification of fire doors and shutters including their closing devices and smoke control doors. The product is to be classified for integrity (E), insulation (I<sub>2</sub>) performance and ambient temperature smoke control (Sa) only.

## 6 Field of application

The test results generated for the Stredor 44 EI30 FED product family have been extended using the rules given in the relevant extended application standards for fire resisting and smoke control doorsets. The reports are referenced in section 3.1 of this classification report.

According to Section 4 of EN 15725: 2010 - *extended application reports on the fire performance of construction products and building elements*, an extended application report is equivalent to a test report in that it forms the basis of preparing a classification report.

The scope of application presented within the EXAP reports for the Stredor 44 EI30 FED design has been written to provide the same extension to scope and the same design options for the product family.

The classification stated in section 5.2 of this report is therefore valid for the Stredor 44 EI30 FED product family presented in the EXAPs for fire resistance and smoke control performance referenced in section 3.1 of this classification report.

## 7 Limitations

This classification document does not represent type approval or certification of the product.

<b>Signature:</b>		
<b>Name:</b>	<b>P Barker*</b>	<b>R Axe*</b>
<b>Title:</b>	Technical Manager	Technical Manager

\* For and on behalf of Warringtonfire

## Appendix A: Revisions

Rev.	WF Ref.	Date	Description