

## CLASSIFICATION OF REACTION TO FIRE PERFORMANCE IN ACCORDANCE WITH EN 13501-1:2007+A1:2009

Classification no.	2015-Efectis-R000127
Sponsor	SAGE Saint-Gobain Europe 21, Square Saint-Charles 75012 PARIS FRANCE
Product name	<b>Sageglass® insulated glass unit</b>
Prepared by	Efectis Nederland BV
Notified body no.	1234
Author(s)	C.C.M. Steinhage B.Sc. E.O. van der Laan M.Sc.
Project number	2014550
Date of issue	February 2015
Number of pages	5

## 1. INTRODUCTION

This classification report defines the classification assigned to **Sageglass® insulated glass unit** in accordance with the procedures given in EN 13501-1:2007+A1:2009.

## 2. DETAILS OF CLASSIFIED PRODUCT

### 2.1 GENERAL

The product, **Sageglass® insulated glass unit**, is defined as insulated glass units intended to be used in buildings and constructions.

### 2.2 MANUFACTURER

SAGE Electrochromics, Inc.  
2 Sage Way  
Faribault, MN 55021  
United States

### 2.3 PRODUCT DESCRIPTION

The product is from the electronically tintable glass side composed of:

- Coated glass: 4 mm
- SentryGlass Foil: 0.9 mm
- Coated glass: 2.2 mm
- Space: 16.4 mm
- Glass: 4 mm
- PVB foil: 1.52 mm
- Glass: 4 mm

See the test reports for detailed product information.

The product has a total thickness of 33 mm and a mass per unit area of approx. 38 kg/m<sup>2</sup>.

## 3. REPORTS, RESULTS AND CRITERIA IN SUPPORT OF THIS CLASSIFICATION

### 3.1 REPORTS

Name of Laboratories	Name of sponsor	Report ref. no.	Test method
Efectis Nederland BV THE NETHERLANDS	SAGE Saint-Gobain Europe FRANCE	2015-Efectis-R000125 2015-Efectis-R000126	EN ISO 11925-2:2010 EN 13823:2014

### 3.2 TEST RESULTS

Test method and test number	Parameter	No. tests	Results	
			Continuous parameter - mean (m)	Compliance with parameters
EN ISO 11925-2				
surface flame impingement	Fs ≤150 mm	6	28	-
	Ignition of filter paper		-	Compliant
Edge flame impingement	Fs ≤150 mm	6	16	-
	Ignition of filter paper		-	Compliant
Side flame impingement	Fs ≤150 mm	6	18	-
	Ignition of filter paper		-	Compliant
EN 13823				
	FIGRA <sub>0.2MJ</sub> [W/s]	3	99	-
	FIGRA <sub>0.4MJ</sub> [W/s]		99	-
	THR <sub>600s</sub> [MJ]		5.5	-
	LFS < edge		-	Compliant
	SMOGRA [m²/s²]		6.9	-
	TSP <sub>600s</sub> [m²]		19	-
	Flaming debris - flaming ≤ 10 s - flaming > 10 s		-	Compliant Compliant

### 3.3 CLASSIFICATION CRITERIA

Fire classification of construction products and building elements Excluding floorings and linear pipe thermal insulation products			
Classification criteria			
Class	B	C	D
Test method(s)			
EN ISO 11925-2 Exposure = 30 s	$F_s \leq 150$ mm within 60 s Ignition of the paper in EN ISO 11925-2 results in a d2 classification.		
EN 13823	FIGRA <sub>0,2 MJ</sub> ≤ 120 W/s LFS < edge of specimen THR <sub>600s</sub> ≤ 7.5 MJ	FIGRA <sub>0,4 MJ</sub> ≤ 250 W/s LFS < edge of specimen THR <sub>600s</sub> ≤ 15 MJ	FIGRA <sub>0,4 MJ</sub> ≤ 750 W/s
Additional classification			
Smoke production	s1 = SMOGRA ≤ 30 m <sup>2</sup> /s <sup>2</sup> and TSP <sub>600s</sub> ≤ 50 m <sup>2</sup> ; s2 = SMOGRA ≤ 180 m <sup>2</sup> /s <sup>2</sup> and TSP <sub>600s</sub> ≤ 200 m <sup>2</sup> ; s3 = not s1 or s2		
Flaming Droplets/particles	d0 = no flaming droplets/ particles in EN 13823 within 600 s; d1 = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s; d2 = not d0 or d1.		

#### 4. CLASSIFICATION AND FIELD OF APPLICATION

##### 4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with clause 11 of EN 13501-1:2007+A1:2009.

##### 4.2 CLASSIFICATION

The product, **Sageglass® insulated glass unit**, in relation to its reaction to fire behaviour is classified:

**B**

The additional classification in relation to smoke production is:

**s2**

The additional classification in relation to flaming droplets / particles is:

**d2**

**Reaction to fire classification: B - s1, d2**

##### 4.3 FIELD OF APPLICATION

This classification is valid for the following product parameters:

Thickness	33 mm
Surface density	38 kg/m <sup>2</sup>
Classified side	Electronically tintable glass side

This classification is valid for the following end use applications:

Substrate	Not applicable
Application	Free standing
Methods and means of fixing	Mechanically
Joints	No joints
Other aspects of end use conditions	To be used in buildings and constructions

##### 4.4 DURATION OF THE VALIDITY OF THIS CLASSIFICATION REPORT

There are no limitations in time on the validity of this report.

## 5. LIMITATIONS

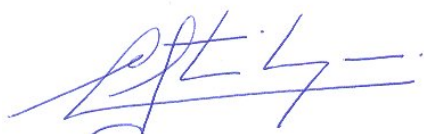
---

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

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 attestation of conformity and CE marking under the Construction Products Directive.

The manufacturer has made a declaration, which is held on file. This confirms that the product's design requires no specific processes, procedures or stages (e.g. no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence the manufacturer has concluded that system 3 attestation is appropriate.

The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide for traceability of the samples tested.

A handwritten signature in blue ink, appearing to read "C.C.M. Steinhage".

C.C.M. Steinhage B.Sc.  
Project leader reaction to fire

A handwritten signature in blue ink, appearing to read "E.O. van der Laan".

E.O. van der Laan M.Sc.  
Project leader reaction to fire