

# Smokeguard

Technical guidance document

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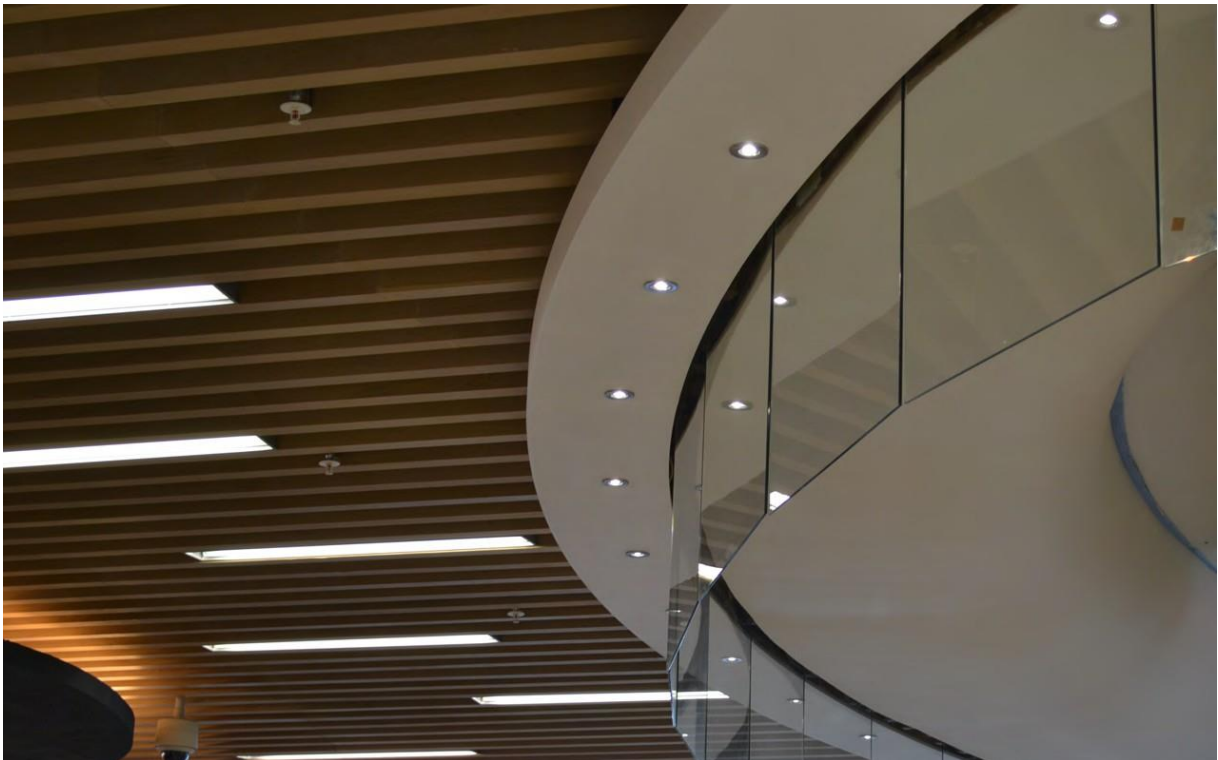
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# 1 Introduction

This document summarises our technical Smokeguard products. Not all information is valid in all regions.

Smokeguard is a glass smoke barrier solution which can help to direct smoke as part of a smoke control system and keep toxic fumes at bay long enough to allow members of the public to exit the building safely; minimising the risk of smoke inhalation, injury and death.

Rigorously tested against rapidly increasing temperatures in accordance with European safety standards EN 12101-1, Smokeguard controls the movement of smoke and is certified for 30 and 60 minute applications. It is ideal for use as a passive safety solution for large public spaces such as shopping centres, museums and transport hubs.



*Figure 1: Example installation*

The following terms are used:

CE	The letters CE mean that the manufacturer or importer affirms the good's conformity with European health, safety and environmental protection standards.
CR	Classification Report Europe (except where national systems exist).
Ext.	PV Extension France
PV	France
NL	Netherlands
UKCA	UK Conformity Assessed

## 2 System characteristics and approvals

Figure 2 illustrates the appearance of the fittings and the installed pane. Table 1 displays the system characteristics of the product.

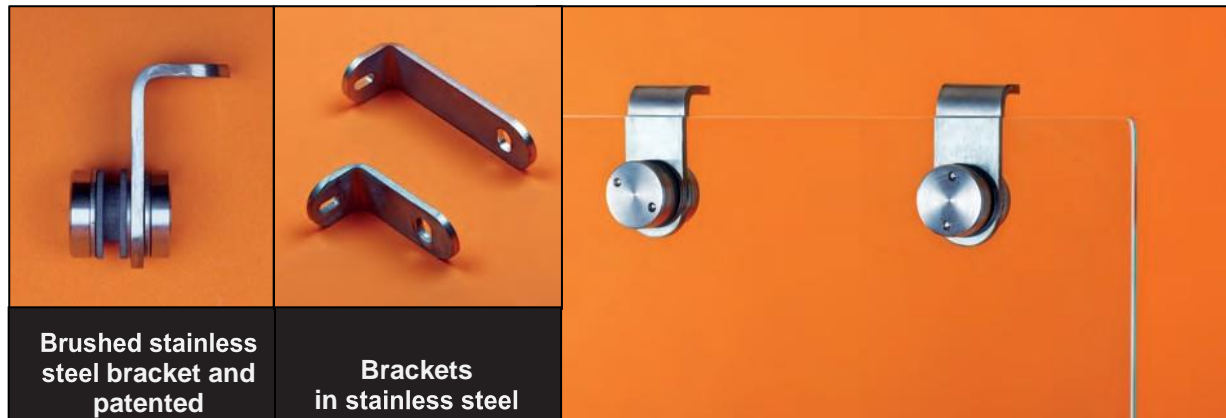


Figure 2: Detail on brackets and an installation with Smokeguard pane

System name	Smokeguard
Smoke Barrier Classification [EN 13501-4]	DH30, D <sub>600</sub> 30 DH60, D <sub>600</sub> 60
Product Standards	EN12101-1 Smoke barrier EN12150-2 Toughened safety glass
Nominal Thickness	8 mm ± 0.3 mm
Dimensional Tolerance	± 2.5 mm
Weight	20 kg/m <sup>2</sup>
Impact Classification [EN12600]	1C1 (tested as a single pane held on four sides)
Light Transmission [EN410]	87%

Table 1: System characteristics

### 3 Application general characteristics

The general characteristics and options of the product are detailed in Table 2 with reference to Figure 3. Installers and specifiers are reminded to refer to the approvals for additional detail.

Part	Description (see Figure 3)
Brackets	Mild or stainless steel with associated fixings
Supporting Construction	Concrete construction Plasterboard (30 minutes only)
Max size of each pane	2500 mm x 1200 mm (W x H)
Minimum size of each pane	465 mm x 109 mm (W x H)
Number of holes per pane	2 holes
Distance from hole to vertical edge of glass (a)	$a = \frac{W}{4}$
Maximum distance between holes (b)	$b = \frac{W}{2}$
Gap between consecutive panes (c)	15 mm

Table 2: Application general characteristics and options

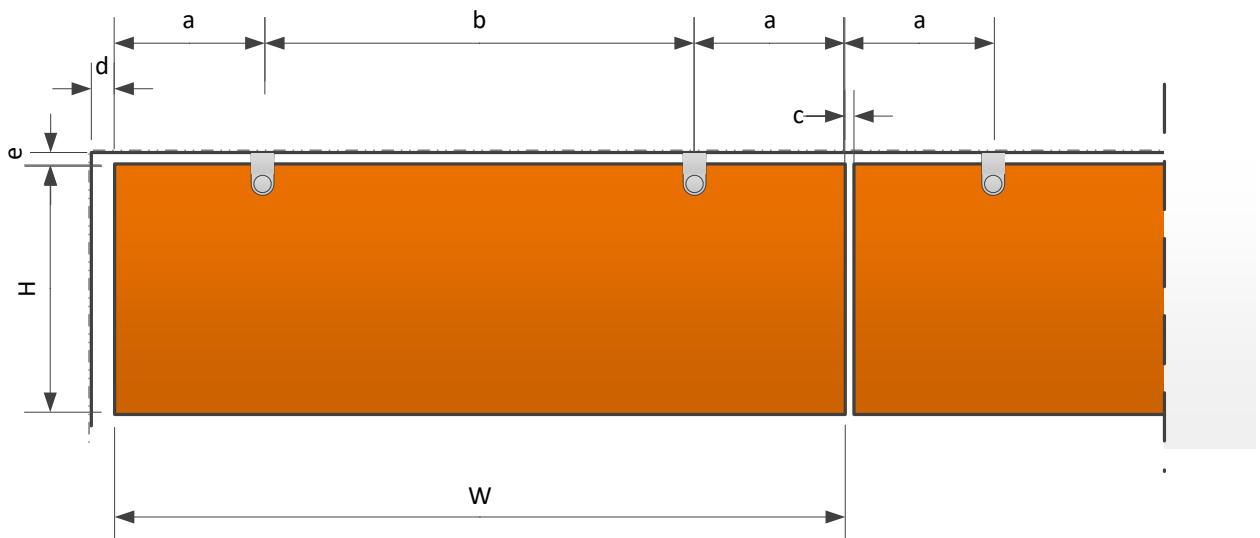


Figure 3: Installation dimension guide. See Table 2

## 4 Summary of approvals

The products are approved by the notified body Efectis, France to European norms in the form of Classification Reports and by Efectis, FR for the French market by Process-Verbal.

Approvals	EFR-14-002741 [PROCESS VERBAL] EFR-19-004852 [CLASSIFICATION REPORT] EFR-20-001294 [CLASSIFICATION REPORT]
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## 5 Options

- Screen printing / acid etching / manifestations (must not cover more than 50% of the glass surface in each case according to EFR-14-002741 and for 30 minutes only)
- Shapes/cut-outs (30 minutes only)
- Flat brackets
- Steel trims to conceal brackets
- Steel jointing strips between consecutive panes (30 minutes only)

## 6 Installation

This guide provides instructions that will assist Pyroguard Smokeguard installers to construct a barrier for all smoke barrier classifications claimed. The installer must verify the application conditions for the building in advance. The assembly of Pyroguard Smokeguard glazing shall only be performed by suitably trained specialist staff. This document does not fully constitute a training document.

In the building envelope, which is subject to the influences of sun, wind, weather and building design factors, the function of the joints and glazing may vary from that under normal interior conditions. Seek technical approval from Pyroguard UK Ltd before planning such an installation.

Furthermore, the function in case of fire cannot be ensured if the installation deviates from that described in this document. Only the recommended types of fixings, which have been fire tested in conjunction with the glazing and materials, are approved to be used for application with Smokeguard. Unfortunately, in the event of defects, the warranty shall be void with the use of other fixings or other materials, or the disregard of generally recognised technical guidelines, or failure to follow these instructions. Additionally, Pyroguard do not warrant the installation nor the structural safety of the installation only the product itself according to the Product Standard EN12101-1.

Smokeguard panes are frequently of considerable weight and of large dimensions and must therefore be handled according to industry guidelines (refer to the Glass and Glazing Federation for details) in order that they are installed without any damage and within regional safety at work guidelines.

### 6.1.1 Handling instructions

Glass panels must be carefully handled using suitable glass handling and/or vacuum-lifting equipment.


Glazing installation must be performed in strict accordance to the installation instructions. Any change in materials or dimensions will result in loss of warranty.



# 7 Marking according to CE and UKCA

The following declaration details the characteristics of the product according to classification reports issued by Efectis, FR and are important for CE and UKCA marking. Efectis, FR are the Notified Body used by Pyroguard to CE Mark, Efectis, NI are the UKCA marking body.

Calculation of smoke passage around the system can be made using this data according to the product standard.

 <b>Marking of Pyroguard</b>		<b>Smokeguard DH60/8 EDC</b>	
Pyroguard UK Ltd., Millfield Lane, Haydock, Merseyside. WA11 9GA. Tel.: +44 (0) 1942 710 720			
We declare under sole responsibility, the following characteristics for the CE Marking and UKCA marking of this glass product, intended to be used in building and construction works, following product standard stated below :			
<b>Manufacturing Site</b>		<b>Haydock, UK &amp; Seingbouse, FR</b>	
<b>Notified Body</b>		<b>1812</b>	
<b>Product Standard</b>		<b>BS EN 12101-1:2005 +A1:2008 Smoke and heat control systems Part 1: Specification for smoke barriers</b>	
	<b>Characteristics</b>	<b>AVCP System(s)</b>	<b>Declared Performance</b>
1	Smoke barrier, type	<b>1</b>	Pyroguard T SC
2	Resistance to fire classification(s)		DH 60; D <sub>600</sub>
3	Response delay (sec)		0
4	Openings, gaps and perimeter spaces :		
	Gap head (mm)		26*
	Gap edge, g (mm)		25
	Gap joint, h (mm)		25
5	Area head (mm <sup>2</sup> )		W x Gap head
6	Area edge (mm <sup>2</sup> )		D x Gap edge
7	Area joint (mm <sup>2</sup> )		D x Gap joint
8	Area total	$N1 \times \text{Area}_{\text{head}} + N2 \times \text{Area}_{\text{edge}} + N3 \times \text{Area}_{\text{joint}}^{***}$	
9	Maximum barrier permeability	NPD	
10	Tested at ambient temperature	NPD	
<small>* if this gap is covered by a steel angle bar. No smoke can pass this space. Value = 0  ** if there is joint fixing between two adjacent glazings, this gap is covered by the joint. No smoke can pass this space. Value = 0  *** N = number of such gaps</small>			

 <b>Marking of Pyroguard</b>	<b>Smokeguard DH30/8 EDC</b>
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Pyroguard UK Ltd., Millfield Lane, Haydock, Merseyside. WA11 9GA.  
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	<b>Characteristics</b>	<b>AVCP System(s)</b>	<b>Declared Performance</b>
1	Smoke barrier, type	1	Pyroguard T SC
2	Resistance to fire classification(s)		DH 30; D <sub>600</sub>
3	Response delay (sec)		0
4	Openings, gaps and perimeter spaces :		
	Gap head (mm)		26*
	Gap edge, g (mm)		10
	Gap joint, h (mm)		15**
5	Area head (mm <sup>2</sup> )		W x Gap head
6	Area edge (mm <sup>2</sup> )		D x Gap edge
7	Area joint (mm <sup>2</sup> )		D x Gap joint
8	Area total	$N_1 \times \text{Area}_{\text{head}} + N_2 \times \text{Area}_{\text{edge}} + N_3 \times \text{Area}_{\text{joint}}^{***}$	
9	Maximum barrier permeability	NPD	
10	Tested at ambient temperature	NPD	

\* if this gap is covered by a steel angle bar. No smoke can pass this space. Value = 0

\*\* if there is joint fixing between two adjacent glazings, this gap is covered by the joint. No smoke can pass this space. Value = 0

\*\*\* N = number of such gaps

## 8 Disclaimer

The configurations mentioned in this document shows materials/products that Pyroguard UK Ltd has successfully used in its own fire tests.

Pyroguard's technical documents summarise the approved glazing, glazing dimensions and approved framing system/glazing assembly. All dimensions are given in millimetres (mm) unless otherwise stated. All glass dimensions are given width first and height second. All glass sizes are maximum allowable dimensions and either/both dimensions may be reduced but not increased. Where a 'max area' is shown the glass size may be taken to the maximum dimension in either width or height as long as the size used for the second dimension does not take it above the maximum area allowed. Where no maximum area is shown then both dimensions may be taken to the maximum allowed.

To fully comply with the approval, the original document referenced should be studied. All components of the glazing assemblies installed must be as described in the original test reports, classification reports, national approvals, global assessments, or other certification. If there is an option given in the assembly drawing for any of the components used in the glazing assembly then only the options given can be used.

Pyroguard's technical documents are provided for information purposes only. The information contained in this document is offered for assistance in the applications of Pyroguard UK Ltd's products. Pyroguard UK Ltd may change the contents hereof without notice. The document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. Pyroguard UK Ltd specifically disclaims any liability with respect to this document and no contractual obligations are formed either directly or indirectly by this document. The technologies, functionality, services, and processes described herein are subject to change without notice. Pyroguard's technical documents are only valid for one year after publication.

Please contact your Pyroguard representative to receive a new edition of this document.

## 9 Warranty

Pyroguard UK Ltd warrants that its products will be free of substantial obstruction of vision from dust or other foreign substances due to defective materials or workmanship for a period of ten years from the date of delivery. Full details of the limited 10-year warranty are available on request.



TECHNICAL FIRE SAFETY GROUP

### **Pyroguard UK Ltd**

Headquarters - International House  
Millfield Lane - Haydock - St. Helens  
Merseyside - WA11 9GA - United Kingdom

**T:** +44 (0) 1942 710 720

**F:** +44 (0) 1942 710 730

**E:** [info@pyroguard.eu](mailto:info@pyroguard.eu)

[www.pyroguard.eu](http://www.pyroguard.eu)

 [twitter.com/pyroguard](https://twitter.com/pyroguard)

 [linkedin.com/company/pyroguard](https://www.linkedin.com/company/pyroguard)

 [facebook.com/pyroguarduk](https://www.facebook.com/pyroguarduk)

 [instagram.com/pyroguard](https://www.instagram.com/pyroguard)

**Pyroguard France SARL** - Parc d'activités communautaire n°1  
145 rue des Roseaux - 57455 Seingbouse - France

**T:** +33 (0)3 87 00 28 15 **F:** +33 (0)3 87 00 28 11 **E:** [info.france@pyroguard.eu](mailto:info.france@pyroguard.eu)

**Pyroguard Netherlands B.V.** - Luchthavenweg 81.125  
5657 EA Eindhoven - The Netherlands

**T:** +31 (0) 40 2888 525 **E:** [info.nl@pyroguard.eu](mailto:info.nl@pyroguard.eu)

**Pyroguard Iberia** - Bahia Space, C/ Bahía de Pollensa,  
5 28042 - Madrid - Spain

**T:** +34 91 737 82 12

**Pyroguard India** - Kanakia Wall Street (4th floor) - Chakala, Andheri Kurla Road  
Andheri East - Mumbai - Maharashtra 400093 - India