



CERTIFICATE OF APPROVAL

No CF 257

This is to certify that, in accordance with
 TS00 General Requirements for Certification of Fire Protection Products
 The undermentioned products of

PYROGUARD UK LIMITED

International House, Millfield Lane, Haydock, WA11 9GA

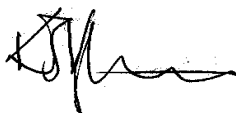
Tel: 01942 710720 Fax: 01942 710730

Have been assessed against the requirements of the Technical Schedule(s)
 denoted below and are approved for use subject to the conditions
 appended hereto:

CERTIFIED PRODUCT
 'Pyroguard'
 Fire Resisting Glass

TECHNICAL SCHEDULE
 TS 25 Fire Resistant Glass,
 Glazing Systems and Materials

Signed and sealed for and on behalf of CERTIFIRE



Sir Ken Knight
 Chairman
 WCL Impartiality Committee



Paul Duggan
 Certification Manager
 Warrington Certification Ltd



Issued: 20th February 2006
 Reissued: 4th February 2016
 Valid to: 3rd February 2021



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard Fire Resisting Glass

This Certificate of Approval relates to the fire resistance of Pyroguard UK Limited's 'Pyroguard' laminated glass products when used in the following applications, as defined in BS 476: Part 22: 1987 subject to the undermentioned conditions.

Glass Specification	Application	Fire Resistance Performance (mins)		Page No.
		Integrity	Insulation	
Pyroguard EW30 clear/wired	Timber framed screens	30	0	4-10
Pyroguard EW30 clear/wired	IGUs in timber framed screens	30	0	11-13
Pyroguard EW30 clear/wired	Steel framed screens	30	0	14
Pyroguard EW30 clear/wired	IGUs in steel framed screens	30	0	15
Pyroguard EW30 clear/wired	Steel doorsets	30	0	16
Pyroguard EW30 clear/wired	IGUs in steel framed screens	60	0	17
Pyroguard EW30 clear/wired	Timber based doorsets	30	0	18-19
Pyroguard FD30 clear/wired	Timber based doorsets (Pyroguard FD60 glass)	60	0	20
Pyroguard EW30 clear/wired	Timber stile & rail doorsets	30	0	21-28
Pyroguard EW30 clear/wired	Secondary Glazed Screen	30	0	29
Pyroguard EW30 clear/wired	Glazed Partition	30	0	30
Pyroguard EW30 Clear/Wired with Priva-See film (total 11 mm)	Timber based doorsets	30	0	31
Pyroguard EW60 clear/wired	Timber framed screens	30 & 60	0	32-35
Pyroguard EW30 MAXI clear/wired	IGUs in timber framed screens	30	0	36
Pyroguard EW60 clear/wired	IGUs in timber framed screens	60	0	37
Pyroguard EW30 MAXI clear/wired	Steel framed screens	30	0	38
Pyroguard EW60 clear/wired	Steel framed screens	60	0	39
Pyroguard EW30 MAXI clear/wired	Aluminium framed screens	30	0	40
Pyroguard EW30 MAXI clear/wired	IGUs in steel framed screens	30	0	41
Pyroguard EW60 clear/wired	IGUs in steel framed screens	60	0	42
Pyroguard EW30 MAXI clear/wired	Timber based doorsets	30	0	43
Pyroguard EW60 clear/wired	Timber based doorsets	60	0	44-45
Pyroguard EW30 MAXI clear/wired	Timber stile & rail doorsets	30	0	46-47
Pyroguard EW30 MAXI clear/wired	IGUs/laminated in horizontal steel framed screens	30	0	48-49

Page 2 of 49 Signed
E/056



Issued: 20th February 2006
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CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard Fire Resisting Glass

This product is approved on the basis of:

- a) Initial type testing
- b) A design appraisal against TS25
- c) Product surveillance under BS EN ISO 9001: 2008
- d) Audit testing

This Certificate of Approval must be read in conjunction with CERTIFIRE Technical Schedule TS25, Fire Resistant Glass, Glazing Systems and Materials.

General Requirements

Where the glass is installed in a timber or steel framed screen, the orientation of the screen shall be no more than $\pm 10^\circ$ from the vertical.

The edge cover to each pane shall be no less than 10 mm minimum.

Options

All systems may include decorative self-adhesive leading or self adhesive timber slats (grid pattern)/ladder beads on either or both faces or may be frosted or patterned on one face.

The glass may have 3M – Ultra 400 clear or Llumiar Window Film SCL SR PS4 applied to either face or an alternative film applied to the known fire risk side only. If the fire risk may be from either side or it cannot be determined which side of the glass will be on the fire risk side, then films other than 3M – Ultra 400 clear or Llumiar Window Film SCL SR PS4 shall not be applied.

Pyroguard glass may be acid etched, bevelled or incorporate grooves subject to the minimum glass thickness being maintained i.e. by utilising thicker glass sheets bevelled at the edge or grooved to standard thickness.

Insulating Glass Units (IGUs) may incorporate Georgian bars within the cavity between inner and outer glass layers.

Insulating Glass Units (IGUs) may also have an integrated blind within the airspace provided the Pyroguard glass pane is glazed on the non fire side when combined with a non-fire rated laminated glass or either side when combined with a float or toughened glass.

Where IGUs are approved and the fire resistant pane is glazed to the non-fire side, the non-fire resistant glass on the fire side can be float, toughened or laminated glass. When the fire resistant pane is glazed to the fire side the non-fire resistant glass on the non-fire side can be any pane that does not contain a flammable organic material i.e. float glass or toughened glass but not a laminated or painted glass unless supported by test evidence not contained in this CF.

The non-fire glass counterpane within the IGU's options considered in this document can be of any thickness (subject to the conditions above and also subject to bead size being maintained).

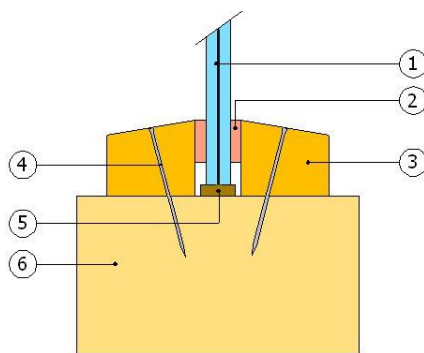
Within this certification IGU airspace widths vary from 6mm to 12mm for different products. The airspace widths are interchangeable for any product within this range. For larger airspace width contact the owner of this Certification.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass in timber framed screens for periods of 30 minutes integrity

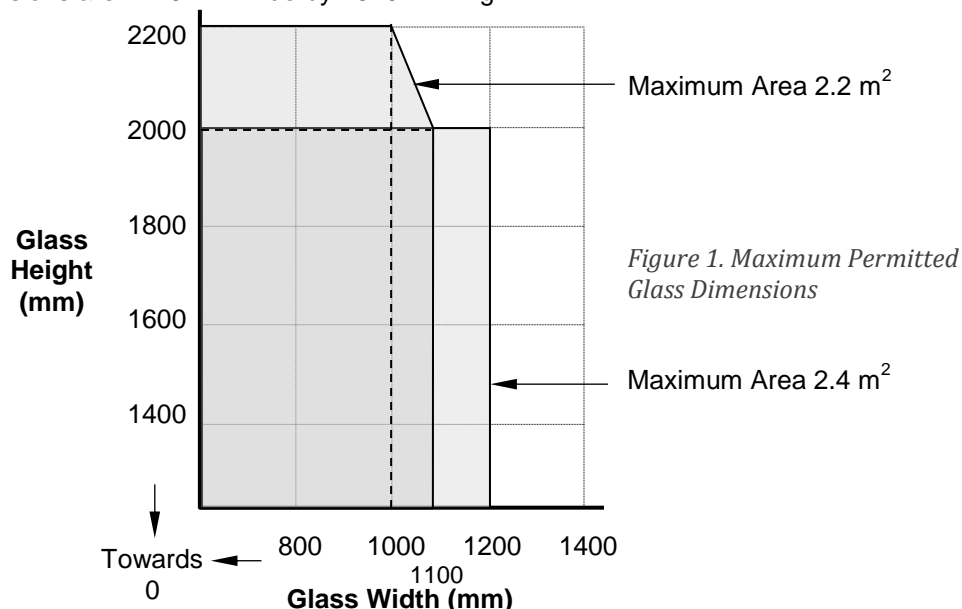
For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



- ① Pyroguard EW30 Clear or Wired
- ② 20 mm by 6 mm 'K tape', ceramic fibre glazing tape
- ③ 20 mm high by 40 mm wide square or chamfered (up to 30°) hardwood glazing beads, minimum density 660 kg/m³.
- ④ 38 mm long No. 8 steel screws at 200 mm centres (30° to glass)
- ⑤ Hardwood or Non-combustible setting blocks
- ⑥ 63 mm by 105 mm (minimum) hardwood framing sections, minimum density 530 kg/m³

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 1 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 2220 mm wide by 2610 mm high.



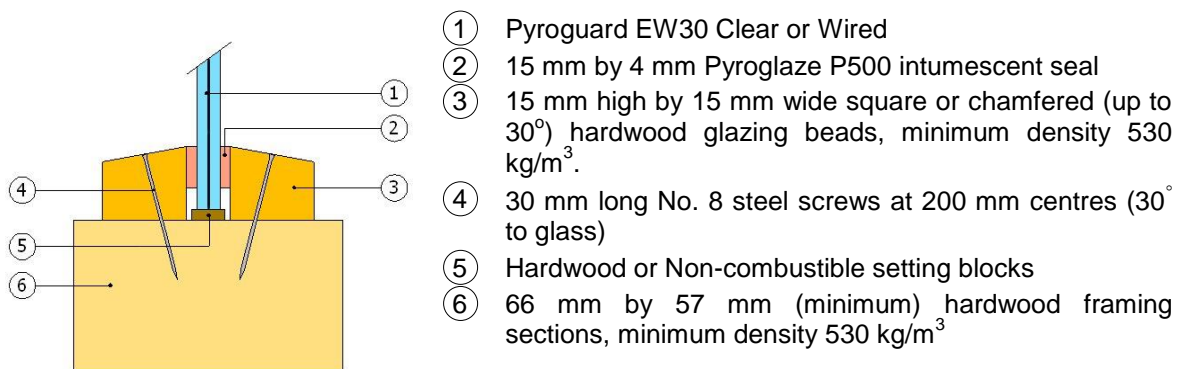
The aspect ratio of the glass may be unlimited within these aperture dimensions. Alternative glazing systems as detailed in Table 1 (Timber Doorsets) may be utilised subject to the dimensional limitations specified in Table 1. These systems may also be included in previously tested doorset fan and side-lights.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

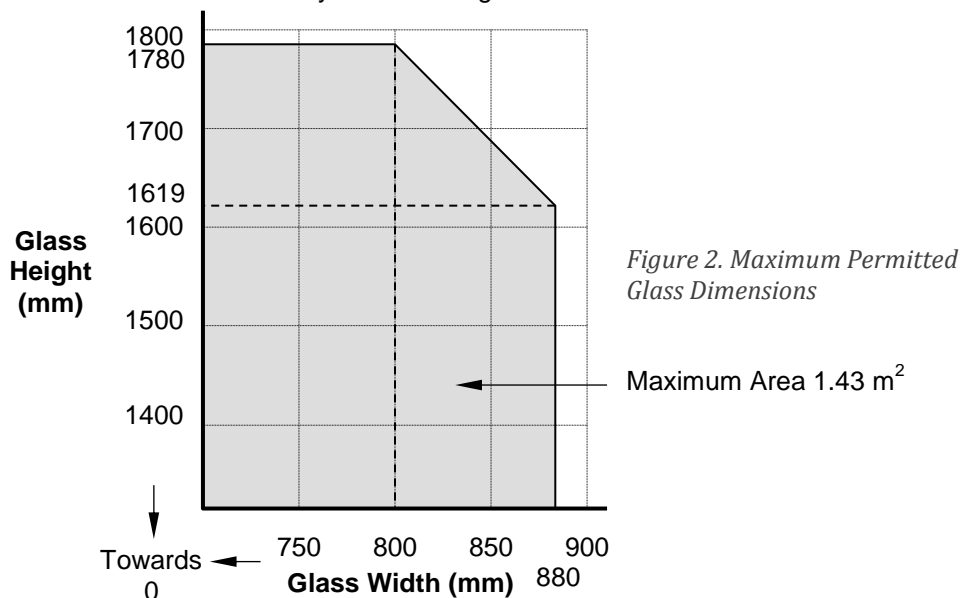
Pyroguard EW30 Clear/Wired glass in timber framed screens for periods of 30 minutes integrity (continued)

For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 2 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 1900 mm wide by 2500 mm high.



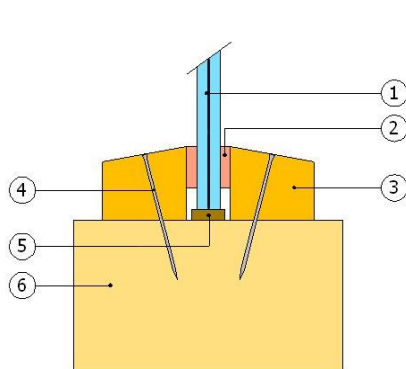
The aspect ratio of the glass may be unlimited within these aperture dimensions. Alternative glazing systems as detailed in Table 1 (Timber Doorsets) may be utilised subject to the dimensional limitations specified in Table 1. These systems may also be included in previously tested doorset fan and side-lights.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass in timber framed screens for periods of 30 minutes integrity (continued)

For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



- ① Pyroguard EW30 Clear or Wired
- ② 12 mm by 3 mm 'Firestrip 30' glazing seal or 10 by 2 mm Interdens glazing seal
- ③ 13 mm high by 21 mm wide square or chamfered (up to 20°) hardwood glazing beads, minimum density 650 kg/m³
- ④ 32 mm long steel screws or 50 mm steel pins at 150 mm centres (30° to glass) and nominally 50 mm from each corner.
- ⑤ Hardwood or Non-combustible setting blocks
- ⑥ 40 mm by 75 mm (minimum) softwood or hardwood framing sections, minimum density 510 kg/m³

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 4 below, when used in conjunction with the above system.

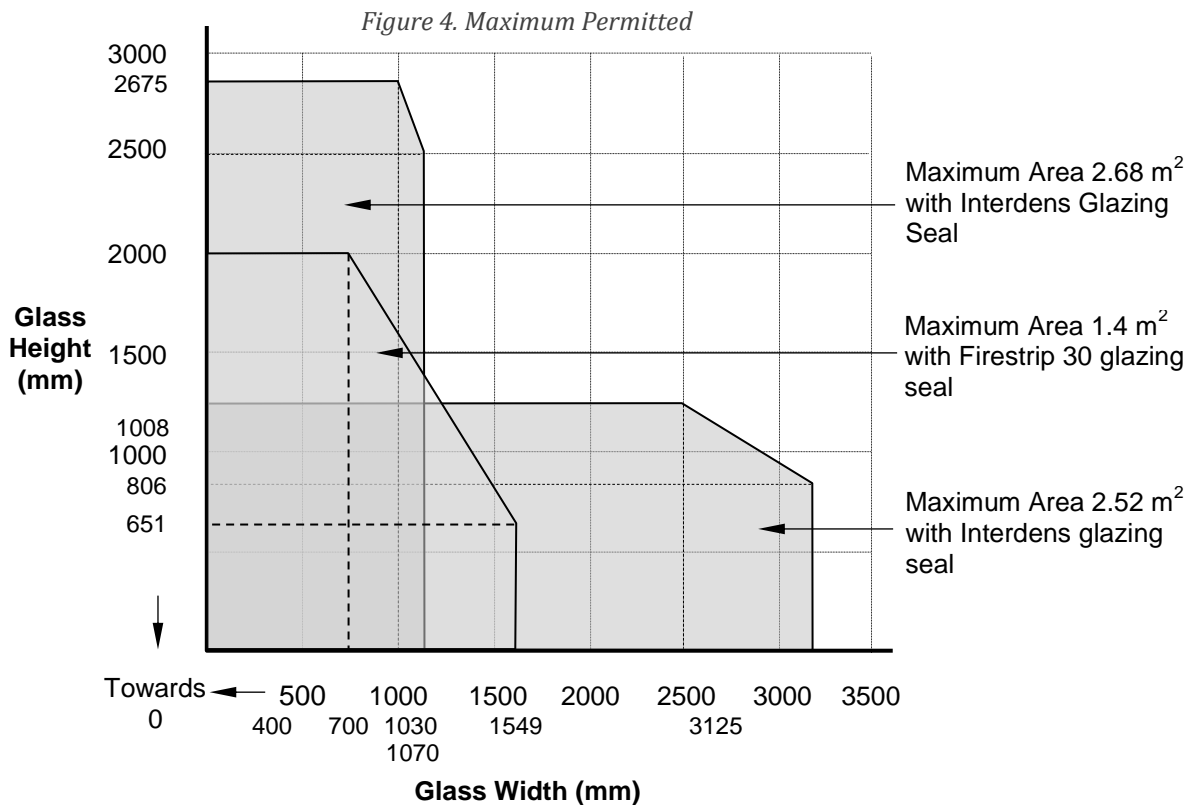
The maximum permitted overall screen dimensions are 1900 mm wide by 2500 mm high.

The aspect ratio of the glass may be unlimited within these aperture dimensions.

Alternative glazing systems as detailed in Table 1 (Timber Doorsets) may be utilised subject to the dimensional limitations specified in Table 1. These systems may also be included in previously tested doorset fan and side-lights.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass in timber framed screens for periods of 30 minutes integrity (continued)

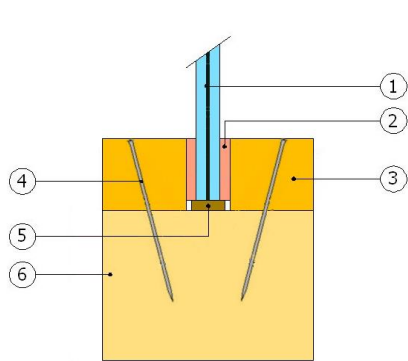


CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass in single pane timber framed screens for periods of 30 minutes integrity

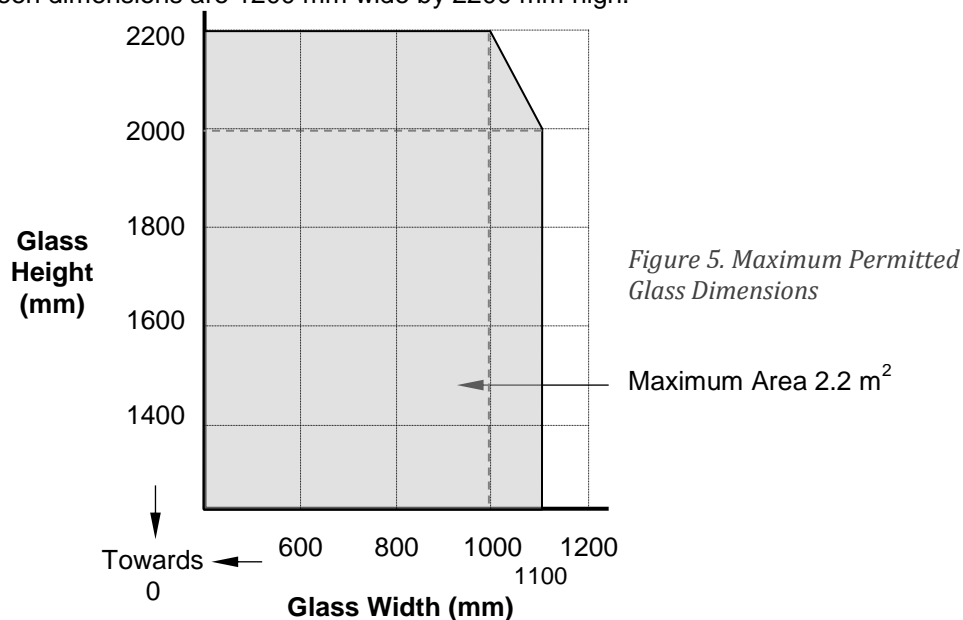
For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



- ① Pyroguard EW30 Clear or Wired
- ② Sealmaster Fireglaze (spacing achieved with 4 mm thick Kerafix pads)
- ③ 20 mm high by 31 mm wide square or chamfered (up to 30°) hardwood glazing beads, minimum density 580 kg/m³.
- ④ 50 mm long steel screws at 200 mm centres (30° to glass)
- ⑤ Hardwood or Non-combustible setting blocks
- ⑥ 40 mm by 75 mm (minimum) hardwood framing sections, minimum density 580 kg/m³

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 5 below, when used in conjunction with the above system. The maximum permitted overall single pane screen dimensions are 1200 mm wide by 2200 mm high.



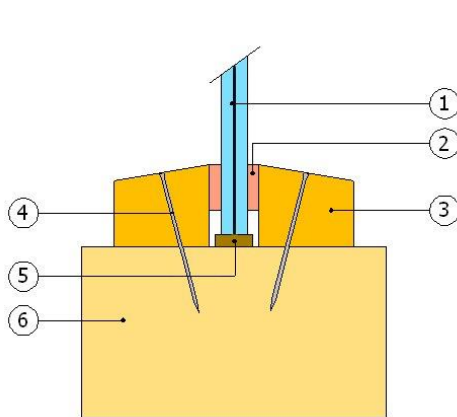
The aspect ratio of the glass may be unlimited within these aperture dimensions. Alternative glazing systems as detailed in Table 1 (Timber Doorsets) may be utilised subject to the dimensional limitations specified in Table 1. These systems may also be included in previously tested doorset fan and side-lights.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass in single pane softwood framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



- ① Pyroguard EW30 Clear or Wired
- ② 20 mm by 3 mm 'K tape', ceramic fibre glazing tape
- ③ 25 mm high by 40 mm wide square or chamfered (up to 30°) hardwood glazing beads, minimum density 650 kg/m³.
- ④ 50 mm long M4 steel screws at 200 mm centres (30° to glass)
- ⑤ Hardwood or Non-combustible setting blocks
- ⑥ 92 mm by 45 mm (minimum) softwood framing sections, minimum density 450 kg/m³

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 6 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 2506 mm wide and 2706 mm high.

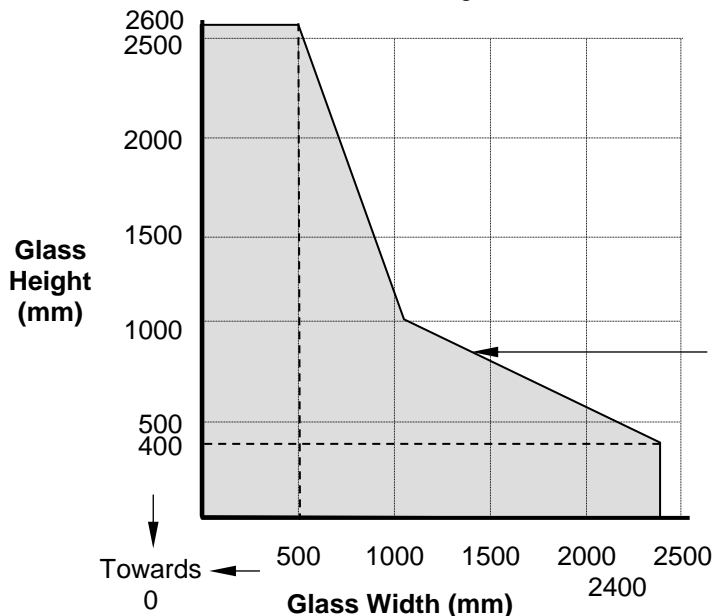


Figure 6. Maximum Permitted Glass Dimensions

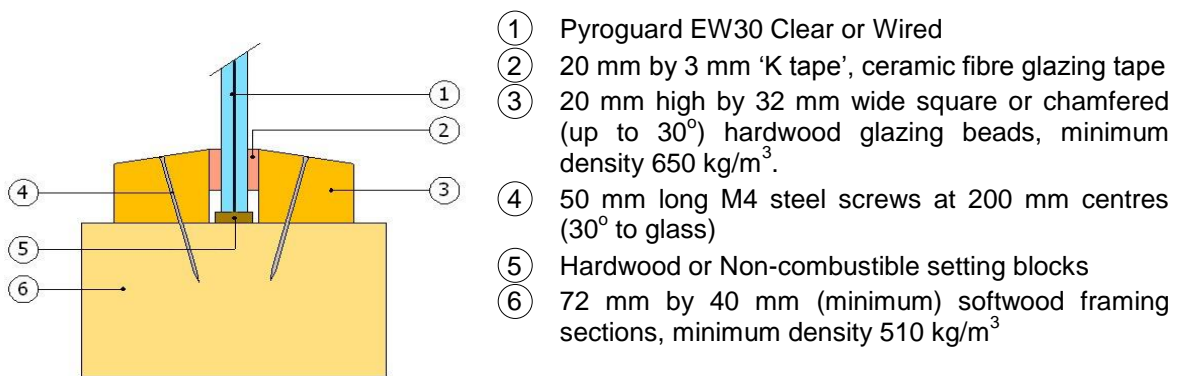
Maximum Area 1.3 m²

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

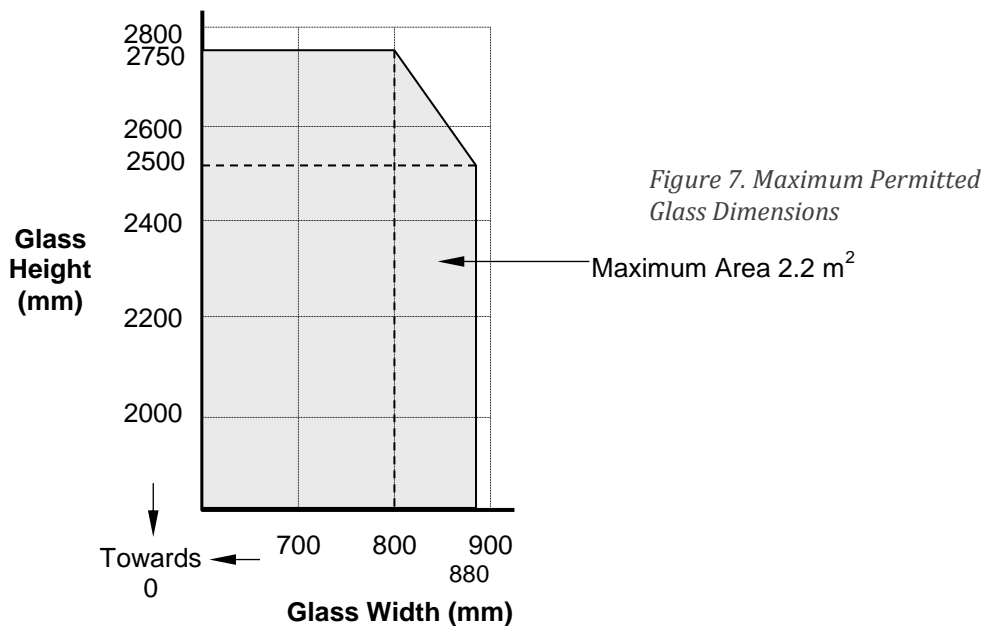
Pyroguard EW30 Clear/Wired glass in softwood framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 7 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 2506 mm wide and 2706 mm high.

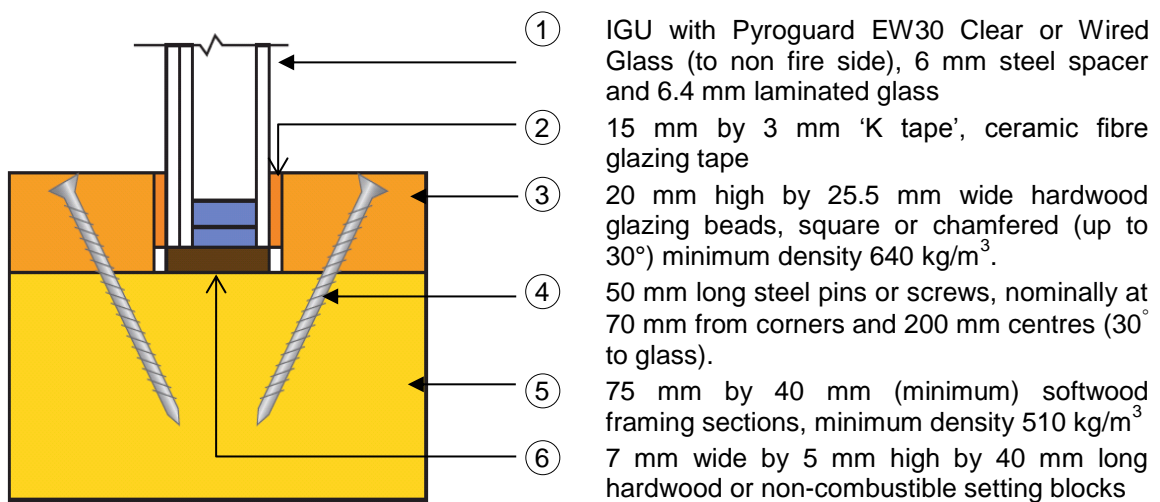


CERTIFICATE No CF 257 PYROGUARD UK LIMITED

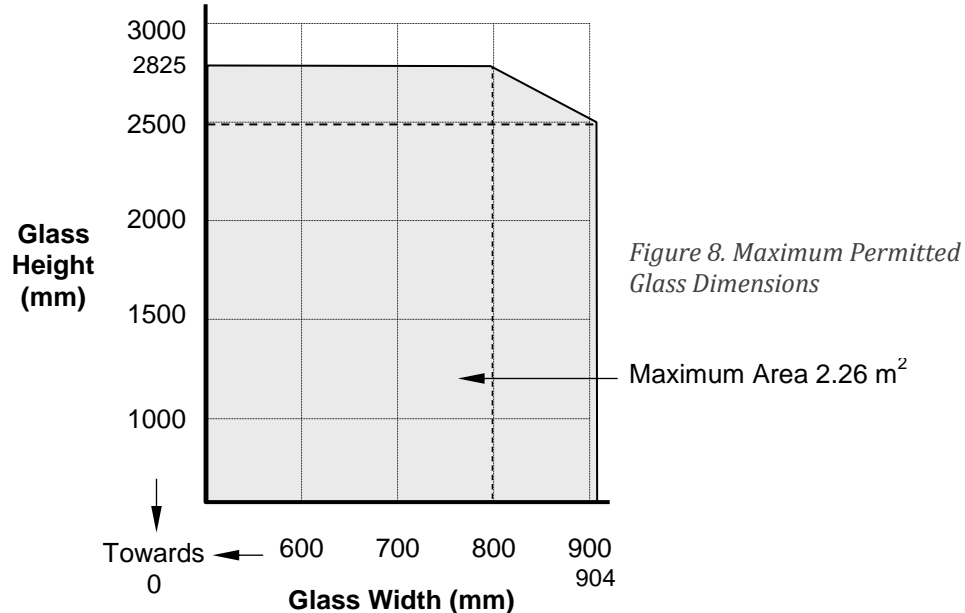
Pyroguard EW30 Insulating Glass Units in single pane timber framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



This Certificate of Approval relates to the sizes of Pyroguard EW30 glass shown in Figure 8 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.

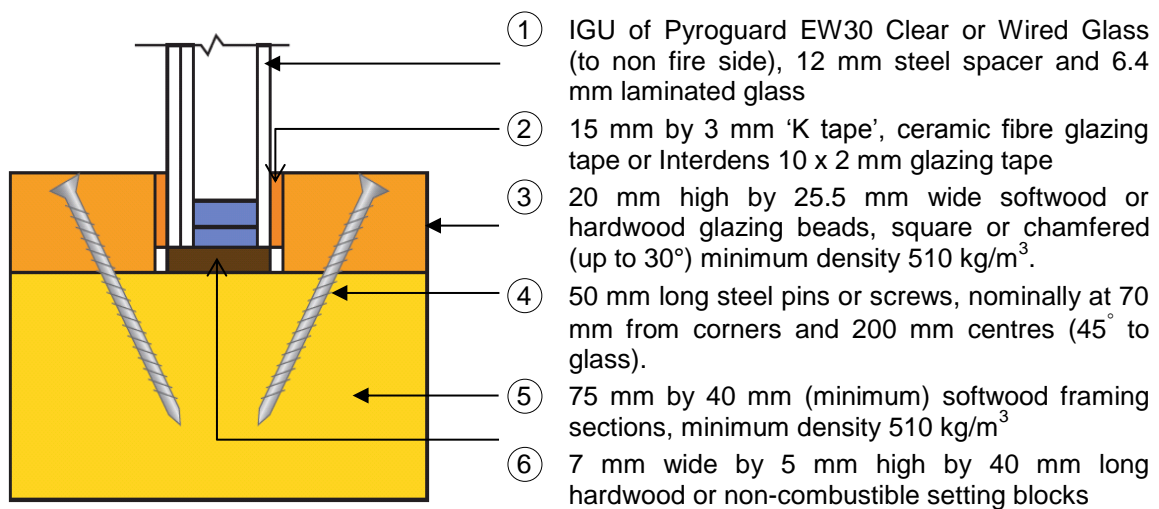


CERTIFICATE No CF 257 PYROGUARD UK LIMITED

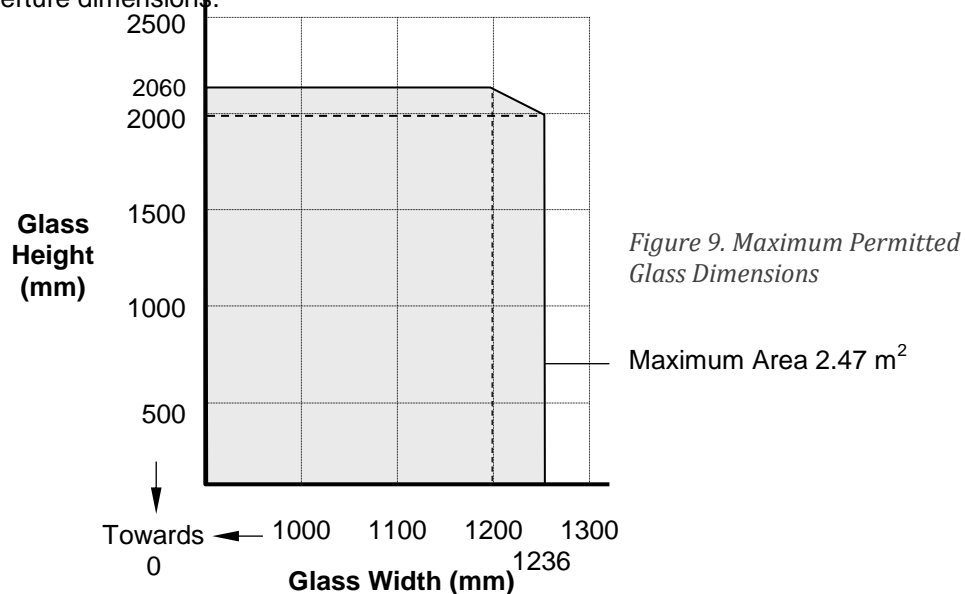
Pyroguard EW30 Insulating Glass Units in single pane timber framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



This Certificate of Approval relates to the sizes of Pyroguard EW30 glass shown in Figure 9 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.

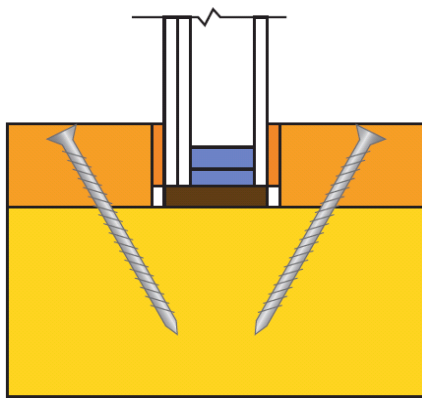


CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired Insulated Glazed Units glass in timber framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



- ① 'IGU' of Pyroguard EW30 glass, a 12 mm Argon filled cavity with steel or aluminium spacer bars and a single layer of 4 mm annealed glass (including 'low E' coated glasses), to form a 23 mm thick unit*.
- ② 10 mm by 2 mm Interdens glazing tape
- ③ 15 mm high by 32 mm wide square or chamfered (up to 30°) hardwood glazing beads, minimum density 650 kg/m³.
- ④ 50 mm long M4 steel screws at 200 mm centres (30° to glass)
- ⑤ Hardwood or Non-combustible setting blocks
- ⑥ 90 mm by 40 mm (minimum) softwood framing sections, minimum density 510 kg/m³

*The panes must be oriented such that the 4 mm layer faces the fire risk direction.

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass IGUs shown in Figure 10 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 3000 mm wide and 3000 mm high.

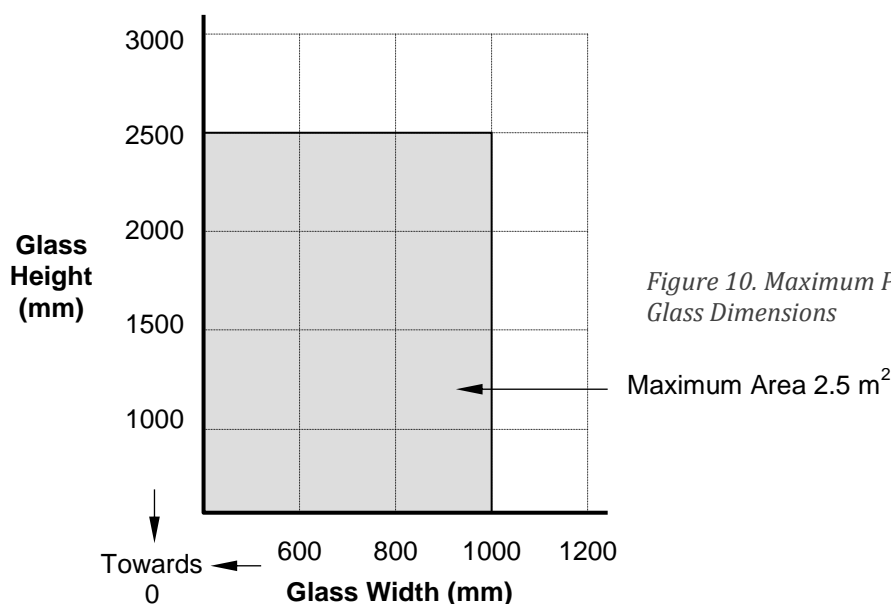


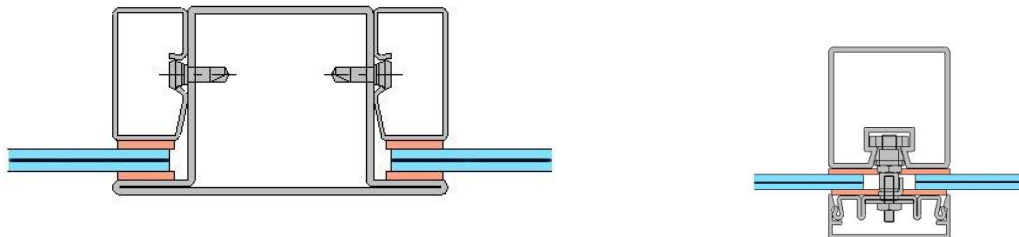
Figure 10. Maximum Permitted Glass Dimensions

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass in steel framed screens for periods of 30 minutes integrity

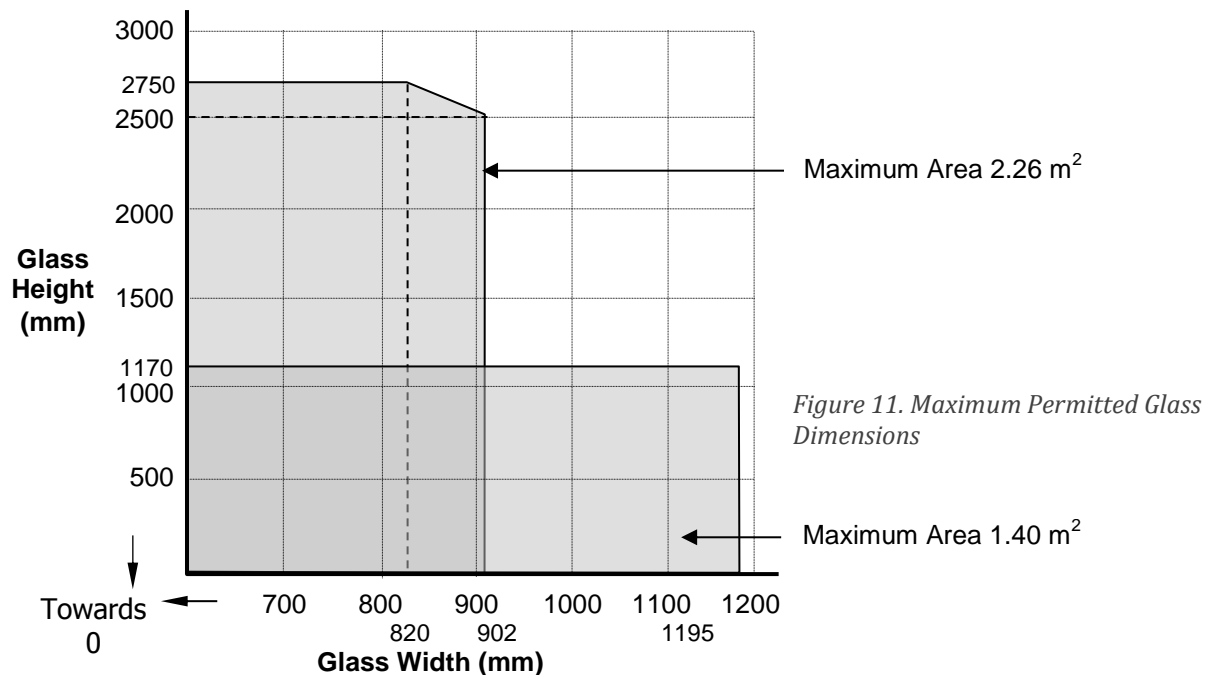
For this application the following conditions shall apply:

The glass shall be installed into a previously tested or CERTIFIRE approved framing system (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads, see examples below. The glass shall be glazed into the screen with 'K Tape' ceramic fibre gasket on both faces and set on non-combustible setting blocks to determine the correct edge cover.



Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 11 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 3000 mm high by unlimited width. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass Insulating Glass Units in steel screens for periods of 30 minutes integrity

For this application the following conditions shall apply:

The 'IGU' shall comprise a single layer of Pyroguard EW30 glass, a 12 -15 mm Argon filled cavity with steel or aluminium spacer bars and a single layer of 4 mm toughened glass (including 'low E' glasses), to form a 23 mm thick unit. The panes must be oriented such that the Pyroguard EW30 glass faces the fire risk direction.

The glass shall be installed into a previously tested or CERTIFIRE approved framing system (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads. The glass shall be glazed into the screen with 'K Tape' ceramic fibre gasket on both faces and set on hardwood or non-combustible setting blocks to determine the correct edge cover.

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass IGUs shown in Figure 12 below, when used in conjunction with the above system. The glass may be installed within multi-paned screens providing that the overall height of the screen does not exceed 3000 mm. The aspect ratio of the glass may be unlimited within these aperture dimensions.

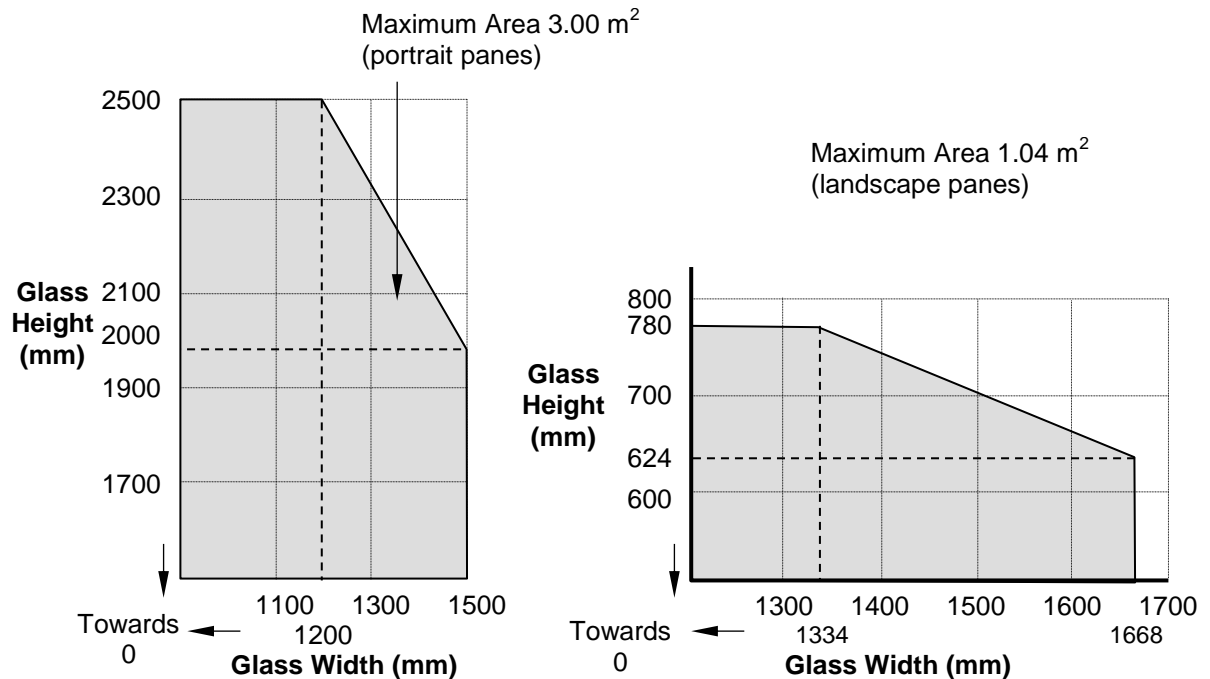


Figure 12. Maximum Permitted Glass Dimensions

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

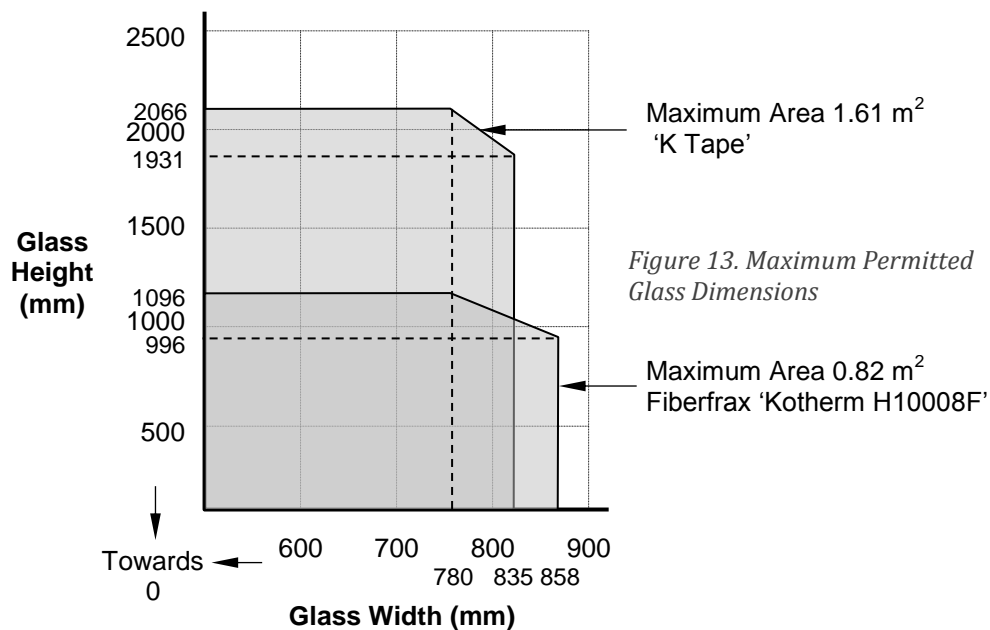
Pyroguard EW30 Clear/Wired glass in steel doorsets for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be installed into a previously tested or CERTIFIRE steel doorset (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads. The glass shall be glazed into the doorset with Fiberfrax 'Kotherm H10008F' ceramic tape or 'K Tape' on both faces and set on non-combustible setting blocks to determine the correct edge cover.

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 13 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired Insulated Glazed Units glass in steel framed screens for periods of 60 minutes integrity

For this application the following conditions shall apply:

The 'IGU' shall comprise a single layer of Pyroguard EW30 glass, a 12 -15 mm Argon filled cavity with steel or aluminium spacer bars and a counterpane of 4 mm toughened glass and can include 'low E' glasses), to form a minimum 23 mm thick unit. The panes must be oriented such that the Pyroguard EW30 glass faces the fire risk direction.

The glass shall be installed into a previously tested or CERTIFIRE approved framing system (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads. The glass shall be glazed into the screen with 'K Tape' ceramic fibre gasket on both faces and set on hardwood or non-combustible setting blocks to determine the correct edge cover.

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass IGUs shown in Figure 14 below, when used in conjunction with the above system. The glass may be installed within multi-paned screens providing that the overall height of the screen does not exceed 3000 mm. The aspect ratio of the glass may be unlimited within these aperture dimensions.

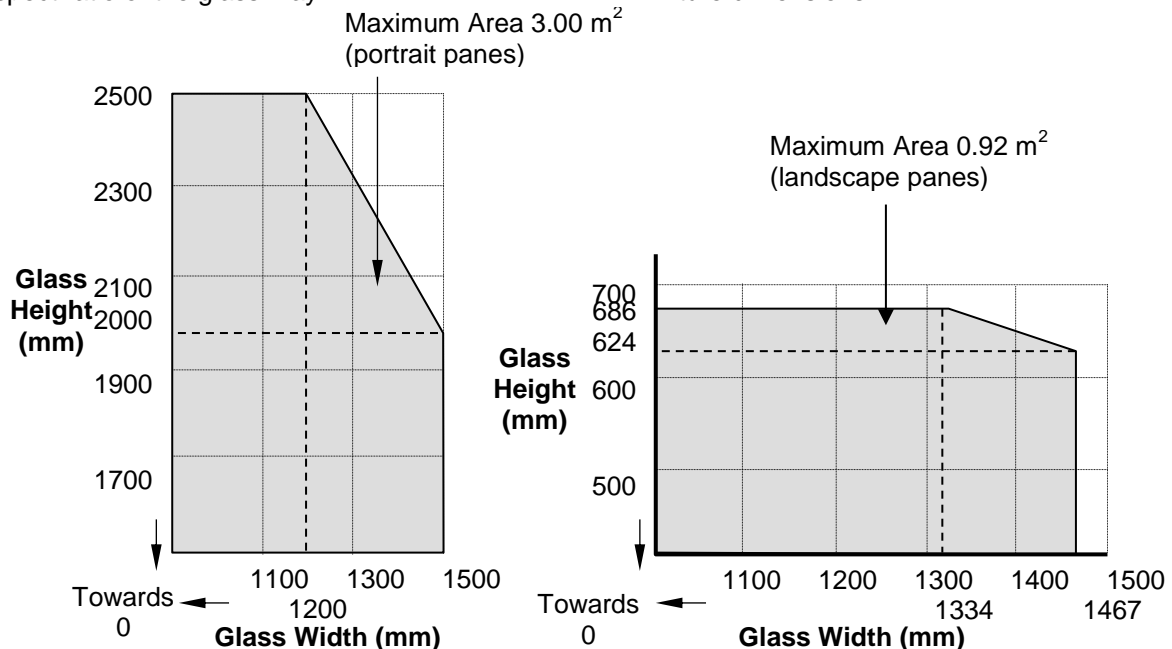


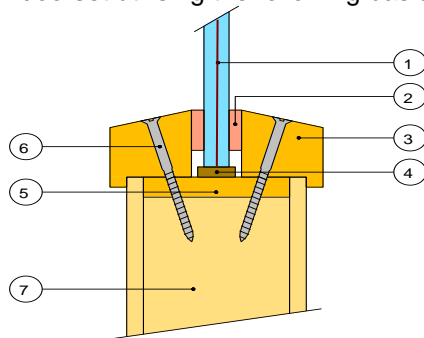
Figure 14. Maximum Permitted Glass Dimensions

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass (including Insulating Glass Units) in timber based doorsets for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be glazed within a previously fire tested or CERTIFIRE approved timber based doorset utilising the following basic specification:



- 1 Pyroguard EW30 Clear or Wired Glass*
- 2 Glazing system (see below)
- 3 Hardwood glazing beads (see below for alternative specs)
- 4 Non-combustible/hardwood setting blocks
- 5 Liner (see below)
- 6 Fixings (see below)
- 7 Nominally 44 mm thick FD30 door leaf

* Option of IGU with Pyroguard EW30 clear or wired glass, 6 mm steel spacer and 6 mm toughened glass, with the system specified in Table 1.

The doorset shall be CERTIFIRE approved or have test evidence for the inclusion of apertures of the proposed dimensions. This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Table 1 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.

Table 1

Glazing System	Maximum Pane dimension – height (mm)	Maximum Pane dimension – width (mm)	Maximum Pane Area (m ²)
Hodgsons Sealants Firestrip 30 ⁽¹⁾	875 (at 500 wide)	875 (at 500 high)	0.44
Lorient Flexible Figure 1 glazing system ⁽²⁾	1236 (at 574 w)	750 (at 960 h)	0.72
Lorient System 36/7 ⁽³⁾	875	750	0.66
Pyroplex 8193 glazing system ⁽⁴⁾	600	610	0.36
Pyroplex 30049 glazing system ⁽⁵⁾	750	750	0.56
Pyroplex 30054 glazing system ⁽⁶⁾	750	750	0.56
Pyroplex 8492 glazing system ⁽⁷⁾	403	626	0.25
Sealmaster Therm-A-Strip 10 mm x 2 mm ⁽⁸⁾	2125 (at 300 w)	800 (at 800 h)	0.64
Sealmaster G30 glazing gasket between beads and glass ⁽⁸⁾	2125 (at 300 w)	800 (at 800 h)	0.64
Sealmaster G30 glazing gasket in Pyroguard UK Ltd's bead system ⁽⁹⁾	800	800	0.64
Dufaylite Interdens 10 x 2 mm glazing strip ⁽¹⁰⁾	1846	760	1.31
IGU + Therm-A-Strip 10 x 2 mm ⁽¹¹⁾	1210	610	0.74
IGU + 'K' tape 15mm x 3mm ⁽¹²⁾	952	749	0.68
Technibond Closed cell foam tape 15mm x 3mm ⁽¹³⁾	1680 (at 508 wide)	610 (at 1400 high)	0.85
Moreland Quickfix FD30 Glazing Bead System ⁽¹⁴⁾	1392	492	0.57
	1500	200	0.3

The aspect ratio of the glass may be unlimited within these pane dimensions or area

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass in timber based doorsets for periods of 30 minutes integrity

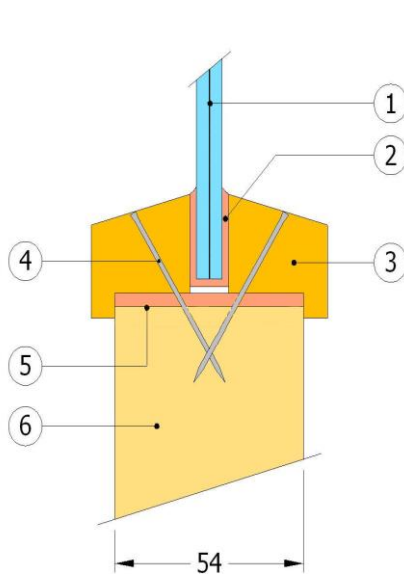
(1)	The glazing beads shall be of Sapele, or equivalent or higher density (610 kg/m ³), sections, 22mm wide by 21mm high, chamfered by approximately 13° and fixed using 1.5 mm diameter, 50mm long steel pins at a maximum of 100mm centres and angled to pass under the face of the glass.
(2)	The glazing beads shall be hardwood of minimum density 550 kg/m ³ or MDF of minimum 750 kg/m ³ density, sections, 22mm wide by 15 mm high with a 5 mm by 5 mm bolection return, chamfered by approximately 15° and fixed using 1.5 mm diameter, 40mm long steel pins or screws at a maximum of 150mm centres and angled to pass under the face of the glass. A secondary hardwood liner (integral or separate) or an LX4402 intumescent liner shall be used to line apertures cut within flaxboard substrates.
(3)	The glazing beads shall be of minimum density 550 kg/m ³ , sections, 22mm wide by 13 mm high, chamfered by approximately 15° and fixed using 1.5mm diameter, 40mm long steel pins or screws at a maximum of 200mm centres and angled to pass under the face of the glass. A secondary Palusol based intumescent material is required to be used as a lining around the perimeter of apertures cut within flaxboard substrates which have a density below 500 kg/m ³ .
(4)	The glazing beads shall be of minimum density 630 kg/m ³ , sections, 20mm wide by 14.5 mm high with a 5 mm by 5 mm bolection return, chamfered by approximately 20° and fixed using, 50 mm long steel screws at a maximum of 150mm centres and angled at 30-45°. A secondary 6 mm thick hardwood liner (min. density 630 kg/m ³) shall be used to line apertures cut within all substrates.
(5)	The glazing beads shall be of minimum density 630 kg/m ³ , sections, 20mm wide by 14.5 mm high with a 5 mm by 5 mm bolection return, chamfered by approximately 20° and fixed using, 36 mm long steel screws at a maximum of 150mm centres and angled at 30-45°. A secondary 6 mm thick hardwood liner (min. density 630 kg/m ³) shall be used to line apertures cut within all substrates.
(6)	The glazing beads shall be of minimum density 630 kg/m ³ , sections, 20mm wide by 14.5 mm high with a 5 mm by 5 mm bolection return, chamfered by approximately 20° and fixed using, 50 mm long steel screws at a maximum of 150mm centres and angled at 30-45°. A secondary 6 mm thick hardwood liner (min. density 630 kg/m ³) shall be used to line apertures cut within all substrates.
(7)	The glazing beads shall be of minimum density 630 kg/m ³ , sections, 20 mm wide by 14.5 mm high with a 5 mm by 5 mm bolection return, chamfered by approximately 20° and fixed using, 45 mm long steel screws at a maximum of 150mm centres and angled at 30-45°.
(8)	The glazing beads shall be hardwood of minimum density 500 kg/m ³ , sections, 25 mm wide by 23 mm high with a 5 mm by 5 mm bolection return, chamfered by approximately 15° and fixed using, 38 mm long steel pins or screws at a maximum of 150mm vertical and 100 mm horizontal centres and angled at 15°. A secondary 6 mm thick hardwood liner (min. density 500 kg/m ³) shall be used to line apertures cut within all substrates.
(9)	Asymmetrical beading system as shown in Pyroguard UK Ltd Drawing no. G20011-01 (01/07/04)
(10)	The glazing beads shall be Sapele hardwood of minimum density 610 kg/m ³ , sections, 20 mm wide by 21 mm high with a 5 mm by 5 mm bolection return, chamfered by approximately 21° and fixed using, 50 mm long steel pins or screws at nominally 70mm at corners and a maximum of 200mm centres and angled at 45° to glass.
(11)	The glazing beads shall be hardwood of minimum density 650 kg/m ³ , sections, 16.5 mm wide by 25 mm high with a 5 mm by 5 mm bolection return, chamfered by approximately 15° and fixed using, 40 mm long steel pins or screws at a maximum of 150mm centres and angled at 30°. A secondary 6 mm thick hardwood liner (min. density 500 kg/m ³) shall be used to line apertures cut within all substrates.
(12)	The glazing beads shall be Sapele hardwood, or equivalent or higher density (610 kg/m ³) sections, 15.5 mm wide by 20 mm high with a 5 mm by 5 mm bolection return, chamfered by approximately 21° and fixed using, 50 mm long steel pins or screws at nominally 70mm at corners and a maximum of 200mm centres and angled at 45° to glass.
(13)	The glazing beads shall be MDF, minimum density 700 kg/m ³ , 20mm wide by 25 mm high including a 4.5 mm wide by 10 mm high bolection return, chamfered at 15° to the glass. Beads were fixed using 2.0 mm diameter, 50mm long steel pins equally spaced at a maximum of 150mm centres (vertical beads) and 230 mm centres (horizontal beads) angled at 30 ° to the MDF beads. A 15 mm by 3 mm closed cell foam tape (Technibond) was located between the glass and beads. An intumescent acrylic sealant can optionally be applied around the perimeter of the glass. An MDF or hardwood liner, minimum density 700 kg/m ³ shall be used to line apertures cut within all substrates.
(14)	Morland QuickFix FD30 Glazing Bead system (comprising bead and glazing gasket), 50 mm long steel pins at 150 mm max. centres (300 to vertical bead edge), Intumescent Acrylic Sealant under perimeter edge of glass. Core incorporating voids or hollow tubes should not be glazed using this system unless a 6 mm hardwood aperture liner is fitted within the perimeter of the aperture (CF5241 must be consulted for full details of this system).

These systems may also be included in previously tested doorset fan and side-lights.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

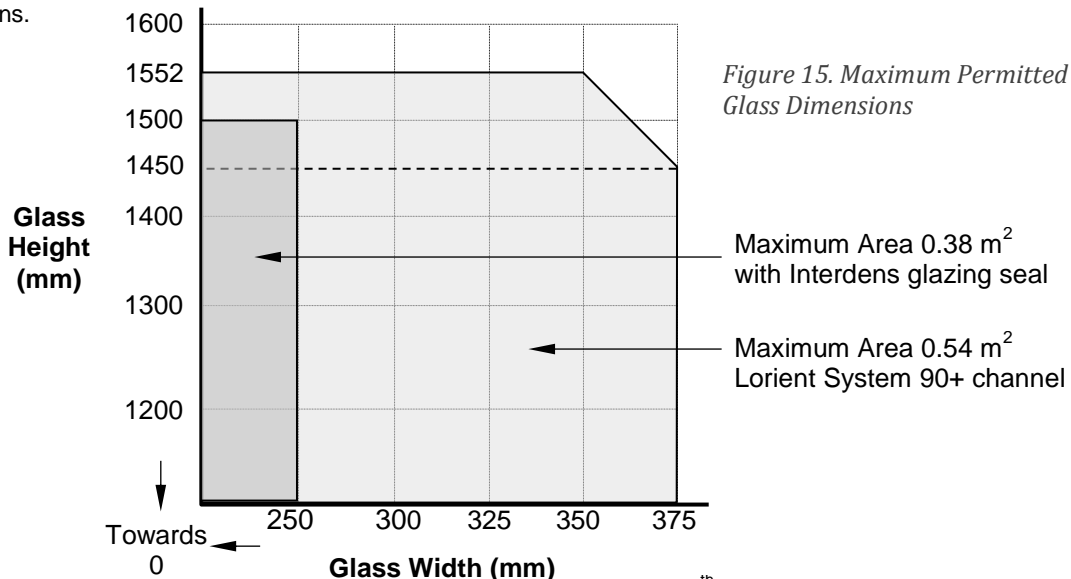
Pyroguard FD60 glass in timber based doorsets for periods of 60 minutes integrity

For this application the following conditions shall apply:
The glass shall be glazed within a previously fire tested or CERTIFIRE approved timber based doorset utilising the following basic specifications:



- ① Pyroguard FD60 glass
- ② Lorient System 90+ or Interdens glazing seal, 20 mm by 2 mm.
- ③ With Lorient System 90, MDF glazing beads of minimum 700 kg/m³ density, 32mm wide by 19 mm high with a 6 mm by 6 mm bolection return, chamfered by approximately 45°. With Interdens glazing seal, MDF glazing beads of minimum 700 kg/m³ density or hardwood glazing beads of minimum 650 kg/m³ density, 27 mm by 30 mm including a 6 mm by 6 mm bolection return, chamfered at 13° to glass
- ④ 50 mm by 2 mm steel pins at 150 mm centres and 45° (for System 90+), or equally spaced at same centres (vertical beads) and 230 mm centres (horizontal beads) fixed at 30° (for Interdens glazing seal).
- ⑤ 54 x 2 mm LX5402 intumescent liner
- ⑥ Nominally 54 mm thick FD60 door leaf

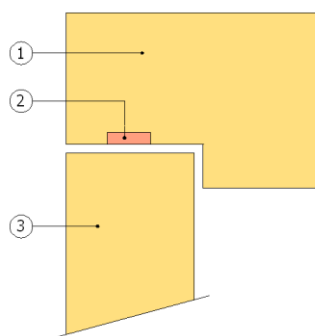
The doorset shall be CERTIFIRE approved or have test evidence for the inclusion of apertures of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 15 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW60 glass in timber stile and rail doorsets for periods of 30 minutes integrity

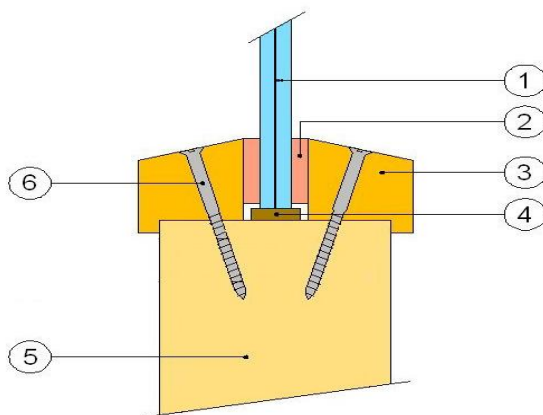
The doorsets may be single-acting, single -leaf only, with an engaged latching device and are to be as detailed within the figures below:



Door Leaf to Frame Detail

- 1 72 mm by 40 mm softwood or hardwood door frame with 25 x 12 mm planted stop, minimum density 510 kg/m³
- 2 Lorient Polyproducts Ltd LP1504 15 x 4mm intumescent seals, positioned centrally within the reveal of the frame, at the head and vertical edges. The leaf to frame gap must not exceed 4 mm.
- 3 Minimum 102 mm by 44 mm softwood stiles, 150 mm by 44 mm softwood top and bottom rails and 100 mm x 44 mm mid rails, minimum density 510 kg/m³. Stiles and rails must be mortice & tenon jointed

All doorset hardware must be CERTIFIRE approved for use with ITT doors and the leaf must be hung upon 1½ pair of hinges and incorporate a latching device and automatic closing device.

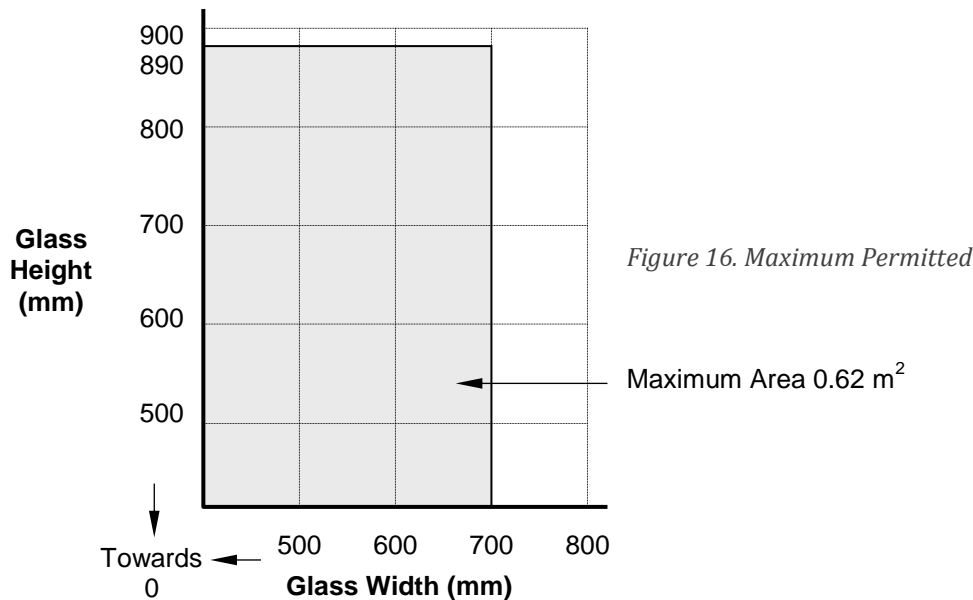


- 1 Pyroguard EW30 Glass
- 2 K-Tape 15 x 3 mm or Interdens 10 x 2 mm glazing tape
- 3 Softwood or hardwood glazing beads 20 mm by 21 mm including a 5 mm by 5 mm bolection return chamfered at 0-20° and minimum 510 kg/m³ density
- 4 Non-combustible or hardwood setting blocks
- 5 Door leaf as described above
- 6 50 mm long steel pins or screws at a maximum of 150mm horizontal centres and angled at 45°

**CERTIFICATE No CF 257
PYROGUARD UK LIMITED**

Pyroguard EW30 glass in timber stile and rail doorsets for periods of 30 minutes integrity (continued)

This Certificate of Approval relates to the sizes of Pyroguard EW30 glass shown in Figure 16 below, when used in conjunction with the glazing system detailed previously.

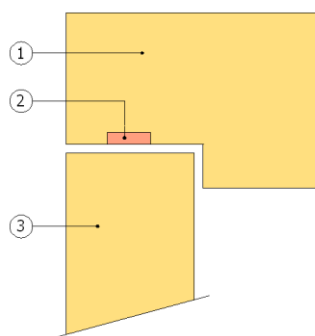


Maximum leaf dimensions are 2040 mm high and 926 mm wide, subject to a maximum area of 1.89 m².

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 glass in timber stile and rail doorsets for periods of 30 minutes integrity

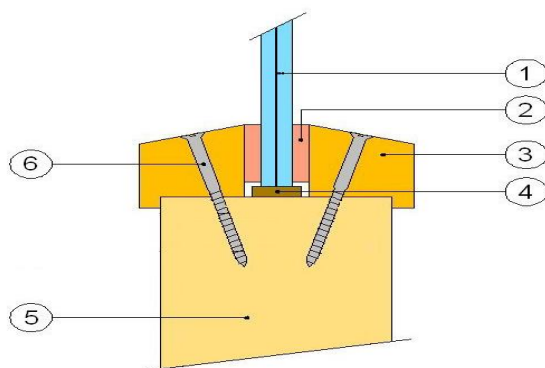
The doorsets may be single-acting, single -leaf only, with an engaged latching device and are to be as detailed within the figures below:



Door Leaf to Frame Detail

- 1 72 mm by 40 mm softwood door frame with 25 x 12 mm planted stop, minimum density 510 kg/m³
- 2 Mann McGowan Ltd Pyrostrip 100 P 15 x 4mm intumescent Palusol seals, positioned centrally within the reveal of the frame, at the head and vertical edges. The leaf to frame gap must not exceed 4 mm.
- 3 Minimum 95 mm by 44 mm softwood stiles, 100 mm by 44 mm softwood top and middle rails and 206 mm x 44 mm bottom rails, minimum density 510 kg/m³. Stiles and rails must be mortice & tenon jointed and polyurethane adhesive

All doorset hardware must be CERTIFIRE approved for use with ITT doors and the leaf must be hung upon 1½ pair of hinges and incorporate a latching device and automatic closing device.

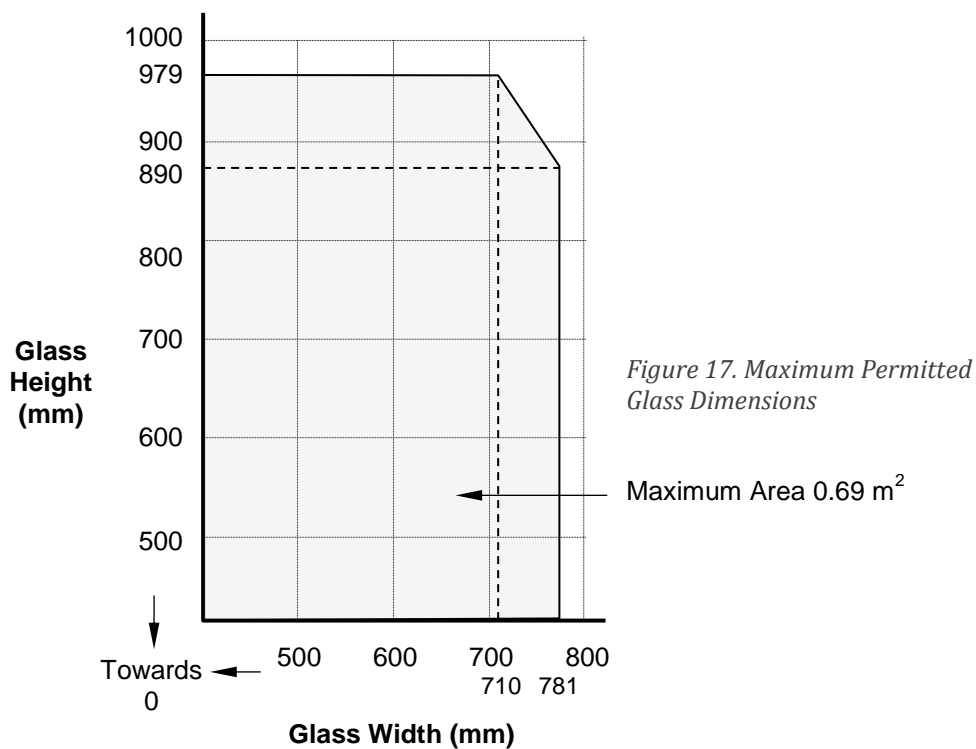


- 2 K-Tape 15 x 3 mm or Interdens 10 x 2 mm
- 3 Softwood or hardwood glazing beads 20 mm by 15.5 mm including a 5 mm by 5 mm bolection return chamfered at 21° and minimum 510 kg/m³ density
- 4 Non-combustible or hardwood setting blocks, 7 mm wide x 40 mm long
- 5 Door leaf as described above
- 6 50 mm long steel pins or screws at a nominal 70 mm from the corners and 200 mm (max) centres and angled at 45° to the glass.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 glass in timber stile and rail doorsets for periods of 30 minutes integrity (continued)

This Certificate of Approval relates to the sizes of Pyroguard EW30 glass shown in Figure 17 below, when used in conjunction with the glazing system detailed previously.

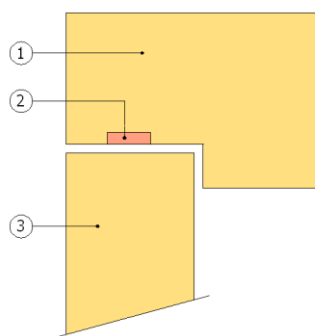


Maximum leaf dimensions are 2040 mm high by 915 mm wide, subject to a maximum area of 1.87 m².

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 glass in timber stile and rail doorsets for periods of 30 minutes integrity

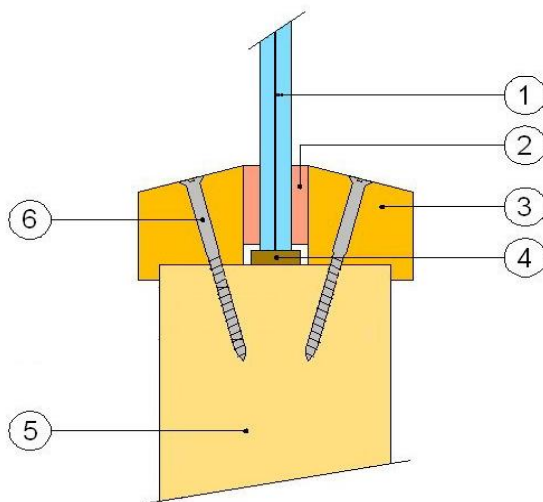
The doorsets may be single-acting, single -leaf only, with an engaged latching device and are to be as detailed within the figures below:



Door Leaf to Frame Detail

- 1 72 mm by 40 mm softwood door frame with 25 x 12 mm planted stop, minimum density 510 kg/m³
- 2 Mann McGowan Ltd Pyrostrip 100 P 15 x 4mm intumescent Palusol seals, positioned centrally within the reveal of the frame, at the head and vertical edges. The leaf to frame gap must not exceed 4 mm.
- 3 Minimum 95 mm by 44 mm softwood stiles, 100 mm by 44 mm softwood top and middle rails and 206 mm x 44 mm bottom rails, minimum density 510 kg/m³. Stiles and rails must be mortice & tenon jointed and polyurethane adhesive

All doorset hardware must be CERTIFIRE approved for use with ITT doors and the leaf must be hung upon 1½ pair of hinges and incorporate a latching device and automatic closing device.

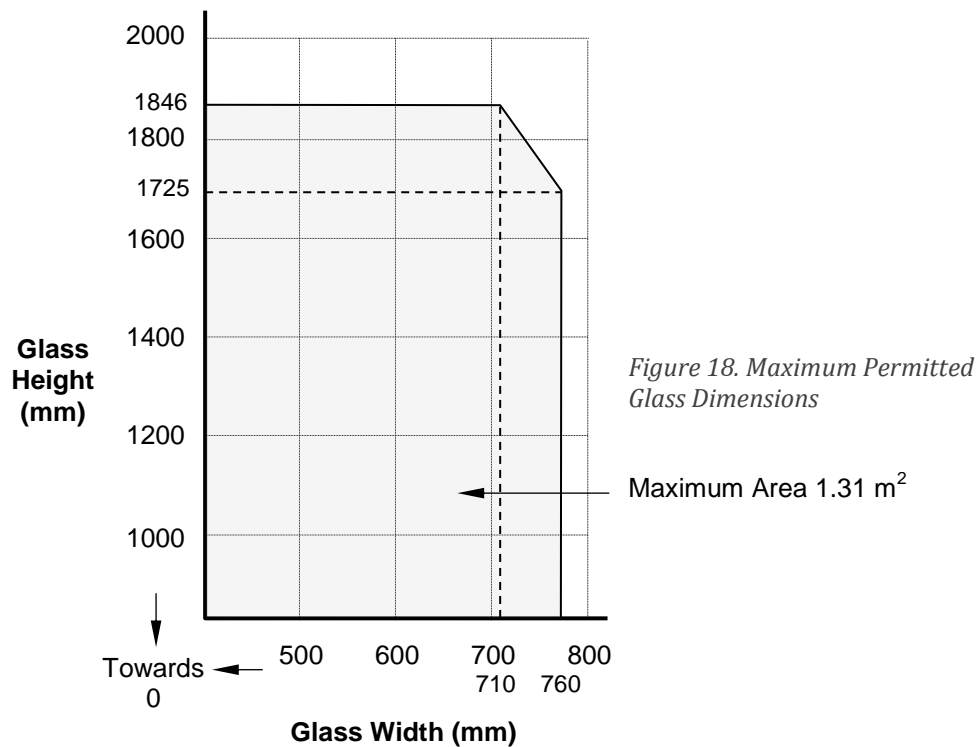


- 1 Pyroguard EW30 Glass
- 2 Interdens 10 x 2 mm
- 3 Softwood or hardwood glazing beads 20 mm by 21 mm including a 5 mm by 5 mm bolection return chamfered at 21° and minimum 510 kg/m³ density
- 4 Non-combustible or hardwood setting blocks, 5 mm high by 7 mm wide x 40 mm long
- 5 Door leaf as described above
- 6 50 mm long steel pins or screws at a nominal 70 mm from the corners and 200 mm (max) centres and angled at 45° to the glass.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 glass in timber stile and rail doorsets for periods of 30 minutes integrity (continued)

This Certificate of Approval relates to the sizes of Pyroguard EW30 glass shown in Figure 18 below, when used in conjunction with the glazing system detailed previously.

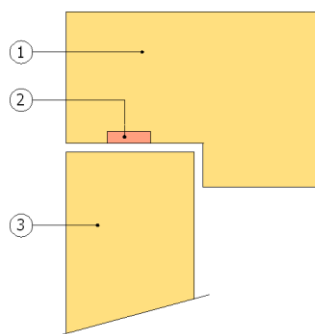


Maximum leaf dimensions are 2040 mm high by 915 mm wide, subject to a maximum area of 1.87 m².

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Insulating Glass Units in timber stile and rail doorsets for periods of 30 minutes integrity

The doorsets may be single-acting, single -leaf only, with an engaged latching device and are to be as detailed within the figures below:

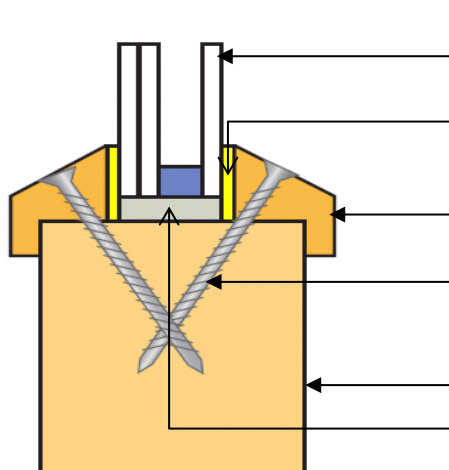


Door Leaf to Frame Detail

- 1 72 mm by 40 mm softwood or hardwood door frame with 25 x 12 mm planted stop, minimum density 510 kg/m³
- 2 Lorient Polyproducts Ltd LP1504 15 x 4mm intumescent seals, positioned centrally within the reveal of the frame, at the head and vertical edges. The leaf to frame gap must not exceed 4 mm.
- 3 Minimum 102 mm by 44 mm softwood stiles, 150 mm by 44 mm softwood top and bottom rails and 100 mm x 44 mm mid rails, minimum density 510 kg/m³. Stiles and rails must be mortice & tenon jointed

All doorset hardware must be CERTIFIRE approved for use with ITT doors and the leaf must be hung upon 1½ pair of hinges and incorporate a latching device and automatic closing device.

The glass shall be glazed utilising the following basic specification:

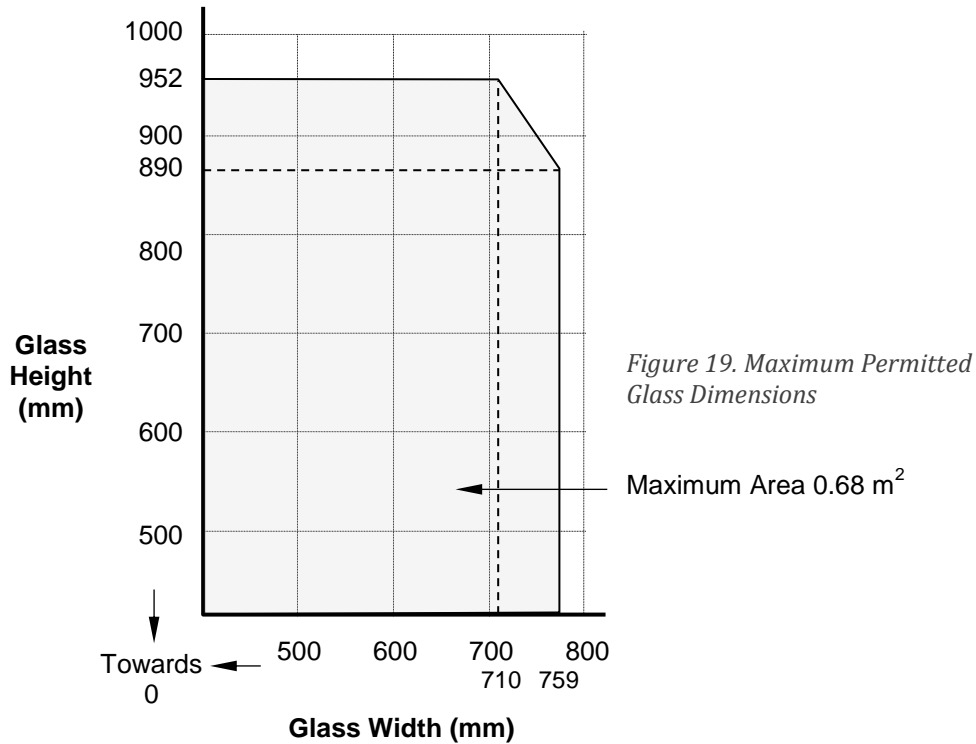


- 1 IGU with Pyroguard EW30 Clear or Wired Glass (to fire side), 12 mm steel spacer and 4 mm float glass
- 2 15 mm by 3 mm 'K tape', ceramic fibre glazing tape
- 3 20 mm high by 32 mm wide hardwood glazing beads, square or chamfered (up to 30°) minimum density 640 kg/m³.
- 4 50 mm long steel pins or screws, nominally 70 mm from corners and 200 mm centres (30° to glass).
- 5 Door leaf as described above
- 6 7 mm wide by 5 mm high by 40 mm long hardwood or non-combustible setting blocks

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 glass in timber stile and rail doorsets for periods of 30 minutes integrity (continued)

This Certificate of Approval relates to the sizes of Pyroguard EW30 glass shown in Figure 19 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass in Maars Metaline secondary glazed partition system for periods of 30 minutes integrity

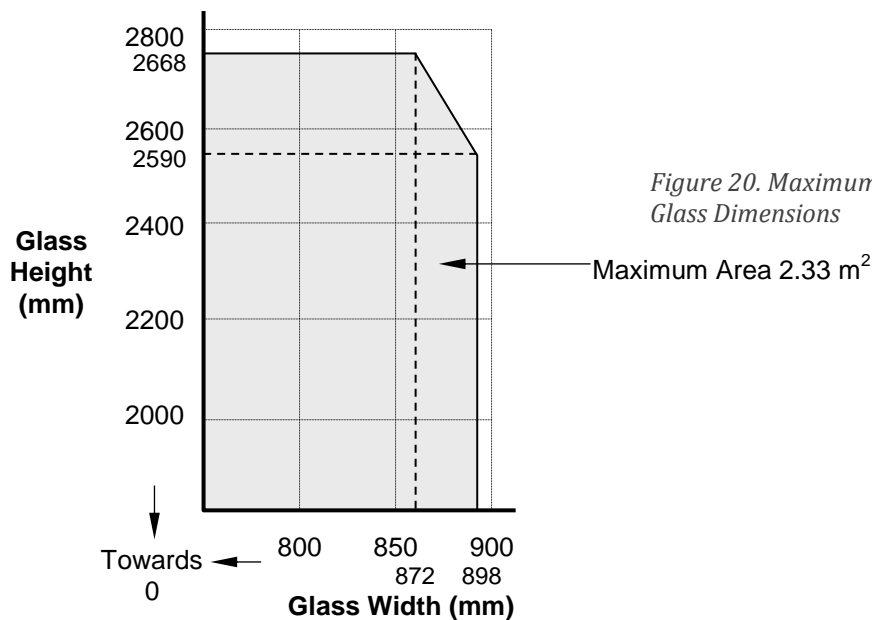
For this application the following conditions shall apply:

The 'secondary glazing' shall comprise a single layer of Pyroguard EW30 glass (to the non fire side), a 64.5 mm cavity and a single layer of minimum 6 mm thick non-fire rated glass (toughened, float, laminated, coated, tinted).

The glass shall be installed into the tested system or other partition system (which is covered appropriately by test or assessment evidence).

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 20 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 3000 mm high by unlimited width. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass in a partition wall system for periods of 30 minutes integrity

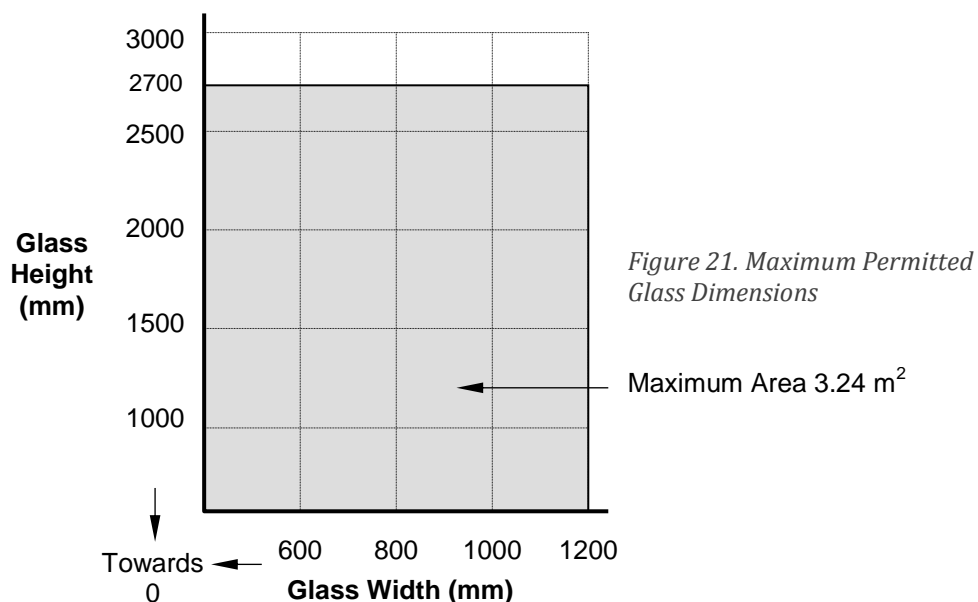
For this application the following conditions shall apply:

The 'IGU' shall comprise a single layer of Pyroguard EW30 glass, a 12 -15 mm Argon filled cavity with steel or aluminium spacer bars and a single layer of 4 mm toughened glass (including 'low E' glasses), to form a 23 mm thick unit. The panes must be oriented such that the Pyroguard EW30 glass faces the fire risk direction.

The glass shall be installed into the tested system or other partition system (which is covered appropriately by test or assessment evidence).

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 Clear/Wired glass shown in Figure 21 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 3000 mm high by unlimited width. The aspect ratio of the glass may be unlimited within these aperture dimensions.

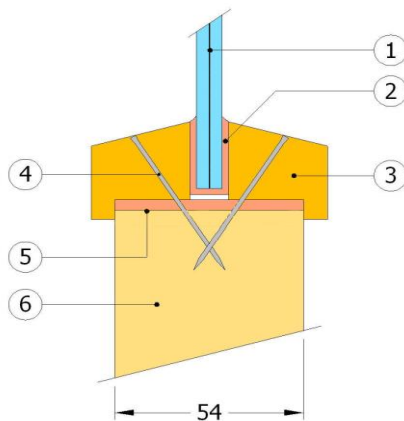


CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 Clear/Wired glass with Priva-See Film (11 mm total thickness) in timber based doorsets for periods of 30 minutes integrity

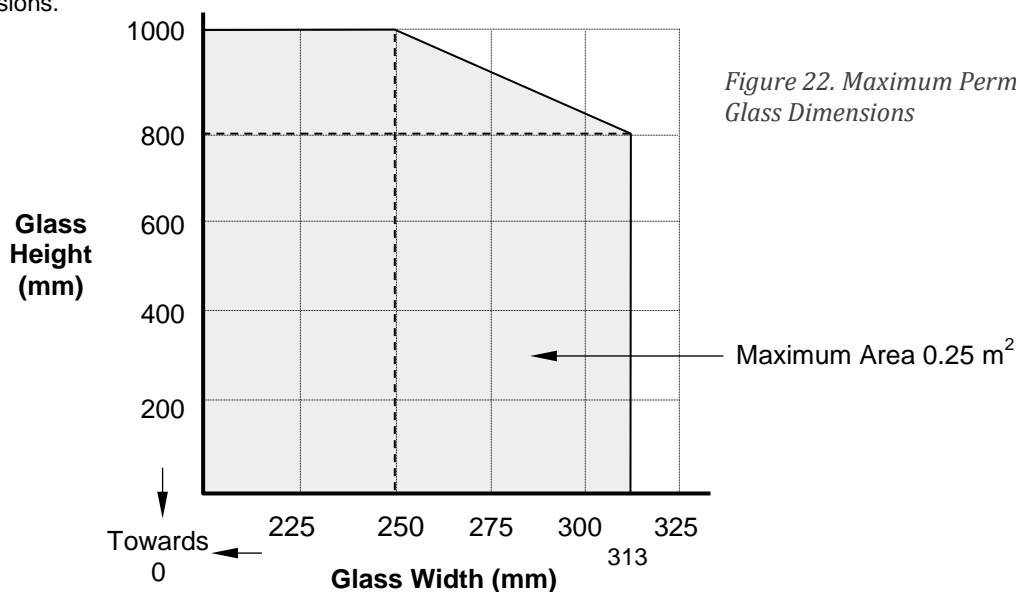
For this application the following conditions shall apply:

The glass shall be glazed within a previously fire tested or CERTIFIRE approved timber based doorset utilising the following basic specifications:



- ① EW30 Pyroguard with Priva-See Film (11 mm total thickness)
- ② 10 mm by 2 mm ISL graphite seal
- ③ MDF (minimum density 700 kg/m³) or hardwood glazing beads (minimum density 650 kg/m³), 20 mm wide by 25 mm high including a 4.5 mm by 10.0 mm bolection return, chamfered at 15° to glass.
- ④ 50 mm by 2 mm steel pins equally spaced at maximum of 150 mm centres (vertical beads) and 230 mm centres (horizontal beads) fixed at 30°.
- ⑤ MDF liner, 42.5 mm by 6 mm thick, density 700 kg/m³
- ⑥ Nominally 44 mm thick FD30 door leaf

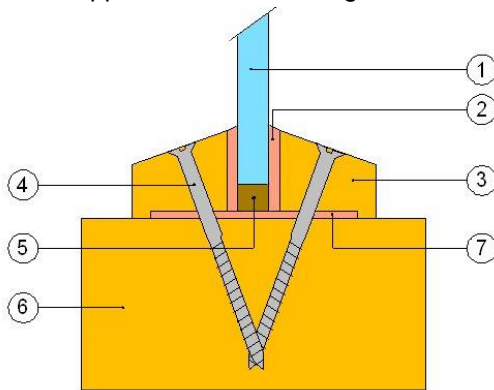
The doorset shall be CERTIFIRE approved or have test evidence for the inclusion of apertures of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 22 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW60 (60 mins) & EW30MAXI (30 mins) glass in timber framed screens for periods of 30 & 60 minutes integrity (System 1)

For this application the following conditions shall apply:



- ① Pyroguard EW60 or EW30 MAXI Clear or Wired
- ② Sealmaster Fireglaze Compound (approx. 23 mm by 4 mm)
- ③ 25 mm high by 37 mm wide square or chamfered (up to 30°) hardwood glazing beads, minimum density 650 kg/m³.
- ④ 50 mm long No. 8 steel screws at 200 mm centres (approx. 30° to glass)
- ⑤ Hardwood or Non-combustible setting blocks
- ⑥ 92 mm by 45 mm (minimum) hardwood framing sections, minimum density 650 kg/m³
- ⑦ 45 mm wide by 2 mm thick Sealmaster 'GL60' intumescent liner (for 60 mins only)

This Certificate of Approval relates to the sizes of Pyroguard EW60 & EW30 MAXI glass shown in Figure 23 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 3000 mm high by unlimited width. The aspect ratio of the glass may be unlimited within these aperture dimensions.

Maximum Area for 30 minutes integrity single or multi-pane screens 3.93 m²

Maximum Area for 60 minutes integrity single-pane screens 1.21 m² (portrait)

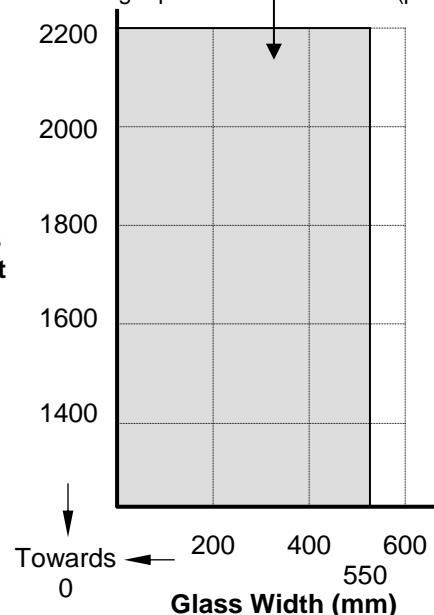
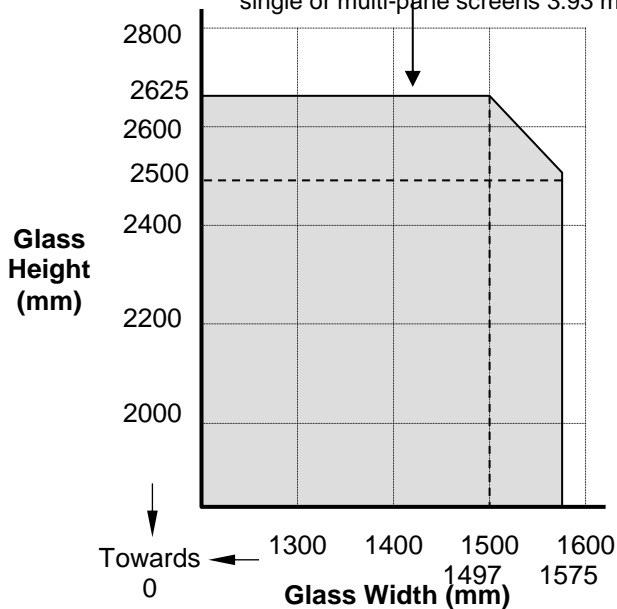


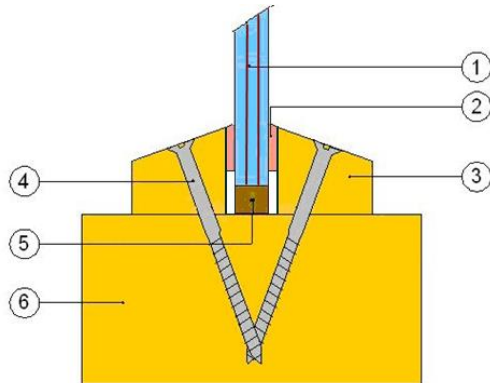
Figure 23. Maximum Permitted Glass Dimensions

These systems may also be included in previously tested doorset fan and side-lights.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

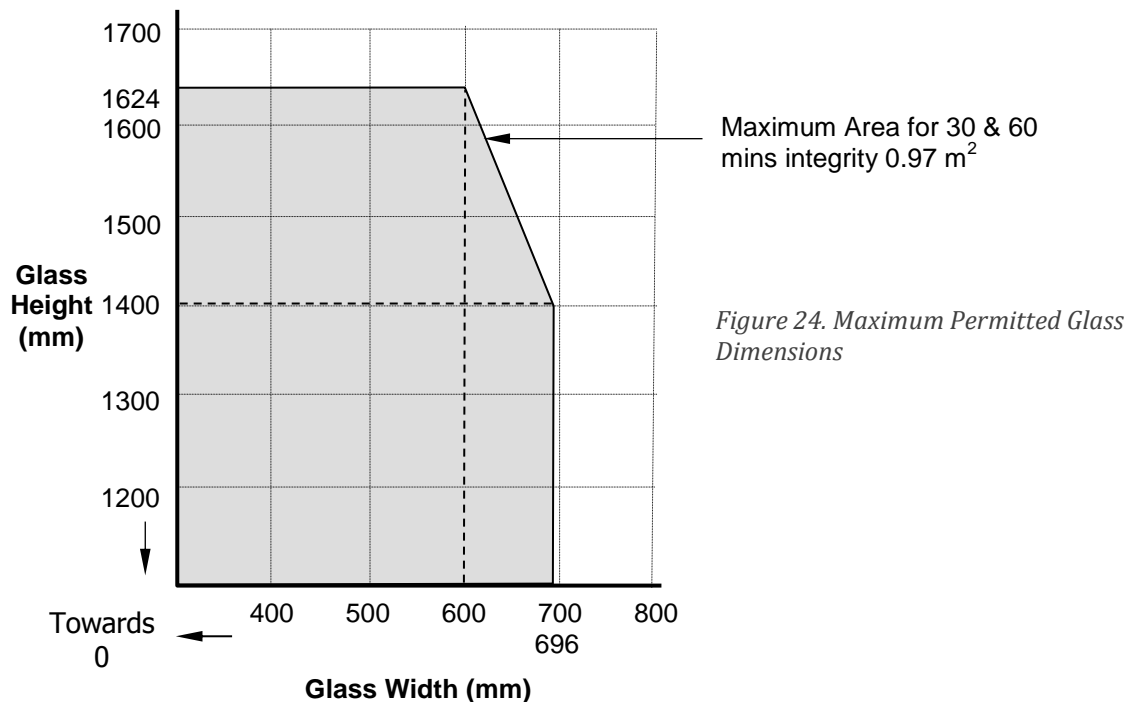
Pyroguard EW60 (60 mins) & EW30MAXI (30 mins) glass in timber framed screens for periods of 30 & 60 minutes integrity (System 1)

For this application the following conditions shall apply:
The glass shall be glazed utilising the following basic specification:



- ① Pyroguard EW60 or EW30 MAXI Clear or Wired
- ② Palusol 10 mm by 2 mm
- ③ 22 mm high by 20 mm wide square or chamfered (up to 30°) hardwood glazing beads, minimum density 660 kg/m³.
- ④ 38 mm long No. 8 steel screws at 200 mm centres (approx. 30° to glass)
- ⑤ Hardwood or Non-combustible setting blocks
- ⑥ 92 mm by 45 mm (minimum) hardwood framing sections, minimum density 650 kg/m³

This Certificate of Approval relates to the sizes of Pyroguard EW60 & EW30 MAXI glass shown in Figure 24 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.



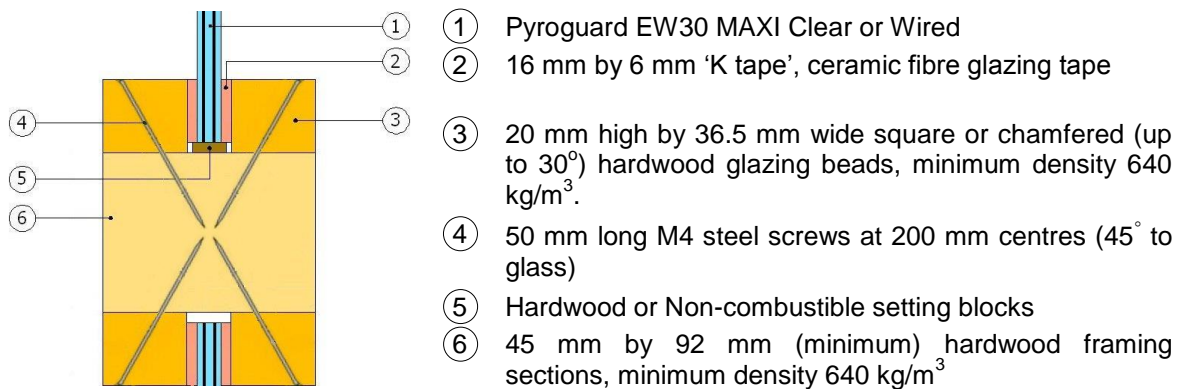
These systems may also be included in previously tested doorset fan and side-lights.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

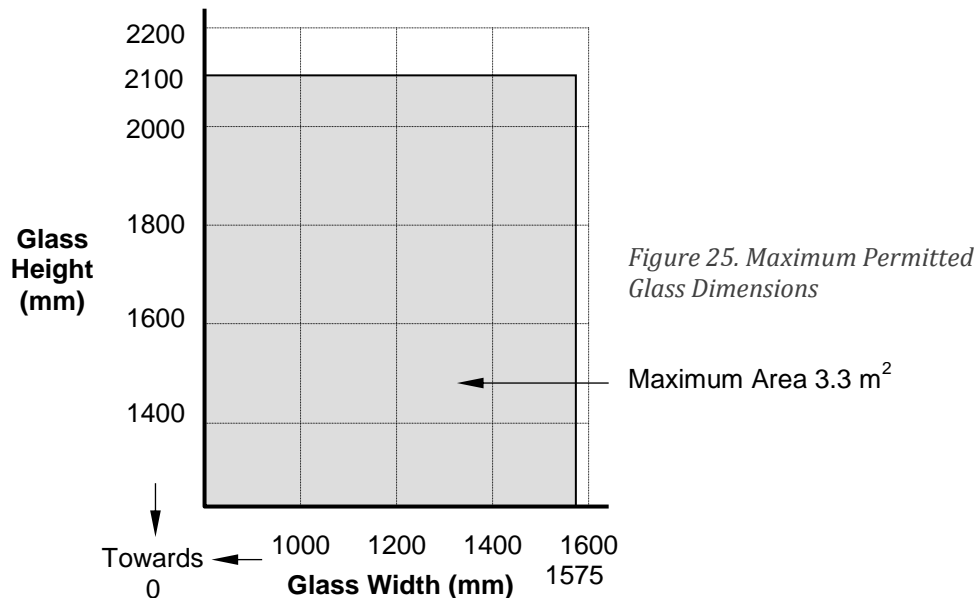
Pyroguard EW30 MAXI Clear/Wired glass in multi-pane timber framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



This Certificate of Approval relates to the sizes of Pyroguard EW30 MAXI Clear/Wired glass shown in Figure 25 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 3000 mm high by unlimited width.

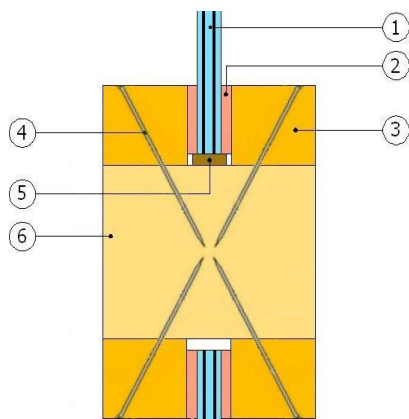


CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI Clear/Wired glass in multi-pane timber framed screens for periods of 30 minutes integrity

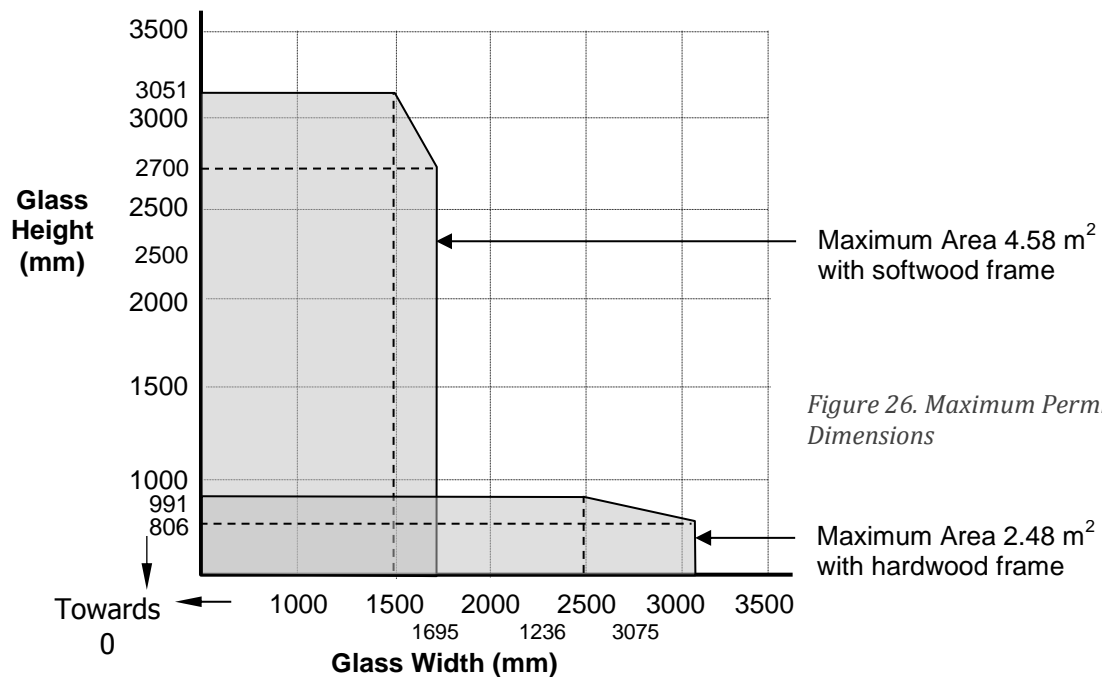
For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



- ① Pyroguard EW30 MAXI Clear or Wired.
- ② 15 mm by 2 mm Interdens glazing tape with softwood frame. 10 mm by 2 mm Interdens glazing tape with hardwood frame.
- ③ 15 mm high by 38.5 mm wide square or chamfered beads (with softwood frame) or 25 mm high by 30 mm wide chamfered beads, up to 14° (with hardwood frame). All glazing beads have minimum density of 640 kg/m³.
- ④ 50 mm long steel pins or screws nominally 50 mm from corners and 150 mm centres (45° to glass) with softwood or hardwood frame
- ⑤ Hardwood or Non-combustible setting blocks.
- ⑥ 45 mm by 92 mm (minimum) softwood framing sections minimum density 510 kg/m³ or 40 mm by 75 mm hardwood framing sections minimum density 640 kg/m³.

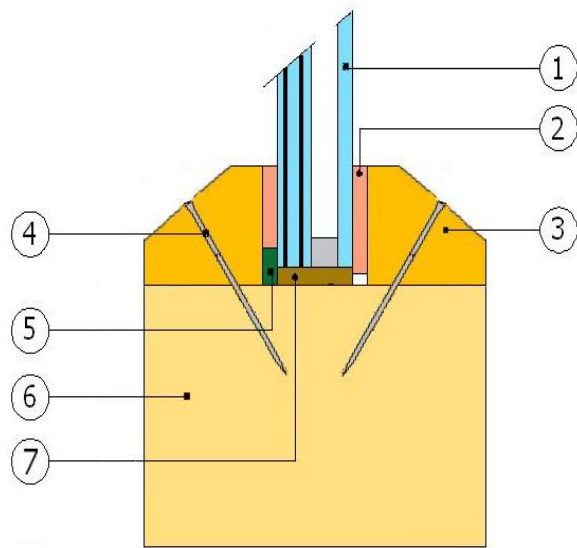
This Certificate of Approval relates to the sizes of Pyroguard EW30 MAXI Clear/Wired glass shown in Figure 26 below, when used in conjunction with the above system. The maximum permitted overall screen dimensions are 3000 mm high by unlimited width.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI Insulating Glass Units in multiple paned timber framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply:
The glass shall be glazed utilising the following basic specification:



- ① IGU of Pyroguard EW30 MAXI Clear or Wired Glass, 15mm aluminium spacer and 6 mm toughened glass
- ② 15 mm by 3 mm 'K tape', ceramic fibre glazing tape
- ③ 25 mm high by 28.5 mm wide chamfered (30°) hardwood glazing beads, minimum density 650 kg/m³
- ④ 50 mm long steel screws at 200 mm centres (approx. 45° to glass)
- ⑤ CXL715 high temperature adhesive (also on both faces of 'K Tape')
- ⑥ 92 mm by 45 mm (minimum) hardwood framing sections, minimum density 640 kg/m³
- ⑦ Sealmaster Fireglaze compound with Hardwood or Non-combustible setting blocks

This Certificate of Approval relates to the sizes of Pyroguard EW30 MAXI glass shown in Figure 27 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.

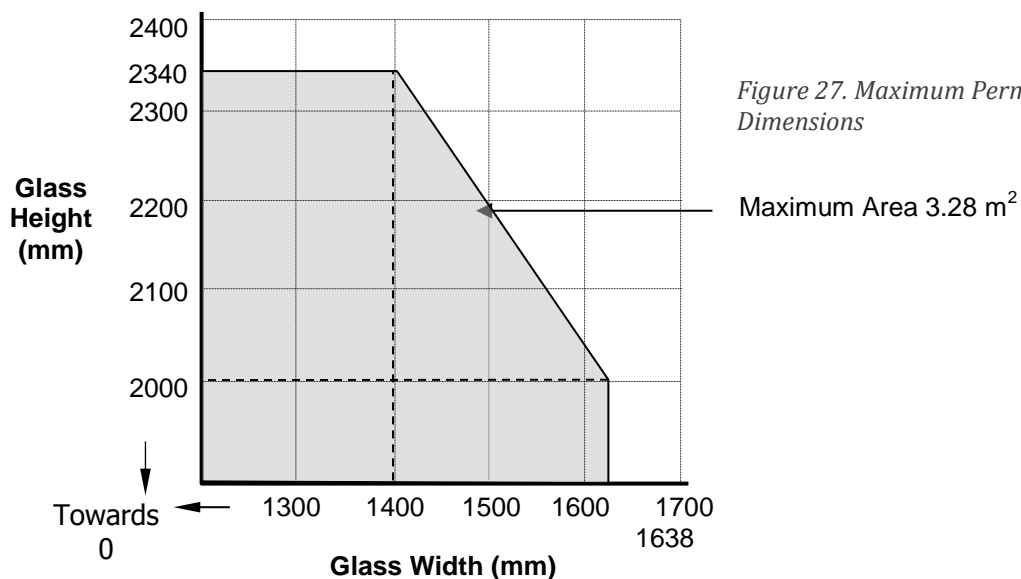
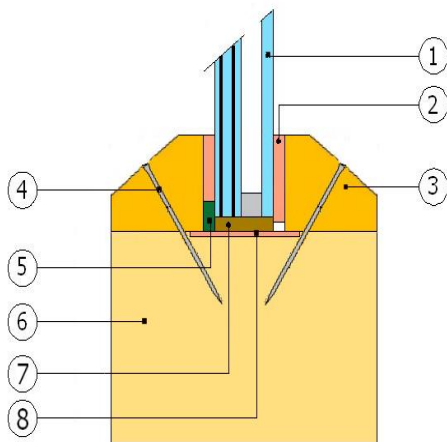


Figure 27. Maximum Permitted Glass Dimensions

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW60 Insulating Glass Units in single pane timber framed screens for periods of 60 minutes integrity

For this application the following conditions shall apply:
The glass shall be glazed utilising the following basic specification:



- ① IGU of Pyroguard EW60 Clear or Wired Glass, 12mm steel spacer and 4 mm float glass
- ② 20 & 15 mm by 6 mm 'K tape', ceramic fibre glazing tape
- ③ 25 mm high by 28.5 mm wide chamfered (30°) hardwood glazing beads, minimum density 650 kg/m³.
- ④ 50 mm long M4 steel screws at 200 mm centres (approx. 30° to glass)
- ⑤ CXL high temperature adhesive
- ⑥ 92 mm by 45 mm (minimum) hardwood framing sections, minimum density 650 kg/m³
- ⑦ Sealmaster Fireglaze compound with Hardwood or Non-combustible setting blocks
- ⑧ Sealmaster GL60 Liner

This Certificate of Approval relates to the sizes of Pyroguard EW60 glass shown in Figure 28 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.

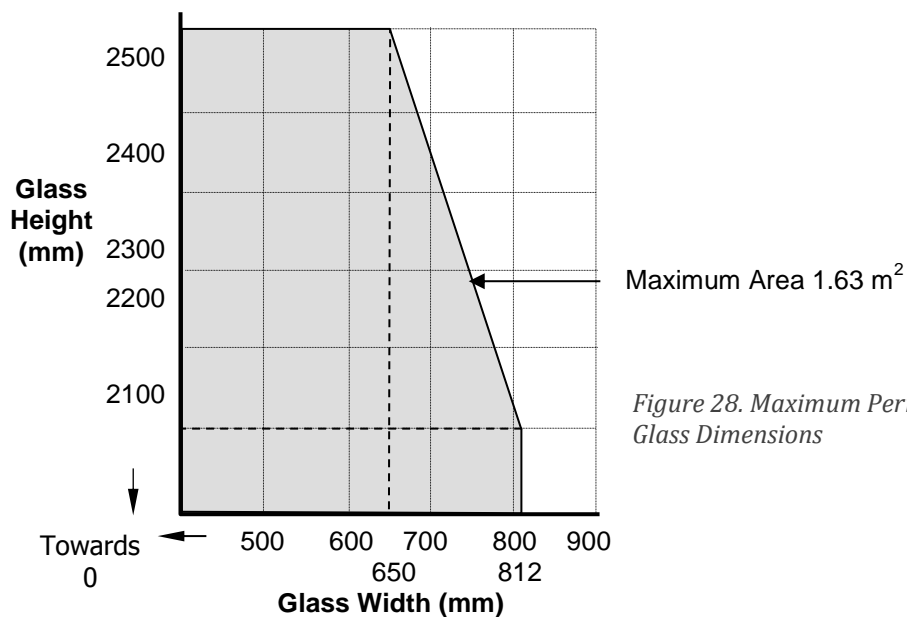
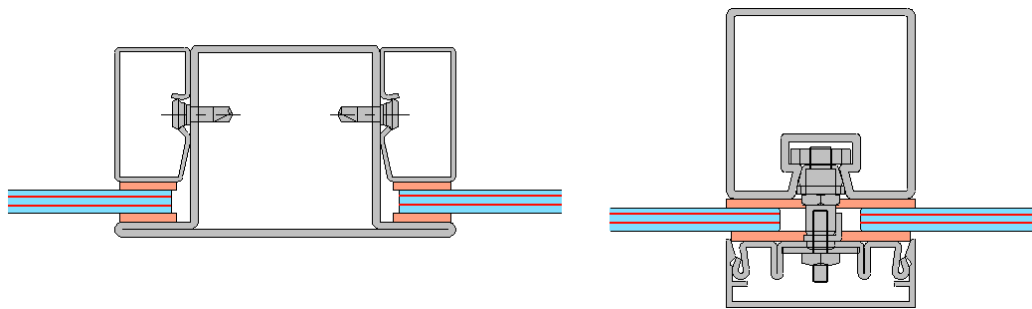


Figure 28. Maximum Permitted Glass Dimensions

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI glass in steel framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply: The glass shall be installed into a previously tested or CERTIFIRE approved framing system (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads, see examples below. The glass shall be glazed into the screen as described in the table below and set on non-combustible setting blocks to determine the correct edge cover.



Glazing Material	Single/Multi-Pane
'K' tape ceramic gasket to both faces of glass	Single Pane

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 MAXI glass shown in Figure 29 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.

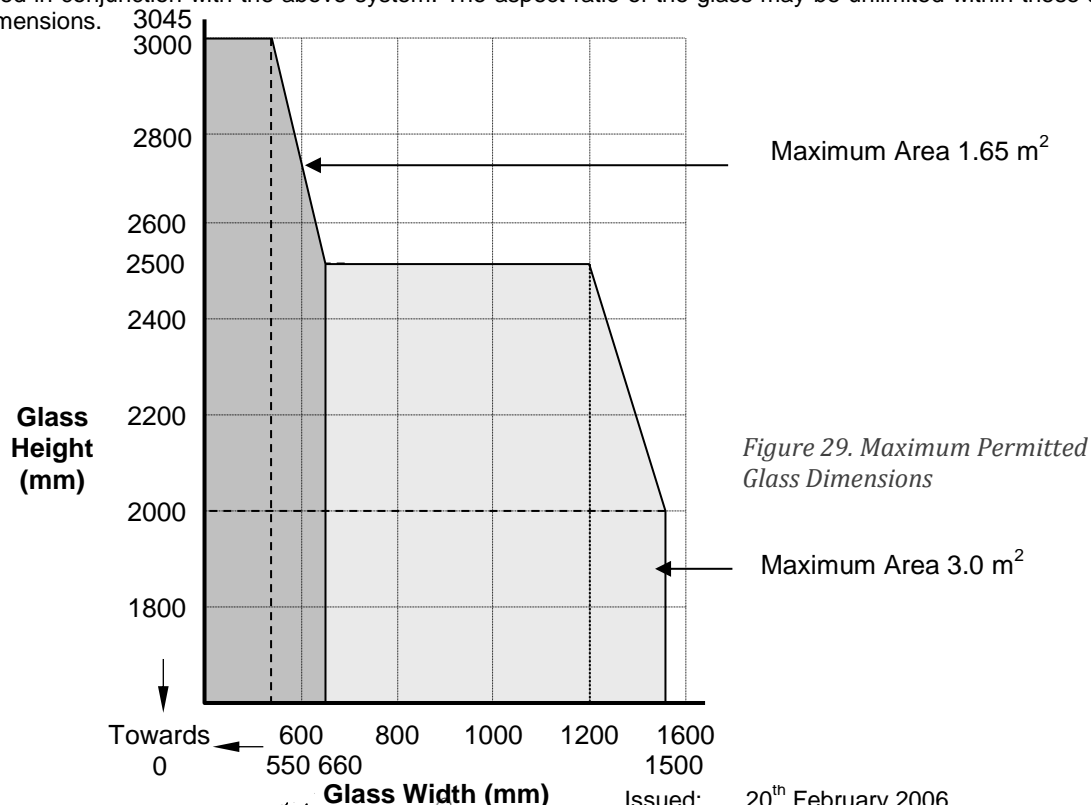
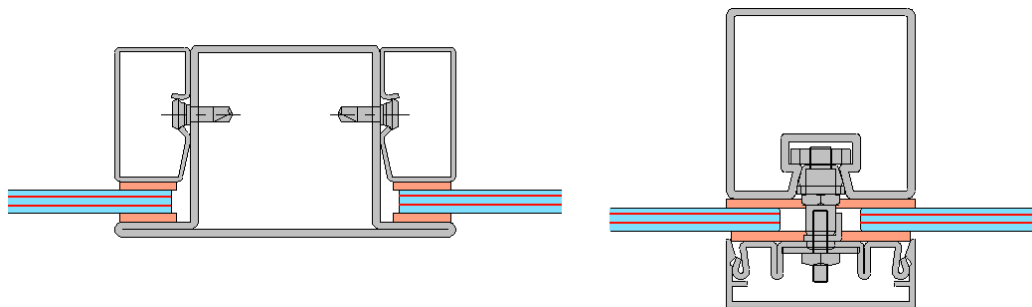


Figure 29. Maximum Permitted Glass Dimensions

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW60 glass in steel framed screens for periods of 60 minutes integrity

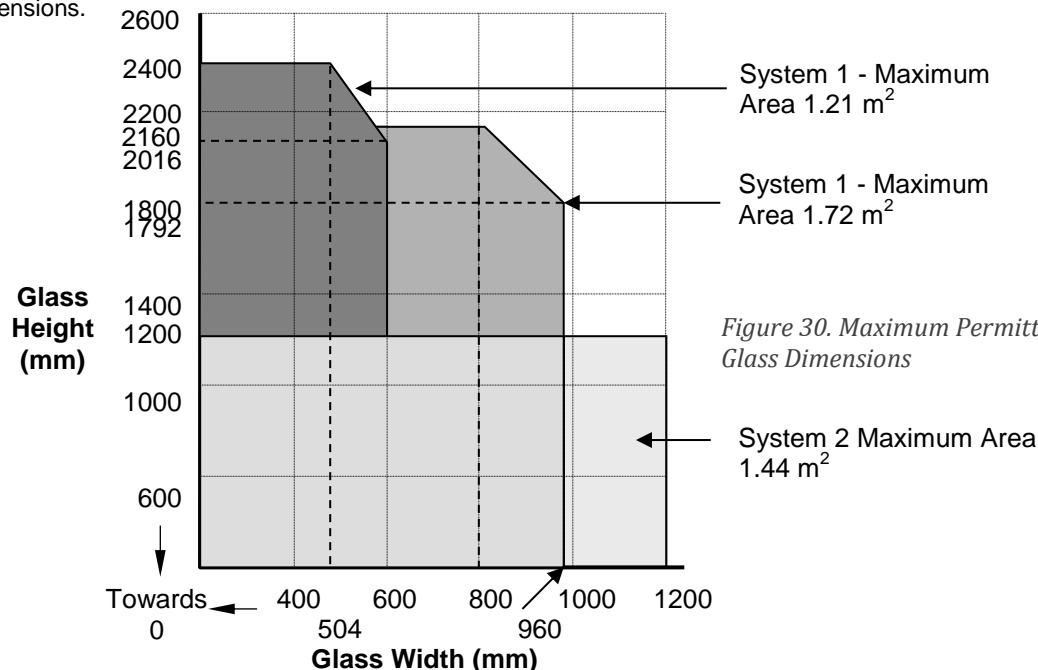
For this application the following conditions shall apply: The glass shall be installed into a previously tested or CERTIFIRE approved framing system (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads, see examples below. The glass shall be glazed into the screen as described in the table below and set on non-combustible setting blocks to determine the correct edge cover.



System	Glazing Material	Single/Multi-Pane
1	20 x 4 mm Mann McGowan P500 intumescent strips to both faces of glass	Single Pane
2	'K' tape ceramic gasket to both faces of glass	Multi-Pane (maximum overall screen size of 2150 mm high by 2550 mm wide)

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW60 glass shown in Figure 30 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI Insulated Glazed Units in Schuco AWS/ADS 65 AD aluminium framed screens for periods of 30 minutes integrity

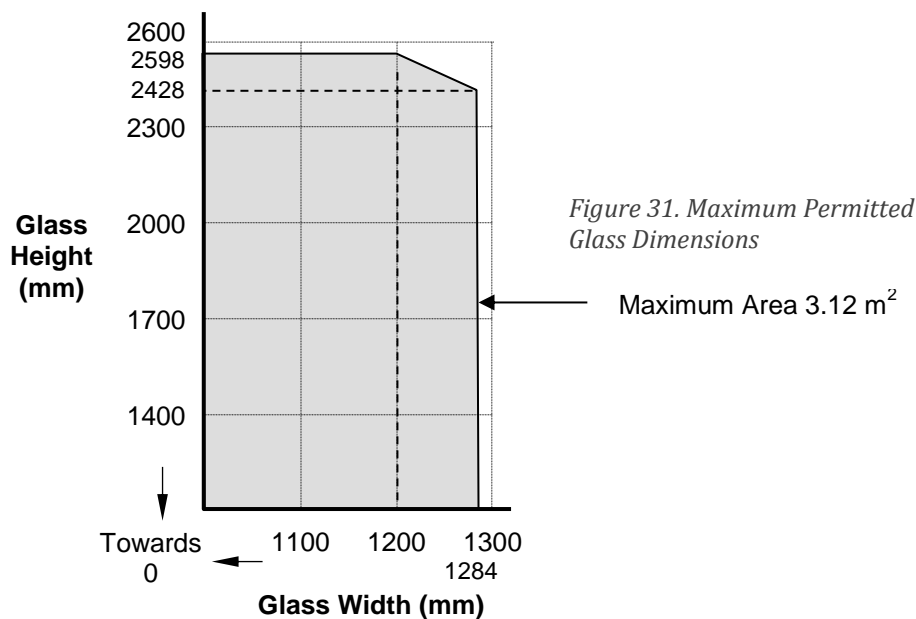
For this application the following conditions shall apply:

The 'IGU' shall comprise a single layer of Pyroguard EW30 MAXI glass, a 12-16 mm cavity with steel or aluminium spacer bars and a single layer of minimum 6 mm thick non-fire rated glass (toughened, float, laminated, coated, tinted*).

The glass shall be installed into a previously tested or CERTIFIRE approved framing system (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads. The glass shall be glazed into the screen with 'K tape' ceramic fibre gasket on both faces and set on hardwood or non-combustible setting blocks to determine the correct edge cover.

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 MAXI glass IGUs shown in Figure 31 below, when used in conjunction with the above system. The glass may only be installed within single paned screens. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI Insulated Glazed Units in steel framed screens for periods of 30 minutes integrity

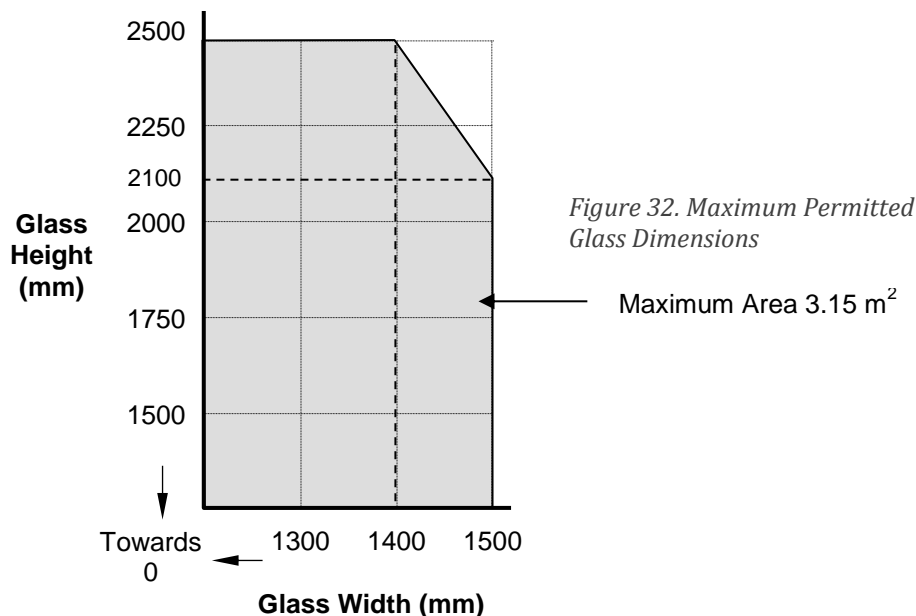
For this application the following conditions shall apply:

The 'IGU' shall comprise a single layer of Pyroguard EW30 MAXI glass, a 10 -15 mm cavity with steel or aluminium spacer bars and a single layer of 4-6 mm toughened or float glass, to form a 25 - 32 mm thick unit.

The glass shall be installed into a previously tested or CERTIFIRE approved framing system (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads. The glass shall be glazed into the screen with 'K tape' ceramic fibre gasket on both faces and set on hardwood or non-combustible setting blocks to determine the correct edge cover.

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 MAXI glass IGUs shown in Figure 32 below, when used in conjunction with the above system. The glass may only be installed within single paned screens. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW60 Insulated Glazed Units in steel framed screens for periods of 60 minutes integrity

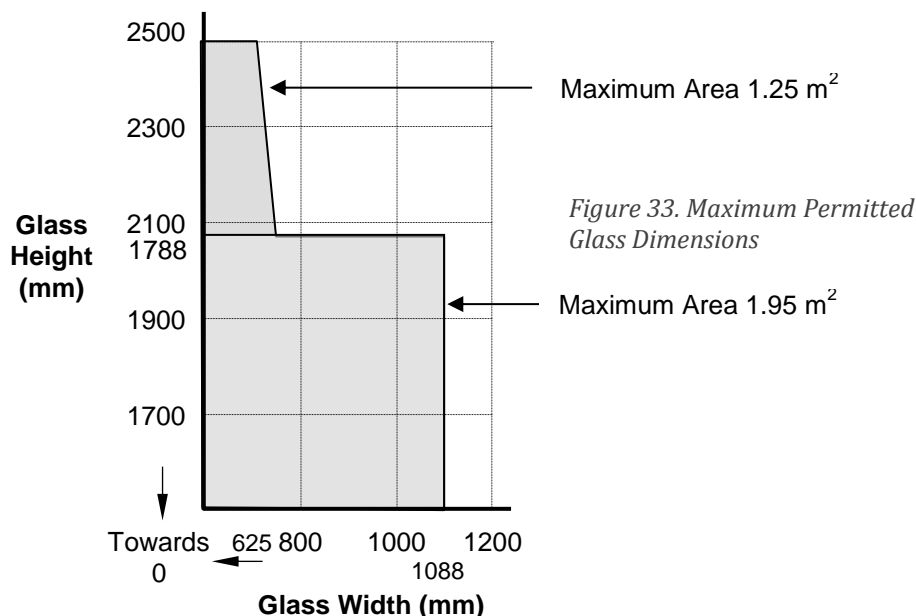
For this application the following conditions shall apply:

The 'IGU' shall comprise a single layer of Pyroguard EW60 glass, a 12-15 mm cavity with steel or aluminium spacer bars and a single layer of 4-6 mm toughened or float glass, to form a 27 - 32 mm thick unit.

The glass shall be installed into a previously tested or CERTIFIRE approved framing system (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads. The glass shall be glazed into the screen with 'K tape' ceramic fibre gasket on both faces, bonded with a ceramic based adhesive across the top edge (between tape/frame and tape/glass) and set on hardwood or non-combustible setting blocks to determine the correct edge cover.

Maximum Permitted Pane Dimensions

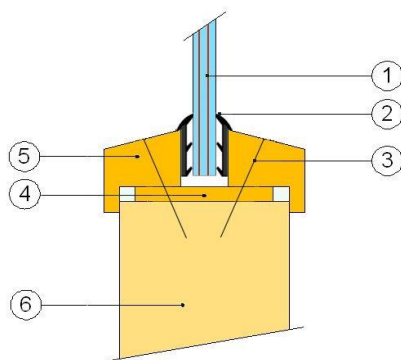
This Certificate of Approval relates to the sizes of Pyroguard EW60 glass IGUs shown in Figure 33 below, when used in conjunction with the above system. The glass may only be installed within single paned screens. The aspect ratio of the glass may be unlimited within these aperture dimensions.



CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI glass in timber based doorsets for periods of 30 minutes integrity

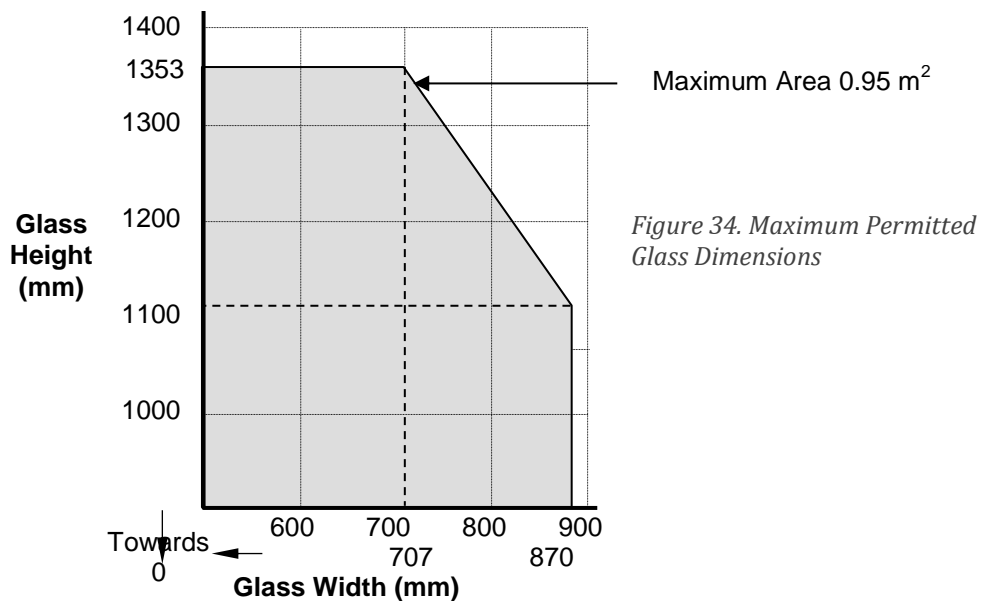
For this application the following conditions shall apply:
The glass shall be glazed within a previously fire tested or CERTIFIRE approved timber based doorset utilising the following basic specification:



- ① Pyroguard EW30 MAXI Glass
- ② Lorient Flexible Figure 1 glazing gasket
- ③ 40 mm long steel screws at a maximum of 150mm centres and angled at 45°
- ④ Hardwood liner 38 x 6 mm
- ⑤ Hardwood or MDF glazing beads 25 mm by 20 mm including a 10 mm by 6 mm bolection return chamfered at 30° and minimum 650 kg/m³ density HW or 750 kg/m³ MDF
- ⑥ Nominally 44 mm thick FD30 door leaf

The doorset shall be CERTIFIRE approved or have test evidence for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyroguard EW30 MAXI Clear/Wired glass shown in Figure 334 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.



These systems may also be included in previously tested doorset fan and side-lights.

Page 43 of 49 Signed Paul Agger
E/056

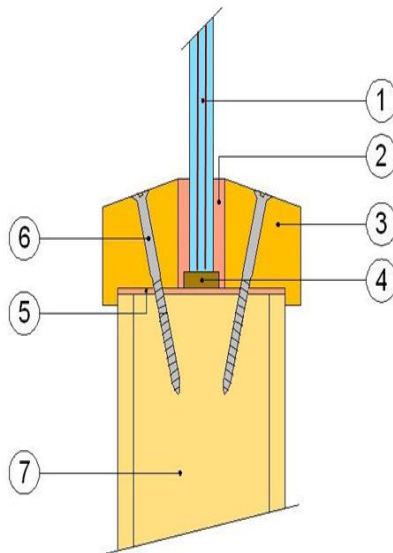
Issued: 20th February 2006
Reissued: 4th February 2016
Valid to: 3rd February 2021

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW60 glass in timber based doorsets for periods of 60 minutes integrity

For this application the following conditions shall apply:

The glass shall be glazed within a previously fire tested or CERTIFIRE approved timber based doorset utilising the following basic specification:



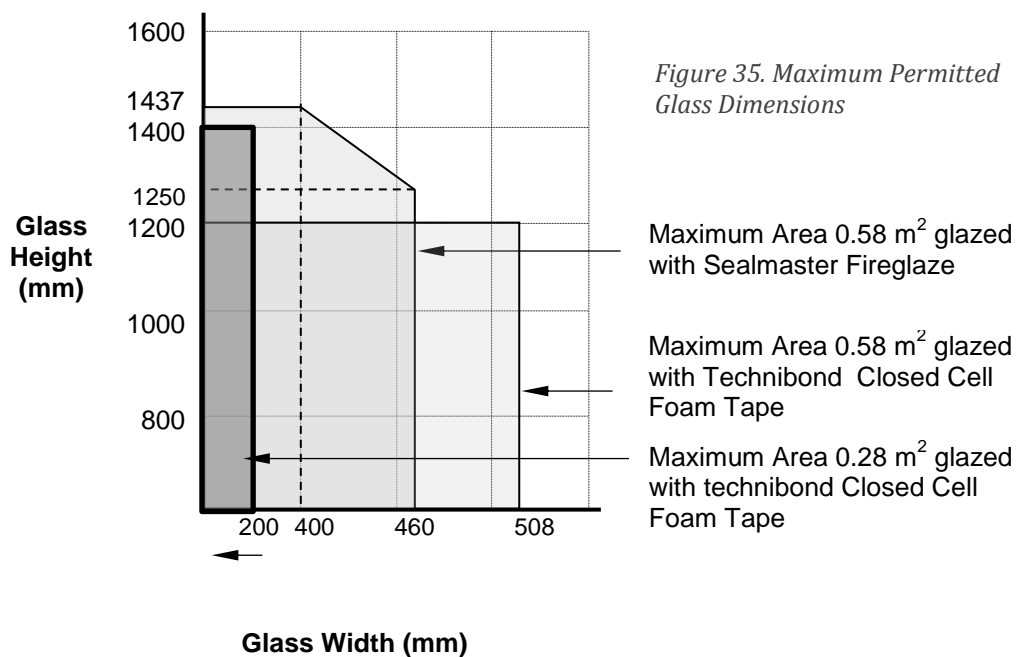
- ① Pyroguard EW60 Glass
- ② Sealmaster FireGlaze approx. 4 mm thick or Technibond closed cell foam tape 15 mm by 3 mm.
- ③ With Sealmaster Fireglaze, hardwood glazing beads (minimum 650 kg/m³ density), 28 mm wide by 27.5 mm high including a 5 mm by 5 mm bolection return chamfered at 30°.
With Technibond closed cell foam tape, MDF glazing beads (minimum 700 kg/m³ density), 20 mm by 25 mm including a 4.5 mm by 10 mm bolection return, chamfered at 15° to glass.
- ④ Non-combustible or hardwood setting blocks. In the case of Technibond closed cell foam tape also with intumescent acrylic sealant around perimeter.
- ⑤ Sealmaster GL60 Liner or Sodium Silicate Liner, 42.5 mm by 6 mm thick density 700 kg/m³
- ⑥ With hardwood glazing beads, 38 mm long steel screws at a maximum of 150mm vertical and 100 mm horizontal centres and fixed at 15°. With MDF glazing beads, 50 mm by 2 mm steel pins equally spaced at same centres (vertical beads) and 230 mm centres (horizontal beads) fixed at 30°.
- ⑦ Nominally 54 mm thick FD60 door leaf

The doorset shall be CERTIFIRE approved or have test evidence for the inclusion of apertures of the proposed dimensions.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW60 glass in timber based doorsets for periods of 60 minutes integrity (continued)

This Certificate of Approval relates to the sizes of Pyroguard EW60 Clear/Wired glass shown in Figure 35 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.

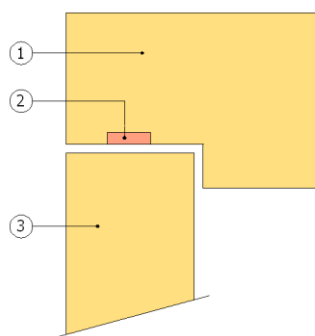


These systems may also be included in previously tested doorset fan and side-lights.

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI glass in timber stile and rail doorsets for periods of 30 minutes integrity

The doorsets may be single-acting, single -leaf only, with an engaged latching device and are to be as detailed within the figures below:

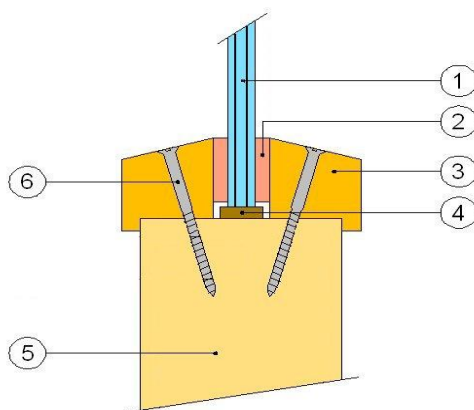


Door Leaf to Frame Detail

- 1 67 mm by 57 mm softwood or hardwood door frame with 19 mm integral stop, minimum density 450 kg/m³
- 2 Lorient Polyproducts Ltd LP1504 15 x 4mm intumescent seals, positioned centrally within the reveal of the frame, at the head and vertical edges. The leaf to frame gap must not exceed 4 mm.
- 3 Minimum 100 mm by 44 mm hardwood stiles and rails (bottom rail 200 mm minimum) minimum density 640 kg/m³. Stiles and rails must be mortice & tenon jointed

The door leaves may be provided with a mid-rail (or a number of intermediate rails) of minimum dimensions 100 mm by 44 mm and of minimum density 640 kg/m³.

All doorset hardware must be CERTIFIRE approved for use with ITT doors and the leaf must be hung upon 1½ pair of hinges and incorporate a latching device and automatic closing device.



- ① Pyroguard EW30 MAXI Glass
- ② K-Tape 15 x 3 mm or Interdens 10 x 2 mm
- ③ Softwood and hardwood glazing beads 35 mm by 20.5 mm including a 12 mm by 6 mm bolection return chamfered at 0-45° and minimum 5100 kg/m³ density
- ④ Non-combustible or hardwood setting blocks
- ⑤ Door leaf as described above
- ⑥ 48 mm long steel screws at a maximum of 200mm horizontal centres and angled at 45°

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI glass in timber stile and rail doorsets for periods of 30 minutes integrity (continued)

This Certificate of Approval relates to the sizes of Pyroguard EW30 MAXI glass shown in Figure 36 below, when used in conjunction with the glazing system detailed previously. The aspect ratio of the glass may be unlimited within these aperture dimensions.

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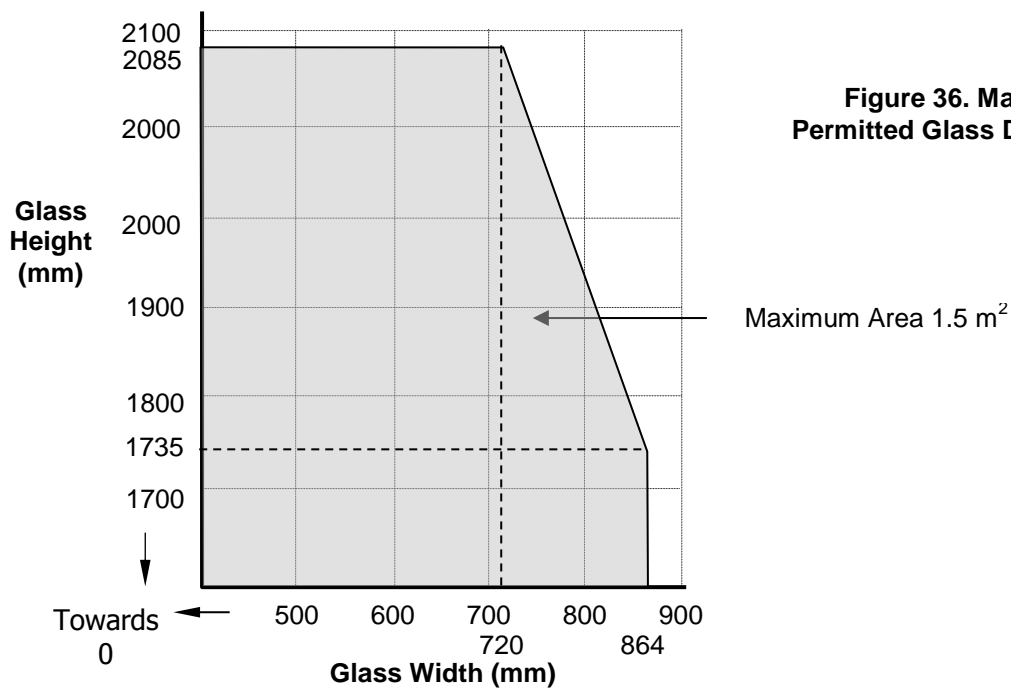


Figure 36. Maximum Permitted Glass Dimensions

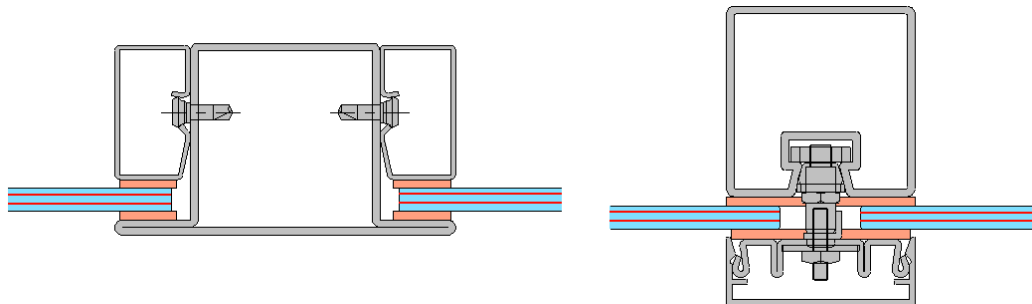
Maximum leaf dimensions are 2382 mm high (at 920 mm wide) and 1064 mm wide (at 2035 mm high), subject to a maximum area of 2.19 m².

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI glass (laminated or as Insulating Glass Units) in single pane, horizontal steel framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be installed into a previously tested or CERTIFIRE approved framing system (which is covered appropriately by test or assessment evidence) using pressure plate glazing, screw-fixed or clip-on retaining beads, see examples below. The glass shall be glazed into the screen with 'K Tape' ceramic fibre gasket on both faces. The laminated glass/IGU shall be as detailed in the table below.



System	Construction	Orientation
1	IGU comprising EW30 MAXI Pyroguard glass and 6 mm toughened glass	Pyroguard at the soffit
2	Laminated glass comprising 8 mm toughened glass, a 1 mm PVB layer, EW30 MAXI Pyroguard glass, a 1 mm PVB layer and a 15 mm toughened glass	Toughened glass at the soffit
3	Laminated glass comprising 8 mm toughened glass, a 2 mm cold pour resin layer, EW30 MAXI Pyroguard glass, a further 2 mm cold pour resin layer and 15 mm float glass	Toughened glass at the soffit

CERTIFICATE No CF 257 PYROGUARD UK LIMITED

Pyroguard EW30 MAXI glass (laminated or as Insulating Glass Units) in single pane, horizontal steel framed screens for periods of 30 minutes integrity (continued)

Maximum Permitted Pane Dimensions

This Certificate of Approval relates to the sizes of Pyroguard EW30 MAXI Laminated/IGUs shown in Figure 37 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.

