



CERTIFICATE OF APPROVAL

No CF 5319

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 T-E30 and T-E60
Range of Integrity Control Fire
Resisting Glass

TECHNICAL SCHEDULE

TS 25 Fire Resistant Glass,
Glazing Systems and Materials

Signed and sealed for and on behalf of Warringtonfire Testing and Certification Limited

Paul Duggan
Certification Manager



Issued: 21st May 2015
Revised: 29th August 2019
Valid to: 20th May 2020





CERTIFICATE No CF 5319

PYROGUARD UK LIMITED

This certification is provided to the client for its own purposes and we cannot opine on whether it will be accepted by Building Control authorities or any other third parties for any purpose. This Certificate of Approval must be read in conjunction with CERTIFIRE Technical Schedule TS25, Fire Resistant Glass, Glazing Systems and Materials.

'Pyroguard T Integrity only (E) Fire Resisting Glass

This Certificate of Approval relates to the fire resistance of Pyroguard UK Ltd, 'Pyroguard T Monolithic and laminated products, Double and Triple Insulating Glass Units(IGU) when used in the following applications, as defined in BS 476: Part 22: 1987 but using test results achieved against the following Standards - BS EN 1363-1 Fire Resistance Tests, BS EN 1363-2 Fire Resistance Tests additional or substitute procedures or BS EN 1364-1 1364-3 Fire Resistance Tests for Non Loadbearing Elements

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
- e) Inspection and surveillance of factory production control

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| Glass Specification | Application | Integrity | Page No. |
|---|---|-----------|----------|
| Pyroguard T-E30/6/8/10 | Hardwood framed screens | 30 | 6-7 |
| Pyroguard T-EW30/6/8/10 or IGU consisting of Pyroguard T-EW30/6/8/10 (6 mm to 18 mm airspace) aluminium spacer bar, counterpane with truncated corners at 135°, Pyroguard T-EW30/6/8/10, Pyrolytic coating on Pyroguard T-EW* | Hardwood framed screens | 30 | 8-9 |
| Pyroguard T-EW30/6/8/10. | Single Steel framed screens | 30 | 10 |
| Pyroguard T-E30/6/8/10. | Single Steel framed screens | 30 | 11 |
| Pyroguard T-E30/6/8/10 | Multiple Paned Steel framed screens | 30 | 12 |
| IGU consisting of Pyroguard T-EW30/6/8/10 (6 mm to 18 mm airspace), Steel spacer bar, counterpane 6 mm toughened glass* | Multiple Paned Steel framed screens | 30 | 13 |
| Pyroguard T-EW30/6/8/10 or IGU consisting of Pyroguard T-EW30/6/8/10 (6 mm to 18 mm airspace), aluminium spacer bar, Pyroguard T-EW 30/6/8/10, Pyrolytic coating on Pyroguard T-EW* | Multiple Paned Steel framed screens | 30 | 14 |
| IGU consisting of Pyroguard T-EW30/6/8/10 - 10 mm airspace, counterpane Float glass, Pyrolytic coating on Pyroguard T-EW* | Multiple Paned Steel framed screens | 30 | 15 |
| IGU consisting of Pyroguard T-E30/6/8/10 (6 mm to 18 mm airspace), steel spacer bar, counterpane, toughened 55.2 laminated glass, Pyrolytic coating on Pyroguard T-EW* | Multiple Paned Steel framed screens | 30 | 16 |
| IGU consisting of Pyroguard T-E30/6/8/10 (10 mm airspace) counterpane Pyroguard T-EW30/6/8/10, Pyrolytic coating on Pyroguard T-EW* | Multiple Paned Steel framed screens | 30 | 17 |
| Pyroguard T-E30/6/8/10, sandblasted glass on fire side and non – fire side | Steel tubular Multiple Paned Steel framed screens | 30 | 18 |
| Pyroguard T-E30/6/8/10, printed glass on fire side or non – fire side, print cover of over 50% of area allowed | Steel tubular Multiple Paned Steel framed screens | 30 | 19 |

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***Note 1:** The fire resistant pane of the IGU construction can be used as a single glazed pane in any previously fire tested or CERTIFIRE approved system. In this case the product code will change.

'Pyroguard T Integrity only (E) Fire Resisting Glass (continued)

| Glass Specification | Application | Integrity | Page No. |
|---|---|-----------|----------|
| Pyroguard T-E30/6/8/10 with one 12 mm laminated 66.2 glass pane, printed on PVB side glazed to fire side, print cover of over 50% of area allowed | Steel tubular Multiple Paned Steel framed screens | 30 | 20 |
| Pyroguard T-EW60 66.2 RV | Timber based doorsets | 60 | 21 |
| IGU consisting of Pyroguard T-EW60/6 VF RV - 6mm steel spacer bar – 4mm toughened glass | Timber based doorsets | 60 | 22 |
| Triple IGU consisting of Pyroguard T-EW60/6 - 14 mm airspace, steel spacer bar- 4 mm Toughened glass-12 mm airspace steel spacer bar - 44.2 laminate glass to fire side | Multiple Paned Steel framed screens | 60 | 23 |
| Pyroguard T-EW60/6 IGU - 16-18 mm airspace -steel spacer bar - with Pyroguard T-EW60/6 or 4 mm toughened glass to fire side | Multiple Paned Steel framed screens | 60 | 24 |
| Pyroguard T-EW60/6 VF RV | Multiple Paned Steel framed screens | 60 | 25 |
| Pyroguard T-EW60/6 VF RV | Multiple Paned Steel framed screens | 60 | 26 |
| Pyroguard T-E 30/6/8/10 | Steel framed doors | 30 | 27 |
| Pyroguard T-E 30/6/8/10 | Single Steel doors | 30 | 28 |
| Pyroguard T-E 30/6/8/10 | Multiple paned Steel framed screens | 30 | 29 |
| Pyroguard T-EW30/6 VF RV | Multiple paned Steel framed screens | 30 | 30 |

***Note 1:** The fire resistant pane of the IGU construction can be used as a single glazed pane in any previously fire tested or CERTIFIRE approved system. In this case the product code will change.

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'Pyroguard T Integrity only (E) Fire Resisting Glass (continued)

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.
- There may be a restriction to the direction of exposure for the glass (refer to drawings for each product and frame type. Orientation may, also, be restricted by the requirements of a non-symmetrical framing system.
- The edge cover for single glass panes shall be a maximum of 10 mm in timber and steel framed systems and 12mm for insulating glass units.
- Spacer width for IGU's with single airspace can be in the range 6 mm to 18 mm. Aluminium or steel spacer bars can be used in 30 minute fire applications but only steel spacer bars for 60 minute fire applications. The IGU primary edge sealant can be Polysulfide, Silicone, Polyurethane or Hot Melt.
- Spacer widths for triple IGUs should be in the range 12-14 mm for either air space width.
- Pyroguard T-E 30/6 (toughened monolithic) can be substituted with Pyroguard T-E 30/8 (toughened monolithic) and Pyroguard T-E 30/10 (toughened monolithic) and vice versa.
- Where IGUs are approved the Pyroguard T fire glass pane is normally glazed on the fire side (unless otherwise shown in the product drawing or by supporting test or assessment evidence). When using Pyrolytic or Low E coated glass products, the coating must be to the PVB laminate or to the IGU spacer bar, not on the fire side directly facing the fire.
- Where a fire resistant IGU is required it can be manufactured from any single size fire glass listed in this certificate for a given fire performance. Where IGUs are approved the fire resistant pane must be glazed to the fire side (unless otherwise shown in the product drawing or by supporting test or assessment evidence). It can be glazed into any previously fire tested or CERTIFIRE approved system.
- The non-fire resistant glass counter panes used in IGU construction can be Float, Patterned, Georgian Polished Wired, Toughened, and Screen Printed (coverage of over 50% of glass area allowed), coated, sandblasted, acid etched but not laminated glasses unless relevant test evidence available.
- When Pyroguard T is constructed with 2 panes of toughened glass, in some cases one of the toughened glass panes can be replaced with a laminated glass (subject to supporting test data). All laminated counterpanes are constructed with float glass unless stated otherwise.
- Triangular shapes constructed with Pyroguard T-EW30/6 VF and EW30/6 V1 with 2 x 45° degrees corner angles or one corner truncated at 135° angle are possible but Pyroguard UK Limited should be consulted prior to specifying these products.
- Manifestation films may be applied to the fire side glass surface.
- For Timber framed glazing systems if the timber beads are square shaped, these may be modified (provided there is supporting test or assessment evidence for required shape).
- Where foam tape or ceramic fibre is specified as a glazing tape, Interdens intumescent strip can be used as an alternative.

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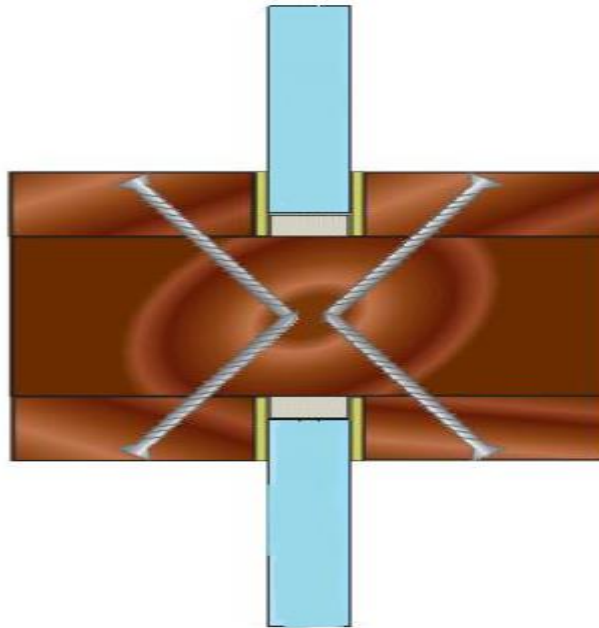


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Pyroguard T-E30/6/8/10 glass in Hardwood framed screens for periods of 30 minutes integrity

For this application the following conditions shall apply:



- 8mm thick toughened fire glass **Pyroguard T-E30/E8** glass symmetrical glazed with one free edge.
- Framework from oak Hardwood with a density of 500 kg/m³ and 86 mm x 40 mm timber profiles. Hardwood double bead system 35 mm x 20 mm with a density of 500 kg/m³. Fixed by 4 x 40 mm steel screws at 170 mm centre angled at 15° degrees spacing 160 mm and 70 mm from corners.
- 10 mm x 2 mm intumescent 'Intumex' (Odice) (or equivalent i.e. 'Interdens') or 'Flexpress' (Rolf Kuhn) or 20 mm x 5 mm 'Superwool' (Odice) A 10 x 2.5 mm INTUMEX LSK swelling seal was fitted at the top and bottom of the fillister of the glazing.
- 80 mm x 8 mm x 10 mm 'Superlux' setting blocks.
- Glazing and frame details as describe in **Efectis test report No 12-V-577**

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Pyroguard T-E30/6/8/10 glass in Hardwood framed screens for periods of 30 minutes integrity (continued)

For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested hardwood framed screen utilising the following basic specification:

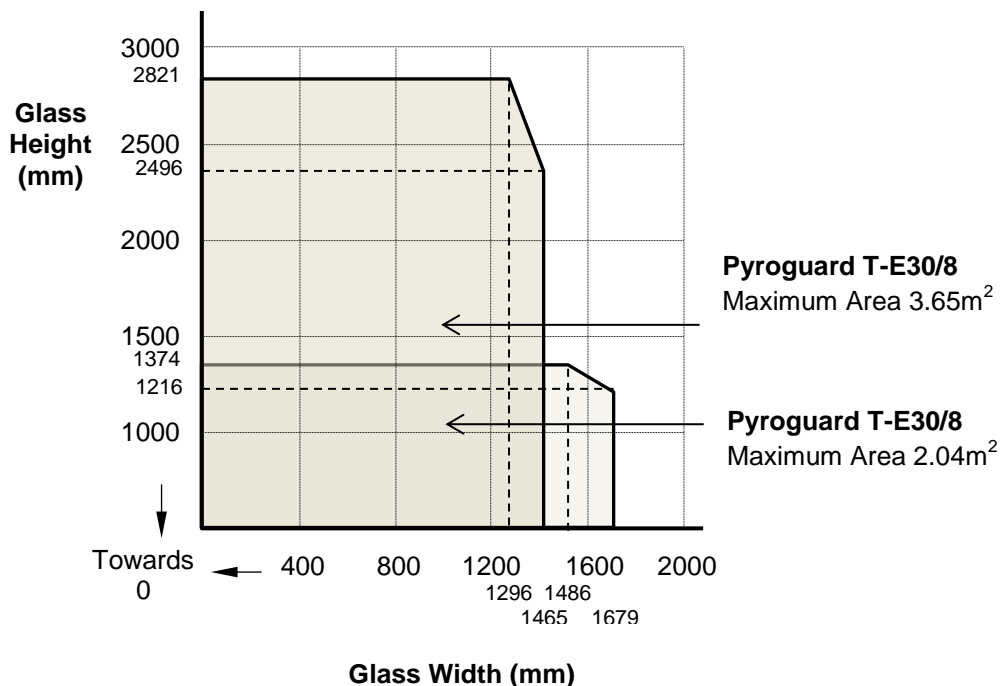
- **Pyroguard T-E30/8 glass**
- Glazing and frame details as described in **Efectis test report No 12-V-577 (34 minutes)**.

The hardwood framed screen shall have appropriate test or assessment evidence for the inclusions of glass of the proposed dimensions.

This Certificate of Approval relates to the sizes of glass shown in Figure 1 below, when used in conjunction with the above system.

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

Figure 1. Maximum Permitted Glass Dimensions



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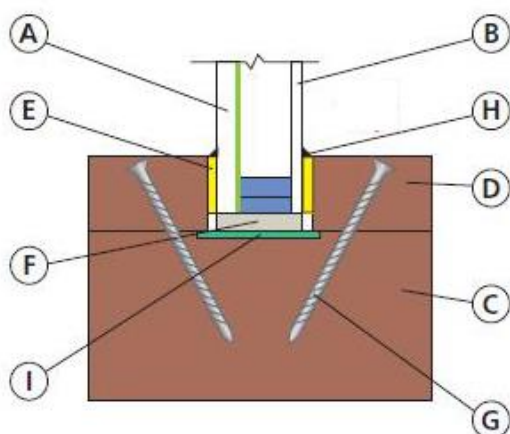
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Pyroguard T-EW30/6/8/10 or IGU consisting of Pyroguard T-EW30/6/8/10 – 6mm to 18 mm airspace - aluminium spacer bar – Pyroguard T-EW30/6/8/10 glass, with truncated corner at 135° in Hardwood framed screens for periods of 30 minutes integrity (continued)

For this application the following conditions shall apply:



- A Pyroguard T-EW30/6 VI
- B Different options for counterface (recommendations in the test report)
- C Hardwood screen 95 x 40 mm, 630 kg/m³ minimum density
- D Hardwood beading 20 x 35 mm, 630 kg/m³ minimum density
- E Glazing material: ceramic tape
- F Setting blocks 80 x 10 x glass thickness (mm)
- G Fixings: screws 4 x 50 mm at a 45 degree angle spacings 160 mm and 70 mm from corners
- H Fire resistant silicone
- I Intumescent tape

- Single Pyroguard T-EW30/6mm, or IGU composed of Pyroguard T-EW30/6 - 8 mm airspace aluminium spacer bar - Pyroguard T-EW30/6) **Note:** EW30/6 has a Pyrolytical or Low E coating on one glass face.
- Framework from Hardwood with a density of 630 kg/m³ and 95 mm x 40 mm section. Divided by 40 x 95 mm rail and styles assembled by steel screws 05 x 80 mm every 200 mm. Hardwood beads 35 mm x 20 mm with a density of 630 kg/m³. Fixed by 4 x 50 mm steel screws at 160 mm centre angled at 45° degrees Glazed with one free edge.
- 10 mm x 3 mm intumescent 'Intumex' (Odice) (or equivalent i.e. Interdens) or 'Fiberfrax' (Gluske) or 15 mm x 3 mm and 10 x 2.5 mm INTUMEX LSK swelling seal fitted at the top and bottom of insulating glass unit. Glazing strips capped with 'Kerafix' (Gluske) fire resistant silicone
- 80 mm x 10 mm 'Flammi 12' setting blocks and Bottom edge clearance at fillister 7.5 mm, fillister hold of the glazing 7.5 mm.
- Glazing and frame details as describe in **CTICM test report No 02-V-136 (ref 11-A-276)**

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Pyroguard T-EW30/6/8/10 or IGU consisting of Pyroguard T-EW30/6/8/10 – 6mm to 18 mm airspace - aluminium spacer bar – Pyroguard T-EW30/6/8/10 glass, with truncated corner at 135° in Hardwood framed screens for periods of 30 minutes integrity (continued)

For this application the following conditions shall apply:

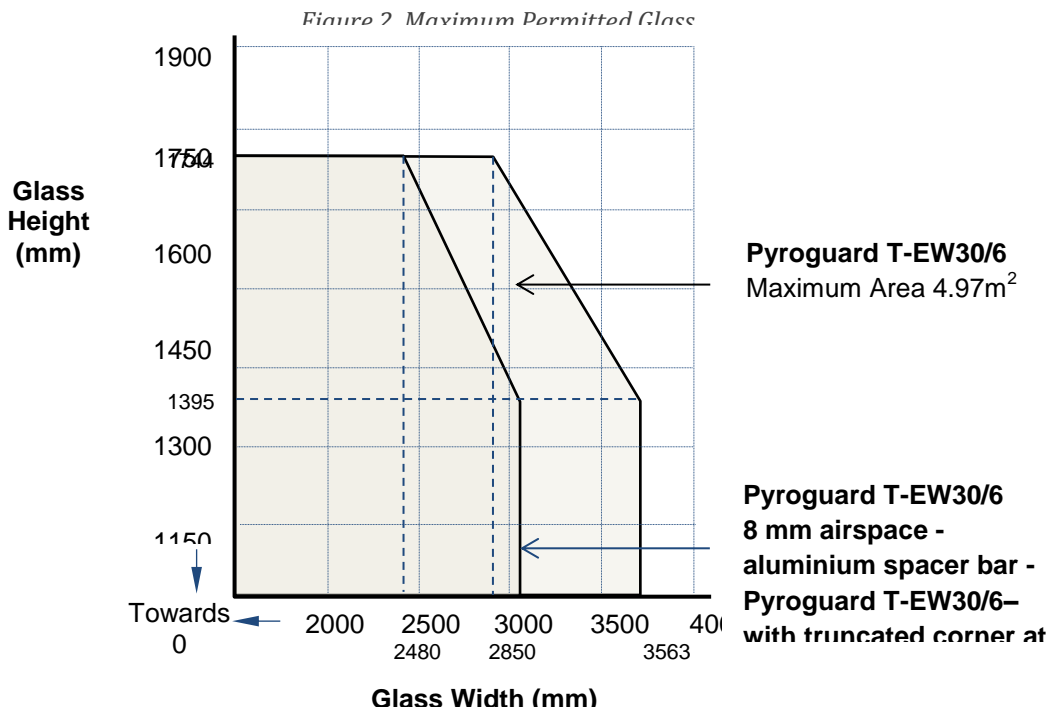
The glass shall be installed within a previously fire tested hardwood framed screen utilising the following basic specification:

- **Pyroguard T-EW30/6 or Pyroguard-T EW30/6 - 8mm airspace – aluminium spacer bar - Pyroguard T-EW30/6 with truncated corner at 135°**
- Glazing and frame details as described in **CTICM test report No 02-V-136 (ref 11-A-276) (41 minutes)**

The hardwood framed screen shall have appropriate test or assessment evidence for the inclusions of glass of the proposed dimensions.

This Certificate of Approval relates to the sizes of glass shown in Figure 2 below, when used in conjunction with the above system.

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



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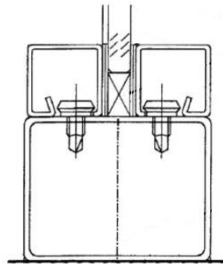
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Pyroguard T-EW30/6/8/10, glass in single (Forster Presto) single steel framed screen for periods of 30 minutes integrity

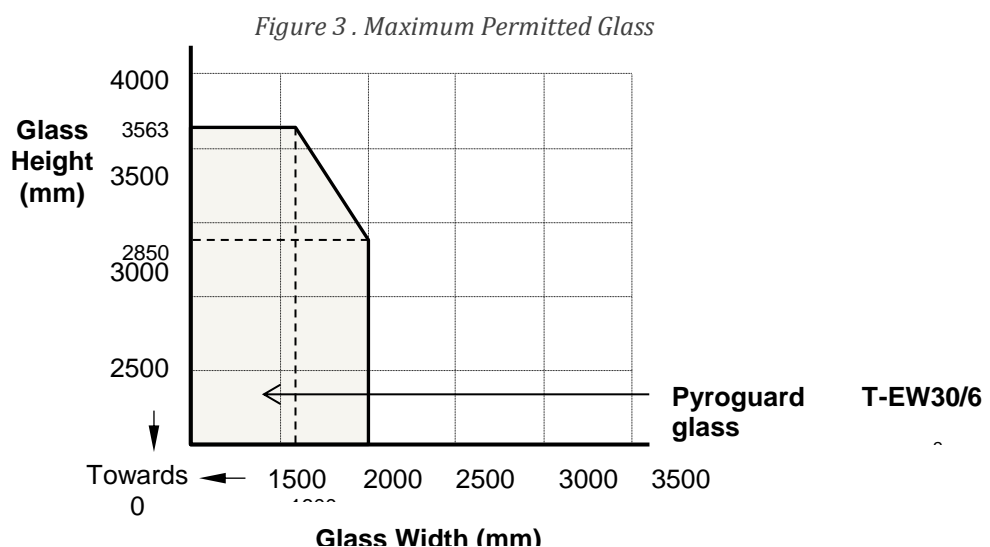
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved single steel framed screen utilising the following basic specification:

- **Pyroguard T-EW30/6 glass**
- Glazing and frame details as described in **CTICM test report No 01-V-197 (ref 11-A-275) (51min)**



The single steel framed screen shall have appropriate test or assessment evidence or be CERTIFIRE approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 3 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.



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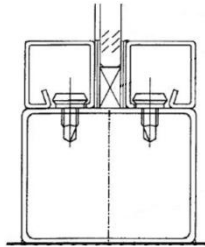
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Pyroguard T-E30/6/8/10, glass in single (Forster Presto) single steel framed screen for periods of 30 minutes integrity

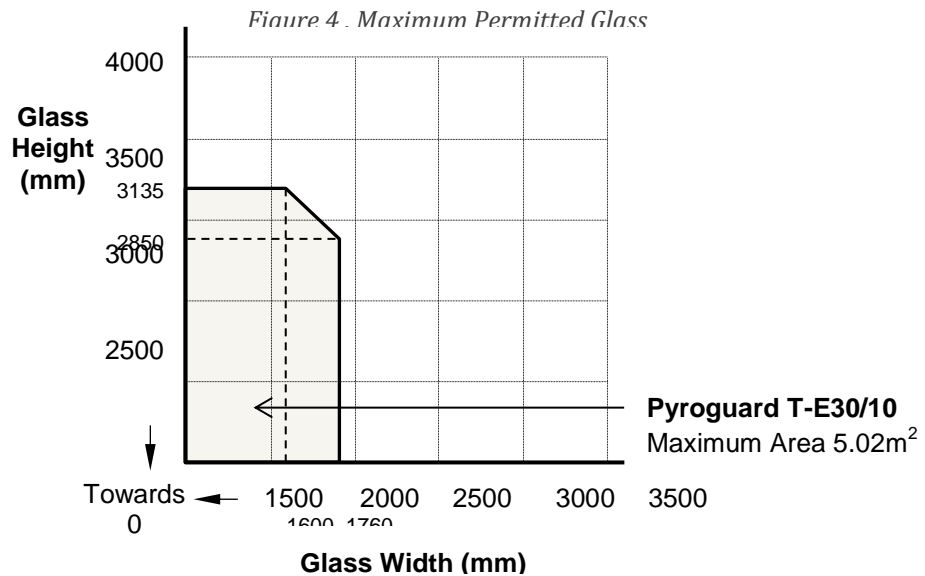
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved single steel framed screen utilising the following basic specification:

- **Pyroguard T-E30/10 glass,**
- Glazing and frame details as described in **CTICM test report No 01-V-135 (ref 11-A-274) (33min)**



The single steel framed screen shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass, shown in Figure 4 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.

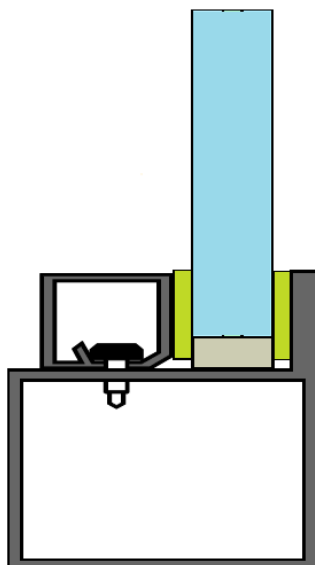


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Pyroguard T-E30/6/8/10, glass in single (Jansen Economy 50) multi-paned steel framed screen for periods of 30 minutes integrity



For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved single steel framed screen utilising the following basic specification:

- **Pyroguard T-E30/10 glass,**
- Glazing and frame details as described in Efectis test report No EFR-17-G-003447 A (35 min)

The multi-paned steel framed screen shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass, shown in the table below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.

Maximum Permitted Glass Dimensions

| | Maximum Width | Maximum Height | Maximum Area |
|-----------|---------------------------------|---------------------------------|--------------------|
| Portrait | 1603mm wide (at 2804mm) high | 3271mm high (at 1374mm wide) | 4.49m ² |
| Landscape | 3271mm wide (at 1389mm) high | 1620mm high (at 2804mm wide) | 4.54m ² |

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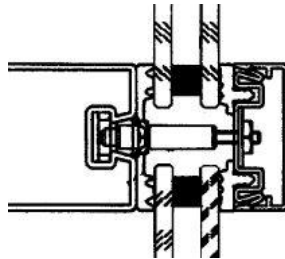
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IGU consisting of Pyroguard T-EW30/6/8/10 – 6mm to 18 mm airspace - steel spacer bar – Counterpane Toughened 6 mm glass in a multi-paned (Jansen VISS-TV) Steel Glazed Screen for periods of 30 minutes integrity

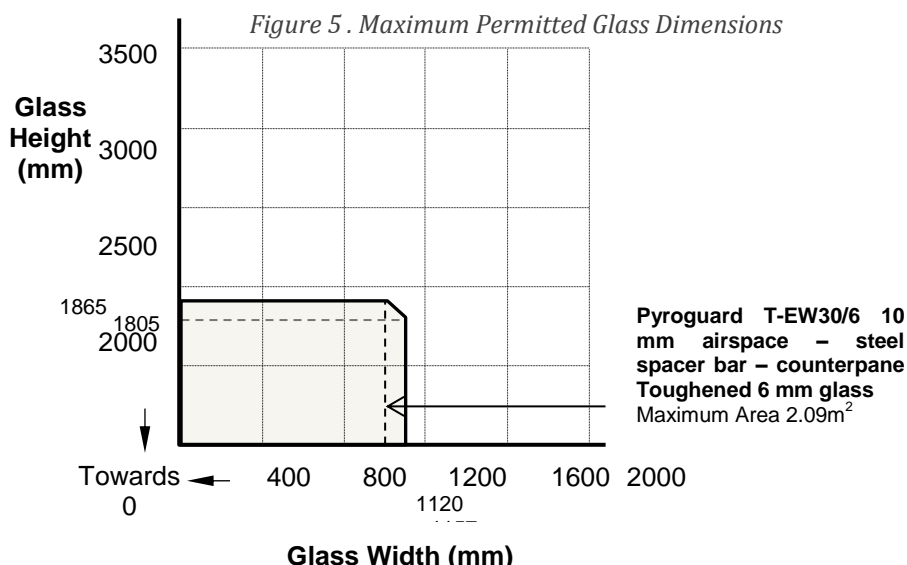
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screen utilising the following basic specification:

- **Pyroguard T-EW30/6 - 10 mm airspace steel spacer bar - Toughened 6 mm glass**
- Glazing and frame details as described in **CTICM test report No 03-V-346 (ref 11-A-280) (31 min)**



The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 5 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.



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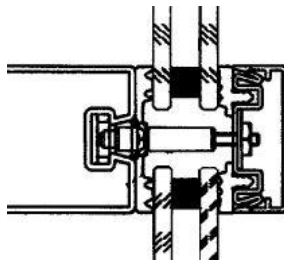
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Pyroguard T-EW 30/6/8/10 or IGU consisting of Pyroguard T-EW30/6/8/10 – 6mm to 18 mm airspace - aluminium spacer bar – Pyroguard T-EW30/6/8/10 glass, in a multi - paned (Jansen VISS-TV) Steel Glazed Screen for periods of 30 minutes integrity

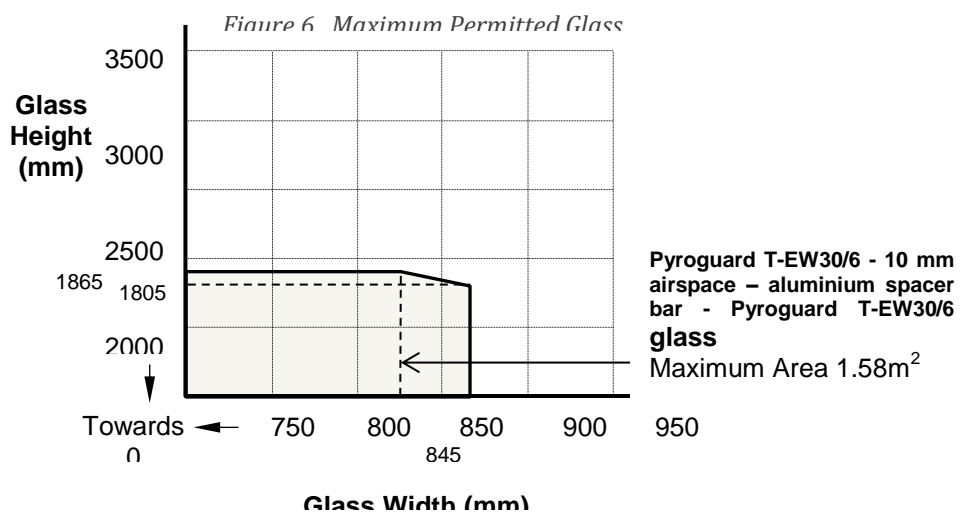
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- Pyroguard T EW30/6 - 10 mm airspace – aluminium spacer bar - Pyroguard T-EW30/6 glass
- Glazing and frame details as described in CTICM test report No 03-V-346 (ref11-A-280)(31 min)



The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 6 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.



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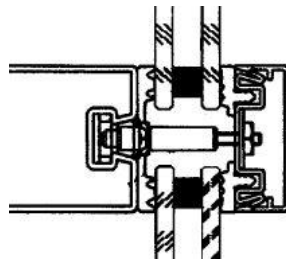
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IGU consisting of Pyroguard T-EW30/6/8/10 -10 mm airspace –steel spacer bar – counterpane float glass in a multi-paned (Jansen VISS-TV) Steel Glazed Screen for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

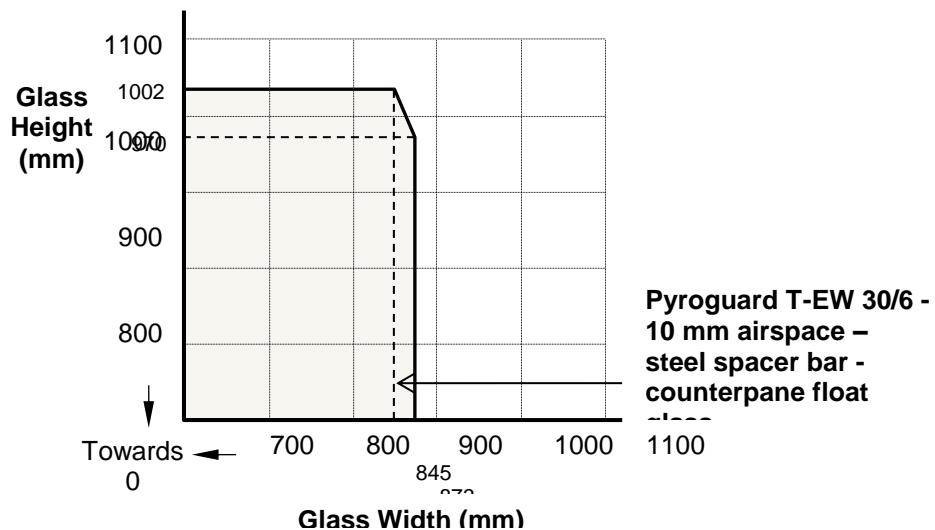
- Pyroguard T-EW30/6 - 10 mm airspace – steel spacer bar – counterpane float glass
- Glazing and frame details as described in CTICM test report No 03-V-346 (ref 11-A-280) (31 min)



The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 7 below, when used in conjunction with the above system.

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

Figure 7. Maximum Permitted Glass



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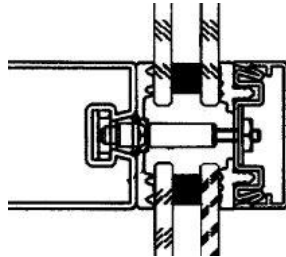
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IGU consisting of Pyroguard T-E30/6/8/10 – 6mm to 18 mm airspace - steel spacer bar – counter pane Toughened 55.2 Laminated glass, in a multi - paned (Jansen VISS-TV) Steel Glazed Screen for periods of 30 minutes integrity

For this application the following conditions shall apply:

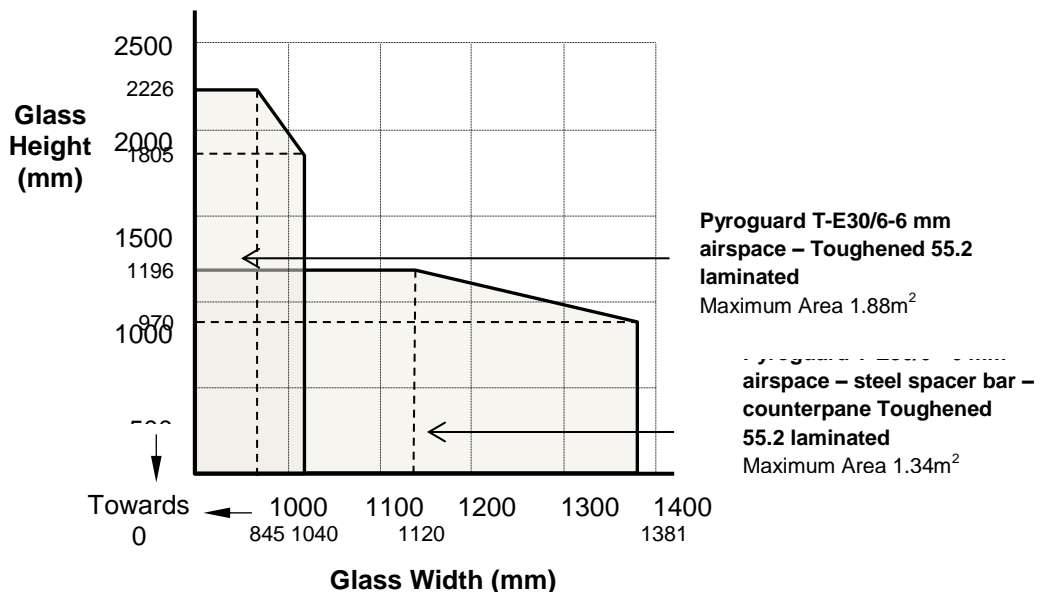
The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- **Pyroguard T-E30/6 - 6 mm airspace - steel spacer bar - toughened 55.2 laminated glass**
- Glazing and frame details as described in **CTICM test report No 03-V-308 (ref 11-A-279) (37 min)**



The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of 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 glass dimensions.

Figure 8 Maximum Permitted Glass



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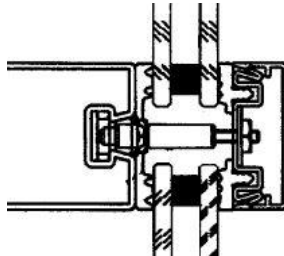
CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

IGU consisting of Pyroguard T-E30/6/8/10 - 10 mm airspace - steel spacer bar – counter pane Pyroguard T-EW30/6/8/10 in a multi-paned (Jansen VISS-TV) Steel Glazed Screen for periods of 30 minutes integrity

For this application the following conditions shall apply:

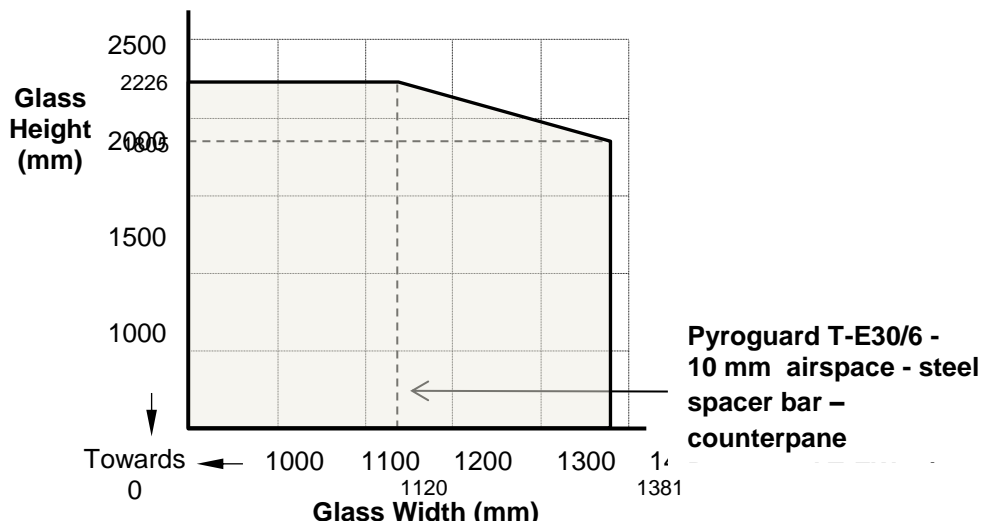
The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- **Pyroguard T-E30/6 - 10 mm airspace - steel spacer bar - Pyroguard T-EW30/6**
- Glazing and frame details as described in **CTICM test report No 03-V-308 (ref 11-A-279) (37min)**



The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of 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 glass dimensions.

Figure 9 Maximum Permitted Glass Dimensions



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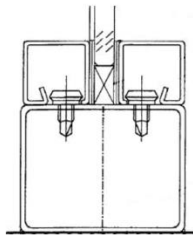
CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-E30/6/8/10 glass, sandblasted on fire and non - fire side glazed in a single (Steel Tube multi-paned (Jansen VISS-TV) Steel Glazed Screen for periods of 30 minutes integrity

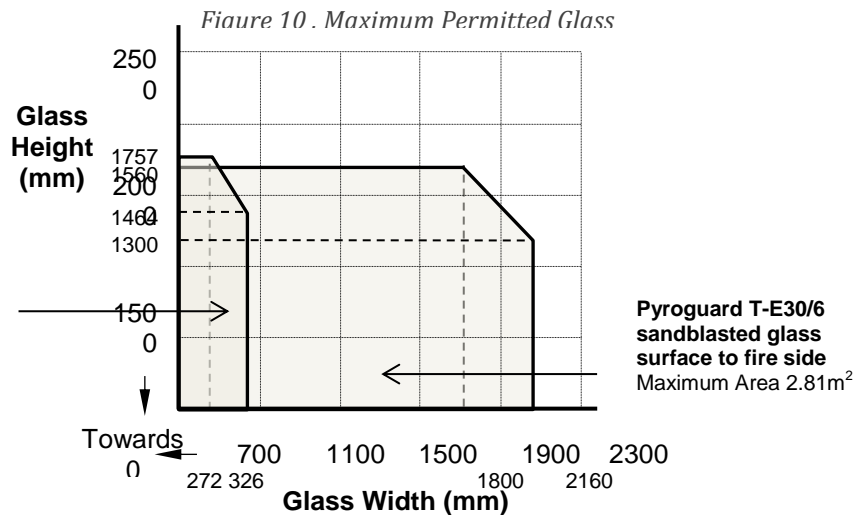
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- **Pyroguard T-E30/6 mm glass, Sandblasted on both side glass surface**
- Glazing and frame details as described in **CTICM test report No 02-V-444 (ref 11-A-277) (36min)**



The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 10 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.



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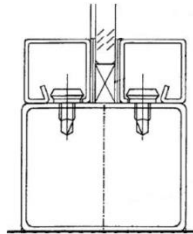
CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-E30/6/8/10 glass with printed surface cover of over 50% of area, to fire side or non - fire side glazed in a single (Steel Tubular) multi-paned (Jansen VISS-TV) Steel Glazed Screen for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

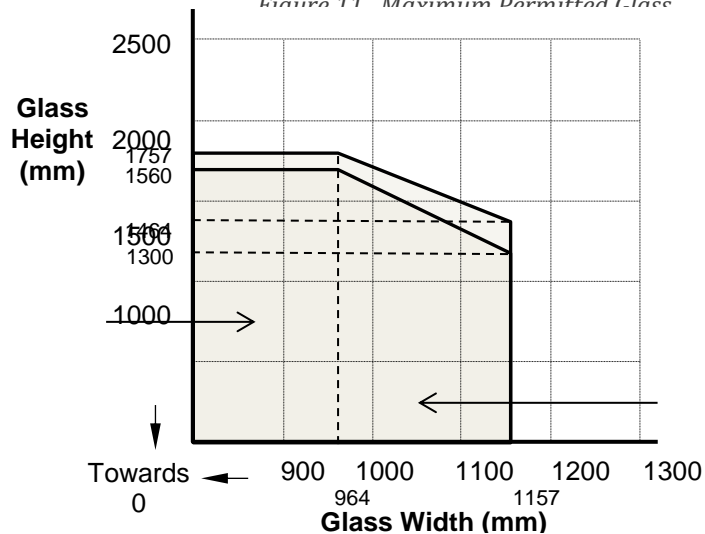
- Pyroguard T-E30/6 mm glass with a printed surface to fire side or non - fire side (cover of over 50% allowed)
- Glazing and frame details as described in CTICM test report No 02-V-444 (ref 11-A-277) (36min)



The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 11 below, when used in conjunction with the above system.

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

Figure 11 Maximum Permitted Glass



Pyroguard T-E30/6 mm glass with print cover of over 50% to fire side
Maximum Area 1.69m²

Pyroguard T-E30/6 mm glass with print cover of over 50% to non - fire side
Maximum Area 1.694m²

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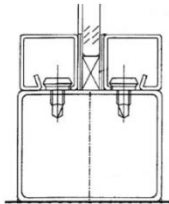
CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-E30/6/8/10 mm glass with one 12 mm laminated 66.2 pane with print cover of over 50% of area on the PVB side (glazed to fire side) in a single (Steel Tubular) multi-paned (Jansen VISS-TV) Steel Glazed Screen for periods of 30 minutes integrity

For this application the following conditions shall apply:

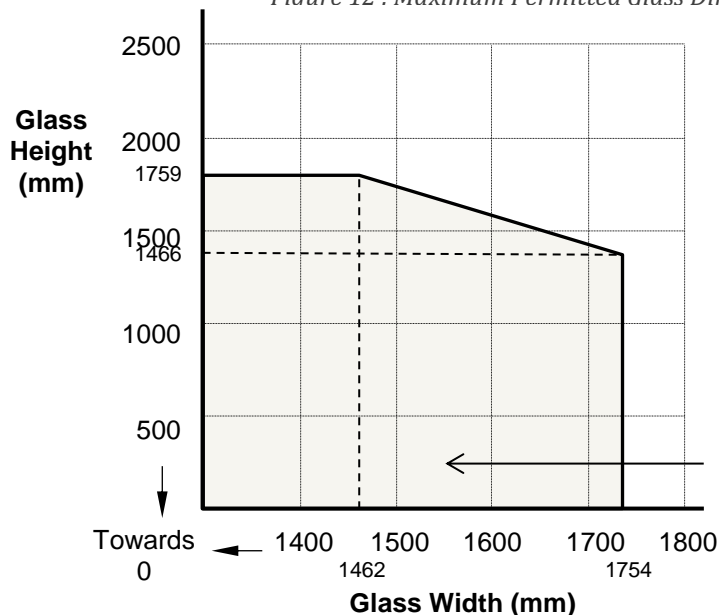
The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- Pyroguard T-E30/6 mm glass with one 12 mm thick laminated 66.2 pane with print cover of over 50% of area on the PVB side
- Glazing and frame details as described in CTICM test report No 02-V-444 (ref 11-A-277) (36min)



The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes glass shown in Figure 12 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.

Figure 12 . Maximum Permitted Glass Dimensions



Pyroguard T-E30/6 mm glass with one 12 mm thick laminated 66.2 pane with print cover of over 50% on the PVB side
Maximum Area 2.57m²

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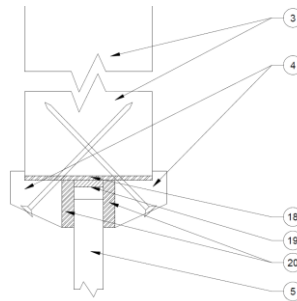
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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-E30/6/8/10 mm glass with one 12 mm laminated 66.2 pane 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:



- 3 Nominally 54 mm thick FD60 door leaf
- 4 Hardwood (640 kg/m³) glazing beads, 28.5mm by 22.3mm including 8.5mm x 5.7mm bolection, chamfered at 25°
Beads fixed with No.8 x 2.5" steel countersunk screws set at 150mm centres and at 45° to the glass
- 5 Pyroguard T-EW60 66.2 RV glass
Non-combustible/hardwood setting blocks 10mm (h) x 25mm (w) x 13mm (d)
- 18 Therm-A-Sol intumescent liner, 52mm x 2mm
- 19 Sealmaster FireGlaze tape, 13mm x 2.5mm
- 20 ISL 60 Plus 20mm x 5mm glazing tape

- Glazing and doorset details as described in **CFR1808152 (68 min)**

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

Maximum Permitted Glass Dimensions

| Maximum Width | Maximum Height | Maximum Area |
|--------------------------------|--------------------------------|--------------------|
| 398mm wide (at 1602mm) high | 1815mm high (at 351mm wide) | 0.63m ² |

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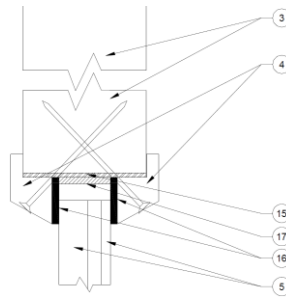
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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-EW60/6 VF RV IGU 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:



- 3 Nominally 54 mm thick FD60 door leaf
- 4 Hardwood (640 kg/m³) glazing beads, 29.5mm by 18.7mm including 10mm x 5.5mm bolection, chamfered at 20°
Beads fixed with No.8 x 2.5" steel countersunk screws set at 150mm centres and at 30° to the glass
- 5 Pyroguard T-EW60/6 VF RV IGU with 6mm steel spacer and 4mm toughened glass
Non-combustible/hardwood setting blocks 10mm (h) x 25mm (w) x 13mm (d)
- 15 Therm-A-Sol intumescent liner, 54mm x 2mm
- 16 ISL 60 Plus 20mm x 5mm glazing seal
- 17 Sealmaster FireGlaze tape, 23mm x 2.5mm

- Glazing and doorset details as described in **CFR1810311 (68 min)**

The doorset shall be CERTIFIRE approved or have test evidence for the inclusion of apertures of the proposed dimensions. The Pyroguard T-EW60/6 VF RV IGU may be glazed in either direction with respect to the fire risk.

Maximum Permitted Glass Dimensions

| Maximum Width | Maximum Height | Maximum Area |
|--------------------------------|--------------------------------|--------------------|
| 374mm wide (at 1583mm) high | 1794mm high (at 330mm wide) | 0.59m ² |

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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Triple glazed unit consisting of Pyroguard T-EW60/6 - airspace width - 14 mm steel spacer bar - 4 mm Toughened glass- airspace width 12 mm - steel spacer bar - laminated 44. 2 glass to fire side in a multiple paned (Forster Unico) Glazed Screen) for periods of 60 minutes integrity

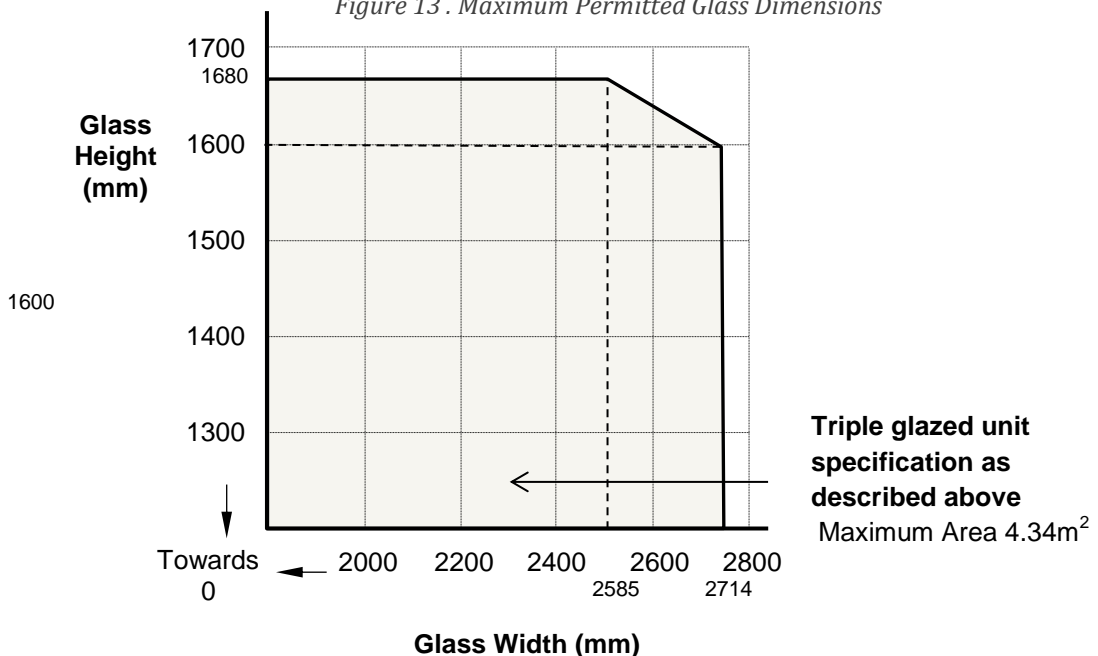
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- IGU specification as described above
- Glazing and frame details as described in **Efectis 13-V-582 (63 min)**

The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of triple glazed IGU shown in Figure 13 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.

Figure 13 . Maximum Permitted Glass Dimensions



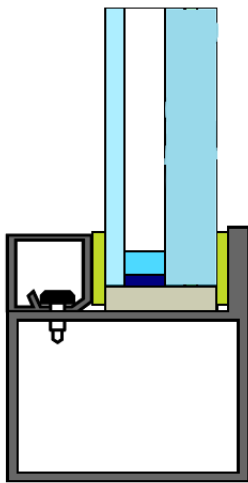
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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

IGU consisting of Pyroguard T-EW60/6 - airspace width 16 mm to 18 mm - steel spacer bar - Pyroguard T-EW60/6 to fire side or 4mm toughened glass to fire side in a multiple paned (Forster Unico) Glazed Screen for periods of 60 minutes integrity



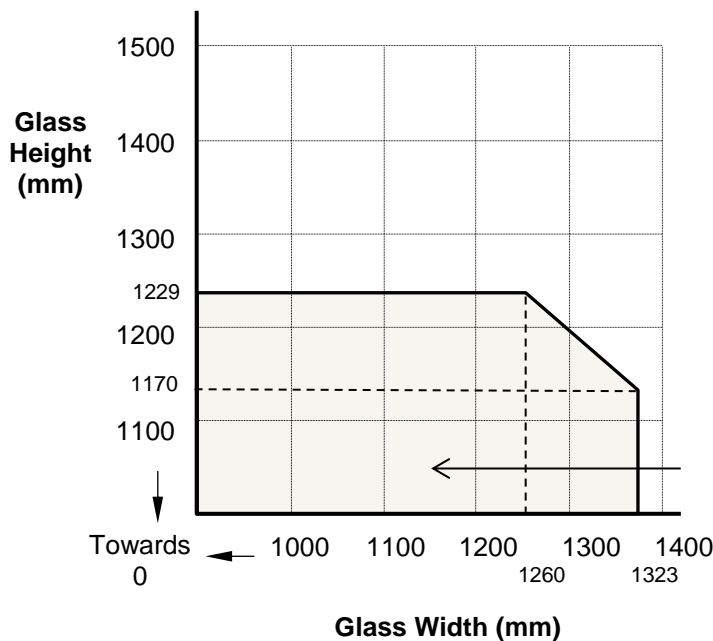
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- IGU specification as described above
- Glazing and frame details as described in **Efectis 13-V-582 (63min)**

The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 14 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.

Figure 14 . Maximum Permitted Glass



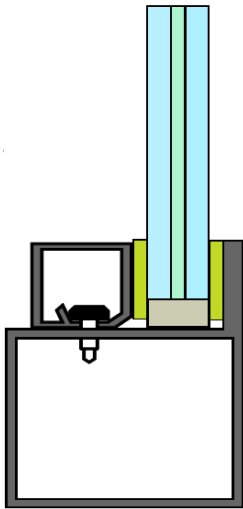
IGU specification as described above
Maximum Area 1.55m²

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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-EW60/6 VF RV in a multiple glazed (Forster Presto) Glazed Screen for periods of 60 minutes integrity



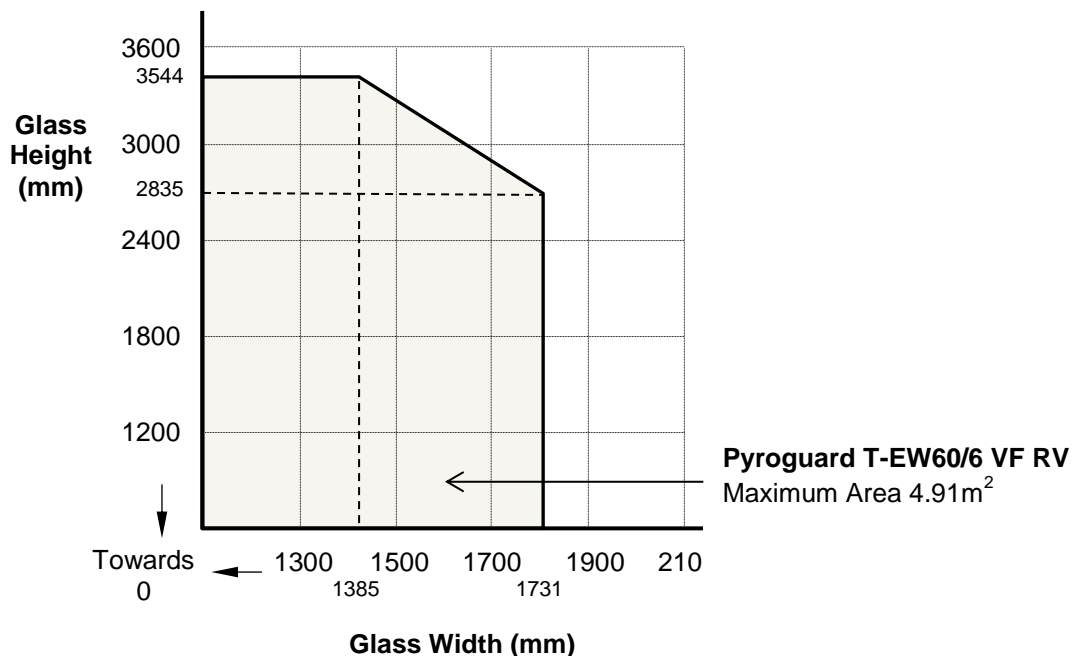
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- Pyroguard T-EW60/6 VF RV.
- Glazing and frame details as described in **Efectis 09-V-209 (82min)**

The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass 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 glass dimensions.

Figure 15. Maximum Permitted Glass Dimensions

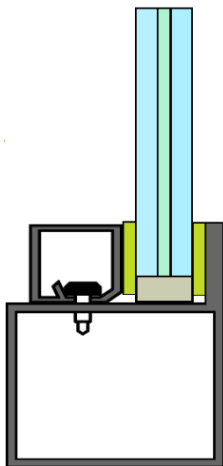


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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-EW60/6 VF RV glass in a multiple glazed (Forster Presto) Glazed Screen for periods of 60 minutes integrity



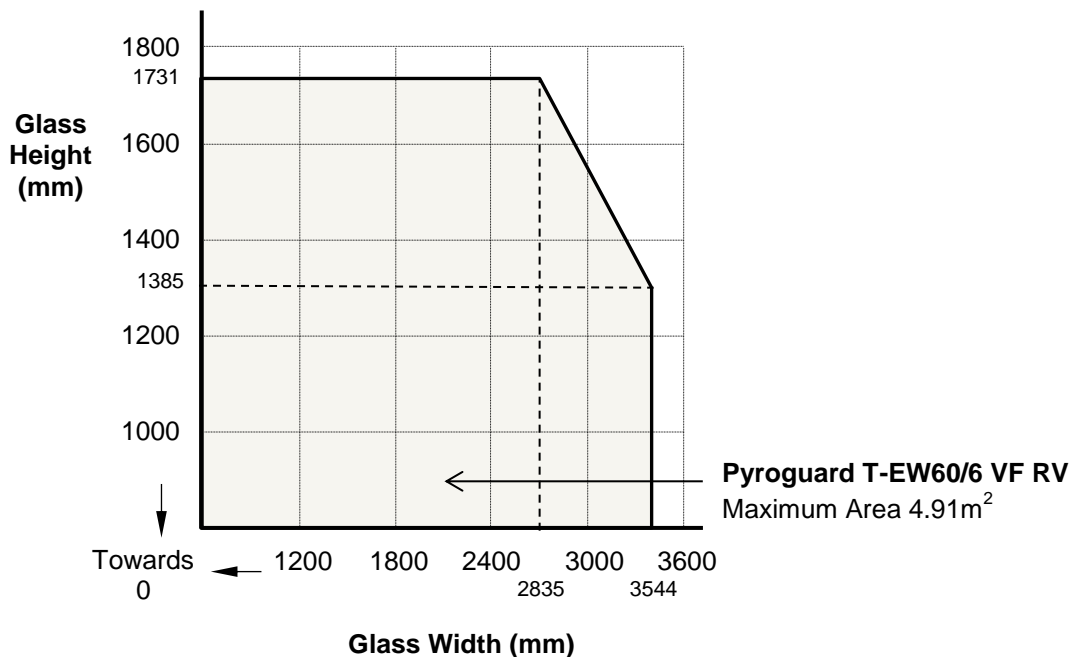
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- **Pyroguard T-EW60/6 VF RV.**
- Glazing and frame details as described in **Efectis 09-V-310 (81min)**

The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 16 below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these glass dimensions.

Figure 16 . Maximum Permitted Glass Dimensions



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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-E30/6/8/10 glass in (Forster Presto) steel framed doors (for periods of 30 minutes integrity)

For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved double steel door system utilising the following basic specification:

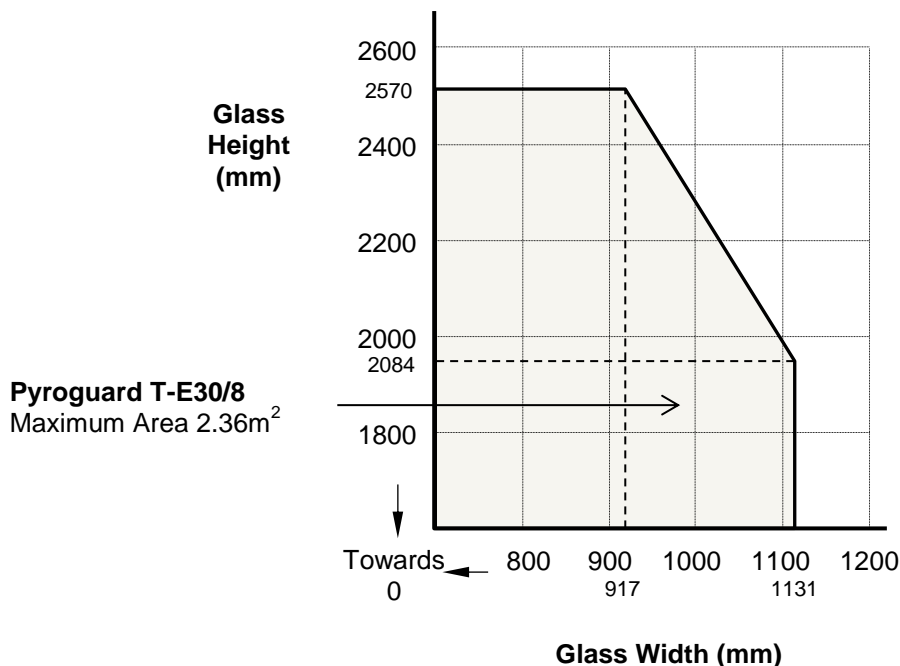
- **Pyroguard T-E30/8**
- Glazing and frame details as described in test report **CTICM 04-V-251 (ref 13-A-182) (37min)**

The steel door system shall have appropriate test or assessment evidence or be CERTIFIRE approved for the inclusions of apertures of the proposed dimensions.

- This Certificate of Approval relates to the sizes of glass shown in Figure 17 below, when used in conjunction with the above system.

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

Figure 17. Maximum Permitted Glass Dimensions



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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-E30/6/8/10 glass in (Forster Presto) steel framed doors for periods of 30 minutes integrity

For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved double steel door system utilising the following basic specification:

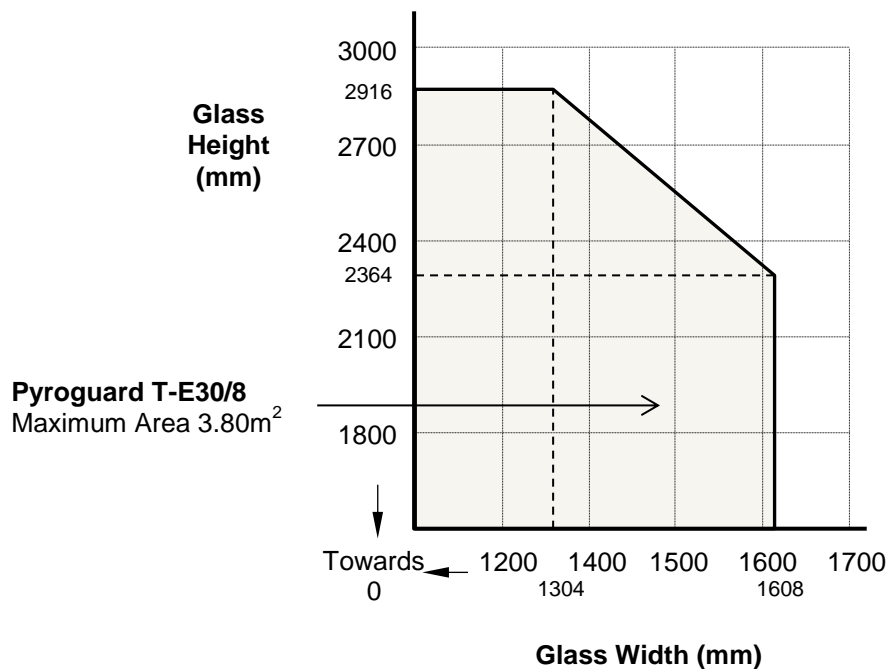
- **Pyroguard T-E30/8**
- Glazing and frame details as described in test report **CTICM 05-V-067 A (ref 13-A-175) (37min)**

The steel door system shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of apertures of the proposed dimensions.

- This Certificate of Approval relates to the sizes of glass shown in Figure 18 below, when used in conjunction with the above system.

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

Figure 18. Maximum Permitted Glass Dimensions

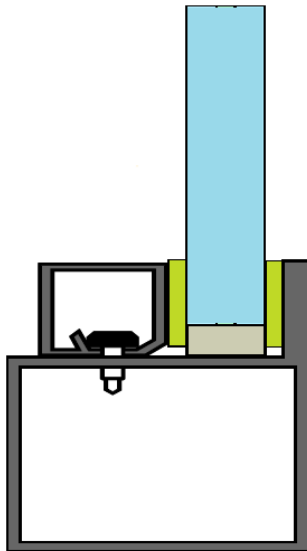


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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-E30/6/8/10 glass in a multiple glazed (Forster Presto) Glazed Screen for periods of 30 minutes integrity



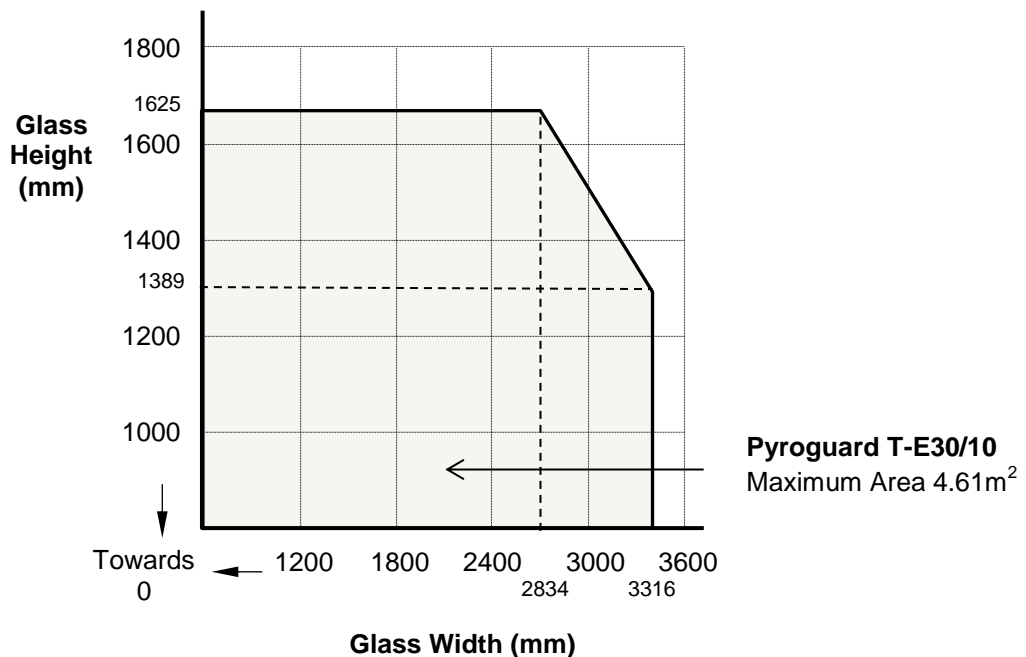
For this application the following conditions shall apply:

The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- **Pyroguard T-E30/10**
- Glazing and frame details as described in **Efectis 03-G-381 A (ref 13-A-175) (35min)**

The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of 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 glass dimensions.

Figure 19 . Maximum Permitted Glass Dimensions



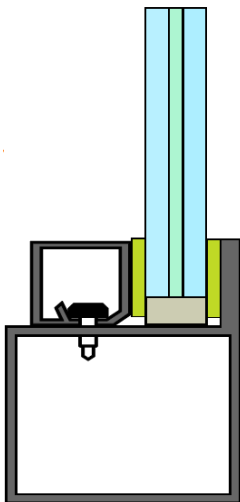
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CERTIFICATE No CF 5319 PYROGUARD UK LIMITED

Pyroguard T-EW30/6 VF RV in a multiple glazed (Forster Presto) Glazed Screen for periods of 30 minutes integrity



For this application the following conditions shall apply:

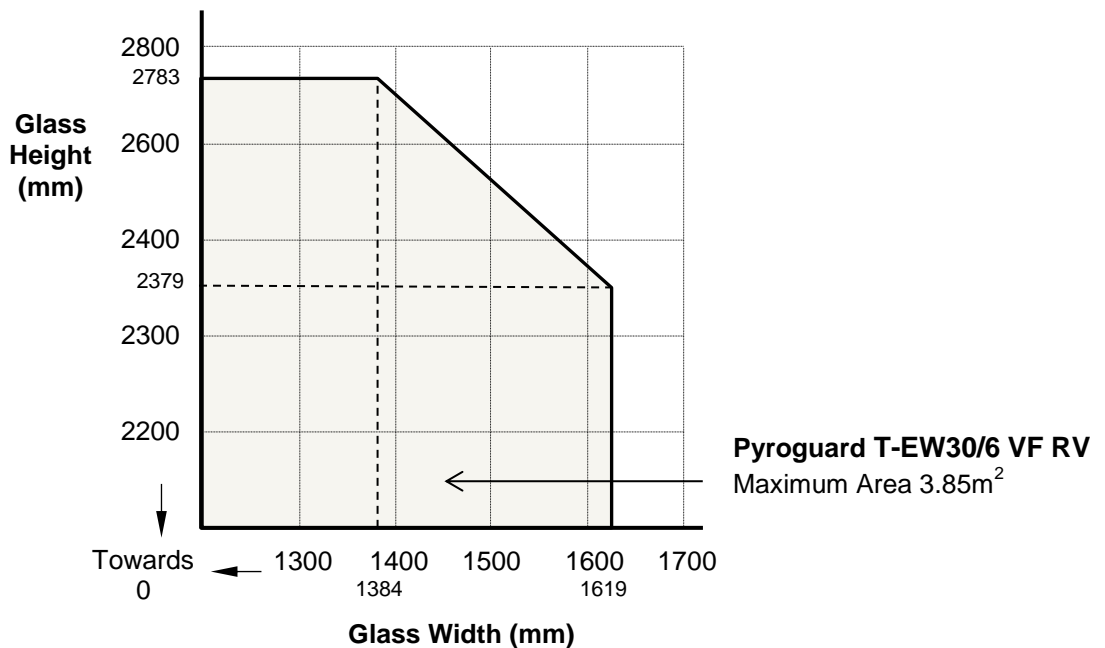
The glass shall be installed within a previously fire tested or CERTIFIRE approved multiple paned steel framed screens utilising the following basic specification:

- **Pyroguard T-EW30/6 VF RV with 66.2 laminated glass**
- Glazing and frame details as described in **Efectis 03-G-381 A (ref 13-A-175) (35min)**

The multiple paned steel framed screens shall have appropriate test or assessment evidence or be CERTIFIRE Approved for the inclusions of glass of the proposed dimensions. This Certificate of Approval relates to the sizes of glass shown in Figure 20 below, when used in conjunction with the above system.

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

Figure 20 . Maximum Permitted Glass Dimensions



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