

### CERTIFICATE OF APPROVAL No CF 5746

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

### **AGC Glass UK**

Lumonics House, Valiant Office Suites, Valley Drive, Rugby, CV21 1TQ, United Kingdom
TEL: +44 (0)1788 535353

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 Pyrobel-T 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: Frequency: Valid to: 09<sup>th</sup> March 2020 Every 3 years 08<sup>th</sup> March 2025





#### **PYROBEL-T FIRE RESISTING GLASS**

This certification is provided to the client for their 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 relates to the fire resistance of AGC Glass UK Limited 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 Perform (mins)			Page No.
		Integrity	Insulation	
Pyrobel-T EW30-16	Timber screens	30	-	5
Pyrobel-T EW30-16	Steel Screens	30	-	6
Pyrobel-T EW30-16 (IGU)	Steel Screens	30	-	7
Pyrobel-T EW30-16 (IGU)	Aluminium Screens	30	-	8
Pyrobel-T EW60-16	Steel Screens	60	-	9
Pyrobel-T EW90-16	Steel Screens	90	-	10
Pyrobel-T EW120-16	Steel Screens	120	-	11
Pyrobel-T El30-18	Timber Screens	30	30	12
Pyrobel-T El30-18 (inc. IGU's)	Steel Screens	30	30	13
Pyrobel-T El30-18 (inc. IGU's)	Steel Screens	60	30	14
Pyrobel-T El60-28	Timber Screens	60	60	15
Pyrobel-T El60-28	Steel Screens - Fixed Light Only	60	60	16
Pyrobel-T El60-28	Steel Screens	60	60	17
Pyrobel-T El60-28	Steel Screens	90	60	18
Pyrobel-T El60-28	Aluminium Screens	30&60	30	19

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#### **PYROBEL-T FIRE RESISTING GLASS**

The glass is approved in the following nominal thicknesses:

Glass Specification	Thickness	Fire Resistance F	Performance (mins)
Oldos Opcomodilon	mokness	Integrity	Insulation
Pyrobel-T EW30-16	16 +/- 1	30	0
Pyrobel-T EW60-16	16 +/- 1	60	0
Pyrobel-T EW90-16	16 +/- 1	90	0
Pyrobel-T EW120-16	16 +/- 1	120	0
Pyrobel-T El30-18	18 +/- 1.4	60/30	30
Pyrobel-T El60-28	28 +/- 2	90/60/30	60/30

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#### **PYROBEL-T FIRE RESISTING GLASS**

This product is approved on the basis of:

- a) Initial type testing
- b) A design appraisal against TS25
- c) Certification of quality management system to BS EN ISO 9001: 2008
- d) Inspection and surveillance of factory production control
- e) Audit Testing in accordance with TS25

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

#### **General Requirements**

#### **General Requirements**

- Where the glass is installed in a timber, steel or aluminium framed screen, the orientation of the screen shall be no more than ±10° from the vertical.
- The edge cover to each pane shall be no less than 15 mm minimum.
- Minimum spacer width in IGU's should be 6 mm.
- Manifestation films may be applied to the fully insulated glass variants.
- For timber framed glazing systems timber beads may be square.
- Timber screens, where the application mentions shared mullion/transoms, multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

#### Shapes

It is also acceptable to include Pyrobel-T in shaped apertures, i.e. circles, ovals, arches, quadrants, etc. within timber door leaves or screens (subject to limitations in the framing systems). For rectilinear apertures angles between adjoining perimeter beads should not be less than 45°. Where shaped apertures are included, only finger jointed glazing beads are acceptable. Maximum linear dimensions or areas as approved should not be exceeded.

Signed Y/003

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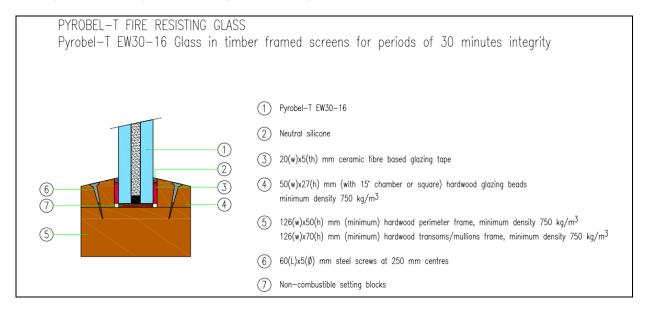
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Pyrobel-T EW30-16 Glass in timber framed screens for periods of 30 minutes integrity only

The glass shall be glazed utilising the following basic specification:



This Certificate of Approval relates to the sizes of Pyrobel-T EW30-16 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 aperture dimensions. May be utilised in multipaned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

Table 2

Maximum Height	Maximum Width	Maximum Area
4500mm high	2000mm wide	9.0m <sup>2</sup>
2000mm high	2500 mm wide	5.0m <sup>2</sup>

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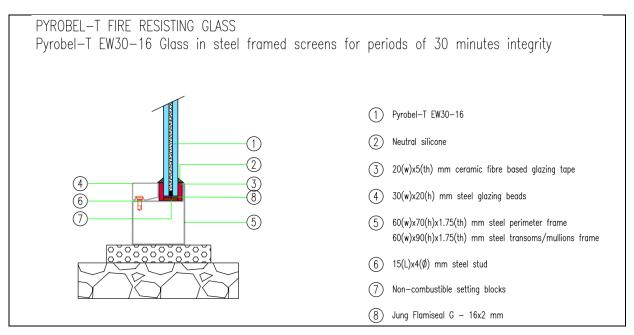
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#### Pyrobel-T EW30-16 Glass in steel framed screens for periods of 30 minutes integrity only

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved steel framing system (for example a Jansen Ecoframe 60 system as detailed below)



An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T EW30-16 glass shown below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions. May be utilised in multipaned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

Maximum Height	Maximum Width	Maximum Area
4375mm high	1875mm wide	6.56m <sup>2</sup>
1875 mm high	4375mm wide	6.56m <sup>2</sup>

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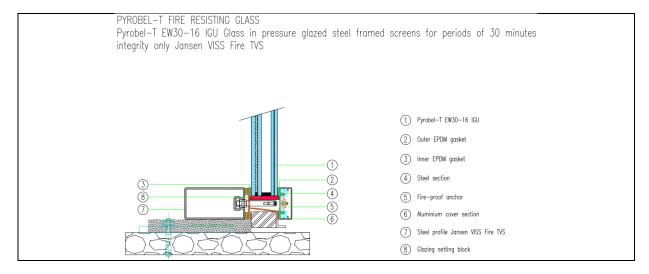
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Pyrobel-T EW30-16 (IGU) Glass in pressure glazed steel framed screens for periods of 30 minutes integrity only (for example Jansen VISS Fire TVS)

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved pressure glazed steel framing system.



An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T EW30-16 glass in an IGU format (comprising a minimum 15 mm wide air cavity, aluminium spacer and minimum 6 mm thick non-fire rated glass which may be toughened, float, coated, tinted) when used in conjunction with the above system. May be utilised in multipaned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

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

Note: Pyrobel-T EW30-16 must be orientated such that it faces the fire hazard direction.

Maximum Height	Maximum Width	Maximum Area
4367mm high	2000mm wide	8.73m <sup>2</sup>

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Pyrobel-T EW30-16 (IGU's) in Kawneer AA100 aluminium framed curtain walls for periods of 30 minutes integrity

The glass shall be glazed within a Kawneer AA100 aluminium framed screen. Please consult the frame manufacturer for drawings of glazing system.

This Certificate of Approval relates to the sizes of Pyrobel-T EW30-16 glass in an IGU format (comprising a minimum 15 mm wide air cavity, aluminium spacer and minimum 6 mm thick non-fire rated glass which may be toughened, float, coated, tinted) when used in conjunction with the above system.

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

Note: Pyrobel-T EW30-16 must be orientated such that it faces the fire hazard direction.

Maximum Height	Maximum Width	Maximum Area
4500mm high	2000mm wide	8.70m <sup>2</sup>
2000mm high	2160mm wide	4.32m <sup>2</sup>

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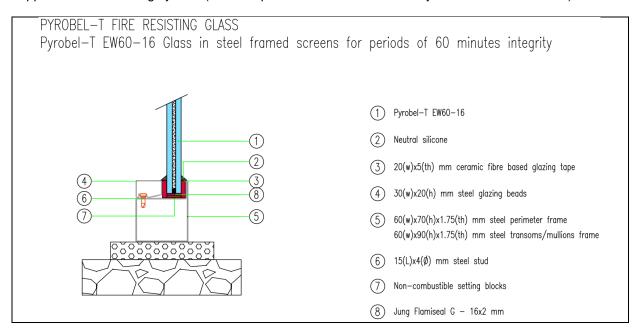
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#### Pyrobel-T EW60-16 Glass in steel framed screens for periods of 60 minutes integrity only

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved steel framing system (for example a Jansen Ecoframe 60 system as detailed below)



An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T EW60-16 glass shown below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions. May be utilised in multipaned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

Maximum Height	Maximum Width	Maximum Area
4375mm high	1875mm wide	6.56m <sup>2</sup>
1875 mm high	4375mm wide	6.56m <sup>2</sup>

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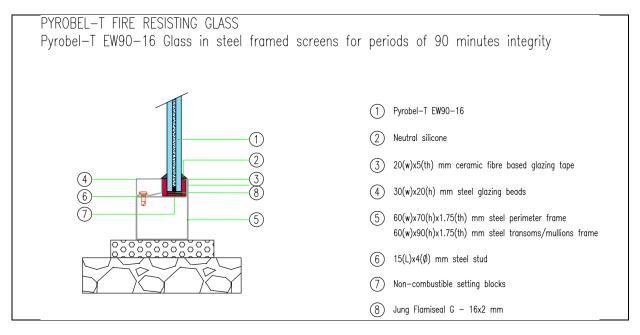
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#### Pyrobel-T EW90-16 Glass in steel framed screens for periods of 90 minutes integrity only

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved steel framing system (for example a Jansen Ecoframe 60 system as detailed below).



An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T EW90-16 glass shown below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions. May be utilised in multipaned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected. Beads may be to either exposure direction.

Maximum Height	Maximum Width	Maximum Area
4375mm high	1875mm wide	6.56m <sup>2</sup>
1875 mm high	4375mm wide	6.56m <sup>2</sup>

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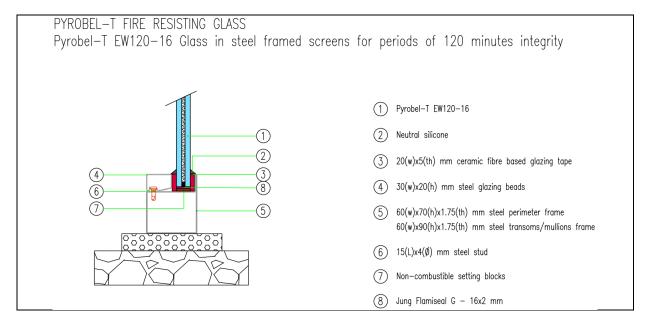
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### Pyrobel-T EW120-16 Glass in steel framed screens for periods of 120 minutes integrity only

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved steel framing system.



An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T EW120-16 glass shown below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions. May be utilised in multi-paned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

Maximum Height	Maximum Width	Maximum Area
3937mm high	1687mm wide	5.91m <sup>2</sup>
3850 mm high	1650mm wide	5.75m <sup>2</sup>

Signed Y/003

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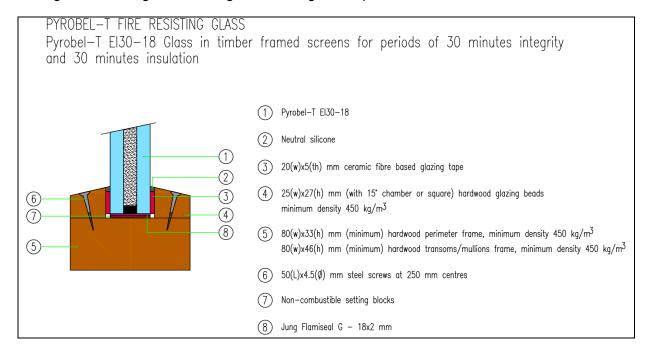
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Pyrobel-T El30-18 Glass in timber framed screens for periods of 30 minutes integrity and 30 minutes Insulation

The glass shall be glazed utilising the following basic specification:



This Certificate of Approval relates to the sizes of Pyrobel-T El30-18 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 aperture dimensions. May be utilised in multipaned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

Maximum Height	Maximum Width	Maximum Area
4166mm high	2000mm wide	8.33m <sup>2</sup>
2000mm high	2140mm wide	4.28m <sup>2</sup>

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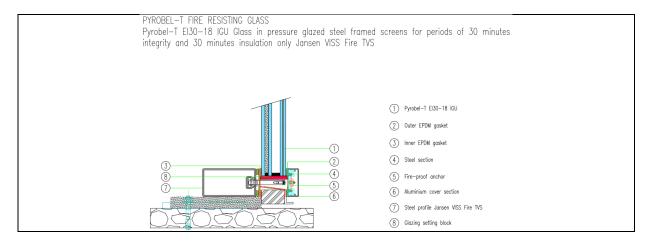
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Pyrobel-T El30-18 Glass (single and IGU) in pressure glazed steel framed screens for periods of 30 minutes integrity and 30 minutes insulation

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved pressure glazed steel framing system (for example a Jansen VISS Fire TVS system as detailed below).



An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T El30-18 glass in single and IGU format (comprising a minimum 15 mm wide air cavity, aluminium spacer and minimum 6 mm thick non-fire rated glass which may be toughened, float, coated, tinted) when used in conjunction with the above system. May be utilised in multipaned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected. The aspect ratio of the glass may be unlimited within these aperture dimensions.

Note: For the IGU glass Pyrobel-T EW30-16 must be orientated such that it faces the fire hazard direction. Screen may be orientated such that beads are on fire or non-fire side.

Maximum Height	Maximum Width	Maximum Area
4500mm high	2000mm wide	9.0m <sup>2</sup>
2000mm high	2500mm wide	5.0m <sup>2</sup>

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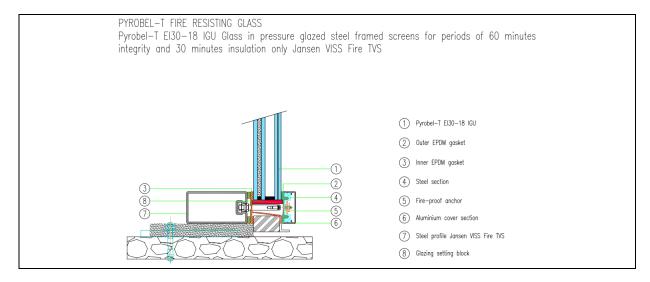
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Pyrobel-T El30-18 (single and IGU) Glass in pressure glazed steel framed screens for periods of 60 minutes integrity and 30 minutes insulation

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved pressure glazed steel framing system (for example a Jansen VISS Fire TVS system as detailed below).



An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T El30-18 glass in single and IGU format (comprising a minimum 15 mm wide air cavity, aluminium spacer and minimum 6 mm thick non-fire rated glass which may be toughened, float, coated, tinted) when used in conjunction with the above system. May be utilised in multipaned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected. The aspect ratio of the glass may be unlimited within these aperture dimensions.

Note: For the IGU glass Pyrobel-T EW30-16 must be orientated such that it faces the fire hazard direction. Screen may be orientated such that beads are on fire or non-fire side.

Maximum Height	Maximum Width	Maximum Area
4242mm high	2000mm wide	8.36m <sup>2</sup>

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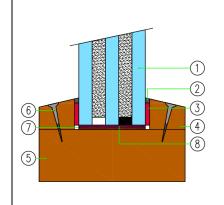


### Pyrobel-T El60-28 Glass in timber framed screens for periods of 60 minutes integrity and 60 minutes Insulation

The glass shall be glazed utilising the following basic specification:

PYROBEL-T FIRE RESISTING GLASS

Pyrobel—T El60—28 Glass in timber framed screens for periods of 60 minutes integrity and 60 minutes insulation



- 1 Pyrobel-T El60-28
- (2) Neutral silicone
- (3) 20(w)x5(th) mm ceramic fibre based glazing tape
- 45 (w)x27(h) mm (with 15' chamber or square) hardwood glazing beads minimum density 750 kg/m<sup>3</sup>
- (5) 128(w)x50(h) mm (minimum) hardwood perimeter frame, minimum density 750 kg/m<sup>3</sup> 128(w)x70(h) mm (minimum) hardwood transoms/mullions frame, minimum density 750 kg/m<sup>3</sup>
- 6 60(L)x5(Ø) mm steel screws at 250 mm centres
- 7 Non-combustible setting blocks
- 8 Jung Flamiseal G 28x2 mm

This Certificate of Approval relates to the sizes of Pyrobel-T El60-28 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 aperture dimensions. May be utilised in multipaned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

Maximum Height	Maximum Width	Maximum Area	
4120mm high	2000mm wide	8.24m <sup>2</sup>	

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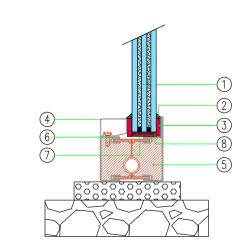
Pyrobel-T El60-28 Glass in insulated steel framed screens for periods of 60 minutes integrity and 60 minutes insulation (SINGLE PANED FIXED LIGHTS ONLY – MULTIPANED SCREEN NOT APPROVED)

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved insulated steel framing system.

PYROBEL-T FIRE RESISTING GLASS

Pyrobel—T El60—28 Glass in insulated steel framed screens for periods of 60 minutes integrity and 60 minutes insulation Jansen Janisol C4



- 1 Pyrobel-T El60-28
- (2) Neutral silicone
- (3) 20(w)x5(th) mm ceramic fibre based glazing tape
- (4) 30(w)x20(h) mm steel glazing beads
- (5) 70(w)x72.5(h)x1.75(th) mm steel perimeter frame 70(w)x95(h)x1.75(th) mm steel transoms/mullions frame
- (6) 15(L)x4(Ø) mm steel stud
- (7) Non-combustible setting blocks
- (8) Jung Flamiseal G 28x2 mm

An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T El60-28 glass shown below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions.

Only approved for use in single paned fixed light - multipaned screen application is not approved.

Maximum Height	Maximum Width	Maximum Area	
4346 mm high	2000mm wide	8.69m²	

Signed Y/003

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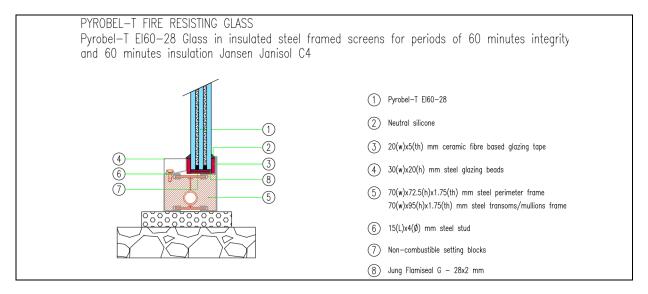
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Pyrobel-T El60-28 Glass in insulated steel framed screens for periods of 60 minutes integrity and 60 minutes insulation (for example Jansen Janisol C4)

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved insulated steel framing system.



An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T El60-28 glass shown below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions. May be utilised in multi-paned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

Beads may be to either side.

Maximum Height	Maximum Width	Maximum Area	
4500mm high	2000mm wide	9.0m <sup>2</sup>	
2000mm high	2462mm wide	4.9m <sup>2</sup>	

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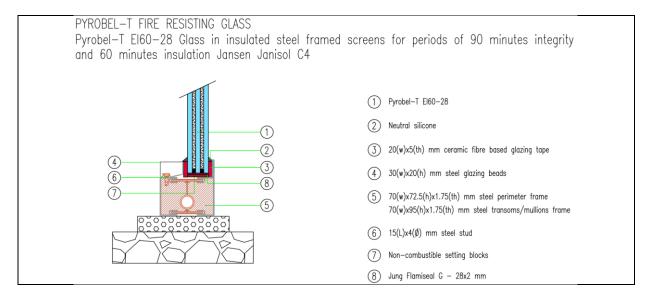
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Pyrobel-T El60-28 Glass in insulated steel framed screens for periods of 90 minutes integrity and 60 minutes insulation (for example Jansen Janisol C4)

The glass shall be glazed utilising the following basic specification:

The glass shall be glazed within a previously fire tested (see example below) or a CERTIFIRE approved insulated steel framing system.



An example of a tested framing system is detailed above. Alternative framing systems shall have test evidence, or be CERTIFIRE approved for the inclusion of apertures of the proposed dimensions.

This Certificate of Approval relates to the sizes of Pyrobel-T El60-28 glass shown below, when used in conjunction with the above system. The aspect ratio of the glass may be unlimited within these aperture dimensions. May be utilised in multi-paned screen systems with shared transoms and mullions. Multipane screens are approved up to an overall screen height of 4000 with unlimited width provided that maximum glass pane sizes are respected.

Beads may be to either side.

Maximum Height	Maximum Width	Maximum Area	
3820mm high	1970mm wide	7.52m <sup>2</sup>	

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Pyrobel-T El60-28 Glass in Kawneer RT 72 HI+ framed screens for periods of 30 and 60 minutes integrity and 30 minutes insulation

The glass shall be glazed within a Kawneer RT 72 HI+ aluminium framed screen. Please consult the frame manufacturer for drawings of glazing system.

This Certificate of Approval relates to the sizes of Pyrobel-T El60-28 glass in an IGU format (comprising a minimum 15 mm wide air cavity, aluminium spacer and minimum 6 mm thick non-fire rated glass which may be toughened, float, coated, tinted) when used in conjunction with the above system.

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

Fire Resistance Integrity/Insulation	Maximum Height	Maximum Width	Maximum Area
30/30	4500mm high	2000mm wide	9.0m <sup>2</sup>
	2000mm high	2441mm wide	4.88m <sup>2</sup>
60/30*	4393mm high	2000mm wide	8.58m <sup>2</sup>

\*Note: for 60 minute integrity, 30 minute insulation performance, beads and fire glass components must be orientated to the non-fire, unexposed face of the screen assembly

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