



CERTIFICATE OF APPROVAL
No CF 699

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

GLAS TRÖSCH AG FIRESWISS

Stanserstrasse 97
CH-6374 Buochs
Switzerland

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

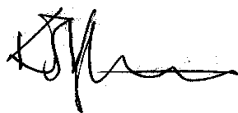
CERTIFIED PRODUCT

**'FIRESWISS COOL' Laminated
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 - Management Council

Issued: 21st August 2009
Reissued: 7th January 2015
Valid to: 6th January 2020

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CERTIFICATE No CF 699 GLAS TRÖSCH AG FIRESWISS

FIRESWISS COOL Fire Resisting Glass

This Certificate of Approval relates to the fire resistance of Glas Trosch AG FIRESWISS 'FIRESWISS COOL' 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	
FIRESWISS COOL 30-7	Timber framed screens	30	0	4
FIRESWISS COOL 30-7 2B2	Timber framed screens	30	0	5
FIRESWISS COOL 30-11 L	Timber framed screens	30	0	6
FIRESWISS COOL 30-7	Timber based 44 mm thick doorsets	30	0	7
FIRESWISS COOL 30-7	Timber based 75 mm thick doorsets	30	0	8
FIRESWISS COOL 30-7 2B2	Timber based 44 mm thick doorsets	30	0	9
FIRESWISS COOL 30-7 2B2	Timber based 75 mm thick doorsets	30	0	10
FIRESWISS COOL 30-11 L	Timber based 44 mm thick doorsets	30	0	11
FIRESWISS COOL 30-11 L	Timber based 75 mm thick doorsets	30	0	12

This product is approved on the basis of:

- a) Initial type testing
- b) A design appraisal against TS25
- c) Certification of quality management systems to ISO 9001:2008
- d) Audit testing
- e) Inspection and surveillance of Factory Production Control

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GLAS TRÖSCH AG FIRESWISS

FIRESWISS COOL Fire Resisting Glass

The glass is approved in the following nominal thicknesses:

Glass Specification	Thickness	Fire Resistance Performance (mins)	
		Integrity	Insulation
FIRESWISS COOL 30-7	7 mm thick	30	0
FIRESWISS COOL 30-7 2B2	9 mm thick	30	0
FIRESWISS COOL 30-11 L	11 mm thick	30	0

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.

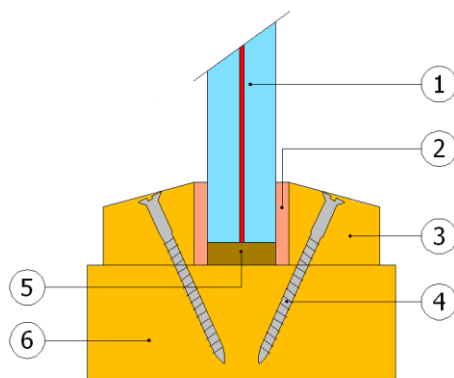
The edge cover to each pane shall be no less than 15 mm minimum.

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FIRESWISS COOL 30-7 glass in timber framed screens for periods of 30 minutes integrity

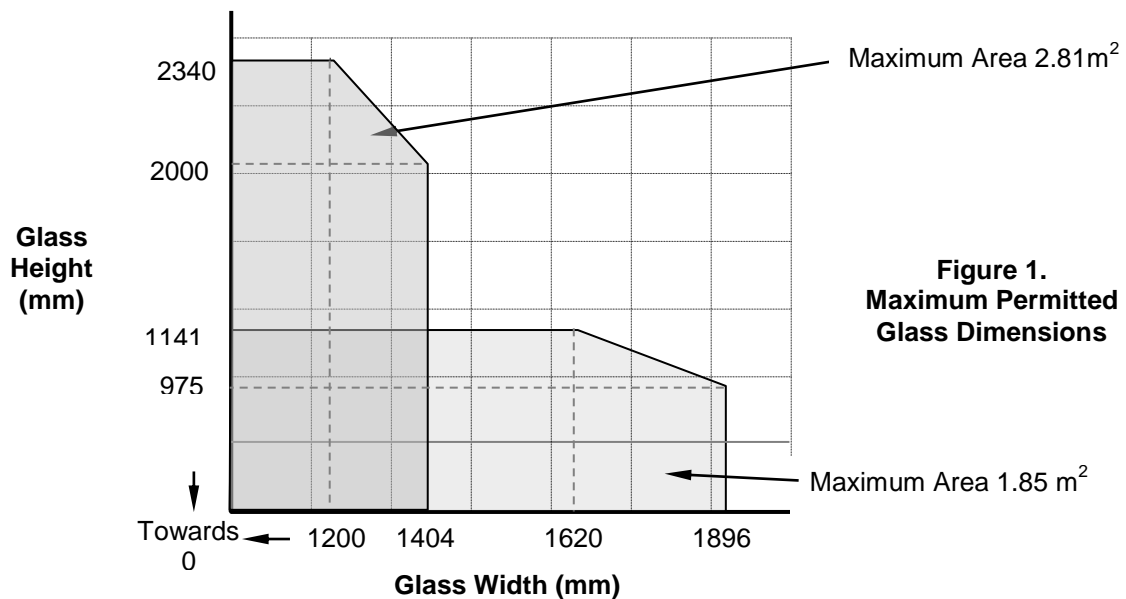
For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



- 1 FIRESWISS COOL 30-7 glass
- 2 20 mm by 4 mm ceramic fibre based tape
- 3 Minimum 20 mm high by 30 mm wide square or chamfered softwood glazing beads, flush or bolection glazed, minimum density 420 kg/m³ or FORMline MDF E1 square or chamfered glazing beads, minimum density 600 kg/m³
- 4 60 mm long steel screws or pins at 450 mm centres (30° to glass)
- 5 Non-combustible setting blocks
- 6 75 mm by 40 mm softwood framing sections, minimum density 420 kg/m³

This Certificate of Approval relates to the sizes of FIRESWISS COOL 30-7 glass shown in Figure 1 below, when used in conjunction with the above system. Other CERTIFIRE approved glazing seals may be acceptable subject to the limitations within the relevant certificate. The aspect ratio of the glass may be unlimited within these aperture dimensions.



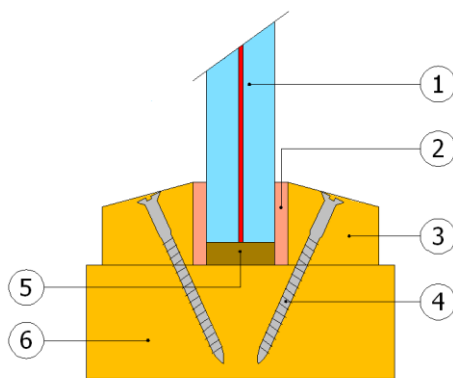
**Figure 1.
Maximum Permitted
Glass Dimensions**

CERTIFICATE No CF 699 GLAS TRÖSCH AG FIRESWISS

FIRESWISS COOL 30-7 2B2 glass in timber framed screens for periods of 30 minutes integrity

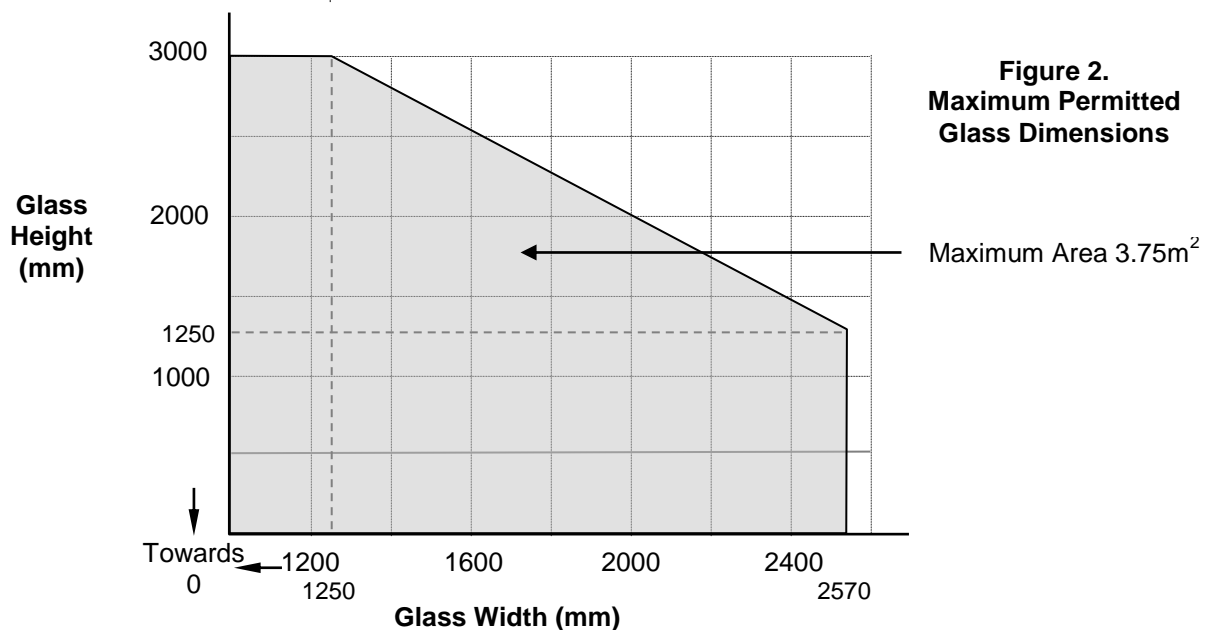
For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



- 1 FIRESWISS COOL 30-7 2B2 glass (9 mm)
- 2 20 mm by 3 mm ceramic fibre based tape
- 3 Minimum 20 mm high by 30 mm wide square or chamfered softwood glazing beads, flush or bolection glazed, minimum density 420 kg/m³ or FORMline MDF E1 square or chamfered glazing beads, minimum density 600 kg/m³
- 4 60 mm long steel screws or pins at 450 mm centres (30° to glass)
- 5 Non-combustible setting blocks
- 6 75 mm by 40 mm softwood framing sections, minimum density 420 kg/m³

This Certificate of Approval relates to the sizes of FIRESWISS COOL 30-7 2B2 glass shown in Figure 2 below, when used in conjunction with the above system. Other CERTIFIRE approved glazing seals may be acceptable subject to the limitations within the relevant certificate. The aspect ratio of the glass may be unlimited within these aperture dimensions.



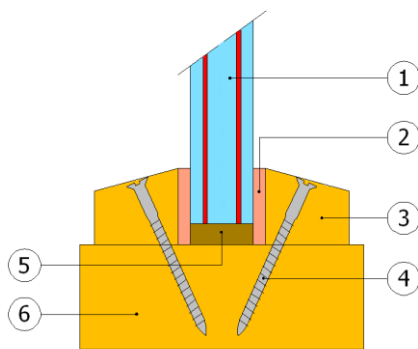
**Figure 2.
Maximum Permitted
Glass Dimensions**

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FIRESWISS COOL 30-11L glass in timber framed screens for periods of 30 minutes integrity

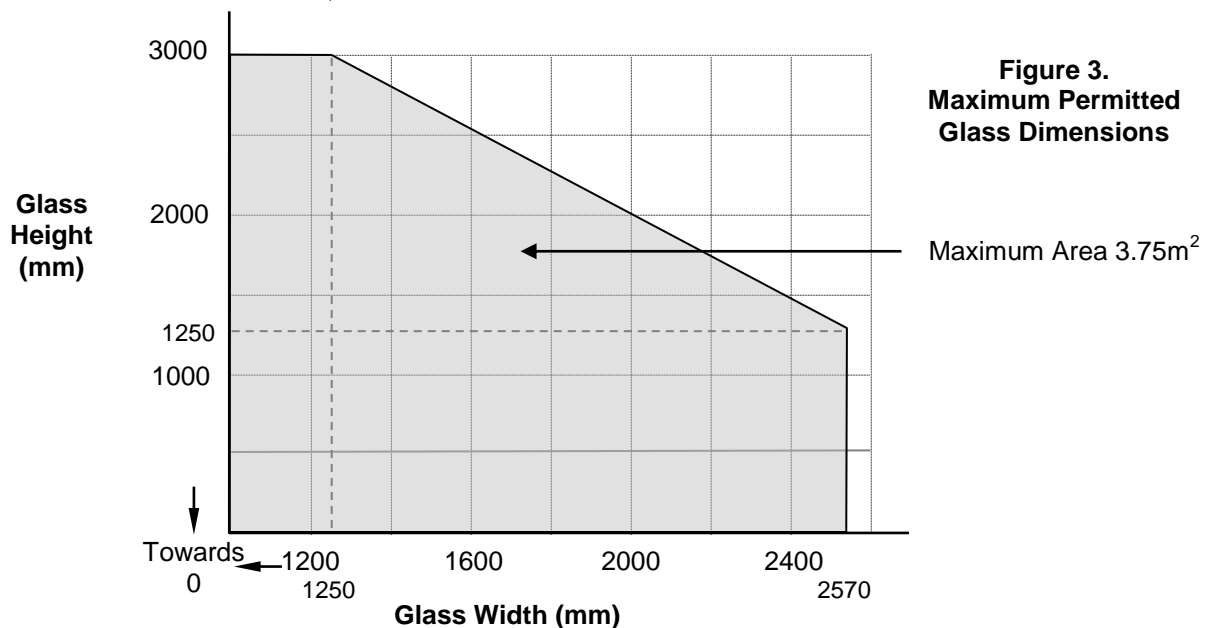
For this application the following conditions shall apply:

The glass shall be glazed utilising the following basic specification:



- 1 FIRESWISS COOL 30-11L glass
- 2 20 mm by 4 mm ceramic fibre based tape
- 3 Minimum 20 mm high by 30 mm wide square or chamfered softwood glazing beads, flush or bolection glazed, minimum density 420 kg/m³ or FORMline MDF E1 square or chamfered glazing beads, minimum density 600 kg/m³
- 4 60 mm long steel screws or pins at 450 mm centres (30° to glass)
- 5 Non-combustible setting blocks
- 6 75 mm by 40 mm softwood framing sections, minimum density 420 kg/m³

This Certificate of Approval relates to the sizes of FIRESWISS COOL 30-11L glass shown in Figure 3 below, when used in conjunction with the above system. Other CERTIFIRE approved glazing seals may be acceptable subject to the limitations within the relevant certificate. The aspect ratio of the glass may be unlimited within these aperture dimensions.



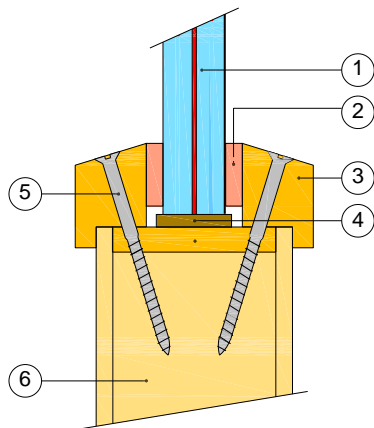
**Figure 3.
Maximum Permitted
Glass Dimensions**

CERTIFICATE No CF 699 GLAS TRÖSCH AG FIRESWISS

FIRESWISS COOL 30-7 glass in 44 mm thick 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 FIRESWISS COOL 30-7 glass
- 2 20 mm by 4 mm Kerafix Flexlit intumescent strip
- 3 Minimum 20 mm high by 30 mm wide square or chamfered hardwood or softwood glazing beads, flush or bevelled glazed, minimum density 420 kg/m³ or FORMline MDF E1 glazing beads, minimum density 600 kg/m³
- 4 Setting blocks 5 mm thick by 7 mm wide by 80 mm long.
- 5 60 mm long steel screws or pins 127 mm at 215 mm centres (30° to glass)
- 6 Any 44 mm thick softwood FD30 door leaf minimum density 420 kg/m³

This Certificate of Approval relates to the sizes of FIRESWISS COOL 30-7 glass shown in Figure 4 below, when used in conjunction with the above system. Other CERTIFIRE approved glazing seals may be acceptable subject to the limitations within the relevant certificate. The aspect ratio of the glass may be unlimited within these glass dimensions.

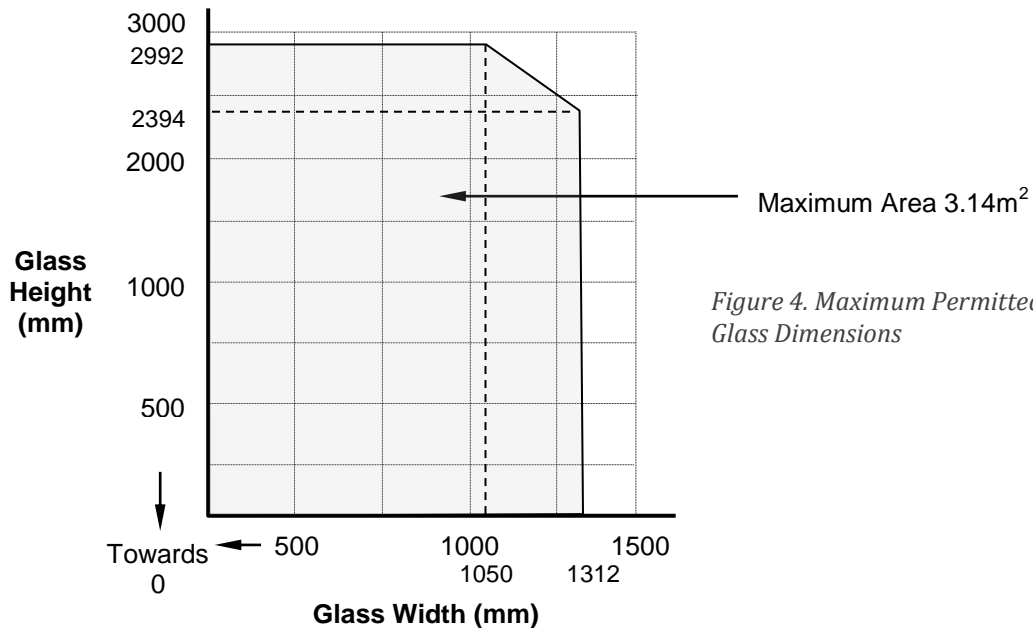


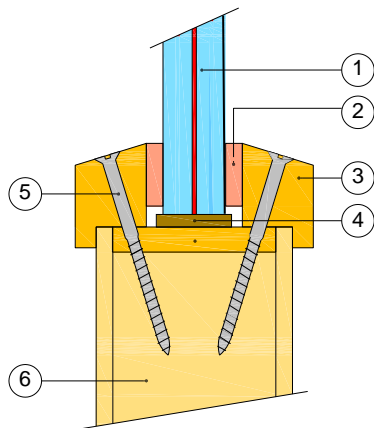
Figure 4. Maximum Permitted Glass Dimensions

CERTIFICATE No CF 699 GLAS TRÖSCH AG FIRESWISS

FIRESWISS COOL 30-7 glass in 75 mm thick timber based doorsets for periods of 30 minutes integrity

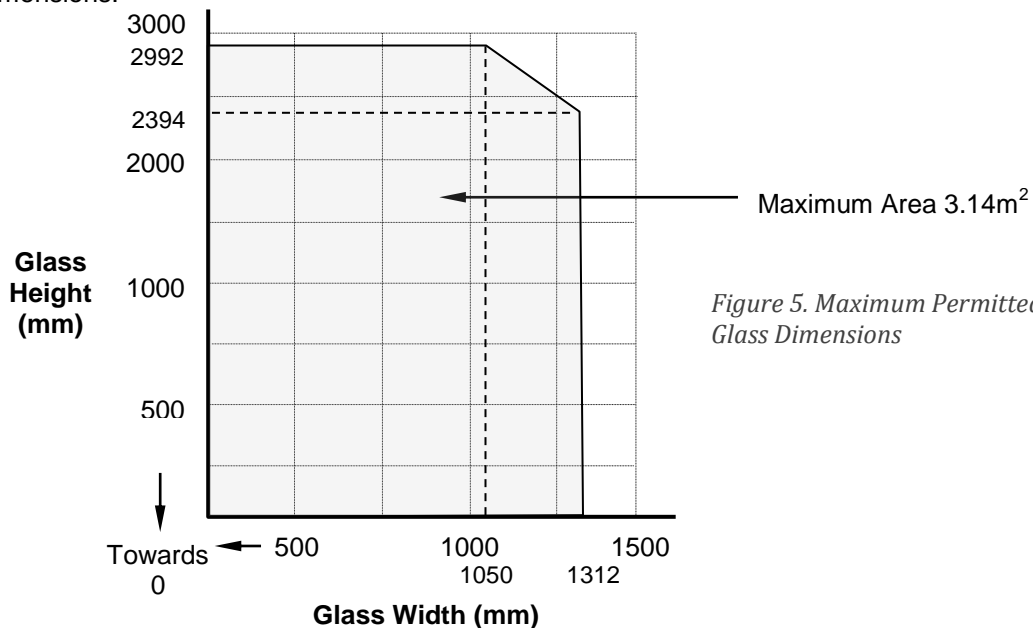
For this application the following conditions shall apply:

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



- 1 FIRESWISS COOL 30-7 glass
- 2 20 mm by 4 mm Kerafix Flexlit intumescent strip
- 3 Minimum 20 mm high by 30 mm wide square or chamfered hardwood or softwood glazing beads, flush or bolection glazed, minimum density 420 kg/m³ or FORMline MDF E1 glazing beads, minimum density 600 kg/m³
- 4 Setting blocks 5 mm thick by 7 mm wide by 80 mm long.
- 5 60 mm long steel screws or pins 127 mm at 215 mm centres (30° to glass)
- 6 Any 75 mm thick softwood FD30 door leaf minimum density 420 kg/m³

This Certificate of Approval relates to the sizes of FIRESWISS COOL 30-7 glass shown in Figure 5 below, when used in conjunction with the above system. Other CERTIFIRE approved glazing seals may be acceptable subject to the limitations within the relevant certificate. The aspect ratio of the glass may be unlimited within these glass dimensions.

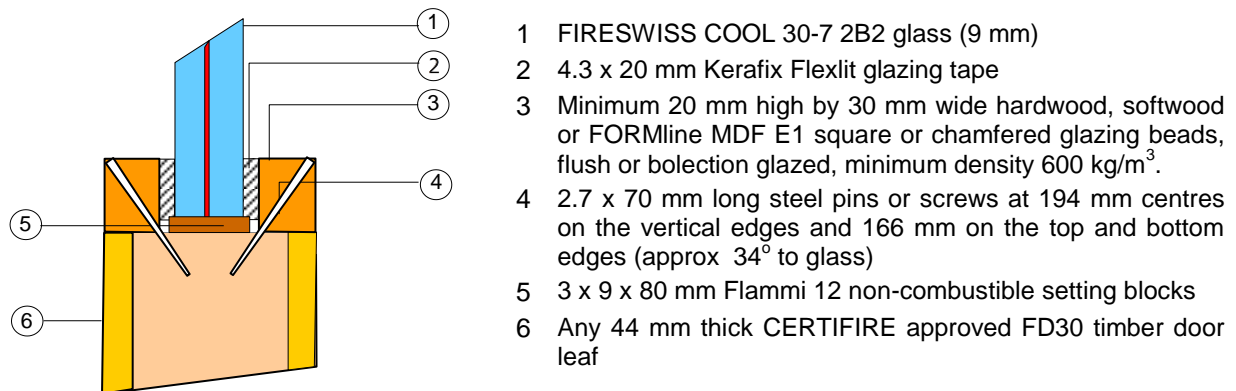


CERTIFICATE No CF 699 GLAS TRÖSCH AG FIRESWISS

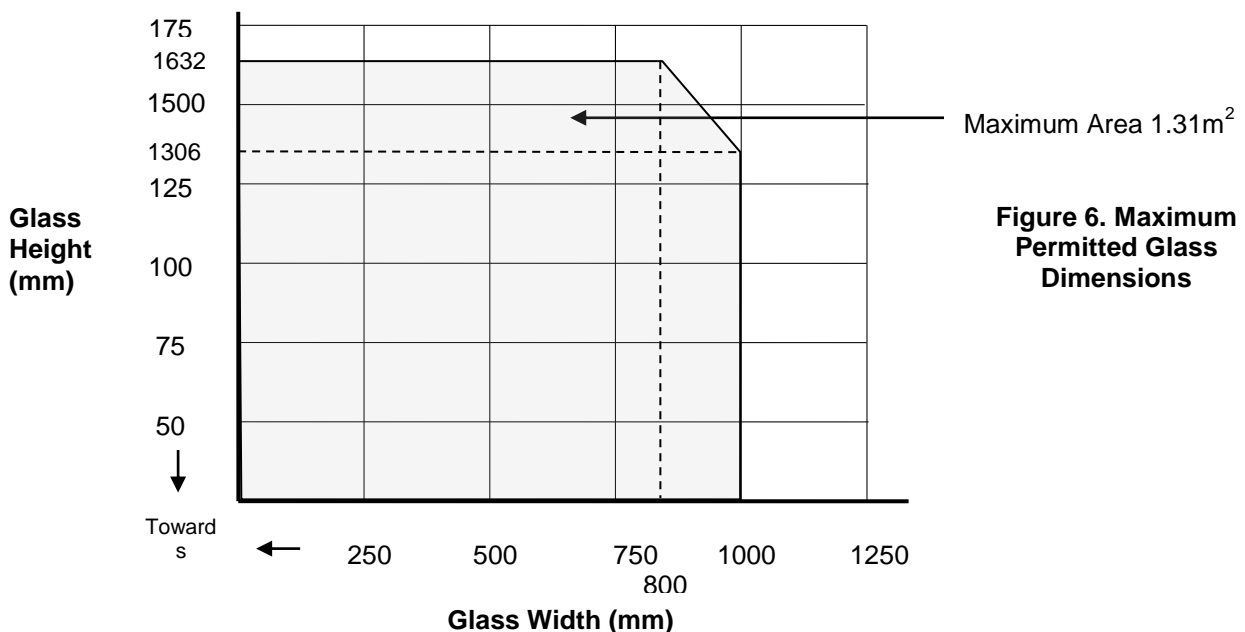
FIRESWISS COOL 30-7 2B2 glass in 44 mm timber based doorsets for periods of 30 minutes integrity

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:



This Certificate of Approval relates to the sizes of FIRESWISS COOL 30-7 2B2 glass shown in Figure 6 below, when used in conjunction with the above system. Other CERTIFIRE approved glazing seals may be acceptable subject to the limitations within the relevant certificate. The aspect ratio of the glass may be unlimited within these glass dimensions.

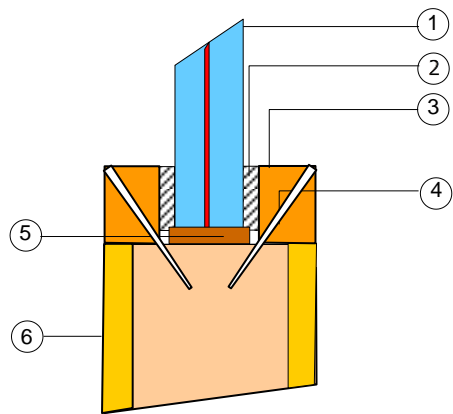


CERTIFICATE No CF 699 GLAS TRÖSCH AG FIRESWISS

FIRESWISS COOL 30-7 2B2 glass in 75 mm timber based doorsets for periods of 30 minutes integrity

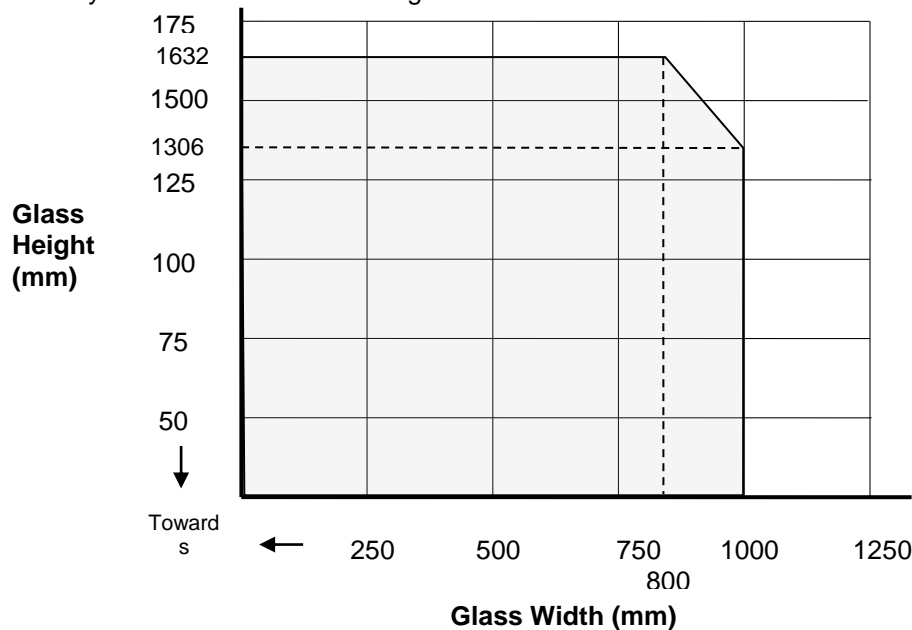
For this application the following conditions shall apply:

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



- 1 FIRESWISS COOL 30-7 2B2 glass (9 mm)
- 2 4.3 x 20 mm Kerafix Flexlit glazing tape
- 3 Minimum 20 mm high by 30 mm wide hardwood, softwood or FORMline MDF E1 square or chamfered glazing beads, flush or bolection glazed, minimum density 600 kg/m³.
- 4 2.7 x 70 mm long steel pins or screws at 194 mm centres on the vertical edges and 166 mm on the top and bottom edges (approx 34° to glass)
- 5 3 x 9 x 80 mm Flammi 12 non-combustible setting blocks
- 6 Any 75 mm thick CERTIFIRE approved FD30 timber door leaf

This Certificate of Approval relates to the sizes of FIRESWISS COOL 30-7 2B2 glass shown in Figure 7 below, when used in conjunction with the above system. Other CERTIFIRE approved glazing seals may be acceptable subject to the limitations within the relevant certificate. The aspect ratio of the glass may be unlimited within these glass dimensions.



Maximum Area 1.31m²

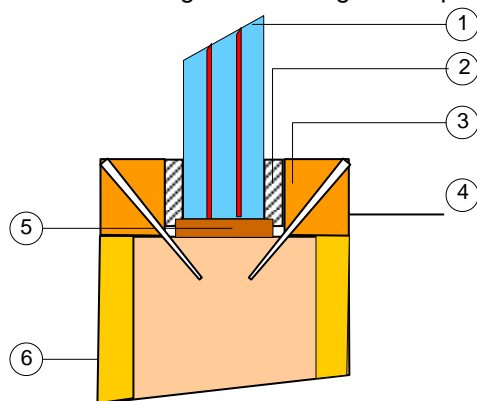
Figure 7. Maximum Permitted Glass Dimensions

CERTIFICATE No CF 699 GLAS TRÖSCH AG FIRESWISS

FIRESWISS COOL 30-11L glass in 44 mm timber based doorsets for periods of 30 minutes integrity

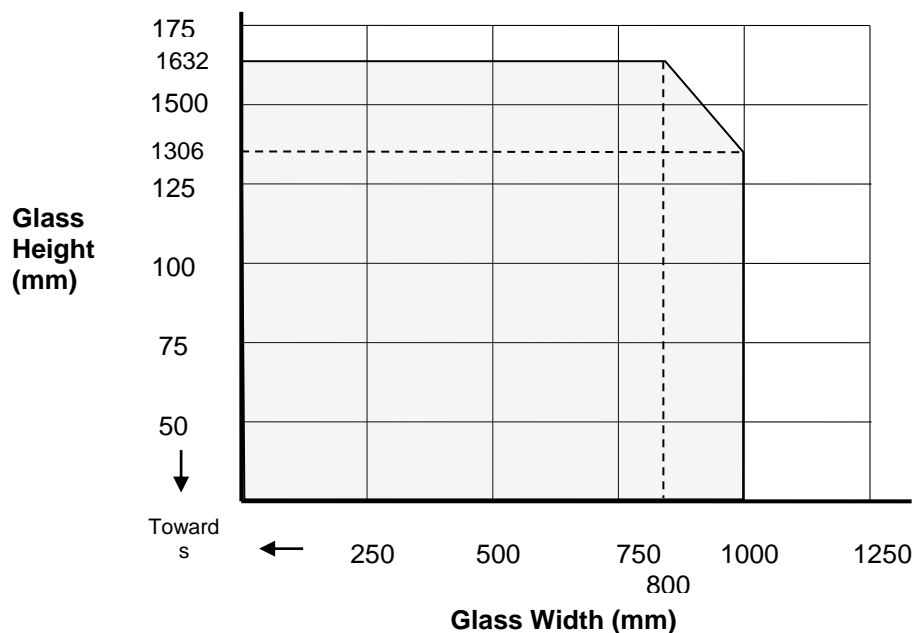
For this application the following conditions shall apply:

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



- 1 FIRESWISS COOL 30-11L glass
- 2 4.3 x 20 mm Kerafix Flexlit tape
- 3 Minimum 22 mm high by 13 mm wide hardwood, softwood or FORMline MDF E1 square or chamfered glazing beads, flush or bolection glazed, minimum density 600 kg/m³.
- 4 2.7 x 70 mm long steel pins or screws at 194 mm centres on the vertical edges and 166 mm on the top and bottom edges (approx 34° to glass)
- 5 3 x 9 x 80 mm Flammi 12 non-combustible setting blocks
- 6 Any 44 mm thick CERTIFIRE approved FD30 timber door leaf

This Certificate of Approval relates to the sizes of FIRESWISS COOL 30-11L glass shown in Figure 8 below, when used in conjunction with the above system. Other CERTIFIRE approved glazing seals may be acceptable subject to the limitations within the relevant certificate. The aspect ratio of the glass may be unlimited within these glass dimensions.



Maximum Area 1.31m²

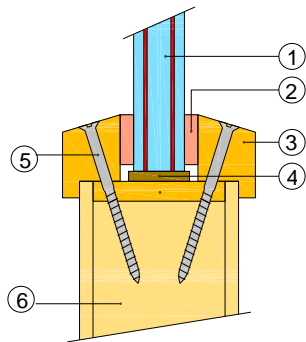
Figure 8. Maximum Permitted Glass Dimensions

CERTIFICATE No CF 699 GLAS TRÖSCH AG FIRESWISS

FIRESWISS COOL 30-11L glass in 75 mm thick 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 FIRESWISS COOL 30-11L glass
- 2 20 mm by 3 mm Kerafix Flexit intumescent strip
- 3 Minimum 20 mm high by 30 mm wide square or chamfered hardwood or softwood glazing beads, flush or bolection glazed, minimum density 420 kg/m³ or FORMline MDF E1 glazing beads, minimum density 600 kg/m³
- 4 Setting blocks 5 mm thick by 10 mm wide by 80 mm long.
- 5 60 mm long steel screws or pins at 215 mm centres (30° to glass)
- 6 Any 75 mm thick softwood FD30 door leaf minimum density 420 kg/m³

This Certificate of Approval relates to the sizes of FIRESWISS COOL 30-11L glass shown in Figure 9 below, when used in conjunction with the above system. Other CERTIFIRE approved glazing seals may be acceptable subject to the limitations within the relevant certificate. The aspect ratio of the glass may be unlimited within these glass dimensions.

