

Fireswiss Foam

A multi-layered fire resisting glass offering integrity and insulation for 30 and 60 minute from an ex-stock situation

Manufacturers and Suppliers of Fire and Security Glasses to International Standards

INTRODUCTION

This new addition to the CGI International stable of fire glasses provides a high quality, fully insulated fire glass, which can be cut from stock and supplied to meet the demanding needs of site programmes.

Fireswiss Foam is manufactured by a special laminating process which creates adjacent layers of glass and clear silicate built up to create a complete fire barrier to both the spread of **FIRE** and **HEAT**.

Depending on the overall glass thickness, fire performances of 30 minutes up to 60 minutes and beyond can be achieved in a wide range of suitable frame types.

A glazed fire resistant barrier meeting **INTEGRITY** and **INSULATION** standards must, in addition to stopping the breakthrough of fire and ignitable gases, limit the surface temperature of all elements of the barrier to an average temperature rise of 140°C or at any point to a temperature rise of 180°C.

PROPERTIES

For its basic 30, 45 and 60 minutes fire performances **Fireswiss Foam** is a multi-laminate of silicate and clear float glass layers, the number of reactive layers determining the fire performance as follows:

Fireswiss Foam Thickness (mm)	number of layers	fire resistance (mins)	heat resistance (mins)
15	7	30	30
23	11	60	60

Due to the overall glass thickness and laminated construction it is necessary to saw-cut glasses to finished size; this can be carried out by CGI International or a specialist distributor partner.

FEATURES

Fireswiss Foam is at the top performance level of fire glass, offering excellent fire and heat control properties together with a high impact safety rating.

Most tests have been carried out to the appropriate European Norm (EN) standard; the EN test evidence is completely acceptable as complying to regulation 7 of the current editions of The Building Regulations: Approved Document B: Fire Safety.

Fireswiss Foam has the following performance features:

- Quick availability from cutting stockholders
- Large tested sizes
- Unlimited small size, available by cutting
- High level of sound reduction, due to overall thickness and interlayers
- Wide range of approved framing types

TECHNICAL DATA

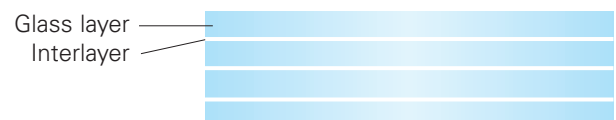
	Sound reduction Rw scale	approx. weight	light transmission
15mm Fireswiss Foam 30/30	38dB	36 kg/m ²	85%
23mm Fireswiss Foam 60/60	>40dB	55 kg/m ²	82%

SPECIFICATION

Fireswiss Foam is (currently) made in standard sizes up to 3100mm x 2125mm and is saw-cut to finished size by CGI International or by a number of specialist stockist partners.

The finished glass pane must be clearly and indelibly marked with the glass and supplier names, plus the fire and impact performance, in accordance with Building Regulations: Approved Document N and Glass & Glazing Federation (GGF) Best Practice Guide.

The make-up of **Fireswiss Foam** in 15mm format is shown for reference:



Each finished cut size must be edge taped with a specially designed foil tape to protect the interlayers from moisture/atmospheric attack.

TEST PERFORMANCES

All original fire resistance testing has been carried out to EN 1363-1:1999; a review of the available test evidence has been used to produce both a (potential) Notified Body's Classification Document and other certification approvals.

FIRE RESISTANCE CERTIFICATION To EN 1363, BS476 or equivalent

Glass Thickness	Test house/ Notified Body	Certification Reference	Frame	Glass Sizes mm	Integrity minutes	Insulation minutes
15mm	ift - Rosenheim	271 29283e	insulated steel	2000 x 2840 2840 x 2000	30	30
15mm	ift - Rosenheim	271 29283e	solid timber	2000 x 2840 2840 x 2000	30	30
15mm	BRE	221706	hardwood	1200 x 1200	60	30
23mm	ift - Rosenheim	271 29284e	insulated steel	1500 x 2500 2500 x 1500	60	60
23mm	Warrington Fire	146062	solid timber multi-panel	w h 1400 x 2000	75	75

CLASSIFICATION DOCUMENTS have been issued by ift - Rosenheim in accordance with EN 13501-2: 2003. This classification is confirmed also to hold the status of a BRITISH STANDARD.

Some additional testing, for UK market use, will be to BS 472 : Part 22.

IMPACT PERFORMANCE

Impact tests on **Fireswiss Foam** have been carried out to EN 12600: 2002 and ALL THICKNESSES of at least 15mm and 23mm and other special make ups achieved the HIGHEST category of impact, with a laminated glass breakage pattern of breakage - CLASSIFICATION 1B1.

FRAME DETAILS

To meet the requirements of fire resistance testing, ALL elements of the glass and frame must provide INTEGRITY and INSULATION protection (INSULATION meaning a surface temperature rise limited to an average of 140° C and a 'spot' temperature rise of 180°C).

For STEEL FRAMES, this typically means an insulated frame type, suitable for holding this glass type for the specified time period.

Insulated steel frame types by FORSTER, JANSEN and approved others are suitable.

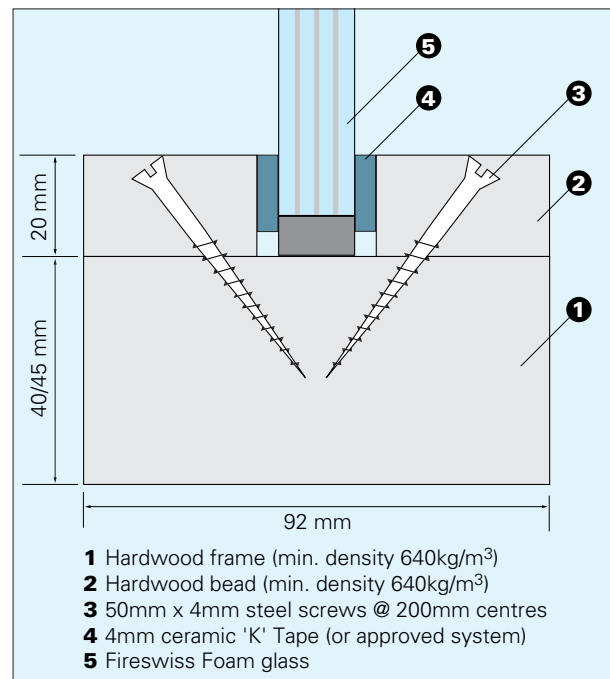
The use of TIMBER FRAMES as glazed fire screens is widespread and, due to the high natural insulation given by timber, they can also provide INTEGRITY with INSULATION for up to 60 minutes at least.

The design of a timber 30 or 60-minute fire screen is critical, as there needs to be attention to several key elements:

- Selection of a suitable timber species (most dense timbers have a slower charring rate).

- Sufficient material/section size of the timber frame and beads, to allow for the charring during the desired fire period and still allow glass retention and freedom from 'burn-through'.
- Selection of compatible fire glass type.
- Position, size and frequency of bead fixings.
- Use of suitable and proven glazing system/medium.

Given the absence of a widely available 'proprietary' frame style, CGI International has worked together with various test houses to agree the following timber frame details which would serve as typical minimum dimensions as far as fire resistance is concerned. For structural design and other factors, other features of a frame may need to be considered.



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