

General:

Doors are glazed primarily for the safety of users of a building. However, glazing is often used as a means for expressing aesthetic considerations.

Strebord® provides for a stable core construction that offers wide scope for glazing.

It would be an almost impossible task for one manufacturer or supplier to test every conceivable variation in glass type and beading system. This section sets out some options but other options may be considered subject to supporting fire test / assessment documentation.

NOTE 1: Further information with regard to glass and glazing systems for fire rated doorsets can be obtained by reference to 'A Guide to Best Practice in the Specification and Use of Fire Resistant Glazed Systems' (2011) published by the GGF (Glass & Glazing Federation).

NOTE 2: All timber used for fire rated doorsets including frames, lippings & beading, must meet or exceed joinery quality, any defects should be repaired and, as far as possible, orientated away from areas of intumescent seal activation.

WARNING: It is essential that the fire test / assessment data for the glazing system relates to use in wood doors. Glass and beading systems proven for use in metal doors or glazed screens may not be suitable for use in wood doors.

Glass Types:

Generally glass will fall into one of two categories:

Uninsulated: Glass in this category would include 6mm Georgian Wired e.g. Pilkington's Pyroshield 2; Borosilicate glass e.g. Shott Glass Pyran; Ceramic glass e.g. Southern Ceramics Firelite. These glass types have the potential to provide for integrity performances referred to in this manual when used with appropriate intumescent beading systems but they do not stop the transfer of heat from the fire side to the non fire side of the door.

To reduce the risk of ignition on the non fire side of the door due to heat transmission, the bead profiles should generally be splayed unless there is fire test / assessment data to support the use of non splayed beads.

Insulated: Glass in this category is generally made up of multiple layers of float glass interleaved with clear hydrated sodium silicate intumescent material.

Glass types in this category include: Pyrobel (AGC Flat Glass Europe) and Pyrostop (Pilkington Glass Ltd.)

NOTE: These glass types should be handled and fitted with care and in strict conformity with the glass manufacturers recommendations. Exposure of the edges of the glass can cause a breakdown in the intumescent interlayers visible as discolouration on the face of the glass.

Glass & Glazing

Wood doors, including doors made using Strebord® cores provide for insulating properties that generally equal the integrity performance when used as flush doors. Unless used with insulating glass types, the insulation performance is generally reduced when doors are glazed.

BS 476 Pt.22 provides for tests of fully insulated or partially insulated specimens.

For fully insulated performances an insulating glass must be used to prevent the temperature on the non fire face from rising above (average) 140°C above ambient temperature or 180°C above ambient temperature at any point.

For partially insulated specimens the 140°C average may be exceeded to an unspecified level over an area not exceeding 20% of the area of the test specimen.

If full insulation is required, the insulation performance of the glass should be at least equal to the insulation performance of the door construction. However, for most applications, an insulation performance equal to 50% of the integrity performance is satisfactory.

Where the insulation performance of the glass is 50% (or more) than the integrity performance of the door, the risk of ignition on the non fire face of the door due to heat transmission is considerably reduced providing for greater scope in the design of the bead profile.

BS 6206 (BS EN 12600) Safety Class:

In addition to fire performances, consideration must also be given to the BS 6206 Safety Performance. The Safety Class will vary according to the location of the glass aperture in the door leaf (assembly). (See Building Regulations - [England & Wales] - Approved Document 'K'). In addition, certain projects (e.g. Schools) may require special Safety Class requirements.

NOTE: Building Regulations (England & Wales) Approved Document 'K' makes reference to BS 6206 and BS EN 12600 safety classes. Impact performances determined by reference to BS EN 12600 may be substituted for the BS 6206 Classes by reference to the following:

BS6206		BS EN 12600
Class 'A'	=	Class 1
Class 'B'	=	Class 2
Class 'C'	=	Class 3

General Notes:

NOTE 1: Building Regulations - (England & Wales) - Approved Document 'K' requires that a safety glass (BS 6206 Class C for pane widths up to 900mm - Class B for pane widths over 900mm) is used for the glazing of doors up to a height of 1500mm above floor level.

NOTE 2: Building Regulations - (England & Wales) - Approved Document 'B' (Table A4 note 5) requires that fire-resisting glass should be marked with the manufacturer and product name.

NOTE 3: BS 6262-4:2005 (clauses 7.1 & 7.2) requires that safety glass should be indelibly marked to be visible after beading.

Strebord®

Door Core

Glass & Glazing

Beading Systems for Fire Doors:

To perform correctly, the glass must be retained in a beading system that incorporates intumescent sealing.

NOTE: All glass types must be fitted fully in accordance with the manufacturers tested details / installation requirements, particularly in respect of edge cover and expansion clearance.

FD30:

Fire performances up to FD30, generally require beading using Min. 640kg/m³ @ 15% moisture content hardwood. Bolection bead (*splayed beads with nibs that extend over the face of the door*) may be used with either non insulating or insulating glass types. Flush beads (*square section glazing beads that do not project beyond the face of the door*) are generally limited for use with insulating and partially insulated glass types. (See details)

FD60:

Fire performances up to FD60, generally require beading using Min. 640kg/m³ @ 15% moisture content hardwood. Bolection bead (*splayed beads with nibs that extend over the face of the door*) may be used with either non insulating or insulating glass types. Flush beads (*square section glazing beads that do not project beyond the face of the door*) are generally limited for use with insulating glass types. (See details)

Propriety Intumescent Glazing Systems:

Various Intumescent Seal manufacturers offer propriety systems for glazing fire doors.

WARNING: It is important to ensure that the system selected for beading fire doors has been tested or assessed to the required level of performance in a wood door. Test / assessment data relating to the beading of metal doors or glazed screens should not be applied to wood doors.

Manufacturers / suppliers offering Intumescent Glazing Systems for use with fire doors include:

Norseal Ltd.
Lorient Polyproducts Ltd.
Mann McGowan Ltd.
Intumescent Seals Ltd.
Sealmaster Ltd.
Pyroplex Ltd.

These systems should be used strictly in accordance with the seal manufacturers fitting instructions.

Dimensions and Margins:

When glazing doors manufactured from Strebord® cores for fire door applications, the total clear glass area of the glazing must not exceed the area permitted by reference to this manual.

WARNING: Maximum approved glazed areas given by reference to page 6.5 are reduced where required by reference to the glazing systems data.

Further, the glass apertures must be located to ensure an adequate margin between the nearest edge of the door and the sight line of the aperture in the door to receive glazing and between the sight line of adjacent glazing apertures.

NOTE: This data is constantly changing as a consequence of on going fire test programmes.

Bead Fixings:

FD30: Generally beads must be fixed using Min. 40mm long x 2mm diameter steel pins or 40mm long No.6~8 screws, inserted at 35~40° to the vertical at no more than 50mm from each corner and at 150mm max. centres.

FD60: Generally beads must be fixed using Min. 60mm long x 2mm diameter steel pins or 60mm long No.6~8 screws, inserted at 35~40° to the vertical at no more than 50mm from each corner and at 150mm max. centres.

NOTE 1: Fixings for beading must pass from the bead fixing position through to a point that is beyond the centre thickness of the door leaf.

NOTE 2: Where removable screw fixed beads are required, (e.g. provision for glass replacement) the screws should be to one face only, steel cups & screws should be used for this purpose. Glass replacement must only be carried out by a qualified glazier.

NOTE 3: Any damaged intumescent glazing system or hardwood beading must be replaced using the same system as originally used when replacing damaged glass.

Security:

Some specifications require a security performance in addition to a fire performance. The bead may be designed to restrict removal from one face by use of a combined lining and bead. The combined lining / bead must be glue and screw fixed (*with the reinforcing screw fixing located centre thickness of the door*) such that there are no visible fixings on the secure face. A removable pinned or screw fixed bead can then be applied to the non secure face.

NOTE: Laminated glass providing for security performances use polymer interlayers and not intumescent interlayers. These glasses are generally not suitable for use with fire rated doorsets.

Technical Support:

Where design requirements describe glazing that falls outside of the scope of the assessed applications envelopes described in this manual for any particular performance, details of the requirement should be forwarded for further comment to:

Falcon Panel Products Ltd.,

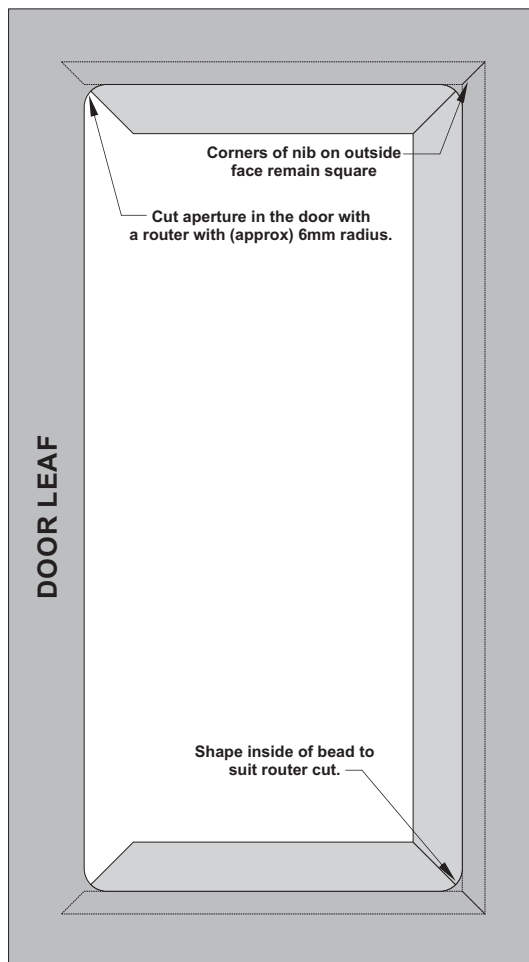
Clock House,
Station Approach,
Shepperton,
Middlesex TW178AN

Tel: 01932 256580

Fax: 01932 230268

**Recommended Aperture preparation
and Beading for Laminate
(and brittle material) faced Doors:**

Fig. 6.1



Strebord® is essentially a wood based product. Whereas this material demonstrates a high degree of stability, some movement can be expected where the core is subjected to significant changes in environmental conditions and in particular, where such changes take place over a short period of time.

When used with plastic laminates (*or facing materials with similar properties*), differential movement between the facing material and the core can lead to stresses that may become evident by cracking of the facing material with the cracks generally originating from apertures in the face of the door.

The risk of this occurrence can be significantly reduced where the corners of the apertures are left rounded. This can be achieved in two ways:

1/ When used with a bolection bead, round the back of the beads at the corners to match the router cut in the aperture. (*The appearance of the cover nib on the face of the door remains square*).

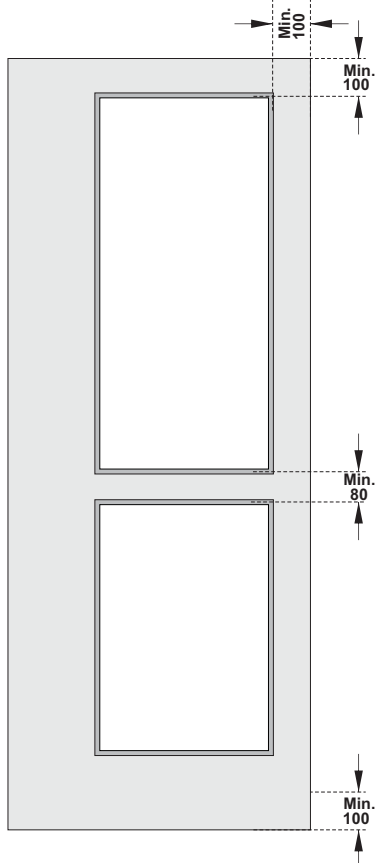
2/ Subject to sufficient bead nib cover, line the aperture with a suitable 3mm material (say plywood) to create square corners to receive the beading.

NOTE: This detail is not approved for 'Q' Mark fire door applications.

NOTE: When used with flush beads, it is recommended that the aperture is lined with hardwood with the corners of the lining shaped to match the routed corners in the door leaf.

Fire Doors - General Glazing Rules

Q FD30 - 'Q' Mark approved
Glazing margins. *Fig. 6.2*



**Strebord® 35+ / 38+ / 44 & Superspan
FD30 Glazing Rules:**

- The maximum recommended area for glazing is 1.9m². *(subject to maintenance of minimum margin requirements).*
- The recommended minimum margins for locating apertures to be not less than 100mm from any edge of the door.
- Where multiple apertures are used, the separation between the sight line of each glazed aperture must not be less than 80mm.
- Multiple apertures are acceptable provide the total glazed area does not exceed the maximum approved area for the particular application. Aperture shape is not restricted providing that glazing systems and beading are compatible with that shape.

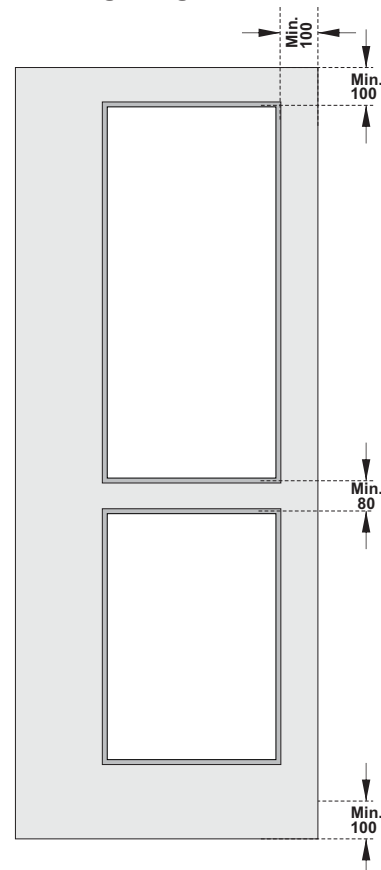
WARNING: The maximum permitted aperture dimension may be reduced according to the selected glass type and glazing system. See 'Q' Mark approved Glass Types and Glazing systems for FD30 applications.

**Strebord® 54
FD60 Glazing Rules:**

- The maximum recommended area for glazing is 0.925m². *(subject to maintenance of minimum margin requirements, glass type and glazing system.).*
- The recommended minimum margins for locating apertures to be not less than 100mm from any edge of the door.
- Where multiple apertures are used, the separation between the sight line of each glazed aperture must not be less than 80mm.
- Multiple apertures are acceptable provide the total glazed area does not exceed the maximum approved area for the particular application. Aperture shape is not restricted providing that glazing systems and beading are compatible with that shape.

WARNING: The maximum permitted aperture dimension may be reduced according to the selected glass type and glazing system. See 'Q' Mark approved Glass Types and Glazing systems for FD60 applications.

Q FD60 - 'Q' Mark approved
Glazing margins. *Fig. 6.3*



Glass & Glazing Glass Types for Fire Doors

FD30 Approved Glass Types

			Max. Approved Glazed Area	Nom. Thickness
	1	PYROSHIELD Safety - Pilkington Glass Ltd.	1.9m ²	6&7 mm
	2	PYROSHIELD 2 - Pilkington Glass Ltd.	1.9m ²	6&7 mm
	3	PYRAN S - Schott Glass Ltd.	1.9m ²	6mm
	4	PYROSTEM - CGI Ltd.	1.25m ²	6mm
	5	PYROGUARD EW30 - CGI Ltd.	1.14m ²	7mm
	6	PYROBELITE - AGC Flat Glass Europe.	1.9m ²	7mm
	7	PYRODUR 30-104 - Pilkington Glass Ltd.	1.9m ²	7mm
	8	PYRODUR 60-10 - Pilkington Glass Ltd.	1.9m ²	10mm
	9	PYROGUARD EW MAXI - CGI Ltd.	0.87m ²	11mm
	10	PYRANOVA 15-s2.0 - Schott Glass Ltd.	1.9m ²	11mm
	11	PYROBELITE - AGC Flat Glass Europe.	1.9m ²	12mm
	12	PYRODUR 60-20 - Pilkington Glass Ltd.	1.9m ²	13mm
	13	PYROGUARD EI 30 - CGI Ltd.	1.9m ²	15mm
	14	PYROSTOP 30-10 - Pilkington Glass Ltd.	1.9m ²	15mm
	15	PYROBEL 16 - AGC Flat Glass Europe.	1.9m ²	16mm

FD30 'Q' Mark Approved Glass Types:

This table lists the 'Q' Mark approved glass types for use with Strebord® FD30 fire door constructions that may be used with all suitable approved glazing systems

Additional glass type options for FD30 applications requiring the use of dedicated glazing systems are listed on page 6.6.

Further glass types may be used in reliance upon further fire test / assessment data to be provided by the glass manufacturer (*supplier*) and, where the glass type is approved for use in timber doors.

It is essential to use the correct beading system to suit the fire performance and the glass type.

NOTE: Users must consult glass suppliers / manufacturers to determine heat radiation, insulation and impact resistance properties together with any other glass performance attributes that may be required for particular projects.

FD60 'Q' Mark Approved Glass Types:

This table lists the 'Q' Mark approved glass types for use with Strebord® FD60 fire door constructions that may be used with all suitable approved glazing systems

Additional glass type options for FD30 applications requiring the use of dedicated glazing systems are listed on page 6.6.

Further glass types may be used in reliance upon further fire test / assessment data to be provided by the glass manufacturer (*supplier*) and, where the glass type is approved for use in timber doors.

It is essential to use the correct beading system to suit the fire performance and the glass type.

NOTE: Users must consult glass suppliers / manufacturers to determine heat radiation, insulation and impact resistance properties together with any other glass performance attributes that may be required for particular projects.

FD60 Approved Glass Types

			Max. Approved Glazed Area	Nom. Thickness
	1	PYROSHIELD 2 - Pilkington Glass Ltd.	0.72m ²	6&7 mm
	2	PYROSHIELD - Pilkington Glass Ltd.	0.72m ²	6&7 mm
	3	PYROSTEM - CGI Ltd.	0.6m ²	7mm
	4	PYRAN S - Schott Glass Ltd.	0.72m ²	6.5mm
	5	PYRODUR 60-10 - Pilkington Glass Ltd.	0.72m ²	10mm
	6	PYROGUARD EW MAXI - CGI Ltd.	0.58m ²	11mm
	7	PYROBELITE 12 - AGC Flat Glass Europe.	0.72m ²	12mm
	8	PYRODUR 60-20 - Pilkington Glass Ltd.	0.72m ²	13mm
	9	Pyroguard EI 30 - CGI Ltd.	0.72m ²	15mm
	10	PYROSTOP 30-10 - Pilkington Glass Ltd.	1.5m ²	15mm
	11	PYROBEL 16 - AGC Flat Glass Europe.	0.72m ²	16mm
	12	CONTRAFLAM - Vetrotech Saint Gobain	0.72m ²	16mm







Dedicated Glazing Systems

FD30 'Q' Mark

Approved Glass Types with Dedicated Glazing Systems:

The glass types listed below are 'Q' Mark approved for use with Strebord® FD30 fire door constructions only when used with the dedicated glazing systems listed in the following table.

FD30 Approved Glass Types			Max. Approved Glazed Area	Nom. Thickness	Dedicated Glazing System
	16	PYROSWISS - Vetrotech Saint Goblain	0.8m ²	6&7 mm	Hodgsons Sealants Ltd.
	17	ESG PYROTECH 630 - Essex Safety Glass Ltd.	0.8m ²	6&7 mm	ESG (Essex) Glazing System
	18	PYROCET XPT - C3S Ltd.	1.9m ²	6mm	XPT Glazing System
	19	PYROCLEAR - Pilkington Group Ltd.	1.25m ²	6mm	Pilkington Pyroclear Glazing System

FD60 'Q' Mark

Approved Glass Types with Dedicated Glazing Systems:

The glass types listed below are 'Q' Mark approved for use with Strebord® FD60 fire door constructions only when used with the dedicated glazing systems listed in the following table.

FD60 Glass Type			Max. Approved Glazed Area	Nom. Thickness	Dedicated Glazing System
	13	PYROCLEAR - Pilkington Group Ltd.	0.72m ²	6mm	Pilkington Pyroclear Glazing System
	14	PYROSTOP 60-101 - Pilkington Group Ltd.	1.5m ²	23mm	Pilkington Pyrostop Glazing System
	15	PYROGUARD 60-23 - CGI	0.72m ²	23mm	Lorient Flexible Fig. 1 OR Mann McGowan Pyroglaze 60
	16	PYROBEL 25 - AGC Flat Glass Europe.	0.72m ²	25mm	AGC Pyrobel 25 Glazing System

NOTE: This manual illustrates 'Q' Mark approved glazing systems for use with Strebord FD30 & FD60 fire rated door. However this information is published for guidance only and reference must be made to glazing system supplier / manufacturer details that take precedence over the details shown in this manual in the event of any conflict.

Glass & Glazing **FD60**

Splayed Section Hardwood Glazing Bead - General

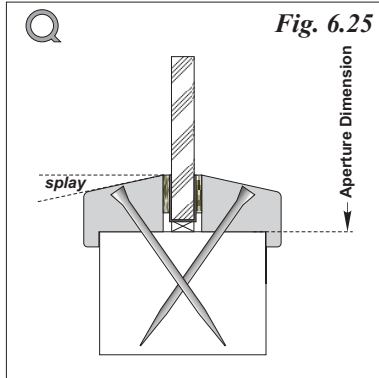


Fig. 6.25

Hardwood Splayed Bolection Bead

- Generally Hardwood splayed bolection beads are approved for use with FD60 Glass Types 1 ~ 12 (**See page 6.5**) when used with approved FD60 glazing systems. (**See page 6.15**).
- Unless otherwise approved timber for glazing beads (*including timber aperture linings where applicable*) must be Min. density 640kg/m³ hardwood, straight grained, joinery quality, free from knots, splits and checks.
- Unless otherwise approved, glazing bead must be retained in position with min. 60mm long x 2mm dia. steel pins and / or min. 60mm long No. 6 ~ 8 screws, inserted at 35~40° to the vertical. Fixings must be located within 50mm from each corner and otherwise located equi-spaced at not more than 150mm centres.
- Pneumatically fired pins otherwise complying with the above specifications may be used.

Square Section Hardwood Glazing Bead - General

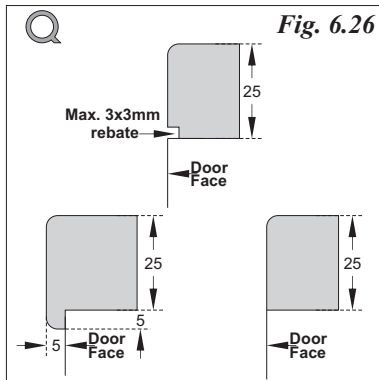


Fig. 6.26

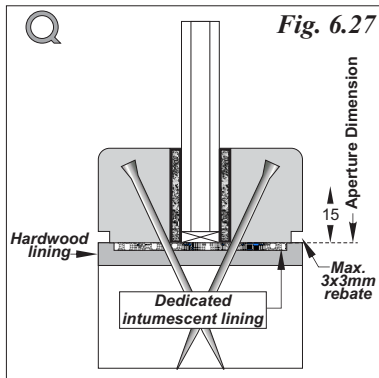


Fig. 6.27

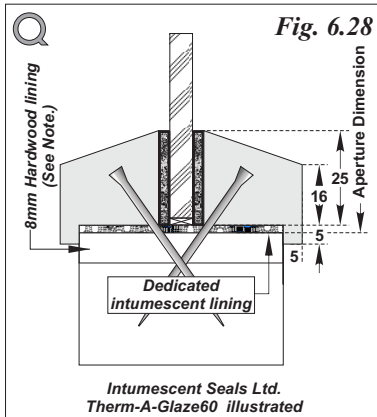
Flush & Square Beads:

- The use of flush beading systems using square section beads is approved when using *Sealmaster Ltd. Fireglaze 60, Intumescent Seals Ltd. Therm-A-Glaze 60* conjunction FD60 glass types 7 ~ 12 only. (**See page 6.5**)
- Maximum aperture dimensions remain as described for the particular glass type or glazing system. **See pages 6.5 & 6.15 for 'Q' Mark approved maximum aperture dimensions for FD60 applications.**
- Apertures must be lined with 6 ~ 10mm thickness min. 640kg/m³ density hardwood when using square section flush beads with the liner glued into position using a UF (*Urea Formaldehyde*) adhesive. The hardwood aperture liner may be recessed to receive intumescent (*or similar*) liners required by the particular glazing system.
- Timber used to manufacture the glazing bead and method of fixing remains as described by reference to **page 6.14 - Fig. 6.25** for **Hardwood Splayed Bolection Beads**. **See above.**

FD60 Glass & Glazing

Approved FD60 Glazing Systems - General

(See pages 6.20, 6.22 & 6.25 for approved Norsound Ltd. Glazing Systems)



Intumescent Seals Ltd. - Therm-A-Glaze 60

Sealmaster Ltd. - Fireglaze Mastic

Pyroplex - Pyroplex System FG60

Mann McGowan Ltd. - Pyroglaze 60 - SCREW FIXED ONLY

- These systems must be used with its dedicated intumescent lining to the aperture (*Refer to manufacturers details*).

- Bead to be fixed using 60mm long x 2mm dia. steel pins OR 60mm long No.8 screws inserted at 35~40° to the vertical at no more than 50mm from each corner and at 150mm maximum centres.

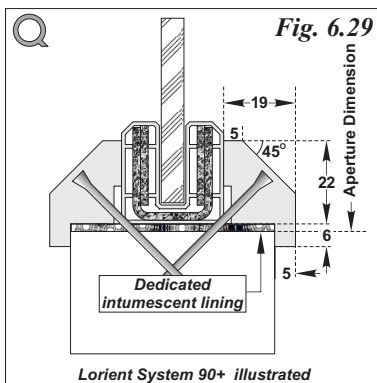
Maximum approved glazed area - Therm-A-Glaze 60 = 1.5m²

Maximum approved glazed area - Fireglaze Mastic = 0.72m²

Maximum approved glazed area - Pyroglaze 60 = 0.72m²

Maximum approved glazed area - System FG60 = 0.25m²

NOTE: Min. 640kg/m³ 8mm Hardwood aperture lining must be used with Pyroplex System FG60 - Recommended option for other beading systems

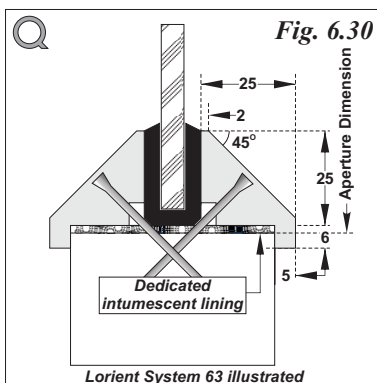


Lorient Polyproducts Ltd. - 'System 90 PLUS'

- This system must be used with its dedicated intumescent lining to the aperture (*Refer to manufacturers details*).

- Bead to be fixed using 60mm long x 2mm dia. steel pins OR 60mm long No.8 screws inserted at 45° to the vertical bead at no more than 50mm from each corner and at 150mm maximum centres.

Maximum approved glazed area - System 90 PLUS = 0.72m²



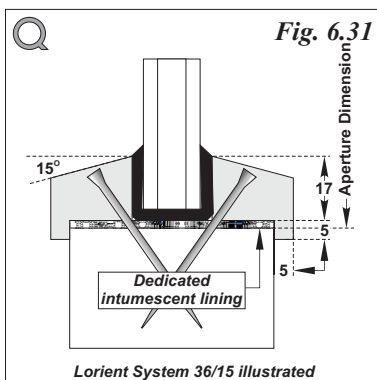
Lorient Polyproducts Ltd. - 'System 63' Flexible Gasket

- This system must be used with its dedicated intumescent lining to the aperture (*Refer to manufacturers details*).

- Bead to be fixed using 60mm long x 2mm dia. steel pins OR 60mm long No.8 screws inserted at 45° to the vertical bead at no more than 50mm from each corner and at 150mm maximum centres.

Maximum approved glazed area - System 63 = 0.72m²

NOTE: Only suitable for use with FD60 Glass Types 3 & 4 - See FD60 glass types page 6.5



Lorient Polyproducts Ltd. - 'System 36/15' Flexible Gasket

- This system must be used with its dedicated intumescent lining to the aperture (*Refer to manufacturers details*).

- Bead to be fixed using 60mm long x 2mm dia. steel pins OR 60mm long No.8 screws inserted at 35~40° to the vertical bead at no more than 50mm from each corner and at 150mm maximum centres.

Maximum approved glazed area - System 36/15 = 0.72m²



Glass & Glazing **FD60**

Dedicated Glazing Systems

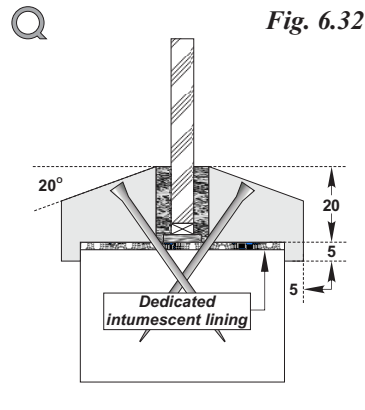


Fig. 6.32

6mm Pyroclear - Pilkington Pyroclear Glazing System

- 25x25mm Hardwood bead including 5x5mm bolection with 20° chamfer otherwise complying with and fixed as described by reference to **page 6.14 - Fig. 6.25**.
- Aperture lined with 54x2mm Palusol ELSA 1000 glazing liner with additional 10x2 Interdens located on top of the liner and central in the thickness of the door between beads.
- 20x5 Kerafix Flexit seal compressed to 4mm fitted between the bead and the glass on both faces.

NOTE: Maximum approved dimension between adjacent apertures = 100mm

Maximum approved glazed area = 0.72m²

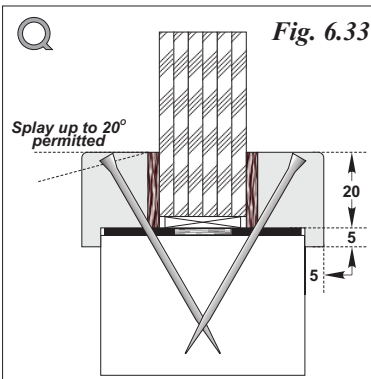


Fig. 6.33

23mm Pyrostop - Pilkington 23mm Pyrostop Glazing System

- 25x17.5mm Hardwood bead including 5x5mm bolection square or with a chamfer up to 20°, otherwise complying with, and fixed, as described by reference to **page 6.14 - Fig. 6.25** but using 63mm long pins 1.8mm gauge minimum OR screws.
- 52x2mm Norsound 5202 flexible aperture liner fitted around the perimeter of the aperture.
- 20x3mm Hodgsons Sealants Firestrip 60 between the bead and face of the glass on both sides.

NOTE: Maximum approved dimension between adjacent apertures = 100mm

Maximum approved glazed area = 1.5m²

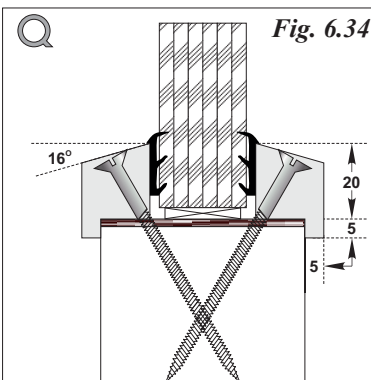


Fig. 6.34

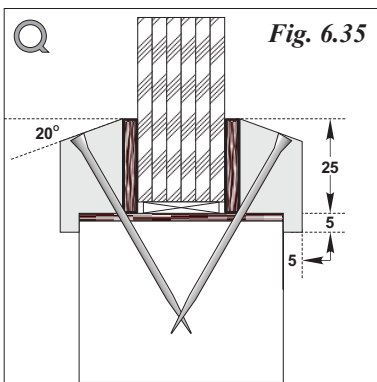
23mm Pyroguard - Lorient 23mm Pyroguard Glazing System

- 25x18mm Hardwood bead including 5x5mm bolection with a 16° chamfer otherwise complying with, and fixed, as described by reference to **page 6.14 - Fig. 6.25** but using 70mm long No. 6~8 screws.
- 54x2mm Lorient Polyproducts Ltd. glazing liner fitted around the perimeter of the aperture.
- 13x3.5mm Lorient Polyproducts Ltd. Flexible Figure 1 glazing gasket fitted between the bead and the glass on both faces.

NOTE: Maximum approved dimension between adjacent apertures = 100mm

Maximum approved glazed area = 0.72m²

Dedicated Glazing Systems contd.

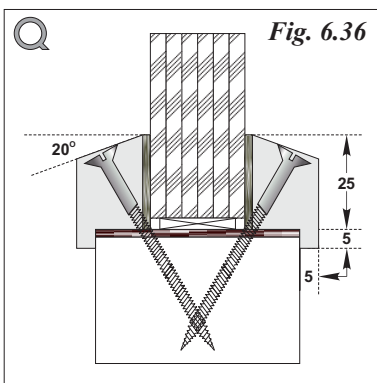


CGI Ltd. 23mm Pyroguard - Mann McGowan Pyroglaze 60 System

- 30x16.5mm Hardwood bead including 5x5mm bolection with a 20° chamfer otherwise complying with, and fixed, as described by reference to **page 6.14 - Fig. 6.25** but using 60mm long pins OR screws.
- 54x2mm Mann McGowan Ltd. Pyroglaze 300 glazing liner fitted around the perimeter of the aperture.
- 25x4mm Mann McGowan Ltd. Pyroglaze 500PSA seals fitted between the bead and the glass on both faces.

NOTE: Maximum approved dimension between adjacent apertures = 100mm

Maximum approved glazed area = 0.72m²



AGC Ltd. 25mm Pyrobel - 25mm Pyrobel Glazing System

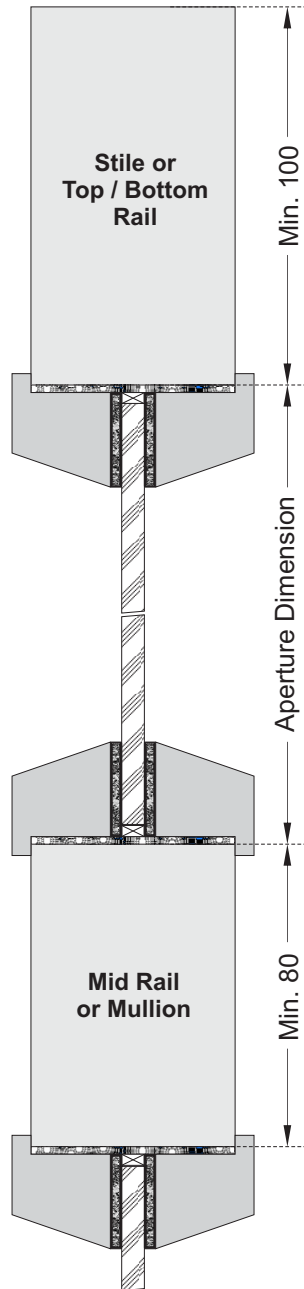
- 30x16.5mm Hardwood bead including 5x5mm bolection with a 20° chamfer otherwise complying with, and fixed, as described by reference to **page 6.14 - Fig. 6.25** but using 60mm long No. 6~8 screws.
- 54x2mm Sealmaster GL60 intumescent glazing liner fitted around the perimeter of the aperture.
- 25x2mm Superwool X607 fitted between the bead and the glass on both faces.

NOTE: Maximum approved dimension between adjacent apertures = 100mm

Maximum approved glazed area = 0.72m²

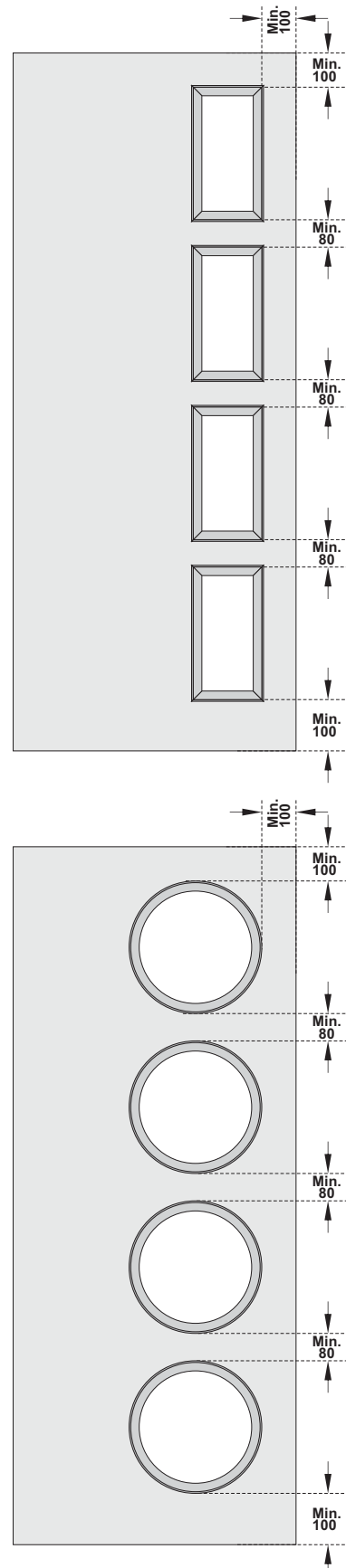
Glass & Glazing FD60
Q Multi Aperture Glazing 1.

Fig. 6.37



- Subject to limitations with respect of glazed areas and use of suitable glazing systems, there are no limits with regard to the quantity or shape of glazed apertures.
- The minimum dimension from any edge of the door to the nearest sight line of the aperture should not be less than 100mm.
- The dimension between adjacent apertures should not be less than 80mm.

Fig. 6.38

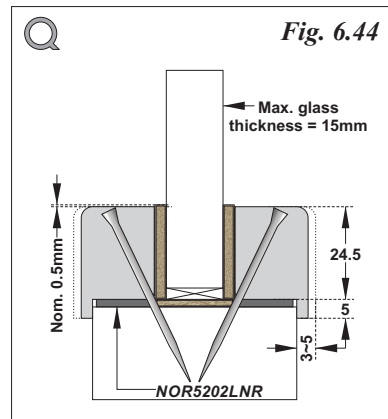
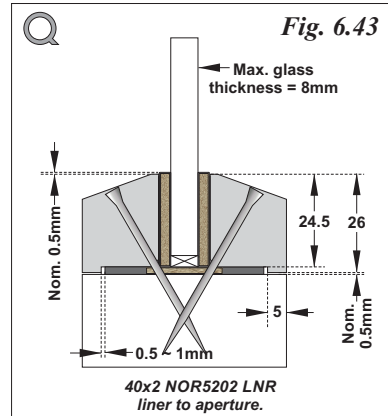
Q Multi Aperture Glazing 1.


Norsound Vision 60 Glazing Systems

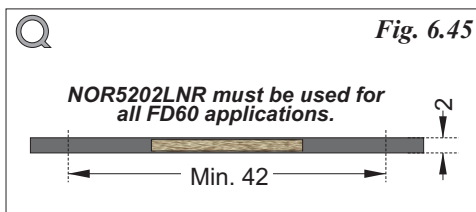
Norsound Vision 60

- The Norsound Vision 60 systems, using a square section flush bead detail can be used with FD60 Glass Types 1 ~ 4. (See page 6.5).
- Where bolection bead profiles are used the Norsound Vision 60 systems can be used with FD60 Glass Types 1 ~ 10. (See page 6.5).
- The bead material must satisfy the following specifications:
Straight grained joinery quality Hardwood, free from knots, splits or checks. Min. density = 640kg/m³.
- For flush style beads, the bead height must be nominally 26mm with a minimum rebate of 1.5mm. For bolection style beads, the bolection returns must be a minimum of 5mm high and project a minimum of 3mm from the leaf face
- The 25mm high Norsound Vision 60 intumescent seal component is required to project Nom. 0.5mm above the sight line of the bead.
- Apertures must be lined using the Norsound 5202LNR aperture liner fitted centrally in the door leaf thickness. The aperture liner can be reduced in width from the standard 52x2mm to a minimum of 42mm wide with the reduction being carried out equally on both edges of the liner.
- When used with flush style beads, a nominal gap of 0.5mm must be allowed between the bead and the aperture in the door leaf.
- Glazing beads must be retained in position with min. 50mm long x 2mm dia. steel pins, OR 50mm long No. 6~8 screws, inserted at 35~40° to the vertical at not more than 50mm from each corner, otherwise equi-spaced between at not more than 150mm centres.
- Pneumatically fired pins are acceptable providing the pins meet the specification given above.
- Norsound Vision 60B seals are fixed to the beads using self adhesive tape. The Norsound Vision 60T seals are fixed using a 'plug in' system into the bead that must be accurately profiled to receive the seal. The 60T seal has been specifically designed to allow for the seal to be fitted to the beading before final cutting for size and mitre jointing.

Maximum approved glazed area = 0.72m²



Norsound 5202LNR FD 60 Aperture Liner



For FD60 fire door applications the aperture for glazing must be lined with the Norsound NOR5202LNR that must be located centrally in the door thickness. The aperture liner is held in position using self adhesive tape with the fixing reinforced by the bead pin / screw fixings.

The NOR5202LNR is supplied in a standard width of 52mm but can be reduced in width to suit particular application requirements provided that the liner is reduced equally from each edge and that the finished width is not less than 42mm.

Refer to Norsound Ltd. for further guidance & patent information concerning Norsound Glazing Systems

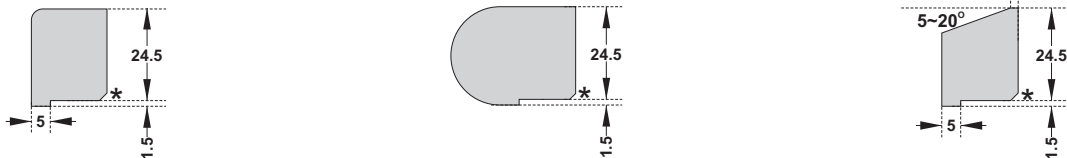
Norsound Vision 60 Glazing Systems

Q Norsound Vision 60B Bead Profiles

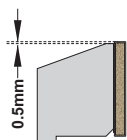
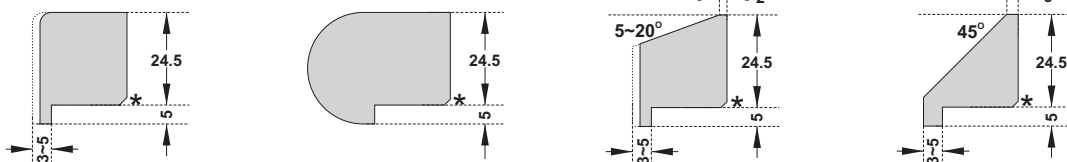
Fig. 6.46

* = 2mm splay applicable to all bead profiles

Typical Flush Bead Types:



Typical Bolection Bead Types:



The Norsound Vision 60 'B' intumescent seal is affixed to the face of the bead with self adhesive tape. It is important to ensure that the seal projects above the bead by Nom. 0.5mm.

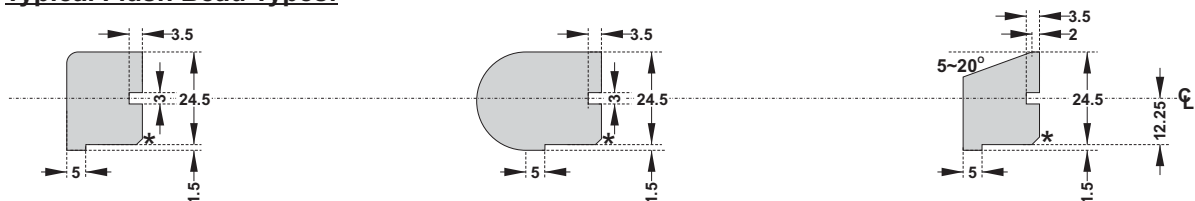
Beads can be to any profile provided that they are not smaller than the minimum dimensions shown in this detail with the 24.5mm height being a critical dimension..

Q Norsound Vision 60T Bead Profiles

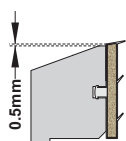
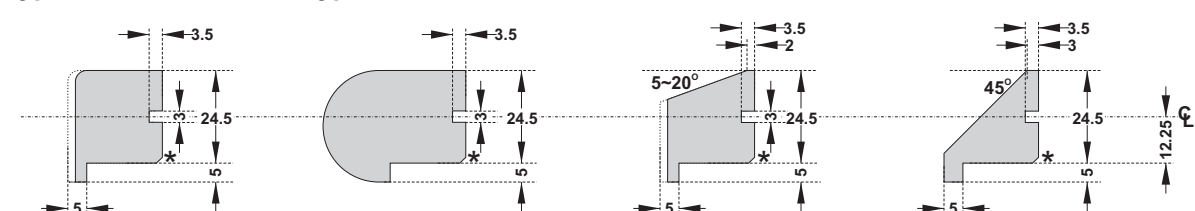
Fig. 6.47

* = 2mm splay applicable to all bead profiles

Typical Flush Bead Types:



Typical Bolection Bead Types:



The Norsound Vision 60 'T' intumescent seal is affixed to the face of the bead using a 'plug in' feature. It is important to ensure that the seal projects above the bead by Nom. 0.5mm.

Beads can be to any profile provided that they are not smaller than the minimum dimensions shown in this detail with the 24.5mm height being a critical dimension..

Glass & Glazing

Norsound Vision

Slimline

FD60

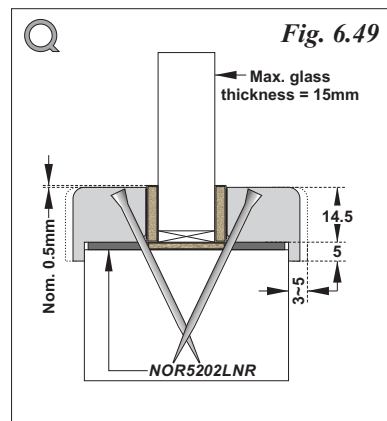
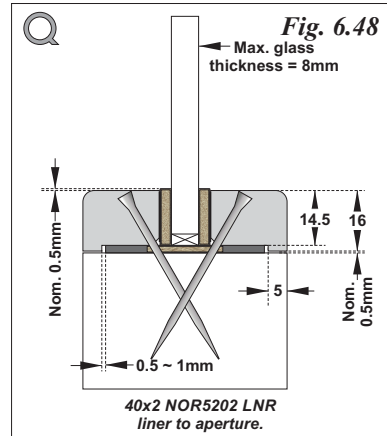
Norsound Vision 60 Slimline Glazing Systems

Norsound Vision 60 - Slimline

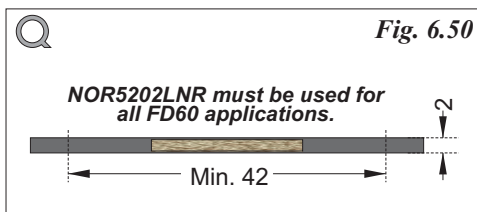
- The Norsound Vision 60 Slimline systems, using a square section flush bead detail can be used with FD60 Glass Types 1 ~ 4. (See page 6.5).
- Where bolection bead profiles are used the Norsound Vision 60 systems can be used with FD60 Glass Types 1 ~ 10. (See page 6.5).
- The bead material must satisfy the following specifications:
Straight grained joinery quality Hardwood, free from knots, splits or checks. Min. density = 640kg/m³.
- For flush style beads, the bead height must be nominally 16mm with a minimum rebate of 1.5mm. For bolection style beads, the bolection returns must be a minimum of 5mm high and project a minimum of 3mm from the leaf face
- The 15mm high Norsound Vision 60 Slimline intumescent seal component is required to project Nom. 0.5mm above the sight line of the bead.
- Apertures must be lined using the Norsound 5202LNR aperture liner fitted centrally in the door leaf thickness. The aperture liner can be reduced in width from the standard 52x2mm to a minimum of 42mm wide with the reduction being carried out equally on both edges of the liner.
- When used with flush style beads, a nominal gap of 0.5mm must be allowed between the bead and the aperture in the door leaf.
- Glazing beads must be retained in position with min. 50mm long x 2mm dia. steel pins, OR 50mm long No. 6~8 screws, inserted at 35~40° to the vertical at not more than 50mm from each corner, otherwise equi-spaced between at not more than 150mm centres.
- Pneumatically fired pins are acceptable providing the pins meet the specification given above.

- Norsound Vision 60B Slimline seals are fixed to the beads using self adhesive tape. The Norsound Vision 60T Slimline seals are fixed using a 'plug in' system into the bead that must be accurately profiled to receive the seal. The 60T Slimline seal has been specifically designed to allow for the seal to be fitted to the beading before final cutting for size and mitre jointing.

Maximum approved glazed area = 0.72m²



Norsound 5202LNR FD 60 Aperture Liner



For FD60 fire door applications the aperture for glazing must be lined with the Norsound NOR5202LNR that must be located centrally in the door thickness. The aperture liner is held in position using self adhesive tape with the fixing reinforced by the bead pin / screw fixings.

The NOR5202LNR is supplied in a standard width of 52mm but can be reduced in width to suit particular application requirements provided that the liner is reduced equally from each edge and that the finished width is not less than 42mm.

Refer to Norsound Ltd. for further guidance & patent information concerning Norsound Glazing Systems

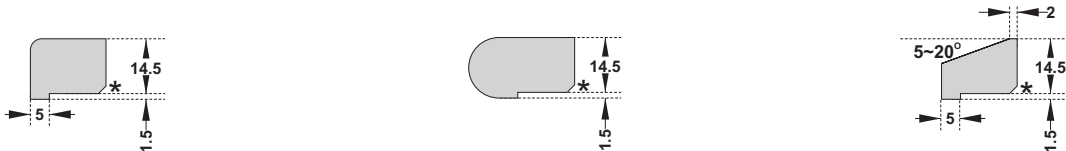
Norsound Vision 60 Slimline Glazing Systems

Q Norsound Vision 60B Slimline Bead Profiles

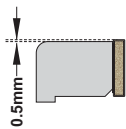
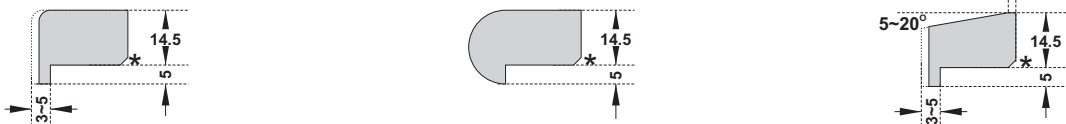
Fig. 6.51

* = 2mm splay applicable to all bead profiles

Typical Flush Bead Types:



Typical Bolection Bead Types:



The Norsound Vision 60 'B' *Slimline* intumescent seal is affixed to the face of the bead with self adhesive tape. It is important to ensure that the seal projects above the bead by Nom. 0.5mm.

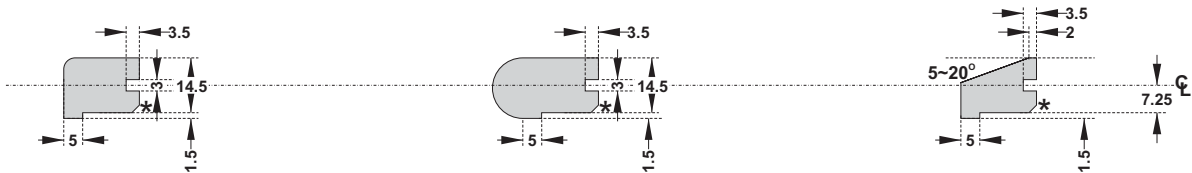
Beads can be to any profile provided that they are not smaller than the minimum dimensions shown in this detail with the 14.5mm height being a critical dimension..

Q Norsound Vision 60T Slimline Bead Profiles

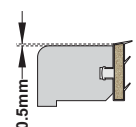
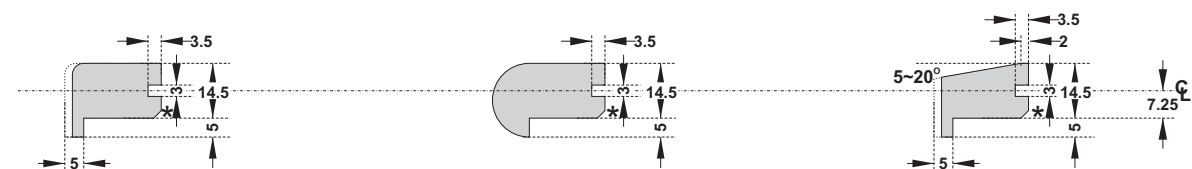
Fig. 6.52

* = 2mm splay applicable to all bead profiles

Typical Flush Bead Types:



Typical Bolection Bead Types:



The Norsound Vision 60 'T' *Slimline* intumescent seal is affixed to the face of the bead using a 'plug in' feature. It is important to ensure that the seal projects above the bead by Nom. 0.5mm.

Beads can be to any profile provided that they are not smaller than the minimum dimensions shown in this detail with the 14.5mm height being a critical dimension.

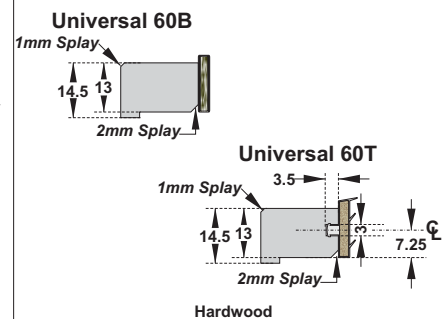
Norsound Universal Glazing Systems

Norsound Universal - FD60 Application

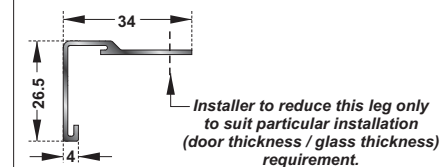
The Norsound Universal 60 Glazing system is 'Q' Mark approved for use with Streborb 54 door constructions, subject to the following:

- The Norsound Universal 60 systems, using a core square section flush bead detail can be used with FD60 Glass Types 1 ~ 12. (See page 6.5).
- The core bead material must satisfy the following specifications: *Straight grained joinery quality Hardwood, free from knots, splits or checks. Min. density = 640kg/m³.*
- The core bead height must be 14.5mm with a 1.5mm rebate.
- The glazing aperture must be lined using the Norsound NOR5202LNR reduced equally from each edge to finish 42x2mm.
- The 15mm high Norsound Universal 60 intumescent seal component is required to project Nom. 0.5mm above the sight line of the aluminium cladding bead when installed.
- Core glazing beads must be retained in position with min. 50mm long x 2mm dia. steel pins, OR 50mm long No. 6~8 screws, inserted at 35~40° to the vertical at not more than 40mm from each corner, otherwise equi-spaced between at not more than 150mm centres.
- Pneumatically fired pins are acceptable providing the pins meet the specification given above.
- Norsound Universal 60B seals are fixed to the core beads using self adhesive tape. The Norsound Universal 60T seals are fixed using a 'plug in' system into the bead that must be accurately profiled to receive the seal. The 60T seal has been specifically designed to allow for the seal to be fitted to the core beading before final cutting for size and mitre jointing.
- The Norsound Universal aluminium cladding must be secured to the core bead by use of 3No. 10~12mm long No. 4 or 6 grub screws per length.

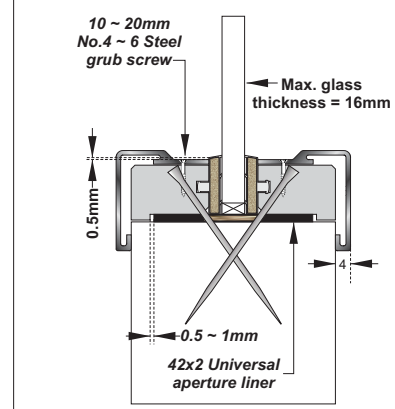
Q Core Bead Profiles Fig. 6.53



Q Universal Cladding Profile Fig. 6.54

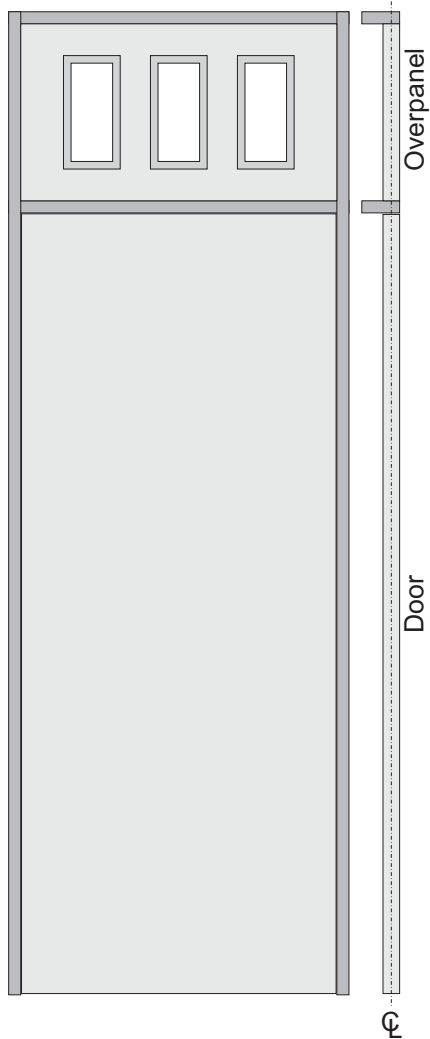


Q Universal 60T Assembly Fig. 6.55



Maximum approved glazed area = 0.72m²

Fanlights & Side Screens

Glazed Overpanel
Fig. 6.59

Glazed Overpanel:

For doorsets with transomed overpanels the overpanels can be glazed as approved for door leaves.

The overpanels must be of the same construction as the door and aligned to be central in thickness with the door leaf.

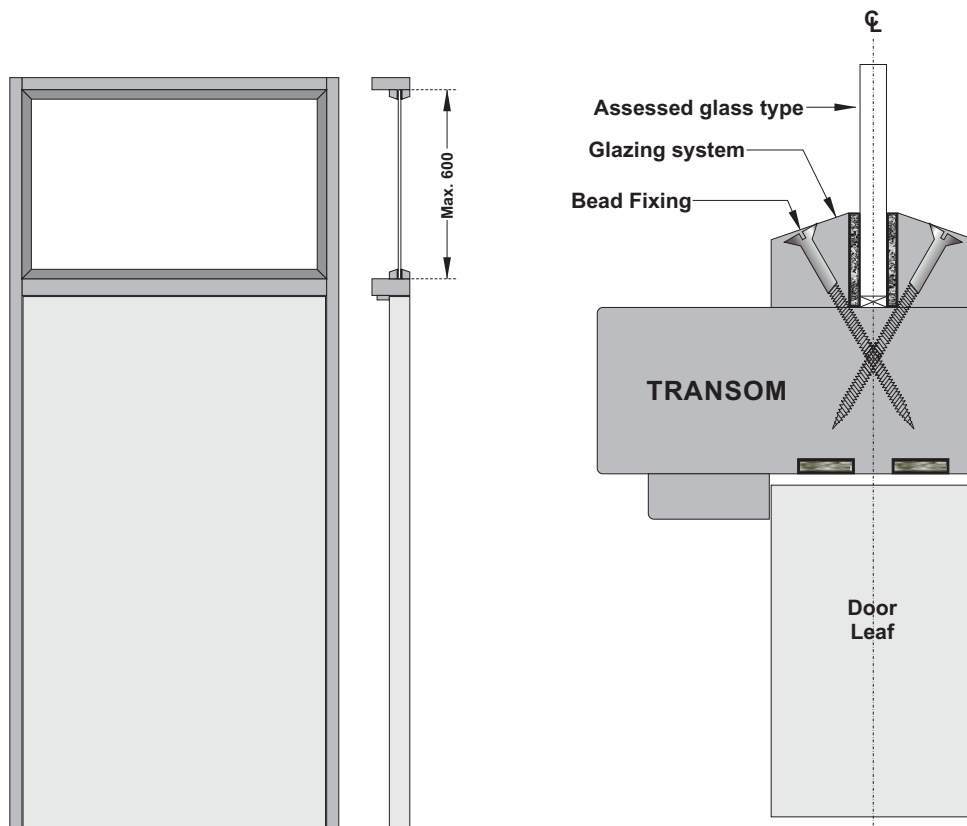
Glazed Fanlights - FD60 - General

Timber frame doorsets including a transom may include a glazed fanlight. The timber frame and glazing beads must be hardwood with a minimum density of 640kg./m³ whilst the frame section for the transom must be a minimum of 70x44mm.

The timber door frame must comply with the specifications described by reference to: *Section 7 - Doorframes*. The use of steel or MDF frames is **not** approved for this application.

Q Glazed Fanlights - FD30 - General

Fig. 6.65



The fanlight glass must generally align centre thickness of the door leaf. Where the door leaf is glazed the fanlight glass can align with the glass in the door leaf towards the opening face of the door.

The glazing system and glass must be able to demonstrate the required performance when tested as a window or screen in accordance with BS476 : Pt.22 : 1987 OR BS EN 1634-1 : 2000 or 2008 at the dimension required for the particular installation. In any event the glazed fanlight must not exceed the following:

Configuration	Height (mm)	Width
Single & Double leaf doorsets	≤ 600	Overall door width

Glazed Fanlights & Side Screens
Norsound Vision 60 Glazing Systems

Strebor[®] 54 doors in timber frames may include glazed fanlights and / or side screens using approved FD60 glass types 1~12 (See page 6.5) provided that the glass has also demonstrated adequate performances when tested as a window or a screen in accordance with BS476 Pt.22 : 1987 or BS EN 1634-1 : 2000 or 2008 at the required pane dimensions.

The glazing system and beads must meet the specifications described for the Norsound Vision 60 glazing system illustrated below.

The maximum approved fanlight and side screen dimensions are as follows:

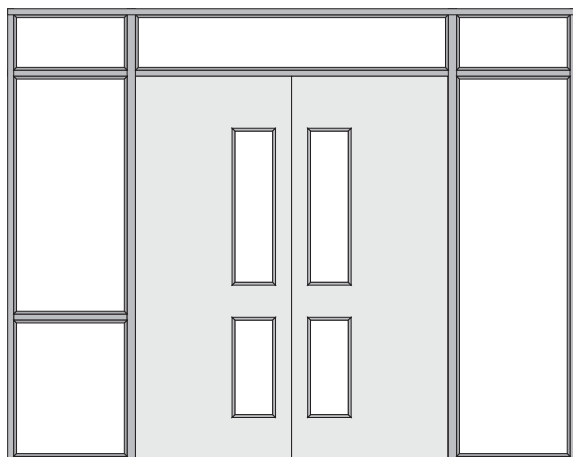
Screen Element	Configuration	Height (mm)	Width (mm)
Fanlight	Single & Double leaf doorsets	≤ 600	Overall door width
Side Screen	Single & Double leaf doorsets	Overall door height	≤ 600

Glazing beads and intumescent materials must be installed as illustrated in Fig. 6.66 ~ Fig. 6.69 below:

System Name		Norsound Vision 60B	Norsound Vision 60T
Typical Installation			
Dimensions	Bead Height	Nominally 24.5mm	Nominally 24.5mm
	Intumescent Seal(s)	25mm high x3mm thick	25mm high x3mm thick + Plug dimension
Aperture Liner		NOR5202 reduced to 42x2mm	NOR5202 reduced to 42x2mm
Assessed Bead Profiles			

Glazed Fanlights & Side Screens - Norsound Vision Glazing Systems.

Mullions: (See pages 6.28 - FD30 & 6.30 - FD60 for further details. Norsound 30T illustrated) Fig. 6.70



The fanlights and side screens may comprise multiple panes of glass providing the total doorset and screen assembly does not exceed 2950mm high and the transom / mullion restrictions described below are complied with.

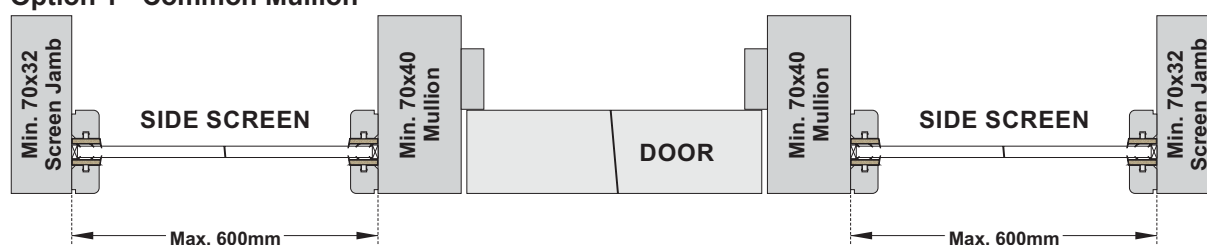
Gaps between glass and framing, to permit expansion, must be set according to the glass manufacturer's information, using non combustible or hardwood setting blocks at the bottom edge.

NOTE: For further guidance refer to: 'A Guide to Best Practice in the Specification and Use of Fire Resistant Glazed Systems' (2011) published by the GGF (Glass & Glazing Federation). - See Page 6.1.

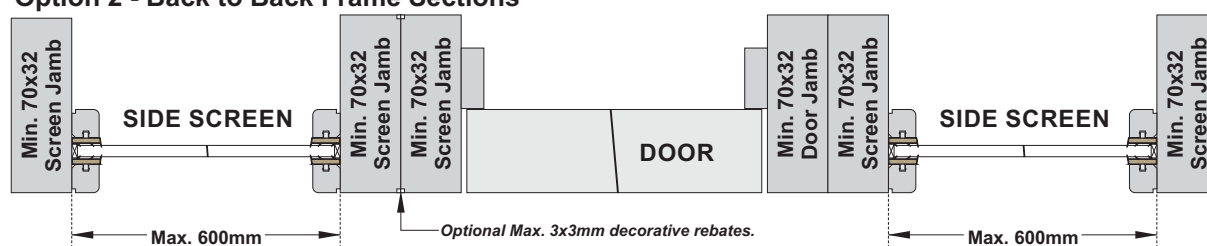
Integrity Performance	Material	Minimum Section Size (mm)	Minimum Density (kg/m ³)
30	Softwood OR Hardwood	70x32 <i>Note 1.</i>	510
60	Hardwood	70x32 <i>Note 1.</i>	640

Note 1: Minimum sectional dimensions for Common Mullions = 70x40mm

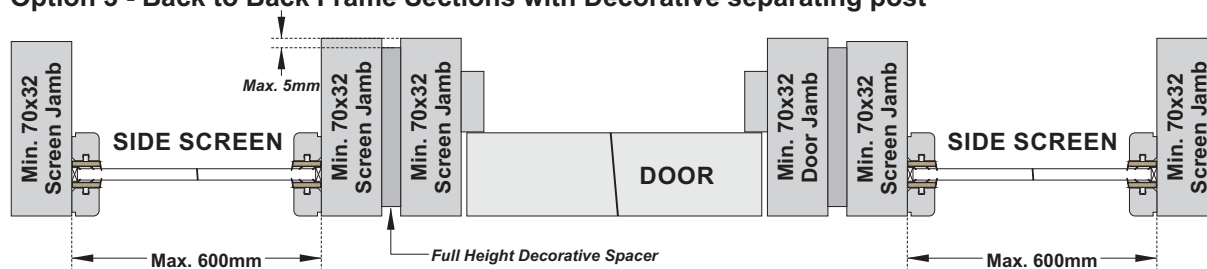
Option 1 - Common Mullion



Option 2 - Back to Back Frame Sections



Option 3 - Back to Back Frame Sections with Decorative separating post



Streborb®
Door Core
Glass & Glazing
Norsound Vision

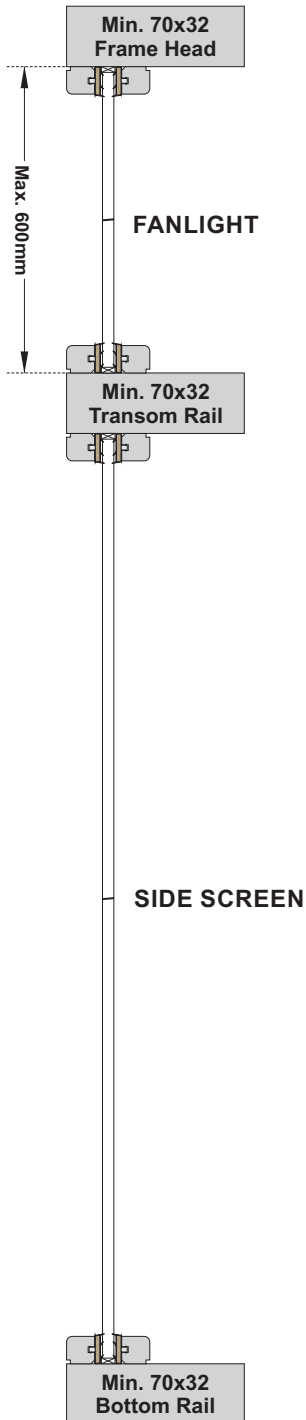
Glazed Fanlights & Side Screens - Norsound Vision Glazing Systems.

Q Transom & Rails. (See pages 6.28 - FD30 & 6.30 - FD60 for further details.
Norsound 30T illustrated)

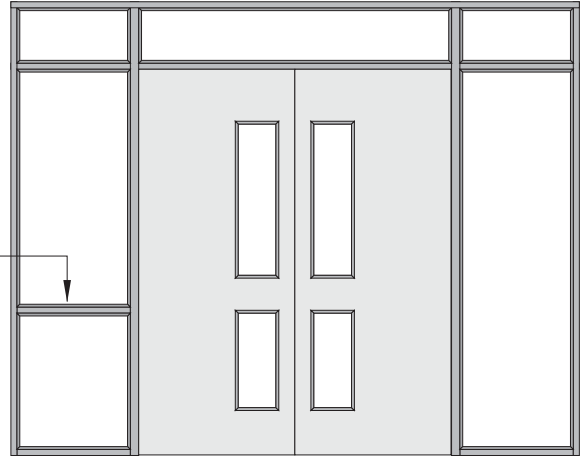
Fig. 6.71

NOTE:
See page 6.31 - Fig.6.70 for material specifications.

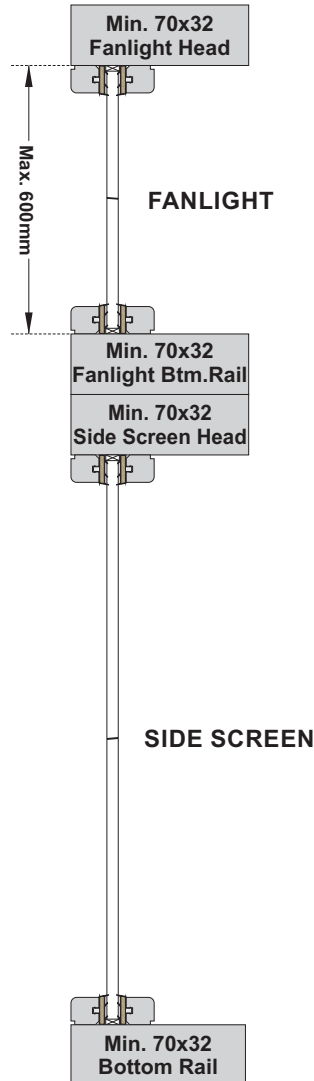
Option 1 - Common Transom



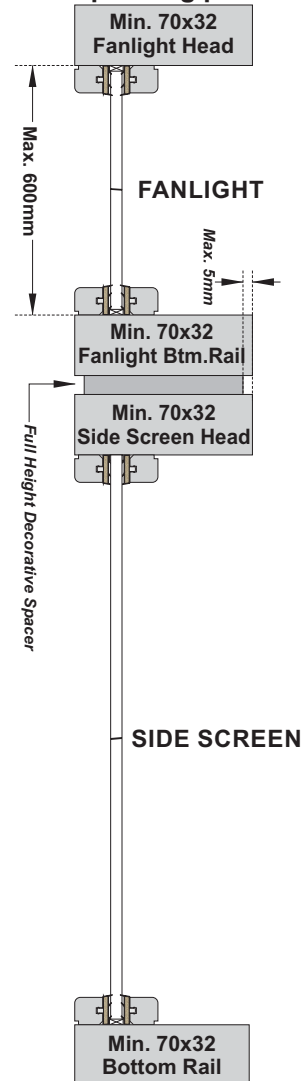
Mid Rails may be treated as Common Transom Rails



Option 2 - Back to Back Frame Sections



Option 3 - Back to Back Frame Sections with Decorative separating post



- Specifications may make reference to Building Regulations - (England & Wales) - Approved Document 'M' and/or BS8300.

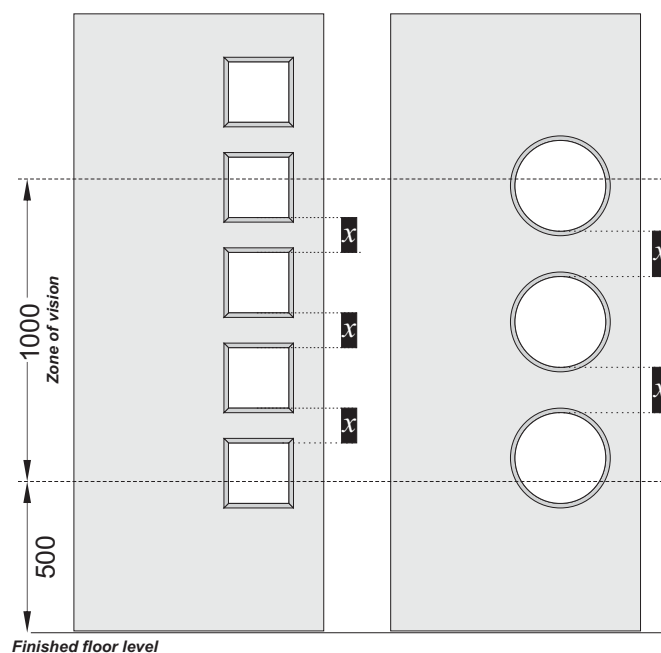
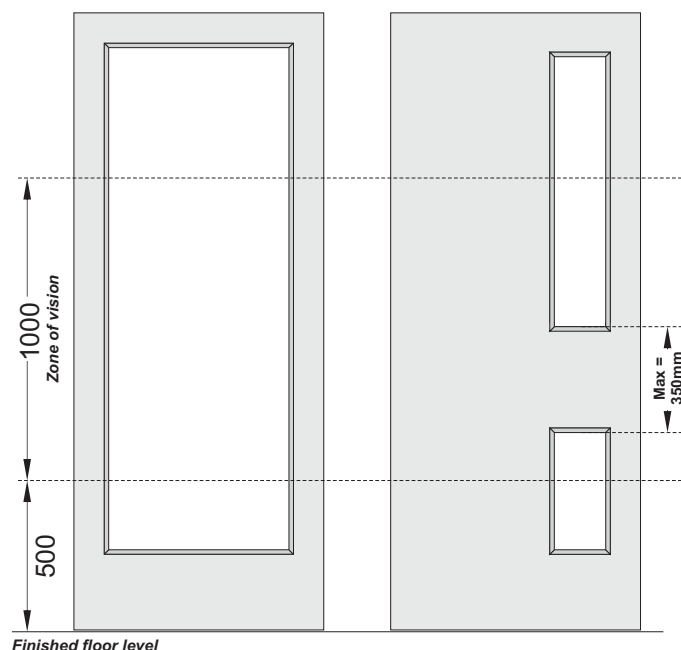
- Where required, doors should be glazed to provide for a zone of vision that is suitable to meet the needs of persons of reduced stature and for persons in wheelchairs.

- It is important to recognise that dimensions relate to the clear glass area (*aperture dimension after beading*). Apertures should be cut to dimensions that anticipate the bead sizes to be used.

- The zone of vision necessary to satisfy this requirement is measured from a height of 500mm above finished floor level and extends to a height of 1500mm above the finished floor level (*not the bottom of the door*).

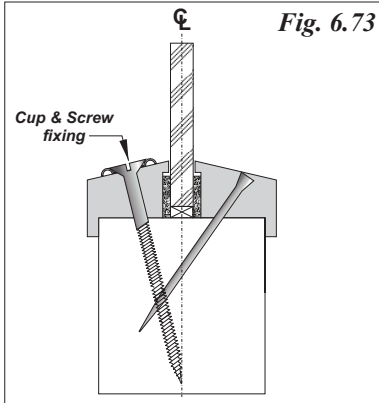
- There are no restrictions on the quantity, size or shape of apertures. However, the height dimension of any opaque elements should not exceed 350mm within the 1000mm high zone of vision. The permitted 350mm high opaque height within the zone of vision can be made up of a single rail or multiple rails. Where multiple rails are used then the total opaque height dimension for all rails (*dim. $x+x$*) should not exceed 350mm.

Building Regulations - (England & Wales) - Approved Document 'M' & BS8300 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice Fig. 6.72



Glass & Glazing

Glass Replacement



Glass Replacement

Glass is perhaps the most vulnerable component of a doorset and may be damaged or broken during transit, installation or later when the building is in use.

- Provision can be made to ease the replacement of glass by the use of cup and screw fixings to one side of the door.
- Damaged glass must be replaced by a qualified glazier.
- For fire door applications the fixing screws for a removable bead must be of sufficient length to pass to (*or through*) the centre of the thickness of the door.
- When replacing glass in fire rated doorsets, the replacement glass must be of the same type and thickness as the glass used for the original installation.
- Provided that the intumescent sealing system and hardwood bead is not damaged during removal, the beading system and intumescent sealing system may be refitted. However, in the event of damage, these components must be replaced using the same system that was used for the original installation.
- Documents describing project related glazing provisions in fire doors should be handed over to the Client on hand over of the building for possible reference by the 'Responsible Person' if required to satisfy their duties in accordance with the Regulatory Reform (Fire Safety) Order 2005.