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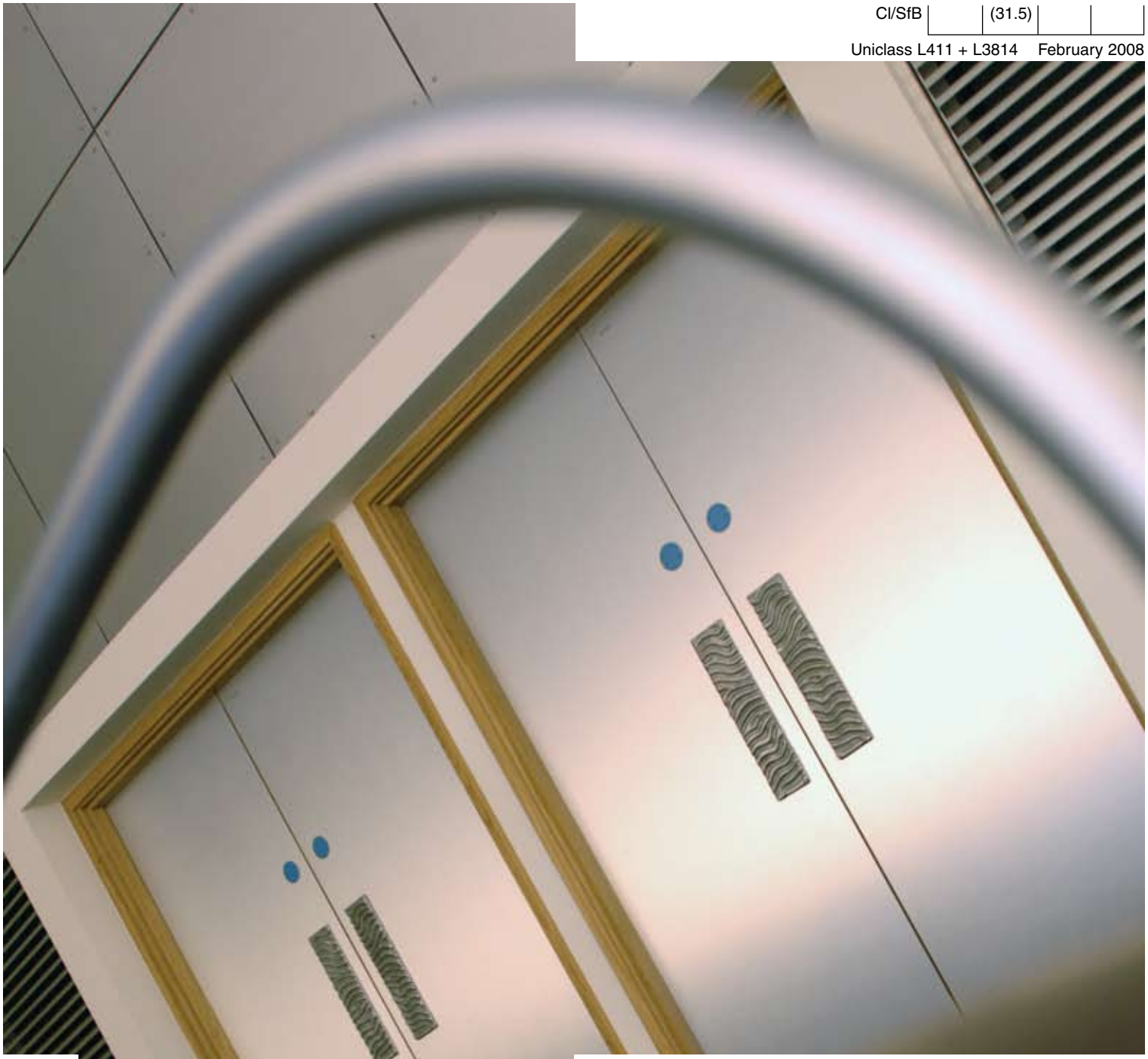


specifying with doors and doorsets

Specifying with doors and doorsets

Leaderflush Shapland

A GUIDE TO PERFORMANCE AND AESTHETIC CHARACTERISTICS

a guide to performance and aesthetic characteristics

contents

Contents

An introduction	P. 03
Discover the Leaderflush Shapland difference	P. 04-05
Design considerations	P. 06-08
The case for doorsets	P. 09
Doorset materials and finishes	P. 10-12
Door leaves & facings	P. 13-14
Frames & architraves	P. 14-16
Vision panels	P. 16-19
Glazed fan lights	P. 20
Glazed screens	P. 21-22
Ironmongery	P. 23-24
Edge detailing, intrumescents & seals	P. 25-26
Accessories, complementary & specialist items	P. 27
Specification & scheduling	P. 28-30
Introducing our other ranges & brands	P. 31

FM 01354 EMS 8007 OHS 517187

specifying with doors and doorsets

doors and doorsets in detail

an introduction

a guide to specifying doors and doorsets

As part of SIG plc, a successful £2.45 billion company, Leaderflush Shapland's financial strength and stability continues to grow whilst retaining its individual identity and position as the UK's largest performance door and doorset manufacturer.

Leaderflush Shapland combines long experience and a tradition of craftsmanship with the most efficient production techniques to ensure that even the largest, fast-track projects can be handled effectively.

Substantial investment into manufacturing technology, product development and customer relationship programmes ensure that all our customers receive the highest possible levels of service and product from manufacture through to installation.

This document contains detailed technical information to supplement individual Leaderflush Shapland product range brochures and should be read in conjunction with them. In addition, information on specific performance characteristics in relation to the Building Regulations and other guidance can be found at www.leaderflushshapland.co.uk.

The information contained within this document is believed to be correct at the time of publication but products are subject to change and details should be checked with the Technical Services Department or alternatively email: enquiries@leaderflushshapland.co.uk. All dimensions referred to are in millimetres unless otherwise stated.

performance is at the core of every Leaderflush Shapland door

discover the Leaderflush Shapland difference

our philosophy today at Leaderflush Shapland is customer focused and service led in everything we do

Support

Expert technical support and a full NBS-based specification facility are available, supported by a team of Specification Managers and our project management service provides a single point of contact at all stages. As members of the RIBA CPD Providers' Network, we offer specifiers an independently assessed CPD seminar service with attendance certificates.

Installation Partners

Leaderflush Shapland has formed strategic relationships with numerous joinery subcontractors across the UK to offer an Installation Partners scheme for doorsets. Each Installation Partner recommended by Leaderflush Shapland is fully conversant in the latest installation techniques and is assessed on a regular basis to ensure a continued chain of quality from manufacture to installation. A list of these Installation Partners can be accessed from our website www.leaderflushshapland.co.uk. For additional information on the scheme contact our Technical Services Department on 01773 530500.

Sustainability

We have developed an Environmental Management System in accordance with BS EN ISO 14001:2004, based on a firm Environmental Policy. Leaderflush Shapland is essentially a timber based manufacturing company and was the first company in its industry to develop and implement tracking systems independently assessed by the 'FSC Trada Trak' accreditation scheme. As a result, doors and doorsets can be specified using solid timber and timber-based raw materials exclusively from well-managed and sustainable sources, independently certified by the Forests Stewardship Council.

FSC © By buying products with the FSC label you are supporting the growth of responsible forest management worldwide

TT - COC - 1844
©1996 Forest Stewardship Council A.C.

Diversity

Leaderflush Shapland offers three core product ranges. The Designer Range of custom made doors, doorsets and screens, the Plasform Range of postformed doors and doorsets, and the Extended Performance Range with enhanced characteristics covering extended fire resistance, acoustics, security and X-ray protection.

Certification

All our doors and doorsets are fully certified to recognised performance standards. The company is accredited to BS EN ISO 9001:2000. All fire resisting products are manufactured under the intensive BWF-CERTIFIRE independent product conformity scheme. Every fire door or doorset carries a tamper evident and fully traceable label with clear, essential information.

Innovation

Continuing product development and an exhaustive performance testing programme enable us to offer a wide scope of certified doorsets. In addition to regular performance testing by UKAS accredited independent bodies our in-house test facility allows continuous product development and quality assurance checks. Our test facilities include a furnace for full size doorsets, cyclic testing rigs, as well as equipment for assessing mechanical properties and security performance. But this innovative approach is also applied to customer service and procurement initiatives to meet the challenges of today's construction industry.

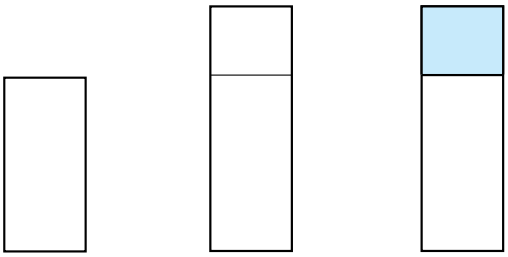
Design considerations

Configurations and handings

The drawings below set out the terminology for typical doorset configurations and handings for use in specifications. Configuration, size, construction and performance characteristics are all interrelated. Specific size ranges for particular products can be found in individual BWF-CERTIFIRE product data sheets. Leaderflush Shapland manufacture all door leaf sizes to suit individual requirements.

Configurations

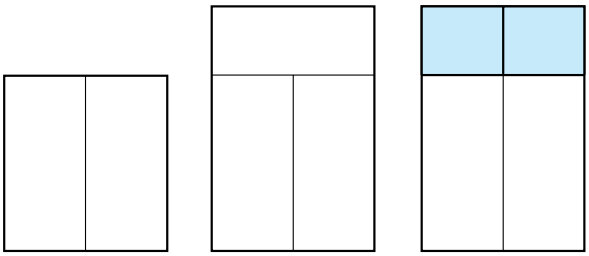
single leaf



With overpanel

With fanlight

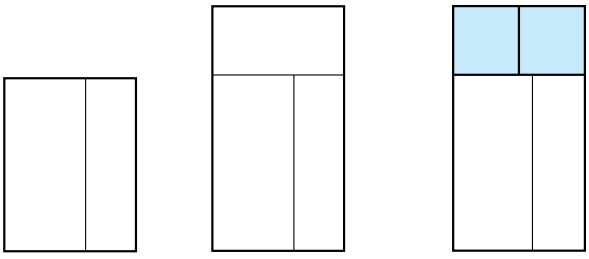
equal pairs



With overpanel

With fanlight

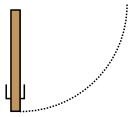
unequal pairs



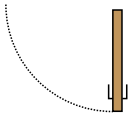
With overpanel

With fanlight

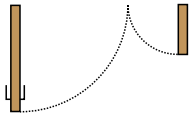
Handings



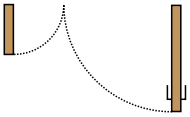
Single action L/H door swing



Single action R/H door swing



Single action L/H leading

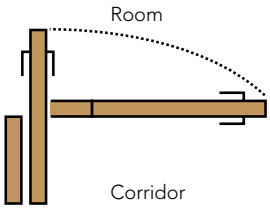


Single action R/H leading

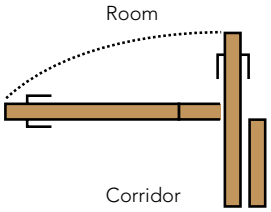
Pivette handings

The following handings are in relation to the Leaderflush Shapland Pivette, bi-folding doorset. Further details can be found in the Designer Range brochure available on request.

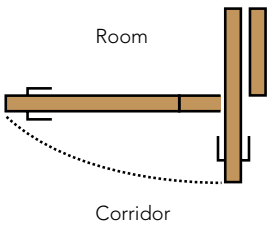
Pivette L/H opening in*



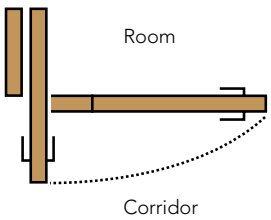
Pivette R/H opening in*



Pivette L/H opening out



Pivette R/H opening out



*Note: These options are not available with the emergency release option.

Tolerances and dimensioning

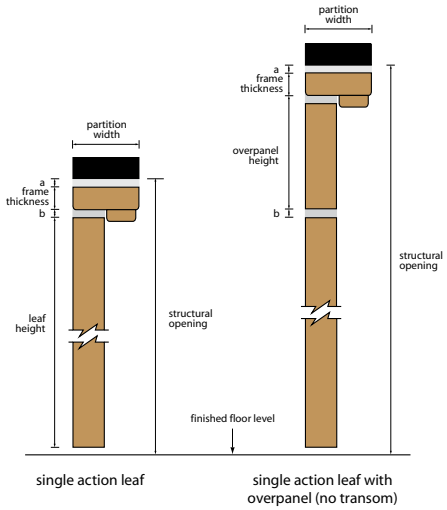
The drawings below set out the terminology and tolerances for dimensioning doorsets.

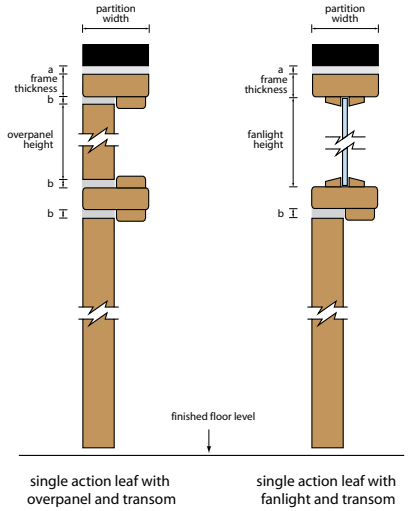
Key

a) 7mm tolerance between structural opening and frame assembly

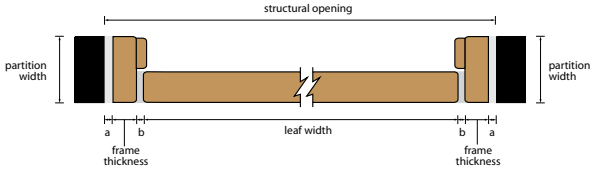
b) 3mm gap

c) 4mm at meeting stiles

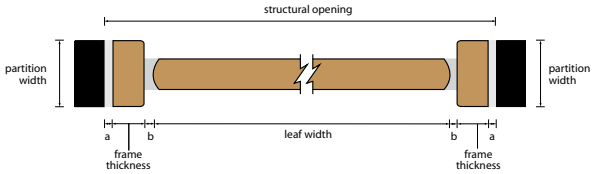




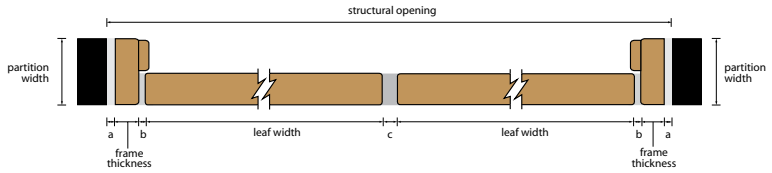
Single action single leaf



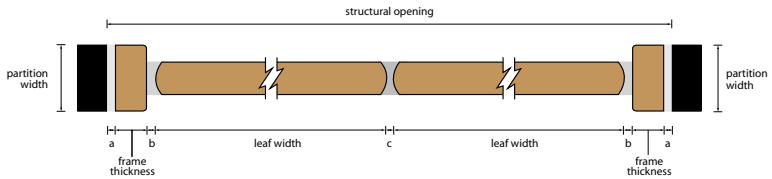
Double action single leaf



Single action pair of leaves



Double action pair of leaves

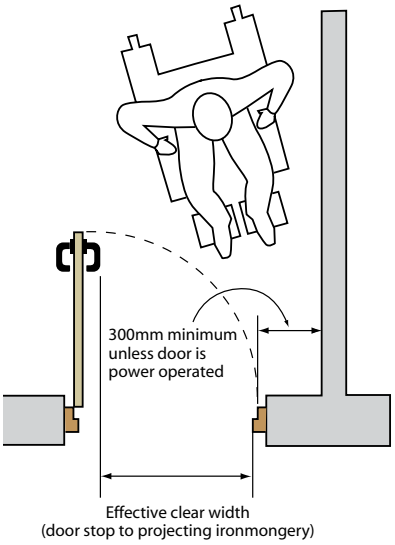


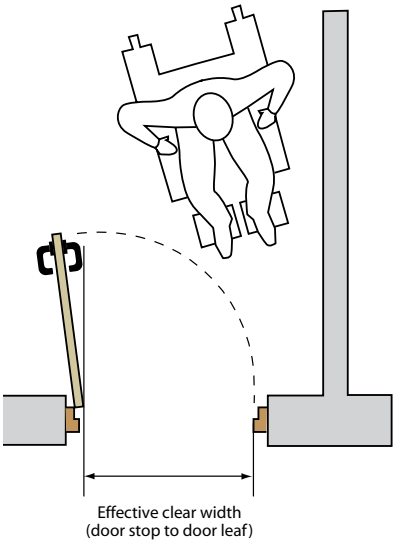
Note: The maximum clearance permitted from the top of the finished floor level to the underside of the door leaf is:

Fire resistance:	
FD30 and FD60	10mm
FD90 and FD120	5mm
Smoke control:	
HTM 58	10mm
BS8214	3mm

Effective clear widths

Approved Document M, Diagram, Effective clear widths.





'Clear opening width' is measured up to any projecting door item including furniture, weatherboards, etc., as shown above. A space of at least 300mm is generally required next to the leading edge of the door to enable wheelchair users to reach and grip the handle, unless the door is power operated. Door opening furniture should be operable with one hand (e.g. lever action).

Approved Document M, Table 2
Minimum Effective Clear Widths

Direction & width of approach	New buildings (mm)	Existing buildings (mm)
Straight-on (without a turn or oblique approach)	800	750
At right angles to an access route at least 1500mm wide	800	750
At right angles to an access route at least 1200mm wide	825	775
External doors to buildings used by the general public	1000	775

The case for doorsets

The doorset is a fully finished, engineered element comprising of frame, pre-hung door leaf (with any vision panels) and essential ironmongery, all matched and pre-assembled in the factory. It is delivered to site as a package for reassembly and simple installation.

In contrast, traditional door assemblies consist of the same elements but usually from various different sources, with final assembly and finishing carried out on site – frequently involving different trades.

Leaderflush Shapland doorsets are designed as complete, engineered units to meet specific performance requirements and manufactured to exacting standards from established components under factory conditions ensuring:

- minimised intervention on site
- consistent fitness for purpose
- straightforward replication of certified test conditions within the building

Appendix B of Approved Document B

"Any test evidence used to substantiate the fire resistance rating of a door should be carefully checked to ensure that it adequately demonstrates compliance and is applicable to the adequately complete installed assembly. Small differences in detail (such as glazing apertures, intumescent strips, door frames and ironmongery etc) may significantly affect the rating".

The importance of doorsets is acknowledged by BS 8214: 1990 'Code of practice for fire door assemblies with non-metallic leaves':

"It is strongly recommended that pre-hung, pre-finished, fire doors (i.e. doorsets) are specified whenever possible as this reduces the amount of site work necessary and allows normal factory quality control procedures to be applied to the finishing operations."

BS 8214 calls for testing of complete fire door assemblies or doorsets, fully representative of all aspects of how they will be used on site. For door assemblies, this is far more problematic with potential for combinations of mismatched, uncertified components and poor site practices. In addition to fire resistance, other performance criteria can be achieved and maintained more easily with doorsets, including:

- smoke containment
- sound reduction
- durability

This is due to the factory finishing, matching and fitting of the various components which work together to meet performance levels. Other guidance documents recognise this, such as HTM 58 Internal Doorsets:

"The high performance standards required of door leaves, frames and ironmongery in health buildings can best be met when these components are accurately fitted and matched in a factory and delivered to site as a complete unit (i.e. doorset)."

Independent research has addressed commonly held misconceptions about the capital costs of doorsets by using an objective comparison of realistic, current market prices compared with those of site-assembled unitary components. This research used single stage tenders for three real projects from reputable, national door contractors. With all building types considered, savings in capital costs were shown for doorsets over the average for contractors using site-assembled unitary components clearly showing that:

Doorsets can save up to half the initial capital cost of traditional door assemblies.

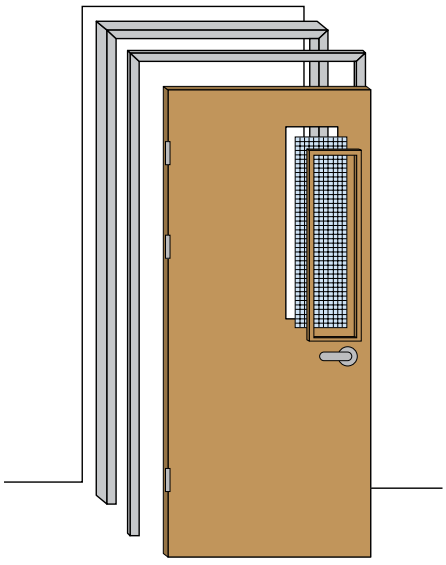
The doorset concept is a well-established example of the prefabrication and off-site product techniques advocated today under the 'Modern Methods of Construction' banner. Current initiatives, based on 'Constructing Excellence' principles, call for greater efficiency and savings in all areas of the building industry, not just construction costs. To satisfy these requirements, research has analysed differences in the procurement process and consequential time implications for architect, consultant quantity surveyor and main contractor's estimator, between doorsets and unitary component assemblies.

This analysis showed that doorsets substantially simplified the procurement process and offered overall time/cost savings of 50%.

Over 60 different components make up a typical storey height door assembly. It is generally accepted within the building industry that:

Substantial installation time and cost savings are achieved on site with doorsets over unitary component assemblies.

"There is an overwhelming case for the use of performance doorsets in place of site assemblies of unitary door components in today's building industry."



Doorset materials and finishes

The following tables outline the options for frame materials and door facings.

Frame materials, finishes and performance		Finish option												Fire performance				
		Velvalux Opaque	Primed	Hyalux Natural	Sealed	Hyalux Tint	Left Clean	Veneer Wrapped	Postformed PVC	Powder Coated	Galvanised	Zintec	PermaSkin®	Non-rated	FD30	FD60	FD90	FD120
Frame materials	Softwood		•	•	•	•	•							•	•			
	Hardwood	•	•	•	•	•	•		•				•	•	•	•		
	MDF	•	•				•		•				•	•	•			
	Steel/Stainless Steel									•	•	•		•	•	•	•	
	Non Combustible	•	•	•	•	•	•	•	•								•	•

Door facings, finishes and performance		Finish option									Fire performance				
		Velvalux Opaque	Primed	Hyalux Natural	Hyalux Tint	Left Clean	Powder Coated	Stove Enamelled	Galvenized	Zintec	Non-rated	FD30	FD60	FD90	FD120
Door facings	MDF/Particle Board	•	•			•					•	•		•	•
	Veneer			•*	•*	•					•	•	•	•	•
	Flat Laminate/PVC					•					•	•	•	•	•
	Postformed PVC**					•					•	•	•	•	•
	Postformed Laminate					•					•	•	•		
	Metal		•			•	•	•	•	•	•	•	•		

* Both Hyalux Natural and Hyalux Tint include Hygienilac antibacterial coating as standard.
** Available as Hygieniform high impact PVC. See Plasform® brochure for further details.

Hardwoods

We purchase only the top quality grades of hardwood, sourced from various parts of the world including the Far East, Africa, South America, Europe and North America – but only where the principle of sustained yield management is maintained. We also adhere to the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This regulates international trade in over 30,000 species to prevent unsustainable levels being reached.

Species are allocated to three appendices as follows:

Appendix I – may be threatened with extinction, with strict regulation of trade.

Appendix II – less threat, with trade subjected to regulation by permit, such as Afromosia.

Appendix III – not threatened globally but protected within individual states, such as mahogany in Brazil.

Veneers		Hardwoods				
Species	Colour	Species	Density	Internal Use	External Use (1)	Max. Fire Rating
Afromosia	Straw Yellow/Brown	Afromosia	710kg/m³	yes	yes	FD60
Anigre	Straw Yellow/Cream	Agba	510kg/m³	yes	yes	FD30
Ash - American White	Straw Yellow/Cream	Ash - American White	670kg/m³ (2)	yes	no	FD60
Beech - Steamed	Pink/Red	Beech - Steamed	720kg/m³	yes	no	FD60
Cherry - American	Pink/Orange/Brown	Cherry - American	580kg/m³	yes	yes	FD60
Idigbo	Straw Yellow	Idigbo	560kg/m³	yes	yes	FD60
Iroko	Yellow/Brown	Iroko	660kg/m³	yes	yes	FD60
Koto	Straw Yellow	Koto (Idigbo or Ash) (3)	580kg/m³	yes	no	FD60
Mahogany - West African	Red/Brown	Mahogany - West African	530kg/m³	yes	no	FD60
Maple	White/Cream	Rock Maple	740kg/m³	yes	no	FD60
Oak - American Red	Red/Brown	Oak - American Red	790kg/m³	yes	no	FD60
Oak - American White	Cream/Light Brown	Oak - American White	770kg/m³	yes	yes	FD60
Sapele	Red/Brown	Sapele or Meranti	640kg/m³	yes	yes	FD60
Utile	Red/Brown	Utile	660kg/m³	yes	yes	FD60
Walnut - American Black	Black/Mauve	Walnut - American Black	660kg/m³	yes	yes	FD60

(1) Veneers should not be used in external situations.
(2) Density can vary by as much as 20%.

(3) Koto in the form of hardwood is only available in limited section sizes, generally max 65mm. Where sections are larger than this Idigbo or American White Ash can be used as an alternative. However these are not an exact match but the closest available.

Where required, every effort is made to colour-match hardwood door lippings, glazing beads, frames, etc., with veneered door facings. However, as timber is a natural material, variations in shade and colour will occur – although usually diminishing over time. The table above offers a guide but other species may be substituted due to availability.

Leaderflush Shapland was the first company in its industry to develop and implement tracking systems independently assessed by BM Trada to meet the requirements of the FSC Chain of Custody Scheme. As a result, doors and doorsets can be specified using solid timber and timber based raw materials exclusively from well-managed and sustainable services and independently certified by the Forest Stewardship Council.

Veneers

Wood veneers are obtained by slicing or peeling a log to produce a thin layer of wood of a selected uniform thickness, usually 0.6mm. Selected logs are de-barked and cut through their length into halves or quarters known as 'flitches'. These flitches are steamed for several days depending on their species before they are sliced into veneer 'sheets'. The individual veneer sheets are the same width as the flitch, so as cutting proceeds sheets will change gradually in size. Each sheet, whilst having the appearance qualities of the flitch will be of very slightly different appearance from both preceding and following sheet.

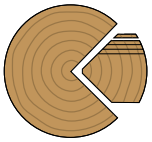
After cutting, the reassembled flitches are cured and dried. The job of the veneer matcher, which is highly skilled, is to use the available raw material to produce combinations of veneers or 'lay-ons' in accordance with the given appearance specification. Sheets will then be guillotined for width and height so that when joined in the specified style they will produce lay-ons only slightly larger than the required panel size. Lay-ons are produced by joining the veneer sheets edge to edge with adhesive or tape. Often lay-ons are individually numbered so that, for example, the lay-on for a matched through overpanel face is identified with its door leaf face at all points in the production sequence. Unless special requirements are called for, a reasonable veneer match between 'en-suite' doors will be provided at our discretion. Our minimum flitch widths are 100mm for quarter cut lay-ons and 150mm for crown cut lay-ons.

There are many timber species suitable for the production of decorative wood veneers – samples can be provided, which are also useful for control purposes during the project. The technique of cutting veneers will substantially effect the appearance of the end product. Where no other veneer is specified, Quarter Cut, Book Matched will be supplied.

The principal methods of veneer cutting are:

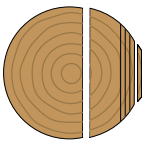
Quarter cut

The log is cut along its length to form four separate flitches. These are then sliced at 90° to the growth rings to provide sheets which have a striped or planked appearance when assembled.



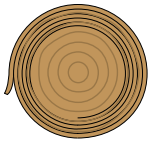
Crown cut

The log is simply sliced along its length, resulting in a figured appearance with less vertical emphasis than Quarter cut.



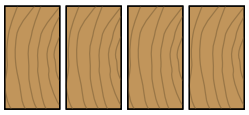
Rotary cut

The log is simply peeled to give a continuous veneer, generally used for constructional plywood. Veneer sheets cannot be matched except for general colour characteristics and their appearance is wild and flowery.



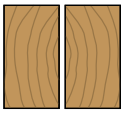
The following four veneering methods can be repeated over pairs of doors, overpanels and side panels:

Consecutively laid (Slip Matched)



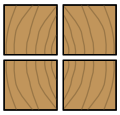
The lay-on is assembled across the face of the door using adjacent sheets as cut from the flitch. Sheets are laid next to each other in the same order and with the same face outward, resulting in a planked effect. Also available is random slip matched.

Book matched



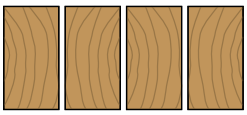
Two adjacent sheets, as cut from the flitch, are placed next to each other and one is turned over to create a mirror image. This can be repeated over the door and used to create a central focus.

Quartered



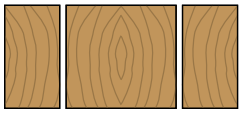
The veneers are laid reversed about two axes so that a mirror image is created in both width and height. Sheets can be cut and arranged to give a centred feature. All veneered doors have hardwood lippings to both vertical edges, softened with a 3mm radius, or alternatively to all 4 edges. These can either be exposed or concealed as required. Lippings are selected to colour match either the veneer or frame (refer to page 11).

Centre jointed



Equal numbers of sheets are used working outwards from the centre line of the door in width. Sheets are selected so that the left half of the door matches the right half, resulting in a mirror image. Alternatively adjacent sheets can be consecutively laid.

Centre feature



An unequal number of sheets is used and the central veneer is used for its striking appearance. To emphasise its focal position the remaining sheets can be laid so that those on the left half mirror those on the right half. Alternatively adjacent sheets can be consecutively laid.

Contrasting inlay

Veneers from different timbers can be laid on the same door to produce a variety of effects ranging from subtle differences to the most striking design statement.

Finishes

Basic information on many of the finishes available for doorsets now follows (referred to in the Materials, Finishes and Performance tables on page 10).

Velvalux Opaque – a factory-applied, opaque system available in any RAL or BS colour.

Primed – in standard form, an opaque finish suitable for use with most paints from reputable manufacturers, for internal use. Compatibility with specific paints can be verified. Doors to be decorated by others must be lightly sanded prior to painting to provide a key.

Hyalux Natural – a clear polishing system which gives a durable, lustrous, satin finish emphasising the veneer grain.

Hyalux Tint – a translucent colouring system available in any RAL or BS colour allowing the veneer grain to show through.

(Polyester) Powder Coated – available in any RAL or BS colour as an alternative to painting. Suitable for both internal and external use, this provides excellent impact resistance and colour continuity.

Stove Enamelled – a two coat application followed by baking in an oven to give a paint finish which is both harder and more temperature-resistant than with air drying. Available in RAL and BS colours, or other colours can be mixed.

Galvanised – a coating of zinc applied by hot-dipping to give a decorative external quality surface. If scratched, eventual corrosion of the steel will occur and if it is to be painted, etch-priming will be needed.

Zintec – a zinc coating applied using an electroplating technique. This is corrosion resistant with good adhering properties for glue, paint or polyester powder coating without further preparation.

Hygienilac® – antibacterial additive is integral to the Hyalux natural and Hyalux tint and is standard in all veneer doors and doorsets. It has a 99.9 percent kill rate and fights against bacteria such as C.diff and MRSA.

PermaSkin® – a revolutionary, durable finishing system developed by BASF, the world's leading chemical company. It can be applied to our standard frame profiles of mono, barum and cubith.

For additional information regarding PermaSkin® visit www.leaderflushshapland.co.uk or call to discuss on 01773 530500.

Door leaves and facings

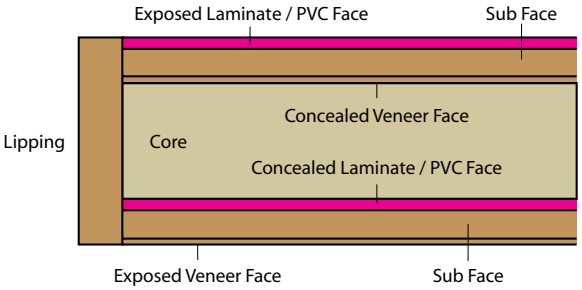
All Leaderflush Shapland door leaves are designed to meet specific performance levels as tested – notably compliance with requirements for BWF-CERTIFIRE certified, fire-rated doorsets – and are manufactured to exacting standards which exceed the guidance offered by BS 8214. Selection of materials and construction methods have been developed with many years experience to best achieve specified performance, while adhering to our environmental policy, appropriate standards and regulations. Core construction is simply determined by us from the combination of performance requirements selected from the product range brochures. However, door leaf designations are summarised below with relevant performance characteristics, for background information.

Leaf Designation	Thickness (mm)	Weight (kg/m²)	Internal Quality	External Quality	Fire Performance (1)	Smoke Control	Sound Reduction (R_wdB)	Thermal Insulation (W/m²K)	Mechanical Strength (2)	Classification of service life	X-Ray Performance	Ballistic Resistance (3)	Delayed Entry Level (4)
ARMADOR 1 NR/30	56	61	•	•	NR/FD30	•	33 (4)	1.80	Severe Duty			G1	Level 2
ARMADOR 1 60	56	63	•	•	FD60	•	33 (4)	1.80	Severe Duty			G1	Level 2
ARMADOR 2 NR/30	57	68	•	•	NR/FD30	•	33 (4)	2.20	Severe Duty			G2 & S86	Level 2
ARMADOR 2 60	57	70	•	•	FD60	•	33 (4)	2.20	Severe Duty			G2 & S86	Level 2
ARMADOR 3	51	80	•	•	NR			2.16	Severe Duty			R2	Level 2
AUDIODOR 30 NR/30	43	25	•		NR/FD30	•	32	1.84	Severe Duty				
AUDIODOR 32 NR/30	45	23	•	•	NR/FD30	•	32	1.63	Severe Duty				
AUDIODOR 32 60	55	33	•		FD60	•	32	1.63	Severe Duty				
AUDIODOR 35 60	52	39	•		FD60	•	35	1.68	Heavy Duty				
AUDIODOR 38	44	32	•		NR/FD30	•	38	1.84	Heavy Duty				
AUDIODOR 39 60	55	68	•		FD60	•	39	1.94	Severe Duty				
AUDIODOR 40	44	32	•		NR/FD30	•	40	1.84	Heavy Duty				
AUDIODOR 44	47	54	•		NR/FD30	•	44	1.82	Heavy Duty				
AUDIODOR SUPER	48	60	•		NR/FD30	•	46-49	1.82	Heavy Duty				
AV1 NR/30	54	34	•	•	NR/FD30	•	29	2.31	Severe Duty				Level 1
AV1 60	54	36	•		FD60	•	29	2.31	Severe Duty				Level 1
AV2 NR/30	55	51	•	•	NR/FD30	•	33	2.31	Severe Duty				Level 2
AV2 60	55	53	•	•	FD60	•	33	2.31	Severe Duty				Level 2
AV3	56	54	•	•	NR			2.31	Severe Duty				Level 3
AV4	51	42	•	•	NR			2.37	Severe Duty				Level 3
ENDURACOR NR/30	43	22	•		NR/FD30	•	28	1.50	Severe Duty	• (6)			
ENDURACOR 60	55	33	•		FD60	•	29	1.36	Severe Duty				
LAMCOR NR/30	45	23	•	•	NR/FD30	•	29	1.63	Severe Duty	• (6)			
LAMCOR 60	53	29	•		FD60	•	29	1.68	Severe Duty				
LEADLINE AS (Code 5/7)	Varies	55/68	•		NR/FD30/FD60	•	39 (5)	1.94	Severe Duty		•		
VULCAN 90/120	54	35	•		FD90/FD120	•	31	1.92	Medium Duty				

(1) Fire resistance - NR = Non-rated; FD30 = 30 minutes; FD60 = 60 minutes.
(2) Tested to BS DD 171.
(3) Tested to BS 5051.
(4) Assessment based on Leaderflush Shapland tests.
(5) Code 7 lead.
(6) Severe duty with 1 million cycles, class 8.

BS 8214 recognises the importance of balancing dissimilar door facings to avoid exaggerated distortions in the door leaf and this is catered for as part of our service. Choices of door lippings for each product range are described in product brochures. For paired leaves, we offer square meeting stiles, as rebated meeting stiles are not recommended in BS 8214, nor do we have test evidence to support their use in fire rated situations.

Example of door facing balancing

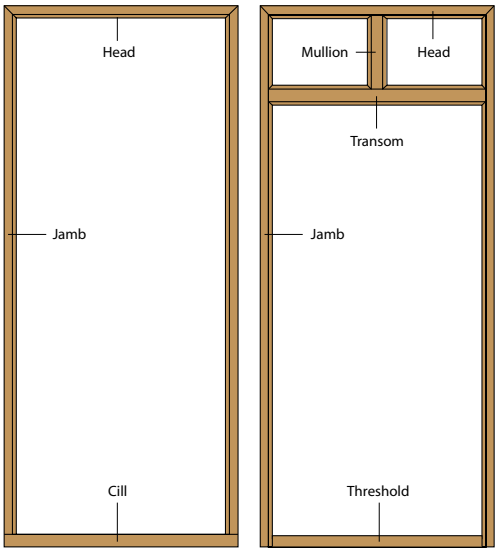


Frames and architraves

Minimum section sizes, material specifications and other criteria apply to BWF-CERTIFIRE approved, fire-rated doorsets. These are detailed in Data Sheets related to individual door leaf constructions (attached to each doorset) but will automatically be incorporated in our designs for doorsets to meet specified performance requirements. Availability of materials, finishes and section profiles for each product range is indicated in individual product brochures but general information is summarised in the tables on page 10 and with the drawings which follow.

Sizes and section profiles
The following terminology is used to describe frame elements:

Standard partition thicknesses for all frame sections are 94, 100, 113, 126 and 144mm, although others are available, depending upon the product range. Non-standard sections and sizes can also be provided, and these should be discussed with us. The following ranges of frame sections are available as shown in the drawings:



Mono
A particularly easy to install one-piece unit, suited to exact opening sizes and for use with or without architraves. As well as being suitable for internal use, it is the standard frame for external and security applications. (The Monex frame is used in inward opening external doorset situations.) Mono edges are softened with a 3mm radius (6mm for PVC wrapped). This section can be used with extension pieces for larger widths.

Barum
A traditional style frame with planted stop, used with extension pieces for larger widths. Barum edges are softened with a 3mm radius (6mm for PVC wrapped). This section is also suitable for double action doors without a stop. This is the standard frame for medium to high level acoustic doorsets.

Cubith
A split frame design with integral architraves and planted stop. It also allows an almost unlimited range of partition widths and reveal depths. Cubith edges are softened with a 3mm radius (6mm for PVC wrapped).

Solo
A steel frame traditionally used in security and industrial situations but suitable for all applications, available in a range of sizes. The Split Solo is available to cater for varying partition thicknesses.

Architraves
Where specified, architraves are supplied in either hardwood, softwood or MDF with finishes to match or contrast frames. Availability of architraves for each product range is indicated in individual product brochures. Architraves can be secret fixed or pinned (which we recommend should be punched and filled). Dog leg architraves are useful for accommodating various partition widths while still using standard frame sizes. Standard architrave sections are shown on page 16 but other profiles can be supplied.

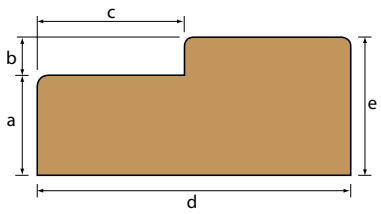
Extension lining
With the exception of Cubith where partition thicknesses exceed 144mm, an extension lining is used to extend the width of the frame to fill the reveal. (See page 16)

Frame joints
Frames are joined at the corners with one of 3 methods; mortise and tenon, mitre and half-lap. The performance levels chosen by the specifier and the section profile determine which of these joints are used ensuring that the resultant joint gives the appropriate level of strength and durability.

Frame profiles

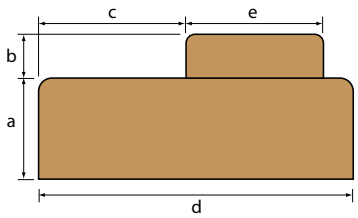
All dimensions determined by performance requirements

Mono



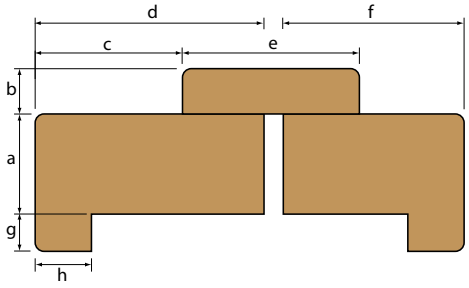
a – **32,** 44mm
b – **12,** 18, 25mm
c – door thickness +2mm
d – **94** -144mm
e – **44,** 50, 69mm

Barum



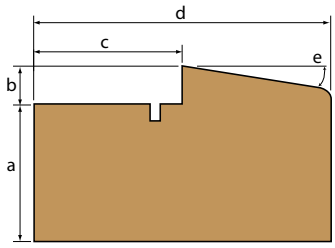
a – **32,** 39, 44mm
b – 12, **14,** 18, 19mm
c – door thickness +2mm
d – **94** -144mm
e – 30, 34, **42**mm (Omit stop when double swing)

Cubith



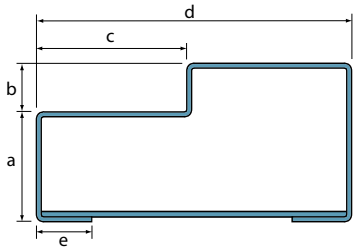
a – **32**mm
b – **14,** 18, 19mm
c – door thickness +2mm
d – **78,** 85mm
e – Varies to suit partition
f – 45, 65mm
g – **12,** 18mm
h – **18**mm

Monex



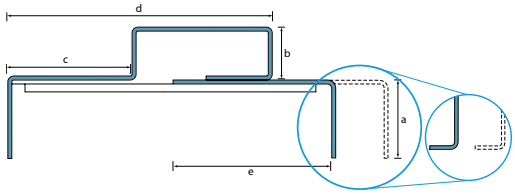
a – **44**mm
b – **12**mm
c – door thickness +2mm
d – **94** -144mm
e – **9**°

Solo



a – **32,** 50mm
b – **18,** 25mm
c – door thickness +2mm
d – **100** -150mm
e – **19**mm

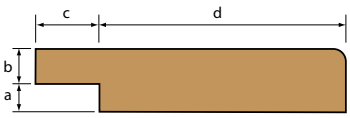
Split Solo – Flush Architrave also available as standard architrave



a – 32mm
b – 18mm
c – door thickness +2mm
d – 100mm
e – varies to suit partition

Note: bold figures indicate default dimension for non-rated, FD30 and FD60 unless otherwise stated.

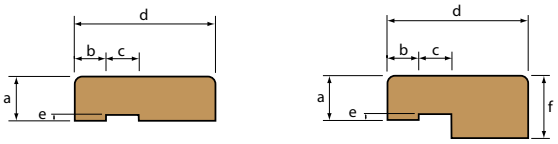
Extension lining



All dimensions determined by performance requirements

a – 8mm **b** – 10mm **c** – 18mm **d** – 45mm - 144mm

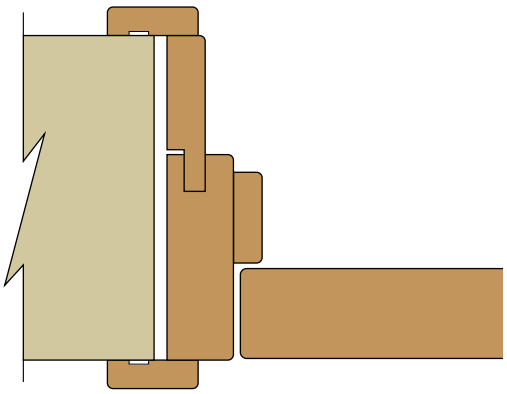
Architraves



a – 14, 18mm **b** – 10mm **c** – 10mm **d** – 45, 69mm

e – 2mm **f** – 20, 24mm

Typical application of extension lining and architraves



Vision panels

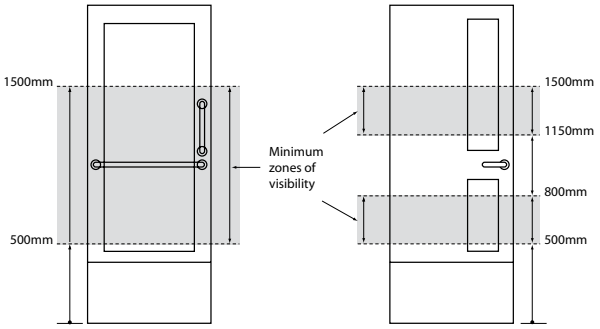
Glazed vision panels are often used within door leaves to let light into a room, for aesthetic reasons or for safety (i.e. allowing people using the door to be seen).

Vision panels should be towards the leading edge and with vertical dimensions including at least the minimum zones shown, either with or without a horizontal rail.

All entrance doors and doorsets, doors across corridors and within lobbies, and where appropriate internal doors require vision panels for door leaves and side panels wider than 450mm.

Visit our website www.leaderflushshapland.co.uk for further details in relation to accessibility.

Visibility requirement for doors

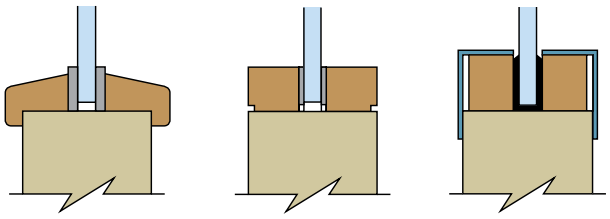


Glazing

Glazing has a major impact on fire performance and limitations are identified in the Building Regulations. Aperture shape and position, glazed area, style of bead and type of glass all influence fire performance, as well as appearance. The most commonly used aperture configurations, all available with fire certification up to 60 minutes, are shown on page 18.

Those designated M comply with Part M and 8300 with BS 8300 for disabled access requirements. Alternative designs can be accommodated and these should be discussed with us at an early stage.

Three types of glazing bead are offered as standard – Timber Bolection, Timber Flush and Steel Trim – and these are used with various alternative details to suit specific fire ratings, aperture shapes and sizes. The available glazing details for each of the apertures shown below are indicated in the table opposite. Hardwood beads can either be fully polished, primed or painted to match the door. These are generally fixed with steel pins, punched in and filled, although other methods (such as screw fixings) are available. Steel trims can be powder coated, coloured to match door furniture, plates or other accessories and are screw fixed.



Bolection Flush Steel Trim

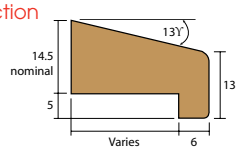
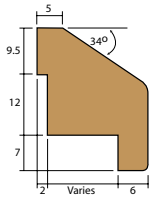
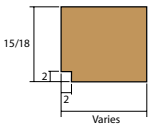
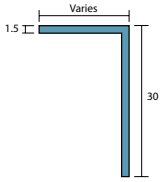
In some situations, safety glass will be required. All aperture dimensions shown in this section relate to the cut-out sizes.

Details of special flush glazing systems, particularly suited to hygienic and 'high tech' applications, can be found in the Plasform Range literature.

To ensure achievement of consistent quality, specified performance levels and fire certification, we strongly recommend that only factory installed glazing be used.

We can supply doors with provision for on-site glazing but cannot certify work carried out by others and in such cases certification must be established separately. Apertures should not be cut into our products on site – as this will invalidate our certification.

Glazing bead profiles table

Profile	Fire Rating	Material	Fixing Method	Internal/External	Shape
Bolection 	NR 30	Hardwood	Pin/Screw	Internal/External	Circular Rectangular Square Irregular
Bolection 	60	Hardwood	Pin/Screw	Internal	Rectangular Square Irregular Circular also available with a modified profile. Contact Technical Services for details
Flush 	NR 30 60	Hardwood	Pin/Screw	Internal	Rectangular Square
Steel Trim 	NR 30 60 90 120	Steel	Screw	Internal	Rectangular Square Circular Irregular

Vision panels

The most popular vision panel styles are shown below, although other designs can be accommodated. All aperture dimensions shown are cut-out sizes and the appropriate margin should be deducted to give the clear view size. A selection of glazing systems is available to suit styles as shown. All apertures shown can be supplied with either a hardwood bolection or steel trim bead, to either non-rated, FD30 or FD60 fire resistance.

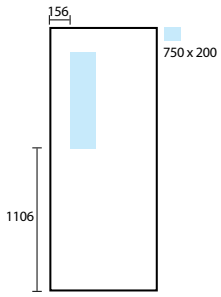
Key - for disabled access requirements

M - compliance with Part M of the Building Regulations

8300 - compliance with BS8300

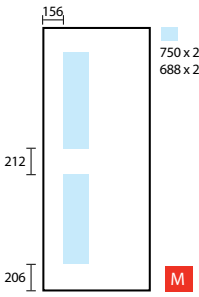
- cut-out dimension

Aperture VN1



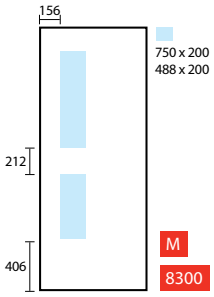
	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

Aperture VN2



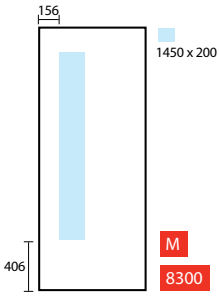
	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

Aperture VN3



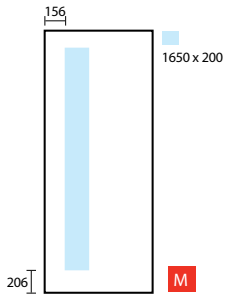
	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

Aperture VN4



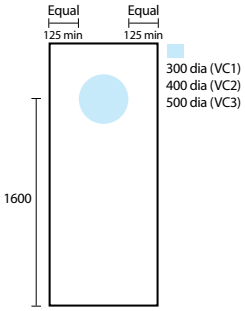
	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

Aperture VN5



	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

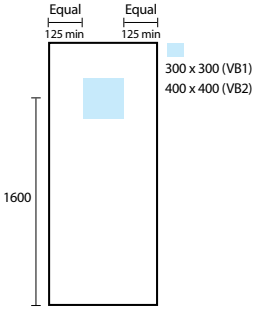
Aperture VC



	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

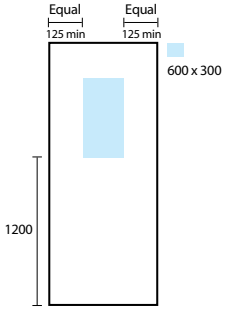
* Not 500 dia

Aperture VB



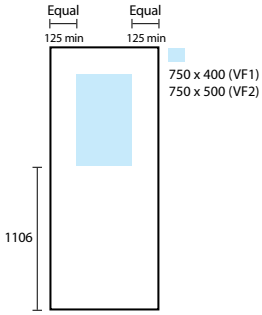
	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

Aperture VW1



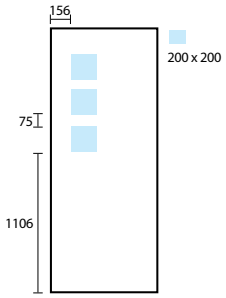
	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

Aperture VF



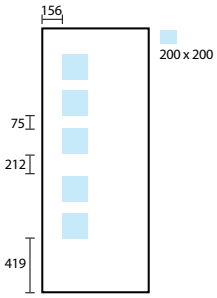
	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

Aperture VM1



	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

Aperture VM2



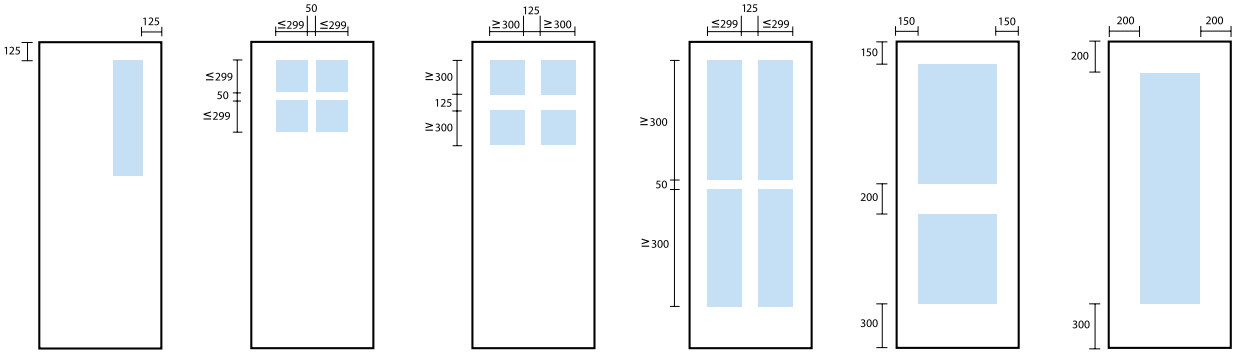
	NR	30	60
Hardwood		•	•
Bolection		•	•
Steel Trim		•	•

NB: The above elevations refer to Non-rated FD30 and FD60. For FD90 and FD120 contact the Technical Services department on 01773 530500
NB: The shaded areas represent cut-out sizes

Non-standard vision panels

Other apertures than those shown on pages 18 and 19 are possible subject to the minimum margins shown below, which relate to flush doors only. For partially glazed 90 and 120 minute doorsets, 125mm indicated margins must be increased to 150mm.

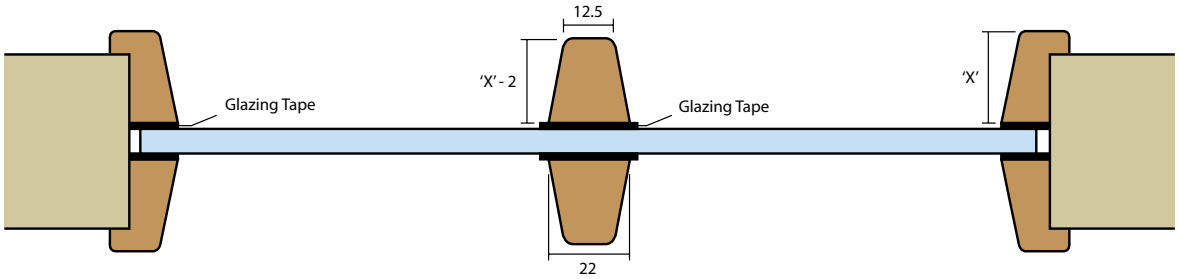
Minimum aperture margins for vision panels



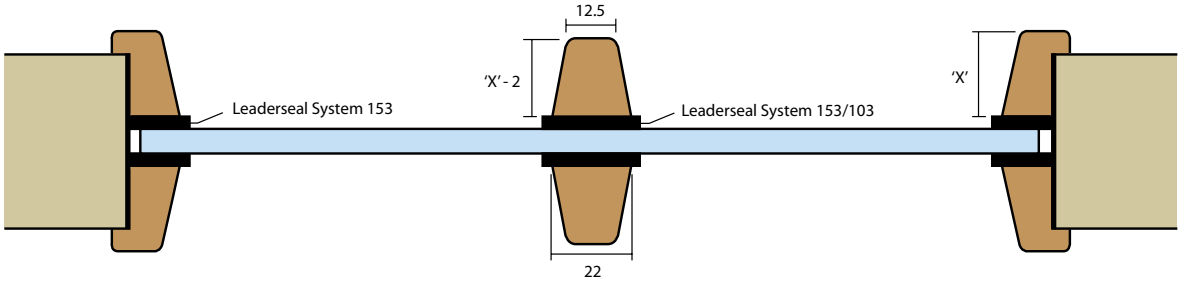
Ladder style apertures

Ladder style apertures are available in square or rectangular arrangements only. Proposed external uses should be discussed with us to ascertain suitability.

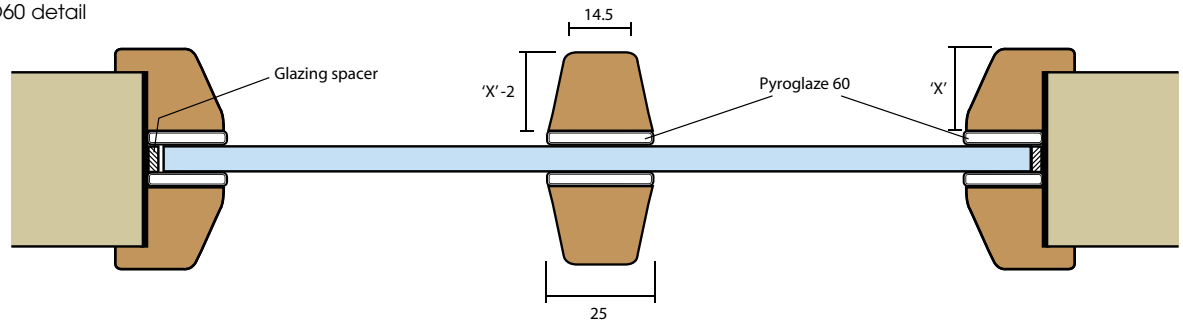
Non-rated detail



FD30 detail



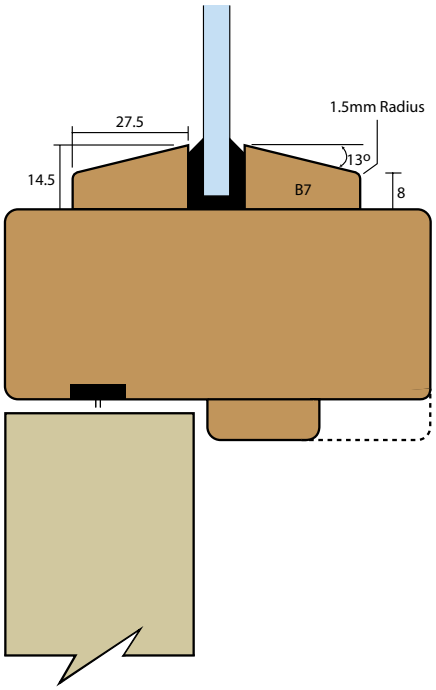
FD60 detail



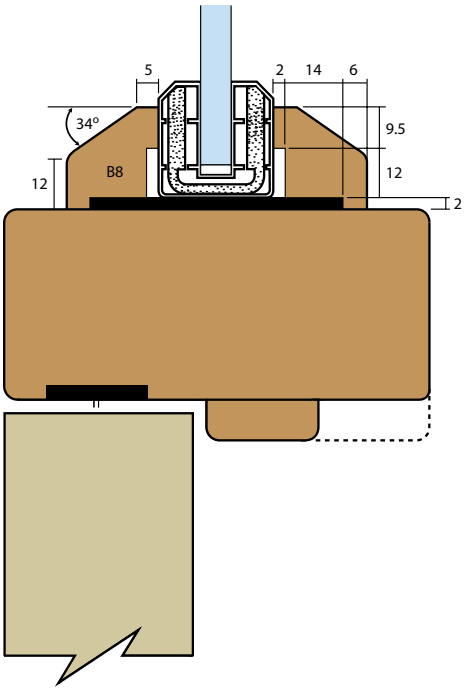
Glazed fanlights

Doorsets can be supplied with fanlights, as outlined on pages 6 and 7. For either clear or wired glass, the maximum individual pane size that can be accommodated is 1000mm wide x 2000mm high for FD30. Alternative details for non-rated/FD30 and FD60 fire rated fanlights, applicable to both situations, are shown below: Profiles/dimensions will vary depending on specific material and finish required.

Non-rated and FD30 Fanlight



FD60 Fanlight

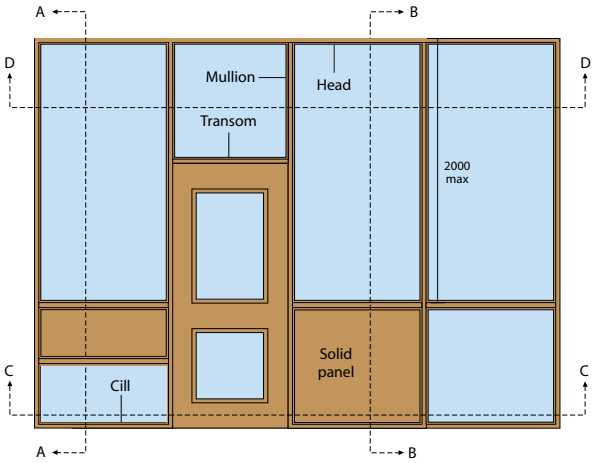


	Non-rated/FD30	FD60
Maximum glass/panel opening	1000mm wide x 2000mm high	Wired glass - max 1494mm wide, max 2359mm high or max 2.25m^2 unwired glass – 2420mm wide, 2420mm high subject to max 2.15m^2
Framing material	Softwood, or hardwood for polish – minimum 410kg/m^3	Hardwood – minimum 640kg/m^3
Bead system	Hardwood – minimum 510kg/m^3	Hardwood – minimum 640kg/m^3
Glazing system	Leaderseal System 36/6	Leaderseal System 90+
Glass type	Wired or unwired	Wired or unwired
Solid infill panel	As door construction, finished to suit	As door construction, finished to suit

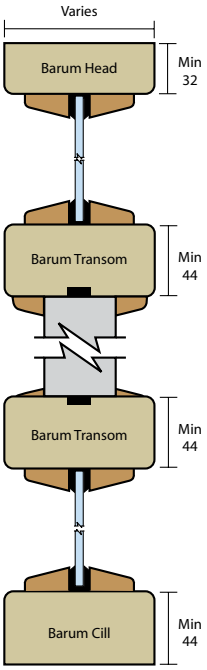
Glazed screens

Door leaves can be incorporated into glazed screens constructed using the Barum frame section for which we can offer fire performance certification. Terminology and typical screen section combinations are illustrated here and it should be noted that, in some situations, safety glass will be required. Screens are supplied ready for glazing by others on site and the frame section is available in hardwood or softwood. They can be finished with our Hyalux Natural polishing system, Hyalux Tint or they can be supplied primed ready for painting on site: information on finishes is given on page 10.

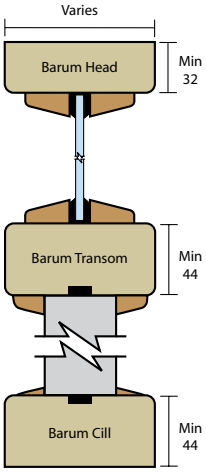
Key elevation for typical FD30 glazed screen (many other configurations can be supplied)



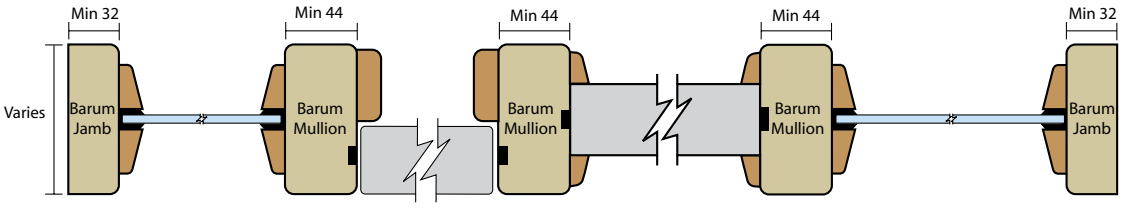
Section A-A



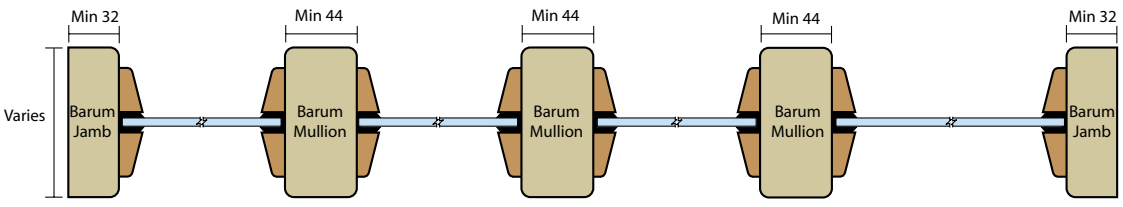
Section B-B



Section C-C

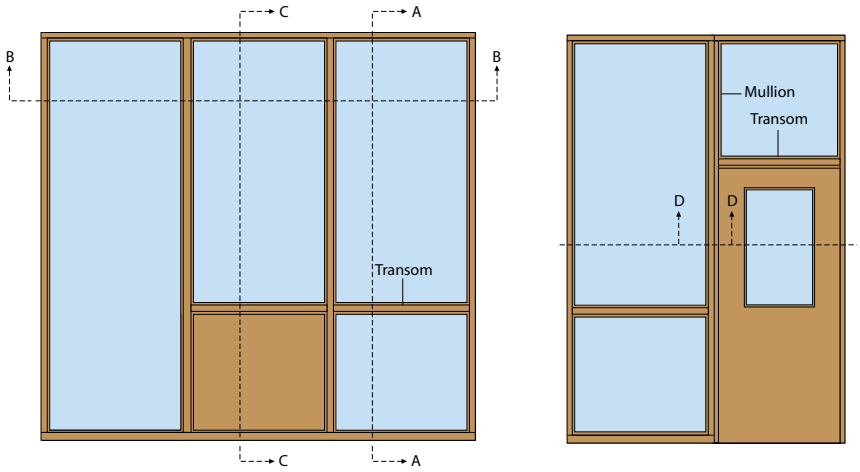


Section D-D

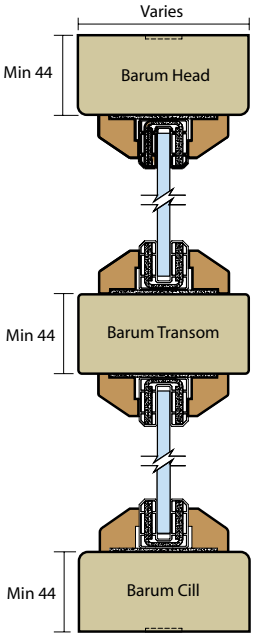


Typical elevations for FD60 glazed screens

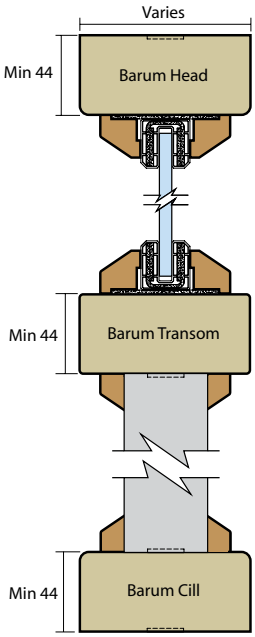
(many other configurations can be supplied)



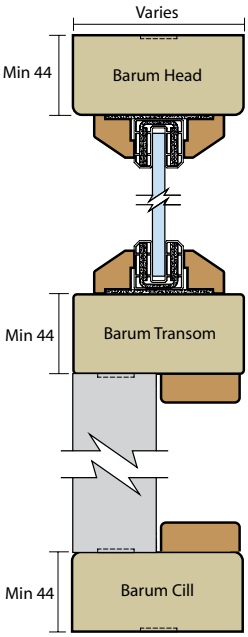
Section A-A



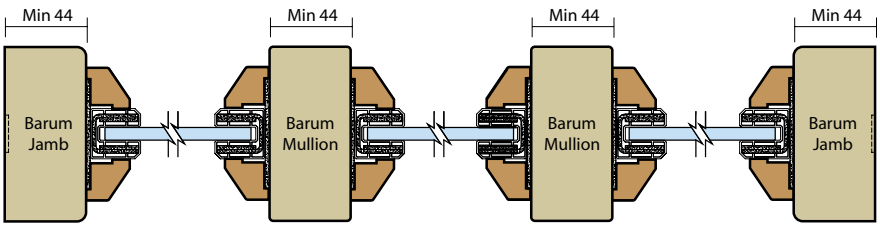
Section C-C



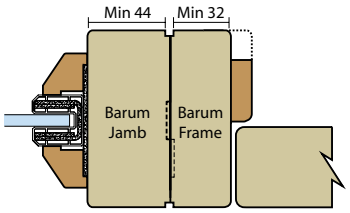
Alt section C-C



Section B-B



Section D-D



Ironmongery

As pointed out in BS 8214, the selection of ironmongery is vital to the performance of fire resisting doors. For this purpose, ironmongery can be separated into 'essential' and 'non-essential' items. Essential ironmongery includes hinges and securing devices (i.e. latches or locks) or closing devices (usually in the absence of securing devices). Various standards can be consulted including BS EN 1935: 2002 'Building Hardware, single axis hinges', BS EN 12209: 2003 'Building Hardware, locks and latches' and BS EN 1906: 2002 'Building Hardware, lever handles and knob furniture'. Leaderflush Shapland offers an extensive choice of factory fitted ironmongery. Other particular ironmongery specifications can be accommodated.

Hinges

Hinges should be manufactured entirely from metallic materials with a melting point higher than 800°C (unless proven by test). Standard finishes include bright zinc plate, stainless steel, brass, chrome and powder coating to any RAL colour. Hinges are automatically factory fitted for all Leaderflush Shapland doorsets to suit door weights and sizes, in accordance with the following procedures. Hinge positioning, whether for butt or lift-off hinges, is two at the top and one at the bottom. We recommend using 4 hinges on doors exceeding 2100mm high.

Door weights per m^2 for Leaderflush Shapland products can be found in the table on page 13 for assessing hinge loadings given in manufacturers' literature. Actual door weights are simply calculated by multiplying these values by height and width (m). These weights per m^2 apply to veneer or paint finishes. Table 1 identifies additions to be made for other materials.

The resulting actual door weights may also require adjustment in certain situations. The current BS EN 1935 refers to +75% adjustment for backcheck door closers.

Wider doors increase the bending moments acting on the hinges and therefore should be allowed for by reducing the maximum mass of door leaf supportable by each class of hinge. The factors by which the door mass has to be adjusted for excessive widths of doors are calculated by dividing the door height by the width.

For a factor of two or greater no allowance has to be made. When the factor is less than two the door mass has to be increased by the value required to bring the factor to two expressed as a percentage (see table 2).

Hinges in FD60 situations must be bedded in intumescent material. This may also be necessary in some FD30 situations. Please contact Technical Services for further advice.

Latches

Latches consist of a case containing a spring-loaded 'snib' operated by handles to open, but tapered on one side to allow the door to close without handle operation. Latches are needed to prevent door movement with differential air pressure but may also be required for fire certification (as identified on BWF-CERTIFIRE data sheets). Care is needed with deep latches near vision panels and aperture margins may need to be increased to maintain door strength while allowing for morticing. To comply with Fire Certification, latches must be CE marked.

Locks

Unlike latches, locks are needed to prevent the door from opening by physical force. The locking mechanism can be incorporated in the same case as the latch (known as a 'sash lock') or as a separate item ('dead lock'). The same care is needed as with latch cases to avoid weakening of the door construction and over-morticing must be avoided to give a tight fit. Traditionally, locks were operated directly by keys but most modern locks use a mechanical cylinder system, either key or thumb-turn operated. Electronically controlled locks are also used, particularly for security and access control applications, either remotely controlled or using devices such as keypads, card readers or proximity sensors. Provision for such locks must be made during construction for conduits and special conductor hinges, and these should be discussed with the Technical Services team at an early stage as fire certification may be compromised.

If fitting lockcases and flushbolts on site into fire doors they must be protected by intumescent material to ensure the door retains its integrity in the case of fire, and to ensure compliance with certification. Please refer to BWF-CERTIFIRE data sheets supplied with each doorset for specific detail.

Conduits for cabling can be incorporated within the factory construction of fire rated doors up to 60 minutes running under the facing. It is essential that the substrate is not grooved in any way and special precautions are needed to ensure certificatable fire performance. Therefore, site-fabricated conduits cannot be fire certificated and it is essential to advise us early of conduit requirements. Factory fitted locks, latches, and flushbolts can be included in the doorset.

Table 1 – additional weights of facing materials

Material	Thickness	Additional weight per m^2 per face
Laminate	0.9mm	0.8kg
Laminate	1.3mm	1.2kg
Acrovyn	0.7mm	1.0kg
Acrovyn	1.98mm	2.9kg
PVC	1.5mm	1.3kg
Steel	0.9mm	7.8kg
Steel	1.6mm	13.7kg

Table 2 – door width adjustment example

Door size – 2000mm height x door width	Factor	Normal increase of mass of door leaf %
1000mm or less	2	0
1050mm	1.9	10
1100mm	1.82	18
1150mm	1.74	26
1200mm	1.66	33
1250mm	1.6	40

Door closers and floor springs

All door closers on fire doors must be CERTIFIRE approved. Door closers can be either surface mounted or concealed. Surface mounted closers provide a controlled, smooth action and can include other functions such as hold-open, delayed-closing, back-check and adjustable latching speed. These are usually fitted to the top of the door on either opening or closing faces. Some closers can be fitted to the frame with only the arm fitted to the door. In this case, it is essential to ensure that the door frame thickness is sufficient.

Various concealed closers can be fitted into the top rail of the door. The rail must be hardwood for a proper fixing and the door thickness at least 54mm to accommodate the closer. As a large portion of the door needs to be removed, fire certification may be problematic, specifications should be checked with Technical Services.

There are other forms of concealed closer available which are fitted into the hanging edge of the door using a chain connector arrangement. However, these are generally unsuitable for use in commercial situations and could invalidate our certification. Discuss your requirements with our Technical Services Department.

Transom closers for double action can be supplied (as part of the doorset only) for fire ratings up to FD60 and a minimum frame width of 144mm is required and a door thickness of 54mm.

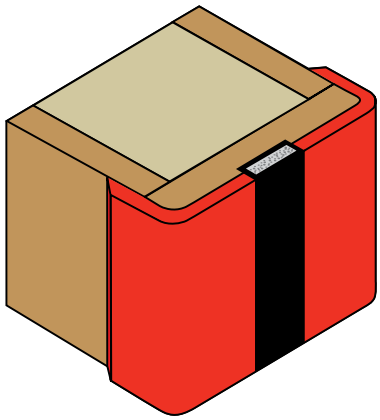
Floor springs are flush fitted within the floor and are also used for double action doors which we can certificate up to 60 minutes. Double action floor springs are positioned centrally within the frame and door edges must be radiused to allow swinging through the frame. Such doors require special construction to accommodate the door spring pin at top and bottom, and we must be notified early to avoid loss of fire certification and guarantees. Single action floor springs are also available but do not enjoy our guarantee or fire certification.

Architectural Hardware

Leaderflush Shapland now offers a comprehensive range of architectural hardware split into two categories, Elements and Origins. The complete range can be found in detail on our website at: www.leaderflushshapland.co.uk, alternatively contact the Architectural Hardware Department on: 01773 530500.

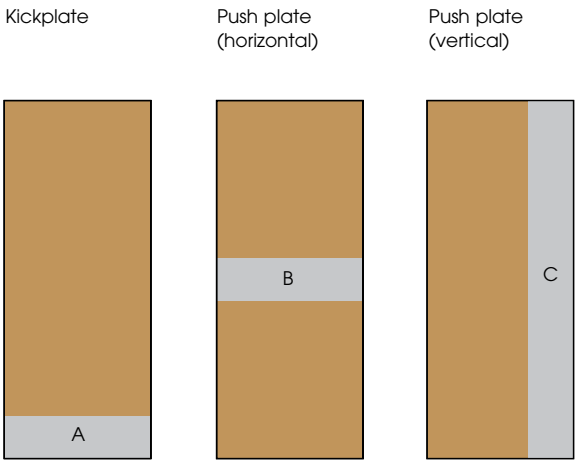
Edge protection

Postformed impact resistant PVC edge protectors can be fitted to the leading edge of the door leaf. These match the kick and push plates ensuring total protection is provided to both the face and edge of the leaf.



Protection plates

Push, kick and general protection plates can be factory fitted. These are either recessed within the substrate and glued or screw fixed over the facing. Alternatively, they can be bonded on site by others. Typical arrangements are shown but generally 200mm wide plates can be applied in different combinations. Plate thickness will be adapted to suit and they may need to be balanced where larger plates are used (except when screw fixed only).

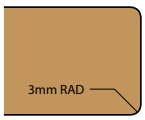


Edge detailing, intumescents and seals

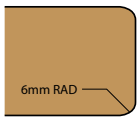
Door edges and lippings

Hardwood lippings are generally applied to vertical door edges of most product ranges, although they can also be applied to top and bottom edges where required – for example where used externally. Timber species are usually selected to match veneers, as outlined on pages 10 and 11. Lippings provide protection to the edge of the door and specifically its face, as well as covering the door core. The Plasform Range utilises a postformed edge detail which conceals hardwood lippings.

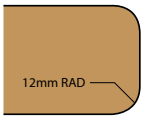
Details of door edges for various situations are illustrated below.



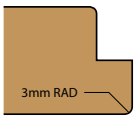
Softened edge for:
- Painted/primed leaves with or without hardwood lippings
- Veneered leaves with veneer over lippings or exposed lippings
- Metalidor



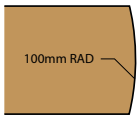
6mm radiused edge:
- Postformed (PVC)



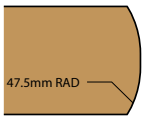
12mm radiused edge:
- Postformed decorative laminate (e.g. Formica)



12mm rebate external pairs (non fire only)



100mm radius for:
- Double action (lock edge)



47.5mm radius for:
- Double action (hanging edge)

Intumescents and smoke seals

Perimeter fire seals are essential to performance and form an integral part of the doorset fire rating, irrespective of stop size. There are three types available: intumescent, intumescent and smoke seal combined, and concealed intumescent. The first two systems incorporate exposed intumescent strips to the frame jambs and head as standard, whereas the concealed method houses the intumescent strips behind vertical door lippings but exposed on top – this provides 30 minutes fire resistance only.

Generally, exposed intumescents are 10mm/20mm x 4mm for 30 minute performance or 2 no 15mm x 4mm seals for 60 minutes. Intumescent colour is determined by veneer selection and will be either maple or light brown. If doorsets are primed for paint white intumescents are supplied as standard.

Where Plasform doorsets have been ordered intumescents will be colour matched from the standard range available. Alternatively intumescent colour for primed or Plasform doorsets can be specified.

Where complete doorsets are being supplied, all necessary intumescent seals will be included to the frame as standard, in order to achieve the stated performance. However, the specifier needs to indicate whether the concealed method is required. In the case of pairs of fire-rated doors, a combined intumescent and smoke seal will be incorporated at the meeting stile of the primary leaf corresponding with a plain intumescent in the secondary leaf.

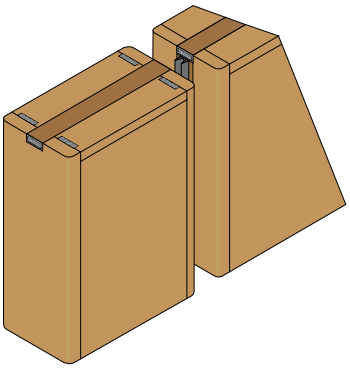
Where doors only are being supplied, seals need to be specified precisely if required. If intumescents are to be fitted by others, they must comply with our fire certification requirements and the BWF-CERTIFIRE data sheet.

Concealed intumescent seals can be incorporated into the vertical edges of single doors but the intumescent in the top edge must be exposed and is positioned to run the full width of the door leaf. With pairs of doors the primary leaf will always feature an exposed combination seal at the meeting stile.

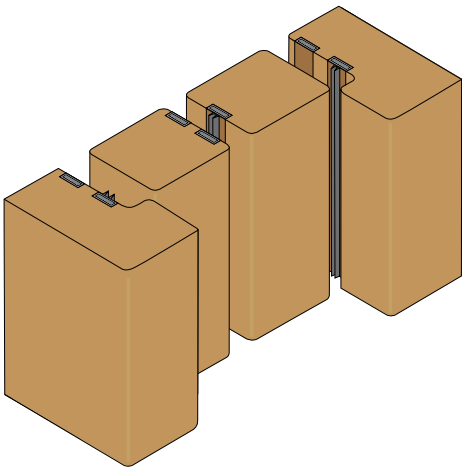
Use of a combined intumescent and smoke seal instead of an intumescent only will provide smoke protection in accordance with BS 476 Part 31.1, 'Requirement for Cold Smoke Protection', providing the gap at the bottom of the door does not exceed 3mm. If it does, an additional threshold seal will be required.

The diagrams which follow indicate the positions of intumescents and seals for various fire ratings and configurations. FD90 and FD120 doors are supplied as part of doorsets only, including the necessary intumescents.

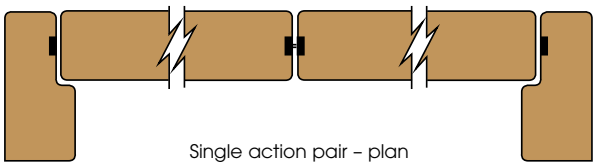
Concealed intumescent for FD30



Exposed intumescent for FD60

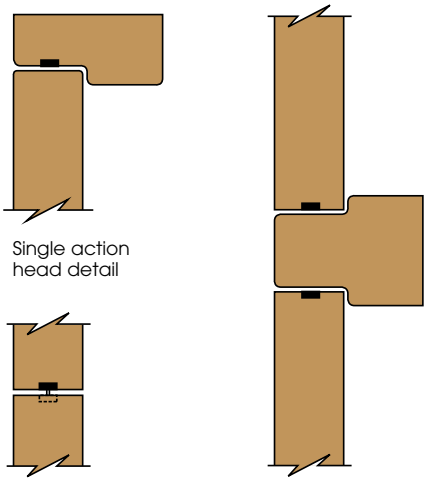


Single action intumescents position FD30



Single action pair – plan

Sections

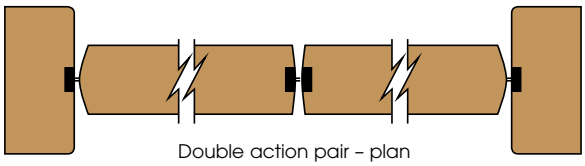


Single action
head detail

Overpanel
without transom

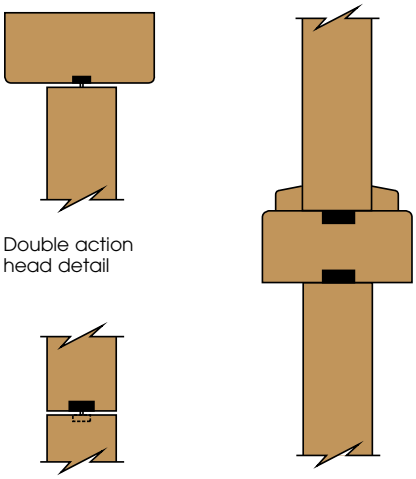
Overpanel
with transom

Double action intumescents position FD30



Double action pair – plan

Sections



Double action
head detail

Overpanel
without transom

Overpanel
with transom

Note: Intumescent detail may vary from that shown depending on performance and certification.

Thresholds

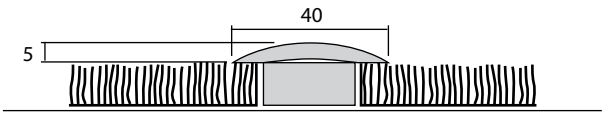
Thresholds may be needed for acoustic and smoke control applications to restrict below-door gaps, working in conjunction with appropriate door-mounted seals. Essential thresholds must be fixed parallel to the bottom of the door and may be screw-fixed directly to hard surfaces such as concrete or smooth vinyl.

For carpet or textured/profiled vinyl flooring, they can be fixed directly to floor screeds.

Aluminium thresholds for acoustic purposes should be located on a hardwood packer (to suit the floor finish depth) with mastic to threshold/packer and packer/screed.

Note: Intumescent detail may vary from that shown depending on performance and certification.

Aluminium threshold

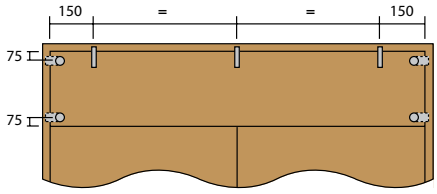


Accessories, complementary and specialist items

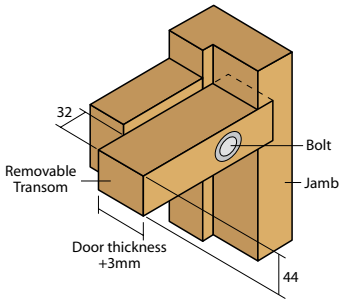
Removable overpanels and transom rails

Removable overpanels and transoms are useful for the occasional movement of large items, such as plant or machinery, and can be made to order. Overpanels are fitted with mild steel dowels (two for a single doorset, three for pairs of doors) which locate into pre-drilled holes in the frame head and are secured by security window bolts to the side. Transoms are fixed using the same type of frame bolts.

Removable Overpanel



Removable Transom

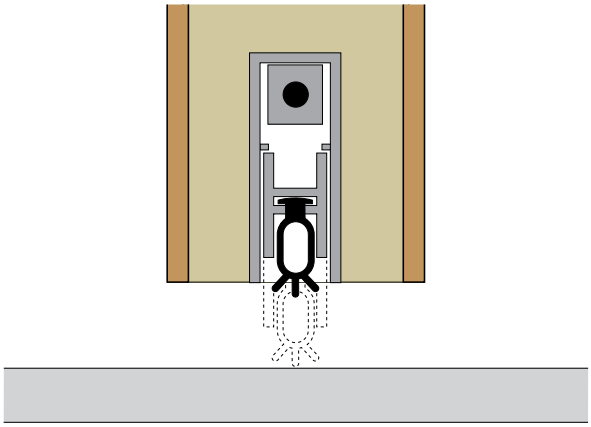


Sliding doors

Leaderflush Shapland can supply leaves for sliding door arrangements. It is essential to advise us early of sliding door requirements as the construction must be modified to accommodate this. These are non fire rated only.

Drop seals

Drop seals can be factory-fitted at the bottom of the door to close the gap with the floor when the door is closed using a mechanical system. This may be useful for smoke containment and low level acoustic control, particularly where the requirements for disabled accessibility call for an unimpeded floor surface. Where fitted by others, we must be informed early to adjust the door construction to suit.



Louvres and air transfer grilles

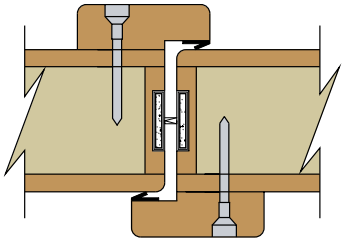
Fire rated air transfer grilles can be supplied for use within BWF-CERTIFIRE approved door leaves up to 60 minutes.

Contact our Technical Services Department for advice.

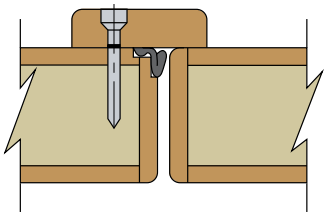
Astragals and angle stops

For pairs of doors, timber astragals may be needed to cloak meeting stiles for sound reduction (35 R_WdB or higher), weather protection and special situations such as radiation areas. Where pairs of doors are used with an overpanel but without transom, steel angle stops are fitted for the doors to close against. Typical examples are shown below.

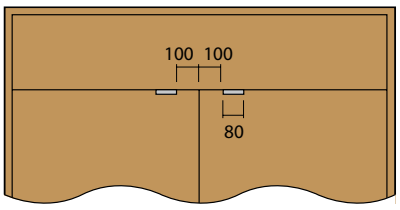
Acoustic doorset Astragal



External doorset Astragal - (weather protection)



Steel angle stops



Specification and scheduling

The growth of information technology is inevitably changing the way that building products are procured and this process is encouraged by initiatives such as the Constructing Excellence.

At Leaderflush Shapland we are firmly committed to driving the use of IT to improve procurement methods – but only by user-friendly means to ensure acceptance. Ultimately, we envisage the specifier's decisions simply generating an on-line model, or 'virtual doorset', containing all characteristics including size, performance levels, details, cost, delivery implications, installation requirements and eventual maintenance regimes. Output documents such as specifications and schedules would be automatically and accurately generated by such a model.

There are a number of Leaderflush Shapland initiatives already in place which work towards this goal. Individual NBS specifications for each product range are now available. A typical NBS based Specification follows, with related Guidance Notes.

The size(s) of the doors and structural openings should be shown on drawings or a schedule, as should the type of door arrangement, e.g. single leaf, double leaf, unequal double leaf with transom and overpanel.
Repeat individual clauses for each different type of door construction.

specification clause

410A . . . . . DOORSETS:
- Drawing reference(s): . . . . . .
- Manufacturer and reference:
  Leaderflush Shapland
  . . . . . .Range doorsets.
- Fire performance: . . . . . .
- Smoke control: . . . . . .
- Certification: BWF-CERTIFIRE.
- Sound reduction:

Door leaf:
- Core: . . . . . duty.
- Facings: . . . . . .
- Lippings: . . . . . .
- Finish as delivered: . . . . . .

Glazing details:
- Bead system: . . . . . .
- Size and position of aperture(s): . . . . . .
- Glass: . . . . . .

Frame and architraves:
- Frame: . . . . . .
- Architraves: . . . . . .
- Material: . . . . . .
- Class (to BS EN 942): . . . . . .
- Finish as delivered: . . . . . .
- Moisture content on delivery: 10 to 12%.

Ironmongery:
- Hinges: . . . . . .
- Locks: . . . . . .

Perimeter seals:
- Fire seals: . . . . . .
- Acoustic seals: . . . . . .
- Weather seals: . . . . . .

Other requirements: . . . . . .
Fixing: . . . . . .

Guidance notes

410A
(New clause by Leaderflush Shapland)

- **Clause heading:** Insert performance and finish, e.g.
  INTERIOR FACTORY PRIMED
  FIRE RESISTING LAMINATE POSTFORMED
  HIGH SECURITY PRIMED
  SOUND REDUCING VENEERED
- **Drawing reference(s):** Insert component and/or schedule drawing number(s).
- **Manufacturer and reference:** Select appropriate range from the Leaderflush Shapland catalogue.
  Insert, e.g.
  Designer
  Plasform Original
  Extended Performance Castle AV2
  Pivette
- **Fire performance:** Insert, e.g.
  FD30
  FD60
  FD90
  FD120
  Not required.
- **Smoke control:** Doors which require smoke seals should be identified on a door schedule. Insert, required for doorsets identified on schedule or not required.
- **Sound reduction:** Identified required R_wdB performance.
  Insert, e.g.
  32R_wdB
  47R_wdB
  Not required.

Door leaf:

- **Core:** Insert mechanical strength either Medium, Heavy or Severe duty.
- **Facings:** Identify whether door is veneered, MDF for paint, laminate faced, etc., (see page 10).
  Veneer – The specification of the veneer should cover the timber species, the method of cutting the timber and the configuration or pattern of the flitches. Provide details for both faces if they are different.
  Laminate/PVC – State material giving details for both faces if different, and colour/pattern where this is not shown on a separate schedule.

  Insert, e.g.
  Oak veneer, quarter cut and book matched.
  Wood veneer, species and pattern as schedule.
  Wood veneer – Burr Maple and American Cherry with Sapele inlays, pattern as shown on drawings.
  Quarter cut Steamed Beech, configured with stiles/rails to suit applied mouldings.
  Perstorp Fox PP1994UN laminate both sides.
  Acrovyn PVC, colours as shown on schedule.
- **Lippings:** Hardwood lippings, softened to a radius of 3mm, are fitted to vertical edges as standard (except where postformed facings are required) and can be concealed or exposed on veneered doors. Insert, e.g.
  Exposed hardwood to vertical edges.
  Concealed hardwood to all edges.
  PVC lipped top and bottom.
  Not required.
- **Finish as delivered:** Detail which of the standard factory applied finishes is required. Insert, e.g.

Hyalux Natural polish.
Hyalux Tint lacquer.
Velvalux Opaque paint system.
Velvalux Opaque primer.
Doors can also be left clean, but a factory finish is strongly recommended.

Glazing details:

Delete this item if glazing is not required.

- **Bead system:** Identify bead design and fixing method, and finish if appropriate (see page 17). Insert, e.g.
  Hardwood bolection bead, pin fixed, finish and colour as door leaf.
  Hardwood flush bead, to be screw fixed, finish and colour as door leaf.
  Steel angle trim, powder coated, colour to match door ironmongery.
- **Size and position of aperture(s):** Select from the range of standard aperture configurations (see page 18). Other arrangements can also be specified, but the size and position of each opening must be shown on component or schedule drawings. Insert, e.g.
  UN1.
  Non-standard as drawings.
- **Glass:** Identify type, ensuring it meets performance requirements.
  Insert, e.g.
  Wired
  Unwired
  Insulated

Frame and architraves:

- **Frame:** Insert one of the following options:
  Mono (frame with integral stop).
  Barum (frame with planted stop).
  Cubith (split frame with integral architraves and planted cover stop).
  Solo (steel frame with integral stop).
  Alternatively, where non-standard profiles have been agreed in advance with Leaderflush Shapland, insert e.g.
  Non-standard as drawings.
- **Material:** Advise material, and species if applicable (see tables on pages 10 and 11). Insert, e.g.
  MDF
  Softwood
  American White Oak
  16 gauge Zintec steel
- **Class:** Select appropriate class from BS EN 942.
  Insert, e.g.
  J40 (for general purpose joinery).
  J30 (for high quality and specialist joinery).
- **Finish as delivered:** Select from a variety of factory applied finishes (see page 10). Insert, e.g.
  Hyalux Natural polish.
  Hyalux Tint lacquer.
  Velvalux Opaque paint system.
  PermaSkin® - frame only.
- **Architraves:** This item can be deleted where Cubith frames have been specified, as architraves form an integral part of the frame profile. Otherwise, insert e.g.
  Not required.
  Required for doorsets identified on drawings.
  Supplied by others.
  Architraves supplied by other companies do not form part of the doorset and should therefore be specified in NBS section P20.

Velvalux Opaque primer.
Powder coating to BS 08B29.
Etch primer.
Stainless brushed self-finish.
Doors can also be left clean, but a factory finish is strongly recommended.

Ironmongery:

- **Hinges:** Leaderflush Shapland always provide hinges with doorsets. These are lift-off type as standard but are upgraded to fixed pin where backcheck closers, or larger doors are required. Hinges are available in a range of standard finishes – BZP, stainless steel, brass, chrome or powder coated to any RAL colour.
  Insert, e.g.
  Leaderflush Shapland standard powder coated RAL 5010.
  Leaderflush Shapland standard BZP.
  Leaderflush Shapland standard brass.
- **Locks:** Leaderflush Shapland recommend that factory morticing be carried out for all recessed items. All recessed ironmongery must incorporate radiused corners. Insert, e.g.
  Factory morticed, supplied and fixed by others.
  Refer to schedule.
  Morticed items supplied and fixed by Leaderflush Shapland.
  Refer to schedule.
  Site morticed, supplied and fixed by others.
  All ironmongery supplied and fitted by Leaderflush Shapland with morticed items factory fitted.

Perimeter seals:

- **Fire seals:** Intumescents and smoke seals are included as standard to ensure the doorset achieves the stated fire performance. With pairs of doors the primary leaf will always feature an exposed combination seal at the meeting stile (see page 26). Insert, e.g.
  Rebated in door frame, rebated in door edges.
  Concealed behind vertical lippings on door leaf.
  Where the positions of the intumescent seals vary between individual doorsets (e.g. some but not all of them are concealed), insert e.g. fitted in positions shown on schedule.
- **Acoustic seals:** Included as standard to ensure the doorset achieves the stated sound reduction performance.
  Insert:
  Required.
  Not required.
- **Weather seals:** Option available for draft/weather seals fitted in the frames. Insert:
  Required.
  Not required.

Other requirements:

Insert reference to special items such as thresholds and edge protection.

Fixing:

We would always recommend that frames are prepared for fixings at works. Insert:
Predrilled with matching pellets.
Frames drilled by others.

We can also assist designers with their own specifications and door schedules. In particular, pre-tender schedules can be prepared from floor plans and other information or we can provide standard format schedules for completion by specifiers. The Checklist which follows can help in ensuring that all necessary information is provided for scheduling.

Ordering

We have introduced **'Alpha Scheduling'** for our internal handling of detailed project information which acts as a single database at all stages. This ensures that the same, full information is used for quotations, orders and acknowledgements, and generates a single order document in an industry-friendly format without omissions.

Alpha Scheduling can also help with the production of specifications and door schedules. To ensure the fastest lead times and minimise follow-up information requests, we recommend use of the following Checklist.

initial request for information

Please ensure your site management is copied in on this document in order to confirm answers

Please supply the following by: Return to:

- Official order document ☐
- Site programme (dates) and any special delivery requirements (access difficulties, time restrictions, sequence and delivery content etc) ☐
- Full delivery address complete with postcode ☐
- Site contact names, telephone and fax numbers ☐
- Current floor plan confirming door numbers and handings ☐
- Current construction issue door schedule detailing site structural opening sizes
- Architect/NBS specification ☐
- Current ironmongery schedules –
  Note: machining will be to our standard positions: lock height at 1000 to centre line of spindle. Flush bolts – edge fixed etc. (unless otherwise advised) ☐
- Where we are morticing for recessed ironmongery, all samples must have radiused fore-ends. It is important that samples are received soon placement of order to ensure compatibility ☐
- Door facing, including veneer species and cut or laminate type and colour, stain specification or full paint colour. (RAL/BS number) ☐
- Dimensioned vision panel elevation (detailing clear view or cut out sizes) and glass type ☐
- Frame section profiles including architrave profile and sizes ☐
- Wall partition thickness (finished sizes including plaster etc) ☐
- Floor covering thickness – Note: in the absence of this information we will allow for an 8mm undercut which includes 3mm for smoke clearance ☐
- Colour intumescent strips to the leaf/edges ☐
- Confirm that laminated doors are in dry areas ☐
- Metal frames/AV3, ironmongery preparation/locations ☐
- Powder coated hinges, beads frames RAL/BS number ☐
- Where back check closers are to be used. Please tick box to enable us to upgrade hinges accordingly ☐

performance doorsets, meeting all performance criteria – across all sectors

introducing our other ranges and brands

an extensive portfolio of products that enables us to satisfy all your doorset needs

Through our brands, Leaderflush Shapland, Multisecure, Fitzpatrick and Longden, we offer the widest choice of performance doors and doorsets across all sectors encompassing commercial, health, education, social housing, heritage, conservation and consumer exclusive homes.

Leaderflush Shapland Ranges

The Ranges within Leaderflush Shapland suit a variety of different applications ranging from high level sound attenuation to standard fire resistance.

The Designer Range of flush doors and doorsets with numerous wood veneer, PVC, paint and metal finishes gives specifiers the freedom to choose from the most popular options which are included with 4 frame types and 11 vision panel designs, all of which have already been fire-tested and certified. The Designer Range also gives the specifier opportunities to produce unique designs with specific performance characteristics. This has been achieved by the partnerships which we have forged with specifiers which ensure that design visions are carried through to be practical long-term solutions.

The Plasform Range has been developed to meet the hygiene, safety and operational requirements of applications ranging from commercial, educational and transport to health, food and the 'high tech' industries. It is characterised by the use of radiused vertical edges to door leaves and all frame edges, with the post-forming of facings around them. This distinctive design is easy to clean, ergonomically friendly and damage resistant, and doors are fully encapsulated and maintenance free. Various vision panel options are available including flush-glazed systems.

The Extended Performance Range offers enhanced characteristics for flush doors in the areas of fire resistance (up to FD 120) and acoustics (up to 49 R_wdB), as well as specific security products with high levels of resistance to forced entry, vandalism and more serious burglary or armed attacks. Specially designed doorsets are also available for X-ray protection.

The Architectural Hardware Range offers a complete architectural hardware solution enabling you to specify all your doorset and ironmongery requirements from one convenient source. A dedicated technical team has been set up to help specifiers and architects with all their ironmongery requirements.

Multisecure

Multisecure specialises in entry doorsets, communal entrances and screens for social housing projects. Blockade doorsets for external or internal applications are 'Secured by Design' accredited and utilise composite timber construction. Fortcullis communal entrance doorsets and screens combine visibility and light with high security. Yobstopper doorsets offer very high security for more taxing applications.

www.multisecure.co.uk

Fitzpatrick

Fitzpatrick offer a full bespoke design service for the manufacture of quality steel doors, doorsets and frames. Fitzpatrick product range incorporates fire rated, insulated, acoustic and security products in both steel and stainless steel.

www.fitzpatrickmetaldoors.co.uk

LONGDEN

The Longden bespoke range of panelled doors and doorsets uses solid timber traditional construction methods combined with innovative techniques unique to the range to meet modern performance standards. Both raised and fielded panel and flat panel designs are available whilst boarded doors or glazed doors and screens can also be accommodated. Other products such as panelling for soffits and reveals or skirtings and dados can be manufactured. Longden has unrivalled experience in conservation and restoration, as well as manufacturing for new projects in either traditional and contemporary styles. Longden solid timber doorsets offer the ultimate in quality for luxury homes.

www.longdendoors.co.uk

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Leaderflush Shapland

The future of performance doorsets

FM 01354

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