ASSA ABLOY Timber Doorsets

Precision and performance

Our design, product development and production methods are focused on delivering precision made doorsets. Door, frame, hinge, lockcase and door blades are manufactured and fitted under factory conditions, guaranteeing a remarkable degree of accuracy.

Our certified doorsets deliver impressive performance, durability and value for money and are quick and easy to install.

This guide sets out how we prepare our doorset specifications and the different features and functions that are considered when designing what kind of door is required.

We cannot, in this short document detail every doorset we supply, but it will enable you to shortlist your requirements so that one of our technical advisors can draw up a complete design proposal specific to your needs.

ASSA ABLOY doorsets are:

- Fully guaranteed
- Compliant with building regulations in England, Wales, Scotland and Northern Ireland
- Fully certified
- Supplied from a single source
- Supplied with factory-fitted glazing
- Supplied with factory-fitted non-projecting ironmongery

ASSA ABLOY is the world’s leading manufacturer and supplier of door opening solutions, meeting tough end user demands for safety, security and convenience.

With over 150 companies operating in more than 40 countries and over 10 percent of the world market, the Group is the strongest global player in the industry.
A typical educational doorset

<table>
<thead>
<tr>
<th>Single</th>
<th>Door and a half</th>
<th>Double</th>
<th>Bespoke</th>
</tr>
</thead>
</table>

**Area of application**
- Classrooms
- Offices
- Administration areas

**Features**
- Vision panel meets requirements of BS 8300
- Keyway above handle
- Cam motion door closer meets requirements of BS 8300
- Hinges are geometrically balanced with door

**Notes**
- Laminate finish for impact resistance and durability
- Glazing beads screw fixed for ease of glass replacement

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<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Model</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder</td>
<td>Scandinavian oval single cylinder 2 keys</td>
<td>ASSA FP501</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>MJK Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lock</td>
<td>76mm double nightlatch with snib-lock back</td>
<td>Modular 765</td>
<td>1</td>
</tr>
<tr>
<td>Accessories</td>
<td>Scanflex Nordic U-lever handle</td>
<td>ASSA 95.45.01</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Scanflex Door Stop</td>
<td>ASSA 95.45.06 SSS</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Scanflex Outside cylinder ring inside thumbturn</td>
<td>ASSA 256-SF</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Generic Kicking Plate</td>
<td>SAA Nominal Size (900mm x 400mm)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>drilled and countersunk with softened edges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Door closers</td>
<td>CAM-motion Door Closer</td>
<td>DCS100 SIL Adjustable Power Size 2-4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hinges</td>
<td>Journal Supported</td>
<td>ASSA 3228 RZF 110mm x 98mm</td>
<td>3</td>
</tr>
</tbody>
</table>

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![ASSA ABLOY Timber Doorsets](image)
Technical specifications

The ASSA ABLOY Commercial Doorset range can offer the following technical specifications:

<table>
<thead>
<tr>
<th>Fire</th>
<th>FD30, D60, FD90 and FD120 certified fire doors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke control</td>
<td>Fire doors are also certified for smoke control FD30S, FD60S, FD90S and FD120S.</td>
</tr>
<tr>
<td>Durability</td>
<td>A range of Doorsets have been tested to the relevant clauses of DD171 resulting in a severe duty rating.</td>
</tr>
</tbody>
</table>

BS8300:2009 Compliance

For ease of visibility through the door, Equality Act compliant vision panels are available.

For ease of access, particularly for wheelchairs, doors are available in a range of sizes that are compliant with BS8300:2009 section 6.4.1

When specified with ASSA ABLOY ironmongery a wide range of fully considered, integrated design solutions are available.

For the visually impaired, a wide range of colours and contrasts can be offered.

BS8493:2008 indicates an LRV difference of 30 points or more between adjacent critical surfaces. The LRV difference between the door furniture and the face of the door is allowable down to 15 points.

Door edge options

- Exposed profiled hardwood lipping
  - Oak door with profiled lippings in solid oak to two or four sides

- Concealed flush hardwood lipping
  - Beech door with concealed lippings in solid beech to two or four sides

- White painted door with melamine edge

- Assimilated Beech laminate with matching PVC edge

Acoustic - sound reduction

Acoustic rated doorsets require accurate sealing and installation to achieve the desired performance.

The Rw ratings are for the doorset only. Manufacturers sometimes provide doorset sound insulation data as a combined rating for the wall and doorset where the Rw is referring to the performance of a wall approximately 10m² containing the doorset.

This is not appropriate as it gives a higher figure than the Rw figure of the dooset itself. Please refer to the table below.

<table>
<thead>
<tr>
<th>School Acoustics - Building Bulletin 93 or BB93</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of space used by students</td>
</tr>
<tr>
<td>Wall including any glazing</td>
</tr>
<tr>
<td>All spaces except music rooms</td>
</tr>
<tr>
<td>Music rooms</td>
</tr>
</tbody>
</table>

The ASSA ABLOY product range includes sound rated doors as follows:

<table>
<thead>
<tr>
<th>Sound classification</th>
<th>ASSA ABLOY classification*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rw 25 dB</td>
<td>Rw 27 dB</td>
</tr>
<tr>
<td>Rw 30 dB</td>
<td>Rw 23 dB</td>
</tr>
<tr>
<td>Rw 35 dB</td>
<td>Rw 28 dB</td>
</tr>
<tr>
<td>Rw 40 dB</td>
<td>Rw 24 dB</td>
</tr>
</tbody>
</table>

* when tested in the laboratory according to ENISO 140 - 3
Door dimensions

The table below shows a selection of standard sizes for single acting doors.

<table>
<thead>
<tr>
<th>Door Set Sizes</th>
<th>Door Leaf (mm)</th>
<th>Outer Frame Measurement (mm)</th>
<th>Structural Opening Size (mm)</th>
<th>Module 90°</th>
<th>Clear 90°</th>
<th>Opening 90°</th>
<th>Widths 90°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>625 x 2052</td>
<td>686 x 2089</td>
<td>730 x 2100</td>
<td>7 x 21</td>
<td>560</td>
<td>539</td>
<td>539</td>
</tr>
<tr>
<td></td>
<td>725 x 2052</td>
<td>786 x 2089</td>
<td>830 x 2100</td>
<td>8 x 21</td>
<td>660</td>
<td>639</td>
<td>639</td>
</tr>
<tr>
<td></td>
<td>825 x 2052</td>
<td>886 x 2089</td>
<td>930 x 2100</td>
<td>9 x 21</td>
<td>760</td>
<td>739</td>
<td>739</td>
</tr>
<tr>
<td></td>
<td>925 x 2052</td>
<td>986 x 2089</td>
<td>1030 x 2100</td>
<td>10 x 21</td>
<td>860</td>
<td>839</td>
<td>839</td>
</tr>
<tr>
<td></td>
<td>1025 x 2052</td>
<td>1086 x 2089</td>
<td>1130 x 2100</td>
<td>11 x 21</td>
<td>960</td>
<td>939</td>
<td>939</td>
</tr>
<tr>
<td></td>
<td>1125 x 2052*</td>
<td>*1186 x 2089</td>
<td>1230 x 2100</td>
<td>12 x 21</td>
<td>1060</td>
<td>1039</td>
<td>1039</td>
</tr>
<tr>
<td></td>
<td>1225 x 2052*</td>
<td>*1286 x 2089</td>
<td>1330 x 2100</td>
<td>13 x 21</td>
<td>1160</td>
<td>1139</td>
<td>1139</td>
</tr>
<tr>
<td>Unequal Pairs</td>
<td>725 x 398</td>
<td>775 x 2089</td>
<td>825 x 2089</td>
<td>8 x 21</td>
<td>660</td>
<td>639</td>
<td>639</td>
</tr>
<tr>
<td></td>
<td>825 + 398 x 2052</td>
<td>875 x 2089</td>
<td>925 x 2089</td>
<td>9 x 21</td>
<td>760</td>
<td>739</td>
<td>739</td>
</tr>
<tr>
<td></td>
<td>925 + 398 x 2052</td>
<td>975 x 2089</td>
<td>1025 x 2089</td>
<td>10 x 21</td>
<td>860</td>
<td>839</td>
<td>839</td>
</tr>
<tr>
<td></td>
<td>1025 x 398 x 2052</td>
<td>1075 x 2089</td>
<td>1125 x 2089</td>
<td>11 x 21</td>
<td>960</td>
<td>939</td>
<td>939</td>
</tr>
<tr>
<td>Equal Pairs</td>
<td>711 + 711 x 2052</td>
<td>761 x 2089</td>
<td>811 x 2089</td>
<td>8 x 21</td>
<td>660</td>
<td>639</td>
<td>639</td>
</tr>
<tr>
<td></td>
<td>811 + 811 x 2052</td>
<td>861 x 2089</td>
<td>911 x 2089</td>
<td>9 x 21</td>
<td>760</td>
<td>739</td>
<td>739</td>
</tr>
<tr>
<td></td>
<td>911 + 911 x 2052</td>
<td>961 x 2089</td>
<td>1011 x 2089</td>
<td>10 x 21</td>
<td>860</td>
<td>839</td>
<td>839</td>
</tr>
<tr>
<td></td>
<td>1011 x 911 x 2052</td>
<td>1061 x 2089</td>
<td>1111 x 2089</td>
<td>11 x 21</td>
<td>960</td>
<td>939</td>
<td>939</td>
</tr>
</tbody>
</table>

Clear opening widths relate to door openings. To comply fully with BS8300:2009 6.4.1 figure 11 ironmongery projections must also be considered.
Timber doors are manufactured from sustainable sources and can deliver a range of performances from heavy domestic applications to severe industrial duty. Normally supplied as separate frames and leaves for ease of handling and reducing site storage risks; impact damage, water penetration, moisture invasion. Can also be supplied pre-hung if required.

Glazed screens and doors
A number of glazed screens and doors can be supplied using the standard ASSA ABLOY frame section in order to comply with fire certification.

Internal doorsets
These quick turn-around doorsets are supplied with doors and frames separately to assist with site installation and manual handling but can be supplied with doors and frames pre-assembled if required. Ironmongery can be supplied loose or fully factory-fitted. They are manufactured to deliver a range of performances from heavy domestic applications to severe industrial duty.

Health
These doorsets are specifically designed to meet the requirements of HTM 58. Special adaptations are available to meet the needs of health establishments such as X-ray, clean rooms etc.

High humidity
Post-formed leaf and frame door set for use in ‘clean’ areas. These are laminated faced leaf and frame doorsets that can withstand a degree of humidity. They are constructed using laminates from any of the major manufacturers or with high-impact thermosetting plastic.

Encapsulated doors
Fully encapsulated seamless doorset to meet the highest requirements of hygiene and moisture resistance. This doorset can be used in wet environments.

Acoustic
Acoustic rated timber doorsets are tested to Rw27 dB, Rw33 dB, Rw38 dB, Rw43 dB. These 4 categories satisfy the requirements of BR83.

High security
A range of timber doorsets incorporating steel within the leaf and frame which can be face fixed for obvious security or within the core for a more discreet finish.

External doors
External doorsets with an integral vapour barrier for added protection against twist and warp due to water ingress. These doorsets prevent the ingress of moisture and therefore prevent a humidity imbalance, which can cause the doors to distort.

Fire rated
We can provide a range of fire and smoke seal rated doors up to and including FD120S.

Performance tested
We have a range of doors tested and certified to DD171 which are medium, heavy and severe rated.
Frame and construction types

Doorsets for commercial applications are supplied with door frames ex-factory in the standard types, sizes and finishes as detailed below:

- Timber frames are factory-engineered Redwood as standard.
- Smoke and intumescent sealing strips are factory fitted according to door type and performance rating.
- Depths other than standard are achieved with an integrated lining system.

The scale of our organisation enables us to cater for large runs on major projects, yet we have sufficient control to cater for those last-minute changes and additions that beset many projects.

Timber frames
Frames are available in the following finishes:
- Untreated
- Factory primed with white primer
- Factory painted in NCS colours
- Hardwood
- Veneered softwood
- Lacquered

Dimensions:
Thickness: 40mm single action.
42mm double action.
Depths: 13 standard depths ranging from 94mm to 250mm. Deeper frames are achieved using extension linings.

Hardwood frames
Frames are supplied in hardwood to match the timber species of the veneer. Fixing holes are pre-drilled with matching hardwood pellets supplied to cover screw fixings.
Vision panels

We offer a range of aperture styles and designs to suit your desired applications, other sizes are available at an extra cost. Cut outs for classified products are subject to maximum allowances in fire / sound certification.

Typical configurations
There are a range of commonly used vision panel configurations. As glazing has a major impact on fire performance, all our standard glazing options provide up to 60 minute fire resistance. The configurations shown on the next page are a selection of a wider range of standard vision panels.

The glass retention systems available include hardwood bolection and flush beads or steel trims.

We also supply specialised glazing systems. For example, we have a special flush glazing solution for hygienic environments which minimises dust traps. To ensure maximum quality and specified performance, all doors must be factory glazed.

Hardwood beads can either be fully polished or painted to match the doorset. These are generally fixed with screws, although other fixing methods are available. Steel trim alternatives allow the designer to match vision panels with door furniture, protective plates or other accessories and are screw fixed into position.

Glazing for vision panels in fire rated doors can either be wired or unwired glass.

Non-typical configurations
For other shapes, sizes, positions and details of vision panels, the constraints set out in the ‘Specifying with Doors and Doorsets’ technical guide should be considered or discussions held with us at an early design stage.

Louvres and grilles
Ventilation grilles, air transfer grilles or louvres can be fitted into doorsets or the hole can be prepared for others to fit.

Visibility control
Vision panel systems are available allowing adjustment to the opacity of glazing for observation or privacy. Contact us for further details.

Vision options

Notes
Health sector legislation
HTM 58 offers four formats of door glazing without dimensions but refers to Approved Document Part M (which does stipulate minimum glazing sizes in certain situations).

Use of the lower panel of glazing is encouraged, as are panels in fire doors for early warning and assessment of any fire. HTM 58 points out the conflict between nursing staff’s need to supervise and the patient’s expectation of privacy.

We can incorporate controllable privacy glazing within vision panels.

Factory glazing
As standard, doors are delivered glazed V1 and V2 are delivered without glass but with beads prepared for 21 mm vistamatic glass and are only available in 45mm non rated or FD30 doors (not acoustic).

*This indicates that the vision panels are BS8300:2009 compliant, this requires a zone of visibility between 500mm and 1500mm if necessary interrupted between 800mm and 1150mm with a maximum 350mm interruption within the zone.
Product ranges

ASSA ABLOY offer a range of materials and finishes including veneers, paint and laminate, to meet your specific requirements.

Veneer doors

ASSA ABLOY offer a selection of veneered surfaces for doors and frames, and hardwood lippings to two or four edges.

Veneers

Veneers can be crown cut, or quarter cut, depending on species selected. Doors are fully factory finished, hardwood lippings and glazing beads are also supplied to complement or contrast.

Frames

Frames are available in softwood, softwood veneered or solid hardwood.

Crown cut veneers

Crown cut veneers are “book-matched” giving an attractive and continuous matched pattern across the width of the door. “Book-matching” takes each veneer slice and joins each edge to the corresponding edge of the next slice, making each group of assembled veneers one continuous attractive pattern.

Frame types

Crown cut

The log is cut along its length, resulting in a figured appearance. This generally produces a veneer with a central area of a strong figured pattern.

Quarter cut

The log is cut into four separate quarters. These are then sliced across the growth rings to provide the veneers with a predominantly straight grain producing a vertical striped pattern up the length of the door.

Veneers available

Oak
Maple
Beech
Ash
Sapele (quarter cut only)
Koto (quarter cut only)
Laminate faced doorsets wood replica

Laminate doors are favoured in many commercial applications as they are characteristically known for being exceptionally hard-wearing, heavy-duty doors.

- Doors are faced with a laminate woodgrain effect and are hardwood lipped on two or four edges, or alternatively can be PVC edged
- A laminate finish gives an easy-to-clean and stain resistant surface
- The range available from our suppliers exceed the requirements of EN438 TestMethod 15 (the resistance of 49 everyday substances)

Laminate faced doorsets colour range

Available in a vast selection of different colours varying from bright, bold solid colours to subtle tones. These can create unique internal environments, designed for the purpose required.

- Complementary fully factory finished hardwood lippings and glazing beads are also supplied
- Doors are faced with laminate from the plain colour ranges and are supplied hardwood lipped on two or four edges, or alternatively can be PVC edged
- Frames for laminate doors are available in softwood, softwood veneered or solid hardwood

Note:
The colours shown above represent only a small selection of those available.

Painted doors

The ASSA ABLOY painted door range provides an extremely practical, hard-wearing and easily cleanable doorset solution.

Fully factory finished painted doors, available in many NCS or RAL numbers, provide a highly durable and quality finish, significantly better than can be achieved on-site.

- Frames are available in softwood, softwood veneered or solid hardwood
- Colours for doors and frames which can complement or contrast with each other as per your requirements
Door functions

ASSA ABLOY is at the forefront of the design manufacture and installation of doors for customers in the commercial, industrial and public sectors.

From pass doors through to the more specialized cleanroom and acoustic, we are sure we can meet your door requirements.

Main entrance: issues for consideration

- The more use a door gets, the more durable it needs to be, ensuring that it complies with BS EN 12400: 2002.
- Infrared activated door operators reduce the time that the door is open. This prevents the transfer of hot/cold air and offers greater environmental control.
- Automated doors help you meet your obligations under the Equality Act 2010.
- Locking method can be via access control or mechanical locking featuring master key systems.
- Consider an electromechanical cylinder that provides an audit trail to give a greater degree of security.
- Alternatively consider access control, such as card entry or proximity entry. Either of these options can be interlinked with internal lobby doors.
- If the exit is a fire escape, use escape hardware that complies with BS EN 1125 and a fire door to comply with BS EN 14600: 2005.

Corridor door: issues for consideration

- Available as single or double swing doors with hinges or floor springs.
- Is the door on an escape route? Install single or double, lockable or non-lockable swing doors with appropriate signage.
- Think about fire compartmentation via electromagnetic release on a fire alarm signal. There are two options available: stand-alone (magnetic hold open) or integral with door closer BS EN 1155.
- You will need to decide the fire rating required, up to FD120S. This will determine door thickness, construction method, types of seals required and signage.

Rear fire escape door

- The main priority is to permit safe escape regardless of whether the user is staff or general public.
- A rear fire escape door may be remote and therefore prone to attack and vandalism. It therefore needs to be strong and durable, as well as weather tight. Consider a steel-encased door, security astragal and hinge dog bolts.
- Install panic escape hardware to comply with BS EN 1125.
- Consider whether the external locking attachment that works with panic escape is to be cylinder, access control or digital key pad.
Door functions

Health door

- Doors designed for use in health facilities are subject to aggressive environments and rigorous cleaning regimes. Consider a laminate door finish which is impervious to water, for easy wipe-down cleaning.
- High security and controlled access may be necessary. Consider security via biometric Codoor reader (fingerprint) or an online access control using Smartair electromechanical lock. Ironmongery should be made from the superior 316 grade stainless steel rather than 304 grade or aluminium.

Acoustic door

- Acoustic doors need to achieve not only the maximum sound reduction required, but also the frequencies this applies to (BS EN ISO 717-1: 1997). The rating is determined by thickness, construction and quality of seals. Consider drop-down seals that engage once the door is in place to prevent undue wear and maintain seal integrity.
- Use Brighthandle to provide a visual reference to the status of the room (ie whether the room is in use or empty).

City apartment door

- There is a full range of door finishes available, from painted doors to laminates and specialist veneers.
- Fire rating up to FD120S, dependent on the fire office requirements (BS EN 14600: 2005).
- Codehandle from UNION, a compact and attractive coded door handle that facilitates keyless entry, provides internal doors with digital access control, without the costly work associated with integrating into an existing access control system. Designed for use on rooms which require a balance of restricted access and convenience for authorised users, the 9 easily programmable user codes and 1 master code can be changed limitlessly, allowing frequent changes of authorised users. Codehandle allows quick and easy installation requiring no wiring or cabling.
- Door closer – select CAM-motion for ease of use, compliant with BS EN 1154.

Disabled toilet

- Accessible doors should comply with BS 8300 and be able to open out in an emergency. The solution is to hang doors on pivots and replace door stops with a rescue set.
- For ease of use consider Brighthandle, which offers a disabled Connect toilet lock featuring a flip-up handle in lieu of a thumb turn.
ASSA ABLOY offers security solutions that draw on the world’s largest selection of locking products for a diverse range of applications and environments.

We guarantee all our products. This includes hardware, stand-alone solutions, electronic products and components.

ASSA ABLOY ironmongery offers strength and reliability, modular, interchangeable lock cases, a wide range of options to suit the specific requirements of schools, hospitals, offices and other public buildings. They are suitable for use on fire and security doorsets.

There is a choice of security levels and a full support and service network.

**Hinges**

ASSA journal supported hinges are ideal for high-usage situations. Their special design gives maximum endurance with minimum maintenance requirements. The small bearing surface makes the door easy to open, even by elderly or disabled people and the hinges are ideal for both site and factory installation.

Tested to BS EN 1935:2002 and CE marked, UNION Powerload hinges have been developed for heavy duty applications and have been assessed for use on timber fire doors to BS EN 1634-1. These hinges are ideal for the specification market where durability, reliability and outstanding performance are paramount.

**Mechanical locks**

Door locks, padlocks and exit devices are a few examples of our traditional mechanical products and they still account for over 50% of ASSA ABLOY world sales. They provide the basic functions of any security device: identification – the key and cylinder and mechanical strength – the lock itself.

**Electro mechanical and electronic locks**

More versatile electro mechanical and electronic products provide higher security and greater convenience than traditional mechanical products. These devices are not only more secure but simplify locking and unlocking. Electro mechanical locks offer added value to hotel guests and staff – they are easy to administrate, offer better security and convenience and you don’t have to replace them if a guest leaves with the key!

**New technology locking solutions**

**ASSA CLIQ** is a technology that brings together and integrates the very best of electronics and mechanics. Combining proven mechanical ABLOY PROTEC locking solutions with low-power electronics, the mechanical lock guarantees physical security, while the micro-electronics provide flexibility and a unique electronic key code for every lock.

**ASSA Smartair** is an electronic handle set or escutcheon that provides a completely standalone single door control operating as an electronic masterkeying system. Smartair’s special design and technology allows the creation of a powerful and sophisticated proximity access control system using attractive wire-free door units.

UNION Codehandle provides simple, effective keyless locking/unlocking of interior doors in all light commercial and residential environments where the convenience of access control is the main priority. In aesthetic environments Codehandle is a more attractive, compact option to bulky keypads. Further, it is so easy to fit – no wires, cables, drilling or special fitting is required.

**Door furniture**

ASSA ABLOY offers several ranges of high-quality stainless steel door furniture to complement its traditional products. A wide range of patterns and designs is available to suit the look and feel of any application.

**CE marking**

As CE marking is required, we are ensuring that our products are tested and comply with the relevant standard. BS EN 14351 is the first step towards doorset compliance as opposed to product compliance. We are ensuring that we keep abreast of any such standards.
Ironmongery and accessories

Door closers
ASSA ABLOY’s door closers have been designed and tested to meet the requirements of BS EN 1154 at a range of power levels, and include optional features such as backcheck, delayed closing, adjustable closing force and easy-action sliding arms. Several products in the range have been certified approved for use on fire doors. The newly expanded ASSA ABLOY Cam Motion series has been specially designed to retain its strength and high efficiency while still ensuring that the door is light to open, making it ideal for use by children, the elderly and disabled people.

Emergency exits
It is important to understand the difference in application between panic exit devices and emergency exit devices. Both need to ensure that they maintain the security of the building and don’t compromise the fire integrity of the door. Panic exit devices that comply with BS EN 1125 can be used in public areas and places where a panic situation could arise, while exit devices that comply with BS EN 179 are suitable for use in areas where occupants are likely to be familiar with the use of the exit device.

Automation
Automatic doors are in demand because they offer a simple and convenient security solution to entrances and exits. Through its broad product range, ASSA ABLOY has the unique ability to integrate automatic door operation with locking and access control.

Access control/access permission
Products based on RFID (Radio-Frequency Identification) technology are some of the fastest growing in the industry. The benefit of RFID is that it enables security monitoring and access control without physical contact.

Other ASSA ABLOY door furniture which may be required:
- Lever handles (available in a wide range of finishes)
- Flush bolts
- Kick plates and push plates (coloured plastic laminate or 1mm stainless steel)
- Finger pulls for sliding doors (can be supplied as standard)
- Air grilles
- Escape fittings
- Pull handles
- Door closers
- Fittings for disabled people
- Signage

All products are supplied from ASSA ABLOY in one complete doorset solution

All ASSA ABLOY products fully comply with relevant building standards and far exceed British Standards.
Performance

Sound insulation
ASSA ABLOY can advise on appropriate sound reduction levels and offer acoustic doorsets achieving up to 43 R\text{d}B, including a lighter weight option offering 40 R\text{d}B.

Our automatic sealing threshold can be used for fire, smoke and sound insulation in timber doors where a regular threshold cannot be mounted.

Hygrothermal
There are situations where legislation dictates that doorsets must withstand areas of normal and high humidity without loss of performance or appearance. ASSA ABLOY’s high humidity and encapsulated doorsets are particularly suited to environments where water resistance and protection against high humidity is important.

Security
ASSA ABLOY offers a complete range of lockcases that meet all requirements for security, convenience and emergency escape. The lockcases are constructed to meet the high requirements set by authorities regarding forced entry and fire-rating.

ASSA ABLOY lockcases are available for all types of doors. They are available in different dimensions – for example, for narrow-stile doors – and for use with different types of electric strike. The majority of ASSA ABLOY lockcases can be equipped with a microswitch for electric monitoring of doors and access control solutions. The product range includes patented hookbolt lockcases. The hookbolt interlocks door and frame and creates a strong unit. Our high-security door incorporates steel within the leaf and frame and can be face fixed to provide a more obvious deterrent.

Accessibility
Issues of accessibility are covered by BS8300:2009 and relevant building regulations in Scotland, Northern Ireland, England and Wales. Operating forces of door closers is a major issue where interpretation of the regulations is currently being revised and hold-open devices or automatic door operation are becoming common in public buildings. ASSA ABLOY can advise on these latest changes. We offer a range of accessible doorset solutions, fully complying with all the recommendations.

Emergency access
Emergency access to WCs and other sanitary accommodation can be achieved with a number of techniques depending on whether the door is outward or inward opening. ASSA ABLOY doorsets can incorporate removable stops on outward opening doors. Alternatively emergency release door stops can be used. ASSA ABLOY accessory sets have been designed for use with bathroom lockcases. Supplied with all necessary screws and fittings, which include red/white indicator and emergency release mechanism.

Vision panels
To ensure quality and specified performance all doors must be factory glazed. Glazing for vision panels in fire-rated doors can either be wired or unwired glass.

There are certain situations where it is desirable for vision panels in doors to be semi-opaque. For example, in environments such as hospitals, consulting rooms, banks, therapy rooms and schools.

There are a number of methods by which this can be achieved, from simple controllable blinds and slide-plate shutters to Intelliglass vision panels, which use liquid crystal glass technology. Each system has its benefits and these need to be aligned with the client’s performance brief and budget, if they are to provide the most appropriate solution.

Security glass
Small observation windows glazed with laminated anti-bandit or ballistic resistant glass are available as standard. The glass is normally retained by high-security steel beads, with no fixings exposed on the attack face. The standard bead finish is black stove enamelling, with powder coated or stainless steel finishes also available. Alternative glazing materials include toughened polycarbonate and 19mm Pyrosec glass – the latter is particularly suitable for secure accommodation such as seclusion rooms.

The standard vision panel size is 300mm square, giving a clear viewing size of 230mm x 230mm. We suggest that security vision panels are kept as small as possible, with maximum clear viewing width of 250mm. Fire-resisting security glazing is available on request.
Performance

Colour and contrast
BS 8439:2008 requires that a Light Reflective Value (LRV) of at least 30 points is measured between the surface of a door and adjacent framework. This standard also confirms that the LRV between a door surface and the attached ironmongery be at least 15 points. Clearly, colour schemes need to be established at an early stage to demonstrate compliance.

In healthcare environments HTM 58 states that doorsets and screens should form part of coordinated interior design. Recent clarification on how these requirements can be met is now available and ASSA ABLOY can offer guidance to designers. ASSA ABLOY doorsets are available in an extensive choice of colours and finishes.

Wayfinding and signage
Use of colour coding (including doorsets) to different areas or floors is a useful technique to help wayfinding in public buildings. All our doorsets range offer the opportunity to incorporate signs and other graphic devices directly onto the door face.

Fire and smoke
Fire resistance is one of the most fundamental performance criteria for doors and doorsets, resulting in a complexity of interrelated regulations, standards and guides.

Part B of the Building Regulations sets out requirements related to the escape of building occupants and access for fire-fighters, gradually replacing the Code of Practice BS 5588. However, insurers and advisory organisations are also particularly concerned with the protection of property, while other application-specific recommendations are also available. Part B refers to fire doors in terms of tests carried out to BS 476, in parallel with a new European standard which will eventually replace it.

It is now generally acknowledged that, in the event of fire, it is smoke that is the major risk to occupants. Generally, ASSA ABLOY doorsets offer FD30S and FD60S options as well as non-rated. In addition, we can offer FD90S and FD120S performance. Appropriate smoke seals and intumescents are automatically included with our doorsets to suit performance. ASSA ABLOY fire-resistant doors and doorsets are UNI4 tested or IFC assessed.

Sound
Acoustic control within buildings can be a complex area traditionally involving either specialist consultants or a purely subjective approach. However, higher density living and the growth in noise sources today have increased awareness and driven measures to reduce problems resulting from noise pollution. In particular, Part E of the Building Regulations 2010 includes quantifiable acoustic performance levels to ensure reasonable conditions in a wider range of residential buildings. Although not regulated, the best approach to non-residential building types should also be considered along similar lines.

The effects of acoustic privacy and nuisance noise are subjective and influenced by background noise within the room, distance from sound source and general context, amongst others. When considering walls containing doors, the combined performance of both elements may be relevant: with the proportion of door to wall being particularly important.

Strength and durability
Various documents, including BS 8214, stress the importance of specifying the appropriate classification of doors to ensure long-term performance under anticipated uses. These classifications are best derived from tests described in BS DD 171:1987, 'Guide to specifying performance requirements for hinged or pivoted doors (including test methods)', although equivalent European standards are now available.

The following classifications apply:

- LD light duty – low frequency of use by those with a high incentive to exercise care, e.g. private house owners.
- MD medium duty – medium frequency of use primarily by those with some incentive to exercise care, although with some chance of accidents or misuse.
- HD heavy duty – high frequency of use by the public and others with little incentive to exercise care where accidents or misuse could occur.
- SD severe duty – subject to frequent violent usage. All ASSA ABLOY doors and doorsets are MD, HD or SD rated.

The DD171 Test
To perform satisfactorily in each category, a door assembly must attain specific levels of performance. These include:

- Strength – slamming, impact, torsion, deformation, closure against obstruction, resistance to jarring, abusive forces on door handle.
- Operation – ease of opening and closing.
- Dimensional requirements – stability, no bowing or twisting.
- Fire resistance – fire doorsets – general principles.
- Building regulations – key requirements relating to fire safety are covered in Approved Document B of the Building Regulations for England and Wales and Section 2 of The Building (Scotland) Regulations 2004. This requires fire-resisting doors either to protect escape routes or to preserve compartmentation.

To comply with Building Regulations purposes, doors are designated in standard periods of fire resistance – for example:

- FD 30 – up to 30 minutes integrity.
- FD 60 – up to 60 minutes integrity.

The Suffix ‘S’ indicates a door which is also required to resist the passage of cold smoke.

X-ray – healthcare
HTM 58 describes lead-lined doorsets with continuous shielding across the leaf and frame, with any gaps masked. Any vision panels to be as small as possible with X-ray resistant glass. In addition, HBN 06 stresses the importance of adjacent construction continuity and lead-lined architraves. Certification of performance is required and identification discs incorporated, giving lead equivalence ratings. X-ray protection doorsets, combining other requirements such as fire or hygiene, can be supplied. Here, the lead sheet is placed closer to one leaf, so masking locks and other cut-outs.

Laser – healthcare
Although not specifically covered in NHS guidance, containment of lasers within operational areas is a growing concern, principally through glazing. ASSA ABLOY can supply doorsets with vision panels containing glass that absorb lasers of specified frequencies.

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MRI and electrical interference – healthcare
MRI is covered in detail by HBN 06. The procedure works by exposing the patient’s body to a magnetic field while radio waves excite atoms in the body. The radio waves and external interference are contained by an RF cage around the room – including copper foil within the door leaf and frame, providing electrical continuity across door/frame wall junctions. The magnetic field raises complex issues of patient safety (heart pacemakers are affected, for example), requiring controlled access with remote-release door locks and other controls. HTM 2014 covers protection from electrical interference with a similar arrangement of copper-lined doorsets including conductivity between door and frame, and conductive glass in any vision panels. Special copper-lined doorsets can be supplied.

Acceptance
Before accepting a door assembly for use in a building, fire officers will require evidence that the assembly meets Building Regulation requirements. This may be in the form of a test report or certificate, or an authoritative assessment, which specifies the door construction, size and details of the frame, ironmongery and glazing (if applicable). It is therefore essential when selecting fire doors to ensure that evidence of compliance for specific door assemblies is available in a form acceptable to the fire authority. Copies of test reports or assessments for ASSA ABLOY doorsets which are described as fire resisting are available on request.

Tests and assessments
Performance of fire-resisting doors must be based on tests to BS 476 Part 22. The test is applied to the whole door assembly, the door blade, frame, plus any ironmongery and other fittings.
Installation

ASSA ABLOY provides a doorset installation service that is fully compliant with all performance demands. Our installers are fully conversant in the latest installation techniques, including for specialised fire and acoustic doors.

We can ensure a continued chain of quality from manufacture to installation.

Delivery of your doorset

Condition in service

Doors are supplied at 10% to 12% moisture content and are designed for a relative humidity range from 40% to 60% from 12°C to 24°C.

If the relative humidity exceeds this for long periods, the conditions in service must be separately specified, or appearance and performance may be jeopardised.

Site installation

- Doors should only be brought onto site after all wet trades are completed and the building has been dried out. Site storage must be suitable, in particular adequate ventilation is essential when the heating is being commissioned.
- The door frame jamb extends on 3-4mm below the bottom of the door leaf. If greater clearance is required, for carpets etc, longer jambs must be specified when ordering. To assist with handling and transport, door and frames are shipped as separate items.
- Before beginning to fix the doorsets on site, first check the partition for plumb and thickness, and the opening for square and size. If the prepared openings does not confirm to specified sizes, within permitted deviations, it must be adjusted before attempting to install the doorset.
- Ensure doors and frames are correct for the location as scheduled. Remove any protective wrappings, blockings and temporary threshold ties.
- Doorset frames will usually be supplied pre-drilled for fixing. Provide adequate fixing points at jamb and head to match the holes in the frames.

- Set door frame into opening and check for plumb, square and level. It is advisable to hang the door leaf (leaves) in the frame at this stage to square the frame around the door. jig doors can also be supplied to allow setting-off and keeping the finished doors offsite.
- Pack firmly between wall and back of frame as necessary, to ensure uniform space around door edges. Fire-resistant doorsets require continuous packing.
- Remove door leaves and secure frame in position, using steel screws of suitable size, ensuring the jambs remain parallel.
- Re-hang the door and check correct position. If the leaves have been pre-hung in the factory, then fixing the frame can distort it, so only make small adjustments to the door.
- If door leaves are removed for re-hanging later, they must be laid perfectly flat, protected and kept in suitable conditions.
- Split frames are fixed in the same manner as above. The door hanging half secured the other half is cramped to it with the dowels or slivers glued. The stops should be in position to meet the door leaf all round.
- Pellets or plug exposed fixing holes, stop nail holes and made good the finish to doors and frames.
- Buffer or smoke seals will be fixed to frames that are factory finished. On frames that require site finishing these self-adhesive seals will be supplied loose for fixing by the general contractor. This applies to combined smoke/intumescent seals and self-adhesive fire discs with regard to non-factory finished doors.
- Any vistamatic panels will be supplied loose for fixing by the general contractor.
### Specification request form

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Which market sector is it for?</td>
<td>Health, Education, Commercial, High security, Other (please specify)</td>
</tr>
<tr>
<td>Is it for internal or external use?</td>
<td>Internal, External</td>
</tr>
<tr>
<td>What is the overall size of the structural opening?</td>
<td>Width, Height</td>
</tr>
<tr>
<td>How many leaves?</td>
<td>Half, One, One and a half, Two, Other (please specify)</td>
</tr>
<tr>
<td>What finish is required?</td>
<td></td>
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<tr>
<td>Does it need to be fire rated, if so to what level?</td>
<td>FD30S, FD60S, FD120S</td>
</tr>
<tr>
<td>Does it need to be acoustically rated, if so to what level?</td>
<td>Rw25dB, Rw35dB, Rw40 dB</td>
</tr>
<tr>
<td>Are there any viewing apertures required?</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Are there any vent grilles required?</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Will it form part of an escape route?</td>
<td>Yes, No, If yes, please specify</td>
</tr>
<tr>
<td>Are there any durability requirements it needs to meet?</td>
<td>Yes, No, If yes, please specify</td>
</tr>
<tr>
<td>Are there any security requirements it needs to meet?</td>
<td>Yes, No, If yes, please specify</td>
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<tr>
<td>Will it integrate with any access control?</td>
<td>Yes, No, If yes, please specify</td>
</tr>
<tr>
<td>Do you require a guarantee on the doorset?</td>
<td>Yes, No, If yes, please specify</td>
</tr>
</tbody>
</table>
ASSA ABLOY is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience.

ASSA ABLOY is represented in all major regions, in both mature and emerging markets, with leading positions in Australia, Europe and North America.

As the world's leading lock group, ASSA ABLOY offers a more complete product range of door opening solutions than any other company on the market.