RISCAuthority

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S25 Physical security for homes: Guidance for insurers

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Contents

Summary of Key Points

Insurers often recommend, or may require, a certain standard of physical security at homes they insure	• Insurer's expectations are usually outlined in a document/policy condition typically referred to as a 'Minimum Security Standard' (MSS), or a similar term.
In recent years an expanding range of door/window types, security device standards and home security approval schemes, plus new Building Regulations, could mean that an insurer's existing MSS wording needs updating/ amending to better reflect what is likely to be present/suitable to secure many modern homes	• To assist insurers in handling this topic, the RISCAuthority have prepared a suite of three related guidance documents. 1st An 'Occupiers Guide' that provides a brief outline of the main issues to be aware of, plus a 'model' MSS supported by guidance styled '10 steps to securing your home'. 2nd An 'Insurers Guide' aimed at frontline insurance personnel, and which supports/ expands upon the Occupiers Guide. 3rd A 'Technical Guide' that provides insurers' senior/technical staff with wider/more detailed background and technical information.
Insurers may need to assist their customers in establishing MSS related security levels, or in understanding how to fully use (secure) certain types of security devices	• It can be difficult for occupiers to determine their home's security, and especially how it may/may not comply with any insurer's MSS. Insurers should understand the various basic issues/technicalities, and be able to offer their own advice and/or make use of the Occupiers Guide.
Replacement doors, windows and security devices need to be of good quality	• Wherever practical, occupiers should be encouraged to only select suitably certificated/approved products.
Safe means of escape and good security are not incompatible	• Insurers need to be mindful of perceived, or actual, conflicts between good security and a need for emergency escape – which can be minimised by careful selection and use of security devices.
Occupiers should be encouraged to routinely use their security devices during all (insurer MSS defined or otherwise) vulnerable periods	• Opportunists taking advantage of unsecured, or poorly secured, doors/windows are the cause of many thefts from homes – often when occupiers are present within part of them, or are 'at home' but out in the garden.
Insurers and occupiers may need to seek further information/guidance	• Further advice for insurers can be found in the Technical Guide, and more widely from trade and standards bodies, eg the Master Locksmiths Association (MLA), the Door and Hardware Federation (DHF) or Secured by Design (SBD).

Symbols used in this guide


Good practice


Bad practice


Discussion topic

Frequently asked question

1 Introduction

Most home owners or tenants (for simplicity, referred to in this guide as 'occupiers') will wish to secure their homes against intruders, with the starting point for most to ensure that perimeter doors and opening windows, or perhaps just opening accessible windows, (for simplicity, referred to in this guide as 'windows') are fitted with security devices that help secure a home to a minimum ('reasonable') standard.

Note

Unless use of a more specific term is appropriate, for simplicity the term 'security device' is used in this guide to refer to any type of mechanical lock/fastening that holds a door or window in its closed position and which, once secured (locked) requires, with the exception of rebate bolts, use of a key (in the case of doors at least from the outside and for windows from the inside) to release (unlock) it.

Similarly, many insurers or insurance brokers (for simplicity, referred to in this guide as 'insurers') will wish to encourage, or sometimes require, occupiers to have a reasonable standard of security at homes they insure. To this end, insurers may formalise their advice/requirements and present them as a Minimum Security Standard (MSS), Minimum Security Requirement or Minimum Security Condition (for simplicity, referred to in this guide as a 'MSS').

When considering what may constitute a reasonable standard of security, as expressed via any MSS, insurers should be mindful of various factors that could usefully inform its content:

- Over the last few decades there has been a decline in the use of traditional timber doors and windows in favour of other forms of construction; for example, use of metal, plastic (PVCu) and occasionally combinations of materials, eg doorsets of 'composite' construction – although most occupiers would probably be unable to reliably ascertain composite construction from surface appearance alone, eg many have a false woodgrain style surface finish.

  Many of these newer types of door/window are not secured by a traditional single point lock, but instead have some other form of security device. For example, plastic doors/windows typically have a 'multi-point lock assembly', ie a set of moving fastening points integrated into the door/window and operated from a handle, that handle itself being the only part of the overall lock assembly that is secured by a lock – typically a 'Euro' profile cylinder lock.

- The availability/relevance of national (British or European) standards (for simplicity, referred to in this guide as 'standards') and other commercial standards or test schemes, and in particular that some security devices may only recently have had a relevant standard published against which they can be tested—and thus availability of security devices certified as meeting it may be limited.

- Many security devices are not always fully 'key operated'. For example, some may lock automatically upon closure or by hand (push button) action, and some will be capable of (internal) hand release even when locked from the outside.

- UK building regulations dealing with means of emergency (fire) escape, and the related interpretation of such issues by bodies involved in specifying security at new homes, eg the National House Building Council (NHBC) or Secured by Design (SBD), are increasingly having an effect on the types of security devices permitted/fitted at some homes.

To aid insurers in handling this topic, this guidance document has been published in support of a simpler document on the same topic aimed at occupiers. That document contains in its two Appendices a 'model' MSS and related guidance titled '10 steps to securing your home'. For convenience/reference, those Appendices are fully reproduced in this guide.

The 'model' MSS was drawn up after extensive industry/expert consultation, and is believed to reflect best practice for new installations; it also, in parts, includes less prescriptive options which may suit many older homes, ie to reflect insurers likely current/past acceptance of certain security devices which may no longer be available/recommended for new installations.

As the 'model' MSS contains a wide range of options, when it comes to issuing the best advice for new installations versus what (possibly lower) security level might be acceptable to an insurer at all homes, some insurers may feel it to be helpful to create differentiated versions of their MSS, ie one that is based on best advice for new homes/installations and one that represents an acceptable minimum standard for older homes/installations.

The '10 steps to securing your home' guidance (that supports the 'model' MSS), contains further information that some insurers may wish to reflect in any MSS of their own.

Notes

1. A simplified guide on this topic aimed at occupiers and titled **Physical security for homes: Guidance for occupiers** is available as a download at the RISCAuthority website, see www.riscauthority.co.uk
2. More detailed/strategic information on MSS considerations is available in a 'Members Only' publication titled **Physical security for homes: Technical guidance for insurers**. This is available as a download at the RISCAuthority website, see www.riscauthority.co.uk

2 Scope

FAQ

Can the 'model' MSS for homes be applied to commercial properties?

As far as it covers the types of doors/windows encountered at commercial premises, the 'model MSS for homes may prove informative for insurers who have a MSS for commercial properties; although at such properties account may need to be taken of a wider range of typical doors, eg the presence of rolling shutter/panel doors (and their wicket gates); of the greater potential to specify/accept use of padlocks; and, also, to provide necessary exemptions for doors/windows designated solely for use as emergency (fire) exits.

With many different types of doors and windows now in use, a widening range of security devices available to secure them, and a variety of related new and developing security device standards, regulations and approval schemes to account for, this guide seeks to improve frontline underwriters' awareness of MSS related issues in relation to typical homes.

The guidance and its related 'model' MSS are not intended for application to:

- homes where living accommodation is shared with other households, eg 'bedsits' and homes in multiple occupation (HMOs);
- electromechanical, electronic and code operated security devices; or
- outbuildings, sheds and garages.

Note

Security of outbuildings, sheds and garages isn't unimportant, whether to protect valuable contents, to deny intruders easy access to tools and equipment, eg ladders, that could be used to break into the home or, where such buildings adjoin and internally communicate with a home's living accommodation, to deny intruders easy access/concealment whilst they attempt forced entry into the rest of the home. However, with such buildings there are often many variables to take into account, and it will usually be more appropriate to seek the security advice of a competent locksmith rather than apply a MSS.

3 Security devices

There are many different types of security device being sold (or already installed), so choosing the right type and ensuring its correct fitting and use (or for existing devices identifying one once installed) can be problematic for occupiers.

Whilst some manufacturers will describe their security devices as being 'High Security' or 'Heavy Duty' etc, these phrases are subjective. Objective proof of security is best achieved through a process whereby a security device is independently tested to a published standard or security approvals scheme. At its simplest, this may involve 'type testing', ie a manufacturer providing a product sample for initial testing, followed up by, usually annual, sample re-testing. But when coupled with additional manufacturing process/quality checks and ongoing audits/random sample selection and retesting, is usually referred to as independent (third party) product 'certification'.

As most final exit doors will only have one lock fitted, its quality (ideally evidenced by certification) assumes particular significance. For other doors, lesser quality locks may be acceptable, as internal supplementary security devices can often be fitted.

When it comes to doors, a wide range of independently tested security devices—often matched to particular types of door/uses, is usually available. However, when it comes to window security devices the provision of independent testing is rare, and as such manufacturers claims/recommended uses have to be more carefully considered.

Important

Figure 1: MLA logo

If an occupier is in any doubt about recognising, choosing, fitting or correct use of security devices, it is prudent to refer them to a competent locksmith, eg a member of the Master Locksmiths Association. Tel 0800 783 1498 or 01327 262255, or visit www.locksmiths.co.uk

The MLA **'Guidelines for minimum security for domestic property'** are a useful source of additional advice, and can be found on their website, see http://www.locksmiths.co.uk/security-advice/security-guidelines-for-domestic-dwellings/

3.1 Independent testing schemes

The most commonly encountered scheme for proving compliance with the provisions of a standard is the certification scheme operated by the British Standards Institution (BSI) Product Services division. Security devices certified by them will show the well known/recognised BSI 'Kitemark' on the security device plus, if space permits, reference to the details of the standard passed, eg BS 3621, and the date version of that standard. The related packaging will show all of this information.

Security devices and/or their associated packaging may show brand marks of other organisations, but when it comes to stand-alone domestic security devices perhaps the most common marks shown will be those of either the Sold Secure or Secured by Design (SBD) organisations. In this regard insurers should note:

- Sold Secure offer type testing product approvals rather than full product certification.
- Secured by Design do not undertake any direct testing/certification, but instead require evidence of this having been undertaken by suitable certification bodies before the SBD logo can be awarded to a particular product.

The Building Research Establishment's (BRE) Loss Prevention Certification Board (LPCB) scheme and Warrington Certification's Certisecure scheme are also involved in domestic security product testing, but place an emphasis on certification of complete doorsets/window assemblies rather than stand-alone security devices.

Further information on all these organisations/schemes can be found in the Technical Guide.

Whilst product packaging will typically show details of any certification/product approval held, related marking of the product itself isn't always present, which can make later identification difficult —an exception being products certified by BSI, who authorise/ recommend use of suitable impressed marks, eg as a minimum, the BSI 'Kitemark'.

Note

As regards certification, insurers need to beware of potentially misleading product claims such as 'designed to meet…' 'manufactured in accordance with…' 'tested to…' etc.

Organisations and brand marks commonly encountered in the domestic security device market	Organisations and brand marks occasionally encountered in the domestic security device market
British Standards Institution www.bsigroup.com	Loss Prevention Certification Board www.redbooklive.com
Secured by Design www.securedbydesign.com	Warrington Certification www.warringtoncertification.com
Sold Secure www.soldsecure.com	

Figure 2: Some organisations' marks associated with security device testing/ certification. (For more information see their respective websites or the Technical Guide)

3.2 Security device standards

There are now several different British (BS) and European (EN) Standards relating to individual security devices for doors (the Technical Guide provides fuller information on them), and one for whole door and window assemblies, ie PAS 24 **Enhanced security performance requirements for doorsets and windows in the UK**. However, there are no current BS/EN standards for stand-alone window security devices.

Note

The previous British Standard for whole window assemblies, BS 7950, was incorporated into PAS 24 from 2012.

PAS 24 (and for windows the former BS 7950) certification arguably provides a level of security against external attack far beyond that typically sought by most insurers' MSS, as it not only requires the door/window to have security devices of the same or comparable

performance to those shown in the 'model' MSS, but also requires the door/window structure and frame to be tested for resistance to forced entry.

A possible issue for insurers asked to accept PAS 24 (or BS 7950) doors/windows – perhaps in place of their stated MSS, is that PAS 24 permits the use of security devices that do not require use of an internal key to open them. However, where such devices are used and the door/window is glazed or has a letter flap, PAS 24 requires use of laminated glazing and a letter flap that provides protection against external manipulation of the internal security device release mechanism.

Note

As insurers typically do not ask customers to change a whole door or window to help provide a particular (MSS) level of security, reference to PAS 24 is not included in the 'model' MSS – but its security value is mentioned in the associated **'10 steps to securing your home'** guide. Insurers should therefore note its potential relevance.

The standards most likely to be referred to in an insurer's MSS will be those that apply to stand-alone door security devices, whether being fitted as new, additional or replacement devices; that is BS 3621 or PAS 3621 (PAS = Publically Available Specification), with their respective variants carrying the suffixes 8621 or 10621; and for lock cylinders TS 007 (TS = Technical Specification) or BS EN 1303. Brief details of these Standards follow.

Notes

1. A major benefit of referring to recognised standards is that it greatly simplifies a potentially complex topic. For example, all that is needed to select a reasonably secure security product/device is to look for evidence that it has been independently assessed as having reached a relevant standard, or in some cases a particular security level outlined within it.
2. Because standards evolve over time, security devices will exist approved to different dated versions of them, or dated versions with later Amendments (A), eg BS XXXX + A1, A2 etc. An insurer may ask for a security device to simply meet the standard or may wish to ask for a dated version of it.
3. A list of the latest date versions of the standards relevant to the 'model' MSS and this guidance document, is contained is contained within Appendix A of the Technical Guide. General information on standards can also be obtained from the Door and Hardware Federation (DHF) website, see www.dhfonline.org.uk

3.2.1 BS 3621 and the 'BS x621 series' - single/multi—point locks/lock assemblies

Originally created back in the 1960s to apply to lever mortice locks, BS 3621 has been developed over the years to cater for other types; for example, cylinder rim locks and mortice locks having a cylinder lock mechanism.

In addition to various prescribed tests, a BS 3621 compliant lock will also have been required to pass other tests, these only being determined after a suitably qualified 'expert group' has carried out a General Vulnerability Assessment (GVA) – which includes a study of the lock design drawings. This GVA process is important, as it allows the testing/certification procedure to adapt to reflect perceived design weaknesses or newly emerging criminal attack methods, eg lock bumping or snapping—see section 3.2.2.1.

For some years now, whether using a lever or pin cylinder lock mechanism, BS 3621 compliant locks have also reflected a defined security level (Grade) and relevant testing of a European Standard for lock assemblies, BS EN 12209—see Note below.

Note

Locks that meet BS EN 12209 are described via a complex coding system, only parts of which relate to security. The standard also has security limitations. As a result, and with BS 3621 both reflecting BS EN 12209 and building upon it, the European Standard is rarely encountered/referenced in isolation within the UK – although the 'model' MSS makes reference to it in relation to certain types of door lock (for sliding doors) which are unlikely to be found certified to the BS x621 series.

More recently, BS 3621 has been extended (whilst still referring to BS EN 12209 and including a GVA) to cater for Building Regulation requirements, where locks may now be required that permit emergency escape without use of a key, and via the PAS versions to cater for multi-point locks, as now typically fitted to most plastic doors.

The end result of various BS 3621 related updates/amendments is that, in the UK, we now have a very well developed suite of BS 3621 derived standards catering for most types of single or multi-point locks. These are often referred to as the BS x621 series of standards, and are summarised below:

For single point locks:

- BS 3621: **Thief resistant lock assemblies. Keyed egress.** This standard applies to mortice (lever or cylinder mechanisms) or rim (cylinder mechanisms) locks that can be locked/unlocked, from both inside or outside, with a key.
- BS 8621: **Thief resistant lock assemblies. Keyless egress.** This standard is as per BS 3621 but, to permit emergency escape of occupants, these locks can always be unlocked from the inside without use of a key, eg by turning/releasing an internal handle or knob etc.
- BS 10621: **Thief resistant dual-mode lock assemblies.** This standard is as per BS 8621 but users, by additional action(s) taken outside, can disable the internal emergency escape function.

For multi-point locks:

- PAS 3621: **Multi-point locking assemblies: Keyed egress. Performance requirements and test methods.** This standard reflects the requirements of BS 3621, but caters for multi-point lock assemblies, as typically used in most plastic doors.
- PAS 8621 and 10621: These standards are versions of PAS 3621 that mirror the emergency escape requirements shown in BS 8621 and 10621.

Because of their inherent weakness, ie capability of being opened from within without use of a key, BS or PAS 8621/10621 security devices are best restricted to use only at homes where emergency escape is legally deemed necessary, ie due to Building Regulations. However, they will be also be encountered used elsewhere, eg because of requirements imposed by other bodies. See section 3.5 for further information.

For whatever reason they may be present, such locks will ideally not be found fitted to doors having a vulnerability to manipulation from outside, eg through an adjacent letter flap or easily broken glazing, but by way of a compensatory precaution re: their use, the ‘model’ includes a related Caution, ie requiring the use of laminated glass and a letter flap restrictor/mailbox.

At homes such as flats, this Caution is less likely to need observing than at houses, as flats are less likely to have a letter flap in their entry/exit doors (letters are often delivered to communal reception areas) and such doors will also usually not be glazed (due to the need to ensure that the door provides an adequate level of fire protection).

Notes

1. Although originally expected to be used mainly on the sole entry door to upper floor flats (as may be required by Building Regulations), BS or PAS 8621 locks may be encountered fitted to various other types of homes, and typically many which carry the National House Building Council (NHBC) ‘Buildmark Warranty’.
2. BS or PAS 10621 locks need to be selected/used with great care, ie disabling the escape function should only be done when the home is knowingly left without any occupants. Even then, the risk of occupants being inadvertently locked in means that a second means of escape (not fitted with a BS or PAS 10621 lock) is always desirable. At the time of publication BS or PAS 10621 certified locks are not readily available. As such, and also because of the risks associated with their use, these locks have not been included as a main recommendation of the ‘model’ MSS.

3.2.2 BS EN 1303—lock cylinders

This European Standard relates to stand-alone lock cylinder mechanisms, as now used in many door security devices. There was no equivalent previous British Standard.

Whilst cylinders may be used in BS 3621 locks (occasionally in a mortice lock, but most often in a rim lock), they are mainly used with multi-point security devices (as typically fitted to plastic doors), and in mortice swing or hook locks (as typically fitted to many aluminium/steel framed doors).

If a security device has been tested to one of the BS x621 series of standards and it incorporates a cylinder mechanism then, as part of the BS x621 series testing, the cylinder will have been required to meet a defined minimum security level of BS EN 1303—which is Key Security Grade 5, Attack Grade 2. It will also have had to pass a BS x621 series GVA and, from 2012 onwards, also be tested for snapping attack resistance – see section 3.2.2.2.

BS EN 1303 therefore only needs to be considered by insurers when catering for door security devices incorporating cylinder locks where the whole security device is not (or isn't capable of being) certified to the BS x621 series.

This is most likely to be encountered in connection with uncertified multi-point lock assemblies and mortice swing/hook locks for metal doors, where to install a BS EN 1303 certified cylinder of a particular security grade* is a feasible retrospective upgrade. That said, if the cylinder is a Euro or Oval profile type, then a cylinder certified to the top (snap resistance) level of TS 007 or SS 312 will provide superior protection – see section 3.2.2.2.

Notes

1. * The appropriate advice is to use a cylinder that is certified as meeting BS EN 1303 at Key Security Grade 5, Attack Grade 2, ie the same level as is called up in the BS x621 series.
2. It should be noted that BSI will not award its 'Kitemark' to a cylinder that simply meets BS EN 1303, it being awarded only if the cylinder meets BS 1303 at Key Security Grade 5 Attack Grade 2, and if it has passed a BS x621 series equivalent GVA.

3.2.2.1 Cylinder attacks

There are two main types of lock cylinder: those referred to as 'screw in' types (a round shape in cross section), and those referred to as 'insert' types—the Euro and Oval profile (in cross section) being the most common.

Criminal attack methods are always evolving, and by way of example in recent years the issue of cylinder 'snapping' has emerged as an increasing problem.

Note

Another fairly new, but seemingly less common form of cylinder attack is known as lock 'bumping', see the Technical Guide for more information.

Figure 3: Typical Euro profile cylinder. Note thinness of the metal casing around the side securing screw position, ie below the moving mid-point lock cam

3.2.2.2 Cylinder snapping

Cylinder snapping is a problem that seems to mainly affect Euro and Oval profile cylinders, as these types are more likely to protrude from a lockcase/door furniture—and their shape facilitates being gripped by a tool.

Snapping involves the external end of a cylinder being gripped with a wrench, or similar tool, and then twisted or rocked until the cylinder breaks in two. The break usually occurs in the thinner central part of the cylinder, where the screw (accessed via the opening edge of a door) that retains the cylinder inside a lock case engages.

This form of attack can be used by criminals to very quickly remove the cylinder from the lock assembly, and thus gain sufficient access to release the lock bolt or multi-point mechanism.

To provide basic protection against snapping attacks, cylinders should always be selected to closely match the thickness of the door and any surrounding door furniture—as vulnerability is exacerbated the further the external end of the cylinder protrudes. Even then, a cylinder can be vulnerable to a snapping attack as the surrounding door furniture (often a fairly brittle casting) may be snapped off—to expose the end of the cylinder to further attack.

Figure 4: The pictures below show various examples of cylinder sizing/fitting

This cylinder is too short, leaving the door furniture more vulnerable to being gripped and broken away

This cylinder (Note it's 'Kitemarked' but not TS 007 Star rated) sits correctly flush with the door furniture

This cylinder protrudes slightly, so may be vulnerable to a snapping attack

This cylinder protrudes several millimetres and is very vulnerable to a snapping attack

3.2.2.3 Testing cylinders for snapping resistance

BS EN 1303 was developed before snapping attacks became an issue, so does not cater for them. Manufacturers have since come up with various ideas to help protect against such attacks. These include fitting a surrounding chamfered cylinder rose (guard)—to prevent a wrench gaining a grip, or having surrounding higher security door furniture. However, with most profile cylinders fitted to multi-point lock assemblies in plastic doors, which are inherently flexible, criminals may still be able to circumvent such protective devices. Some cylinders have a sacrificial end (designed to snap off under attack and leave the rest intact), but this can leave the internal mechanism of the remaining cylinder exposed and vulnerable to other forms of attack.

To better address the problem, two UK organisations have developed additional specific snapping resistance test standards:

- SS 312: From 2011 cylinders approved by Sold Secure at their SS 312 'Diamond' test level, offer tested snapping resistance.

Sold Secure Diamond cylinders not only have to pass the snapping resistance tests but also have to already be 'Kitemarked' (or otherwise have been certified as meeting BS EN 1303 at Key Security Grade 5 Attack Grade 2, and to have passed a BS x621 series GVA).

See www.soldsecure.com for more information.

- TS 007: From 2012, Technical Specification TS 007, developed by the Door and Hardware Federation (DHF), became available. TS 007 offers two options, namely use of a 1 Star cylinder with 2 Star door furniture/hardware (eg a door handle) or a stand-alone 3 Star cylinder.

TS 007 cylinders not only have to pass the snapping resistance tests but also have to already be 'Kitemarked' (or otherwise have been certified as meeting BS EN 1303 at Key Security Grade 5 Attack Grade 2, and to have passed a BS x621 series GVA).

See www.dhfonline.org.uk for more information.

If insurers concerned about snapping resistance encounter a 1 Star cylinder (which provides no significant snapping protection), ascertaining that the door furniture it sits within has a 2 Star level of protection will be necessary to establish the intended overall 3 Star level of protection of TS 007. Depending on where the 2 Star mark is placed, eg it may be on the inside face of door furniture, ascertaining the total Star rating may be problematic.

Where the furniture doesn't have the required rating, retrofitting 2 Star door furniture is likely to be fraught with problems, eg matching existing door fixing points and, often importantly in occupiers eyes, also matching door designs/colours.

As a result, the 3 Star cylinder option (cylinders usually being readily retrofitted) is likely to represent the most secure and readily usable TS 007 option – and as such only this option has been reflected in the 'model' MSS.

BSI is now using TS 007 within its 'Kitemark' scheme for all relevant (Euro or Oval profile) cylinders and associated hardware. As a result, from 2012 onwards all stand-alone 'Kitemarked' cylinders will either show a 1 or 3 Star mark alongside the 'Kitemark' – and any door furniture intended to complement a 1 Star cylinder will show a 2 Star mark alongside its 'Kitemark'.

Important

- Secured by Design (SBD) have indicated that they regard retrofitting a TS 007 3 Star, or SS 312 Diamond, rated cylinder to a pre-2012 PAS 24 certified doorset lock, or to a BS x621 series lock, as an enhancement of security, and thus, in terms of retaining any SBD approval, an acceptable change.

Insurers clearly need to remain alert to developments in this area, eg new products and test regimes, but for the moment use of TS 007 3 Star 'Kitemarked' or Sold Secure SS 312 Diamond level cylinders is perhaps the simplest option for insurers to put forward when advising occupiers how to upgrade possibly vulnerable cylinders.

Figure 5: An example of British Standards Institution 3 Star TS 007 cylinder 'Kitemarking' and Sold Secure SS 312 Diamond labelling

FAQ

What level of security does TS 007 or SS 312 provide? As with all test standards, insurers need to be aware that when it comes to snapping resistance, it is levels of resistance (not absolute protection) that are measured—using different attack tools/methods for differing periods of time. In this regard Sold Secure SS 312 and TS 007 have slightly different methodologies, but at their respective highest security levels both aim to provide similarly enhanced protection (for several minutes) against typical snapping attacks.

Important

From the 2012, cylinders used in locks meeting the BS x621 series, and PAS 24, have had to demonstrate snapping attack resistance broadly comparable to the TS 007 3 Star level.

This is usually achieved by the cylinder being provided with suitable additional protective hardware—which of course needs fitting if it is to achieve its aim!

If insurers encounter such locks then, provided the occupier is sure that all originally supplied lock hardware was fitted—and that the originally supplied cylinder hasn't subsequently been changed (for a possibly less secure type), there is no obvious security advantage to be gained from requesting/advising occupiers to change the cylinders to TS 007 3 Star, or SS 312 Diamond, rated types.

3.3 Fitting and use

Whilst many security devices are suitable for self fitting, the wrong one fitted to the wrong door/window in the wrong way may result in poor security, and, what's more, may damage or weaken a door/window and/or invalidate any manufacturer's door/window warranty. In this regard, a particular area of difficulty is retrofitting new/different security devices to plastic and metal doors/windows, with all their different profiles/internal construction. As such, this is usually a job best left to a competent locksmith

Once fitted, a security device needs to be correctly used if it is to be effective. In this context occupiers are often unaware that some locks (for example, many 'automatic' cylinder rim locks or locks meeting BS 10621) require a second key turn or other mechanical action to be completed before they are fully operational (secured) – such action typically being required to prevent criminals, eg after breaking adjacent glazing, from being able to operate the internal lock release mechanism.

In most cases manufacturer's instructions should give adequate advice on security device fitting and use, but if in any doubt the advice of a competent locksmith should be sought.

3.4 Key storage and keyboxes

Storage of keys in an external keybox (as sometimes suggested to facilitate easy/quick access by carers or alarm response personnel) can undermine security, and should therefore not be sanctioned without careful consideration. The Technical Guide provides detailed advice on this matter.

Once locked, a security device ideally needs to have its key removed and stored safely to ensure maximum security. Whilst there are unlikely to be issues with removal/safe storage of keys to security devices when a home is unattended, when the home is occupied differing views on this matter may exist.

If it is accepted that occupiers will be familiar with their homes and the designated places where keys can safely be kept, it might seem entirely reasonable to advise occupiers that keys should be removed from security devices once locked—but kept nearby and inaccessible to potential intruders. Insurers will clearly need to determine their own view on this matter.

In a related vein, some occupiers may wish to store keys outside their home in a keybox, perhaps to facilitate easy access by carers or an alarm response company. This is generally an insecure practice and needs to be considered with care, especially where a home has intruder alarm protection—see the Technical Guide for more information.

3.5 Security and fire safety

There has long been a debate about the potential conflict between security and fire safety, with different viewpoints expressed by various parties. This debate largely centres on the position when the home is occupied rather than when unoccupied, and encompasses both the types of security devices that should or should not be fitted to certain doors/windows*, and also what should or should not be done with keys once security devices are locked.

Note

* According to the circumstances, an insurer's MSS requirements may need to reflect the requirements/advice of others, as outlined as outlined in sections 3.5.1 and 3.5.2.

3.5.1 Security devices and Building Regulations

When it comes to the legalities of what security devices can be fitted – which for new homes is governed by the Building Regulations applicable at the date of construction, the position varies depending upon the type of home, which part of the UK it is situated in and when it was built.

The current position is briefly outlined below, with further information available in the Technical Guide.

- England and Wales

  The fire safety related 'Approved Document' supporting the Building Regulations says little on the matter of security devices; other than acknowledging that where a designated 'escape window' is required (rarely) it may still be fitted with a lock, and that flats 4.5 metres above ground (ie second floor level) with only one exit door must have a door lock that permits emergency escape without using a key, ie whilst BS or PAS 8621 locks are likely to be fully acceptable, other types may not be.

- Scotland

  The fire safety related 'Technical Handbook' supporting the Building Regulations requires external doors and windows to homes to meet a set security standard, ie PAS 24 or otherwise have achieved SBD status, and also those that have only one entry door be fitted with locks that do not hinder escape, ie whilst BS or PAS 8621 locks are likely to be fully acceptable, other types may not be.

- Northern Ireland

  The fire safety related 'Technical Handbook' supporting the Building Regulations says nothing on the matter of security devices.

3.5.2 Security devices and new home 'approval' bodies

The legal positions expressed within the applicable Building Regulations may be overlaid by differing interpretations of the fire safety/escape issue taken by other bodies which can become involved in 'signing off' new homes. For example:

- National House Building Council (NHBC):

  If involved in issuing their 'Buildmark Warranty' on new homes, NHBC requires that a BS or PAS 8621 lock is fitted to the principal (front) entry door of all homes (ie not just flats) and a BS or PAS 3621/8621 lock to any other entry doors.

  It will permit use of a BS or PAS 10621 lock on the principal door, but only if a second door leading to safety, (ie not onto a balcony) exists, and which has either a BS or PAS 3621 or 8621 lock fitted. All accessible windows are required to be lockable.

  Whilst NHBC principally concerns itself with locks, ie it makes no requirement for doors and windows to meet wider tests such as PAS 24, it does require any glazing in or adjacent to doors fitted with BS or PAS 8621/10621 locks to be laminated glass.

- Secured by Design (SBD):

  SBD essentially requires all doors and windows to be certified to PAS 24. When it comes to locks it specifies use of a BS or PAS 3621 lock on all doors except single entry doors to flats 4.5m above ground level – where it specifies use of a BS or PAS 8621 lock. It takes the same stance on BS or PAS 10621 as the NHBC.

  All accessible windows are required to be lockable, except any designated escape window, which it will instead require to have laminated glass—to hinder breakage and thus prevent easy access to the non-lockable internal fastening.

  Like the NHBC, SBD also requires use of laminated glass in or adjacent to any door that has a BS or PAS 8621/10621 lock, and additionally where such locks are fitted requires any letter flap in or adjacent to a door to be so positioned, and of a type*, that hinders external access to the internal lock release mechanism.

  Where an occupier states that their home has SBD approval, but can't provide any/sufficient details of individual security devices, an insurer may consider that the SBD scheme provides sufficient confidence in the overall level/design of security provision to

enable them to treat an occupiers doors/windows as providing an acceptable alternative to any MSS—but possibly subject to further information being provided. For example, by asking if the occupier can confirm that:

- they are the first occupier of the home; and
- no modifications or non-SBD-recognised replacements to the original doors, windows or security devices have been made.

Notes

1. Where both SBD and NHBC are involved with the same property, SBD defer to NHBC and, as appropriate, accept a BS or PAS 8621/10621 lock on the entry door.
2. *A suitable standard (TS 008) has only recently been created for testing letter flap restrictors.

3.5.3 Impact of Building Regulations, NHBC or SBD status on the 'model' MSS

Although BS or PAS 8621/10621 locks provide comparable security against external attack as BS or PAS 3621 locks; due to their exposure to internal (keyless) release or external manipulation, they are not as secure as BS or PAS 3621 locks in all circumstances – hence the Cautions on their use contained in the 'model' MSS.

Whilst participation in the NHBC Warranty scheme is voluntary for developers/builders, in practice a significant proportion of new homes offered for sale across the UK are built under its auspices. SBD is also a voluntary scheme, but a significant proportion of (especially social) housing in England and Wales is now built with SBD status. So, whether as a result of Building Regulations or the actions of other bodies, BS 8621 locks are quite widely used. In time, PAS 8621 locks (but perhaps less so BS or PAS 10621 locks) may also become more common.

In compiling the 'model' MSS, the chance of a conflict with any applicable Building Regulations and/or NHBC or SBD involvement has been minimised by including reference to BS or PAS 8621 locks—albeit with related advice on their most appropriate use. In all cases of doubt, occupiers should be advised to contact their local authority Planning/Building Control Department.

The only area of difference between the 'model' MSS and likely requirements of other bodies is in relation to the fitting of security devices to all accessible windows, ie SBD will not specify locks on designated escape windows – even though Building Regulations do permit them.

However, with such windows few and far between, this area of difference is not felt likely to result in undue insurer referrals/queries.

Note

In reflecting the possible use/presence of BS or PAS 8621/10621 locks in the 'model' MSS alongside some related Cautions regarding use, glazing and letter flaps, it is recognised that this may create an extra area of customer and insurer interaction. Nonetheless, the related content of the 'model' MSS is believed to represent good security advice.

4.0 Glazing

As the 'model' MSS makes reference to the need for laminated glass in relation to protecting possibly vulnerable BS or PAS 8621/10621 locks, insurers need an awareness of the different types of laminated glass, related standards, safety regulations and identification.

4.1 Types of laminated glass

Laminated glass can be made in different ways, but in essence consists of two or more panes of ordinary 'float' glass bonded to each other by a layer of different material, most commonly PVB plastic but sometimes a resin, to make a glass 'sandwich'. The more layers/thicker the glass the stronger will be the result.

Laminated glass is usually supplied simply as laminated glass, but may be supplied in other forms, eg sold as 'safety glazing' or 'high security' glazing. If used as safety glazing (as may be required by Building Regulations or H&S legislation) it must either resist breakage or, when it does break, break safely. If sold as high security glazing it is usually made to provide a greater degree of resistance to physical penetration/removal.

Laminated glass should ideally be produced in accordance with a recognised product standard, eg BS EN 14449, but if intended as safety glazing should be additionally tested and certified as meeting BS EN 12600. If sold as high security glazing it should comply with BS EN 356. In appropriate cases it can be supplied as meeting both BS EN 12600 and BS EN 356.

By way of reference, the key standards for laminated glass are:

Product manufacturing standard

- BS EN 14449: **Laminated glass and laminated safety glass – Evaluation of conformity/ product standard**

Test standards

- BS EN 12600*: **Glass in Building. Pendulum test—impact test method and classification for flat glass.**
- BS EN 356: **Glass in Building. Security glazing. Testing and classification of resistance against manual attack**

Notes

1. * Prior to 2006, BS 6206 was used within the UK.
2. For the sake of simplicity/practicality, and given that most laminated glass is more secure than normal float glass/normal safety glazing, the 'model' MSS simply refers to 'laminated glass', ie laminated glass of any (safety/security) performance.

4.2 Identifying laminated glass

None of the aforementioned standards require individual panes of glass to show a compliance mark, although (as an aid to identification/sale) most manufacturers will mark each production sheet of glass with details of any applicable manufacturing, safety or security standard. That said, laminated glass is usually cut to size before fitting/making up, so any such marking will not necessarily be transferred onto the cut pieces—which can hinder later identification.

Reliable identification of glazing installed in the UK is only made possible by virtue of Building Regulations, which from 1992 onwards have required all glazing installed in 'critical locations'* to be safety glazing, ie meet defined impact safety requirements, eg as per BS EN 12600.

Note

* Critical locations are defined in BS 6262, and are regarded as those where accidental impact by building users is most likely. In relation to doors, this includes any glazing in the door from ground/floor level up to 1500mm height and, up to the same height, any glazing in an adjoining window within 300mm of the sides of the door. An exception is made for small panes – ie where the width/height is less than 250mm, the total area less than 0.5m^2 and the glass used is at least 6mm thick.

Whilst the Building Regulation requirements for safety glazing can be met by use of certain plastic sheet materials, applied safety film or wired glass, it is most usually met by use of 'toughened' or laminated glass.

Note

Unlike laminated glass, toughened glass (which despite its name is a safety rather than security glass), tends to be routinely marked irrespective of any Building Regulations, as it is cut to size before being heat treated to make it toughened and marking is the only outward indication of its revised form. The relevant product standard is BS EN 12150.

The Building Regulations require that each piece of installed safety glazing be permanently marked with the name of the manufacturer, the manufacturing product standard and the achieved impact Class of BS EN 12600—see section 3 of Appendix 1 for impact class marking details.

By its very nature, security glazing tends to be routinely marked as such (to promote its security credentials), but if used in a 'critical location' must also be marked to show its safety credentials, as per the Building Regulations.

Note

The Cautions in the 'model' MSS relating to the need for laminated glass reflect the spirit of the Building Regulations (in terms of areas likely to need/be marked as safety glazing), but for simplicity do not fully reproduce them. See the Technical Guide for further information.

Where the 'model' MSS suggests the use of laminated glass, but the existing glazing cannot be identified, it could clearly be expensive/disruptive to change it. In such cases insurers need to take a view as to whether:

- the glazing does need changing or whether it can be protected in some way*; or
- the door lock should be changed to a less vulnerable type.

Note

* Options include fitting secondary laminated glazing, a fixed metal mesh barrier/grille or improving the security (and safety) of the existing glass, ie by having a competent glazier fit it with (internally applied) BS EN 12600 compliant plastic 'safety film'. If adopting this course of action, it should be noted that whilst safety film will help hold any broken glass together it will not, because it is typically only applied to the visible glass and not into the frame edges, resist a broken pane being forced entirely from the frame.

Further information on glazing can be found in the Technical Guide.

5.0 The RISCAuthority 'model' MSS

The 'model' MSS has been created to provide occupiers and insurers with a coherent and structured set of guidance based on current best advice, and which is related, wherever possible, to a relevant standard. However, when it comes to referencing standards there are several issues that have been taken into account:

- For the sake of simplicity, the 'model' MSS avoids reference to dated versions of a standard; it should nonetheless be noted that standards are updated over time, and a security device certified to the latest version of it will usually provide the best security.
- Consideration has been paid to the likely availability of certified security devices suited to particular types of door. For example, whilst a lock for a sliding door could in theory be certified to BS 3621, none are known to be available, so BS 3621 is not referenced in that part of the 'model' MSS. Instead, rather than reference no standard at all for such locks, the 'model' MSS references BS EN 12209—as it is possible that some locks certified to it may be encountered.
- With some standards fairly new, but security devices to which they relate often having been produced 'untested' for many years beforehand, or with security devices which meet the latest version of a standard possibly in relative short supply, it may not be reasonable/realistic to suggest occupiers always replace their existing devices in order to comply with the 'model' MSS. A pragmatic approach has therefore been adopted, which in places sees a series of choices offered—in generally decreasing order of security provision. For example, the first choice would typically be compliance with a relevant British Standard, followed by compliance with a European Standard and then compliance with a standard for just a lock cylinder.
- The lack of a relevant standard may mean that the only way to reference some security devices is to refer to them via a simple descriptive 'functional requirement'. One of the

problems with using a descriptive functional requirement is that of choosing a term that adequately reflects the desired type of security, but which an occupier can still understand and be able to readily/reliably identify. Consequently, if a practical alternative exists, reference to functional requirements has been avoided in the 'model' MSS.

A good example of all the above is how the 'model' MSS treats multi-point lock assemblies, as widely used now for many years on plastic doors. A relevant standard (PAS 3621) has only just been published and, at the time of writing, products certified to that standard are not yet widely available. In any event, retrofitting a PAS 3621 certified lock assembly into an existing door is likely to be problematic due to differing door and lock assembly profiles.

In the absence of a PAS 3621 certified product, and with no European Standard available, reference is next made to use of a lock assembly that at least includes a cylinder meeting a recognised security standard. In this regard the TS 007 3 Star or Sold Secure SS 312 Diamond approval schemes provide the best option for specifying good cylinder security, but it should noted that BS EN 1303 has also been included in the 'model' MSS at a specified security level – if only for completeness. That said, one of the problems with BS EN 1303 is both the relative scarcity of cylinders certified to it and possible difficulties in identification once fitted – and in particular identifying its security 'Grade'.

Given the relatively few suitably certified cylinders available, and to help cater for the huge number of uncertified cylinders already in use within locks (which some insurers may wish to accept), as a final option the following functional requirement has been included within Code C of the 'model' MSS:

- "a multi-point fastening device….. secured by …. a lock cylinder with five* (or more) pins".

In a similar vein, use of the term 'a lock cylinder with five* (or more) pins' is also included in the options cited under Codes E, F and I.

Notes

1. * In cases where an insurer's MSS requires a security device to simply have a five pin cylinder, the minimum BS EN 1303 Key Security Grade that can satisfy this is Grade 3. However, a Grade 4 (also five pin) cylinder (as called up in past versions of BS 3621), or a Grade 5 (six pin) cylinder (as called up in the current BS x621 series), both provide a more secure option. In any event, the five pin cylinder threshold used in the 'model' MSS reflects a near default baseline offering for most cylinders sold/used in the UK, and is thus likely to be capable of being readily met.
2. More detailed information on the background considerations informing the structure and content of the 'model' MSS can be found in the Technical Guide.

5.1 Application of the 'model' MSS

Whilst some insurers may be happy to create/update a MSS based only on the technical content of the 'model' MSS, some may wish to create a MSS that not only describes what security devices are recommended/required, but which also deals with more general (non-technical) matters. For example, which parts of a home it applies to, how and when the security devices need to be used and where their keys should be kept.

Because insurers will have different philosophical stances and/or wording styles/constraints on such non-technical matters, the 'model' MSS does not venture into these areas. However, for the sake of providing some guidance to occupiers, the associated '10 steps to securing your home' guidance does provide some related advice—which some insurers may wish to reflect in any MSS of their own.

In considering these non-technical matters, the first step might be to consider:

- Which area(s) of a 'home'* require protection (eg all buildings at an address or only certain buildings/areas).
- Which doors/windows require the specified security devices (eg all 'perimeter'* doors/windows or for windows perhaps just those regarded as 'accessible'*).
- How and when occupiers need to use the specified security devices (eg to put them into

'full operation' when the home is left without occupants and/or when they have retired to bed – but perhaps with an associated dispensation for rooms where people are sleeping).

- What needs to be done with keys to locked security devices (eg remove them from security devices and store them out of sight/reach of accessible perimeter glazing or letter flaps).

The second may be to consider if the words marked with a * above (or similar words used by insurers) might usefully have their meaning defined as part of a MSS. In the absence of any contrary definitions, the '10 steps to securing your home' guidance suggests the following be adopted:

- the 'home'—all buildings, or areas within buildings, designed to provide, or being used as, living accommodation, ie excluding garages and outbuildings;
- a 'perimeter' door/window—all those that lead out into the open air and also, if present, those that lead into integral/adjoining garages or outbuildings, into another person's home or, at flats, into internal communal areas, eg shared corridors/lobbies etc;
- as 'accessible' windows—all those that an intruder could^ reach from adjoining/adjacent ground, or via adjoining/adjacent structures or objects that could^ be readily climbed.

^In considering potential for access, a good rule of thumb is to always consider the following as accessible:

- all basement/ground floor windows;
- 1st floor windows overlooking single storey portions of a home and structures such as porch canopies, door pediments etc; or
- for any other windows, those that a fit and/or determined person might reach by climbing up/along adjoining/adjacent rainwater or sewage downpipes, sheds, trees, walls and fences etc.

Note

The 'model' MSS suggests fitting recognised security devices to all perimeter doors, which on rare occasions could mean that security devices are required where occupiers might regard a door as inaccessible, eg at flats which have doors leading onto external upper floor private balconies. Whilst an insurer's MSS could restrict door security device requirements to 'accessible' doors only, any workable definition of such a term is always likely to include a degree of subjectivity (and therefore potential for dispute), or be subject to change, eg the erection of scaffolding for building works. The simplest and most secure approach is to require protection to all perimeter doors.

5.2 Adapting the 'model' MSS

The 'model' MSS has been constructed in such a way as to make it fairly easy for insurers wishing to adopt it, either in whole or in part, to amend its provisions.

Whilst some insurers may wish to generally streamline the 'model MSS, eg by removing reference to some of the standards which are less commonly encountered in relation to door locks such as BS EN 12209 or BS EN 1303, any desire for amendment is expected to occur where an insurer wishes to offer additional choices under some code headings. The most obvious example might be where an insurer wishes to accept locks that do not meet BS 3621, in which case Code A will need amending to include some descriptive functional requirements for non BS 3621 alternatives, such as use of 'a five lever mortice deadlock' and/or a 'cylinder rim deadlock with lockable internal handle' etc.

Note

Whilst the 'model' MSS has been constructed to readily permit additions/alterations, insurers will have to make their own judgements as to how secure any extra options are and thus where, if they are following a security based running order, each should be listed.

6.0 Summary

Given the need for a MSS to nowadays account for a widening range of domestic door/window types, new security device standards, Building Regulations and interpretations of related fire safety issues made and acted upon by other organisations, it is likely that insurers can no longer adequately rely upon many traditional MSS wordings.

That said, creating a MSS that reflects both current best advice and typically accepted positions from the past is a rather complex task, such that when it comes to possibly creating/updating any MSS, an insurer faces a choice:

- if positioning a MSS as merely advisory, it can be kept fairly simple, ie largely mirroring only the latest (best advice) based on the most relevant standards;
- if wishing to impose a MSS, there will be many occupier's homes which have security devices installed that may not meet the most recent version of a standard, or any standard at all. In such cases insurers may need to adopt a more pragmatic approach, eg by accepting use of a wider (and perhaps less secure) range of security devices.

In either case, account may also need to be taken of the types of home involved, ie houses or flats, and the impact of current Building Regulations and other organisation's attitudes to emergency escape.

In an attempt to reconcile these different approaches, the 'model' MSS includes reference to both the latest types of security devices/standards and, where appropriate, similar or alternative examples typically deemed acceptable in the past. Where such an approach creates choices, it lists them in order of decreasing security provision.

To help avoid possible conflict with Building Regulations and NHBC or SBD requirements, when it comes to use of door locks with emergency escape facilities (eg BS or PAS 8621 types) the 'model' MSS makes no formal distinction between types of homes, eg houses, flats, maisonettes—but does include related Cautions re: the most appropriate applications for such locks and, where used, recommends protection of any vulnerable glazing and/or letter flaps.

Taken as a whole, the RISCAuthority 'model' MSS and related guidance is intended to provide a means by which insurers and occupiers may, more readily and consistently, identify a range of mechanical security devices best suited to securing, to a reasonable standard, typically encountered perimeter doors/windows at most homes. As such its content* is made freely available for adoption/adaption, either in whole or in part, by insurers.

Note

*Reproduction of any images requires prior RISCAuthority permission.

Appendix 1: 10 steps to securing your home

In ensuring adequate physical security exists at your 'home', there are 10 basic steps to consider. Reading these will assist your understanding and implementation of the advice contained in the 'model' MSS shown in Appendix 2.

Important

Before acting upon any of the issues outlined below, you should check to see if your insurer has any specific related requirements, definitions or advice of its own.

1. Determine the areas of your 'home' that need protecting

Unless defined otherwise by your insurer, for the purposes of this guidance and the 'model' MSS your 'home' should be regarded as all buildings, or areas within buildings, designed to provide, or being used as, living accommodation, ie excluding garages and outbuildings.

Note

A wide variety of doors/windows will be found in garages/outbuildings and such areas may still need securing, either to protect their contents, to deny intruders access to tools that could be used to break into your home or, where the garage/outbuilding provides internal access to it, to help prevent intruders gaining easy access and then being concealed when attempting forced access to the home. Whilst some garage/outbuilding doors/windows might be capable of being secured as per the 'model' MSS, for others, especially vehicular access doors, the advice of a competent locksmith should be sought.

FAQ

Insurers are often asked whether a 'very small' opening window needs locking. As any window, even if arguably not large enough to permit human entry, may if opened enable intruders to readily attack/compromise security devices on adjacent doors or other windows, or even 'fish' valuable objects out, the usual (and most secure) approach is to disregard size.

2. Determine which doors/opening windows need securing at the 'perimeter' of your home

Unless defined otherwise by your insurer, your homes' 'perimeter' doors/windows should be regarded as all those that lead out into the open air and also, if present, those that lead into integral/attached garages or outbuildings, into another person's home or, at flats, into internal communal areas, eg shared corridors/lobbies etc.

Notes

1. Other than in exceptional cases, all perimeter doors should be regarded as 'accessible' and will need adequately securing. However, subject to any contrary insurer requirements, when it comes to windows, and if you feel comfortable making the necessary assessment, it may be considered sufficient to protect only those windows regarded as 'accessible'.
2. Unless defined otherwise by your insurer, 'accessible' perimeter windows should be regarded as all those that an intruder could* reach from adjoining/adjacent ground, or via adjoining/adjacent structures or objects that could* be readily climbed.

* In considering potential for access, a good rule of thumb is to always consider the following as accessible:

- all basement/ground floor windows;
- 1st floor windows overlooking single storey portions of your home and structures such as porch canopies, door pediments etc; and
- for any other windows, those that a fit and/or determined person might reach by climbing up/along adjoining/adjacent rainwater or sewage downpipes, sheds, trees, walls and fences etc.

If in doubt, always fit a window with a suitable security device.

Can keys help identify types of security devices?

Lever and cylinder locks have very different keys, as shown below. This difference in form can be a help in starting to identify a lock type.

Figure A1.1 : Lever lock keys (left) and cylinder lock keys (right)

3. Ascertain the types of perimeter doors/windows currently fitted and their related security devices

This task isn't as easy as you may wish, as many different types of doors/windows exist, with a related wide variation in fitted security devices and types of glazing.

When it comes to security devices, there are two main types to recognise, ie those that fit within a door/window (referred to as 'mortice') and those that fit to the surface of it (referred to as 'rim'). Where a mortice lock for a door includes a separate handle operating a door latch it is often referred to as a mortice sash lock.

In the case of doors, a mortice or rim lock is likely to have one of two common lock mechanisms, ie either a lever or pin cylinder mechanism. For windows a cylinder lock or simple screw mechanism is most common.

Figure A1.2: Examples of rim and mortice door locks

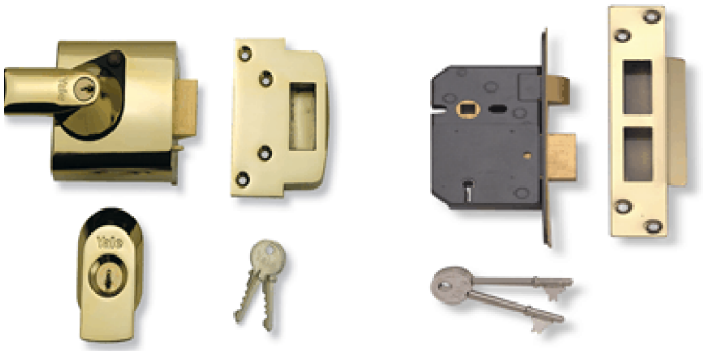


Figure A1.3: Examples of door cylinders

Round profile

Oval profile

Euro profile

The process of identifying what may already be fitted can, if security devices/glazing are not clearly marked, be rather protracted, but the notes on the following page should assist.

If, after reading/acting upon the advice on identification in this section, you are in any doubt about recognising particular security devices and/or laminated glass, you should consult a competent locksmith or glazier, for example:

A member of the Master Locksmiths Association (MLA). Tel 0800 783 1498 or 01327 262255 or see www.locksmiths.co.uk

A member of the Glass and Glazing Federation (GGF). Tel 020 7939 9101 or see www.ggf.org.uk

Glass and Glazing Federation

Identifying security devices

Once fitted, and assuming no original packaging/instructions are available, establishing what type of security device is present can be difficult. In such circumstances you need to examine the security device, step by step, to glean what information you can:

- look at the external parts of the security device for markings relating to certification to a required standard, noting that when an insurer specifies a particular standard they will usually accept a security device that meets any dated version of it, ie they will not usually require an upgrade to the latest version;
- if the marks seen do not appear to be of the required type, it is possible you have a security device or door/window that meets another standard or an external security approval scheme. For example, a complete door/window assembly might be marked to show that it meets PAS 24 and/or has Secured by Design status;
- if there is no external marking, you may be able to establish that it meets an insurers functional requirements (if so described in their MSS). An example of this might relate to the type of pin cylinder multi-point lock assembly fitted to plastic (PVCu) doors, where a suitable standard (eg PAS 3621) has only recently been developed; and
- if unable to establish satisfactory information via the above steps, you may wish to:
  - remove it yourself (to look for internally applied marks, or perhaps count the visible ends of the pins in a cylinder barrel);
  - consult a competent locksmith (who after examining it and/or the key, as removed or in-situ, should be able to determine its type); or
  - obtain and fit a replacement security device of the required type.

Identifying glazing

A piece of glass in a door or window is most likely to show some sort of permanent marking if Building Regulations require that 'safety glazing' be used there. The two most common forms of safety glazing are toughened and laminated glass, but only laminated glass also provides a security function. To check whether a piece of glass is laminated you should:

- Look for a suitable mark on the surface of the piece of glass, the current (Building Regulation) requirements being that safety glazing shows:
  - the manufacturers name;
  - the manufacturing standard – BS EN 14449 for laminated glass; and
  - a safety classification from BS EN 12600 – either in abbreviated form, ie Class 1, 2 or 3 (where 1 is the safest), or as a full classification code in this form: a number (1-3) followed by a letter (B for laminated) and then another number (1-3), eg use of the code 1B1 would be typical for most laminated glass.
- If the mark(s) seen do not appear to match those mentioned above it is possible you still have laminated glazing, but of a type that meets another standard or external security approval scheme. For example:
  - older safety glass may be marked with the manufacturers name and a safety classification from BS 6206, ie Class A, B or C (where A is the safest), but it will only be laminated glass if the word 'Laminated' and/or a code letter 'L' also forms part of the Class coding, eg Class 'LB'.
  - Reference may be made to a standard for laminated security glazing, BS EN 356, with an associated classification code in this form—a letter (P) followed by a number (1-5) and then another letter (A). For homes, the minimum BS EN 356 glass classification, P1A, is most commonly used.
- If unable to establish satisfactory information via the above steps, it is recommended that you consult a competent glazier for advice.

4. Compare and contrast

Consider how your current perimeter doors/windows compare to the advice contained in the 'model' MSS, and consider the need for suitable door/window or security device replacements/upgrades.

5. Seek proven security

Subject to availability, buying new creates the perfect opportunity to prefer those products that have evidence of suitable independent (third party) 'certification', or other forms of 'approval', to a relevant security standard or scheme.

The most commonly used scheme for proving compliance with the provisions of a standard is the certification scheme operated by the British Standards Institution (BSI). BSI certified devices will show an impressed BSI 'Kitemark' on the security device plus, if space permits, reference to the standard passed, eg BS 3621 and the date version of that standard. The packaging will show all this information.

Various other marks/logos are associated with security devices, the two most common in the domestic sphere being those of the police operated Secured by Design scheme and the MLA operated Sold Secure scheme. Whilst packaging/labels might show these other marks/logos, an impressed mark on the security device is not usually required—which can make later identification difficult.

Notes

1. Where the words 'certified' or 'approved' are used in the 'model' MSS, the terms should be considered as meaning that a security device has been proven to meet a stated standard or security approval scheme by a test body independent of the manufacturer. This is most easily ascertained by looking for products displaying common marks such as the BSI 'Kitemark' or the Secured by Design or Sold Secure logos, ie

British Standards Institution
www.bsigroup.com

Secured by Design
www.securedbydesign.com

Sold Secure
www.soldsecure.com

Other security approval schemes exist, so if in any doubt refer to your insurer.

2. Stand alone/retrofit window security devices are not designed to a recognised security standard, so instead look for robust devices offered by reputable suppliers/manufacturers.

6. Buying complete new doors/windows

If buying new doors/windows, always give preference to those certified as meeting PAS 24 and which, if your door requires an emergency exit facility without use of a key (eg upper floor flats with only one entry/exit door) have a suitably certified lock, eg BS or PAS 8621—also noting that such doors should, if glazed, contain laminated glass and if having a letter flap, have one fitted with an access restrictor.

7. Buying new security devices

If buying a stand-alone new security device, look for those most likely to suit the type and use of the door/window under consideration and which, wherever possible, meet the highest of any listed options shown in the 'model' MSS – which will typically be devices that are certified as meeting a relevant standard.

When it comes to choosing a security device, you may need to be mindful of the possible impact on emergency escape; this is a matter which is sometimes covered by Building Regulations and which may also be reflected in the security device requirements of bodies that might have been involved in providing a warranty for new homes, eg the National House Building Council (NHBC), or in issuing a security scheme approval, eg Secured by Design (SBD).

Different Building Regulations exist in England, Wales, Scotland and Northern Ireland, but they have relatively little to say on door/window security that is restrictive, other than typically requiring that a lock on the only entry/exit door to certain homes (eg many upper floor flats) can always be opened from inside without use of a key.

Homes built under NHBC or SBD auspices will take account of local Building Regulations relating to security devices and means of escape, but may then extend those emergency escape requirements to further doors and/or windows. However, they will then typically require additional security measures to be implemented, by way of compensation for potentially introduced security weaknesses, eg by the use of laminated (security) glazing or letter flap restrictors.

Important

To avoid any possible conflict with external influences, eg Building Regulations, NHBC or SBD requirements/advice, the 'model' MSS does not distinguish between types of homes, eg houses or flats and related possibly appropriate/inappropriate security devices. That said, it should be noted that 'Cautions' may be listed in the 'model' MSS in relation to use of certain types of security devices. In all cases of query concerning Building Regulations and possible means of escape vis-a-vis suitable security devices, refer to your local authority Planning/Building Control department for further advice.

8. Ensure correct fitting

New doors/windows and security devices should be fitted as per the manufacturer's advice. If this isn't readily available, then security devices should be fitted in a conventional position, ie for single point door locks, at or near the mid-point of the door's opening edge, and for other devices as per the advice contained in the 'model' MSS.

In all cases of doubt, refer to a competent locksmith, eg a member of the Master Locksmiths Association (MLA).

Note

Whilst many security devices are suitable for self fitting, the wrong one fitted to the wrong door/window in the wrong way may result in poor security, and may even damage or weaken a door/window. In this regard, a particular area of difficulty can be retrofitting extra security devices to plastic doors/windows – with all their different profiles/internal construction and fittings, and sometimes also retrofitting to metal ones. As such, this is a job often best entrusted to a competent locksmith.

You should note that some locks (for example many 'automatic' latching BS 3621 cylinder rim locks and locks meeting BS or PAS 10621) require a second key turn, or other mechanical action, to be completed before they are fully operational (secured) – such action typically being required to prevent intruders who gain access to the hand release mechanism, eg through adjacent glazing or a letter flap, from releasing it. In most cases manufacturers' instructions should give adequate advice on security device use, but if in doubt consult a competent locksmith.

9. Correct use of security devices

Always use your security devices to their full designed extent, ie put them into full and effective operation, whenever your home is left without occupants—even if only left for a short time. Also do so at night when any occupants have retired to bed, with the possible exception, subject to any contrary insurer requirement, of accessible windows in occupied bedrooms —which occupants may wish to leave open for ventilation. That said, such windows should, where permitted by their design/security devices, ideally be secured in a lockable 'ventilation' position.

10. Security device keys

The best security devices become ineffective if criminals can obtain easy access to their keys, so consider key security from the following two perspectives:

- If you are moving into/have just moved into your home, and especially if you are not its first occupier, consider whether you have possession of all keys to security devices, but especially those that control external access to the home—typically two keys are supplied with most new door locks. If you are in any doubt, or you otherwise simply wish to ensure you have the best security, consider lock replacement.
- Once locked, remove keys from security devices and, subject to any contrary insurer requirements, either take them with you or keep them in a safe (but accessible in emergencies) place inside the home, ie in a place where they can't be seen or reached from outside your home—to prevent intruders obtaining them after breaking perimeter glazing or 'fishing' them out through a letter flap.

Appendix 2: RISCAuthority 'model' Minimum Security Standard (MSS)

This 'model' MSS outlines RISCAuthority recommendations for mechanical* security devices that are likely to be regarded as most suited to securing a range of typical perimeter doors and opening windows at homes, and to a reasonably comparable level of basic security. It is presented in two tables:

- Table 1 shows a coded range of options matched to the types/uses of commonly encountered doors and windows. For types of door and window not shown, eg doors of composite materials, frameless glass, double sliding doors (ie both slide), multi-panel folding doors and garage doors etc. seek competent locksmith and/or insurer advice.
- Table 2 describes the type of security device and, as appropriate, the recommended number/nature of fitting, for each of the codes shown in table 1. Also included are any necessary 'Caution(s)' plus, where felt helpful, photographs or notes.

Note

* The 'model' MSS is not intended to cater for use of electromechanical, electronic or code etc, operated security devices. For these seek competent locksmith and/or insurer advice.

Table 2 makes reference to security device standards wherever relevant/practical; however, where availability of such products may now, or historically, be absent/limited it suggests other options. Where a series of main or sub options are shown, the first of the options will generally provide the best security—and should therefore be preferred.

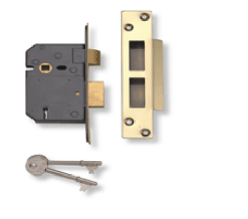
Important

1. The 'model' MSS does not set out which areas of your home require protection nor when/how security devices should be used or where their keys should be kept. Where your insurer applies a MSS, such matters will be usually be set out within it. In the absence of any contrary insurer requirements, it is recommended that you follow the relevant advice shown in Appendix 1.
2. Where your insurer applies a MSS it may differ from the 'model' MSS, ie it may be presented in a different fashion, may merge or omit some options, may accept security devices without reference to door/window materials or types of windows etc. It may also include other (less secure) options not shown in the 'model' MSS, eg any 'five lever mortice deadlock' rather than requiring one meeting BS 3621.
3. If in any doubt as to how to proceed, always check with your insurer/insurance broker or, as appropriate, a competent locksmith/glazier.

Table 1

Mechanical security devices recommended for securing perimeter doors and opening windows		
DOOR TYPES	**Options for doors used as a final exit**	**Options for all other doors**
Personnel doors		
Single doors – hinged		
Timber	A or B	A or H
Plastic	C or D	C or H
Metal	E or F	E or F or H
Stable doors – hinged		
Timber	A (each door)	A or H (each door)
Plastic	C (each door)	C or H (each door)
Single doors – sliding		
Timber or plastic	(C or F) + J	(C or F or G) + J
Metal	F + J	(F or G) + J
Single doors – 'tilt/slide'		
Plastic	Not Applicable	C
Double doors – hinged		
1st closing door (leaf):		
Timber, plastic or metal	I	I
2nd closing door (leaf):		
Timber	A	A or H
Plastic	C	C or H
Metal	E or F	E or F or H
Other doors		
Cellar trap door(s)—hinged Timber or metal	Not Applicable	K
WINDOW TYPES	**Options**	
Hinged (inc roof/skylights)		
Plastic	W	
Timber or metal	X	
Tilt and turn (plastic)	W	
Vertical sliding	X	
Horizontal sliding	X + Y	
Louvered	Z	
Note Door height windows, commonly called 'French' or 'patio' windows, should be regarded as doors and be secured accordingly		

Table 2: Guide to codes used in Table 1

Mechanical security device options		
Code	**Description**	**Notes**
A	A lock 'certified' as meeting BS 3621. **Caution** A BS 3621 mortice lock provides acceptable security only if it has a suitable (as usually supplied) boxed striking plate fitted (a rebated type will need to be purchased for use with most double doors).	 Example of a BS 3621 mortice sash lock (ie with a separate handle operated latch) and a boxed striking plate. **Note** BS 3621 mortice locks are operated by a key from outside and inside, and may have a lever or cylinder lock mechanism.  Example of a BS 3621 rim lock **Note** A BS 3621 rim lock is operated by a key from outside, but may have an optionally lockable hand release knob/handle inside. Such locks will only be fully secured when the knob/handle is locked out of use – an especially important precaution if there is adjacent non laminated glazing or a letter flap that doesn't restrict external access.

B	A lock 'certified' as meeting BS 8621.
	
	Caution
	• A BS 8621 lock is most appropriately used at homes with only one perimeter entry/exit door and where emergency escape facilities have been deemed necessary, eg some flats.
	• A BS 8621 lock provides acceptable security only if:
	  • it has a suitable (as usually supplied) boxed striking plate fitted (a rebated type will need to be purchased for use with most double doors);
	  • any glazing in the door, or in any window (fixed or opening) adjoining either side of the door, is laminated glass;
	  • any letter flap in the door, or next to it, has an access restrictor or internal mailbox that prevents external access, by hand or tools, to the internal lock release mechanism.
		
		Example of a BS 8621 rim lock
		
		Notes
		a. BS 8621 locks can always be opened from the inside without using a key.
		b. If selected and used with care a more secure alternative is a BS 10621 lock—as with such locks the internal knob/handle can be locked out of use (from outside) when the home is left without occupants. To avoid inadvertently trapping anyone, such locks should only be fitted where a second perimeter door (which leads to safety and which does not itself have a BS 10621 lock fitted) exists.
		c. Where a BS 8621 or 10621 lock is used it is vital, in order to maintain security, to deny intruders ready access to the internal lock release mechanism—hence the glazing/letter flap Cautions.
		d. During 2015 letter flap restrictors/mailboxes 'certified' as meeting security standard TS 008 are expected to become available—their use being recommended.

Table 2: Guide to codes used in Table 1

Mechanical security device options		

C	Either:
	• a multi-point lock assembly 'certified' as meeting PAS 3621;
	or
	• a multi-point lock assembly having at least three moving fastening points operated by a handle secured by either:
	  • a lock cylinder 'certified' as meeting the 3 Star level of TS 007;
	or
	  • a lock cylinder 'certified' as meeting BS EN 1303 at Key Security Grade 5, Attack Grade 2;
	or
	  • a lock cylinder with five (or more) pins.
		
		Example of a plastic door having a multi-point lock assembly.
		Note
		A comparable alternative to a 3 Star TS 007 cylinder is one 'approved' by Sold Secure as meeting the Diamond level of SS 312.

D	A multi-point lock assembly 'certified' as meeting PAS 8621.
	Caution
	• A PAS 8621 lock is most appropriately used at homes with only one perimeter entry/exit door and where emergency escape facilities have been deemed necessary, eg, some flats.
	• A PAS 8621 lock provides acceptable security only if:
	  • any glazing in the door, or in any window (fixed or opening) adjoining either side of the door, is laminated glass;
	  • any letter flap in the door, or next to it, has an access restrictor or internal mailbox that prevents external access, by hand or tools, to the internal lock release mechanism.
		Notes
		a. PAS 8621 locks can always be opened from the inside without using a key.
		b. If selected and used with care a more secure alternative is a PAS 10621 lock—as with such locks the internal knob/handle can be locked out of use (from outside) when the home is left without occupants. To avoid inadvertently trapping anyone, such locks should only be fitted where a second perimeter door (which leads to safety and which does not itself have a PAS 10621 lock fitted) exists.
		c. Where a PAS 8621 or 10621 lock is used it is vital, in order to maintain security, to deny intruders easy access to the internal lock release mechanism—hence the glazing/letter flap Cautions.
		d. During 2015 letter flap restrictors/mailboxes 'certified' as meeting security standard TS 008 are expected to become available—their use being recommended.

E	Either:
	• a mortice swing lock 'certified' as meeting BS EN 12209 at Security Grade 7;
	or
	• a mortice swing (MS) lock;
	and
	in both cases being fitted with either:
	  • a lock cylinder 'certified' as meeting the 3 Star level of TS 007;
	or
	  • a lock cylinder certified as meeting BS EN 1303 at Key Security Grade 5, Attack Grade 2;
	or
	  • a lock cylinder having five (or more) pins.
		
		Example of a MS lock (this one ready to take a separate Round profile cylinder).
		Notes
		a. TS 007 is only applicable to Euro and Oval profile cylinders, not round profiles.
		b. A comparable alternative to a 3 Star TS 007 cylinder is one 'approved' by Sold Secure as meeting the Diamond level of SS 312.

Table 2: Guide to codes used in Table 1

Mechanical security device options		
F	Either: • a mortice hook lock 'certified' as meeting BS EN 12209 at Security Grade 7; or • A mortice hook lock; and in both cases being fitted with either: • a lock cylinder 'certified' as meeting the 3 Star level of TS 007; or • a lock cylinder 'certified' as meeting BS EN 1303 at Key Security Grade 5, Attack Grade 2; or • a lock cylinder having five (or more) pins.	 Example of a mortice hook lock (this one ready to take a separate Euro profile cylinder). **Notes** a. TS 007 is only applicable to Euro and Oval profile cylinders, not round profiles. b. A comparable alternative to a 3 Star TS 007 cylinder is one 'approved' by Sold Secure as meeting the Diamond level of SS 312.
G	Any type of factory fitted* lock or lockable fastening; plus a 'patio door' lock fitted internally at (or near) the top or bottom corner of the non-fastening side. **Caution** *If the door has no factory fitted lock or lockable fastening, a second patio door lock should be fitted internally at (or near) one of the other corners of the door.	 Example of a patio door lock. **Note** The fitting of extra security devices to plastic and metal doors requires particular care and should be entrusted to a competent locksmith.
H	Any type of rim or mortice door lock; plus Fitted internally, at (or near) both the top and bottom corners of the closing edge of the door, either: i. key operated mortice rack bolts; or ii. lockable surface mounted bolts.	  Example of a mortice rack bolt and lockable bolt. **Notes** a. Option H i. is unlikely to be suitable for use with plastic or metal doors. b. The fitting of extra security devices to plastic and metal doors requires particular care and should be entrusted to a competent locksmith.

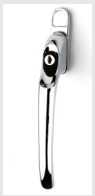
Table 2: Guide to codes used in Table 1

Mechanical security device options		

I	Either:
	• a multi-point lock assembly having at least two moving fastening points operated by a handle secured by either:
	  • a lock cylinder 'certified' as meeting the 3 Star level of TS 007
	or
	  • a lock cylinder 'certified' as meeting BS EN 1303 at Key Security Grade 5, Attack Grade 2.
	or
	  • a lock cylinder having five (or more) pins.
	or
	• one of the following:
	  • rebate bolts fitted at both the top and bottom of the closing edge of the door;
	or
	  • key operated mortice rack bolts fitted at (or near) both the top and bottom corners of the closing edge of the door;
	or
	  • lockable surface mounted bolts fitted internally at (or near) both the top and bottom corners of the closing edge of the door.
		Notes
		a. TS 007 is only applicable to Euro and Oval profile cylinders, not round profiles.
		b. A comparable alternative to a 3 Star TS 007 cylinder is one 'approved' by Sold Secure as meeting the Diamond level of SS 312.
		  Example of a rebate bolt.
		Notes
		a. As rebate bolts are installed within the closing edge of a door, they do not need to be locked because access to them requires prior opening of the other (locked) door of the pair.
		b. Mortice rack bolts are unlikely to be suitable for use with plastic or metal doors.
		c. The fitting of extra security devices to plastic and metal doors requires particular care and should be entrusted to a competent locksmith.

J	Two anti-lift devices fitted within the top retaining track, one being located at (or near) each corner of the door.	  Example of an anti-lift device (left) and (right) as installed - a cutaway image.
K	**Single doors:** Either: • bolts as per H i. or ii. above, fitted internally at (or near) both the top and bottom corners of the closing edge of the door; or • a padlock and padbar fitted internally at (or near) the midpoint of the closing edge of the door. **Double doors:** Either: • bolts as per H i. or ii. above, fitted internally at (or near) both the top and bottom corners of the closing edge of both doors; or • both doors fastened together by a padlock and padbar fitted internally at (or near) the mid-point of the closing edges of the doors.	 Example of a typical padlock (open shackle type) with padbar. **Notes** a. Metal doors - Option H i. is unlikely to be suitable. b. Timber doors—Where their design permits it, padbars that are coachbolted through a door (rather than just being fixed to it by screws) will provide enhanced security. c. The fitting of extra security devices to metal doors requires particular care and should be entrusted to a competent locksmith.

Table 2: Guide to codes used in Table 1

Mechanical security device options			
W	Either: • a multi-point fastening device, having two (or more) moving fastening points, operated by a lockable handle; OR • a fastening handle with integral lock.		Example of a plastic window having a multi-point fastening device.
X	A single point, key operated or released, fastening device.* **Caution** Windows with an opening edge of greater length than 1.2m should be fitted with two security devices * Some examples include: • a fastening handle with integral lock; • a sliding window catch with integral lock; • a mortice rack bolt or a screw in bolt; • a surface mounted lock or lockable bolt; • a window stay with integral lock; • a stay lock.	 Example of a handle with integral lock.	 Example of a locking catch for a sliding (sash) window.
			Example of a surface mounted locking window catch and a push bolt lock.
	Note Many types of window security device exist, and the examples shown/listed above are not exhaustive. Whatever its type, the principal requirement is that it is suited to the window type and, however it is secured (locked), a 'key', ie a removable device, is required to release (unlock) it.		Example of a window stay with integral lock.
			Note The fitting of extra security devices to plastic and metal windows requires particular care and should be entrusted to a competent locksmith.
Y	Two anti-lift devices fitted within the top retaining track, one being located at (or near) each corner of the window.		Example of an anti-lift device.
Z	Either: • the louvered window having a fixed internal or external steel grille or set of steel bars; or • where the glazing brackets are metal, each louvre to be glued in place using epoxy resin adhesive.		**Note** These windows are rarely encountered fitted in homes, but if present are usually inherently weak. Unless protected as per the first bulleted option, their replacement with conventional windows is recommended.

Appendix 3: Glossary of security device terminology

The terminology used in connection with security devices can be unfamiliar and this may sometimes lead to confusion. This Appendix outlines what is usually meant by some commonly encountered terms. A fuller glossary of terms can be viewed on the MLA website, see http://www.locksmiths.co.uk/security-advice/security-jargon-buster/

Anti-lift devices

Sliding doors are often, due to their size and method of external installation, relatively insecure, when locked – a common method of criminal attack being to lever such doors upwards (into the installation recess within the frame top track) and then, when released from the base track, prise the doors outwards.

Installing snugly fitting anti-lift devices (which can be a bought product or self made from suitable metal, timber or rigid plastic strips/wedges) to fill the space between the top of the sliding door and the inside of the top door track will prevent the door being lifted and thus hinder such attacks.

Sliding windows are usually smaller in size than doors and, being installed into a frame from inside a home, are perhaps less vulnerable to lifting attacks, but nonetheless benefit from fitting anti-lift devices too.

Automatic locking

This is a term that is used to describe security device functions that occur simply by means of closing the door or window to which they are fitted. This may be straightforward latching of a lock bolt into the closed position or, for additional security (typically with rim 'automatic' deadlocks), also activate a deadlocking function.

Automatic locking in relation to window locks is sometimes referred to as 'close to lock - key to unlock'.

Deadlocking

This is a term applied to locks which, once locked, resist the lock bolt being pushed back from its locked position. In many locks this deadlocking protection is enhanced by use of a boxed striking plate/reinforced bolt housing.

Differs

Differs is a term that refers to the number of different combinations of key that can be created and matched to a security device, eg a lock may be said to have a thousand differs, meaning only one of a thousand different keys would open a particular example of that lock.

All other things being equal, more complex/secure locks will have a greater number of differs than simpler devices. Some simple devices, eg basic 2 or 3 lever mortice lever locks, may have very few key differs and very simple devices, eg many window locks, may have no key differs at all.

Escutcheon

An escutcheon is a face plate, with or without a pivoted cover, which may be fitted to protect the surface of a door/window where a key enters a lock.

Fastening

When using a term such as fastening on its own (as opposed to lockable fastening), no security value beyond holding a door/window in a closed position is implied.

Key

Keys come in many forms, some complex and some so simple, eg in many window locks, that they resemble a basic screwdriver. In essence, a key should be regarded as a removable device that permits unlocking, and often locking too, of a security device.

Key operated

This term has been widely used by insurers over the years, eg as in 'key operated bolt/window lock'. But increasingly such a term may be considered as inappropriate, as many security devices do not require exclusive use of a key to operate them. See also 'lockable'.

Lock assembly

The word ‘lock’ is widely used as a shorthand term for what would usually be more properly referred to as a lock assembly, a ‘lock’ having various constituent parts—namely the lock housing (lockcase), lock mechanism (levers or a pin cylinder), a lock key and a moving lockbolt or lock cam. Two types of lock assembly are recognised:

- Single point lock assemblies – having one locking fastening (lockbolt).
- Multi-point lock assemblies – having several fastening points linked to an operating handle which is secured by the lock mechanism.

Lockable

When considering the intention behind the term lockable, the principal requirement is that however a security device fitted to a door or window has its lock mechanism engaged in the ‘secure’ (closed) position, for example by use of a key, by push button action or some automatic action upon the door/window being closed, some form of removable device (key) is required to unlock it, in the case of doors from at least the outside the home and for windows from inside.

Lockbolt/moving fastening points/lock cam

A feature of all lock assemblies is that some part will need to physically move to hold a door/window in its ‘secure’ (closed) position. In a single point lock assembly this moving portion is referred to as a lockbolt. In a multi-point lock assembly, a series of moving fastenings (which can be bolts, hooks or mushroom headed screws) perform a similar function, and are moved by manual operation of the connected lock assembly handle – the lock mechanism itself, typically a cylinder, having a lock cam that prevents/enables the handle to be operated.

Lock housing

According to where they are fitted, locks can be categorised into two broad groups reflecting the nature of their housing, ie the surrounding casing that contains the lock mechanism and lock bolt:

- those that that fit within a door/window are termed mortice locks;
- those that fit to the surface of a door/window are termed rim locks.

Mortice door lock

Box rim door lock

Cylinder rim door lock with lockable internal handle

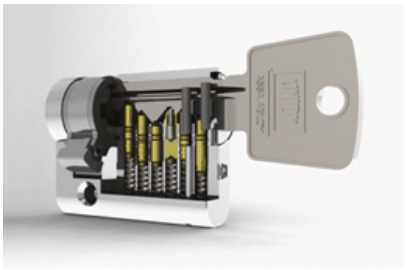
Lock mechanisms and their keys

The two most common types of lock mechanism are the lever lock and cylinder lock mechanism, each having distinctive key types.

Typical lever lock keys on left, cylinder lock keys on right

- Lever mechanisms are usually used in mortice locks (but can be used in padlocks and some rim locks); those with a minimum of five levers being a common benchmark of basic security value. The term 'lever' relates specifically to the number of hinged metal plates within the lock housing that a key has to lift (by correct engagement of 'steps' along the key 'bit') to a pre-set height before the key can be turned to move the lockbolt in and out of the lockcase.
    - Lever lock keys typically have a round profile shaft and a projecting flat end ('bit) which is inserted into the lock. This key bit will have a number of 'up and down' steps in its edge profile designed to engage with the lock levers. As these keys usually need to enter the lock from each side of the door, the stepped profile of the bit will typically be symmetrical either side of its notional mid-point.
- Cylinder mechanisms are used in both rim and mortice locks, those with a minimum of five pins being a common benchmark of basic security value. The term 'pin' relates specifically to the presence of sprung pins within the lock barrel that a key (by the notches along its length) has to lift to a pre-set height before the key can be turned to move the lock bolt.

  Door lock cylinders come in one of three forms, 'double' (key operated from both sides of door), 'single' (key operated from only one side of the door) and 'thumb turn' types (key operated on one side and hand released from the other).



Cutaway image of a Euro profile cylinder, showing how a key engages with the (six in this case) internal cylinder pins

- Cylinder lock keys typically have a flat profile shaft with a number of 'up and down' steps cut along its length, most of which will need to be inserted into the cylinder. Unlike lever locks, the key will not have a notional mid point with symmetrical steps either side of it, as cylinder locks designed to operate from both sides of a door will have two identical cylinders, one at each end of the cylinder barrel.

Note

Cylinder mechanisms are contained within a casing (barrel) that can be removed from the lock housing. These casings have varying cross sections. Those that are round are usually called 'screw in types' and those of other shapes are usually referred to as 'profile' types, eg Oval and Euro profiles. Their shapes do not indicate the complexity of the internal mechanism.

L to R—Examples of a Round single cylinder plus an Oval and Euro profile double cylinder

Night latch

This is a term associated with basic cylinder rim locks for doors. Night latches have an automatic fastening (latch), which is non deadlocking, and can always be released by use of the non-locking internal handle.

Cylinder rim night latch

Opening windows

Whether or not a window is opening or fixed might seem a straightforward matter, but it is often a source of query in the case of windows that are said to no longer be capable of being opened.

A starting point for whether or not a window should be regarded as an 'opening window' is clearly to consider whether it was originally designed and installed to be capable of opening. If it is a metal or plastic window that will usually be the end of the matter, but for timber windows it may be necessary to consider if a window is still capable of being opened by normal means. Typical scenarios might include:

- a timber window that is considered jammed, perhaps because it is ill fitting or swells when wet. This should not be regarded as non-opening;
- a timber window that has been painted over many times/over many years, such that it couldn't be opened without tools and the application of considerable force. Some insurers may be prepared to regard such a window as effectively non-opening; and
- a timber window that has been nailed or screwed shut. If the nail/screw passes through the window surround into the frame (ie not just through a window handle, catch or stay), this might reasonably be regarded as mechanically fixed, ie non-opening.

Rose

A rose is a protective (often chamfered) surround to a protruding end of a lock cylinder.

Sash lock

This is a term associated with mortice door locks that also have a handle operated fastening (latch) to hold the door closed without the lock being engaged.

Mortice sashlock, shown together with a boxed striking plate

Striking (or strike) plate

This is a term most often associated with mortice locks, and refers to the type of protection provided to the receiving point of a lockbolt—whether this is located in a fixed door frame or, in the case of double doors, another door.

At its simplest, this may be achieved by fitting a metal plate flush to the surface opening, ie a 'flush striking plate'. In more secure mortice locks, for example locks meeting BS 3621, a 'boxed striking plate' will be fitted instead. This has a metal housing (box) attached to its rear face, within which the lockbolt engages, its purpose being to hinder attacks on the lock bolt via the side/rear of the substrate into which the striking plate is fitted. On double doors a rebated striking plate is often needed.

With rim locks, a frame mounted housing for receiving the lockbolt/latch fulfils a similar function.

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