RISCAuthority

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FPA Fire Protection Association

S16 Guidelines for shop front protection

Version 2 Published 2021

Acknowledgements

The assistance of SWS UK and the Door & Hardware Federation is gratefully acknowledged.

Cover image: Getty/instamatics

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1 Introduction

Shop front security is an important issue for insurers and their customers, as shop fronts can become the target of burglars and vandals. To reduce this risk, retailers should look to:

- reduce the temptation; and
- ensure the shop front is as secure as possible.

2 Scope

This guide contains information to assist businesses (such as retailers) and specifiers (such as insurers) to select and/or evaluate suitable security solutions for glazed shop display frontages and similar applications. Reference is also made to the associated planning permission issues that often arise.

3 Reducing temptation

Retailers need to reduce the value of goods on display as far as possible, while recognising that there may be a balance between that and marketing. Additionally, the nature, value and accessibility of goods and equipment visible through the window inside the shop should also be taken into account.

Actions can include:

- use of dummy goods/packaging;
- removal of theft-attractive goods from window displays outside business hours.
  Note: Consideration may also need to be given to ensuring that very high value/theft-attractive products, such as jewellery items, are not displayed in windows during business hours;
- protection of goods displayed by means of internal cages or steel security cables looped through items; and
- ensuring that, outside business hours, internally visible, high risk equipment, eg cash tills or merchant-fill ATMs, are empty and left open.

4 Securing the shop front

Overall shop front security will be a balance of:

- the exterior environment, eg maximising natural surveillance;
- the structural elements and materials of the shop front being of a nature to add to the strength of the front;
- construction and condition of doors and windows;
- locks and locking systems;
- nature of the glazing;
- supplementary shutters and grilles;
- the approach being protected from ‘ram raiding’;
- intruder alarms and/or Video surveillance systems (VSS, formerly known as CCTV); and
- innovative, state-of-the-art solutions designed to detect and/or deter crime, eg forensic dyes or spray systems, security fog devices or radio frequency identification (RFID) devices.

This guide deals with shop front glazing, shutters and grilles, as advice on any other security issues mentioned is widely available from a number of different sources, for example:

1. RISCAuthority guidance documents – several guides on intruder alarms and other relevant topics have been published:
    - S9: *Intrusion and hold-up alarm systems (I&HAS): considerations for installers and other stakeholders*;
    - S27: *'Model' SDP-AFD summary sheet for Intrusion Hold up Alarm Systems*;
    - S33: *Intruder alarm systems: Ten-step guide for purchasers*;
    - S10: *Guidance for the protection of premises against attacks using vehicles (ram raids)*; and
    - S7: *Security guidance for fog devices*;
2. your local police force's crime prevention/architectural liaison officers;
3. companies registered with either the National Security Inspectorate (NSI) (www.nsi.org.uk) or the Security Systems and Alarms Inspection Board (SSAIB) (www.ssaib.co.uk), who may be a good source of advice on electronic security systems;
4. locksmiths registered with the Master Locksmiths Association (MLA) (www.locksmiths.co.uk), who may be a good source of advice on locks, locking systems and general physical security;
5. trade bodies, such as the Glass and Glazing Federation (GGF) (ggf.org.uk), the Door & Hardware Federation (DHF) (www.dhfonline.org.uk) or the British Security Industry Association (BSIA) (www.bsia.co.uk); and
6. your own property insurance company, who may be able to provide general or specific advice. In any event, it is a good idea to check new/revised security measures with them before implementation, in case they have any specific requirements/ advice that you may need/wish to take account of.

5 Glazing

Glazing may, for health and safety, security and Building Regulations' requirements, need to be 'safety glazing' and thus conform to the British Standard on safety glazing (BS 6262-4: *Glazing for buildings. Code of practice* for safety related to human impact).

There are two main types of glass that can be used in this context: toughened and laminated.

Toughened glass is restricted in size because of the way it is made, thus is typically only used in shop doors and smaller windows. In the context of accidental impacts, it is up to five-times tougher to break than standard glass. However, through use of freely available tools, it can easily be shattered.

Laminated glass is the usual choice for security and, with care in its selection, can also meet most safety requirements. Laminated glass consists of sheets of glass bonded to each other by means of 'interlayers' consisting of a type of film, usually 'PVB' (poly vinyl butyral). If the glass is attacked, the film, plus the second/subsequent layer(s) of glass/film, prevent or at least significantly delay penetration, chiefly because the film acts by holding together the shattered glazing. The more thickness/layers of glass and film, the stronger the product.

However, whilst toughened and laminated glass have a role to play in selected applications, a factor to take into account is that a potential attacker is unlikely to be able to differentiate these from other types of glass and, as a result, there is no deterrent effect – a valuable factor in reducing the cost of damage as well as theft.

6 Shutters and grilles

Note: This section provides an overview of shutter and grille designs, their general attributes and limitations. The actual security value of a particular product against specific forms of attack can be hard to determine, and suppliers' related claims may be couched in unfamiliar terms. However, prospective purchasers need not feel they have to master the detailed technical issues that determine product strength/security. Instead, they may wish to make their product selection criteria having regard to various security standards and certification schemes that exist in this field, eg the Secured By Design accreditation or the Loss Prevention Certification Board (LPCB) certification to LPS 1175, the latter allowing purchasers to identify a desired security rating for the type of product under consideration.

All other things being equal, shutters or grilles fitted internally are generally more secure than where fitted externally, as they gain a degree of protection from the building perimeter/glazing behind which they are fitted. That said, the choice of internal or external fitting is not always made on security grounds. For example local authority planning considerations (see Section 7) may influence what is permissible and where shutters and grilles are primarily being installed to provide protection against breakage of glazing, they clearly have to befitted on the outside of the premises.

Where shutters and grilles are not being selected on the basis of some impartial (third party certified) scheme that assesses the overall security they provide, it is important to note that whatever their type of construction, shutters and grilles are only as secure as their fixings and locking mechanisms and electrically operated shutters may, without taking care, not readily achieve a similar standard of locking to those which are mechanically operated.

The following are the main types of shutters and grilles but there are many variations on these basic designs and, irrespective of whether fitted internally or externally, the relative integral strength of these types, and also one product design to another, is variable.

Metal roller shutters

These are usually suitable for use both inside or outside:

- they are usually of steel or aluminium construction;
- they may be of solid or perforated lath, the latter intended to allow passers-by to view the contents of the display/shop interior when artificially lit;
- laths should be designed to make positive engagement in suitably shaped guides and have a bottom rail consisting of a heavy gauge angle bar; and
- channel/guides should be securely bolted to the brickwork to prevent an attack on any vulnerable sides.

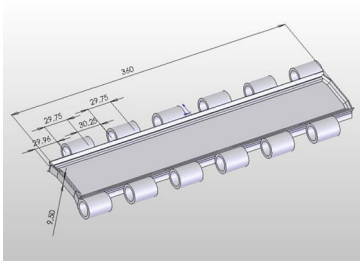
'Solid' metal roller shutter

Locking will vary according to type and installed location, but typically will be by means of the following:

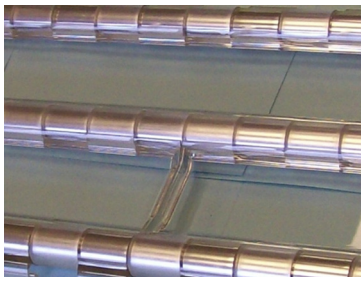
- cylinder profile (pin bolt) locks welded to each channel;
- security padlocks, where possible of the close shackle type, conforming to a security grade commensurate with the assessed risk and fitted through the bottom rail into a locking ring or stud fixed in concrete below ground level;
- padbolts welded to the ends of the bottom rail and engaging with holes in the side channels, secured by security padlocks; or
- electrically operated mechanisms/locking, perhaps supplemented in high security situations by manual locking.

Note: For high security, a padlock certified as meeting at least Grade 4 of BS EN 12320: *Building hardware. Padlocks and padlock fittings. Requirements and test methods*, is advised. Further advice is available on the websites of DHF (www.dhfonline.org.uk) and Sold Secure (www.soldsecure.com).

Method of operation can have the potential to affect security. Most shutters are manually operated and their security will often reflect the manner by which they are locked. However, electric operating mechanisms are nowadays often used, and especially for large shutters,



Polycarbonate link. The sections are linked with horizontal rods which engage in the side guides. The loops through which the rods are threaded can be seen



An assembled piece of polycarbonate 'curtain' showing how the links fit together

'Aperture' roller shutter allowing interior to be viewed

Metal collapsible gate

which can be difficult to operate manually. Where electric mechanisms are in use, attention needs to be paid to the security of the operating switch.

At their simplest, such switches are push buttons or face fixed wall switches operated by a simple key. More secure operations involve use of a key pad sending coded messages to an internal code reader which operates the switching mechanism, or they may be operated by a handheld transmitter (rather like modern car keys).

In general, it is preferable for any type of electric operating switch/mechanism to be located inside the premises, but very often there is a need for at least one switch (in respect an exit route shutter) to be outside. Where a simple key switch is installed outside, it is not unknown for criminals to 'hot wire' such devices by the simple expedient of cutting any visible cable running to the switch and joining wires to complete the operating circuit. Alternatively, they may knock the box off the wall to expose the wiring, or unscrew the switch faceplate and manipulate the wiring inside. In general, changing such switches to use of a coded transmitter device or a keypad switch instead is advisable. Failing that, some protection can be obtained by recessing the switch into the wall to protect it from being knocked off and/or changing the standard faceplate screws for security screws.

Another area to consider is that where the shutter is external and used for entry to the premises, there may be a manual override winder within, or projecting from, the shutter casing, which is for use in case the operating mechanism fails. There is little use protecting an otherwise weak operating switch if this override device is left unprotected. Measures that can be adopted include blanking off/padlocking shut any external access plate/hatch to this device, or otherwise fitting a security padlock of sufficient shackle width to block the insertion of a winding tool into the winder eye.

Where nothing can be done to enhance switch security and the premises have an intruder alarm, it may be possible to have the switch or shutter itself fitted with alarm detection to provide an early indication of attack. Your alarm company should be able to advise you further.

Important note: Where a manual lock is fitted to an electrically operated door, it is wise to ensure that an overload cut out is incorporated into the shutter motor, otherwise a burned out motor can be the result if an attempt is accidentally made to raise a locked shutter.

Advice on all these matters should be sought from the original manufacturer/installer,or other competent shutter door installer.

Aperture and composite roller shutters

These are usually suitable for use both inside or outside. They have apertures within them, allowing passers-by to view the contents of the display/shop interior, but introduce the risk of damage being caused through the apertures.

Versions are available with polycarbonate links inserted into the aperture space, thus eliminating the risk of damage to glazing through apertures, and which also have the benefit of preventing criminals from fastening a rope or chain to the shutter in an effort to pull it off.

These shutters should not be used in high security applications but they may be useful where, for aesthetic reasons, an expansive or full view into a shop is required when the premises are closed, as apart from the horizontal rods, the shutter is completely transparent.

Attention needs to be paid to the security of locks or electric operating mechanisms, as per metal roller shutters above.

Metal collapsible gates

Also referred to as retractable gates, trellis gates, concertina gates etc,these are fitted internally. They offer a formidable barrier consisting of heavy pickets that slide in steel channel section and they are usually secured by integral locking devices but may be secured with, ideally good quality, padlocks. They are versatile and have the benefit that they are relatively unobtrusive when open but the bunched width of the components when open takes up approximately 15% of the overall opening width and cannot always be disguised. They are operated manually which requires access and can be a relatively cumbersome task. Consequently, whilst popular as protection for openings in the non display situation they are in frequently used to protect a shop front.

Fixed grilles

These may be used inside or outside. They typically comprise a one-inch steel woven mesh welded into an angle iron or flat iron frame, which should be screwed or bolted to the building structure rather than a window frame. It is important that the grilles protect the full height of the shop front glazing.

They are vulnerable in that there is a chance of damage being inflicted through the apertures or a rope/chain being attached to the grille and used to pull it off, eg with the aid of a vehicle.

Needless to say there are aesthetic issues with such grilles and there can be problems when windows require cleaning.

Hinged or removable grilles

These are usually most suitable for use outside. They typically comprise a one-inch steel woven mesh welded into an angle iron frame, held by fixed 'lift out' channels or hinges and secured with security padlocks.

Channels/hinges should be of substantial steel construction and be securely bolted to the building, rather than just the shop front frame. It is important that the grilles protect the full height of glazing.

As with aperture roller shutters, collapsible grilles (see below) and fixed grilles, there is a chance that damage can occur through the apertures. There is also a vulnerability in that a rope/chain can easily be attached to the grille and used to help pull it off.

The weight of large removable grilles can be an issue for users.

Collapsible grilles

Similar in their engineering to metal collapsible gates (but far less secure), collapsible grilles, sometimes referred to as jeweller's grilles, are usually of metal fitted inside the window and raised/lowered by cables, pulleys and a winding handle. There are various proprietary designs. One consists of flat strips which collapse like a Jacob's Ladder. Others consist of thin rods linked with flat strips which collapse like a bellows. A variation unrolls inside the window and may be referred to as a roller or portcullis grille. They are available with apertures of various size, the choice being determined by the size of articles on display. If they are secured at all, the arrangement may be non-locking and very simple, serving only to frustrate an attempt to lift the grille and reach in.

As they provide good through visibility, such products may be allowed to remain in place during business hours to provide protection against smash and grab attacks. However, the physical strength of such designs is limited and they have fallen out of favour over the years with the escalation of brute force employed by thieves.

7 The planning system

A change to the external appearance of a premises normally requires planning permission. In the context of shop fronts, planning permission would normally be required in the following instances:

- Where a shutter/grille is fixed to the external face of a building.
- If a roller shutter's boxed housing is fixed internally but the shutter unrolls on the external face.

Permission would not normally be required if a shutter/grille is installed inside the shop front, but it is always wise to check before proceeding.

A conflict of interest can arise between retailers (and their insurers)wishing to install adequate security protection for their premises and local authority planning departments concerned with maintaining standards of appearance in areas under their control. Particular difficulties have occurred in the erection of solid roller shutters, which are often considered the best possible protection by insurers and their policy holders, but which the local authority may consider as detracting from the aesthetic appeal of a neighbourhood.

Local authorities may also be concerned that the widespread use of roller shutters outside normal shopping hours transforms the appearance of shopping centres, such that they appear to be rather unattractive sterile areas. This can be felt to be particularly obtrusive in retail zones within conservation areas or in local shopping centres located within a residential setting.

In many instances, shutters/grilles have been installed without planning permission as installation is relatively easy and owners have been unaware of the necessity of planning permission. Sometimes councils have granted permission retrospectively, although in other cases action has been taken to obtain the removal of the offending shutter/grille.

Taking the local authorities' views into account is more likely to lead to an agreement between them and premises owner/occupiers, and in this regard it is worth noting that many local authorities produce planning guides for such equipment. In deciding whether planning permission should be given for shop front protection, local authorities are likely to consider the following:

- Whether the area is considered environmentally sensitive. If so, all shutters/grilles are likely to either be prohibited or restricted to certain types.
- The design. An applicant seeking planning permission for a new shop/shop front might be advised that he/she must incorporate into the design a facility to install a roller shutter that is housed behind the fascia or the shop window.
- The type and materials of the shutter/grille. These might be specified; for example, colour coated finishes are often considered less obtrusive whilst natural finish aluminium or galvanised metal might be considered unsightly and unsuitable for most shopping street settings. 'Aperture' shutters are generally more acceptable than conventional 'solid' shutters (polycarbonate glazing will improve security). So-called 'perforated' lath shutters (where the lath is perforated by a large number of small holes to give a 'net curtain' effect) will also, if illuminated from inside, enable the window display to be seen.
- The visual impact of shutters/grilles. This must correlate with the size of the opening to be covered. A wide shop front covered by a continuous shutter would have much more visual impact than several shutters fitted over smaller openings designed to be more harmonious with the general street scene. Equally, a shutter/grille that only covers the shop window itself will be preferred, ie one lowered only to the top of any stall riser incorporated into the shop front rather than right down to the ground.

8 Conclusion

Care taken to protect a shop front can significantly reduce the risk of crime. However, before embarking on such measures you need to undertake, or commission from other sources, a simple security risk assessment (eg consider the risks faced and the possible consequences of crime; then assess what protection you currently have and how it might need to be improved). This should hopefully allow you to identify a proportionate and balanced set of suitable countermeasures – preferably using products that meet recognised standards and, ideally, where adherence to those standards is independently confirmed (third party certification).

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