SC 22003

CFPA EUROPE®

SECURITY GUIDELINES FOR BUSINESS

Foreword

CFPA Europe develops and publishes common guidelines in order to achieve similar interpretation in the European countries and to give examples of acceptable solutions, concepts and models. CFPA Europe has the aim to facilitate and support fire protection, security and protection against natural hazards.

The market imposes new demands for quality and safety. Today, fire protection, security and protection against natural hazards form an integral part of a modern strategy for survival, sustainability and competitiveness.

These Guidelines are primarily intended for the public. They are also aimed at rescue services, insurers, consultants, safety companies and the like so that, in the course of their work, they may be able to help manage risk in society.

These Guidelines reflect best practice developed by the national members of CFPA Europe. Where these Guidelines and national requirements conflict, national requirements shall apply.

These Guidelines have been compiled by the Security Commission and are adopted by all members of CFPA Europe.

Content

1 Introduction

Burglary is a risk for all kinds of businesses, starting with small shops and offices up to financial companies and jewellers, and therefore concerns everybody.

Burglary can only be combated by taking adequate preventive measures. In most cases, this means the use of mechanical or electronic protective devices. For objects in general, adequate protective measures can be a precondition for burglary and vandalism insurance.

For this reason, security guidelines for the protection against burglary have been developed. They give recommendations as to which security requirements should be applied to a company. At the same time, assessment of the respective risk and the benefit-cost ration of such measures are taken into consideration. As a result, six non-binding risk classes for business premises (SC 1 – SC 6; SC: Security Class) are described in chapter 11.

It is recommended that a high-risk business be protected and monitored using both mechanical and electronic protective devices and organisational measures. It is important that the measures complement one another and form a security chain that allows the policyholder to insure his valuables without any further support. The Security Guidelines take up this concept and give recomendations as to how this type of security chain can be established in the non-binding risk classes. The user should therefore always assess individual measures to determine whether they strengthen or weaken the security chain.

The measures specified in these Security Guidelines can only constitute non-obligatory suggestions. In individual cases, e.g. with objects in general (high value, high-risk location, etc.), additional measures may be necessary in order to achieve effective protection against the risk of burglary or vandalism.

It is recommended that only approved or certified products be used, and a professional installation company be engaged to ensure that these security measures are fully effective. These products are tested and certified by an accredited testing and certification body.

If certified and approved burglar-resistant components are used (e.g. burglar-resistant doors, professionally installed retrofits on windows, etc.), all parties involved can be sure that the products have been intensively tested and offer excellent protection against burglary. For example, a burglar-resistant door with a certificate shall force the criminal to require a certain amount of time to break in, even if he has tools. Burglary protection products are regularly divided into classes. Studies by the police have confirmed that many burglary attempts fail in the face of high-quality security systems, because the burglar does not have the time to carry out the burglary.

These Security Guidelines can be used as a guide for risk management planning. Experience has shown that the use of approved burglar-resistant elements during the installation of the object offers the best protection. Retrofitting often does not provide the same level of protection. The user should also pay particular attention to which element of the security chain is the weakest.

Important note: During planning, installation and implementation of the security measures, the local regulations for escape and rescue routes shall be observed.

Confer also to *CFPA Guidelines Emergency Exit Doors in non Residential Premises 06/S*.

This also applies if fire-resistant closures, e.g. fire doors or fire flaps, are used simultaneously for burglary protection. Modifications to these products are only permitted in accordance with national law or respective regulations.

It is highly recommended to make use of professional installation companies. As far as possible, these companies should hold a certification for their profession.

National regulations shall – always – be applied, if available.

2 General

2.1 Risks and challenges

In order to meet their special responsibility, the management shall implement a systematic protection concept that clearly defines and documents the necessary structural protection measures and organisational safeguards. Such a protection concept would typically include a specific risk assessment from which it derives protection concepts against identified risks.

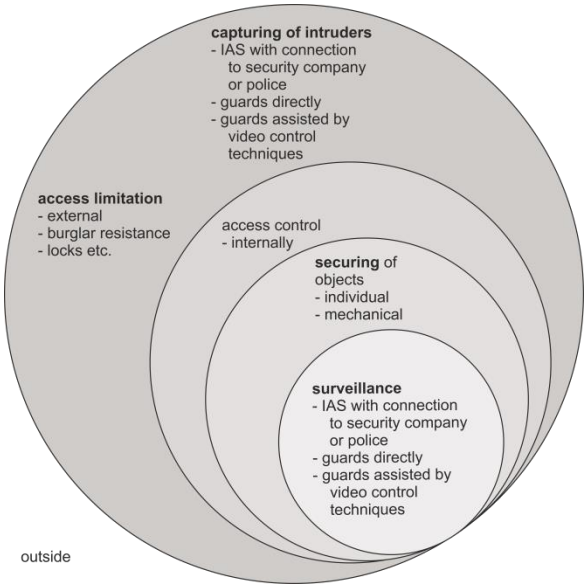


Figure 2-1 Defence in principle

Organisational measures in the context of the protection concept such as access restrictions, bag searches and adequate surveillance “top off” the protection concept to be developed against burglary and theft, by also preventing pickpocketing and vandalism during opening hours. However, visitors’ and customers’ legitimate interest in inconspicuous and discreet checks shall always be taken into consideration.

Electronic and optical systems should complement mechanical safeguards to monitor the areas structurally protected, and trigger an alarm in case of a crime (burglary or lock-in). The further outside electronic safeguards are used (e.g. as perimeter protection with, say, alarm loops in the outer glazing), the faster an alarm is triggered, causing immediate intervention by security guards if connected to the police or security services (cf. Figure 2-1). In addition to mere perimeter safeguards, “trap protection monitoring” should also be incorporated to detect locked-in burglars as early as possible.

These Security Guidelines provide practical recommendations to protect commercial and business premises against

- burglary
- theft by visitors or employees
- robbery
- vandalism

Experience shows that approved physical security elements (as e.g. windows and doors) installed in the course of the erection of a building provide the most effective protection. Often, mechanical upgrades do not provide the same level of protection, though they clearly enhance security. In this context, planners, users and security officers need to focus their attention on the weakest elements of the security chain and, if required, upgrade them.

The general recommendation is to protect and/or monitor an object at risk with both mechanical and electronic safeguards. Manned security and surveillance and the overall organisation of different protection measures are important components of an optimum protection concept.

The most important prerequisite for the different safeguards is to complement one another in a useful way and constitute a harmonised security chain that makes it possible to insure the premesis. These Security Guidelines take up these principles and provide recommendations on how to install such a security chain. Hence, users should always review individual safeguards and determine whether they weaken or strengthen the security chain.

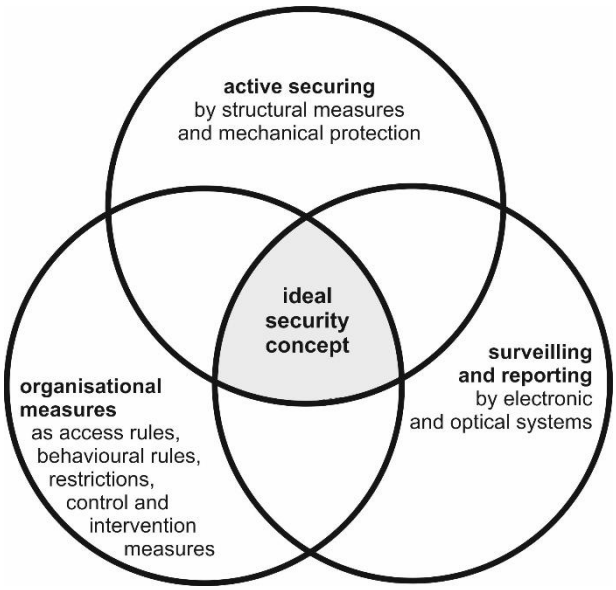


Figure 2-2: Active protection

The top priority of risk assessment is personal safety. Protection of the building is secondary to personal safety which, in case of a fire, might have adverse effects on the building if priority is given to open escape routes. However, the best possible coordination of personal safety and property protection measures involving the police and fire brigade ensures a high level of property protection.

Hence, the optimum protection concept against burglary/theft takes into account the structural measures that provide optimum protection as early as in the design or planning stage for the premesis (see Figure 2-2).

Mechanical safeguards such as burglary resistant windows and doors play an essential part. Good mechanical safeguards feature robust burglar resistance – the higher the resistance, the harder it becomes for the burglar to overcome these safeguards (in terms of time, tools, expertise) – which increases the risk for the perpetrator to be discovered and caught.

When coordinating mechanical and electronic safeguards, the most important aspect is adequate burglar resistance of the mechanical safeguards. As the perpetrator would need more time to overcome the safeguards, it becomes more likely for security guards who have been alerted to intervene in time. It also helps to prevent successful “smash and grab” break-ins.

The objective of these Security Guidelines is therefore to make insurers, managers, installers/maintenance persons and security officers, planners and the police aware of the various options of security technology with a view to burglary/theft. They provide non-binding recommendations to parties involved for developing an effective protection concept (structural/organisational/electronic) against the risks outlined here.

These Guidelines do not cover measures for protection against any other risks which include e.g. fire, natural hazards, water damage or development of contingency plans. The protection of data centres, IT facilities etc. is not covered by these Guidelines. Several aspects of protection have to be considered: e.g. physical

loss of equipment (these Guidelines can be applied), loss of data, modification or theft of data (cf. Guidelines for Cyber Security of Small and Medium Enterprises, No 11/S).

The Security Guidelines explicitly take into consideration that every building has different structural and organisational properties.

The scope of protection therefore always needs to be tailored to the individual organisation, the respective value of the goods.

A classification of the premises in terms of the required scope of protection can only be made to a limited extent (taking the Security Classes into acount cf. chapter 11.1 to 11.6).

In general, every facility may have different occupancies and premises at risk. Therefore, it might be useful to establish zones of different protection levels. These zones can be enclosed buildings, parts of buildings or rooms.

2.2 Implementation of protection measures

When implementing protection measures, different intentions, skills and motivations of perpetrators and their expected approaches as well as the level of surveillance at different times need to be taken into consideration.

The security measures described apply to walls, floors and ceilings surrounding insured premises, and to corresponding openings such as doors, gates or windows. Openings generally require a mechanical protective device for burglary if they are less than 4 m above the ground or can be reached with existing installations from the outside, e.g. via annexes, canopy roofs, balconies, fire ladders, exterior gratings, etc.

Building hardware, such as doors, windows and other building elements and electronic measures shall be tested and certified according to European standards or national rules and regulations.

Even if 100 % security is not realistic, where certified and approved burglar-resistant elements are installed (e.g. burglar-resistant doors, security upgrades installed by experts on windows), all parties involved can be certain that these products have proved during intensive tests that they are well suited as protection against burglary. For instance, a certified burglar-resistant door needs to withstand an attack with tools typically used for a break-in for a defined minimum time. In general, the resistance level of a safeguard – resistance that a safeguard poses to a perpetrator – needs to be adequate. The higher the resistance level, the longer a perpetrator needs to enter a building or steal an object – the greater the chances that intervention forces, e.g. the police, will succeed in preventing the crime, catch the perpetrator in the act or persuade him to abandon his plan.

In general, products for burglary and theft protection are divided into different classes. Investigations by the police show that many burglary attempts fail because of sophisticated security technology. The more sophisticated the protection is, the more effort the perpetrator has to make; he loses time to overcome the safeguards which may prevent him from completing the theft.

Important note: When planning, installing and operating the protection measures, the relevant legal provisions and requirements for escape and evacuation routes shall be complied with. More detailed provisions are contained in the respective regional building codes. Moreover, requirements for fire protection and protection against damage caused by water need to be taken into account.

2.3 Risks

Although the level of threat differs, there are nevertheless basic risks to which almost all businesses are exposed. The level of exposure of a business is determined by a number of factors such as location, size, type and amount of goods and activities (in particular material values, damage due to business interruption), etc. Further environmental aspects and human behaviour may lead to risks to be covered accordingly.

The individual protection concept generally represents an analysis of possible attack and loss scenarios (taking into account potential damage) aimed at achieving a defined protection level. This starts with an individual risk assessment. In this context, it is important to distinguish protection against malicious attacks (security) and protection against human or technical error (safety).

All protection concepts have a structural approach in common:

First step: Risk assessment

- Defining the object to be protected and the protection goals
- Assessing the likelihood of a loss and potential scope of damage
- Analysing the threats/damage scenarios

Second step: Business impact analysis

- Evaluating the possible damage

Third step: Control and mitigation

- Developing measures to reduce the likelihood/scope of a loss
- Planning measures and providing means to prevent and mitigate the loss if the risk materialises including business continuity and loss prevention plans
- Analysing the degree of risk that can be tolerated (even a sophisticated protection concept is not able to completely eliminate the residual risk)

Above all it should be borne in mind that the security arrangements may need to be modified quickly if personnel with direct responsibility “on the ground” identify a developing problem that requires a swift and practical solution, compatible with the overall strategy.

One of the main problems in practical and operational risk management is a realistic assessment of risks, which is often based on subjective assumptions, and the identification of useful early warning indicators for monitoring risk potential.

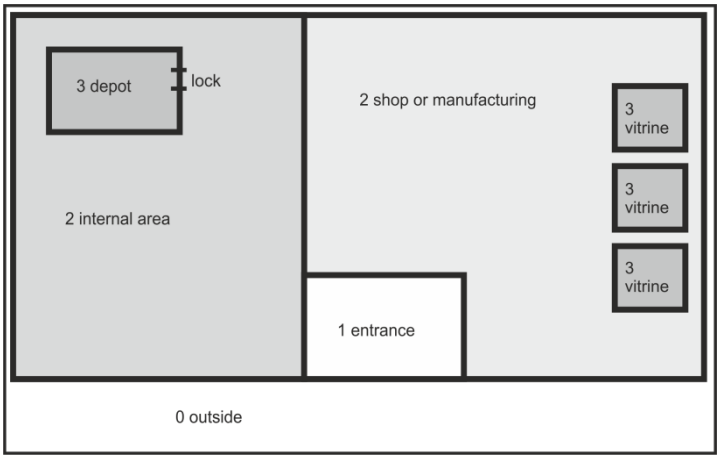
The risk assessment includes determining the probability of occurrence and the possible scope of damage. It is based on a structured approach that classifies the risk and provides insight into the factors that have a positive or negative influence on the risk. The greater the probability and scope of damage, the more the project is at risk and the more it needs radical revision. Various methods can be used for risk assessment.

Benefits of a comprehensive risk management: Potential problems and exposures can be identified at an early stage.

Pitfalls of risk management: Despite good research, risks can only be estimated. Such estimates always imply a certain degree of uncertainty.

The risks should be assessed taking into consideration the different sectors of a business.

Figure 2-3 shows an example of how a risk is divided into different sectors. Each sector needs to be secured individually. The number and typology of sectors can be different for each business.



0 = outside

1 = entrance (public area)

2 = shop or manufacturing

2 = internal area, offices

3 = safe, storage rooms, vitrines

Figure 2-3: Example for sectors, schematic illustration

At the beginning of a risk analysis, the protection matrix below provides some first guidance. It illustrates the level and kind of protection that might be required in different sectors (tick the boxes that are relevant in the individual situation).

Sector	Main Risk	Structural Mechanical	Intruder Alarm / Hold-up Alarm System	Video Surveillance System
0	Vandalism Burglary			
1	Vandalism Burglary Hold-up Theft			
2	Burglary			
3	Burglary Hold-up			

Table 2-1 Example of a protection matrix

There is a difference between buildings used exclusively by one single business and those which are part of other organisations or whose premises can also be used, in whole or in part, by other organisations. While some premises can be locked after opening hours, in buildings with shared occupancies it is possible for third parties to enter outside opening hours. In this case, the business premises need to be separated from other – occupied – premises. Any partition needs to have mechanical safeguards, electronic surveillance and organisational protection measures. Such a shared occupancy may result from e.g. an integrated restaurant that is operated during and beyond opening hours.

In general, such risks may be posed by different groups of users such as employees, service providers or third parties without any obvious connection to the business (e.g. visitors).

All risks described below may result in immediate damage, e.g. theft and destruction of goods and property. Moreover, almost every immediate damage is likely to have indirect repercussions. For instance, if important goods are stolen, the business has to expect a decline in sales or worse, a loss of customers and business reputation.

2.3.1 Burglary

Burglary crimes include burglary and theft and crimes such as

- theft of goods or valuable assets during the opening hours of a business
- "smash and grab" theft
- theft during transport

All these crimes may also be committed by third parties who have no connection with the business. At the same time, however,

- theft by business employees
- theft by contractors' employees

also need to be taken into account when developing the protection concept.

Burglary and theft as a particularly severe kind of theft is one of the most obvious risks to which goods are exposed.

The primary target of a burglary/theft is to steal goods and valuable assets. Burglaries may also be aimed at other valuables such as admission money or change deposited in ticket booths or safety containers, IT equipment, knowledge/information and office equipment.

Theft by and/or following "sneak in" or “lock in" are special types of theft and are dealt with in the same way as burglaries. In these cases, the perpetrator hides in the business or utility rooms which give him fairly easy access to goods and valuable assets, making it possible for him to complete the crime after opening hours.

Crime preparations through e.g. manipulation or sabotage of security equipment in preparation for a subsequent attack also need to be taken into account in the protection concept. This implies attempted burglary by a perpetrator who opens or manipulates windows or doors during opening hours so that he can use them later, either for access or to escape.

The design of escape and evacuation routes can have a considerable impact on the risk of burglary.

2.3.2 Robbery

Robbery involving hold-up is a significant risk for businesses. In a hold-up, the perpetrator threatens or exercises physical violence to achieve his goals. Threatening to use force helps the perpetrator to exert pressure to seize e.g. goods or cash.

Robbery includes the following acts by perpetrators:

- robbery hold-ups during opening hours aimed at business employees or visitors
- intercepting business employees when entering or leaving business premises before or after opening hours
- sneaking into premises during opening hours of the business with the aim of a subsequent hold-up
- breaking-in after opening hours with the aim of a subsequent robbery hold-up

The risk of robbery hold-ups is particularly significant as it is not only directed at assets but also, in particular, poses a risk to persons.

2.3.3 Vandalism

Vandalism in the broadest sense refers to deliberate, illegal damage or destruction of a third party’s property; it is common in different forms. Vandalism directed at goods implies e.g. breaking or spraying things with the aim of partially or completely destroying them.

Vandalism is an offence that can have different motives:

- malice
- destructiveness
- mental disorientation, emotional disorders
- anger, bitterness, frustration
- aversions to certain brands or business concepts
- destruction of evidence, cover-up of other crimes

2.3.4 Fire and fire smoke

Fires (fire as well as smoke and heat) may have disastrous effects on people, goods, buildings and furnishings.

The following factors pose the risk of fire development and fire spread:

- arson
- negligence (e.g. unsuitable location for heaters)
- defective (or old) electrical systems and equipment
- fire hazard activities (welding, soldering, hot-glueing, abrasive cutting, etc.)
- radiant heat by lights
- handling flammable substances (including the risk of auto ignition)

- open flames (candles, for example, during the Advent season in the foyer, at the cash desk or in the administration)

Protection against these risks is not covered by these Guidelines.

The security risk assessment has to take into consideration that fire protection measures might influence human behaviour or the whole security concept (e.g. escape doors that open automatically after a fire alarm).

2.3.5 Natural hazards

Natural hazards include:

- heavy rain and accumulation of waste water, e.g. due to technical problems in the sewerage system or the building supply system
- floods and storm surges
- storm
- hail
- heavy snow
- vibrations caused by earthquakes, erosion, landslide

Protection against these risks is not covered by these Guidelines.

2.3.6 Other hazards

In addition to the risks outlined above, further risks may occur that are not covered in this document, such as

- technical hazards
- kidnapping
- espionage
- etc.

3 Walls, floors, ceilings and roofs

3.1 General

Mechanical resistance to forced entry depends on the type of material, its strength, thickness and the craftsmanship and installation.

When examining the resistance, particular attention should be paid to the following:

- walls, floors, ceilings
- roofs of single-storey buildings, in particular halls without false ceilings
- roofs, insofar as they can be reached without great difficulty or with simple aids (e.g. with ladders, via annexes, canopy roofs, balconies, fire ladders, outside gratings)

3.2 Resistance of walls, floors, ceilings and roofs

The materials of walls, floors, ceilings and roofs can be classified according to their resistance to forced entry as shown in Table 3-1. Plaster, insulation and panelling do not increase the resistance.

Construction/Resistance	Materials
Light construction Low resistance	– light construction panels, e.g. made of plasterboard – wood products, wood (boards, sheets) – sandwich plates – gas concrete – plastics – profiled panels, corrugated panels – clay (in half-timbered design) – glass blocks, profiled construction glass – cavity blocks – stone, also in half-timered design, < 120 mm thick
Solid construction Sufficient resistance (corresponding to SG 4)	– gypsum/steel composite components for mechancial reinforcement of light construction panels[1)] – stone (e.g. brick, chalk sandstone), also in half-timbered design, at least 120 mm thick – concrete
Exceptionally solid construction Increased resistance (corresponding to SG 6)	– stone (e.g. brick, chalk sandstone), at least 240 mm thick – concrete, at least 200 mm thick

Table 3-1: Resistance classification of construction methods and materials, basic descriptions

4 Doors

4.1 General

Physical conditions, flow of persons and goods and costs determine the types of door that can be implemented, e.g.

- standard doors
- sliding doors
- swing doors
- revolving doors
- industrial and garage doors

These Security Guidelines deal predominantly with standard doors, but other types can be secured in a comparable manner.

Door resistance depends on the material used, the door construction and the installation. Doors shall be sturdy enough to offer a minimum resistance to physical attacks, such as kicking, jumping against the door, blows with the shoulder and the use of simple tools.

For all doors in walls that border the insured rooms or the exterior, it is important that the door leaf and door frame as well as door hinges, door lock, fittings, striker plate and, where applicable, additional security devices are matched with respect to their burglar-resistant effect.

Therefore, all security-relevant parts of a door and their working principles shall be evaluated in order to identify and remedy any mechanical weaknesses.

The resistance of existing doors to burglary can be increased by the replacement or installation of additional locks, sturdy door hinges, high-quality locks and lock cylinders, burglar-resistant door plates, burglar-resistant striker plates, reverse hooks and burglar-resistant fillings.

4.2 Weak points of doors

Doors without burglar-resistant features – these include the vast majority of doors – can be overcome without the use of any special tools.

Door leafs (or door fillings) can, if they are not sturdy enough, be easily kicked in. The door leaf can break away totally or partially, leaving an opening big enough to walk through. All-glass door leafs as well as honeycomb-core and tubular particle board doors (also known as plywood doors) are particularly at risk here.

Weak door leafs such as these cannot be adequately secured even with high-quality security products, e.g. with cross bars, as they do not have the necessary fundamental stability.

Striker plates can become deformed under heavy strain and expose the lock bolt. If incorrectly installed, striker plates can be completely torn out of the frame.

A common burglary method is to break open the door using simple levering tools. The use of crowbars is normally not even necessary; quite average screwdrivers are often all that are required to destroy the striker plate.

Mortise locks can completely deform under pressure, releasing the bolt. Again, the normal burglary method is levering out with the simplest tool (a screwdriver). If the bolts of the door lock are not sturdy enough, they will bend or slip out of the striker plate with the slightest shoulder blow.

Lock cylinders can be easily broken off if they protrude by more than 3 mm from the door plate on the exterior. Often a simple wrench is all that is required. In addition, there are special tools that make breaking off the lock cylinder even easier.

Cylinders that are not equipped with a special pull protection can also be overcome by pulling the cylinder core (the turning part of the cylinder into which the key is inserted) out of the lock. For this purpose, special tools are used that can exert very high pulling forces.

Door plates can be bent or torn out of the door leaf if the mounting or the material of the plate is not sturdy enough. Weak door plates can be prised off the door leaf without great effort using a small screwdriver or a wedge. As soon as the lock cylinder is exposed, entering is just a matter of seconds. The cylinder can then be simply broken off, e.g. as described above.

Hinges are often made of cheap and not very sturdy materials. Furthermore, the hinges are often only slotted into the door leaf or door frame. These “spigot hinges” can be easily pulled out of their mounting when pressure is applied to the door (shoulder blow, prising off using a screwdriver).

4.3 Door leafs

Door leafs can consist of various materials, such as glass, wood, metal, plastic or a combination of these.

Especially weak door leafs shall be doubled up to achieve the fundamental stability necessary for a security upgrade. If the door’s load capacity or the door hinges are not adequate for doubling, then an effective security upgrade is not possible.

When a door is not required as a passageway, it is possible to permanently seal the door opening; for example, by masking the door and door frame with a steel panel or a sturdy wood panel anchored into the wall.

4.3.1 Honeycomb-core and tubular particle board doors

Honeycomb-core and tubular particle board doors are the most popular door leafs. They are used mainly for interior or entry doors and bear a low mechanical resistance due to their thin top layer and their weak

wood frames, despite having a door leaf thickness of approx. 40 mm. In the construction of door leafs, a differentiation is made between middle layers of

- synthetic honeycomb
- cardboard or paper honeycomb
- plywood or hard masonite strip
- tube core pressboard or
- pressed straw

For better protection against sound, fire, radiation, heat or smoke, door leafs should be thickened and the middle layers reinforced. Door leafs reinforced with middle layers of joined, solid wood rods are frequently confused with solid wood door leafs. These middle layers do not increase the door's effectiveness against burglars.

Glass fillings are often used. In this case, an opening for the glass filling is cut out of the door leaf. A glass pane is mounted into the cutout with both sides fixed by window trim.

Neither burglar-resistant glazing nor fencing can provide such a door leaf with adequate burglar resistance.

4.3.2 Panelled door leafs

Panelled door leafs consist of wood frames containing glass fillings, solid wood or other materials, e.g. plywood or particle board.

The burglar-resistant effect of these door leafs depends on the stability of the wood frames, the fillings and the fastening of the fillings in the wood frames.

Panelled door leafs are often too weak to enable adequate burglar resistance. Weak door leafs shall be doubled up for stability.

Glass fillings are normally laid into a notch and fixed on the opposite side by trim or, more simply, only puttied. Security-relevant fastening is only adequate when the trim is mounted and screwed from the inside and not removable from the outside.

Fillings of "normal" glass (i.e. not burglar-resistant glass), also including insulated and wired glass, are not secure. This type of glazing needs to be secured with steel fencing (not removable from outside) or replaced by burglar-resistant glazing.

4.3.3 Double door leafs (solid wood)

Double door leafs consist of a single frame encased on both sides with solid wood. High-resistance materials can also be used between the interior and exterior casing, e.g. steel sheets.

Locks, door hinges and other fittings can be especially stable when fixed to double doors. This is owing to the construction of double doors, and allows a high level of protection against intrusion.

4.3.4 Metal frame door leafs

Metal frame door leafs mostly consist of a metal-clad frame with glass fillings.

Fillings of "normal" glass (i.e. not burglar-resistant glass), also including insulated and wired glass, are not secure. For secure protection against intrusion, it is necessary to secure this type of glazing with steel fencing (not removable from outside) or replace it by burglar-resistant glazing (attached fencing is not suitable).

The filling trims shall be mounted from inside, firmly screwed in place and in no way removable from outside.

4.3.5 Synthetic door leafs

Synthetic door leafs consist, on the whole, of a single running frame made of metal or synthetic cladding. The cladding is glued to both sides of the synthetic panels. Since the doors are mostly constructed of PVC or similar material, the door's stability shall be reinforced with an inner steel frame.

Fillings of “normal” glass (i.e. not burglar-resistant glass), including insulated and wired glass, are not secure.

Therefore, it is necessary to secure this type of glazing with steel fencing (not removable from outside) or replace it by burglar-resistant glazing (attached fencing is not suitable).

4.3.6 Steel door leafs

Steel door leafs are mostly double-walled. Yet in most cases, this does not yet provide adequate resistance to intrusion.

Steel door leafs with glass fillings can also be moulded into special shapes. These fillings weaken the door’s burglar resistance. In order to increase protection against intrusion, this type of glazing can be secured with steel fencing (not removable from outside) or replaced by burglar-resistant glazing.

The filling trims shall be mounted from inside, firmly screwed in place and in no way removable from outside.

If possible, EN classed and approved mortise locks should be used (see 4.5.6). The use of additional bolts is advisable if the door’s construction only permits a small cylinder housing that closes on just one turn (e.g. double bolt lock, mortise lock with a swing bolt or hook bolt).

Steel door leafs are often used as **fire doors**. One shall be careful that subsequent changes do not sacrifice the fire door’s approval. But a wide range of changes are permissible with door frames (e.g. installation of an additional bolt lock in or on a door leaf). In this case, it is important to observe legal specifications regarding the modification of fire-resistant closures.

4.3.7 All-glass door leafs

All-glass door leafs are mostly manufactured from pre-stressed single-pane safety glass (SPSG). The term “security glazing” refers here exclusively to industrial safety and not to protection against intrusion. It is important to note that SPSG offers no protection against intrusion.

Special locks shall be used with all-glass door leafs (see 4.5.11).

4.3.8 Door frames

It is particularly important to fasten the door frames adequately at the hinges and striker plate. Door frames shall be fastened firmly to the wall in at least six places. Please observe the manufacturer’s fastening specifications for burglar-resistant doors.

A connection with the floor (metal sill, metal base) increases the door frame’s stability.

4.4 Door security components

4.4.1 Door hinges

The selection of door hinges is dependent on the construction and material of the door frame and door leaf. According to the method of fastening used for the door frame and the door leaf, there is a choice of screw-on, mortise, drill-in or weld-on hinges. Simpler hinges, e.g. drill-in hinges, are often not effective against intrusion.

Doors with high security requirements with regard to intrusion shall have three stable interior hinges.

With hollow-core doors, the hinges shall be installed with reinforcing plates or special fastening nuts. The bearing surface shall be large enough, otherwise the door may split.

This is similarly true for special hinges designed for chipboard door frames. The suspension bolts are additionally secured against tampering by screwing a fastening plate to the outside of the frame. Hinges of this kind cannot be retrofitted.

Weld-on hinges fasten securely to metal doors, providing a strong resistance to intrusion. Although weld-on hinges are very stable, steel doors not designed as fire doors do not offer any defined resistance to burglary.

In this instance, hinge bolts are not intended to provide protection against intrusion, but simply to prevent excessive buckling in case of fire.

As a rule, it is recommended to fit door hinges to the interior of the door. But do not avoid concerns relating to exterior door hinges: The hinge pins (bolts) shall be secured and the hinges themselves shall be protected against being knocked or sawed off.

Additional protection of weak door hinges is recommended, e.g. securing the hinge sides.

4.4.2 Securing the hinge sides

Door hinges are often only fastened with one bolt in the door leaf and one in the frame. These hinges can break or crack very easily. Doors with weak hinges shall be protected by additionally securing the hinge sides. This is especially true if the hinges are mounted on the outside of the door.

The hinge bolts can offer additional stability if their striker plates are anchored to the masonry using special plugs.

4.4.3 Striker plates

In order to be able to securely bolt a door, high quality striker plates and stable striker bolts are required at the mortise locks. Typical problems with striker plates include

- weak material
- inadequate fastening
- inadequate length

As long as an EN classified and approval is lacking, the following minimum requirements should be observed:

- The striker plate (steel) thickness should be at least 3 mm.
- The striker plate length should be at least 300 mm, preferably 500 mm.
- The fastening of the striker plate shall be adequately stable and correspond to the various materials used, as well as the construction of the door frame itself (e.g. anchored and glued to the masonry).

Striker plates that are bolted at various points shall be stable and of an adequate length as well. Striker plates that are bolted at various points shall be mounted “in one piece”, so that burglars are not able to easily crack them out. Here as well, the mounting shall specifically match the type of door frame. This increases stability and makes it more difficult for possible intruders to prise the striker plate off.

Latch and bolt recesses in metal frames can be reinforced with multiple screwed or welded solid steel plates. These are used to prevent the frame from cracking out under force.

The level of burglar resistance offered by weaker metal frames can be raised by installing additional locks, e.g. double bolt locks.

4.5 Locks

Locks are differentiated by their type (e.g. mortise lock), the locking mechanism (e.g. cylinder or Chubb lock, lever lock), the type of bolt (e.g. slide or hook bolt) and the application (e.g. all-glass door lock).

With all locks, it is important to make sure that the cylinder housing is sealed all around, and that bolt penetration is at least 20 mm.

If the bolt penetration is less, it is not guaranteed that the bolt will engage properly with the striker plate. In this case, the lock has to be replaced.

Other problems common to locks are:

- The latch or bolt is not made of adequately strong material (e.g. plastic or die cast).
- The bolt is too short (when in locked position, a part of the bolt remains in the cylinder housing; if this length is too short, the bolt will easily break loose under force).

4.5.1 Mortise locks

A mortise lock is slotted into the mortise on a door leaf. It is important that the door leaf be adequately strong, so that the lock cannot be broken by simple physical force. Burglar-resistant door plates significantly reinforce the stability of mortise locks.

Better than simple mortise locks are **multipoint locking devices**. Here as well, it is important to observe the minimum bolt penetration of 20 mm.

Multipoint locking devices have the advantage that with a single touch, the door is bolted at various points simultaneously. This greatly increases resistance against intrusion on the lock side.

Products equipped with slide bolts, simple hook bolts or round pins often do not fully engage with the striker plate when closed.

Lock varieties equipped with hook bolts should be used to achieve adequate resistance against intrusion.

Users in Sweden and Norway may apply the rule SSF 3522.

Users in France may apply reference to documents CNPP H61 and technical rule CNPP T61.

4.5.2 Cylinder locks (cylinder mortise locks)

These locks are designed for use with locking cylinders. The locking cylinder is inserted into the cylinder housing and fastened with a screw.

Cylinder mortise locks are tested and approved and are graded into the following classes in accordance with their performance:

Class	**Performance**
VdS class A; SSF 3522 class 3	burglar-resistant
VdS class B; SSF 3522 class 5	increased burglar resistance

Table 4-1: Classes of mortise locks

4.5.3 Slide bolt locks (mortise locks for tubular frame doors)

Slide bolt locks can be used as cylinder or Chubb locks, lever locks.

Secure bolting is not possible when slide bolt locks are used in hollow-core doors offering a bolt penetration of only 10-12 mm. However, special locks can offer the minimum required bolt penetration of 20 mm.

Users in Sweden and Norway may apply the rule SSF 3522.

4.5.4 Swing bolt locks (mortise locks for tubular frame doors)

Swing bolt locks are cylinder or Chubb locks designed for installation in hollow-core doors. In open position, the hook bolt sits upright in the cylinder housing; the bolt length is not, as with slide bolts, limited by the narrow depth of the cylinder housing. Upon locking, the bolt pivots approx. 30 mm out of the lock.

Swing bolt locks can also be installed in swing doors. Since a few millimetres of the bolt are visible in the closed position, the lock shall be able to withstand a high degree of force. The bolt, often manufactured in a so-called sandwich style, shall be especially safeguarded against sawing. Furthermore, the bolt shall be protected from forceful kickback in the locked position.

Swing bolt locks with hook bolts are mainly used in sliding doors. With these locks, the hook-shaped bolt snaps into the striker plate, preventing the door from sliding.

Swing bolt locks with hook bolts are recommended for use with turning doors and swing doors, as hook bolts markedly increase a door's resistance against intrusion.

Users in Sweden and Norway may apply the rule SSF 3522.

4.5.5 Locking cylinders

4.5.5.1 Mechanical locking cylinders

Locking cylinders are very important for the security of a door. However, they can offer safety only in conjunction with the lock and the door plate. Profile cylinders are commonly used in Germany. Round and oval cylinders are quite rare in Germany.

When breaking and entering, criminal offenders attack locking cylinders in a variety of ways. They shall therefore afford protection against any methods available to burglars:

- breaking
- drilling
- picking
- pulling

These methods of attack are effectively made more difficult by VdS- and SSF-approved locking cylinders.

A distinction is made between locking cylinders with and without integrated pull protector. Often door plates are used which offer no special protection against extraction tools. In such cases, only pulling protectors integrated in the cylinder offer adequate burglar resistance.

Special requirements are provided for master key systems and associated locking cylinders. The following list provides the various profile cylinders approved by VdS for use in master key systems.

Locking cylinders are not only used in mortise locks, but also in double bolt locks, all-glass door locks, retrofit products and lockable window catches.

Profile cylinders are tested and approved by VdS and SSF, and are graded into the following classes in accordance with their performance:

Class	**Performance**
VdS class A; SSF 1090 class 3	burglar-resistant
VdS class B; SSF 1090 class 5	increased burglar resistance

Table 4-2: Classes of locking cylinders (VdS, Germany and SSF, Sweden)

4.5.5.2 Electronic locking cylinders

Conventional locking cylinders process the locking code mechanically. Joining these mechanical solutions are a growing number of locking cylinders that decipher and process the code by means of electronic components and information, either exclusively or in addition to a mechanical reading.

Products that offer both technologies are described as mechatronic. In addition to the mechanically functioning cylinder pins, mechatronic cylinders are capable of triggering one or more further locking points in the cylinder. Mechatronic cylinders offer a key of typical size and shape, yet expanded by means of electronic components. These components may be visible or invisible, e.g. a chip.

Exclusively electronic locking cylinders do not have a conventionally shaped key. The key often consists of only a single chip, which can be produced in a variety of shapes. An all-electronic key may come as a chip card or as a key chain pendant the size of a penny. The shape is entirely left to the imagination of the manufacturer.

The operation of a mechatronic cylinder is similar to mechanical cylinders. Upon contact, additional information is exchanged between the key and the cylinder. With all-electronic cylinders, the information can be exchanged without any contact at all. In this case, the locking code is transmitted by radio signal.

A clear advantage of electronic/mechatronic products is evident when used with master key systems. With these systems, there is always a risk that one or more keys may get lost. This may require changing over the entire system. Electronic keys have the advantage that entry authorisations can be changed at any time. An electronic key can also be declared “invalid”.

This programmability offers a range of possibilities in the design and adjustment of master key systems. Time restrictions are – depending on the product – easy to incorporate (e.g. an office worker’s key functions between 8:00 and 18:00, a custodian’s key only functions between 8:00 and 10:00). Furthermore, it may be important to cancel authorisation for keys of retired employees or missing keys. The allocation of entry authorisation can also be limited to certain days and rooms, e.g. if some workmen need access to a specified area.

The changeover from mechanical to electronic locking cylinders is often possible without any complications, as electronic products do not differ in size and shape from conventional products and perfectly fit into cylinder locks.

For all locking cylinders – mechanical, electronic, mechatronic – the VdS and SSF requirements are equally valid, e.g. resistance against so-called intelligent opening methods.

Users in Sweden and Norway may apply the rule SSF 3523.

4.5.6 Chubb locks

The security of Chubb locks against forced opening and picking is essentially dependent on the number and condition of the pins/levers. The quantity and arrangement of a lock’s pins/levers are intended to determine the shape of a key’s teeth (symmetric or asymmetric). The number of pins/levers is equivalent to the number of notches, less one for bolt movement. Chubb locks should have at least seven symmetrically or five asymmetrically arranged pins/levers.

Chubb locks with asymmetric double-bit keys can have an even greater number of pins/levers and thereby offer a higher level of security.

4.5.7 Locking systems

A locking system locks any part of a façade which can be opened, e.g. a closed door. These elements can only be unlocked with a key or code. A locking system essentially consists of an authorisation control device with an input unit, interlocking device and protective measures.

It is also possible to implement electronic solutions alongside more conventional mechanical locking systems. In these cases, the traditional key can be replaced by other data transfer devices, e.g. a chip card.

Mechanical keys can also be combined with electronic storage or processing media. For example, a conventional key can be equipped with a transponder that delivers additional or alternative information via radio signal. Research is currently underway to include the identification of biometric data, such as fingerprints and iris recognition.

Locking systems should be tested and approved and divided into the following classes according to their performance:

Class	Performance
VdS 2156 class A; SSF 3523 class S2 - S3; SSF 210; CNPP H61 A2P 1*	basic burglar resistance
VdS 2156 class B; SSF 3523 class S3; SSF 210; CNPP H61 A2P 2*	medium burglar resistance
VdS 2156 class C; SSF 3523 class S5; SSF 210; CNPP H61 A2P 3*	advanced burglar resistance

Table 4-3; Classes of locking systems (VdS, Germany and SSF, Sweden and CNPP, France)

Only a few locking methods are possible for warded locks. They have only one locking pin and can be opened easily with simple tools.

For this reason, warded locks should only be used for interior doors not requiring any burglar resistance.

4.5.8 Cylinder protectors, key-hole locks

The subsequent installation of a cylinder protector or a key-hole lock only slightly hampers the use of lock picking tools on a warded lock. Warded locks retrofitted in this way do not offer protection against intrusion.

4.5.9 Additional protection

A variety of additional protection measures are able to increase the burglar resistance of a door. Additional locks that allow access from the outside should be equipped with locking cylinders protected against attacks.

Note: Locks can normally be equipped with locking cylinders that lock simultaneously. This means that no additional keys are required for the extra locks.

Please consider personal protection as well. Use a stable locking bar at all entry doors. When a locking bar is closed, the door can only be opened a crack. This offers a certain degree of protection against any unknown visitors.

Installation of additional security mechanisms requires special care, particularly with weak doors. They should be professionally installed by experienced craftsmen.

Double bolt locks offer better protection. They stabilise the door leaf along its entire width and enable simultaneous bolting of the door on both sides. The bolts enter stable lock cases, anchoring the door into the masonry. Many double bolt locks additionally offer a locking bar.

Doors that are seldom used, and where design is not of the utmost importance, can also be secured by means of simple crossbars. It is important to ensure that the weight-carrying components are stably mounted and the crossbars are well-secured. Crossbars can be especially well-secured with padlocks.

A specialist will be able to provide a customised solution.

4.5.10 Multipoint locks

Multipoint locks make use of massive bolts which lock the door from above, below and the sides. The bolt shall be secured to an adequate depth in well-anchored pulley blocks or stone sockets, both above and below.

When properly installed, multipoint locks offer a high degree of mechanical resistance to intrusion due to their staggered locking points. They can be mounted on the door leaf or integrated into the door leaf, depending on their make. They are particularly well-suited for locking double doors. Multipoint locks shall be lockable because they are accessible from the attack side when closed.

Multipoint locks are also available as retrofit products with VdS approval.

Users in Sweden and Norway may apply rule SSF 3522.

4.5.11 Users in France may apply to reference documents CNPP H61 and technical rule CNPP T61.All-glass door locks

All-glass doors shall have special locks mounted onto the glass panes. It is advisable to install a lock on each door leaf. The bolts ought to shut by at least 20 mm above and below. Locking cylinders are protected with rosettes.

4.5.12 Switch locks

Switch locks are used to activate electronic doors, gates and roller blinds, or to control motor locks. They are generally designed for use with profile cylinders; please note that the profile cylinder shall not protrude more than 3 mm. Exterior switch locks shall rest in armoured casing. This prevents unauthorised activation attempts. A steel plate, accessible only by key, could enable such protection of the interior contacts and connections. Some switch locks will not accept such fittings, important for protecting the profile cylinder against extraction tools. In such instances, profile cylinders with integrated pull protectors shall be used.

Leads to switch locks shall be protected from attack. At best, they are buried and run into the switch lock from behind. Switch locks are not to be confused with ancillary control equipment for setting intruder alarm systems. Due to their particular importance, ancillary control equipment shall fulfil expansive requirements that are not necessary for common switch locks.

4.5.13 Door plates

Protruding locking cylinders, or door plates removable from outside, are practically open invitations to burglars. Weak door plates endanger not only the locking cylinder, but the entire area around the lock.

A tested and approved burglar-resistant door plate makes it more difficult to

- twist/break
- extract
- penetrate

the locking cylinder, and in addition, reinforces the door leaf in the region of the lock recess.

The door plate shall

- tightly cover the locking cylinder
- hamper access to the locking cylinder
- hamper the use of tools
- be firmly screwed from inside
- be manufactured of steel, at least 10 mm thick (Class B and C)
- protect the mortise lock in the region of the pins

By exception, rosettes may be used in place of burglar-resistant door plates when the latter cannot be installed.

Note: Small door plates for metal or plastic hollow-core doors are available.

Door plates should be tested and approved and graded into the following classes in accordance with their performance:

Class	Performance
VdS 2113 class A; SSF 1096 class 3	basic burglary protection
VdS 2113 class B; SSF 1096 class 4	medium burglary protection
VdS 2113 class C; SSF 1096 class 5	advanced burglary protection

Table 4-4; Classes of door plates (VdS, Germany and SSF, Sweden)

4.6 Burglar-resistant doors

New construction, renovation, additions or simply the exchange of old or damaged entry doors, offers a prime opportunity for the installation of tested burglar-resistant doors. The security features of burglar-resistant doors are not outwardly recognisable. They are offered in all commonly available materials, such as wood, plastics, metal, as well as in a variety of makes, e.g. with or without inset glazing. Burglar-resistant doors can prevent intrusion by means of tools and/or physical force. At the same time, additional requirements may be fulfilled, such as fireproofing or sound insulation.

The fundamental characteristics of tested and approved burglar-resistant doors are:

- securely mounted door leaf
- high quality hinges, and additional securing of the hinges where required (i.e. exterior hinges)
- high quality locking device (normally a multipoint locking device)
- burglar-resistant door plate
- locking cylinder protected against picking, drilling, and extraction
- any infills (e.g. glazing) are as sturdy as other parts of the door
- professional installation according to manufacturer's specifications

At best, choose a burglar-resistant door that offers a locking bar and a peep-hole. Approved burglar-resistant doors often come prepared for connection to an intruder alarm system. The purchase of a tested and approved burglar-resistant door is especially recommended, as all parts are perfectly matched, guaranteeing intrusion protection as defined by its class.

Burglar-resistance should be tested, approved and graded into the following classes according to their performance:

Class	Performance
EN 1627 class RC2; VdS 2534 class N; SSF 1078 class 1	limited basic protection
EN 1627 class RC3; VdS 2534 class A; SSF 1078 class 2; CNPP H64 BP1	as N, with additional protection against professional burglary techniques
EN 1627 class RC4; VdS 2534 class B; SSF 1078 class 2; CNPP H64 BP2	as A, with additional protection against non-destructive burglary techniques
EN 1627 class RC5; VdS 2534 class C; SSF 1078 class 3; CNPP H64 BP3	as B, with additional protection against electrically operated tools

Table 4-5 Classes of burglar-resistant doors (VdS, Germany and SSF, Sweden and CNPP, France)

Even doors of Class RC2 are much stronger than conventional doors.

5 Gates

Gates are just as important to secure as doors; the preceding commentary on doors is, in turn, valid for gates. However, the various types of gates mentioned below demand a separate treatment.

5.1 Sliding gates

Sliding gates consist mostly of wood or metal. Rollers, which run on a track, are often mounted above the gate. Appropriate measures shall be taken to prevent the levering of the gate, e.g. by a second track above the rollers. Sliding gates often rest on another track positioned on the ground, holding the gate in position.

A lock with a hook bolt can be used as the locking mechanism (see 4.5.10). If the gate need not be lockable from the outside, the use of multipoint locks or a lockable bar on the inside is recommended.

5.2 Rolling gates

Rolling gates are mostly electronically activated, due to their size. The control shall be switchable, e.g. via the central shutoff of current from an interior switch lock. If it is not possible to install a switch lock on the inside, then it shall be armoured (see 4.5.12).

Rolling gates shall be additionally secured with lockable bolts, if possible a hook bolt lock (see 4.5.4) with additional sideways-running multipoint locks. Locking a hook bolt is at times difficult, as when the striker plate is soiled.

An additional lockable bolt is not required if an interior drive mechanism is wired and capable of locking the rolling gate under high pressure. The use of a sliding barrier is optional (it protects the drive shaft).

The rolling gates shall be mounted in adequately stable tracks. If the track is form-fitting, the gate shall be engaged by a minimum depth of 20 mm. If the track is not form-fitting, then a minimum depth of 50 m is suggested.

Depending on the application, burglar-resistant roller blinds can be used instead of rolling gates.

5.3 Multi-panel gates, latch gates

Multi-panel gates (latch or sectional gates) come with and without fillings, e.g. glazing. They can also be fitted with a slip door. An adequate locking mechanism is defined by the following characteristics:

- The fixed panel bar is lockable and sits at an adequate depth in the pulley blocks or stone sockets, above and below.
- The outer-lying hinges are well-mounted and the pins locked into position.
- A lock with a hook bolt is used.

Large, heavy latch gates, moveable only by electric drive, can be secured with an interior switch lock. If the gate is equipped with a slip door, it shall be secured just as normal doors (see 4).

Fillings shall be of burglar-resistant glass or equally strong material. Also, they shall not be removable from the outside (i.e. by stripping the rubber seal). The window trim shall be screwed in from the interior. Fillings may also be secured by interior fencing, given that they are not removable from the outside, e.g. welded to the door leaf.

6 Windows

6.1 General

Windows and glass doors, as entry doors, are weak points of any structure.

Windows differ in the way they open. As such, they may be categorised as follows:

- vent window
- bottom hung window

- tilt and turn window
- skylight
- pivot window
- top hung window
- sliding window
- fixed window

The present Guidelines deal with the most common types of windows, such as vent windows, bottom hung windows, and glass doors; other types of windows are equally important to secure.

6.2 Weak points of windows

Windows without burglar-resistant characteristics, including the vast majority of windows, can be easily entered.

Even with the simplest of tools, these windows can be levered open in a matter of seconds. And visible damage hardly ever occurs, in contrast with levering doors.

Preferred burglary methods when breaking and entering through windows are:

- levering open a window sash with tools
- entering through cracked windows
- opening the window catch (breaking window near to catch)

Please observe:

- standard fit, lockable window catches offer no protection against a burglar's main means of breaking and entering: levering open a window sash with tools
- open and cracked windows invite burglars right in
- along with the catch side, the hinge side of a window shall be secured
- multiple glazing, primarily used for heat insulation, have no effect on the mechanical security of a window; it is unimportant to a criminal whether he breaks a single or multiple glazing window; also, a multiple glazing window does not necessarily shatter at a higher decibel then a single glazing window

Note: There is no vacuum between panes. This explains the lack of implosion when the window is shattered.

- Glazing with a built-in metal mesh or so-called safety glass is also lacking in any effective protection against intrusion. The term "safety glass" refers exclusively to accident prevention and not to the protection against intrusion.

6.3 Window friezes

Window friezes should be fastened securely to the masonry on each side, e.g. window clamps or wall anchors. The notch area lying between the frame and the frieze should also be fitted so as to hamper any attacks with tools (e.g. levering tools).

6.4 Security components for windows

There are many effective security components available for retrofitting; to protect windows against levering, breaking and unlocking. They vary in terms of installation, functionality and stability. Security components may be mounted visibly or invisibly, depending on their individual design.

6.4.1 Fittings

The locking mechanisms (fittings/hinges) integrated into the window pane and window frame are often too weak. A lockable window catch – concerning window fittings that are not burglar-resistant – should not be viewed as a security measure.

Typical weak points in standard fittings are:

- The material used for the fittings is unsuitable (e.g. shatterable zinc die casting).

- The number of pins is too low, e.g. tumbler pins (length of bolt which engages striker plate is too low). Window panes and frames have a simple function: they keep the wind and rain out. They can easily be pushed out of the striker plate, eliminating any semblance of burglar resistance.

Window fittings with mushroom head pins are to be favoured as security technology. Due to their special T-shape, the pins manage to “claw” the opposing piece.

In many cases, specialised craftsmen are able to install fittings with mushroom heads as a replacement for the original weak fittings in order to secure the windows against burglary.

6.4.2 Additional protection devices

Windows with standard fittings can be retrofitted for additional security.

Security devices shall be installed at several points in order to protect the entire window or door. They shall be installed across the entire area accessible to burglars.

Retrofit products are offered for a variety of applications. All additional bolting shall be able to fix the window or door in the closed position. As a general rule, retrofit products offer a solid protection against intrusion when:

- they are tested and VdS-approved or tested and approved according to SSF 200 or FG-112.
- an adequate number of devices are implemented
- products are mounted securely

It is also important to secure the hinge side, as well as the catch side.

Note: When tilted, windows offer no protection against intrusion (even when secured with multipoint locks or window locks with a locking bar). Breaking and entering through tilted windows is only marginally hindered by additional security devices. From the perspective of burglar protection, a tilted window is an open window.

Products are available that lock/unlock with a key or a simple knob. There are also additional locks which lock automatically when the window is closed. These should not be used with glass doors, as this creates the risk of accidentally locking oneself out.

Special products are offered for bay windows.

Special products can also be used for securing the hinge sides of windows and terrace doors.

Sometimes the installation of normal, approved retrofit products is not possible. In some such situations, it may be possible to use telescoping bars. They shall fasten on both sides into the masonry and can be used to secure the window on both hinge and catch side.

6.5 Glazing

6.5.1 Non-resistant glazing

Glazing incorporating the following types of glass offer no protection against intrusion:

- crystal mirror glass/float glass
- ornamental glass
- multi-pane insulated glass
- wired glass
- single-pane safety glass, e.g. Sekurit ©
- U-shaped glass
- glass blocks, excluding the use of special security components

Single-pane safety glass, wired glass or thin composite safety glass shall be used in low walls, entry doors or escape routes as they prevent accidents. They are often falsely perceived to be burglar-resistant due to their description as safety glass.

These types of glass cannot be upgraded by the installation of shatter-resistant window film.

6.5.2 Burglar-resistant glazing

Burglar-resistant glazing consist of multi-pane glass connected by layers of durable synthetic film. Depending on its make, composite safety glass (CSG) offers protection against thrown objects and against breaking and entering. The glass will split upon impact, however, the broken pieces cling fast to the synthetic film; forced entry is thereby considerably hindered.

Composite safety glass can also be manufactured from multi-pane insulated glass. Insulated glass can also achieve an effective level of burglar resistance when incorporated with synthetic films or plates.

Burglar-resistant glazing should be tested, approved and graded into the following classes in accordance with their performance:

P4A is the lowest class and P8B is the highest class in terms of resistance against penetration.

Class	**Performance**
EN 356 class P4A, VdS 2163 class EH 01; SSF 200 class P1A; FG-112 class B2	basic *shatter* resistance
EN 356 class P5A, VdS 2163 class EH 02, ; SSF 200 class P1A; FG-112 class B3	medium *shatter* resistance
EN 356 class P7B, VdS 2163 class EH 1,	basic *impact* resistance
EN 356 class P8B, VdS 2163 class EH 2,	advanced *impact* resistance

Table 6-1: Classes of glazing

6.5.3 Bullet-resistant glazing

Bullet-resistant glazing are divided into eight resistance classes according to EN 1063 (Glass in building - Security glazing - Testing and classification of resistance against bullet attack). They may be required due to the type of business or for reasons of personal security.

The classification is based on the type of fire weapon used, i.e. the make of the weapon and the bullets. The use of bullet-resistant glazing only makes sense if the walls and the window frames are bullet-resistant. When installing burglar-resistant glazing, it is important to ensure that the correct side of the glazing faces the protected area. Bullet-resistant glazing are not necessarily burglar-resistant. For further information, see EN 1063.

6.5.4 Alarm glasses

An alarm glass typically consists of composite safety glass with an alarm wire insert or of pre-stressed single-pane safety glass with an embossed alarm loop. With composite safety glass (CSG), the alarm is triggered when the glass is broken and the inlaid wire disrupted. With single pane safety glass (SPSG), the glass easily shatters, simultaneously disrupting a detector located in the corner of the glazing.

Alarm glasses should be burglar-resistant.

6.5.5 Window joints

Window joints should be avoided in the design of glazing. Otherwise, the joints shall be protected against attack. Elastic sealing can be covered from the outside by non-removable aluminium or steel.

6.5.6 Burglar-resistant windows

New construction, renovation, or additions, or simply the exchange of old or damaged windows or terrace doors (glass doors) offers a prime opportunity for the installation of tested **burglar-resistant windows or glass doors**.

Burglar-resistant windows can hinder intrusion by means of tools and/or physical force.

Burglar-resistant windows are categorised according to their resistance into classes RC2, RC3, RC4 and RC5. Even windows of class RC2 are much stronger than conventional windows. Burglar-resistant windows are offered in all commonly available materials (wood, plastic, metal) and are not visibly different from normal windows.

The fundamental characteristics of tested and approved burglar-resistant doors are:

- sturdy assembly of window panel and window frames
- resistant glazing
- proper fastening of the glazing into the window panel
- high quality hinges
- high quality locking device
- professional installation according to manufacturer's specifications

Tested and approved burglar-resistant windows often come ready for connection with an intruder alarm system.

The purchase of a tested and approved window is especially recommended as all parts are perfectly matched, guaranteeing intrusion protection as defined by its class.

Burglar-resistant windows are classified according to their performance characteristics as follows:

Class	**Performance**
EN 1627 class RC2; VdS 2534 class N; SSF 200 RC2N; CNPP H62 A2P R2; FG-112 B1	limited basic protection
EN 1627 class RC3; VdS 2534 class A; SSF 200 RC2N + Lock SSF 3522 class 3 or protection against entering (crawl in); CNPP H62 A2P R3; FG-112 B2	as RC2, with additional protection against professional burglary techniques
EN 1627 class RC4; CNPP H62 A2P R4; FG-112 B3	as RC3, with additional protection against non-destructive burglary techniques
EN 1627 class RC5	as RC4, with additional protection against electrically operated tools

Table 6-2: Classes of windows

6.6 Cellar windows and skylights

6.6.1 Cellar windows and light shaft security

Cellar windows shall be secured as all other easily accessible windows.

Typical weak points for cellar windows and light shafts are:

- weak rodent-proof screens
- vulnerable, ineffective locking mechanisms
- inadequate fastening to masonry

– unfastened window grates

In cases where a cellar window is accessible from a light shaft, the window itself can be secured or access to the window can be obstructed.

One recommendation is a covering with steel-reinforced glass blocks. It blends in with the sidewalk and offers the option of air ventilation. When completely closed, it provides heat insulation and weather protection. It can be secured against removal from inside the shaft. Another possibility is building an emergency exit.

When light shafts are covered with a conventional grill, make sure that it is

– stable and close-meshed
– firmly secured against removal

Grills shall always be anchored into concrete or masonry. Mounting into the wall of a plastic light shaft is not sufficient. In this case, the grill shall be fastened to the cellar wall.

It is especially important to observe that the highly vulnerable corners on split grills are properly secured.

Rolling bars function particularly well when used as core of lattice bars (see 6.7.4).

6.6.2 Skylights

Special glass used for skylights normally fulfils the requirements for accident prevention. This does not imply that they are burglar-resistant.

It is therefore recommended to install a grill into the recess, such as is only removable from the inside, or a lock. Rim locks can also hinder entering from outside.

6.6.3 Dome lights

Dome light safety includes two basic options:

– installing a grill
– use of burglar-resistant glass, if the dome light is not for ventilation

A dome light should be fastened so as to be non-removable from outside.

Building permits and approvals shall always be heeded, e.g. dedicated dome lights that function as a smoke outlet or escape route shall not be interfered with.

6.7 Panels, screens

6.7.1 Rodent-proof screens

Rodent-proof screens offer protection against small animals, but they are no protection against criminal intrusion. Windows with rodent-proof screens shall be seen as unsecured windows.

Please observe the following safety measures:

– secure any accompanying light shaft, see 6.6.1
– secure windows with a grill, see 6.7.4

Rodent-proof screens that cannot be removed should be additionally reinforced with flat steel cut-outs anchored to the ledge or the window recess.

6.7.2 Interior panels

Interior panels are removable panels of solid wood or material of a comparable sturdiness. Interior panels offering protection against intrusion are defined by the following characteristics:

– The material is adequately thick.
– The panels are not removable from the exterior.

Additional security can be achieved with interior steel sheeting, as well as crossbars with padlocks.

6.7.3 Precast masonry and concrete parts

Occasionally it may be a good idea to wall over a cellar window, either completely or partially. Another option is installing a precast concrete unit over the cellar window.

6.7.4 Grills and rolling shutters

Grills and rolling shutters can be used to secure windows as well as doors. Fixed grills (cf. Table 6-3) can be implemented to permanently secure a window. If windows need to be accessible, or if a door needs to be secured, rolling shutters or sliding gates may be considered.

Burglar-resistant grills and rolling shutters should be tested, approved and divided into the following classes according to their performance:

class	**performance**
EN 1627 class RC2; VdS 2534 class N; SSF 012, SSF 033 class 2, CNPP H62 A2P R2	limited basic protection
EN 1627 class RC3; VdS 2534 class A; SSF 012, SSF 033 class 2; CNPP H62 A2P R3	as RC2, with additional protection against professional burglary techniques
EN 1627 class RC4; VdS 2534 class B; SSF 012, SSF 033 class 3, CNPP H62 A2P R4	as RC3, with additional protection against non-destructive burglary techniques
EN 1627 class RC5	as RC4, with additional protection against electrically operated tools

Table 6-3: Classes of grills and rolling shutters

6.7.5 Fixed grills

Firmly anchored grills can significantly impede a criminal from entering.

Grills may be installed according to a tested and approved design, or a custom-tailored solution provided by the installer.

In the latter case, the grill opening should not exceed 10 x 20 cm (max. 12 x 25 cm).

Grills can be fastened

- on the wall
- in the recess
- directly to the window or door

When mounted to the wall, the minimum distance between anchoring and recess should be 10 cm. The screws shall be secured against unbolting.

Approved products are also available in the realm of welded grills. These grills may be customised to the dimensions of the window in question. In this scenario, the individual elements of the grill are welded together, as the entire unit is fastened to the window frame, wall, or recess.

Tested and approved grills may have grill bars with reduced profiles, offering special protection against metal saws. Grills which are not approved shall offer square bars with a minimum thickness of 16 x 16 mm, or round bars with a minimum diameter of 18 mm. The grill bars shall be anchored in the masonry.

Another possibility is the use of rolling bars. Rolling bars offer a high level of protection against saws, consisting of an outer pipe, and a pivoting inner bar. When a criminal attempts to saw through the grill, the

interior bar rolls with the saw, making his work more difficult. The outer pipe should be made of tough steel (e.g. ST 50). A hardened and tempered material (e.g. manganese steel) is suitable for the interior rolling bar.

If the wrong materials are used, the rolling bar can be easily smashed with a few hammer blows, joining it to the exterior bar and rendering it completely ineffective. Furthermore, it is important that the exterior pipe is welded to the frame. This prevents deformation of the pipe and secures free rotation of the inner bar.

Rolling bar grills are especially well-suited for use with light shafts.

As a general rule, please observe that the grills are anchored so as to be non-removable from the exterior.

6.7.6 Rolling shutters

Rolling shutters are mainly used to secure display windows and storefront doors. Secure rolling shutters are defined by the following characteristics:

- grill is made of highly resistant material
- small distance between bars (little mesh width)
- minimum depth in guiding tracks is 30 mm on both sides
- when more than 2.5 m in width, grill removal by constructive measures is effectively hindered
- effective locking mechanism

A variety of locking mechanisms are possible:

- an inner-lying rim lock with hook bolt, profile cylinder and rosette
- a multipoint lock with locking cylinder and rosette
- a drive mechanism with hand crank, by which the gear unit locks a built-in profile cylinder
- a switch lock (armoured when located outside) for electrically-driven rolling grills, capable of locking the grill with high pressure

Note: If the drive unit serves as the locking mechanism, it should be tested if the grill cannot be forced open enough to enter the opening just by pushing it open against the drag of the drive and thus comprise security.

6.7.7 Sliding gates

Sliding gates are mainly used to secure display windows and storefront doors.

Secure sliding gates are defined by the following characteristics:

- the grill is composed of steel bars, minimum thickness 20 x 20 mm
- distance between bars (mesh width) does not exceed 120 mm
- the gate is of adequate strength
- minimum depth in guiding tracks is 30 mm on both sides
- when more than 2.5 m in width, grill removal by constructive measures is effectively hindered
- the tracks are constructed of at least 3 mm thick steel
- the tracks are adequately fastened (e.g. with wall anchors)
- there is an effective locking mechanism, e.g. approved lock with hook bolt, approved profile cylinder and approved door plate or rosette
- the bolts on the attack side are not accessible without additional tools

6.7.8 Burglar-resistant rolling shutters

This type of security can be achieved with the aid of VdS-approved products and CNPP-approved products. However, it shall be clear that rolling shutters are only secure when closed. Furthermore, a potential criminal can easily surmise when rolling shutters have been closed for long periods (e.g. during vacation). In order to avoid any undesirable attention, rolling shutters can be automatically activated during these periods, e.g. via electromotive guidance.

Burglar-resistant rolling shutters may also be used as rolling gates (see 6.7.4).

Simply securing rolling shutters from being raised does not suffice as protection against intrusion. Due to their design, conventionally sold shutters can be easily torn out.

The resistance of rolling shutters depends both on the material used and on a professional installation according to the manufacturer's specifications. They can be further secured by using approved products.

7 Safes

7.1 General

Police experience shows that cash and valuables are exceptionally easy to transport. They are also convenient when it comes to disposing of the loot. This makes them highly coveted targets for any criminal. For this reason, cash and valuables are protected in containers offering a variety of mechanical security features. The existence of such a container can also be a security risk. When selecting a container, please consider whether it will be used outside business hours.

Containers with additional security features are described as **secure storage units**, including safes and strongrooms. A storage unit's mechanical resistance is important to ensure that criminals take longer when trying to remove the valuables.

For this reason, storage units are offered with a variety of mechanical resistances and high resistance against removal (via anchoring).The following information is intended to facilitate the selection of a suitable container and to illustrate the various applications.

Tested and approved safes may be recognised by the quality marks on the inside of the door.

Safes are differentiated according to their design as follows:

Freestanding safes offer the full range of security features directly upon delivery (after anchoring, if applicable).

Wall safes (built-in safes) achieve their full security value only after installation into a wall or floor opening and subsequent grouting of the opening (e.g. setting in concrete).

Safes are classified according to their mechanical resistance against intrusion by degrees of resistance, ranging from 0, I, …, to X according to EN 1143-1. It is highly recommended to use safes offering protection against core drills. At present, core drill protection is indicated by the letters "CD". Safes can additionally offer a defined protection against explosives. This is indicated by the letters "EX".

One should also consider the large number of aged, but still operational containers with additional security characteristics (with or without quality verification).

Important security measures for containers are:

- use of approved containers
- use of time locks/time locking devices for protection against burglary and robbery
- adequate anchoring of the safes
- monitoring with intruder alarm system of a class appropriate to the risk

Freestanding safes are directly at risk of burglary via removal and subsequent breaking of the container. VdS-approved freestanding safes with a mass of less than 1000 kg (empty weight) offer the possibility of adequate anchoring. Older products often do not have this option.

7.2 Monitoring of secure storage units

The monitoring of secure storage units should follow the guidelines for the planning and installation of intruder alarm systems, VdS 2311, Intruder Alarm Systems, Planning and Installation, Annex E (for Germany).

Users in Sweden may apply standard SSF 130. Users in Norway may apply the standard FG-200.

The following measures shall be observed:

- monitoring of all safe doors with regard to opening, locking and reach-in
- monitoring of the safe corpus with regard to reach-in
- monitoring of the complete safe with regard to removal (according to its equipment)

Monitoring against reach-in can be achieved e.g. by means of surface control integrated into the safe, an impact sound detector or an electric field monitor.

Electric field monitors do not allow the monitoring of opening, closing or removal. In this case, the additional use of motion detectors (e.g. impact sound detectors) is required to immediately detect any approach to the monitored safe.

Note: If additional motion detectors are used in a room with a safe, all windows shall be monitored against locking. However, a complete shell protection is not required.

VdS-approved safes of resistance grade III and higher are either equipped for IAS monitoring (i.e. they contain all safe-relevant monitoring measures) or designed for the installation of such measures.

Specifications for strongrooms are discussed in other guidelines.

7.3 Tips for selecting the right safe

The experience of the police and the insurance industry is invaluable when it comes to storing cash and small valuables in locked safes. Their findings on the selection of containers are discussed in the Technical Comments (Technische Kommentare), VdS 3134.

Users in Sweden may apply the technical recommendation FTR 1028.

7.4 Classically constructed secure storage units

Secure storage units are highly durable. Of course these older units are subject to a different set of rules. Determining the construction and security value of these older models is normally only possible after recourse to the industry archives or by obtaining an expert opinion.

8 Intruder and hold-up alarm systems (IAS, HUAS)

Intruder alarm systems (IAS) are primarily designed to recognise intrusion or intrusion attempts and signal an alarm as early as possible. Physical security devices and the IAS monitoring shall be perfectly synchronised, considering the anticipated intervention time, so as to enable the intervention team to arrive as early as possible and before the criminals have entered (cf. Figure 8-1). Cooperation between the electronic and mechanical elements shall be designed to reduce the probability of false alarms.

Users in Sweden may apply to standard SSF 130. Users in Norway may apply to standard FG-200.

For intruder alarm systems the European standard EN 50131 may be applied as well.

8.1 General

Intruder alarm systems (IAS) shall be selected according to the risk involved. According to the circumstances, the use of hold-up alarm systems (HUAS) may be suggested. An IAS monitors valuables and signals an alarm in case of forced entry. In case of hold-up or threat of a dangerous situation, a HUAS is able to relay the situation to the intervention team.

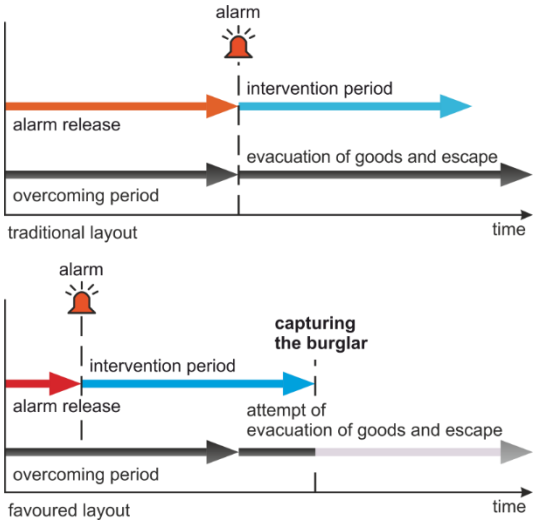


Figure 8-1: Intervention time

Apart from the European grades, national regulations shall be taken into account.

8.2 Grade 1 and Grade 2 intruder alarm systems

Grade 1 and 2 intruder alarm systems offer basic protection against overcoming in the set and unset state; the detectors have medium response sensitivity.

Scope: households with small amounts of valuables.

8.3 Grade 3 intruder alarm systems

Grade 3 intruder alarm systems offer a higher protection against overcoming in the set and unset state; the detectors have higher response sensitivity.

Scope: households with a serious amount of valuables, low-risk and medium-risk public premises, e.g. schools or supermarkets.

8.4 Grade 4 intruder alarm systems

Grade 4 intruder alarm systems offer high protection against overcoming in the set and unset state; the detectors have high response sensitivity. Extensive monitoring of the security-related functions is provided.

Scope: high-risk commercial premises, e.g. jeweller, watchmaker.

8.5 Installation

The systems shall be installed by an approved installer in accordance with the relevant guidelines for the planning and installation of IAS. IAS and HUAS can be combined or installed as independent systems. System planning and installation shall be performed by an approved IAS installer.

Testing and approval

All IAS should be tested and approved by the national authority having jurisdiction.

Users in Germany may apply to guidelines VdS 2311.

Users in Sweden may apply to standard SSF 1015.

Users in France may apply to guidelines CNPP APSAD R81.

8.6 Set/unset condition

An input device shall be used for setting/unsetting the IAS. Such a device can be realised as a physical or preferably electronic key or a chip card. According to the classification of the IAS, it may additionally be required to use a mnemonic identification feature (e.g. PIN, digit, character or letter combination).

A time control may be used as an alternative or in addition to an input device with a mental identification feature. This feature unsets the IAS only at certain pre-programmed times.

Due to organisational factors such as visitor use of rooms, entering rooms by other means, differing working hours, maintenance work, multi-purpose rooms, it may be necessary to split the IAS into various security zones that can be set/unset separately.

Infrequently used areas should be designed so as to remain in the set state until the time of use.

9 Robbery

European investigations show that robbery ranks among the fastest growing property crimes. According to police findings, this trend is increasing in connection with the improvement of security systems. In addition to this, successful hold-ups often lead to imitation crimes.

The danger of robbery exists for nearly all businesses and services when cash and/or expensive or easily transportable goods are involved; this is particularly true for jewellers, banks, petrol stations, amusement halls and department stores.

Even if an intrusion demands a certain degree of skill, a robbery only requires the appropriate degree of cold-bloodedness.

Normally, criminals only threaten the use of violence. However, the victim shall always bear in mind that the criminal may use a weapon and the situation could escalate.

As with all security measures, the higher the risk, the greater the need for loss prevention. Naturally personal protection is the primary objective, but the guarding of valuables is also relevant.

In cooperation with the police, security measures and proposals are developed to minimise the risk of robbery.

The following factors benefit criminals if they apply, for example:

- Premises that are the target of a hold-up are often open to the public and/or often unsecured during opening hours.
- Planning and preparation for the crime can be relatively simple.
- The robbery itself often only requires speed and agility.
- The relation risk/benefit is often favourable for the perpetrator.

9.1 Risks

The risk for businesses and services is influenced by a variety of factors. However, the following robbery methods are typically used:

- hold-ups during opening hours (typical hold-up)
- detaining employees when entering or leaving (atypical hold-up)
- robbery of a vehicle carrying money or valuables

9.2 Protective measures

The following measures (as shown) shall be co-ordinated for optimal protection against typical and atypical hold-ups.

9.2.1 Organisational measures

Easy access to cash and other attractive goods should be excluded, for example by

- displays in separate rooms, possibly with access control and time lock
- locking up especially valuable goods in secure storage containers with a time lock
- limiting the display of expensive goods in shop windows
- limiting the storage of attractive goods in open displays, or displays with simple locks

Further proposals:

- Keys to separate rooms, storage containers and showcases should be stored safely and separately from the corresponding locks.
- Staff should be regularly advised on general security measures and trained in the correct behaviour in case of hold-ups.
- Under certain conditions the hiring of security personnel (or doormen) may be necessary.
- A signal should be used, so that the first employee of the day can alert colleagues to a potential danger (an “all clear” signal).
- The cash register should be regularly sorted and cleared out.
- It should be evident that cash/valuables are under time lock and video surveillance (e.g. stickers, visible cameras).

9.2.2 Construction-based/mechanical measures

Access to cash and attractive goods can be successfully prevented by means of construction-based/mechanical measures. These measures include:

- showcases with tested burglar-resistance qualities
- polycarbonate window panes enclosing the window display, to block access to the contents from inside
- safes locked with time delay systems – use of money-counting rooms, preferably without a window or in a discrete location
- securing elements (e.g. fastening with steel wire)
- secure, closed cash control systems
- turnstiles (e.g. tripod) are occasionally recommended

9.2.3 Electronic measures

The previous examples of construction-based/mechanical measures can be effectively reinforced by electronic measures. These include:

- approved and certified intruder and hold-up alarm systems
- electronic keys, possibly combined with the function of activating a hold-up alarm, e.g. by operating an alarm switch
- hold-up alarm in adjoining rooms/money counting rooms
  Note: A hold-up alarm shall never activate an external alarm (e.g. a siren).
- video surveillance of the business premises from adjoining rooms or via hidden cameras
- combination of hold-up alarm system and video recording
- direct transmission of video images to the police or security company in case of an alarm
- dyeing system
- access control system with electrical locking/unlocking of doors
- tracking system, e.g. for transport containers

9.2.4 Robbery during transport

The transport of major valuables should only be carried out by specialised, professional transport companies. Transport services shall comply with the national approval and accreditation system.

In cases where valuables need to be transported by employees, the following shall be observed. In order to guarantee the highest possible security for persons and goods in transport, special measures are specified in the insurance requirements and/or the applicable specifications of the employers’ liability insurance association. These include:

- number and age requirements for the personnel involved in the transport
- alternating the personnel involved in the transport
- alternating transport routes, vehicles and times
- avoiding unknown surroundings
- avoiding recognition of the transport as such (e.g. use of neutral clothing and neutral transport containers)
- use of tracking systems (GSM or GPS) and/or transport containers equipped with a dyeing system that activates automatically upon unauthorised access

10 Security classes, definitions and examples

10.1 Introduction

Relevant for defining a Security Class (SC) for a special risk is, on the one hand, the possible loss for the company – called the seriousness of the event; on the other hand, it is the temptation for burglars (e. g. values, visibility, transport and escape possibilities, resale possibilities) – called the likelihood (cf. Figure 10-1).

Note 1: It should be noted that the examples are intended to assist the business owner or insurer, who is individually obliged to assess the risk and to formulate security requirements and the possible coverage level. Risks should be located in enclosed spaces.

Note 2: Please note that these Guidelines only deal with property risks. Risks that may arise from a loss of data or compromised data or IT systems are dealt with in other regulations. It goes without saying that national regulations shall be adhered to first and foremost.

SC 1

Risks with a relatively low amount of valuable assets; low interest for burglars to attack the premises

Examples: architect's office; ballet school; smithery; flower shop; basic office; pottery; stationery

SC 2

Risks with a relatively low amount of valuable assets; medium interest for burglars to attack the premises

Examples: restaurant; communal premises; theatre; solarium; shoe shop; tailor shop

SC 3

Risks with a medium amount of valuable assets; medium interest for burglars to attack the premises

Examples: sports shop, petrol station shop; photography

SC 4

Risks with a medium amount of valuable assets; high interest for burglars to attack the premises

Examples: supermarket, tobacconist, wine and spirits shop; bicycle dealer; fashion shop; shop for information technology and mobile communication; perfumery

SC5

Risks with a relatively high amount of valuable assets; medium interest for burglars to attack the premises

This Security Class is especially used for banks and financial institutions.

SC 6

Risks with a relatively high amount of valuable assets; high interest for burglars to attack the premises

Examples: jeweller, watchmaker

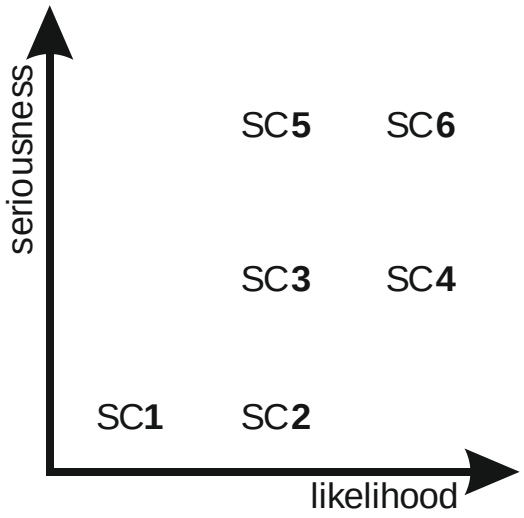


Figure 10-1: Risk seriousness vs. likelihood

Users in Sweden may apply the rule SSF 200. Users in Norway may apply the standard FG-112.

11 Requirements

Security measures should always be adapted to the individual situation. Conversely, case-specific security measures should not be formulated as universal requirements.

Note on the layout of the following tables: When the "Requirements" column does not contain a security measure, the retrofit measures should be used instead. In this way, the highest possible level of protection can be achieved.

11.1 Security Class SC 1

Security element	Requirements	Retrofit measures	Additional information
walls bordering the insured rooms (cf. 3.2)	– solid construction	– in case of thin walls, an increase of the resistance level is suggested, e.g. by reinforcement with gypsum-steel composite components – alternatively, the walls can be monitored with a Grade 3 IAS according to DIN EN 50131-1	- depending on the risk level, the "solid construction" requirement may be ignored
floors bordering the insured rooms (cf. 3.2)	– solid construction	– in case of light construction, monitoring by a Grade 3 IAS is suggested	

ceilings or roofs bordering the insured rooms (cf. 3.2)	– solid construction	– in case of light construction, monitoring by a Grade 3 IAS is suggested	
doors (cf. 4)	– Class RC2 burglar-resistant door (cf. 4.6)		
door leafs, door leaf fillings (cf. 4.3ff)		– with weak fillings, exchange for class P4A glazing or – doubling with material of comparable stability, e.g. 0.5 mm thick steel sheet or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- trims for fillings or glazing shall be screwed to the inside - rolling shutters and grills shall be secured against lifting - when grills or rolling shutters with burglar-resistant characteristics are used, the requirements for door security do not apply
fixed panels, in two-panelled doors (cf. 4.3.2)		– vertical door bar with bolt penetration above and below or – multipoint locks mounted to the door leaf	- vertical door bars which do not insert into notches shall be lockable

Security Class SC 1 continued

Security element	Requirements	Retrofit measures	Additional information
locking mechanisms (cf. 4.5)		– Class A lock and – Class A locking cylinder and – Class A door plate and – high quality striker plate or – Class A locking system or – double bolt (German classes)	- striker plates, hinge fasteners and door frames shall be anchored into the adjoining wall - with infrequent use, the door can be secured with an interior slide bolt and pad locks or an interior crossbar
hinges (cf. 4.4.1)	– sturdy interior hinges	– hinge fasteners	
doors with **controlled switch**, driven by a key (cf. 4.5.12)		required for exterior switch locks: – armoured mounting with Class A locking cylinder (German class)	
doors with **all-glass door leaf** (cf. 4.3.7)	– special locks (cf. 4.5.11)	Lock with – Class A locking cylinder and – rosettes not removable from outside and – additional lock or – Class A locking cylinder and – additional lock – grilling (additional measure possibly required in case of serious valuables and/or high risk situations (e.g. isolated location) (German classes)	

Security Class SC 1 continued

Security element	Requirements	Retrofit measures	Additional information
Gates (rolling, sliding and multi-panelled gates) (cf. 5)		– doubled wood gate leaf or double-layered steel gate leaf, e.g. gate leaf of steel sheets, at least 0.5 mm thick and – guiding tracks that are not removable from outside, e.g. with covered upper wheel track – Class A mortise lock with class A locking cylinder or class A locking system or Chubb lock, each with hook bolt and – striker plate with burglar-resistant characteristics or – electric drive with neutral stop block and switch lock With exterior switch lock: – armoured mounting – Class A locking cylinder (German classes)	- with infrequent use, the gate can be secured with an interior slide bolt or an interior crossbar with padlocks - slip doors and windows are treated the same as other doors and windows
Gates with fillings (cf. 5.3)		– with weak fillings, exchange for glazing of class P4A or – doubling with material of comparable stability, e.g. with 0.5 mm thick steel sheet or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- trims for fillings or glazing shall be screwed to the inside - rolling shutters and grills shall be secured against lifting - when grills or rolling shutters with burglar-resistant characteristics are used, requirements for gate or slip door security do not apply

Security Class SC 1 continued

Security element	Requirements	Retrofit measures	Additional information
windows / glass doors (cf. 6)	– Class RC2 burglar-resistant window (cf. 6.5.6)	– exchange of glazing, according to risk, for glazing of class P4A – exchange of fittings following DIN 18104-2 or products of equivalent quality and – lockable window catch with class A locking cylinder or – installation of at least two retrofit products following DIN 18104-1 or products of equivalent quality on windows with a width and/or height of up to 150 cm; with bigger windows, other retrofit products should be used or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics (partly German classes)	- trims for fillings or glazing shall be screwed to the inside - exchange of fittings is intricate and requires professional knowledge - rolling shutters and grills shall be secured against lifting
fixed windows (display windows) (cf. 6)	– Class RC2 burglar-resistant window (cf. 6.5.6)	– exchange of glazing for glazing of class P4A or – interior second pane of class P4A or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- if grills are to be moved, then the locking mechanism shall meet the requirements for doors - rolling shutters and grills shall be secured against lifting

Security Class SC 1 continued

Security element	Requirements	Retrofit measures	Additional information
cellar windows (cf. 6.6)	Class RC2 burglar-resistant window (cf. 6.5.6)	– grills with burglar-resistant characteristics or – precast masonry or concrete parts or, if the window is accessible via a concrete light shaft – securing the light shaft with non-removable rolling grill	- retrofitting as “windows” is also possible
window joints (cf. 6.5.5)		– securing with metal profiles, not removable from outside	- window joints shall be avoided
skylights (cf. 6.6.2)		– additional lock	
dome lights (cf. 6.6.3)		– dome lights are secured against unscrewing from outside or – grill or rolling grill, interior, with burglar-resistant characteristics	- when dome lights are used as smoke outlets, the use of grills in the outlet channel shall first be tested as to whether the bars will block the free flow of air
fanlights	the securing shall follow “windows” or “fixed windows” depending on the layout		
other openings	the securing shall follow “doors” or “windows” depending on the layout		
individual elements	the securing shall be individualised according to the risk, e.g. mechanical fastening to prevent theft, IAS monitoring		
safes (cf. 7)	depending on the value of the goods, storage containers with security features (safes) corresponding to insurer’s specifications		
video surveillance	individualised according to risk		

11.2 Security Class SC 2

Security element	Requirements	Retrofit measures	Additional information
walls, bordering the insured rooms (cf. 3.2)	– solid construction	– with thin walls, raising the level of resistance is suggested, e.g. by reinforcing with gypsum-steel composite components – alternatively, the walls can be monitored by a Grade 3 IAS according to DIN EN 50131-1	- depending on the risk level, the “solid construction“ requirement may be ignored
floors, bordering the insured rooms (cf. 3.2)	– solid construction	– if the construction is not solid, Grade 3 IAS monitoring is suggested	
ceilings or roofs, bordering the insured rooms (cf. 3.2)	– solid construction	– if the construction is not solid, Grade 3 IAS monitoring is suggested	
doors (cf. 4)	– Class RC2 burglar-resistant door (cf. 4.6)		
door leafs, door leaf fillings (cf. 4.3ff)		– with weak fillings, exchange for glazing of Class P4A or – doubling with material of comparable stability, e.g. with 0.5 mm thick steel sheet or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- trims for fillings or glazing shall be screwed to the inside - rolling shutters and grills shall be secured against lifting - when grills or rolling shutters with burglar-resistant characteristics are used, requirements for door security do not apply
fixed panels, in two-panelled doors (cf. 4.3.2)		– vertical door bar with bolt penetration above and below or – multipoint locks mounted on the door leaf	vertical door bars which do not insert into notches shall be lockable

Security Class SC 2 continued

Security element	Requirements	Retrofit measures	Additional information
locking mechanisms (cf. 4.5)		– Class A lock and – Class A locking cylinder and – Class A door plate and – high quality striker plate – additional lock or – multipoint locking device and – Class A locking cylinder and – Class A door plate and – high quality striker plate or – Class A locking system and – additional lock or – double bolt (German classes)	double bolts are recommended when securing with retrofit products striker plates, hinge fasteners and door frames shall be anchored in the adjoining wall with infrequent use, the door can be secured with an interior slide bolt and padlocks or an interior crossbar
hinges (cf. 4.4.1)	– sturdy interior hinges	– hinge fasteners or – double bolt	
doors with **controlled switch**, driven by a key (cf. 4.5.12)		required for exterior switch locks: – armoured mounting with Class A locking cylinder (German class)	

Security Class SC 2 continued

Security element	Requirements	Retrofit measures	Additional information
doors with **all-glass door leaf** (cf. 4.3.7)	– special locks (cf. 4.5.11)	lock with – Class A locking cylinder and – rosettes not removable from outside and – additional lock or – Class A locking system and – additional lock – grilling (additional measure possibly required in case of serious valuables and/or high risk situations (e.g. isolated location) (German classes)	
gates (rolling, sliding and multi-panelled gates) (cf. 5)		– doubled gate leaf or double-layered steel gate leaf, e.g. gate leaf of steel sheets, at least 1 mm thick and – guiding tracks are not removable from outside, e.g. with covered upper wheel track – Class A mortise lock with class A locking cylinder or class A locking system or Chubb lock, each with hook bolt and – striker plate with burglar-resistant characteristics or – electric drive with neutral stop block and switch lock With exterior switch lock: – armoured mounting with – Class A locking cylinder (German classes)	- with infrequent use, the gate can be secured with interior slide bolts or an interior crossbar with padlocks - slip doors and windows are treated the same as other doors and windows

Security Class SC 2 continued

Security element	Requirements	Retrofit measures	Additional information
gates with **fillings** (cf. 5.3)		– with weak fillings, exchange for glazing of Class P4A – doubling with material of comparable stability, e.g. with 0.5 mm thick steel sheet or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- trims for fillings or glazing shall be screwed to the inside - rolling shutters and grills shall be secured against lifting - when grills or rolling shutters with burglar-resistant characteristics are used, requirements for gate or slip door security do not apply
windows / glass doors (cf. 6)	– Class RC2 burglar-resistant window (cf. 6.5.6)	– exchange of glazing, according to risk, for glazing of Class P4A – exchange of fittings following DIN 18104-2 – lockable window catch with Class A locking cylinder or – installation of at least two retrofit products following DIN 18104-1 or products of equivalent quality on windows with a width and/or height of up to 120 cm; with bigger windows, other retrofit products should be used or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics (partly German classes)	- trims for fillings or glazing shall be screwed to the inside - exchange of fittings is intricate and requires professional knowledge - rolling shutters and grills shall be secured against lifting

Security Class SG 2 continued

Security element	Requirements	Retrofit measures	Additional information
fixed windows (display windows) (cf. 6)	– Class RC2 burglar-resistant window (cf. 6.5.6)	– exchange of glazing for glazing of Class P4A or – interior second pane of Class P4A or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- if grills are to be moved, the locking mechanism shall meet the requirements for doors - rolling shutters and grills shall be secured against lifting
cellar windows (cf. 6.6)	– Class RC2 burglar-resistant window (cf. 6.5.6)	– grills with burglar-resistant characteristics or – precast masonry or concrete parts or, if the window is accessible via a concrete light shaft – securing the light shaft with non-removable rolling grill	– retrofitting as “windows” is also possible
window joints (cf. 6.5.5)		– securing with metal profiles, not removable from exterior	- window joints shall be avoided
skylights (cf. 6.6)		– additional lock and – glazing of Class P4A or – grills with burglar-resistant characteristics	
dome lights (cf. 6.6.3)		– dome lights are secured against unscrewing from outside or – grill or rolling grill, interior, with burglar-resistant characteristics	- when dome lights are used as smoke outlets, the use of grills in the outlet channel shall first be tested as to whether the bars will block the free flow of air
fanlights	- securing shall follow “windows” or “fixed windows” depending on the layout		
other openings	- securing shall follow “doors” or “windows” depending on the layout		

Security Class SG 2 continued

Security element	Requirements	Retrofit measures	Additional information
individual elements	- securing shall be individualised according to the hazard, e.g. mechanical fastening to prevent theft, IAS monitoring		
safes (cash, stocks; cf. 7)	- depending on the value of the goods, storage containers with security features (safes) corresponding to insurer specifications		
Intruder alarm systems (cf. 8)	- Grade 3 IAS for monitoring equipment and supplies		- for serious valuables

11.3 Security Class SC 3

Security element	Requirements	Retrofit measures	Additional information
walls, bordering the insured rooms (cf. 3.2)	– solid construction	– with thin walls, raising the resistance level is suggested, e.g. by reinforcing with gypsum/steel composite components	- electronic monitoring alone is not adequate
floors, bordering the insured rooms (cf. 3.2)	– solid construction	– retrofitting shall be determined according to the risk and individual circumstances	
ceilings or roofs, bordering the insured rooms (cf. 3.2)	– solid construction	– retrofitting shall be determined according to the risk and individual circumstances	
doors (cf. 4)	– Class RC2 burglar-resistant door (cf. 4.6)		
door leafs, door leaf fillings (cf. 4.3ff)		– exchange of fillings for glazing of Class P4A or P5A or – doubling with compressed wood (at least 10 mm thick) or – steel sheets (at least 1 mm thick) or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	trims for fillings or glazing shall be screwed to the inside - rolling shutters and grills shall be secured against lifting - when grills or rolling shutters with burglar-resistant characteristics are used, requirements for door security do not apply
fixed panels, in two-panelled doors (cf. 4.3.2)		– vertical door bar with bolt penetration above and below or – multipoint locks mounted on the door leaf	- vertical door bars which do not insert into notches shall be lockable

Security Class SC 3 continued

Security element	Requirements	Retrofit measures	Additional information
locking mechanisms (cf. 4.5)	– Class B lock and – Class B locking cylinder and – Class B door plate and – high quality striker plate – two additional locks or – multipoint locking device with at least three bolting points and – Class B locking cylinder and – Class B door plate and – high quality striker plate or – Class A locking system and – additional lock or – double bolt and – additional lock (German classes)		- double bolts are recommended when secured with retrofit products - striker plates, hinge fasteners and door frames shall be anchored in the adjoining wall
hinges (cf. 4.4.1)	– sturdy interior hinges	– hinge fasteners or – double bolt	
doors with **controlled switch**, driven by a key (cf. 4.5.12)		required for exterior switch locks: – armoured mounting with – Class B locking cylinder (German class)	

Security Class SC 3 continued

Security element	**Requirements**	**Retrofit measures**	**Additional information**
doors with **all-glass door leaf** (cf. 4.3.7)	– special locks (cf. 4.5.11)	lock with – Class B locking cylinder and – rosettes not removable from outside and – additional lock and – grilling or – Class B locking system and – additional lock and – grilling (German classes)	
gates (rolling, sliding and multi-panelled gates) (cf. 5)		– double wood gate leaf (doubled thickness of at least 10 mm) or double-layered steel gate leaf, e.g. gate leaf of steel sheets at least 1 mm and – guiding tracks are not removable from outside, e.g. with covered upper wheel track – Class B mortise lock with class B locking cylinder or class B locking system or Chubb lock, each with hook bolt and – striker plate with burglar-resistant characteristics or – electric drive with neutral stop block and switch lock with exterior switch lock: – armoured mounting with – Class B locking cylinder (German classes)	- with infrequent use, the gate can be secured with interior slide bolts or an interior crossbar with padlocks - slip doors and windows are treated the same as other doors and windows

Security Class SC 3 continued

Security element	**Requirements**	**Retrofit measures**	**Additional information**
gates with **fillings** (cf. 5.3)		– exchange of fillings for glazing of Class P4A or P5A or – doubling with compressed wood (at least 10 mm thick) or – steel sheets (at least 1 mm) or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- trims for fillings or glazing shall be screwed to the inside - rolling shutters and grills shall be secured against lifting - when grills or rolling shutters with burglar-resistant characteristics are used, requirements for gate or slip door security do not apply
windows/glass doors (cf. 6)	– Class RC3 burglar-resistant window (cf. 6.5.6)	– exchange of glazing for glazing of Class P4A or P5A, depending on risk – exchange of fittings for those following DIN 18104-2 and – lockable window catch with Class A locking cylinder or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics (partly German classes)	- trims for fillings or glazing shall be screwed to the inside - exchange of fittings is intricate and requires professional knowledge - rolling shutters and grills shall be secured against lifting

Security Class SC 3 continued

Security element	Requirements	Retrofit measures	Additional information
fixed windows (display windows) (cf. 6)	– Class RC3 burglar-resistant window (cf. 6.5.6)	– exchange for glazing of Class P4A or P5A or – interior second pane of Class P4A or – (*) swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- if grills are to be moved, the locking mechanism shall meet the requirements for doors - rolling shutters and grills shall be secured against lifting (*) If there is a risk that an intruder can simply reach inside, then securing the grill with an interior second pane of Class P4A will be required
cellar windows (cf. 6.6)	– Class RC3 burglar-resistant window (cf. 6.5.6)	– grills with burglar-resistant characteristics or – precast masonry or concrete parts or if the window is accessible via a concrete light shaft – securing the light shaft with non-removable rolling grill	- retrofitting as “windows” is also possible
window joints (cf. 6.5.5)		– securing with metal profiles, not removable from the outside	- window joints are to be avoided
skylights (cf. 6.6)		– grills with burglar-resistant characteristics	
dome lights (cf. 6.6.3)		– dome lights are secured against unscrewing from the outside or – exchange of fillings for glazing of Class P4A or P5A or – grill or rolling grill, interior, with burglar-resistant characteristics	- when dome lights are used as smoke outlets, the use of grills in the outlet channel shall first be tested as to whether the bars will block the free flow of air

Security Class SC 3 continued

Security element	Requirements	Retrofit measures	Additional information
fanlights	- securing shall follow “windows” or “fixed windows” depending on the layout		
other openings	- securing shall follow “doors” or “windows” depending on the layout		
individual elements	- securing shall be individualised according to the risk, e.g. mechanical fastening to prevent theft, IAS monitoring		
safes (cash, stocks; cf. 7)	- depending on the value of the goods, storage containers with security features (safes) corresponding to insurer’s specifications		
intruder alarm systems (cf. 8)	- Grade 4 IAS for monitoring equipment and supplies		- for serious valuables

11.4 Security Class SC 4

The security measures of Security Class SC 2 shall be followed. However, warehouses and departments with an especially high-risk assortment of goods should secure these target areas with mechanical security devices and electronic intruder alarm measures following Security Class SC 3.

Particularly high-risk goods are, for example:

- antiques/artworks
- bicycles
- communication devices/telephones/mobile phones
- glasses, optical products
- IT technology, e.g. computers, notebooks
- jewellery, watches
- leather clothing and goods
- perfume/cosmetics
- persian rugs
- spirits
- sporting goods
- tobacco and smoking utensils
- weapons

including accessories, where applicable.

11.5 Security Class SC 5

In case of doubts, national rules and guidelines apply.

Requirements are very different in the various countries. Therefore, no common requirements are specified; for national requirements, please refer to the respective standards and guidelines.

Germany: Requirements are specified in the Security Guidelines VdS 2472 as well as VdS 5052 (Guidelines for Securing Automated Teller Machines, Risk Assessment and Measures).

Sweden: SSF 200 (foldable leaflets in English)

11.6 Security Class SC 6

Security element	Requirements	Retrofit measures	Additional information
walls, bordering the insured rooms (cf. 3.2)	– exceptionally solid construction	– with thin walls or even strong walls, the resistance level shall be raised – depending on the risk, the resistance level can be raised through reinforcing with gypsum/steel composite components	- electronic monitoring alone is not sufficient
floors, bordering the insured rooms (cf. 3.2)	– exceptionally solid construction	– retrofitting shall be determined according to the risk and individual circumstances	
ceilings or roofs, bordering the insured rooms (cf. 3.2)	– exceptionally solid construction	– retrofitting shall be determined according to the risk and individual circumstances	
doors (cf. 4)	– Class RC4 burglar-resistant door (cf. 4.6)		
door leafs, door leaf fillings (cf. 4.3ff)		– doubling with compressed wood (at least 10 mm thick) or steel sheets (at least 1 mm thick) or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- trims for fillings or glazing shall be screwed to the inside - rolling shutters and grills shall be secured against lifting - when grills or rolling shutters with burglar-resistant characteristics are used, requirements for door security do not apply
fixed panels, in two-panelled doors (cf. 4.3.2)		– vertical door bar with bolt penetration above and below or – multipoint locks mounted on the door leaf	- vertical door bars which do not insert into notches shall be lockable

Security Class SC 6 continued

Security element	**Requirements**	**Retrofit measures**	**Additional information**
locking mechanisms (cf. 4.5)		– Class B lock and – Class B locking cylinder and – Class C door plate and – pull protector and – high quality striker plate and – two additional locks or – multipoint locking device with at least three bolting points and – Class B locking cylinder and – Class C door plate and – pull protector and – high quality striker plate or – Class B locking system and – two additional locks or – two double bolts (German classes)	- double bolts are recommended when securing with retrofit products - striker plates, hinge fasteners and door frames shall be anchored in the adjoining wall
hinges (cf. 4.4.1)	– sturdy interior hinges	– hinge fasteners or – double bolt	
doors with **controlled switch**, driven by a key (cf. 4.5.12)		required for exterior switch locks: – armoured mounting with – Class B locking cylinder (German classes)	

Security Class SC 6 continued

Security element	Requirements	Retrofit measures	Additional information
doors with **all-glass door leaf** (cf. 4.3.7)	– Special locks (cf. 4.5.11)	Lock with – Class B locking cylinder and – rosettes not removable from outside and – additional lock and – grilling or – Class B locking system and – additional lock and – grilling (German classes)	
gates (rolling, sliding and multi-panelled gates) (cf. 5)		– double wood gate leaf (doubled thickness of at least 10 mm) or double-layered steel gate leaf, e.g. gate leaf of steel sheets at least 1.5 mm thick and – guiding tracks are not removable from outside, e.g. with covered upper wheel track – Class B mortise lock with Class B locking cylinder or Class B locking system or Chubb lock, each with hook bolt and – striker plate with burglar-resistant characteristics or – electric drive with neutral stop block and switch lock – with exterior switch lock: – armoured mounting with – Class B locking cylinder (German classes)	- with infrequent use, the gate can be secured with interior slide bolts or an interior crossbar with padlocks - slip doors and windows are treated the same as other doors and windows

Security Class SC 6 continued

Security element	Requirements	Retrofit measures	Additional information
gates with **fillings** (cf. 5.3)		– exchange of glazing for glazing of Class P7B or – doubling with compressed wood (at least 25 mm thick) or steel sheets (at least 2 mm thick) or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	- trims for fillings or glazing shall be screwed to the inside - rolling shutters and grills shall be secured against lifting - when grills or rolling shutters with burglar-resistant characteristics are used, requirements for gate or slip door security do not apply
windows / glass doors (cf. 6)	– Class RC4 burglar-resistant window (cf. 6.5.6)	– exchange of glazing for glazing of Class P7B, P8B, depending on the risk and – exchange of fittings for those following DIN 18104-2 and – lockable window catch with Class A locking cylinder or – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics (partly German classes)	- depending on the risk, a Class RC4 burglar-resistant window or the exchange of current glazing for that of Class P8B or a combination of EH glazing and grill may be required - an exchange of current glazing for that of Class P78B is only possible for highly stable, static elements - trims for fillings or glazing shall be screwed to the inside - exchange of fittings is intricate and requires professional knowledge - rolling shutters and grills shall be secured against lifting

Security Class SC 6 continued

Security element	Requirements	Retrofit measures	Additional information
fixed windows (display windows) (cf. 6)	– Class RC4 burglar-resistant window (cf. 6.5.6)	– exchange of glazing for glazing of Class P7B or for display windows – exchange of glazing for glazing of Class P8B or – interior second pane of Class P8B or – exchange of glazing for glazing of Class P7B or P8B and – swinging, sliding, rolling or fixed grills or rolling shutters with burglar-resistant characteristics	
cellar windows (cf. 6.6)	Class RC4 burglar-resistant window (cf. 6.5.6)	– grills with burglar-resistant characteristics or – precast masonry or concrete parts or if the window is accessible from a concrete light shaft – securing the light shaft with non-removable rolling grill	- retrofitting as “windows” is also possible
window joints (cf. 6.5.5)		– securing with metal profiles, not removable from outside	- window joints shall be avoided
skylights (cf. 6.6)		– grills with burglar-resistant characteristics	
dome lights (cf. 6.6.3)		– burglar-resistant glazing of Class P7B or – grill or rolling grill, interior, with burglar-resistant characteristics	- when dome lights are used as smoke outlets, the use of grills in the outlet channel shall first be tested as to whether the bars will block the free flow of air

Security Class SC 6 continued

Security element	Requirements	Retrofit measures	Additional information
fanlights	- securing shall follow “windows” or “fixed windows” depending on the layout		
other openings	- securing shall follow “doors” or “windows” depending on the layout		
individual elements	- securing shall be individualised according to the risk, e.g. mechanical fastening to prevent theft, Grade 4 IAS monitoring		
safes (cash, stocks; cf. 7)	- depending on the value of the goods, storage containers with security features which correspond to insurer’s specifications		
intruder alarm systems (cf. 8)	- Grade 4 IAS with complete shell protection and hold-up alarm		- for serious valuables

Annex A References

CFPA 06/S Guidelines Emergency Exit Doors in non Residential Premises

CFPA 11/S Cyber Security for Small and Medium-sized Enterprises (SME), Requirements

CNPP H0 General reference document for A2P mark

CNPP H61 Special reference document for A2P mark – Building locks

CNPP T61 Technical specifications – Building locks – Specifications and testing methods

CNPP H62 Special reference document for A2P mark – Building windows and closures

CNPP T62 Technical specifications – Building windows and closures – Specifications and testing methods

CNPP H64 Special reference document for A2P mark – Building doors

CNPP T64-1 Technical specifications – Building doors – Specifications and testing methods

CNPP H71 Special reference document for A2P mark – Safes

CNPP T71-1 Technical specifications – Safes, strongrooms doors, strong rooms, “deposit safes” and “night deposit safes” – Specifications and testing methods

CNPP T71-6 Technical specifications – Equipment of technical security enclosures – Specifications and testing methods

DIN 18104-1 Einbruchhemmende Nachrüstprodukte – Teil 1: Aufschraubbare Nachrüstprodukte für Fenster und Türen – Anforderungen und Prüfverfahren; Burglar-resistant retrofit products – Part 1: Screw-on retrofit products for windows and doors - Requirements and test methods

DIN 18104-2 Einbruchhemmende Nachrüstprodukte – Teil 2: Im Falz eingelassene Nachrüstprodukte für Fenster und Türen – Anforderungen und Prüfverfahren; Burglar-resistant retrofit products – Part 2: Rebated retrofit products for windows and doors – Requirements and test methods

DIN EN 50131-1 Alarmanlagen – Einbruch- und Überfallmeldeanlagen – Teil 1: Systemanforderungen; Alarm systems - Intrusion and hold-up systems – Part 1: System requirements

NF EN 50131-1 Systèmes d'alarme - Systèmes d'alarme contre l'intrusion et les hold-up - Partie 1 : exigences système - Alarm systems - Intrusion and hold-up systems - Part 1: System requirements

NF 324-H58 Référentiel de certification NF&A2P pour matériels de sécurité électroniques - NF&A2P certification rules for Electronic Security Equipment

EN 356 Glas im Bauwesen – Sicherheitssonderverglasung – Prüfverfahren und Klasseneinteilung des Widerstandes gegen manuellen Angriff; Glass in building – Special safety glazing – Test methods and classification of resistance to manual attack

EN 1063 Glass in building – Security glazing – Testing and classification of resistance against bullet attack

EN 1143-1 Wertbehältnisse – Anforderungen, Klassifizierung und Methoden zur Prüfung des Widerstandes gegen Einbruchdiebstahl – Teil 1: Wertschutzschränke, Wertschutzschränke für Geldautomaten, Wertschutzraumtüren und Wertschutzräume; Secure storage units – Requirements, classification and methods of testing for resistance to burglary – Part 1: Safes, ATM safes, strongroom doors and strongrooms

EN 1627 Türen, Fenster, Vorhangfassaden, Gitterelemente und Abschlüsse – Einbruchhemmung – Anforderungen und Klassifizierung; Doors, windows, curtain walls, grille elements and closures – Burglar resistance – Requirements and classification

FG- 112 Sikring mot tyveri mechanical security

FG-200 Intruder alarm security

SSF 012 Rullgaller och galler

SSF 033 Gallergrid – krav och provning

SSF 130 Projektering och installation av inbrotts- och överfallslarmanläggning

SSF 200 Regler för inbrottsskydd – Byggnader och lokaler

SSF 1015 Anläggarfirma – Inbrottslarmanläggning

SSF 1078 Klassning, krav och provning

SSF 1090 Mechanical cylinders – Burglar resistance – Requirements and test methods

SSF 1092 Fixed mounted mechanical lock cases – Burglar resistance – Requirements and test methods

SSF 1096 Reinforcement plates – Burglar resistance – Requirements and test methods

SSF 3522 Inbrottsskyddande låsenheter för montering – klassning, krav och provning

prSSF 3523 Digital låsenhet – klassning, krav och provnings

VdS 2113 Einbruchhemmende Türschilder; Burglar-resistant door plates

VdS 2163 Einbruchhemmende Verglasungen, Anforderungen und Prüfmethoden; Burglar-resistant glazing, requirements and test methods

VdS 2311 Intruder Alarm Systems, Planning and Installation

CNPP APSAD R81- Détection d'intrusion - Règle d'installation – Intrusion detection – Installation rules

NF 367-I80 Systèmes électroniques de sécurité - Service d'installation et de maintenance en détection d'intrusion, vidéosurveillance, contrôle d'accès. Electronic Security Equipment – Installation, maintenance in intrusion detection, CCTV, access control

VdS 2472 Security Guidelines for Banks, Savings Banks and Other Financial Institutions

VdS 2534 Einbruchhemmende Fassadenelemente, Anforderungen und Prüfmethoden; Burglar-resistant façade elements, requirements and test methods

VdS 3134 Technische Kommentare; Technical Comments

VdS 5052 Guidelines for Securing Automated Teller Machines, Risk Assessment and Measures

to be completed.