

A photograph of a modern, two-story house at dusk. The house has large glass windows and a balcony, both of which are illuminated from within, showing interior lights and furniture. The exterior is lit with warm, recessed lighting. The house is set on a landscaped lawn with a gravel path and a small tree. The sky is a deep blue.

# swissFineLine Protect

Transparency in its safest form

# Transparency in its safest form

The desire for light-flooded spaces and the need for safety and security are no longer incompatible.

swissFineLine Protect provides a level of security for windows that was never before thought possible.

Burglary protection



Bullet resistance



Monitoring



# swissFineLine Protect

Burglary protection

# Burglary protection: maximum security

swissFineLine Protect is the only frameless sliding window with burglary protection as high as resistance class RC4

- In resistance class RC4, swissFineLine Protect easily withstands even the most brutal attacks and professionally planned break-ins where the perpetrators use sawing and striking tools, such as an axe, a crowbar, a hammer and chisel, or even a cordless power drill
- With resistance classes RC2, RC3 and RC4, swissFineLine Protect offers elements that are suitable for a wide range of requirements
- Independently certified to DIN EN 1627 by the accredited testing institutes ift Rosenheim GmbH (Rosenheim, Germany) and gbd Zert GmbH (Dornbirn, Austria)



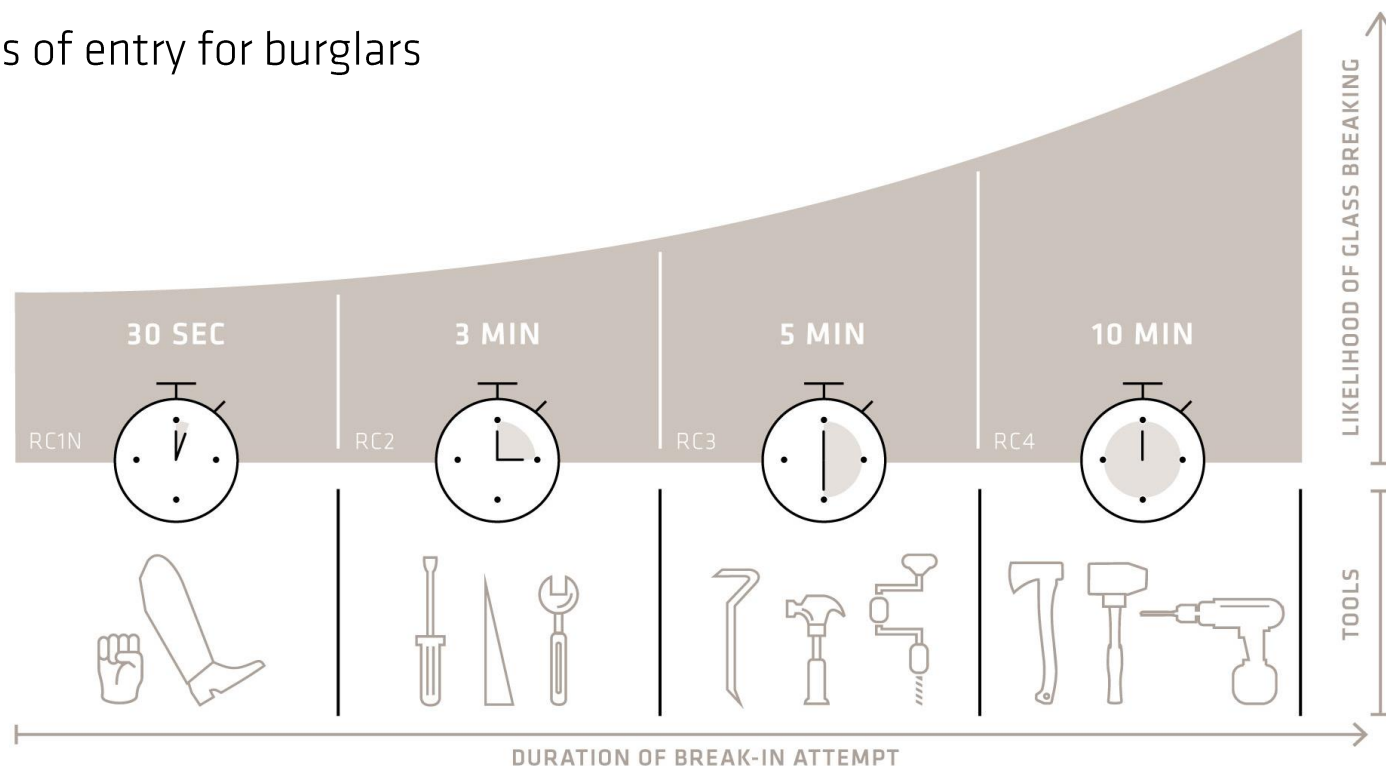
according to DIN EN 1627



# Burglary protection: RC2 to RC4

Best resistance times: the longer the window holds out against an attack, the more likely the criminals are to give up

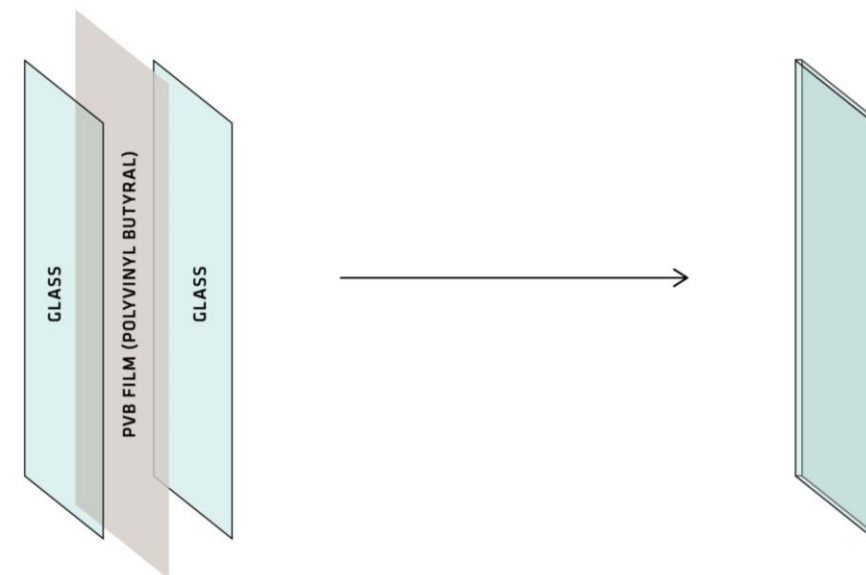
- Windows and patio doors are the main points of entry for burglars
- It usually only takes a few minutes or even seconds to attempt a burglary by prying open a window casement with a screwdriver
- An RC4 rating provides protection against attempted burglaries by experienced perpetrators using professional tools for at least 10 minutes



# Burglary protection: the glass

swissFineLine Protect elements are made of a laminated safety glass consisting of high-tech plastics and glass elements

- Tested & certified according to DIN EN 356
- The laminated safety glass that is used is a combination of matching layers of glass and polyvinyl butyral, which complement and reinforce each other's safety features
- The polyvinyl butyral films (PVB films) provide the glass pane with a remaining structural capacity even when extreme force is applied
- If broken, the glass will adhere to the polyvinyl butyral film, preventing the pane from collapsing and therefore continuing to provide break-in protection

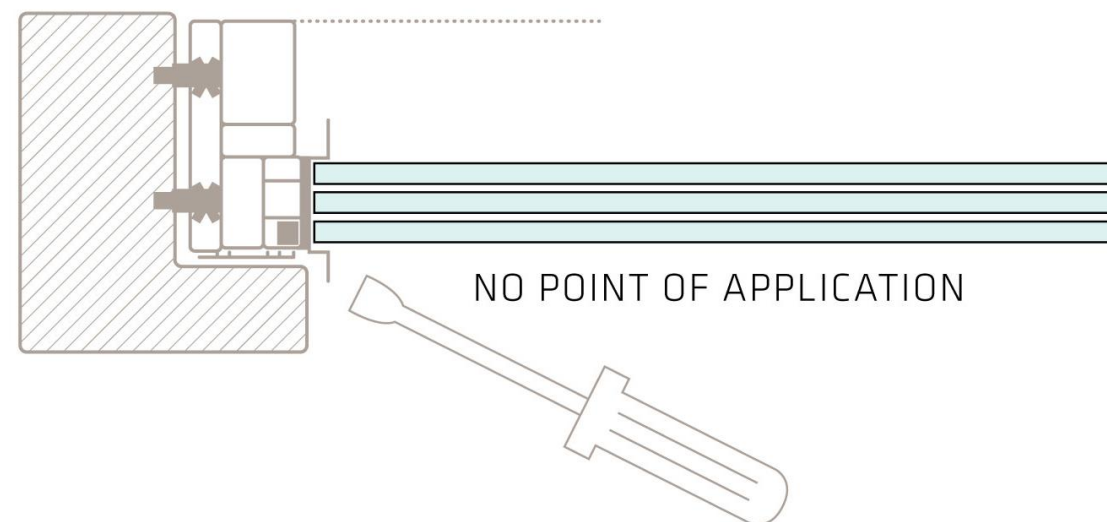


COMPOSITION OF LAMINATED SAFETY GLASS

## Burglary protection: the frame

No easy way for burglars to gain entry: the near invisible swissFineLine Protect frames are designed to provide the highest level of protection

- Perpetrators mostly use screwdrivers to pry open a window casement
- With swissFineLine Protect, burglars don't stand a chance with this method: when closed, the elements cannot be pried open
- Additional protection is provided in resistance classes RC3 and RC4 by equipping the chambers of the grip profile with specially designed anti-drill protection that not even a power drill can break



A photograph of a modern, multi-story house at dusk. The house has large glass windows and balconies, some of which are illuminated from within. A clock tower is visible in the background. The sky is dark blue with some clouds. The foreground shows a lawn and some tall grasses.

# swissFineLine Protect

Bullet resistance



## Bullet resistance: maximum security

swissFineLine Protect is the only frameless sliding window with bullet resistance as high as resistance class FB6-NS








- swissFineLine Protect can easily withstand attacks with any kind of handguns or long guns with up to 5.56x45 and 7.62x51 calibre full-jacket bullets, without any scattering of splinters in the building's interior
- Whether pistol, revolver, rifle, sub-machine gun or Kalashnikov – with resistance classes FB4-NS and FB6-NS, swissFineLine Protect provides elements that meet a wide range of requirements
- Independently certified according to DIN EN 1522 by Armasuisse, Switzerland's Federal Office for Defence Procurement



according to  
DIN EN 1522

# Bullet resistance: FB4 and FB6

Resistance class FB6 provides protection against attacks with handguns as well as long guns with up to 5.56x45 and 7.62x51 calibre full-jacket bullets

	RESISTANCE CLASS ACCORDING TO EN 1522	TYPE OF WEAPON	CALIBRE	PROJECTILE MASS (G)	BULLET VELOCITY (M/S)	MUZZLE ENERGY (JOULES)	GLAZING ACCORDING TO EN 1063
HANDGUNS	FB1		.22 LR	2,6 ± 0,1	360 ± 10	168	BR1
	FB2		9 MM LUGER	8,0 ± 0,1	400 ± 10	689	BR2
	FB3		.357 MAGNUM	10,2 ± 0,1	430 ± 10	943	BR3
LONG GUNS	FB4		.44 REMINGTON .357 MAGNUM	10,2 ± 0,1 15,6 ± 0,1	430 ± 10 440 ± 10	943 1510	BR4
	FB5		5.56 X 45	4,0 ± 0,1	950 ± 10	1805	BR5
	FB6		5.56 X 45 7.62 X 51 FULL METAL JACKET	4,0 ± 0,1 9,5 ± 0,1	950 ± 10 830 ± 10	1805 3289	BR6
*	FB7		7.62 X 51 ARMOUR PIERCING COMPOSITE RIGID	9,8 ± 0,1	820 ± 10	3261	BR7

\*LONG GUNS WITH SPECIAL  
ARMOUR PIERCING COMPOSITE  
RIGID AMMUNITION

## Bullet resistance: NS = non-splintering

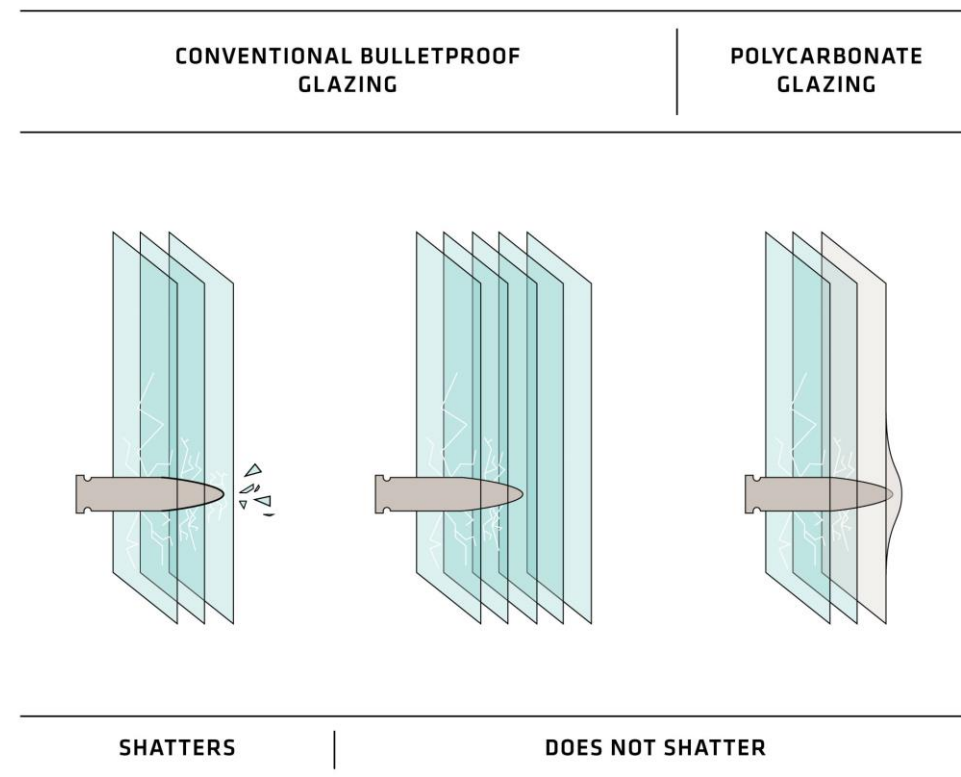
When shot at, the bullet-resistant swissFineLine Protect elements do not scatter any glass fragments into the building's interior

- Maximum security, as not only the projectile but also the glass fragments can cause injuries
- Fragments of glass can hit and injure not only the attacker's target but anyone present
- Protection from injury to the body caused by splinters flying in all directions for all individuals present in the building

# Bullet resistance: the glass

swissFineLine Protect elements consist of the safest and thinnest high-tech glass available in the market

- Tested & certified according to DIN EN 1063
- Unique combination of glass and highly transparent plastics, such as polycarbonate, ensures optimal glazing properties
- Bullet-resistant polycarbonate glazing is approx. 50% thinner and lighter than conventional bullet-resistant glazing
- Coated polycarbonate is used as the final layer on the inside of the building, preventing splinters from scattering into the building



# Bullet resistance: the glass

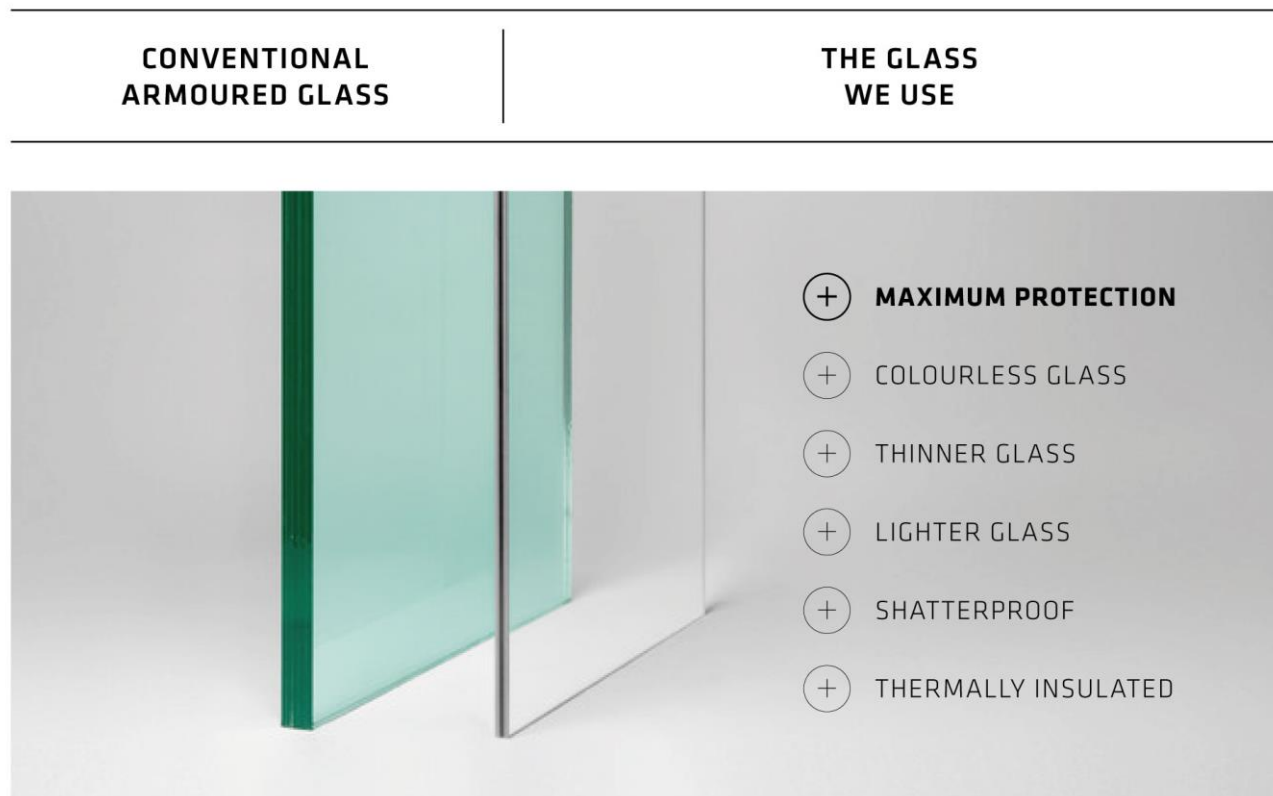
swissFineLine Protect elements consist of the safest and thinnest high-tech glass available in the market

- Traditionally, bullet-resistant glass such as laminated safety glass consists of many layers of glass and film
- The result is a very thick and extremely heavy glass structure
- This is optically and technically unsuitable for large glass elements and sliding doors:
  - the thickness of the elements does not allow for optically flawless and colour-neutral glass
  - Due to the heaviness of the structure, it is no longer technically feasible to produce, for example, sliding doors of an appropriate size
  - The increasing thickness of the glass structure means that it is no longer compatible with thermal insulation through insulating glass

# Bullet resistance: the glass

Safer & thinner: a direct comparison with traditional armoured glass shows the benefits

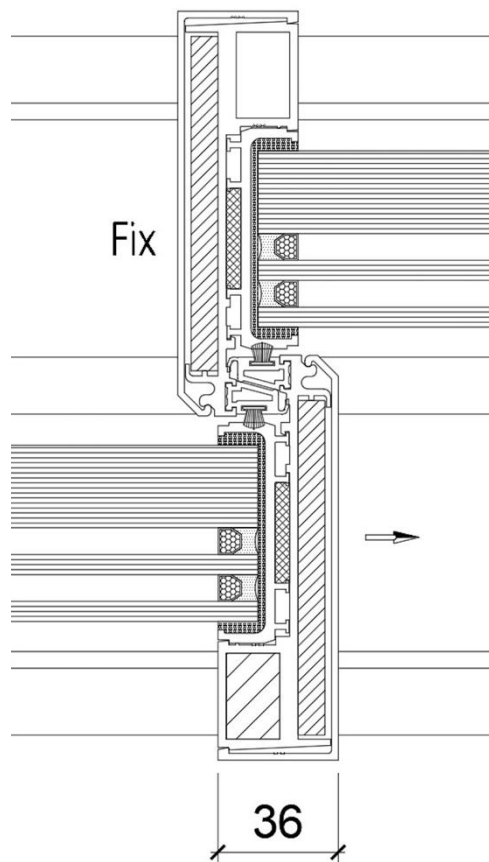
- The glass used for swissFineLine Protect has many advantages over armoured glass
- swissFineLine Protect glass is visually almost indistinguishable from non-bulletproof glass
- Only certified glass is used by swissFineLine Protect for bullet-resistant windows



## Bullet resistance: the frame

The frames developed by us: near invisible and yet extremely strong

- Their almost frameless design is what makes swissFineLine elements stand out
- When under fire, the frame elements must be able to withstand the most extreme high-impact forces
- With its specially designed reinforcements, swissFineLine Protect offers maximum security with a minimal frame size of as little as 36 millimetres



A detailed architectural rendering of a modern residential building. The building features multiple levels with balconies, large windows, and a mix of light-colored facades and dark accents. The scene is set during sunset or sunrise, with a warm, golden light. In the foreground, there is a lush garden with various plants and a paved walkway. A semi-transparent white banner is overlaid across the middle of the image, containing the text "swissFineLine Protect" and "Monitoring".

# swissFineLine Protect

## Monitoring



# Monitoring: smart burglary protection

You can upgrade swissFineLine Protect with the electronic monitoring components to create an individual smart home alarm system

- Electronic monitoring components in addition to mechanical burglary protection ensure even greater security
- Sensors for position and lock monitoring of the elements can be integrated and concealed in the frameless design
- Can be custom-integrated into the home security system
- Smart monitoring & control of the window elements with the help of an app



# Monitoring: smart burglary protection

Perfectly connected: smart monitoring and control of the swissFineLine elements

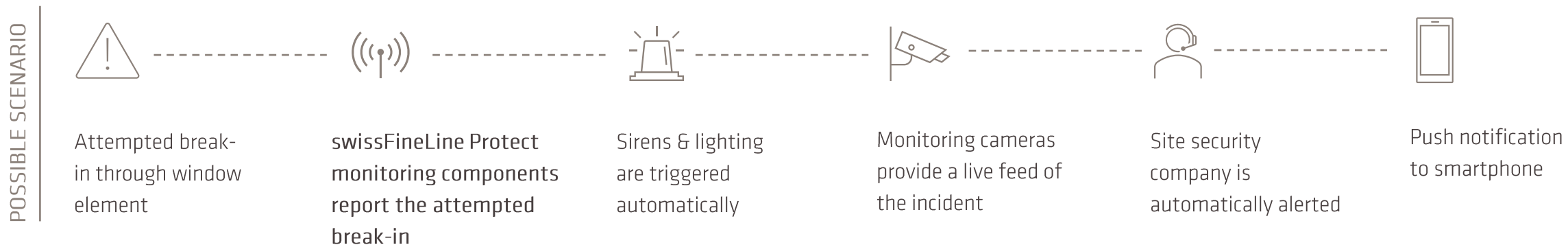
- Using an app on a smartphone or tablet allows you to monitor and control the window elements while you are away
- The app sends push notifications when the position & lock monitoring system gives an alarm
- Thanks to their minimal dimensions, both the monitoring components and the electric motor for opening and closing the elements are fitted and remain concealed in the lintel profile



# Monitoring: smart burglary protection

swissFineLine Protect can be integrated in smart home security systems of third-party providers

- Linking the electronic monitoring components to the burglar alarm or home security system ensures perfect connectedness and maximum security
- The result is a secure alarm process that gives criminals no chance to attack and provides the occupants with complete transparency and control:



# CONTACT

Do you have questions about swissFineLine? Would you like some advice or a non-binding offer? Please feel free to contact us.



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## MORE INFORMATIONS

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