



## UNIGLAS® | SAFE Safety glass: resistance classes

UNIGLAS® | **SAFE Safety glass** offers active protection for properties and people. German police crime statistics show that there was a burglary of a house or flat every four minutes in Germany during 2011. To make access more difficult for the culprits, the right safety glass has to be used. A distinction is made here between the following basic characteristics:

- active safety characteristics:  
protection from burglary, shots, explosions, and hence protection for life and limb
- passive safety characteristics:  
protection from severe injuries by the use of the materials laminated safety glass (LSG) and single-pane safety glass (SSG)

Banks, jewellers and retailers have long protected themselves by the use of safety glass and appropriate locking systems. In view of the soaring numbers of burglaries (according to police statistics up by 9.3% from 2010 to 2011), it is recommended that private



property too be appropriately protected. Crime statistics also prove that protective measures considerably lower the risk of burglaries in houses and flats.

Since most burglars prefer to work as quickly as



possible, their attempts to break in will stop immediately if unexpected resistance is met.

Depending on the risk category of the property, glass resistant to thrown objects and to penetration must be matched by appropriate fittings and locks. The UNIGLAS® | **SAFE Safety glass** product range contains the right glass for all resistance classes of windows and patio / balcony doors.

At 71%, windows and French windows are the most popular routes for entry. This is why these areas need particular attention. Laminated safety glass is in this case the most suitable transparent material for providing sufficient protection.

### The resistance classes:

The allocation to resistance classes means in actual practice step-by-step increases in safety, which can be selected depending on the personal risk assessment and application regulations:

Thrown-object-resistant glazing  
(UNIGLAS® | **SAFE** P1A, P2A ... P5A)

Penetration-resistant glazing  
(UNIGLAS® | **SAFE** P6B, P7B, P8B)

Bullet-resistant glazing  
(UNIGLAS® | **SAFE** BR1-S ... BR7-NS ) Explosion-resistant glazing  
(UNIGLAS® | **SAFE** ER1, ER2 ... R4 )

All UNIGLAS | **SAFE** glazing conforms to currently valid standards and has been inspected and monitored by official bodies.

#### Thrown-object-resistant glazing:

The testing method simulates heavy thrown objects using a metal ball (4.2 kg weight, diameter 10 cm). The test is passed if no ball has penetrated the sample after being dropped on the glass several times. The thrown-object-resistant glazing is subdivided into five groups:

Resistance class	Applications
P1A	Very simple measure to delay burglary
P2A	For single-family and multi-family houses on housing estates
P3A	Remotely located houses for private use
P4A	Houses with high quality furnishings, holiday homes
P5A	Villas with valuable contents, particularly high-risk buildings

#### Penetration-resistant glazing:

The suitability test is conducted using a 2 kg axe driven by a machine. The number of strokes needed to create a defined breakthrough opening (40 x 40 cm) in the test specimen (110 x 90 cm) results in the following three safety classes:

Resistance class	Applications
P6B	IT centers, pharmacies, photographic and HiFi shops
P7B	Museums, galleries, psychiatric institutions
P8B	Jewellers, prisons, furriers

#### Recommended glazing classes:

In the national Annex NB (for Germany), DIN EN 1627 on burglar-resistant building products recommends the use of the following glazing in accordance with EN 356, depending on the required resistance class of the windows and French windows:

RC 4 – P6B  
RC 5 – P7B  
RC 6 – P8B  
RC 2 – P4A  
RC 3 – P5A

The resistance classes have, since September 2011, been designated "RC" for "resistance class" and correspond to the previous designation "WK". Resistance classes RC 1N and RC 2N do not set any requirements on glazing. RC 2N is recommended only for components with respect to which no direct attack on the glazing is to be expected.

#### Bullet-resistant glazing

The resistance classes differ depending on the caliber of the ammunition used. There is a further differentiation by "shatterproof" (NS / SF) and "non-shatterproof" (S / SA).

Shatterproof UNIGLAS® | **SAFE** is used where there may be persons directly behind the pane.

For further questions, in particular about details of bullet-resistant and explosion-resistant glazing, your personal UNIGLAS experts will be glad to help.

Our information is provided to the best of our knowledge and belief, but rules out any warranty. Right to printing errors, mistakes and changes reserved. (Date: May 2015)