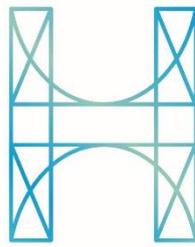


Bullet Resistant Glass

For high risk installations



Hermans
TECHNIGLAZ
SOLAR, SAFETY, DAYLIGHT



Romag has been manufacturing security glass for more than 70 years and is one of the UK's leading and most trusted manufacturers of bullet resistant glass. Constructed from several layers of glass bonded with various interlayers of tough polyvinyl butyral (PVB), polyurethane and polycarbonate. The construction of the glass is designed to absorb and disperse the impact energy of a projectile, safeguarding those behind the glass.

The thickness of the glass is determined by the perceived threat level. Romag's reputation and passion for innovation ensures our Bullet Resistant glass is some of the thinnest available on the market, allowing for seamless integration into everyday constructions. Globally our glass provides protection for high risk military installations, government buildings, embassies, airports, banks and high value retail outlets, VIP residences, cash transfer vehicles, armoured personnel carriers and VIP limousines.

Spall Allowed vs No Spall

Romag offer two fundamental options for bullet resistant glass; spall allowed and no spall. The requirement for spall allowed / no spall is part of the European standard BS EN 1063. Both options are very effective but are suited to different applications. Spall allowed will emit splinters of glass from the reverse of the panel when impacted. It makes it suitable for applications with a stand-off distance from the glass, e.g. a shop window, or similar.

No spall is constructed using both glass and polycarbonate one of the strongest glazing materials available with an impact resistance many times greater than float or toughened glass. The polycarbonate fully absorbs the impact of the projectile resulting in a zero spall option which provides superior bullet resistance, enabling overall glass thickness to be reduced by up to 40% over conventional bullet resistant glass; enhancing light transmission and glass clarity. No spall could also be achieved with an antispall film, No spall constructions are particularly suited to applications such as cashier booths and vehicles; anywhere where people will be positioned within a close proximity of the glass.

KEY FEATURES

- **Wide range of sizes**
- **Some of the thinnest bullet resistant glass on the market**
- **High level of optical clarity for unobstructed vision**
- **Suitable for architectural and transport constructions**
- **Suitable for curves**
- **Printing and tinting options**

TYPICAL APPLICATIONS

- **Military vehicles**
- **Armoured vehicles**
- **VIP transport**
- **Cash in Transit**
- **Airports and embassies**
- **Government buildings**
- **Museums and banks**
- **High value retail**

Testing

Romag take quality standards and product testing very seriously. All our products are independently certified to BS EN 1063, with regular tests conducted at our in-house ballistic testing facility.

Specification

Romag continually updates its products. If your requirements are not met by those in the product selector below, please contact our sales team for further assistance



BS EN 1063 Product Selector

Test Classification

| Ballistic Spec No Spall (NS) Spall Allowed (S) | Additional No Spall (NS) Spall Allowed (S) | Thickness (mm) | Type of weapon | Calibre | Ammunition |
|--|--|-------------------|--|-----------------------------|-------------|
| BR1 S (see note 3) | | 13.5 | Pistol  | 22LR | L/RN |
| BR2 NS | | 17.7 | Hand Gun  | 9mm Luger (see note 1) | FJ/RN/SC |
| BR2 S (see note 3) | | 21.8 | Hand Gun  | 9mm Luger (see note 1) | FJ/RN/SC |
| BR3 NS | | 17.9 | Hand Gun  | .357 Mag (see note 1) | FJ/CB/SC |
| BR3 S (see note 3) | | 26.3 | Hand Gun  | .357 Mag (see note 1) | FJ/CB/SC |
| BR4 S (see note 3) | SG1 S | 31.0 | Hand Gun  | .44 Rem Mag | FJ/FN/SC |
| BR4 NS | SG1 NS | 22.0 | Hand Gun  | .44 Rem Mag (see note 2) | FJ/FN/SC |
| BR4 NS | SG2 NS | 30.7 | Hand Gun  | .44 Rem Mag (see note 2) | FJ/FN/SC |
| BR4 NS | SG1 NS | 24.7 | Hand Gun  | .44 Rem Mag (see note 2) | FJ/FN/SC |
| BR5 NS | SG2 NS | 35.7 | Rifle  | 5.56 x 45 (see note 2) | FJ/PB/SCP-1 |
| BR5 S (see note 3) | | 38.8 | Rifle  | 5.56 x 45 (see note 2) | FJ/PB/SCP-1 |
| BR6 S (see note 3) | | 52.0 | Rifle  | 7.62 x 51 (see note 1) | FJ/PB/SC |
| BR6 NS | SG2 NS | 37.5 | Rifle  | 7.62 x 51 (see note 1) | FJ/PB/SC |
| BR6 NS (see note 3) | | 70.6 | Rifle  | 7.62 x 51 (see note 1) | FJ/PB/SC |
| BR7 NS | | 73.8 | Rifle  | 7.62 x 51 (see note 1) | FJ/PB/HC1 |
| BR7 NS (see note 3) | | 83.3 | Rifle  | 7.62 x 51 (see note 1) | FJ/PB/HC1 |
| SG1 NS | BR4 NS | 22.0 | Shot Gun  | 12/70 | Solid Slug |
| SG1 NS | BR4 NS | 24.7 | Shot Gun  | 12/70 | Solid Slug |
| SG2 NS | BR4 NS | 30.7 | Shot Gun  | 12/70 | Solid Slug |
| SG1 S (see note 3) | BR4 S | 31.0 | Shot Gun  | 12/70 | Solid Slug |
| SG2 NS | BR5 NS | 35.7 | Shot Gun  | 12/70 | Solid Slug |
| SG2 NS | BR6 NS | 37.5 | Shot Gun  | 12/70 | Solid Slug |

Notes

- 1 Full steel jacket (plated)
- 2 Full copper alloy jacket
- 3 All glass

Ammunition Key

- L** Lead
- CB** Coned bullet
- FJ** Full metal jacket bullet
- FN** Flat nose
- HC1** Steel hard core, mass 3.7g
0.1g hardnose more than 63 HRC
- PB** Pointed bullet
- RN** Round nose
- SC** Soft core (lead)
- SCP1** Soft core ((lead) and steel penetrator (type SS 1)

