

Manual & Bullet Attack Glass

Manufactured in a microfloat process with cutting-edge technology. A special float glass with outstanding properties provides the basis for a wide variety of safety applications. In addition to its excellent homogeneity, it displays impressive optical quality – even surpassing low iron glass – while remaining low in specific weight. Suitable for impact and manual attack resistant glass in accordance with DIN EN 356 and bullet resistance in accordance with DIN EN 1063.

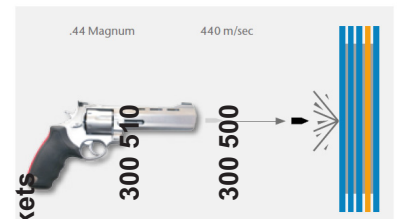
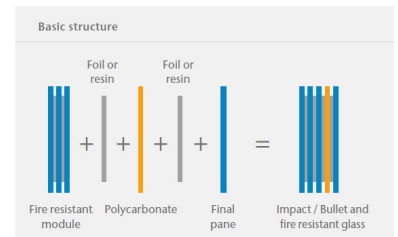
Manual attack resistant glasses are classified in different resistance classes depending on their properties. The standard EN 1627 describes the necessary requirements for manual attack resistant windows, doors and shutters and classifies them in 5 different resistance classes:

Resistance class	Glazing according to EN 356	Type of burglar and assumed break-in method
RC 2	P4A	Occasional burglar with simple lever tools
RC 3	P5A	Experienced burglar in a targeted attack on property using lever tools
RC 4		Experienced burglar in targeted attack on property regardless of noise level (lever-, strike- and drilling tools / cordless)
RC 5	P7B*	Experienced burglar in targeted attack on property with mechanical and electric tools
RC 6	P8B*	As in RC 5, but with more time and more powerful electric tools (angle grinder diameter Ø 230 mm)

Resistance class	Glazing according to EN 1063	Weapon/Caliber
FB 1	BR 1	Rifle 22 LR
FB 2	BR 2	9mm Parabellum
FB 3	BR 3	.357 Magnum
FB 4	BR 4	.357 Magnum + .44 Rem. Magnum
FB 5	BR 5	Rifle 5,56 x 45
FB 6	BR 6	Rifle 5,56 x 45 + Rifle 7,62 x 51
FB 7	BR 7	Rifle 7,62 x 51 (Hard steel core projectile)

The standard EN 1522 applies to all bullet resistant building elements and includes all components. This means this glass is tested and classified as complete structures in accordance with this standard.

* Certification to EN 356 is not possible if the opening is larger than 400 mm x 250 mm. Therefore, additional testing to EN 1627 using the appropriate tool set will be required.



What is the difference between each glass type?

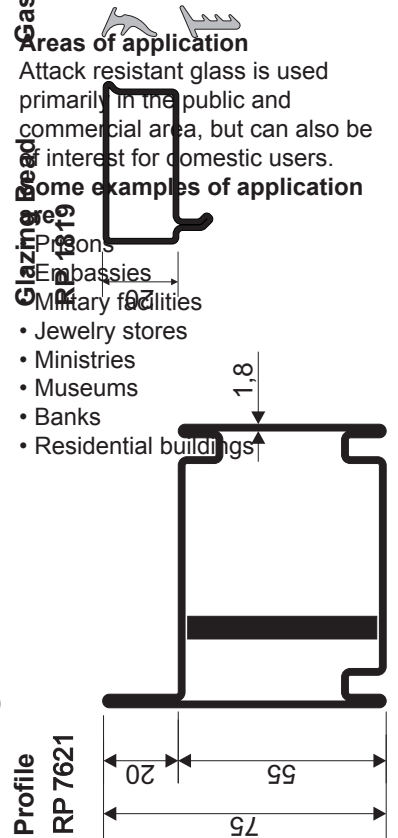
Protection of persons and property	
<p>Fire protection in accordance with EN 13501-2 + Manual attack resistance and bullet resistance in accordance with EN 356 and EN 1063</p>	<p>Manual attack resistance and bullet resistance in accordance with EN 356 and EN 1063</p>
<p>EI</p>	

Areas of application
 Attack resistant glass is used primarily in the public and commercial area, but can also be of interest for domestic users.

Some examples of application

- Prisons
- Embassies
- Military facilities
- Jewelry stores
- Ministries
- Museums
- Banks
- Residential buildings

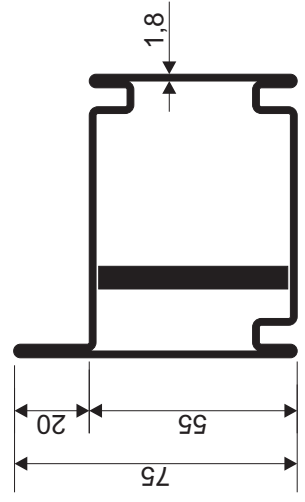
Framing Detail



Glastype	Article number	EN 356	EN 1063	Fire resistance	Thickness in mm	Weight in kgm2
Manual attack resistance - Standard products						
P4A	2.4.2	P4A	-	E 60	10	23
P5A	3.13.10	P5A	-	-	11	23
P6B	2.2.2	P6B	-	-	15	27
P7B	2.9.3	P7B	-	-	18	33
P8B	1.9.3	P8B	-	-	18	32
Manual attack resistance - Special products (suitable for panic doors RC 2 – RC 4)						
P8B P2	1.5.10	P8B P2	-	-	20	35
P8B PRC3	7.11.52)	P8B PRC3	-	-	34	58
P8B PRC4	7.12.0	P8B PRC4	-	-	50	82
Bullet resistance - Standard products						
BR2NS	1.2.3		BR2NS	-	17	32
BR2NS	1.4.5		BR2NS	EW 30/E 60	24	52
BR4NS	15.3.0		BR4NS	-	20	41
BR4NS	1.5.4	P8B	BR4NS	-	44	96
BR6NS	1.3.3	P8B	BR6NS	-	40	80
BR6NS	1.5.7	P8B	BR6NS	EI 30 /EW 60	63	137
PRC3 BR7NS	1.1.2	P8B	PRC3 BR7NS	EI 45 /EW 60	74	162
BR4NS	1.6.5		BR4NS	-	50	93
BR4NS	1.6.6		BR4NS	-	60	94
Fire protection & Bullet resistance - Standard products						
BR6NS	1.5.7	P8B	BR6NS	EI 30 /EW 60	63	137
BR7NS	1.1.2	P8B	BR7NS	EI 45 /EW 60	74	162

Framing Detail

Profile
RP 7621



Glazing Bead
RP 1819



Gaskets

