BS EN1063 2000

Glass in building. Security glazing. Testing and classification of resistance against bullet attack.

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 129 " Glass in building" the secretariat of which is held by IBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2000, and conflicting national standards shall be withdrawn at the latest by May 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The Main requirement for bullet-resistant glazing is to prevent the passage of projectiles from various types of weapon. The classification of bullet-resistance of glazing in this standard is a technical classification, based on common weapons and ammunition, in order of attacking power. As the variety of weapons and ammunition does not allow them all to be taken into account, a selection had to be made that covers most weapons and ammunition. The choice of bullet-resistant glazing is established by the user for each individual case.

1.Scope

This standard specifies performance requirements and test methods for the classification of the bullet-resistance of glass (consisting of one or more layer of glass) and glass/plastic composites.

NOTE 1: The term "bullet-resistant glazing" applies to products that have the obvious characteristics of glass, but it is understood to include also laminated products of glass and plastics.

This standard applies to:

- attack by handguns, rifles and shotguns;
- glazing in buildings, for interior and exterior use;

NOTE 2: For interior use at a temperature of (18 ± 5) °C. For exterior use the influence of outside temperature and weathering should be considered. Any additional requirements should be agreed between the purchaser and the vendor.

- the glazing product itself, assuming proper fixing.

NOTE 3: The protection provided by bullet-resistant glazing depends not only on the product itself, but also upon the design and fixing of the glass.

Table 1: Classification and test requirements for testing by bullet resistance of glazing: hand guns and rifles

Class	Type of Weapon	Calibre	Type	Mass g	Test conditions			
					Test Range m	Bullet Velocity m/s	nr. of strikes	Striking Distance mm
1) Full Steel jacket (plated) 2) Full copper alloy jacket * twist length (178 ± 10)mm ** twist length (254 ± 10)mm L -lead CB - coned bullet FJ - full metal jacket bullet FN - flat nose HCI - steel hard core, mass (3,7 ± 0,1) g, Hardness more than 63 HRC PB - pointed bullet RN - round nose SC - soft core (lead) SCPI - soft core (lead) and steel penetrator (type SS109)								
BR1	Rifle	0,22 LR	L/RN	2,6 ± 0,1	10,00 ± 0,5	360 ± 10	3	120 ± 10
BR2	Hand gun	9 mm Luger	FJ[1])/RN/SC	8,0 ± 0,1	5,00 ± 0,5	400 ± 10	3	120 ± 10
BR3	Hand gun	0,357 Magnum	FJ[1])/CB/SC	10,2 ± 0,1	5,00 ± 0,5	430 ± 10	3	120 ± 10
BR4	Hand gun	0,44 Rem. Magnum	FJ[2])/FN/SC	15,6 ± 0,1	5,00 ± 0,5	440 ± 10	3	120 ± 10
BR5	Rifle	5,56 x 45*	FJ[2])/PB/SCP	4,0 ± 0,1	10,00 ± 0,5	950 ± 10	3	120 ± 10
BR6	Rifle	7,62 x 51	FJ[1])/PB/SC	9,5 ± 0,1	10,00 ± 0,5	830 ± 10	3	120 ± 10
BR7	Rifle	7,62 x 51**	FJ[2])/PB/HC1	9,8 ± 0,1	10,00 ± 0,5	820 ± 10	3	120 ± 10

Table 2: Classification and test requirements for testing the bullet resistance of glazing: shot guns (SG)

Class	Type of Weapon	Calibre	Type	Mass g	Test conditions			
					Test Range m	Bullet Velocity m/s	nr. of strikes	Striking Distance mm
1) Brenneke								
SG1	Shot gun	cal. 12/70	Solid lead slug[1])	31,0 ± 0,5	10,00 ± 0,5	420 ±20	1	-
SG2	Shot gun	cal. 12/70	Solid lead slug[1])	31,0 ± 0,5	10,00 ± 0,5	420 ± 20	3	125 ± 10

NOTE1: The classes BR1….BR7 are classified in order of the level of protection offered. e.g. a panel complying with the requirements specified for a certain class complies with those specified for the preceding classes.

NOTE 2: Classes SG do not necessarily comply with the requirements specified in the classes BR, as the ammunition is different.