BURGLARY RESISTANCE

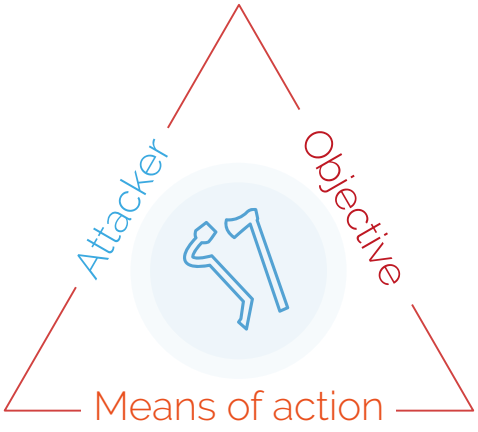
EN 1627-1630 - EN 356

A brief explanation

THE ATTACK CIRCUMSTANCES

There are a number of theories to define the risks and threats. We can approach it similarly to the fire triangle and define a "**risk triangle**" which is made up of three parameters:

- the attacker;
- the objective;
- the means of action.



To reduce the risk of attack and burglary, we will act precisely on each of those three parameters:

1. To avoid **the attacker** proceeding with his malicious act, we may for example raise awareness of the penalties to which they can be subjected.
2. We can also focus on **the objective** by increasing the difficulty of access, by reducing the temptations and knowledge of its surroundings.
3. Lastly, the **methods and means of action** are the specific areas in which we intervene as manufacturers of physical security solutions, but there are many other means, such as the frequency of security guard patrols, alarm systems etc.

Another theory expresses the risk using a fairly simple equation:

$$\text{Risk} = \frac{\text{threat} \times \text{vulnerability}}{\text{protection}}$$

- **the threat** represents the type of action likely to cause harm (*the attacker*);
- **the vulnerability** represents the level of exposure to the threat in a specific context (*the objective*);
- **the protection** consists of the actions taken to defend someone or something, to ensure that no harm is suffered (*the means of action*).

To reduce risks, one of the solutions will be to increase and guarantee the level of protection.

What proves that the expected level of protection is attained?
It is the attempted burglary test regulated by European standards and certification of a total solution that has been tested, examined and approved as a whole.

Crime typology

Identifying the threat	Petty crime	Professional crime	Serious crime
The attacker	Occasional criminal Opportunist	Experienced criminal Organised criminal	Terrorism Organised crime
Psychological profile	Amateur attackers: work by chance and without taking major risks; usually give up very easily when faced with dissuasive mechanisms	Experienced attackers: good technicians and well organised, they set precise targets; they may work in teams and prepare their actions	Specially trained attackers (drill): trained to attack and determined, they work in teams and keep fear under control; usually benefit from outside and inside complicity
Preferred targets	Homes, apartments and villas with or without valuables, small stores etc.	Businesses, storage facilities, jewellery shops, stores with valuables, banks etc.	Strategic state and military buildings, high-risk businesses, banks etc.
Method and means of action	Physical force and light tools	Hand-held perforating tools and small electric tools	Very substantial resources (human, financial, technical and equipment)
Equivalence to the level of standard EN 1627-1630	RC1 / RC2 / RC3	RC3 / RC4 / RC5	RC5 / RC6

The test circumstances

The sole reference at European level for the assessment of the performances of burglary-retardant joinery is the set of standards EN 1627-1630.

These standards offer a **classification system made up of six categories** (1 to 6 in increasing order of burglary resistance) and describe the test methods used to assess the resistance of these elements to static and dynamic pressure, as well as to manual burglary attempts. Standard **EN 1627 describes the test conditions and resistance classes.**

The tests take place in three stages:

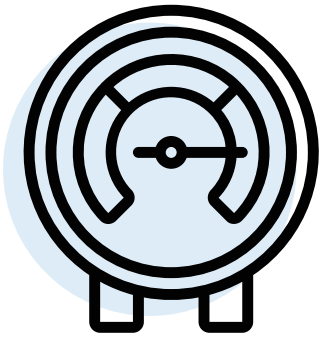
1. RESISTANCE TO STATIC PRESSURE
(EN 1628)

The doors, windows and partitions are subjected to **a force** exerted by a machine at various more "sensitive" points.

This pressure is 3 kN for classes 1 and 2, 6 kN for class 3, 10 kN for class 4, and 15 kN for classes 5 and 6. By way of comparison, 10 kN is more or less equivalent to a load of 1,020 kg.

2. RESISTANCE TO DYNAMIC PRESSURE
(EN 1629)

The resistance to dynamic pressure is assessed by aiming **a mass of 50 kg** at three impact points. For classes 1 and 2, the release distance is 450 mm; for class 3 it is 750 mm. For classes 4 and above, the standard does not provide for any tests under dynamic pressure, as the resistance under static pressure is very high and sufficient.



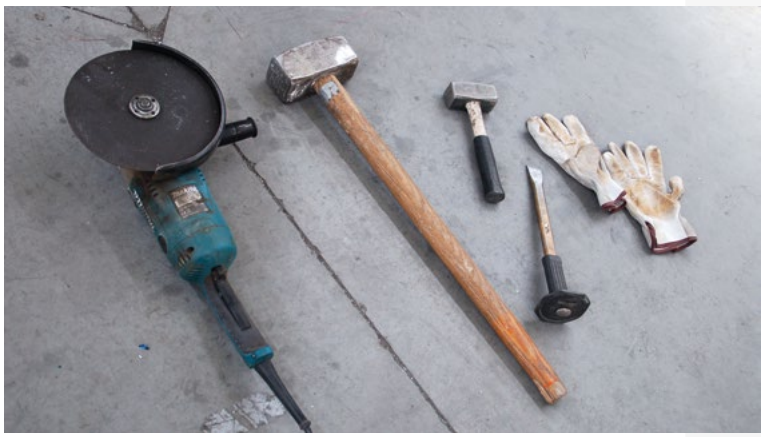
3. RESISTANCE TO MANUAL ATTEMPTED BURGLARY
(EN1630)

Unlike ballistic resistance which is subject to a performance requirement, here it is the means that are of paramount importance. The standard describes the means **(force, tools, duration, etc.)** implemented in order to bore a **hole with defined minimum dimensions**.

The tests are passed if the **template objects** (a rectangle, an ellipse and a circle) are unable to pass through any openings made during the test within the allocated time

During this test, the "attackers" are given a different **set of tools for each class**. The attackers can use those tools for a fixed period of time, as well as all the other tools listed in the lower classes.

The **total test time** includes the contact time, rest time, observation time and "tool change" time.



The attackers have the opportunity to study the plans of the joinery tested in advance to determine the potential vulnerabilities through which they could enter.
This gives them a considerable advantage over an actual assault situation.

The test circumstances

The EN 356 standard classifies glazings according to their performance in terms of resistance to vandalism (classes P1A to P5A) and burglary (classes P6B to P8B).

For vandal resistance tests, the glazing is tested with the repeated drop of a 4.1 kg steel ball. The higher the ball falls, the higher the resistance class.

Class	Drop height (m)	Energy (joules)	Number of impacts
P1A	1.5	60	3 in triangle
P2A	3	120	3 in triangle
P3A	6	240	3 in triangle
P4A	9	360	3 in triangle
P5A	9	360	9 (3X3 in triangle)

For the burglary resistance tests, the glazing is first broken with hammer strikes and then attacked with the ax, the numbers of strikes vary according to the classification sought.

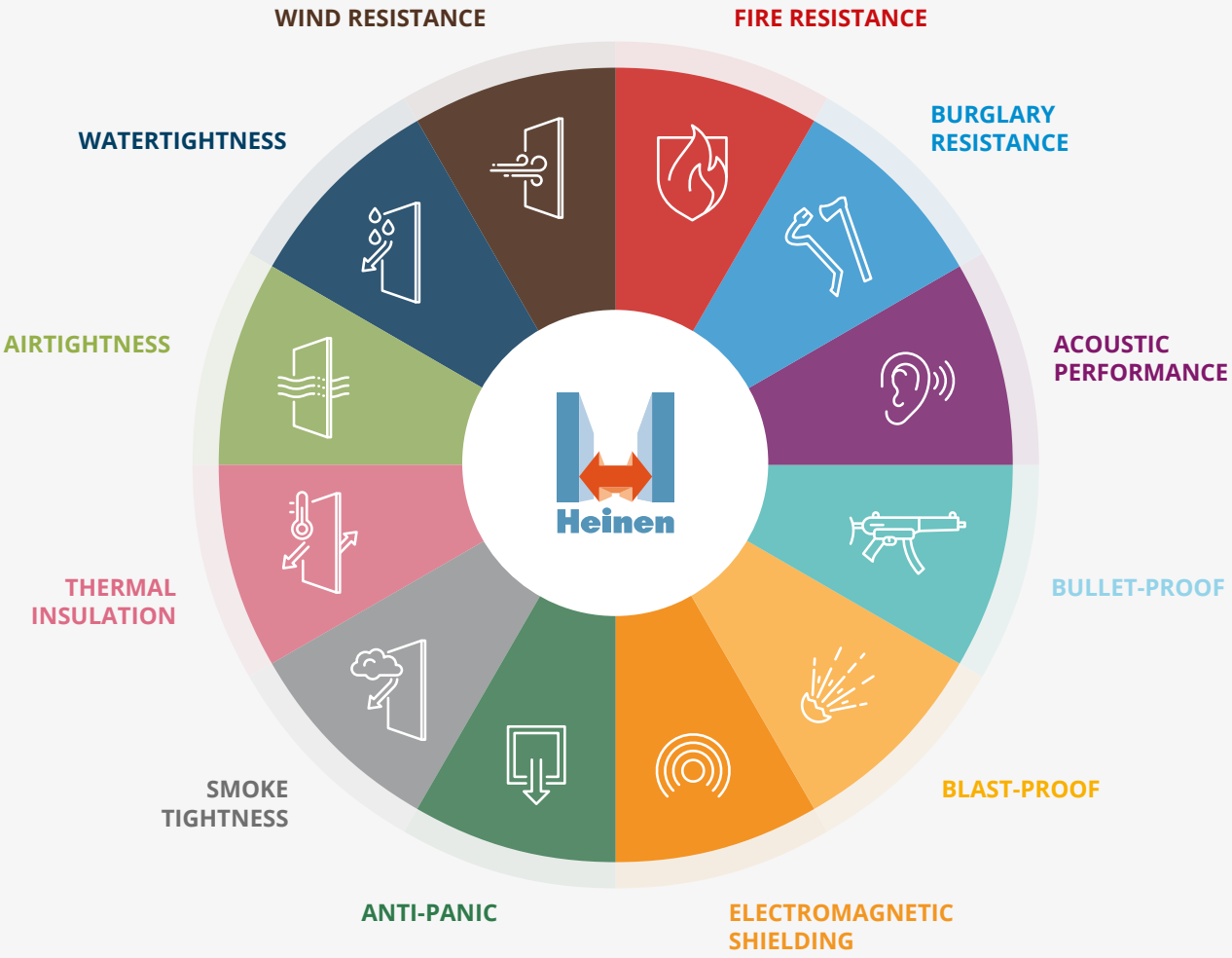
STANDARD EN 356 - ANTI-BREAK CLASSIFICATIONS			
Class	Number of hammer strikes	Number of ax strikes	Min. number of strikes
P6B	12	19	31
P7B	12	39	51
P8B	12	59	71

The classes and values

Class *(EN 1627)*	Class *(EN356) Minimum Requirement*	Burglar	Static tests *(EN 1628)*	Dynamic tests *(EN 1629)*	MANUAL TESTS - ATTEMPTED FORCED ENTRY (EN 1630)			
					Tool set	Illustration of some tools	Contact duration	Total test duration
RC1	**/**	Occasional	300 kg	50 kg 450 mm	Small simple tools, physical force		/	/
RC2	**P4A**	Occasional	300 kg	50 kg 450 mm	Above + simple tools (screwdriver, pliers, wood/plastic wedges, saws)		3 min	15 min
RC3	**P5A**	Moderate	600 kg	50 kg 750 mm	Above + additional screwdrivers, crowbar, small hammer, hand drill, drift pin		5 min	20 min
RC4	**P6B**	Experienced	1000 kg	/	Above + heavy hammer, axe, wood chisel, metal chisel, bolt-cutter, hand chisel and portable drill		10 min	30 min
RC5	***P7B**	Experienced	1500 kg	/	Above + electric tools (drill, portable jigsaw, sabre saw, angle grinder)		15 min	40 min
RC6	***P8B**	Experienced	1500 kg	/	Above + sledgehammer, steel wedge, powerful electric tools (grinder, impact hammer)		20 min	50 min

*For RC5 and RC6 the glazing must be tested folowing the EN1627-1630

Combining bespoke performance features



Heinen doors can combine performance features on a bespoke basis. Depending on your needs, one or more performance features are added to the basic, robust METAL+ door.

BURTON SECURITY

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