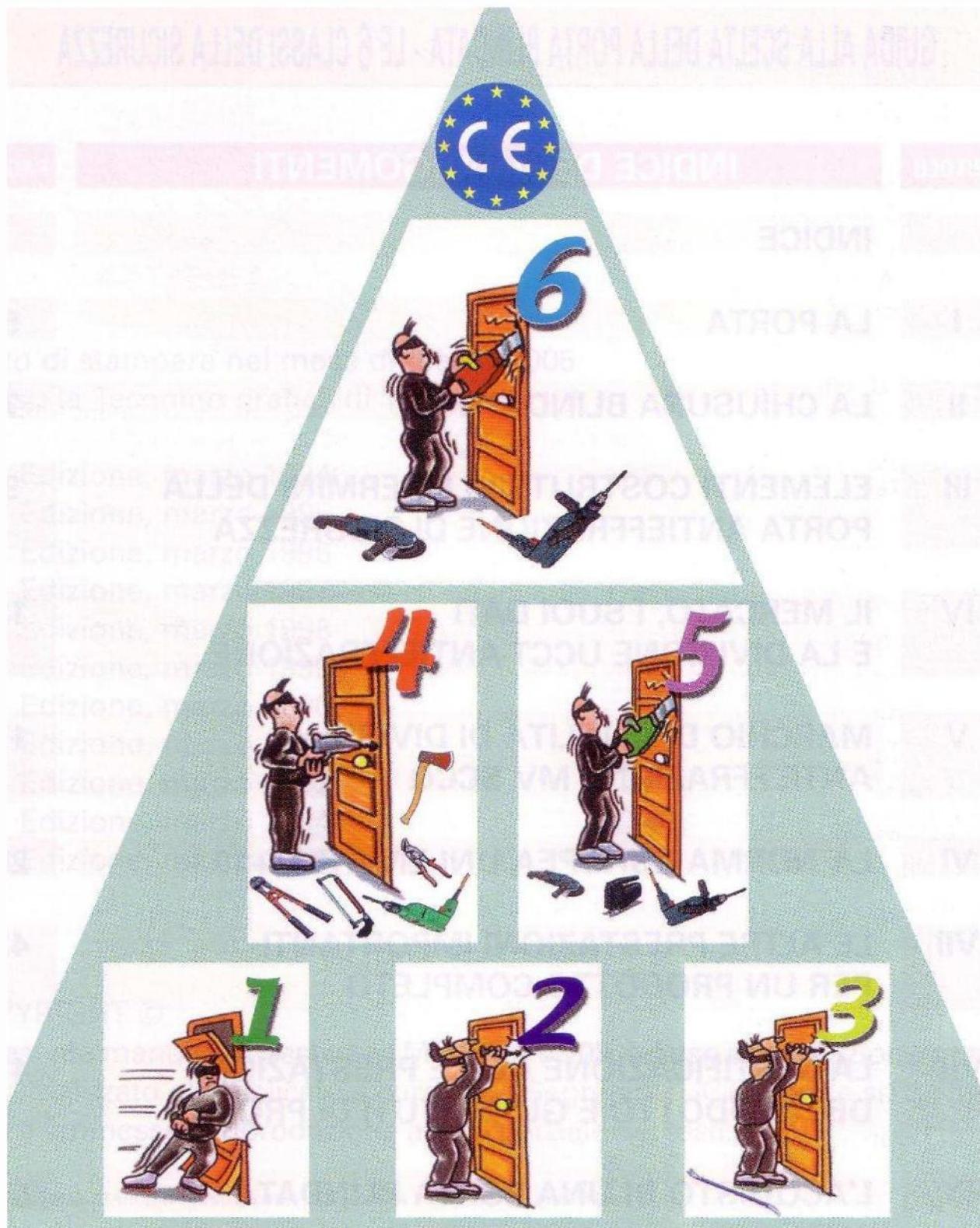


EUROPEAN REGULATION UNI ENV 1627 - 30



EUROPEAN REGULATION UNI ENV 1627/30

- This Document has been modified by American Master Door, LLC to clarify the English translation

INTRUSION and BURGLARY RESISTANCE CRITERIA For Doors, Windows, and Security Shutters

The following European Specifications define and comprise the requirements for establishing the Intrusion (Break-in) and Burglary Resistance Classification associated with Doors, Windows and Security Shutters.

UNI ENV 1627 Requirements and Classification

UNI ENV 1628 Resistance under a Static Load Method of Testing

UNI ENV 1629 Resistance under a Dynamic Load Method of Testing

UNI ENV 1630 Resistance to Manual Attack Method of Testing

In 1999, the Italian Security Door manufacturers agreed to unify the Italian regulations by superseding the old regulation UNI9569 established 1989, with this new European version.

This new European version is composed of four regulations: UNI ENV 1627, UNI ENV 1628, UNI ENV 1629, and UNI ENV 1630, which establish the specifications and test requirements for defining the Intrusion / Break-in Resistance Classification of this group of building components. The prefix name UNI indicates that the European regulation is established by the Italian regulator, UNI.

The products that are classified and conform to these regulations must pass testing for an engineered prototype by the approved Testing Institute. In addition, the product Manufacturer's must submit periodic production control documentation to guarantee continued conformance with the regulations.

The regulations require that the sample product be evaluated under three types of qualification endurance tests:

1. Static Load Testing
2. Dynamic Load Testing
3. Defined Levels of Manual Attack

Only samples that pass all three of these tests can be certified to one of the six Intrusion / Break-in Resistance Classifications. Table 7, defines these Classifications by establishing the type of tools and level of manual force applied during the test, that is intended to simulate the efforts of a dedicated assault team to break the product being tested.

There are CONVENTIONAL and REAL tests:

- The first tests ensure that the product can resist static and dynamic loading
- The second test simulates attempted breaking of the product defenses and measures the time duration (endurance) spent to penetrate that defense.

The endurance of the sample, and the type of tools used during the breaking operation, are established in accordance with the endurance class that the product intends to achieve.

It is important to recognize that the test duration is extremely long compared to an actual real time break-in situation. The intruder / burglar generally does not focus completely on the break-in attempt and will dedicate periods of time to ensure that their actions remain undetected.

The regulation test has the three (3) tests executed in sequence one after the other:

1. **Resistance under a static load**
2. **Resistance under a dynamic load**
3. **Resistance to manually forced failure (brake point)**

TABLE 7 - UNI ENV 1627/30 Classification Summary

CLASS	INTRUSION METHOD	APPLICATIONS
1	The intruder / burglar tries to break the window or the door using physical force: Kicks / Pushes etc.	Entrance and interior doors with access to goods with low intrinsic value.
2	The burglar tries to break the window or the door using simple tools: Screwdrivers, tongs, pincers.	Entrance and interior doors for: Residences, offices, schools and industrial / commercial buildings.
3	The burglar tries to break the window or the door using simple tools from Class 2 plus use of a Crowbar.	Entrance and interior doors for: Residences, Offices, Schools and industrial / commercial buildings.
4	An expert burglar tries to break-in with additional tools such as saws, hammers, chisels and drills.	Secure Residential Rooms, Commercial / Government offices, Hospitals, Industrial facilities.
5	An expert intruder attempts to break in using electric tools including drilling machines, grinding wheels with max disk diameter of 125 mm.	Banks, Secure Document Storage, Nuclear power and Military Facilities, and Embassies etc.
6	An expert intruder attempts break-in using high power electric tools such as drilling machines, and grinding wheels with a maximum disk diameter of 230 mm.	Banks, Secure Document Storage, Nuclear Power and Military facilities, and Embassies etc.

Test 1 - Resistance Under Static Load

Test 1, Resistance Under a Static Load, is executed by the gradual application of the specified test force for the applicable Class over one minute, and then maintaining that force for one additional minute.

The force is applied by specific pressure blocks at established points located as follows:

- the corner of the panel
- middle position between two fixing points
- on the fixing points (lock, hinges and their supports, moving and fix bolts)

The results of the test measure the amount of deformation on the door leaf from the applied load.

The loads range from a minimum of 3 kN to 15 kN (from 300 to 1,500 kg.) according to the application points and the class of the product. The limits of deformation range from 8 to 30 mm.

CLASS	1 and 2			3			4			5 and 6		
Point of Loading	kN	mm.	type	kN	mm.	type	kN	mm.	type	kN	mm.	type

Panels corners	3	8	1	6	8	1	10	8	1	15	8	1
Between fixing points	1,5	30	1-2	3	20	1-2	6	10	1-2	10	10	1-2
On fixing points	3-6*	10	1-2	6	10	1-2	10	10	1-2	15	10	1-2

* 3 kN in case of more than 1 lock; 6 kN in case of 1 lock

Test 2 - Resistance Under Dynamic Load

Test 2, Resistance Under a Dynamic Load, is made only for products in Classes 1, 2, and 3. The locking system is impacted by a weight of 30 kilograms, that is constructed of a leather sack filled with sand connected to a steel rope. The sack is swung from a height of 0.8 meters for Class 1 and 2 products, and from 1.2 meters for Class 3 products.

A successful test is achieved if no opening is present that would enable access to the operating mechanisms for the door, or break through other products.

Test 3 - Resistance to Manual Attack

Test 3 is associated with determining resistance to a simulated manual attack performed by a professional assault team. This test is scheduled only for classes 2 to 6.

Prior to beginning the test, the assault team performs preliminary inspections of the product to identify potential weak points. The preliminary test lasts $\frac{1}{4}$ of the total test time. Both segments of the tests are video recorded.

The duration of resistance to attack for each product Class ranges from 3 to 20 minutes. Regarding the overall test time, which includes the time to prepare the tools, and to select different tools from within the allowable group, the test duration ranges from 15 to 50 minutes.

The tools to be used are divided into 5 groups, according to type, dimension and power. Each group of tools is related to a specific Class.

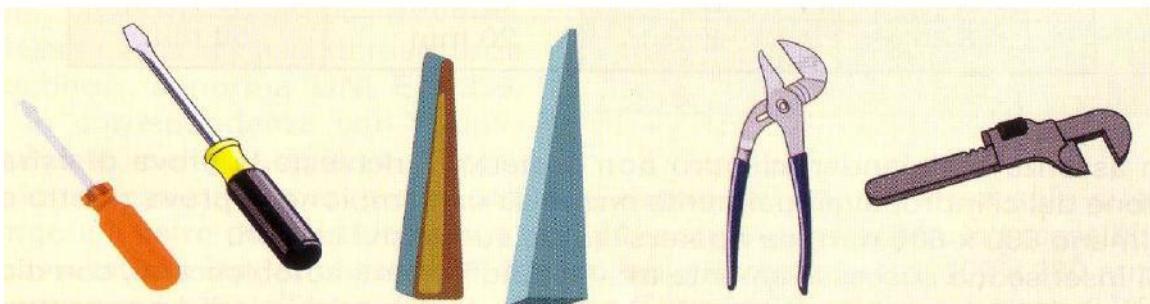
Class	Set of Tools	Resistance Duration	Max. Testing Time
1	No test	=	=
2	A	3 min.	15 min.
3	B	5 min.	20 min.
4	C	10 min.	30 min.
5	D	15 min.	40 min.
6	E	20 min.	50 min.

Below are graphical illustrations for each set of tools used in the assault test for each Classification.

SET OF TOOLS

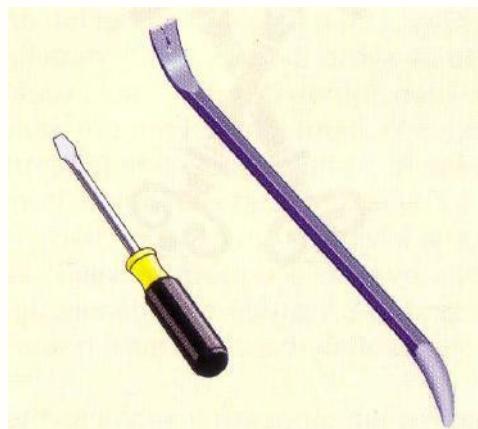
Group A – Class 2

1. Screwdriver , total length 260 mm., point 10 mm.
2. Screwdriver, total length 375, point 16 mm.
3. Wedge (wood or plastic), length 200 mm., width 80 mm., height 40 mm.
4. Adjustable tongs, total length 240 mm.
5. Monkey-wrench, total length 240 mm.



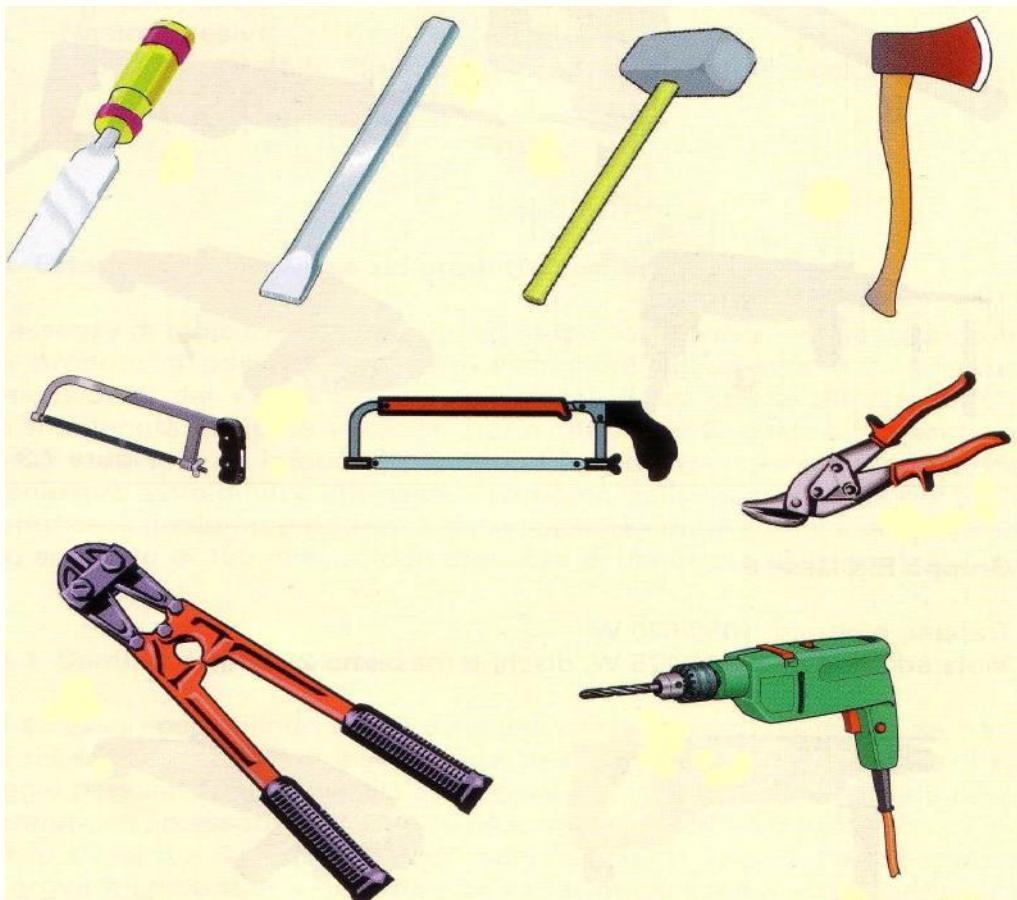
Group B – Class 3

1. Screwdriver , total length 375 mm., point 16 mm.
2. Crowbar, total length 710 mm.



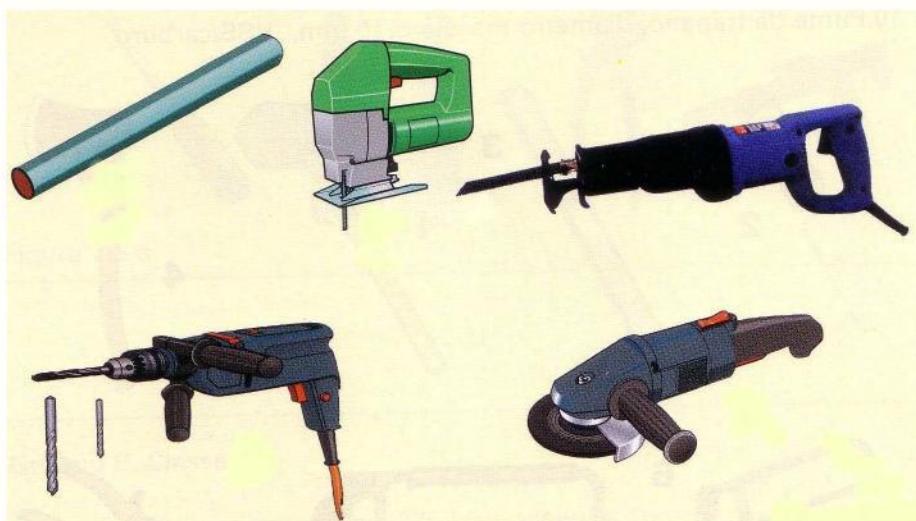
Group C – Class 4

1. Chisel, total length 350 mm, width of the blade 30 mm.
2. Chisel, total length 250 mm, width of the blade 30 mm
3. Hammer, total length 300 mm., max. weight 1,25 kg.
4. Axe, total length 350 mm.
5. Hand saw with HSS blades
6. Cutting nippers
7. Shears, total length 460 mm.
8. Electric drilling machine 320/160 W
9. Drilling machines bits with max. diam. 10 mm., HSS/carbide



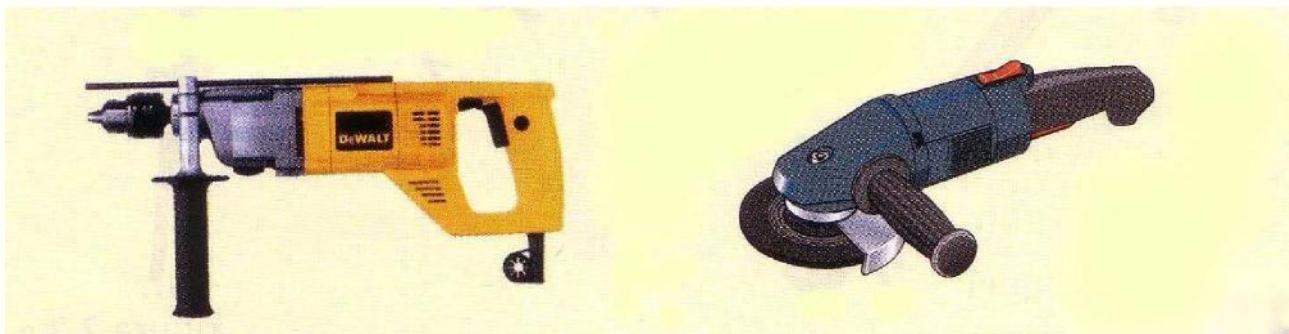
Group D – Class 5

1. Extension pipe.
2. Electric saw 550/335 W with blades
3. Electric saw 900/520 W with blades
4. Electric drilling machine 600/310 W
5. Drilling machines bits max. diam. 13 mm HSS/carbide
6. Drilling machine bits max. diam 50 mm. HSS/carbide
7. Grinding wheel 1000/575 W, disc with max. diam. 125 mm.



Group E – Class 6

1. Electric drilling machine 1050/ 620 W
2. Grinding wheel 1900/1175 W, disc with max. diam. 230 mm.



Summary:

The Resistance Classification assigned to a product ranges from a rating of 1 to 6. This classification rating is a guarantee that the product is manufactured to meet or exceed the stated tolerances for overall strength and resistance to intrusion. When comparing any products defined as being "Armored", only the 4 European rules - EN 1627, 1628, 1629, 1630 define and grant the specific levels of resistance.

At this time, there is not a similar classification system for "armored" door and window products in the United States, other than for detention facilities and Department of State (DOS) specifications.