

British & European standards

Cylinders

Cylinders are rated according to the British and European standard BS EN 1303, which was revised in 2005. The new version of the standard rates cylinders into six grades of security, of which Grade 6 is the highest. In addition, the standard now includes a separate Attack Resistance classification, which is graded from 0 to 2.

The full CEN classification is a 8-digit code, broken down as shown in the table opposite.

CLASSIFICATION	GRADES							
Category of Use	1	For use by people with a high incentive to exercise care, and with a small chance of misuse.						
Durability	4	25,000 cycles	5	50,000 cycles	6	100,000 cycles		
Door Mass	0	Not applicable						
Fire Resistance	0	Not suitable for fire doors			1	Suitable for fire/smoke resistant doors		
Safety	0	Not applicable						
Corrosion Resistance	0	No requirement	A	High resistance	B	Temperature -20°C to +80°C	C	High resistance & temp -20°-80°
Security	Six grades: see below							
Attack Resistance	Three grades: see below							

SECURITY RATING	GRADE 1	GRADE 2	GRADE 3	GRADE 4	GRADE 5	GRADE 6
Minimum number of effective differs	100	300	15,000	30,000	30,000	100,000
Minimum number of movable detainers	2	3	5	5	6	6
Maximum number of identical steps	100	70	60	60	60	50
Direct coding on key	Yes	Yes	No	No	No	No
Operation of security mechanism	1.5	1.5	1.5	1.5	1.5	1.5
Torque resistance of cylinder/plug (Nm)	2.5	5	15	15	15	15

ATTACK RESISTANCE RATING	GRADE 0	GRADE 1	GRADE 2
Drilling attack (minutes)	-	3/5	5/10
Chisel attack (blows)	-	30	40
Twisting attack (twists)	-	20	30
Plug extraction, 15kN (mins)	-	3	3
Torque resistance (Nm)	-	20	30

Padlocks

Padlocks are rated according to the British and European standard BS EN 12320.

The full CEN classification is a 7-digit code, of which the first 5 digits are not applicable. The sixth digit classifies corrosion resistance, which is either 1 (internal applications) or 2 (external applications).

The seventh digit classifies security, and is graded from 1 to 6 as shown in the table opposite.

PADLOCK SECURITY RATING	GRADE 1	GRADE 2	GRADE 3	GRADE 4	GRADE 5	GRADE 6
Minimum number of effective key differs	300	1000	2,500	5,000	10,000	20,000
Non-interpassing of keys - 1 interval (Nm)	1	1.5	1.5	1.5	1.5	1.5
Force on cylinder plug (kN)	-	-	4	5	10	15
Torque on cylinder plug (Nm)	-	2.5	5	15	20	30
Pulling of shackle and staple (kN)	3	5	15	30	70	100
Twisting of shackle and staple (Nm)	40	100	200	450	1200	2500
Cutting of shackle and staple (kN)	6	15	25	35	70	100
Impact on padlock body, shackle & staple	-	-	1.25kg 800mm -20°C	3.05kg 1000mm -20°C	6.55kg 1400mm -40°C	7.15kg 1500mm -40°C
Drilling on body, shackle & staple (min)	-	-	-	2	4	8
Sawing on body, shackle & staple (min)	-	-	-	2	4	8