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EN14846:2008

Electromechanically operated locks and striking plates

Example of classification:								
3	**X**	**9**	**E**	**0**	**P**	**7**	**1**	**3**
1°	**2°**	**3°**	**4°**	**5°**	**6°**	**7°**	**8°**	**9°**

Category of use (first digit)

grade 1: For use by people with a high incentive to exercise care and with a small chance of misuse (e.g. residential doors)

grade 2: For use by people with some incentive to exercise care but where there is some chance of misuse (e.g. office doors)

grade 3: For use by the public where there is little incentive to exercise care and where there is a high chance of misuse (e.g. doors in public buildings)

(1)	Operation time for locking and unlocking	Return force on the latch F2	Resistance to side load on the latch F1	Torque to operate the deadbolt M3	Strength of normal latch action and stops M5	Torque resistance of lockable follower M10
grade 1:	≤ 3,0 s	≥ 2,5 N	≥ 2 kN	≤ 1,5 Nm	≥ 20 Nm	≥ 60 Nm
grade 2:	≤ 3,0 s	≥ 2,5 N	≥ 3 kN	≤ 1,0 Nm	≥ 40 Nm	≥ 60 Nm
grade 3:	≤ 3,0 s	≥ 2,5 N	≥ 3 kN	≤ 0,8 Nm	≥ 60 Nm	≥ 80 Nm

Durability (second digit)

	Latch bolt		Deadbolt		
	Latch action	**Load on the latch**	**Automatically operated** ***(self-locking)***	**Electrically operated**	**Manually operated**
grade A:	50.000 cycles	0 N	50.000 cycles	50.000 cycles	12.500 cycles
grade B:	100.000 cycles	0 N	100.000 cycles	100.000 cycles	25.000 cycles
grade C:	200.000 cycles	0 N	200.000 cycles	200.000 cycles	50.000 cycles
grade F:	50.000 cycles	10 N	50.000 cycles	50.000 cycles	12.500 cycles
grade G:	100.000 cycles	10 N	100.000 cycles	100.000 cycles	25.000 cycles
grade H:	200.000 cycles	10 N	200.000 cycles	200.000 cycles	50.000 cycles
grade L:	100.000 cycles	25 N	100.000 cycles	100.000 cycles	25.000 cycles
grade M:	200.000 cycles	25 N	200.000 cycles	200.000 cycles	50.000 cycles
grade R:	100.000 cycles	50 N	100.000 cycles	100.000 cycles	25.000 cycles
grade S:	200.000 cycles	50 N	200.000 cycles	200.000 cycles	50.000 cycles
grade W:	100.000 cycles	120 N	100.000 cycles	100.000 cycles	25.000 cycles
grade X:	200.000 cycles	120 N	200.000 cycles	200.000 cycles	50.000 cycles
grade Y:	200.000 cycles	250 N	200.000 cycles	200.000 cycles	50.000 cycles

(1) main requirement related to the classification grade (indicative)

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Door mass and closing force (third digit)

	Door mass	Closing force
grade 1:	up to 100 kg door mass	50 N maximum closing force
grade 2:	up to 200 kg door mass	50 N maximum closing force
grade 3:	above 200 kg door mass as specified by the manufacturer	50 N maximum closing force
grade 4:	up to 100 kg door mass	25 N maximum closing force
grade 5:	up to 200 kg door mass	25 N maximum closing force
grade 6:	above 200 kg door mass as specified by the manufacturer	25 N maximum closing force
grade 7:	up to 100 kg door mass	15 N maximum closing force
grade 8:	up to 200 kg door mass	15 N maximum closing force
grade 9:	above 200 kg door mass as specified by the manufacturer	15 N maximum closing force.

Suitability for use on fire/smoke doors (fourth digit)

	Intended use	Fire rate classification
grade 0:	not approved for use on fire/smoke door assemblies	-
grade A:	suitable for use on smoke door assemblies	-
grade B:	suitable for use on smoke and fire door assemblies.	With a classification time of EI 15 min.
grade C:	suitable for use on smoke and fire door assemblies	With a classification time of EI 30 min.
grade D:	suitable for use on smoke and fire door assemblies	With a classification time of EI 60 min.
grade E:	suitable for use on smoke and fire door assemblies	With a classification time of EI 90 min.
grade F:	suitable for use on smoke and fire door assemblies	With a classification time of EI 120 min. or greater

Safety (fifth digit)

grade 0: No safety requirements

Corrosion resistance and temperature (sixth digit)

	Corrosion resistance		Temperature range	Humidity range - EN 60068-2-30
grade 0:	No defined corrosion resistance		No requirement	No humidity resistance.
grade A:	No defined corrosion resistance		No requirement	Level 1 (+ 40 °C with initial RH of 95 %)
grade B:	No defined corrosion resistance		No requirement	Level 2 (+ 55 °C with initial RH of 95 %)
grade C:	Low corrosion resistance	(24h NSS)	From +5°C to +55°C	Level 1 (+ 40 °C with initial RH of 95 %)
grade D:	Moderate corrosion resistance	(48h NSS)	From +5°C to +55°C	Level 1 (+ 40 °C with initial RH of 95 %)
grade E:	High corrosion resistance	(96h NSS)	From +5°C to +55°C	Level 1 (+ 40 °C with initial RH of 95 %)
grade F:	Very high corrosion resistance	(240h NSS)	From +5°C to +55°C	Level 1 (+ 40 °C with initial RH of 95 %)
grade G:	Moderate corrosion resistance	(48h NSS)	From -10°C to +55°C	Level 1 (+ 40 °C with initial RH of 95 %)
grade H:	High corrosion resistance	(96h NSS)	From -10°C to +55°C	Level 1 (+ 40 °C with initial RH of 95 %)
grade J:	Very high corrosion resistance	(240h NSS)	From -10°C to +55°C	Level 2 (+ 55 °C with initial RH of 95 %)
grade K:	Moderate corrosion resistance	(48h NSS)	From -25°C to +70°C	Level 2 (+ 55 °C with initial RH of 95 %)
grade L:	High corrosion resistance	(96h NSS)	From -25°C to +70°C	Level 2 (+ 55 °C with initial RH of 95 %)
grade M:	Very high corrosion resistance	(240h NSS)	From -25°C to +70°C	Level 2 (+ 55 °C with initial RH of 95 %)
grade N:	No defined corrosion resistance		From -25°C to +70°C	Level 1 (+ 40 °C with initial RH of 95 %)
grade P:	No defined corrosion resistance		From -25°C to +70°C	Level 2 (+ 55 °C with initial RH of 95 %)

(1) main requirement related to the classification grade (indicative)

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Security and drill resistance (seventh digit) – according to EN 12209:2003 § 4.2.7

grade 0: No security requirement
grade 1: Minimum security and no drill resistance
grade 2: Low security and no drill resistance
grade 3: Medium security and no drill resistance
grade 4: High security and no drill resistance
grade 5: High security with drill resistance
grade 6: Very high security and no drill resistance
grade 7: Very high security with drill resistance

(1)	Forcing torque on lever handles M9	Torque resistance of knob or lever handle on Rim night latches M10	side load on deadbolt and net drilling time F4	Minimum deadbolt projection before F5 d	End load and net drilling time F5	Resulting projection after F5 application d1	Resistance to pulling of hook/claw bolt F6	Resistance to disengaging of of hook/claw bolt F7	Resistance to forcing of locating devices in sliding door lock F8	Resistance to pulling off of knob on bored lock and latch sets F9
grade 1:	20 Nm	-	1 kN	10 mm	1 kN	8 mm	1 kN	1 kN	1 kN	1 kN
grade 2:	30 Nm	-	3 kN	12 mm	2 kN	10 mm	3 kN	2 kN	3 kN	1,5 kN
grade 3:	-	1 kN	5 kN	14 mm	4 kN	11 mm	5 kN	4 kN	4 kN	-
grade 4:	-	1 kN	7 kN	20 mm	5 kN	17 mm	7 kN	5 kN	5 kN	-
grade 5:	-	1 kN	7 kN /3 min.	20 mm	5 kN / 3 min.	17 mm	7 kN	5 kN	5 kN	-
grade 6:	-	1 kN	10 kN	20 mm	6 kN	17 mm	10 kN	6 kN	6 kN	-
grade 7:	-	1 kN	10 kN /5 min.	20 mm	6 kN / 5 min.	17 mm	10 kN	6 kN	6 kN	-

Security - electrical function (eighth digit)

grade 0: no requirement
grade 1: status indication - audio or visual signal from the lock that can be used as an indication that the bolt is fully thrown and deadlocked

Security - electrical manipulation (ninth digit)

(1)	Voltage drop protection	Protection against the effect of cutting cables	Protection against the effects of wire manipulation	Resistance to electromagnetic manipulation	Resistance to electrostatic discharge EN 61000-4-2	Resistance to electrostatic manipulation EN 61000-4-2
grade 0:	-	-	-	-	-	-
grade 1:	-	-	-	-	≥ 100 discharges 4 kV – in air 4 kV – in contact	-
grade 2:	Voltage dips (40%) Voltage dips (70%) Short interruptions (0%)	Short circuiting of the cables	-	form 80 [MHz] to 2000 [MHz]	≥ 100 discharges 15 kV – in air 8 kV – in contact	≥ 200 discharges 15 kV – in air 8 kV – in contact
grade 3:	Voltage dips (40%) Voltage dips (70%) Short interruptions (0%)	Short circuiting of the cables	Burst immunity test Surge immunity test	form 80 [MHz] to 2000 [MHz]	≥ 100 discharges 15 kV – in air 8 kV – in contact	≥ 200 discharges 15 kV – in air 8 kV – in contact

(1) main requirement related to the classification grade (indicative)