

EN12209:2016



Mechanically operated locks and locking plates

Example of classification:

3	X	9	B	0	G	7	0
1°	2°	3°	4°	5°	6°	7°	8°

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)

	Return force on the latch	Torque to operate the lock by key	Torque to operate the lock by follower	Strength of stops	Torque resistance lockable follower	Minimum follower restoring torque	Side load on the latch	Rim lock with lockable handle/knob	Strength of follower action	
	F1	M1	M2	M3	M4		F2	M4	Deadbolt	Latch
⁽¹⁾ grade 1:	≥ 2,5 N	≤ 1,2 Nm	≤ 10 Nm	20 Nm	30 Nm	≥ 0,8 Nm	2 kN	0,4 [kN]x max radius [mm]	30 Nm	20 Nm
grade 2:	≥ 2,5 N	≤ 1,0 Nm	≤ 7 Nm	40 Nm	50 Nm	≥ 0,8 Nm	3 kN		30 Nm	20 Nm
grade 3:	≥ 2,5 N	≤ 0,8 Nm	≤ 5 Nm	60 Nm	70 Nm	≥ 0,8 Nm	3 kN		30 Nm	20 Nm

Durability (second digit)

	Latch bolt		Shared latch action			Deadbolt	
	by handle	Load	by key	by handle	Load	Manual by key	Self-locking
grade A:	50 000 cycles	0 N	12.500 cycles	37.500 cycles	0 N	12.500 cycles	50 000 cycles
grade B:	100 000 cycles	0 N	25.000 cycles	75.000 cycles	0 N	25.000 cycles	100 000 cycles
grade C:	200 000 cycles	0 N	50.000 cycles	150.000 cycles	0 N	50.000 cycles	200 000 cycles
grade G:	100 000 cycles	10 N	25.000 cycles	75.000 cycles	10 N	25.000 cycles	100 000 cycles
grade H:	200 000 cycles	10 N	50.000 cycles	150.000 cycles	10 N	50.000 cycles	200 000 cycles
grade L:	100 000 cycles	25 N	25.000 cycles	75.000 cycles	25 N	25.000 cycles	100 000 cycles
grade M:	200 000 cycles	25 N	50.000 cycles	150.000 cycles	25 N	50.000 cycles	200 000 cycles
grade R:	100 000 cycles	50 N	25.000 cycles	75.000 cycles	50 N	25.000 cycles	100 000 cycles
grade S:	200 000 cycles	50 N	50.000 cycles	150.000 cycles	50 N	50.000 cycles	200 000 cycles
grade W:	100 000 cycles	120 N	25.000 cycles	75.000 cycles	120 N	25.000 cycles	100 000 cycles
grade X:	200 000 cycles	120 N	50.000 cycles	150.000 cycles	120 N	50.000 cycles	200 000 cycles

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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)

- grade 0:** not verified for use on fire resisting /smoke control doorset assemblies
- grade A:** for use on smoke control doorset assemblies based on a test in accordance with EN 1634-3 where the lock contributes to the integrity as described in EN12209 Annex A
- grade B:** for use on smoke control and fire resisting doorset assemblies based on a test in accordance with EN 1634-1 or EN 1634- 2 where the lock contributes to the integrity as described in EN12209 Annex A
- grade N:** for use on smoke control and fire resisting doorset assemblies based on tests where the lock does not contribute to keeping the door in a closed position during the fire resisting and/or smoke control test ref. EN12209 Annex A

Safety (fifth digit)

- grade 0:** No safety requirements

Corrosion resistance and temperature (sixth digit)

	Corrosion resistance	Temperature range
grade 0:	no defined corrosion resistance	no temperature requirement
grade A:	low corrosion resistance (24h NSS)	no temperature requirement
grade C:	high corrosion resistance (96h NSS)	no temperature requirement
grade D:	very high corrosion resistance (240h NSS)	no temperature requirement
grade F:	high corrosion resistance (96h NSS)	from -10 °C to +60 °C
grade G:	very high corrosion resistance (240h NSS)	from -10 °C to +60 °C

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Security and drill resistance (seventh digit)

- 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 M7	Torque resistance of lockable follower M5	Torque resistance rim lock with an integral lockable handle M5	End load and net drilling time F5	Minimum deadbolt projection L1	Resulting projection L2	Minimum deadbolt hook projection H1	Resulting projection d	Resistance to pulling of anti-separation bolt and net drilling time F6	Resistance to forcing of locating devices in sliding door lock and net drilling time F7	Resistance to pulling off of knob on bored lock and latch sets F8	Side load on deadbolt and drilling F4
grade 0:	-	-	1,0 [kN] x Max. radius [mm]	-	-	-	-	-	-	-	-	-
grade 1:	20 Nm	60 Nm		1 kN	10 mm	8 mm	5 mm	3 mm	1 kN	1 kN	1 kN	1 kN
grade 2:	30 Nm	80 Nm		2 kN	12 mm	10 mm	5 mm	3 mm	3 kN	3 kN	1,5 kN	3 kN
grade 3:	-	100 Nm		4 kN	14 mm	11 mm	5 mm	3 mm	5 kN	4 kN	-	5 kN
grade 4:	-	150 Nm		5 kN	20 mm	17 mm	5 mm	3 mm	7 kN	5 kN	-	7 kN
grade 5:	-	150 Nm		5 kN / 3 min.	20 mm	17 mm	5 mm	3 mm	7 kN / 3 min.	5 kN / 3 min.	-	7 kN / 3 min.
grade 6:	-	200 Nm		6 kN	20 mm	17 mm	5 mm	3 mm	10 kN	6 kN	-	10 kN
grade 7:	-	200 Nm		6 kN / 5 min.	20 mm	17 mm	5 mm	3 mm	10 kN / 5 min.	6 kN / 5 min.	-	10 kN / 5 min.

Key identification requirement (eighth digit)

- grade 0:** No requirements (e.g. lock operated by cylinder according to EN1303 or EN15684)
- grade A:** Minimum three detaining elements
- grade B:** Minimum five detaining elements
- grade C:** Minimum five detaining elements extended number of effective differs
- grade D:** Minimum six detaining elements
- grade E:** Minimum six detaining elements extended number of effective differs
- grade F:** Minimum seven detaining elements
- grade G:** Minimum seven detaining g elements extended number of effective differs
- grade H:** Minimum eight detaining elements extended number of effective differs

(¹)	Min. nr. of detaining elements	Min. nr. of effective differs	Min. nr. of differing steps height on key	Non interpassing of keys	Coding protection
grade 0:	No requirements (e.g. lock operated by cylinder according to EN1303 or EN15684)				
grade A:	3	100	2	YES	NO
grade B:	5	1.000	3	YES	YES
grade C:	5	10.000	3	YES	YES
grade D:	6	4.000	3	YES	YES
grade E:	6	20.000	3	YES	YES
grade F:	7	6.000	4	YES	YES
grade G:	7	50.000	4	YES	YES
grade H:	8	100.000	4	YES	YES