EN STANDARDS OVERVIEW

For determination of the Classification Coding System

EN 1154:1996 + A1:2002 (D)

Door closers

EN 1155:1997 + A1:2002 (D)

Hold-open devices

EN 1158:1997 + A1:2002 (D)

Door coordinator devices

EN 1906:2012 (D)

Lever handles and knob furniture

EN 179:2008 (D)

Emergency exit devices with lever handle/push pad

EN 1125:2008 (D)

Panic exit devices operated by a horizontal bar

EN 12209:2003 (D)

Locks and latches

EN 1935:2002 (D)

Hinges

EN 1154:1996 + A1:2002 (D)

Door closers

Classification Coding System - e.g. ECO TS-61

1	2	3	4	5	6
4	8	5 2	1	1	4

1 Category of use

Grade 3: For closing doors from at least 105° open
Grade 4: For closing doors from 180° open

2 Durability

Only one test duration is identified for door closers manufactured to this standard:
Grade 8: 500.000 Test cycles

3 Door closer power size

Grade 1-7: See table below: Where a door closer provides a range of power sizes both the **minimum and the maximum** sizes shall be identified

Door closer power size	Recommended door leaf width	Test door mass	Closing moment				Opening moment	Door closer efficiency
			between 0° and 4°		between 88° and 92°	any other angle of opening	between 0° and 60°	between 0° and 4°
	mm (max.)	kg	Nm (min.)	Nm (max.)	Nm (min.)	Nm (min.)	Nm (max.)	% (min.)
1	750	20	9	13	3	2	26	50
2	850	40	13	18	4	3	36	50
3	950	60	18	26	6	4	47	55
4	1.100	80	26	37	9	6	62	60
5	1.250	100	37	54	12	8	83	65
6	1.400	120	54	87	18	11	134	65
7	1.600	160	87	140	29	18	215	65

4 Suitability for use on fire/smoke doors

Grade 0: Not suitable for use on fire/smoke door assemblies
Grade 1: Suitable for use on fire/smoke door assemblies

5 Safety

Grade 1: All door closers are required to satisfy the essential requirement of safety in use; Therefore only grade 1 is identified

6 Corrosion resistance

Grade 0: No defined corrosion resistance
Grade 1: Mild resistance
Grade 2: Moderate resistance
Grade 3: High resistance
Grade 4: Very high resistance

EN 1155:1997 + A1:2002 (D)

Electrically powered hold-open devices

Classification Coding System - e.g. ECO SR-EFR

1	2	3	4	5	6
3	5	6 3	1	1	0

1 Category of use

Grade 3: For doors in use by the public and others, with little incentive to take care, i.e. where there is some chance of misuse of the door

2 Durability

Two test durations are identified for devices manufactured to this standard:

Grade 5: 50.000 Test cycles

Grade 8: 500.000 Test cycles

3 Hold-open power size

Grade 3-7: See table below: Where an electrically powered hold-open device is suitable for a range of door closer power sizes, both the **minimum and maximum** power sizes shall be identified

Hold-open power size	Recommended door leaf width mm (max.)	Test door mass kg	Overload test drop weight kg	Test door friction Nm (max.)
3	950	60	15	0,3
4	1.100	80	18	0,4
5	1.250	100	21	0,5
6	1.400	120	27	0,6
7	1.600	160	36	0,8

4 Suitability for use on fire/smoke doors

Grade 1: Suitable for use on fire/smoke door assemblies

5 Safety

Grade 1: All electrically powered hold-open devices are required to satisfy the essential requirement of safety in use; Therefore only grade 1 is identified

6 Corrosion resistance

Grade 0: No defined corrosion resistance

Grade 1: Mild resistance

Grade 2: Moderate resistance

Grade 3: High resistance

Grade 4: Very high resistance

EN 1158:1997 + A1:2002 (D)

Door coordinator devices

Classification Coding System - e.g. ECO SR

1	2	3	4	5	6
3	5	6 3	1	1	3

1 Category of use

Grade 3: For all internal and external doors in use by the public and others, with little incentive to take care, i.e. where there is some chance of misuse of the door

2 Durability

Two test durations are identified for door coordinator devices manufactured to this standard:

Grade 5: 50.000 Test cycles

Grade 8: 500.000 Test cycles (for door coordinator devices incorporated in, or for use in conjunction with, automatic swing door operators)

3 Door coordinator size

Grade 3-7: See table below: Where a door coordinator device is suitable for a range of door closer power sizes, both the **minimum and maximum** sizes shall be identified

Door coordinator size	Recommended door leaf width mm (max.)	Test door mass kg	Distance between hinge centre lines mm (max.)	Test door friction Nm (max.)
3	950	60	1.900	0,3
4	1.100	80	2.200	0,4
5	1.250	100	2.500	0,5
6	1.400	120	2.800	0,6
7	1.600	160	3.200	0,8

4 Suitability for use on fire/smoke doors

Grade 0: Not suitable for use on fire/smoke door assemblies

Grade 1: Suitable for use on fire/smoke door assemblies

5 Safety

Grade 1: All door coordinator devices are required to satisfy the essential requirement of safety in use; Therefore only grade 1 is identified

6 Corrosion resistance

Grade 0: No defined corrosion resistance

Grade 1: Mild resistance

Grade 2: Moderate resistance

Grade 3: High resistance

Grade 4: Very high resistance

EN 1906:2012 (D)

Lever handles and knob furniture

Classification Coding System - e.g. OKL Magis

1	2	3	4	5	6	7	8
4	D9	–	B1	1	5	0	B

1 Category of use

Grade 1: Medium frequency of use, high incentive to exercise care, small chance of misuse, e.g. internal residential doors
Grade 2: Medium frequency of use, some incentive to exercise care, some chance of misuse, e.g. internal office doors
Grade 3: High frequency of use, little incentive to exercise care, high chance of misuse, e.g. public office doors
Grade 4: High frequency of use on doors which are subject to violent usage, e.g. football stadiums, schools, public toilets

2 Durability

Grade 6: 100.000 Test cycles
Grade 7: 200.000 Test cycles
Grade D9: MPAZert 1 million Test cycles

3 Door mass

Grade –: No classification

4 Fire resistance

Grade 0: No performance determined
Grade A: For use on smoke-control doors
Grade A1: For use on smoke-control doors, tested with 200.000 cycles on a test door
Grade B: For use on smoke-control and fire-resistant doors
Grade B1: For use on smoke-control and fire-resistant doors, tested with 200.000 cycles on a test door
Grade C: For use on smoke-control and fire-resistant doors with requirements for fire protection inlays in backplate, rose and escutcheon
Grade C1: For use on smoke-control and fire-resistant doors with requirements for fire protection inlays in backplate, rose and escutcheon, tested with 200.000 cycles on a test door
Grade D: For use on smoke-control and fire-resistant doors with requirements for special core in the handle/knob
Grade D1: For use on smoke-control and fire-resistant doors with requirements for special core in the handle/knob, tested with 200.000 cycles on a test door

5 Safety

Grade 0: Normal use
Grade 1: Safety applications

6 Corrosion resistance

Grade 0: No
Grade 1: Mild
Grade 2: Moderate
Grade 3: High
Grade 4: Very high
Grade 5: Extra high

7 Security

Grade 0: No burglary resistance
Grade 1: Mild burglary resistance
Grade 2: Moderate burglary resistance
Grade 3: High burglary resistance
Grade 4: Extra high burglary resistance

8 Type of operation

Type A: Spring-assisted furniture
Type B: Spring-loaded furniture (with Carrier 90° swing)
Type U: Unsprung furniture

EN 179:2008 (D)

Emergency exit devices with lever handle/push pad

Classification Coding System - e.g. ECO GBS 92 D / OKL Magis, D-110

1	2	3	4	5	6	7	8	9	10
3	7	7	B	1	3	5	2	A	B

1 Category of use

Grade 3: High frequency of use where there is little incentive to exercise care, i.e. where there is a chance of an accident occurring and of misuse

2 Durability

Grade 6: 100.000 Test cycles
Grade 7: 200.000 Test cycles

3 Door mass

Grade 5: Up to 100 kg
Grade 6: Up to 200 kg
Grade 7: Above 200 kg

4 Suitability for use on fire/smoke doors

Grade 0: Not approved for use on fire/smoke door assemblies
Grade A: Suitable for use on fire/smoke door assemblies based on the requirements of **B.1**
Grade B: Suitable for use on fire/smoke door assemblies based on the requirements of **EN 1634-1**

5 Safety

Grade 1: All panic and emergency devices have a critical safety function therefore only the top grade 1 is identified

6 Corrosion resistance

Two grades of corrosion resistance given in **EN 1670:2007**, 5.6:
Grade 3: 96 h (high resistance)
Grade 4: 240 h (very high resistance)

7 Security

Grade 2: 1.000 N
Grade 3: 2.000 N
Grade 4: 3.000 N
Grade 5: 5.000 N

8 Projection of operating element

Grade 1: Projection up to 150 mm (large projection)
Grade 2: Projection up to 100 mm (standard projection)

9 Type of operation

Type A: Emergency exit device with “lever handle” operation
Type B: Emergency exit device with “push pad” operation

10 Field of door application

Grade A: Outward opening single exit door, double exit door: active or inactive leaf
Grade B: Outward opening single exit door only
Grade C: Outward opening double exit door: inactive leaf only
Grade D: Inward opening single exit door only

EN 1125:2008 (D)

Panic exit devices operated by a horizontal bar

Classification Coding System - e.g. ECO GBS 93 B / EPN 2000 II

1	2	3	4	5	6	7	8	9	10
3	7	7	B	1	3	2	2	B	A

1 Category of use

Grade 3: High frequency of use where there is little incentive to exercise care, i.e. where there is a chance of an accident occurring and of misuse

2 Durability

Grade 6: 100.000 Test cycles
Grade 7: 200.000 Test cycles

3 Door mass

Grade 5: Up to 100 kg
Grade 6: Up to 200 kg
Grade 7: Above 200 kg

4 Suitability for use on fire/smoke doors

Grade 0: Not approved for use on fire/smoke door assemblies
Grade A: Suitable for use on fire/smoke door assemblies based on the requirements of **B.1**
Grade B: Suitable for use on fire/smoke door assemblies based on the requirements of **EN 1634-1**

5 Safety

Grade 1: All panic and emergency devices have a critical safety function therefore only the top grade 1 is identified

6 Corrosion resistance

Two grades of corrosion resistance given in **EN 1670:2007**, 5.6:
Grade 3: 96 h (high resistance)
Grade 4: 240 h (very high resistance)

7 Security

Grade 2: Panic devices are primarily for the operation of a door from inside and security is secondary to that of safety

8 Projection of horizontal bar

Grade 1: Projection up to 150 mm (large projection)
Grade 2: Projection up to 100 mm (standard projection)

9 Type of horizontal bar operation

Type A: Panic exit device with “push-bar” operation
Type B: Panic exit device with “touch-bar” operation

10 Field of door application

Grade A: Single door, double door: active or inactive leaf
Grade B: Single door only
Grade C: Double door, inactive leaf only

EN 12209:2003 (D)

Locks and latches

Classification Coding System - e.g. ECO GBS 81

1	2	3	4	5	6	7	8	9	10	11
3	M	6	1	0	D	6	B	C	2	0

1 Category of use

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, high chance of misuse, e.g. doors in public buildings

2 Durability

Grade A: 50.000 Test cycles; no load on latch bolt
Grade B: 100.000 Test cycles; no load on latch bolt
Grade C: 200.000 Test cycles; no load on latch bolt
Grade F: 50.000 Test cycles; 10 N load on latch bolt
Grade G: 100.000 Test cycles; 10 N load on latch bolt
Grade H: 200.000 Test cycles; 10 N load on latch bolt
Grade L: 100.000 Test cycles; 25 N load on latch bolt
Grade M: 200.000 Test cycles; 25 N load on latch bolt
Grade R: 100.000 Test cycles; 50 N load on latch bolt
Grade S: 200.000 Test cycles; 50 N load on latch bolt
Grade W: 100.000 Test cycles; 120 N load on latch bolt
Grade X: 200.000 Test cycles; 120 N load on latch bolt

3 Door mass and closing force

Grade 1: Up to 100 kg; 50 N max. closing force
Grade 2: Up to 200 kg; 50 N max. closing force
Grade 3: Above 200 kg (or specified by the manufacturer); 50 N max. closing force
Grade 4: Up to 100 kg; 25 N max. closing force
Grade 5: Up to 200 kg; 25 N max. closing force
Grade 6: Above 200 kg (or specified by the manufacturer); 25 N max. closing force
Grade 7: Up to 100 kg; max. 15 N closing force
Grade 8: Up to 200 kg; max. 15 N closing force
Grade 9: Above 200 kg (or specified by the manufacturer); 15 N max. closing force

4 Suitability for use on fire/smoke doors

Grade 0: Not approved for use on fire/smoke resisting door assemblies
Grade 1: Suitable for use on fire/smoke resisting door assemblies, subject to satisfactory assessment of the contribution of the lock or latch to the fire resistance of specified fire/smoke resisting door assemblies

5 Safety

Grade 0: No safety requirement

6 Corrosion resistance and temperature

Grade 0: No defined corrosion resistance, no temperature requirement
Grade A: Low corrosion resistance, no temperature requirement
Grade B: Moderate corrosion resistance, no temperature requirement
Grade C: High corrosion resistance, no temperature requirement
Grade D: Very high corrosion resistance, no temperature requirement
Grade E: Moderate corrosion resistance,
Temperature requirement: from -20°C - +80°C
Grade F: High corrosion resistance,
Temperature requirement: -20°C - +80°C
Grade G: Very high corrosion resistance,
Temperature requirement: -20°C - +80°C

7 Security and drill resistance

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

8 Field of door application

Grade	Type	Door	Forend Supported	Egress control by key
A	Mortice	Hinged and sliding door*	No	
B	Mortice	Hinged door	No	
C	Mortice	Sliding door	No	
D	Rim	Hinged and sliding door*	No	
E	Rim	Hinged door	No	
F	Rim	Sliding door	No	
H	Mortice	Hinged door	Yes	
J	Rim	Hinged and sliding door*	No	
K	Mortice	Hinged door	No	Yes
L	Mortice	Sliding door	No	Yes
M	Rim	Hinged door	No	Yes
N	Rim	Sliding door	No	Yes
P	Mortice	Hinged door	Yes	Yes
R	Rim	Hinged door (Inward opening only)	No	Yes
S	Mortice	Hinged and sliding door*	No	Yes
T	Rim	Hinged and sliding door*	No	Yes

*Unrestricted

9 Type of key operation and locking

Grade 0: Not applicable
Grade A: Cylinder lock or latch; manually locking
Grade B: Cylinder lock or latch; automatically locking
Grade C: Cylinder lock or latch; manually locking with intermediate locking
Grade D: Lever lock or latch; manually locking
Grade E: Lever lock or latch; automatically locking
Grade F: Lever lock or latch; manually locking with intermediate locking
Grade G: Lock or latch without key operation; manually locking
Grade H: Lock without key operation; automatically locking

10 Type of spindle operation

Grade 0: Lock or latch without follower
Grade 1: Lock or latch for knob or sprung lever handle operation
Grade 2: Lock or latch for unsprung lever handle operation
Grade 3: Lock or latch for heavy duty unsprung lever handle operation
Grade 4: Lock or latch for heavy duty unsprung lever handle operation specified by the manufacturer

11 Key identification requirement

Grade 0: No requirements
Grade A: Minimum three detaining elements
Grade B: Minimum five detaining elements
Grade C: Minimum five detaining elements,
Extended number of effective locking elements differ
Grade D: Minimum six detaining elements
Grade E: Minimum six detaining elements,
Extended number of effective locking elements differ
Grade F: Minimum seven detaining elements
Grade G: Minimum seven detaining g elements,
Extended number of effective locking elements differ
Grade H: Minimum eight detaining elements,
Extended number of effective locking elements differ

EN 1935:2002 (D)

Hinges

Classification Coding System - e.g. ECO OBX- and OBN-20 Hinges

1	2	3	4	5	6	7	8
4	7	7	1	1	4	1	14

1 Category of use

Grade 1: **Light duty**
Hinges for use on doors or windows in housing or other living areas and in buildings where there is a low frequency of use by those with a high incentive to exercise care and with a small chance of accidents occurring or of misuse

Grade 2: **Medium duty**
Hinges for use on doors in housing or other living areas and in other buildings where there is a medium frequency of use by those with some incentive to exercise care but where there is some chance of accidents occurring or of misuse

Grade 3: **Heavy duty**
Hinges for use on doors in buildings where there is a high frequency of use by public or others with little incentive to exercise care and with a high chance of accidents occurring or of misuse

Grade 4: **Severe duty**
Hinges for use on doors which are subject to frequent violent usage

2 Durability

Grade 3: 10.000 Test cycles (Hinges for use only on windows)
Grade 4: 25.000 Test cycles (Hinges for use on windows and doors)
Grade 7: 200.000 Test cycles (Hinges for use only on doors)

3 Test door mass

Grade 0: 10 kg
Grade 1: 20 kg
Grade 2: 40 kg
Grade 3: 60 kg
Grade 4: 80 kg
Grade 5: 100 kg
Grade 6: 120 kg
Grade 7: 160 kg

First digit			Second digit		Third digit	
Category of use			Durability Test cycles		Test door mass	
Duty	Grade	For use on	Grade	Number of Test cycles	Grade	Mass kg
Light	1	Window	3	10.000	0	10
Light	1	Window	3	10.000	1	20
Light	1	Door or Window	4	25.000	1	20
Medium	2	Door	7	200.000	1	20
Light	1	Window	3	10.000	2	40
Light	1	Door or Window	4	25.000	2	40
Medium	2	Door	7	200.000	2	40
Light	1	Window	3	10.000	3	60
Light	1	Door or Window	4	25.000	3	60
Medium	2	Door	7	200.000	3	60
Heavy	3	Door	7	200.000	4	80
Severe	4	Door	7	200.000	5	100
Severe	4	Door	7	200.000	6	120
Severe	4	Door	7	200.000	7	160

4 Suitability for use on fire/smoke doors

Grade 0: Not suitable for use on fire/smoke resistant door assemblies
Grade 1: Suitable for use on fire/smoke resistant door assemblies **(EN 1634-1)**

5 Safety

Grade 1: All hinges are required to satisfy the essential requirement of safety in use. Therefore only grade 1 is identified

6 Corrosion resistance

According to **EN 1670**
Grade 0: No defined corrosion resistance
Grade 1: Mild corrosion resistance
Grade 2: Moderate corrosion resistance
Grade 3: High corrosion resistance
Grade 4: Very high corrosion resistance

7 Security-burglar-resistance

Grade 0: Not suitable for use on burglar-resistant door assemblies
Grade 1: Suitable for use on burglar-resistant door assemblies, subject to satisfactory assessment of the contribution of the hinges to the burglar-resistance of specified burglar-resistant door assemblies

8 Hinge grade

Fourteen grades of hinges are identified in this European Standard, as listed in the table below

Fourth digit	Fifth digit	Sixth digit	Seventh digit	Eighth digit
Fire/smoke suitability	Safety	Corrosion resistance	Security	Hinge grade
Grade	Grade	Grade	Grade	Grade
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**1**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**2**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**3**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**4**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**5**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**6**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**7**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**8**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**9**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**10**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**11**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**12**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**13**
0 or 1	1	0, 1, 2, 3, 4	0 or 1	**14**

Further relevant standards

EN 1522:	Bullet-resistant windows, doors and closures
EN 1634-1:	Fire resistance tests for door and shutter assemblies; Part 1: Fire resistance tests
EN 1634-3:	Fire resistance and smoke control tests for door and shutter assemblies; Part 3: Smoke control test for door and shutter assemblies
EN 1191:	Windows and doors Resistance to repeated opening and closing - Test method
EN 14351-1:	Windows and doors Product standard, performance characteristics; Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics
prEN 14351-2:	Windows and doors Product standard, performance characteristics; Part 2: Internal pedestrian doorsets without resistance to fire and/or smoke leakage characteristics
prEN 16034:	Windows, doors and garage doors Product standard, performance characteristics; Fire resisting and/or smoke control characteristics
prEN 16361:	Power operated pedestrian doors Product standard, performance characteristics; Pedestrian doorsets, other than swing type, initially designed for installation with power operation without resistance to fire and smoke leakage characteristics

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■ SYSTEMTECHNOLOGY FOR THE DOOR