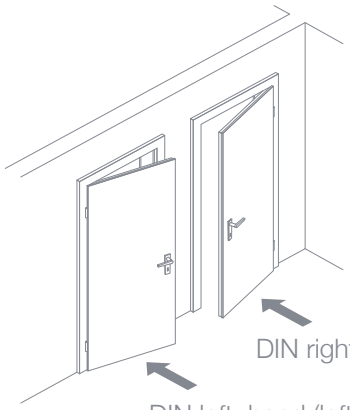
Mortice Locks: Door Direction

Depending on the pivot direction of a door, a door is classified as a left and right hand door. The door direction or side definition according to DIN 107 is determined as follows:

Visible position of the door hinges on the left = DIN left
Visible position of the door hinges on the right = DIN right

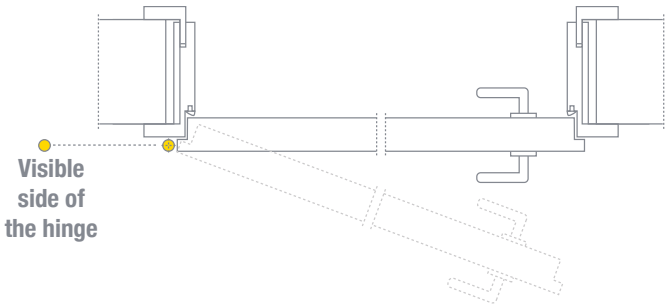
Common definitions derived from the access direction:

In accordance with the door directions, the mortice locks are also classified as DIN left and DIN right hand locks:

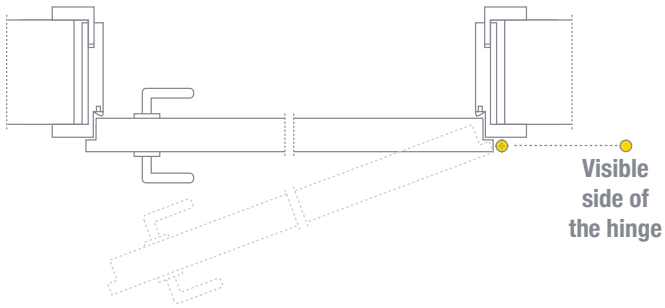


DIN right hand (right hand inwards)

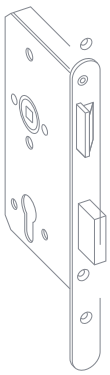
DIN left hand (left hand inwards)



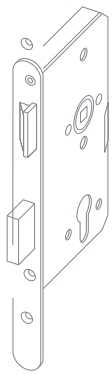
DIN LEFT



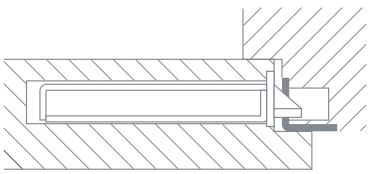
DIN RIGHT



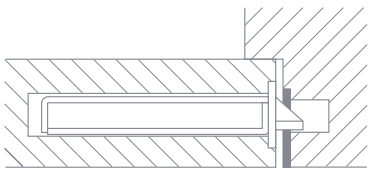
DIN left hand lock (the straight side of the latch points to the left)



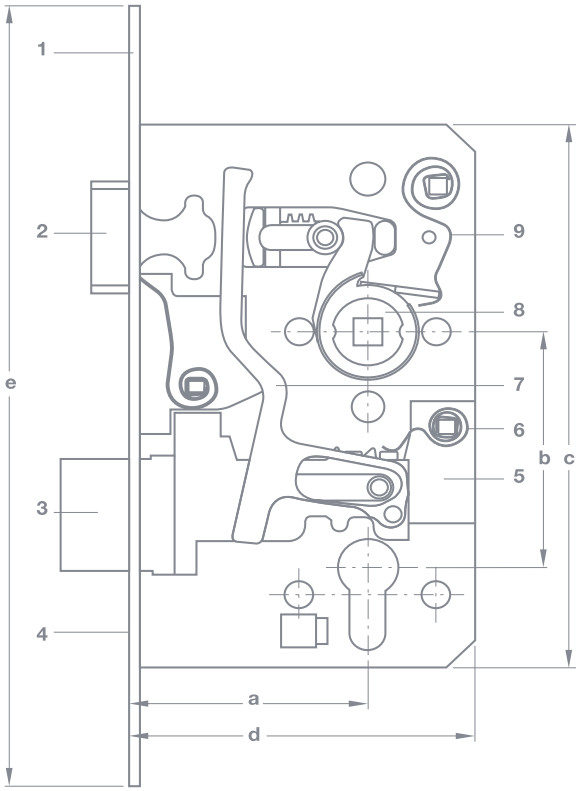
DIN right hand lock (the straight side of the latch points to the right)



Profile of a rebated door with mortice lock (forend protruding on one side)



Profile of a flush door with mortice lock (forend protrudes on both sides)



1 Forend
2 Latch
3 Deadbolt
4 Screw channel for profile cylinder
5 Tumbler
6 Tumbler spring
7 Key action
8 Lever follower
9 Counter spring

a Backset
b Distance
c Case height
d Case width
e Forend length
f Forend width

Scope:

This standard covers the requirement and test methods for durability, strength, security and function of all types of mechanical locks and latches (including associated or separately locking plates), intended for use on pedestrian doors in buildings. Excluding electro-mechanically operated locks and striking plates, multipoint locks and their locking plates, locks for windows, padlocks, locks for safes, furniture locks and prison locks.

Classification:

The standard classifies locks and latches using the 11 digit coding system. Each digit relates to a particular feature of the product measured against the standards performance requirements.

2
(1-3)

Digit 1: Category of use
Classification is in three grades, grade 1 being the lowest

Grade 1: Low frequency. For use by people with a high incentive to exercise care and a small chance of misuse, e.g internal residential doors.

Grade 2: Medium frequency. For use by people with some incentive to exercise care but where there is some chance of misuse, e.g. internal office doors.

Grade 3: High frequency. For use by public or others with little incentive to exercise care and with a high chance of misuse, e.g. public doors

Digit 2: Durability

Twelve grades of durability are identified:

Grade A: 50,000 cycles, no load on latch bolt
Grade B: 100,000 cycles, no load on latch bolt
Grade C: 200,000 cycles, no load on latch bolt
Grade F: 50,000 cycles, 10N load on latch bolt
Grade G: 100,000 cycles, 10N load on latch bolt
Grade H: 200,000 cycles, 10N load on latch bolt
Grade L: 100,000 cycles, 25N load on latch bolt
Grade M: 200,000 cycles, 25N load on latch bolt
Grade R: 100,000 cycles, 50N load on latch bolt
Grade S: 200,000 cycles, 50N load on latch bolt
Grade W: 100,000 cycles, 120N load on latch bolt
Grade X: 200,000 cycles, 120N load on latch bolt

Digit 3 - Door mass and closing force

Nine grades of door mass and closing force are identified:

Grade 1: Up to 100 kg door mass; 50N maximum closing force
Grade 2: Up to 200 kg door mass; 50N maximum closing force
Grade 3: Up to 200 kg door mass or specified by the manufacturer; 50N maximum closing force
Grade 4: Up to 100 kg door mass; 25N maximum closing force
Grade 5: Up to 200 kg door mass; 25N maximum closing force
Grade 6: Up to 200 kg door mass or specified by the manufacturer; 25N maximum closing force
Grade 7: Up to 100 kg door mass; 15N maximum closing force
Grade 8: Up to 200 kg door mass; 15N maximum closing force
Grade 9: Up to 200 kg door mass or specified by the manufacturer; 15N maximum closing force

Digit 4 - Fire resistance

Two grades of suitability for use on fire/smoke doors are identified:

Grade 0: Not approved for use on fire/smoke door assemblies
Grade 1: Suitable for use on fire/smoke door assemblies tested to EN1634-1 etc.

Note 1: A grade 1 classification means only that the lock has been designed for use on fire/smoke control doors; the actual fire performance achieved (e.g. fire integrity of 30 minutes on a partially glazed timber door etc.) will be contained in a separate fire test report.

Note 2: Where a product is intended for fire/smoke use (i.e. “1” in box 4), it must be possible to demonstrate compliance with the Essential Requirements of the Construction Products (Amendments) Regulations. It is recommended that the product should bear the CE mark.

Digit 5: Safety

Only one grade of safety is identified:

Note: A lock or latch conforming to this standard can, at the same time, also be part of an exit device conforming to EN179 or EN1125

Digit 6 - Corrosion resistance and temperature

Eight grades of corrosion resistance are identified:

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 to +80°C

Grade F: High corrosion resistance; temperature requirement: from -20°C to +80°C

Grade G: Very high corrosion resistance; temperature requirement: from -20°C to +80°C

Digit 7 - Security and drill resistance

Seven grades of security and drill resistance are identified:

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

Digit 8 - Field of door application.

Fifteen grades of door application are identified in the table below:

Grade	Type	Application 1	Application 2	Application 3
A	Mortice	Unrestricted application	–	–
B	Mortice	Hinged door	–	–
C	Mortice	Sliding door	–	–
D	Rim	Unrestricted application	–	–
E	Rim	Hinged door	–	–
F	Rim	Sliding door	–	–
G	Bored lock	Unrestricted application	–	–
H	Mortice	Hinged door	Supported	–
J	Rim	Hinged door	Inwards	–
K	Mortice	Hinged door	–	Locked from inside
L	Mortice	Sliding door	–	Locked from inside
M	Rim	Hinged door		Locked from inside
N	Rim	Sliding door	–	Locked from inside
P	Mortice	Hinged door	Supported	Locked from inside
R	Rim	Hinged door	Inwards	Locked from inside

Digit 9 - Type of key operation and locking

Nine grades of type of key operation and locking are identified:

Grade 0: Not applicable

Grade A: Cylinder lock or latch; manual locking

Grade B: Cylinder lock or latch; automatic locking

Grade C: Cylinder lock or latch; manual locking with intermediate locking

Grade D: Lever lock or latch; manual locking

Grade E: Lever lock or latch; automatic locking

Grade F: Lever lock or latch; manual locking with intermediate locking

Grade G: Lock or latch without key operation; manual locking

Grade H: Lock without key operation; automatic locking

Digit 10 - Type of spindle operation

Five grades of spindle operation are identified:

Grade 0: Lock without follower

Grade 1: Lock with sprung lever or knob

Grade 2: Lock with light unsprung lever

Grade 3: Lock with heavy unsprung lever

Grade 4: Lock with manufacturer's own specification furniture

Digit 11 - Key identification

Nine grades of key identification are identified:

Grade 0: No requirement

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 elements, extended number of effective differs

Grade H: Minimum eight detaining elements, extended number of effective differs

Note: This applies only to lever locks: cylinders are assessed to BS EN1303: 1998

Classification code:

:2:H:5:1:0:E:5:A:F:2:C:

Code shown using DHF graphic icons:
EN12209

EXAMPLE:

This indicates a mechanically operated lock and locking plate intended for use in situations where there is an incentive to exercise care; that will withstand a durability of 200,000 cycles with 10N side load on the latch bolt on a door of up to 200 kg in mass; that will close with a maximum force of 25N; that is suitable for use on a fire/smoke resisting door; that has no safety requirement; that has moderate corrosion resistance over a temperature range of -20°C to +80°C; that has high security and drill resistance; that is suitable for unsprung furniture; and that has five detaining elements with a minimum of 10, 000 differs.