

Specification for

Thief resistant locks

ICS 91.190

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee B/538, Doors, windows, shutters, hardware and curtain walling, to Subcommittee B/538/4, Building hardware, upon which the following bodies were represented:

- Association of Builders' Hardware Manufacturers
- Association of Building Engineers
- Association of Burglary Insurance Surveyors
- British Plastics Federation
- British Security Industry Association
- Council for Aluminium in Building
- Glass and Glazing Federation
- Guild of Architectural Ironmongers
- Institute of Architectural Ironmongers
- LHC Building Components and Services
- Loss Prevention Council
- Master Locksmiths' Association
- National House-building Council

This British Standard, having been prepared under the direction of the Sector Board for Building and Civil Engineering, was published under the authority of the Standards Board and comes into effect on 15 September 1998

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First published as BS 3621
May 1963
Second edition April 1980
Third edition September 1998

The following BSI references relate to the work on this standard:
Committee reference B/538/4

ISBN 0 580 29569 9

Amendments issued since publication

Amd. No.	Date	Text affected

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Foreword

This British Standard has been prepared by Subcommittee B/538/4. It supersedes BS 3621:1980 which is withdrawn.

This edition incorporates the requirements of BS EN 1303:1998.

In instances where the insurance risk is outside the scope given in clause 1, surveyors may specify special requirements regarding the locks to be used.

It is important that doors to which thief resistant locks are attached, and their frames, are of adequate strength to suit the locks and are of a design which prevents easy access by means other than attacking the locks.

Locks should always be fitted with the components supplied by the manufacturer.

The tests and examination given in this British Standard are intended for the type approval of locks. Some of the tests are also suitable for the quality assurance of production runs. However, it is drawn to the attention of users of this standard that because of the security element in the standard it is not possible to reveal all the criteria for acceptance within the published text. Submission of the locks to a panel of locksmith experts is mandatory in order to comply with the requirements of this specification (see clause 10). Details of the examination to which the locksmith experts submit the locks may vary according to the design and type of lock. These details and the conclusions of the examination will only be revealed to the manufacturer.

Users of this standard wishing to check upon a manufacturer's claim that his product has been passed by the panel of locksmith experts should write to the address given in clause 10.

In view of the security nature of this British Standard, users are strongly advised to consider the desirability of third-party certification, inspection and testing of products conforming to this British Standard. Appropriate conformity attestation arrangements are described in BS EN 45011. Users seeking assistance in identifying appropriate assessment bodies or schemes may ask BSI to forward their enquires to the relevant association.

Annex A is normative.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

1 Scope

This British Standard specifies design requirements, test methods and performance requirements for thief resistant locks operated by keys with mechanical patterns and intended for fixed mounting on hinged or sliding doors to provide reasonable security against unauthorized entry.

Provision is made within the specification for locks having claw or hook bolts, mounted on hinged or sliding doors, and for locks having spring bolts, or dead bolts of either single or multiple throw, mounted on hinged doors.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication referred to applies.

BS 3900-F2, *Durability tests on paint films — Part F2: Determination of resistance to humidity (condensation conditions)*.

BS 5872, *Specification for locks and latches for doors in buildings*.

BS 6100-1.3.6, *Glossary of building and civil engineering terms — Part 1: General and miscellaneous — Section 1.3: Parts of construction works — Subsection 1.3.6: Joining products, builders' hardware and accessories*.

BS EN 1303, *Building hardware — Cylinders for locks — Requirements and test methods*.

BS EN 1670, *Building hardware — Corrosion resistance of hardware for doors, windows, shutters and curtain walling — Requirements and test methods*.

3 Terms and definitions

For the purposes of this British Standard the terms and definitions given in BS 6100-1.3.6 and the following apply.

3.1

swing bolt

bolt that swings in a circular throw but has no hook

NOTE 1 The term "lock" is used irrespective of the particular type of security bolt involved.

NOTE 2 Many different forms of clutch and hook bolts now exist and for simplicity are referred to in this standard as "hook bolts".

NOTE 3 Since it is a requirement of this standard that all security bolts are deadlocked, the term "dead bolt" is replaced by "shoot bolt" for a bolt with a linear throw.

4 Design requirements

4.1 The design of the lock shall be such that the fixing screws on which the security of the locks, staples or striker plates depends shall be concealed or locked when the door is locked and the key removed. Lock-headed screws exposed when the door is closed shall resist any attempt to remove them with a screwdriver. Screws which are not concealed or locked shall not be fitted when the lock is submitted to the tests in annex A. (See also clause 9.)

4.2 Where the security bolt is controlled by the key from both sides of the door, the degree of security on each side of the door shall be not less than the minimum provided by this specification.

4.3 Where the security bolt is controlled from either or both sides of the door by handles or knobs, the handles or knobs shall either be disconnected from the security bolt when deadlocked or shall be capable of being rendered ineffective in such a way that forcing them will not withdraw the bolt as specified in 9.8.

4.4 Any identification marks on the key or keys supplied with any lock or group of locks shall be used once only and shall not disclose the combination of the key.

4.5 Where the security bolt is in the form of a dead bolt, having either linear or arcuate movement, the throw and the resulting projection measured perpendicular to the forend shall not be less than 14 mm. Where a spring bolt is also used as the security bolt, having either automatic or key actuated detention, the shoot or throw and the resulting projection measured perpendicular to the forend shall not be less than 14 mm. The throw requirements shall not apply to hook or claw bolts.

4.6 Locks with a spring bolt with automatic detention shall be deadlocked at full throw and at least at one intermediate deadlocking position between 7 mm and 10 mm throw.

When locking all other types of locks, it shall not be possible to remove the key from the lock before the bolt is fully thrown and properly detained as specified in 4.5 and 9.5.

4.7 Cylinders of the types covered by BS EN 1303 shall be tested to the requirements of BS EN 1303 to the minimum requirements defined by the classification: **1 : 6 : - : 0 : - : 1 : 4 :**

Locks that do not make use of cylinders of the type covered by BS EN 1303 shall provide a minimum of 1 000 effective differs. The manufacturer shall maintain readily accessible differing charts by which an inspector can verify that the locks have been manufactured in such a way that no lock having the same differ as any other lock is made until at least 999 other locks, each effectively differing from all the others, have been made or, where this is not the case, a number of locks with the same differ have been specifically ordered by a user. The differs shall be obtained by one of the following three methods.

- a) At least five moveable detainers or levers independent of any fixed obstructions which may be used, such as bullets, wards, etc. Locks containing eight levers or less shall include a device to increase the resistance to picking or manipulation by means other than the use of the correct key.

NOTE False notching is indicative of such a device.

- b) A pin tumbler mechanism with at least six pins. At least four of the pins or drivers shall include a device to increase the resistance to picking or manipulation by means other than the use of the correct key.

NOTE Mushroom drivers are indicative of such a device.

- c) A disc tumbler mechanism with at least six sliding or rotating tumblers. At least four of the tumblers shall include a device to increase the resistance to picking or manipulation by means other than the use of the correct key.

NOTE False notching is indicative of such a device.

4.8 With each lock the manufacturer shall supply screws or other fixing devices of adequate strength suitable for fixing the lock to a door and frame, together with full fixing instructions.

4.9 All vulnerable parts of locks shall be protected against attack by drilling from the outside of the door. An anti-drilling plate or plates shall be fixed to the locks. Both sides of locks which can be used with either side facing outwards shall be protected.

4.10 Locks making use of a cylinder to contain the key-controlled mechanism, e.g. lever, pin tumbler or disc tumbler cylinders, shall be designed or protected so as to provide no purchase for a wrench, or shall conform to the requirements of **9.6**. Neither the cylinder nor its protective fitting shall be removable from the outside of the door by removing fixings.

4.11 Where locks manufactured in accordance with the requirements of this British Standard have, in addition to the security bolt(s), other features which come within the scope of BS 5872, they shall conform to the relevant performance requirements of category A of BS 5872.

5 Master keyed locks

No lock shall be used in a master keyed suite in such a way that its security is less than the minimum provided by this specification. A master keyed lever lock, for example, shall have at least five levers where the gate clearances are unaltered by the process of master keying. Fixed obstructions shall not be used for differing purposes. At least one step or notch on any superior key shall always be higher than the corresponding steps on any other key which controls the same lock(s).

6 Finishes

Locks manufactured in accordance with this standard shall conform to the requirements of BS EN 1670 appropriate to the classification level claimed. For the purposes of this standard, the acceptance criteria shall be for appearance only, the tests shall be performed on a single sample that is not used for any other test and shall apply only to surfaces that are visible when the lock and/or its accessories are fitted in a normal manner.

7 Test sample

Clauses **8** and **9** shall be used to approve new designs or to re-approve locks already in production. A sample of six locks (seven in the case of locks with hook or claw bolts) shall be supplied for testing and examination, each with at least two normal keys. The two keys shall have the interval differ as specified in **9.2**.

NOTE 1 Three of these locks are required for examination by the panel of experts; the other three are used for testing and are identified as locks 1, 2 and 3.

Prototypes shall not be used for testing designs.

NOTE 2 Prototypes may, however, be used by the manufacturer for guidance purposes.

If any lock fails to conform to all the appropriate requirements of clause **9**, or if manufacturing variability is suspected, all tests shall be repeated in duplicate. For this purpose, six additional locks (eight in the case of locks with hook or claw bolts) shall be tested in accordance with annex A, the locks being identified as locks 1', 2' and 3', and 1'', 2'' and 3''. Should any of these locks fail to conform to all the appropriate requirements of clause **9**, the product shall be deemed not to conform to the requirements of this British Standard. Before re-submission, evidence shall be produced to justify the expectation of superior performance.