

**Association of  
Builders  
Hardware  
Manufacturers**

# Best practice guide

Cylinders for locks  
to  
BS EN 1303

in association with



*Extracts from BS EN 1303: 1998  
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**• ABHM BEST PRACTICE GUIDES**

This publication is one in a series of guides addressing the major issues that should be considered when specifying, ordering or using the products it describes. It aims to provide the reader with a concise document which includes a summary of relevant sections from the new European product standard. The reader will then be in a position to seek further specialist advice where necessary and recognise **GENUINE** conformity to the new standards.

**• BS EN 1303 Building Hardware - Cylinders for locks**

**SCOPE**

- a) This European standard applies to cylinders for such locks as are normally used in buildings and are designed to be used with cylinders. It identifies one category of use, three grades of durability, two grades of fire resistance, two grades of corrosion resistance and five grades of security.
- b) The suitability of cylinders for use on fire/smoke door assemblies is determined by fire performance tests conducted in addition to the performance testing required by this European standard. Suitability for use on fire doors may not be essential in every situation.
- c) On occasions there may be a need for additional functions within the design of the cylinder not covered by this European standard. In such cases purchasers should ensure that the products are suitable for their intended use. This is particularly important when the operation of such additional functions is safety related.

A complete edition of this standard can be obtained by post from BSI Customer Services, BSI Standards, Chiswick High Road, London W4 4AL. BS EN 1303 replaces that part of BS 3621: 1980 related to cylinders and is incorporated in BS 3621: 1998.

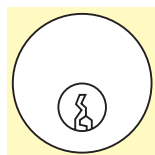
**• CYLINDER TYPES**



*Euro*



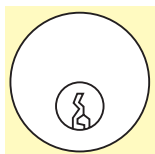
*UK Oval*



*Rim*



*Scandinavian Oval*



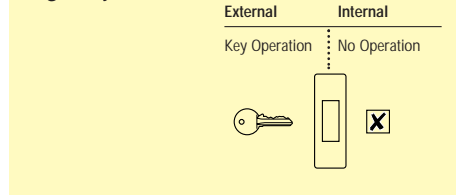
*Screw-In*



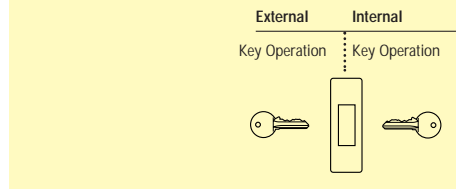
*Knobset*

**• APPLICATION**

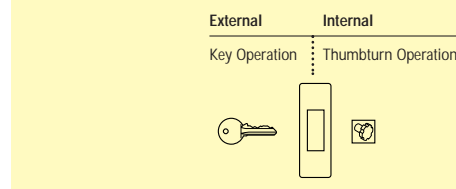
*Single Cylinder*



*Double Cylinder*



*Thumbturn Cylinder*



**• SPECIFICATION ISSUES**

- 1) All European countries will use the same product standard.
- 2) Products complying with the new European standard provide peace of mind and evidence of professional specification.
- 3) Product selection should be made on the basis of the building use, occupancy and particular application.

**NOTE:**

- 1) It is intended that this standard will be specified in conjunction with the appropriate parts of prEn 12209-1 when it is ratified.
- 2) This standard has been adopted as a British standard and should be used in specifications. If in doubt contact your local GAI registered architectural ironmonger, master locksmith or manufacturer.

**• CLASSIFICATION**

This standard classifies cylinders using a 7 digit coding system. It is intended that a similar classification system will apply to all building hardware product standards so that complementary items of hardware can be specified, to a common level of durability, security, corrosion resistance and fire resistance.

Each digit refers to a particular feature of the product measured against the standard's performance requirements.

Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7
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**Digit 1 - Category of use**

One category is identified:

- grade 1: Suitable for use at extremes of temperature -20°C to +80°C

**Digit 2 - Durability**

Three grades of durability will classify cylinders as either grade 4, 5 or 6 based on the number of test cycles achieved:

- grade 4: 25 000 cycles
- grade 5: 50 000 cycles
- grade 6: 100 000 cycles

Key strength is also tested to ensure there is no failure of the key within the durability test.

**Digit 3 - Door mass**

No requirement.

**Digit 4 - Fire resistance**

Cylinders will be classified as either grade 0 or 1:

- grade 0: No requirement
- grade 1: Cylinders shall be fire tested in accordance with current fire test requirements or prEN 1634-1

**Digit 5 - Safety**

No requirement.

**Digit 6 - Corrosion resistance**

Cylinders will be classified as either grade 0 or 1:

- grade 0: No requirement
- grade 1: Conform to grade 3 of BS EN 1670 as a minimum

**Note:**

- No distinction is made between the inside and the outside of either the cylinder and/or the door.
- On completion of the test, the cylinder must operate using a maximum 1.5 Nm torque on the key.

**Digit 7 - Security**

Cylinders will be classified in grades 1 to 5, where 5 is the highest. The grade of security can differ from one side of a double cylinder to the other. Table 1 provides a summary of the main security criteria (See below).

The following marking denotes a cylinder meeting the required category of use, durability grade 6 (100 000 cycles) with no fire resistant requirement, grade 1 corrosion resistance and grade 4 security.

1	6	-	0	-	1	4
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**• MARKING**

This standard requires that the classification relevant to the cylinder shall be quoted in the accompanying documentation, on its labelling or packaging and/or by marking the product itself or by more than one of these methods.

The marking/labelling shall include the following:

- manufacturer's name or trademark, or other means of identification.
- product model identification.
- the seven digit classification listed above.
- number of this European standard.

**Table 1: Security**

	Grades				
	1	2	3	4	5
Minimum number effective differs	100	300	15 000	30 000	100 000
Minimum number of movable levers, pins, discs etc	2	3	5	6	6
Direct coding on key	YES	YES	NO	NO	NO
Maximum net drill time (minutes)	-	-	-	3	5
Total drill test time (minutes)	-	-	-	5	10
Resistance to attack by chisel (number of blows)	-	-	-	30	40
Resistance to plug / cylinder extraction	-	-	-	15 kN	15 kN
Torque resistance of plug/cylinder (Nm)	2.5	5	15	20	30

## Additional important considerations

In addition to ensuring that products satisfy the requirements of this standard, other factors should be taken into consideration when selecting cylinders. These not only include sourcing products from a reputable manufacturer, but also quality assurance, support services and unequivocal conformity to the standard as detailed below:

### • QUALITY ASSURANCE

The internationally recognised standard for quality assurance, BS EN ISO 9000 provides confidence that the products are being manufactured to a consistent quality level. All ABHM members operate recognised BS EN ISO 9000 Quality Assurance Schemes.



Companies displaying this symbol are registered under the BSI Registered Firm Scheme.

### • SUPPORT SERVICE

The correct specification and installation of cylinders with the respective lock cases is essential to ensure that they are able to operate efficiently within the performance levels described in this standard. Specialist advice is available from ABHM members in support of their products from specification stages through supply to effective operation on site.

### • CONFORMITY

Conformity to the standard must be clearly and unequivocally stated. Such phrases as “tested to .....", “designed to conform to.....”, “approved to”, are not sufficient. To avoid misleading or confusing claims it is recommended that one of the following phrases is used when stating conformity:

a) This product has been successfully type-tested for conformity to all of the requirements of BS EN 1303 Test reports and/or certificates are available upon request.

b) This product has been successfully type-tested for conformity to all of the requirements of BS EN 1303 including the additional requirements for fire/smoke door use\*.

Test reports and/or certificate are available upon request.

\* Add as appropriate.

c) This product has been successfully type-tested for conformity to all of the requirements of BS EN 1303 including the additional requirements for fire/smoke door use\*. Regular audit testing is undertaken. Test reports and/or certificates are available upon request.

\* Add as appropriate.

### ABHM PROFILE

Formed in 1897 to represent the interests of brassfounders, the ABHM and its members has been instrumental in the industry's advancement over the last 100 years.

Innovations in material and manufacturing technologies combined with changes in the building industry throughout the world have demanded new skills and knowledge from the designer and manufacturer of the products themselves as well as from specifiers, stockists and installers in the various sectors of the building industry.

The Association and its members have consistently risen to this challenge, creating products which meet the needs of a changing world and developing performance standards

alongside national and international organisations, such as BSI and CEN, which enable the industry to select and compare hardware with confidence.

The advances made throughout the industry are reflected in the Association's structure, the diversity of its membership and its wide range of activities. The ABHM represents the United Kingdom's leading manufacturers of builders' hardware, architectural ironmongery and door and window fittings, and provides the technical expertise essential for the formulation of performance standards at home and abroad.

All members are listed in a Product Guide which includes an easy to use matrix of products and services available.

#### British Hardware Federation

BHF represents some 3,500 ironmongery, hardware and DIY shops in the United Kingdom. In addition, it embraces the Independent Builders Merchants Service, a specialist division of the Federation.

#### Builders Merchants' Federation

The Builders Merchants' Federation represents the majority of bona fide merchants in the UK. Its members have a combined turnover of £6 billion a year. Members range from large nationals to small independents.

#### Guild of Architectural Ironmongers

Founded in 1961, the Guild represents 95% of bona fide distributors within the UK and the majority of manufacturers of architectural ironmongery. The Guild serves to further all aspects of architectural ironmongery by promoting the interchange of information to encourage better product design and high professional standards of ironmongery scheduling and specification.

#### Master Locksmiths Association

The MLA is recognised by the Home Office, Police and The British Standards Institution as being the authoritative body for locksmithing. It was formed to promote the membership to Central and Local Governments, Industry, Commerce and the Public.



ABHM  
42 Heath Street, Tamworth, Staffs B79 7JH  
Tel: 01827 52337 Fax: 01827 310827