

Test Report No. 7191167797-MEC17-MHA
dated 09 Oct 2017



PSB Singapore

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SUBJECT:

Cylinders for locks test on 'Schlage' EC 900 cylinder submitted by Allegion (Hong Kong) Limited.

TESTED FOR:

Allegion (Hong Kong) Limited
77-79 Gloucester Road
29/F Fortis Tower
Wanchai, Hong Kong

DATE SUBMITTED:

27-Jul-2017

TEST DURATION:

01-Aug-2017 to 26-Sep-2017

METHOD OF TEST:

BS EN 1303 : 2015, Building hardware – Cylinders for locks– Requirements and test methods.

The test was conducted at TÜV SÜD PSB's fire test laboratory located at No. 10, Tuas Avenue 10, Singapore 639134



LA-2007-0380-A
LA-2007-0381-F
LA-2007-0382-B
LA-2007-0383-G

LA-2007-0384-G
LA-2007-0385-E
LA-2007-0386-C
LA-2010-0464-D

The results reported herein have been performed in accordance with the terms of accreditation under the Singapore Accreditation Council. Inspections/Calibrations/Tests marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our inspection body/laboratory.

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1 Science Park Drive, #02-01
Singapore 118221
TUV®



EXECUTIVE SUMMARY:

Four units of 71mm cylinder identified as 'Schlage' EC 900 were submitted for the 'BS EN 1303 : 2015, Building hardware – Cylinders for locks– Requirements and test methods' test to verify the requirements for the strength, security, durability, performance and corrosion resistance (where applicable) of cylinders and their original keys for use with locks normally used in buildings.

All characteristics included in the standard for which the sponsor of test declares performances has been tested and listed under the test results. The summary of the test results is available in page three.

In accordance with the specification of the test conducted, the submitted cylinders demonstrate compliance with this European Standard, BS EN 1303 : 2015 and achieved a classification as follows:

Category of use	Durability	Door mass	Fire resistance	Safety	Corrosion resistance & temperature	Key related security	Attack resistance
1	6	0	0	0	C	6	0

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SUMMARY OF TEST RESULTS:

Clause No.	Description	Results
4.2	Key strength	Comply
4.3	Durability	Comply
4.7.2	Operation at extreme temperature	Comply
4.8.1	Minimum number of effective differs	Comply
4.8.2	Minimum number of movable detainers	Comply
4.8.3	Maximum number of identical steps	Comply
4.8.4	Direct coding on key	Comply
4.8.5	Operation of the security mechanism	Comply
4.8.6	Torque resistance of plug and/or cylinder	Comply
4.7.1	Corrosion resistance	Comply
8	Marking	Comply

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SAMPLE DETAILS:

Brand	Schlage
Model	EC 900
Markings in the labelling, packaging or literature	Written confirmation of markings on packaging
Manufacturer	Allegion Security Technologies(China) Co., Ltd.
Date of manufacture	April 2017
Material	Brass
Remarks	Tested with 71mm cylinder

REPORTS TO BE USED IN CONJUNCTION:

None



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INITIAL OBSERVATIONS:

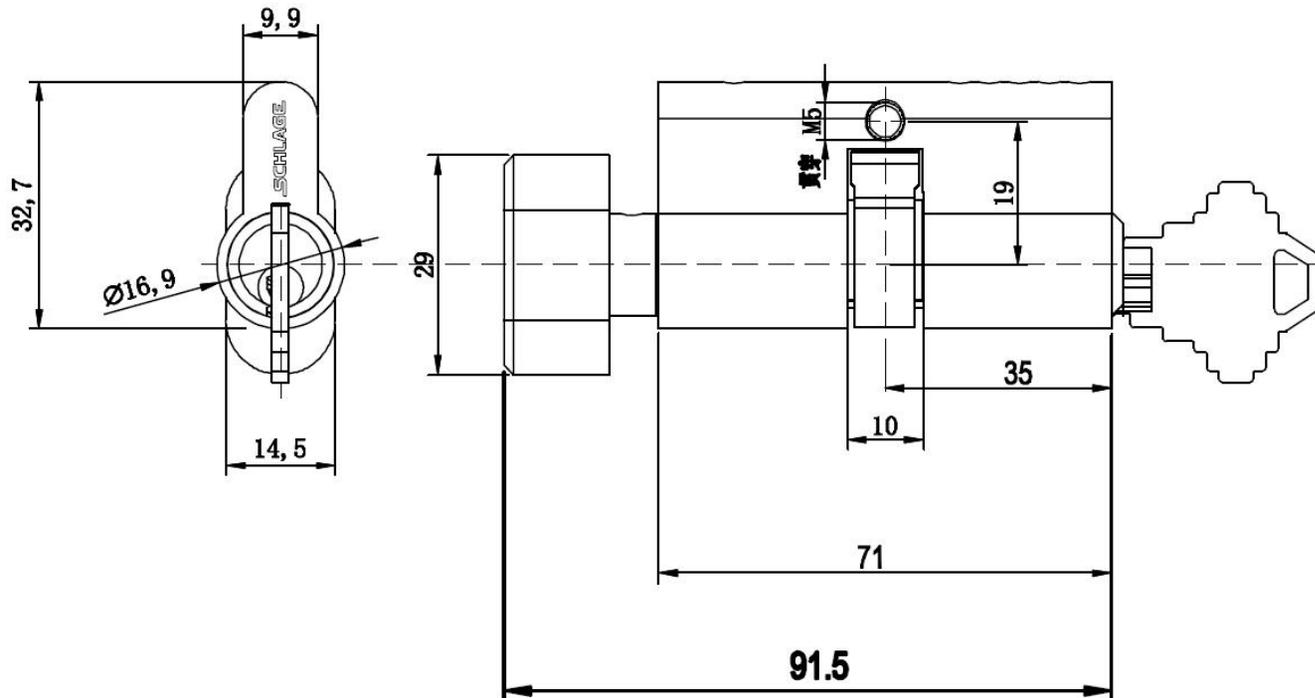
Plate 1 reflects images of sample as first received.



Plate 1

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DIMENSIONED DRAWING:



All dimensions in mm
Scale: Not to Scale

Figure 1: Cylinder



TEST RESULTS:

Durability – clause 4.3

Descriptions	Results	Requirements
Test cycles	100,000	Grade 4: 25,000 cycles Grade 5: 50,000 cycles Grade 6: 100,000 cycles
Operaton of cylinder	Comply	After the test, it shall be possible to operate the cylinder with a new original key with a torque not exceeding 1.5 Nm.

Operation of the security mechanism – clause 4.8.5

Descriptions	Results	Requirements
Torque applied	1.5Nm	Torque of 1.5Nm to be applied using the next closest key.
Operation of cylinder	Comply	Cylinder shall not be operable

Key strength – clause 4.2

Descriptions	Results	Requirements
Torque applied	2.5Nm	Key shall not break under a torque of 2.5Nm
Integrity of key	No breaking of key	
Functionality	Comply	The key shall be capable of being removed from the cylinder and re-use to operate the same cylinder with a torque not exceeding 1.5Nm

Operation at extreme temperature – clause 4.7.2

Descriptions	Results	Requirements
Number of attempts	1	At test temperature of -25°C, key able to operate cylinder within 5 attempts with a maximum torque of 1.5Nm
Number of attempts	1	At test temperature of 65°C, key able to operate cylinder within 5 attempts with a maximum torque of 1.5Nm

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Minimum number of effective differs – clause 4.8.1

Description	Results	Requirements
Minimum number of effective differs (Based on documentations)	Grade 6 (Written declaration of minimum 100,000 effective differs)	Grade 1 : 100 Grade 2 : 300 Grade 3 : 15,000 Grade 4 : 30,000 Grade 5 : 30,000 Grade 6 : 100,000

Minimum number of movable retainers – clause 4.8.2

Description	Results	Requirements
Minimum number of movable retainers	Grade 6 (Written declaration of 6 moveable retainers)	Grade 1 : 2 Grade 2 : 3 Grade 3 : 5 Grade 4 : 5 Grade 5 : 6 Grade 6 : 6

Maximum number of identical steps – clause 4.8.3

Description	Results	Requirements
Maximum number of identical steps (Based on documentations)	Grade 6 (Written declaration of 50% maximum number of identical steps with max 2 adjacent)	Grade 1 : 100% Grade 2 : 70%, max 2 adjacent Grade 3 : 60%, max 2 adjacent Grade 4 : 60%, max 2 adjacent Grade 5 : 60%, max 2 adjacent Grade 6 : 50%, max 2 adjacent

Direct coding on key – clause 4.8.4

Description	Results	Requirements
Direct key coding	No direct coding on keys	Direct key coding on keys not permitted for key related security grades 3,4,5 and 6

Torque resistance of plug and/or cylinder – clause 4.8.6

Descriptions	Results	Requirements
Torque applied	15Nm	Torque to be applied, Grade 1 : 2.5Nm Grade 2 : 5Nm Grade 3 to 6 : 15Nm
Plug security	Comply	The plug shall not rotate

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Corrosion resistance – clause 4.7.1

Descriptions	Results	Requirements
Operating torque after corrosion test	< 1Nm	The cylinder shall operate with a maximum torque of 1.5Nm after the corrosion test.

Marking – clause 8

Description	Results	Requirements
Marking of classification	Written confirmation of marking to be done on packaging.	The classification in clause 6 shall be quoted in the accompanying documents relevant to the cylinder, on its labelling or packaging and/or by making the product itself or by more than one of these methods

CONCLUSION:

According to BS EN 1303 : 2015, Building hardware – Cylinders for locks, the results obtained demonstrate that the specimen tested complied with the relevant clauses and is classified as follows:

Category of use	Durability	Door mass	Fire resistance	Safety	Corrosion resistance & temperature	Key related security	Attack resistance
1	6	0	0	0	C	6	0


Min Htet Aung
Higher Associate Engineer


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Product Manager
(Fire Property)
Mechanical



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July 2011

