

ASSA ABLOY

ASSA ABLOY LIMITED

Test Laboratory, Well Lane, Wednesfield, England. WV11 1TB

Phone: +44 (0) 1902 867730 • Fax: +44 (0)1902 867789
Registered Office : 2096505

TEST REPORT

No. TR 128-11 Issue 2

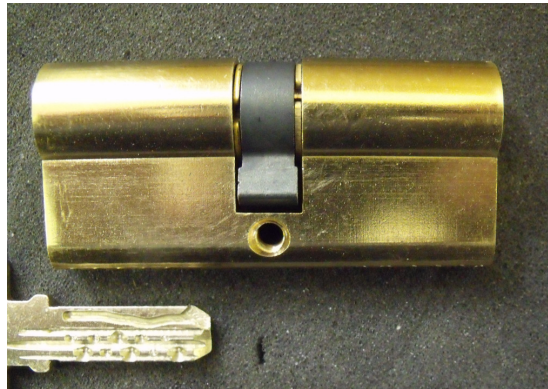
Test of: Cylinder

Issue Date: 26th October 2011



| | | |
|--|---|--|
| Test to: BS EN 1303 : 2005, category of use grade 1 , durability grade 6 , corrosion resistance grade C, key security grade 5 | | |
| Client Details: ASSA ABLOY | | Contact: J McGuinness – Product Management EMEA |
| Sample Details: Yale EMEA 10 pin flat key cylinder 2000 series, 13 samples supplied | | |
| Samples Received: 9 th May 2011 | Date Test Completed: 31 st May 2011 | Job Number: 2011-125 |

Picture of Sample



Samples were received in a good condition

Test Conclusions

| Clause No | Description | Compliance |
|-----------|-------------------------------------|------------|
| 5.2 | Key strength | Yes |
| 5.3 | Durability | Yes |
| 5.4 | Door Mass | N/A |
| 5.5 | Fire resistance | No |
| 5.6 | Safety | N/A |
| 5.7 | Operation at extreme temperatures | Yes |
| 5.8.1 | Minimum number of effective differs | Yes |
| 5.8.5 | Operation of security mechanism | **N/A |
| 5.8.6 | Torque resistance of plug/cylinder | Yes |
| 5.7 | Corrosion resistance | Yes |

** Operation of security mechanism could not be fully checked as next closest differ keys were not supplied.

Classification Achieved

| Category of use | Durability | Door mass | Fire resistance | Safety | Corrosion resistance & temperature | Key related security | Attack resistance |
|-----------------|------------|-----------|-----------------|--------|------------------------------------|----------------------|-------------------|
| 1 | **6 | 0 | 0 | 0 | C | 5 | 0 |

Disposal

Samples will be retained for a minimum of one month prior to disposal.

This report supersedes TR 128-11 issued on 31st May 2011

Senior Test Engineer:

Richard Darrell

Authorised by:

Ian Bridge (Laboratory Manager)

| | |
|---|--------------------|
| Revision No. 06 | Document No. RS001 |
| The Results obtained relate only to the items tested | Page 1 of 3 |
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Results

5.2 Key strength

| Clause / Description | Requirement | Actual | Assessment |
|----------------------|---|--|------------|
| 5.2 – Key strength | Apply torque of 2.5 Nm Key subsequently operates cylinder @ <1.5 Nm | Sample 1 - 2.5 Nm applied subsequently operates @ <1.5 Nm | Pass |
| | | Sample 2 - 2.5 Nm applied subsequently operates @ <1.5 Nm | Pass |

5.3 Durability

| Clause / Description | Requirement | Actual | Assessment |
|----------------------|---|---|------------|
| 5.3 – Durability | Grade 6 – 100,000 cycles New original key operates after test @ <1.5 Nm | Sample 1 -100,000 cycles new original key operates after test @ <1.5 Nm | Pass |
| | | Sample 2 - 100,000 cycles new original key operates after test @ <1.5 Nm | Pass |

5.4 Door mass

Not applicable to cylinders, no tests required.

5.5 Fire resistance

No evidence submitted by customer.

5.6 Safety

Not applicable to cylinders, no test required.

5.7 Corrosion and Extremes of Temperature

| Clause / Description | Requirement | Actual | Assessment |
|--|---|--|------------|
| 5.7 – Corrosion resistance | Grade C – 96 Hours exposure subsequently operates with max torque of 1.5 Nm | Sample 12 – After 96 hours exposure the cylinder operates @ 0.06 Nm | Pass |
| | | Sample 13 – After 96 hours exposure the cylinder operates @ 0.06 Nm | Pass |
| 5.7 – Operation at extreme temperatures | Grade C – + 80°c -20°c At each temperature the key will operate and not exceed the torque of 1.5 Nm | Sample 1 – <0.05 Nm @ +80°c <0.05 Nm @ -20°c | Pass |
| | | Sample 2 – <0.05 Nm @ +80°c <0.05 Nm @ -20°c | Pass |

5.8 Key related Security

| Clause / Description | Requirement | Actual | Assessment |
|---|---|--|------------|
| 5.8.1 – Min number of effective differs | Grade 5 - 30,000 differs | System provides 605,500 effective differs | Pass |
| 5.8.2 – Min number of moveable detainers | Grade 5 – 6 moveable detainers | System has 14 moveable detainers (10 pins + 4 side bars detainers) | Pass |
| 5.8.3 – Max number of identical steps | Grade 5 – 60 % | 60% maximum identical steps with maximum 2 identical steps adjacent | Pass |
| 5.8.4 – Direct coding of key | Grade 5 – No coding on key | Sample 1 – No coding on key | Pass |
| | | Sample 2 – No coding on key | Pass |
| 5.8.5 – Operation of security mechanism | Grade 5 – Following durability next closest key up and down shall not operate @ max torque of 1.5 Nm | Sample 1 – No closest differ keys supplied | Not tested |
| | | Sample 2 – No closest differ keys supplied | Not tested |
| 5.8.6 - Torque resistance of the plug/cylinder | Grade 5 – Cylinder shall not operate with torque of 15 Nm applied via suitable tool | Sample 9 – 15 Nm does not operate | Pass |
| | | Sample 10 – 15 Nm does not operate | Pass |

Notes

Clause 5.3 – Pro Natur was used to lubricate the keys at the start of test and thereafter at 25,000 cycle intervals.

Clause 5.7 – No lubrication was required for the operation of cylinder following this test.

Marking

No Marking details were supplied.