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Door hardware assessment

Test standard: Section 2 and appendix B11 of AS 1530.4:2014

Report sponsor: E Plus Building Products Pty Ltd and ASSA ABLOY Australia Pty Ltd

Product: ASSA ABLOY ES8100 V LOCK

Report number: FRT220190

Revision: DHAR1.0

Contents

1. Introduction

This report documents the findings of the assessment undertaken to determine the expected fire resistance level (FRL) of an ASSA ABLOY ES8100 V LOCK tested in accordance with section 2 and appendix B11 of AS 1530.4:2014[1] and assessed in accordance with AS 1905.1:2015[2].

Warringtonfire performed this assessment at the request of the test sponsors listed in Table 1.

Table 1 Test sponsor details

Test sponsor	Address
E Plus Building Products Pty Ltd	12-13 Dansu Court Hallam VIC 3803 Australia
ASSA ABLOY Australia Pty Ltd	235 Huntingdale Road Oakleigh VIC 3166 Australia

2. Variations considered in this report

The variations considered in this report are:

Fitting an ASSA ABLOY ES8100 V LOCK as a secondary lock to the doorsets referenced in test reports listed in Table 2. Table 3 provides additional supporting information about the tested hardware.

Table 2 Referenced test reports

Test reference	Doorset description	Test standard
FSV 0609	Single leaf plywood faced E-core doorset, nominally 46 mm thick	AS 1530.4:1997
SI 2271	Two leaf plywood faced E-core doorset, nominally 46 mm thick	AS 1530.4:1985

Table 3 Additional supporting information

Test report	Test date	Doorset description	Test duration	Test standard
FRT220190 R1.0	18 August 2022	Single leaf plywood faced E-core doorset, nominally 46 mm thick	240 minutes	AS 1530.4:2014

[1] Standards Australia, 2014, Methods for fire tests on building materials, components and structures – Part 4: Fire-resistance tests for elements of construction, AS 1530.4:2014, Standards Australia, NSW.

[2] Standards Australia, 2015, Components for the protection of openings in fire-resistant walls Fire-resistant doorsets, AS 1905.1:2015, Standards Australia, NSW.

3. Description of the tested door hardware

Table 4 describes the tested door hardware specimen. This information was provided by the test sponsor and surveyed by Warringtonfire. Table 5 describes the pre-test functionality test done on the door system.

Photographs of the test specimen are included in Figure 1 to Figure 3.

All measurements were done by Warringtonfire – unless indicated otherwise.

Table 4 Specimen description

Item	Description	
Door hardware product name	ASSA ABLOY ES8100 V LOCK	
Details	Body size	40 mm tall × 23 mm wide × 198 mm long
	Strike plate size	256 mm long × 29 mm wide × 2.9 mm thick
	Front plate size	256 mm long × 29 mm wide × 2.9 mm thick
	Throw size	20 mm projection
	Mass	0.763 kg
Material	Stainless steel with internal electric components	
Manufacturer	ASSA ABLOY Australia Pty Ltd	
Installation	The secondary lockset was located on the frame, flush with the top of the frame and 75 mm away from the latch edge of the door frame. The secondary lockset plate was located on the door leaf, flush with the top edge of the door leaf, 75 mm away from the latch edge of the door frame.	
Door leaf thickness	46 mm	

Table 5 Specimen functionality test

Item	Description	
Opening and closing cycles	The door was subjected to a series of 50 opening and closing cycles of at least 75° for side-hung doorsets in accordance with clause 7.2.5 of AS 1530.4:2014.	
Opening force	2.5 N	
Closing force	2.2 N	
Latching force	31 N	
Average clearance measurement (exposed side)	Top edge	1.7 mm
	Latch edge	2.4 mm
	Hinge edge	0.9 mm
Average clearance measurement (unexposed side)	Top edge	0.9 mm
	Latch edge	1.5 mm
	Hinge edge	0.8 mm

Figure 1 Plate on the door

Figure 2 Bottom view

Figure 3 Pre-installation

4. Assessment

Section 4 of AS 1905.1:2015 requires some variations from tested prototypes to be subjected to a pilot scale test for assignment of FRL. As such, in addition to the full-scale tests listed in Table 2, a pilot scale test listed in Table 3 forms the basis of this assessment.

A pilot scale fire resistance test – in accordance with section 2 and Appendix B11 of AS 1530.4:2014 – was done on a pilot scale doorset under the test reference - FRT220190. It included an ASSA ABLOY ES8100 V LOCK fitted into the door frame as a secondary latch.

AS 1530.4:2014 states that either sustained flaming on the surface of the unexposed face for 10 seconds or longer, ignition of a cotton pad or gap gauge failure constitute integrity failure. During the test – FRT220190 – the ASSA ABLOY ES8100 V LOCK did not initiate failure of the doorset for the duration of the test.

As the proposed ASSA ABLOY ES8100 V LOCK – as a secondary latch - did not cause failure in FRT220190, then adding the proposed hardware to the referenced doorsets as a secondary latch is not expected to affect their performance.

5. Conclusion

It is the opinion of Warringtonfire's accredited fire testing laboratory in Australia that the proposed doorsets are expected to achieve the FRLs shown in Table 6 if fitted with the listed hardware

This assessment report has been prepared in accordance with section 4.5 of AS 1905.1:2015 and is conditional on the operational characteristics and materials of the doorset complying with section 2 of AS 1905.1:2015. The field of application for the ASSA ABLOY ES8100 V LOCK is the same as the field of application for the doorset that the ASSA ABLOY ES8100 V LOCK is installed on.

Table 6 Conclusion

Test reference	Description	Assessed hardware	FRL
FSV 0609	Single leaf plywood faced E-core doorset, nominally 46 mm thick	ASSA ABLOY ES8100 V LOCK as a secondary latch	**-/240/30**
SI 2271	Two leaf plywood faced E-core doorset, nominally 46 mm thick	ASSA ABLOY ES8100 V LOCK as a secondary latch	**-/240/30**

Conditions and validity

- The conclusions of this assessment may be used to directly assess the fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all conditions.
- Because of the nature of fire resistance testing, and the consequent difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy of the result. The inherent variability in test procedures, materials and methods of construction, and installation may lead to variations in performance between elements of similar construction.
- The assessment can therefore only relate to the actual prototype test specimens, testing conditions and methodology described in the supporting data, and does not imply any performance abilities of constructions of subsequent manufacture.
- This assessment is based on information and experience available at the time of preparing this report. The published procedures for the conduct of tests and the assessment of the test results are the subject of constant review and improvement and it is recommended that this report be reviewed by Warringtonfire before the end of the validity date.
- The information in this report must not be used for the assessment of variations other than those stated in the conclusions above. The assessment is valid provided no modifications are made to the systems detailed in this report. All details of construction should be consistent with the requirements stated in the relevant test reports and all referenced documents.
- The data, methodologies, calculations and results documented in this report specifically relate to the tested specimen/s and must not be used for any other purpose. This report may only be reproduced in full. Extracts or abridgements must not be published without permission from Warringtonfire.
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Quality management

<table>
<tr><th>Revision</th><th>Issue date</th><th>Expiry date</th><th colspan="4">Information about the report</th></tr>
<tr><td rowspan="4">DHAR1.0</td><td rowspan="4">30 August 2022</td><td rowspan="4">30 August 2027</td><td>Description</td><td colspan="3">Initial issue</td></tr>
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