Assessment report

Report sponsors		Report issue date	Report no.
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Table 1 Amendment schedule

Version	Date	Information about report			
R1.0	30 October 2019	Description	Initial issue		
			Prepared by	Reviewed by	Authorised by
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Objective

To assess the fire resistance performance of an E+ doorset with the nominated variation to the door hardware.

Variations considered in this report

Fitting a dormakaba M5 & M6 Digital mortice lockset with dormakaba MS2602 (MS2600 series) Mortice lockset instead of the door lockset tested in the referenced tests.

Table 2 Referenced test reports

Test reference	Doorset description	Test standard
FSV 0608	Single leaf plywood faced E-core mini doorset, nominally 35mm thick.	AS 1530.4:1997
FSV 0609	Single leaf plywood faced E-core doorset, nominally 45mm thick.	AS 1530.4:1997
SI 2271	Two leaf plywood faced E-core doorset, nominally 45mm thick.	AS 1530.4:1985

Table 3 Additional supporting information

Test report	Doorset description	Test duration	Test standard
EWFA 2449009	Single leaf plywood faced E-core doorset, nominally 35mm thick.	121 minutes	AS 1530.4:2005
A pilot scale fire resistance test in accordance with Appendix B11 of AS 1530.4:2005 was conducted on a pilot scale doorset on the 22 December 2010. It included a Kaba EF680 Electric lever with Kaba MS2 (MS Series) Mortice lockset fitted to the door leaf.			

Description of the tested and proposed door hardware

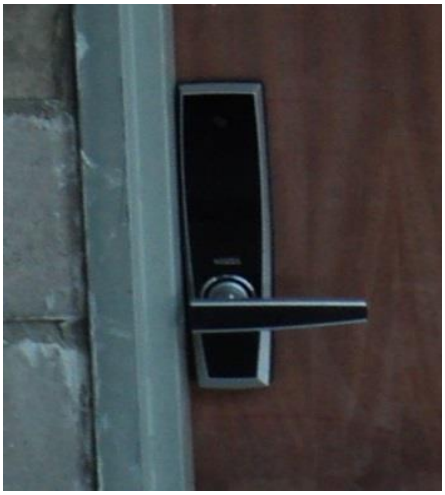

Figure 1 Unexposed view of the tested hardware

Figure 2 Exposed view of the tested hardware

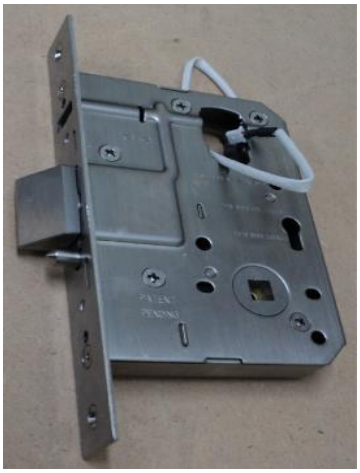

Figure 3 MS2(MS Series) Mortice Lockset

Figure 4 Tested E-Flash 680 Digital door lock

Figure 5 Proposed dormakaba M series Digital door lock

Table 4 Specimen description

Item	Description
Product name	Kaba EF680 Electric lever and Kaba MS2 (MS Series) Mortice lockset
Door system properties	
Door leaf thickness	38 mm

Discussion

It is expected that if the proposed lever and lockset do not initiate failure of the pilot doorset before failure occurred on the referenced full-sized doorsets, then substituting the proposed lever and lockset with those hardware items on the referenced doorsets will not be detrimental to the performance of the referenced doorsets.

With reference to test EWFA 2449009, the tested hardware consisted of a Kaba EF680 electric lever which incorporated a touch pad and a proximity card reader on the non-fire side and a Kaba MS2 (MS Series) Mortice lockset. When tested, no sustained flaming of components associated with the lever or lockset occurred for the 121 minutes test duration.

AS 1530.4:2014 states that sustained flaming on the surface of the unexposed face for 10 seconds or longer constitutes integrity failure.
Post-test observations of the tested construction indicate the most heavily exposed part of the electric lever on the non-fire side was the part over the Lockset near hole through the lockset for the spindle. The upper part where the proximity card reader is located is less exposed and appeared somewhat unaffected at 121 minutes exposure.
The test appears to confirm that the Kaba EF680 electric lever and lockset do not present an integrity risk when tested on the target doorset.

Proposed Dormakaba M5 & M6 Digital Door Locksets

The proposed hardware variation includes installing Dormakaba M5 & M6 Series Digital Door locks. A confirmation was received from the hardware manufacturer that the proposed digital door locksets are made of similar materials that have similar melting points and using the same manufacturing processes. Moreover, the installation template of both locksets and the preparation work that needs be done on the door leaf is almost similar.
Both Digital door locks were surveyed and were reviewed in light of the permissible variations stated in AS 1530.4:2014 clause 7.9.7. The outcome of the survey is as per the following:

- The proposed Dormakaba M5 & M6 Digital Door locksets were found to be closer in specifications to Kaba EF780 Electric Lever than the tested Kaba EF680 electric lever. The specifications of both the tested Kaba EF680 and the proposed locksets Dormakaba M5& M6 Series Digital Door locks were further compared and it was confirmed that the principle difference between the electric lever and the proposed M series lockset is the replacement of the proximity reader with Biometric “FP Module assembly” in the upper part of the electric lever. As per the above discussion, this part of the lockset was found to be less exposed during the test and somewhat unaffected.
- Dimension of E-Flash series was found to be 281mm×71mm and M series was found to be 280mm×60mm. Figure 6 shows a comparison of the overall dimension of the tested and the proposed hardware.
- Both hardware use the same mortice lock/latching device with 60mm backset.
- Confirmation by the hardware manufacturer received that both locksets have spring loaded lever design which will induce zero turning moment on the spindle.

Based on the above comparison and the information received from the hardware manufacturer, it is concluded that the proposed M-series locksets will not introduce any detrimental effect on the fire resistance of the doorsets for a period in excess of 120 minutes.

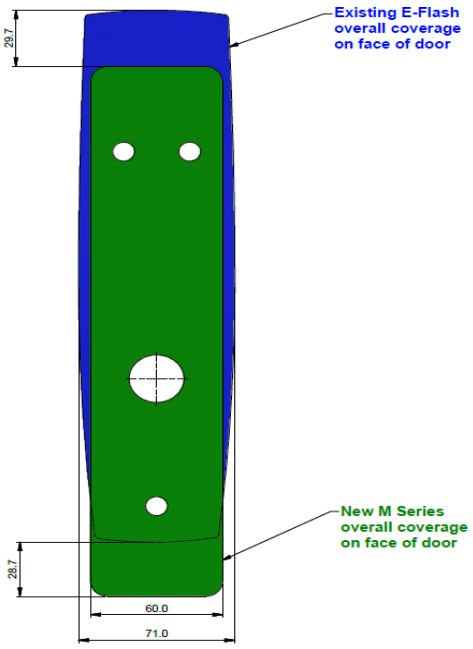

Figure 6 Comparison between proposed dormakaba MSeries Lockset and tested EF680/EF780 Electric Lever

Conclusion

Based on the discussion above, it is the opinion of this laboratory that the doorsets listed in Table 5 will achieve the fire resistance level (FRL) shown in Table 5 if they are fitted with Dormakaba M5 & M6 Series Digital Door Locks in conjunction with dormakaba MS2602 (MS2600 series) Mortice locksets in both configurations on the doorsets – as described in this assessment report.

This assessment has been prepared in accordance with Section 4.5 of AS 1905.1:2015 and is conditional upon the operational characteristics and materials of the doorset complying with Section 2 of AS 1905.1:2015. The field of application of the door lockset is defined by the field of application of the doorset that the door lockset is installed upon.

Table 5 Conclusion of assessment

Test reference	Description	FRL
FSV 0608	Single leaf plywood faced E-core mini doorset, nominally 35mm thick.	-/120/30
FSV 0609	Single leaf plywood faced E-core doorset, nominally 45mm thick.	-/120/30
SI 2271	Two leaf plywood faced E-core doorset, nominally 45mm thick.	-/120/30

Conditions/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 preparation of 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 before the validity date by Warringtonfire Australia Pty Ltd.
- 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.
- All work and services carried out by Warringtonfire Australia Pty Ltd are subject to, and conducted in accordance with, our standard terms and conditions of Warringtonfire Australia Pty Ltd, which are available at https://www.element.com/terms/terms-and-conditions or on request.

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