




Report sponsors		Report issue date	Report no.
Firecore Pty Ltd 291 Warringah Road Beacon Hill NSW 2100 Australia	Dormakaba Australia Pty Ltd 12-13 Dansu Court Hallam Vic 3803 Australia	25 November 2019	FAS 190286a R1.0
		Report validity date	

Table 1 Amendment schedule

Version	Date	Information about report			
R1.0	25 November 2019	Description	Initial issue		
			Prepared by	Reviewed by	Authorised by
		Name	Mahmoud Akl	Omar Saad	Omar Saad
		Signature			

Objective

To assess the fire resistance performance of a TVC30 Firecore 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 1382a	Single leaf TVC30 core Firecore doorset, nominally 38mm thick.	AS 1530.4:2005
FSV 1418a	Single leaf TVC40 core Firecore doorset, nominally 48mm thick.	AS 1530.4:2005
FSV 1391a	Double leaf TVC40 core Firecore doorset, nominally 48mm thick.	AS 1530.4:2005

Table 3 Additional supporting information

Test report	Doorset description	Test duration	Test standard
FSP1460	Single leaf TVC30 core Firecore doorset, nominally 38mm 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 17 February 2011. 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

	
<p>Figure 1 Unexposed view of the tested hardware</p>	<p>Figure 2 Side view of Lockset</p>
	
<p>Figure 3 MS2(MS Series) Mortice Lockset</p>	



Figure 4 Tested E-Flash 680 series 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 FSP1460, it incorporated a Kaba EF680 electric lever which incorporated touch pad and 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 the 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 using the same manufacturing processes. Moreover, the installation template of both locksets 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 are 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 have been compared and it is confirmed that the principle difference between the electric levers is the replacement of the proximity reader with Biometric “FP Module assembly” in the upper part of the electric lever.
- 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, it is concluded that the proposed M-series locksets will not introduce any detrimental effect the fire resistance of the doorsets for a period in excess of 120 minutes.

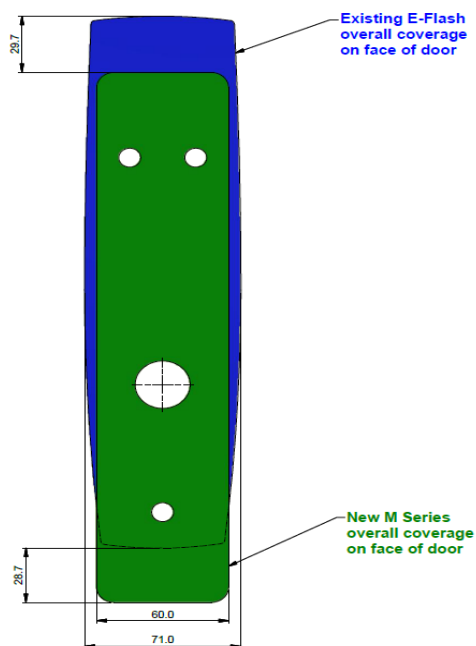


Figure 6 Comparison between proposed dormakaba M series Lockset and tested EF680/EF780 Electric Lever

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 1382a	Single leaf TVC30 core Firecore doorset, nominally 38mm thick.	-/120/30
FSV 1418a	Single leaf TVC40 core Firecore doorset, nominally 48mm thick.	-/120/30
FSV 1391a	Double leaf TVC40 core Firecore doorset, nominally 48mm 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.

Testing authority	Warringtonfire Australia Pty Ltd
Address	Unit 2, 409-411 Hammond Road, Dandenong South, VIC 3175
Phone	T: +61 (0)3 9767 1000
ABN	81 050 241 524
Email	info.fire.melbourne@warringtonfire.com