




Test sponsors		Report issue date	Report no.
Firecore Pty Ltd 291 Warringah Road Beacon Hill NSW 2100 Australia	Digital Door Locks Pty Ltd Suite 250, 1 Queens Rd, Melbourne VIC 3004	10 December 2019	FAS190240 R1.0
		Report validity date	

Table 1 Amendment schedule

Version	Date	Information about report			
1.0	10 December 2019	Description	Initial issue		
			Prepared by	Reviewed by	Authorised by
		Name	Alim Rasel	Mahmoud Akl	Omar Saad
		Signature			

Objective

To assess the fire resistance performance of a TVC30 core Firecore mini doorset with the nominated variation to the door latchset.

Variations considered in this report

Fitting the following smart door locks instead of the door latchset tested in the referenced test.

- SHS-H505FMK/AU.
- SHS-H705FMK/EN.
- SHP-DH538MC/AU.
- SHP-DH538MU/AU.
- SHP-DH537MC/AU.
- SHP-DH537MU/AU.
- SHP-DH525MK/EN.

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
FRT190245	Single leaf TVC30 core Firecore mini doorset, nominally 38mm thick.	60 minutes	AS 1530.4:2014

A pilot scale fire resistance test in accordance with Appendix B11 of AS 1530.4:2014 was conducted on a pilot scale doorset on the 26 August 2019. It included a SHP-DH537 and SHS-H705 smart door lock fitted into the door leaf.

Description of the tested door hardware



Figure 1 Unexposed view of the tested hardware



Figure 2 Exposed view of the tested hardware



Figure 3 Latch edge of the tested hardware



Figure 4 Applied intumescent

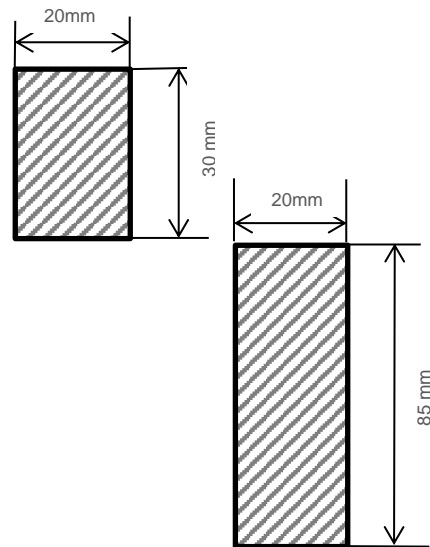


Figure 5 Applied intumescent dimensions

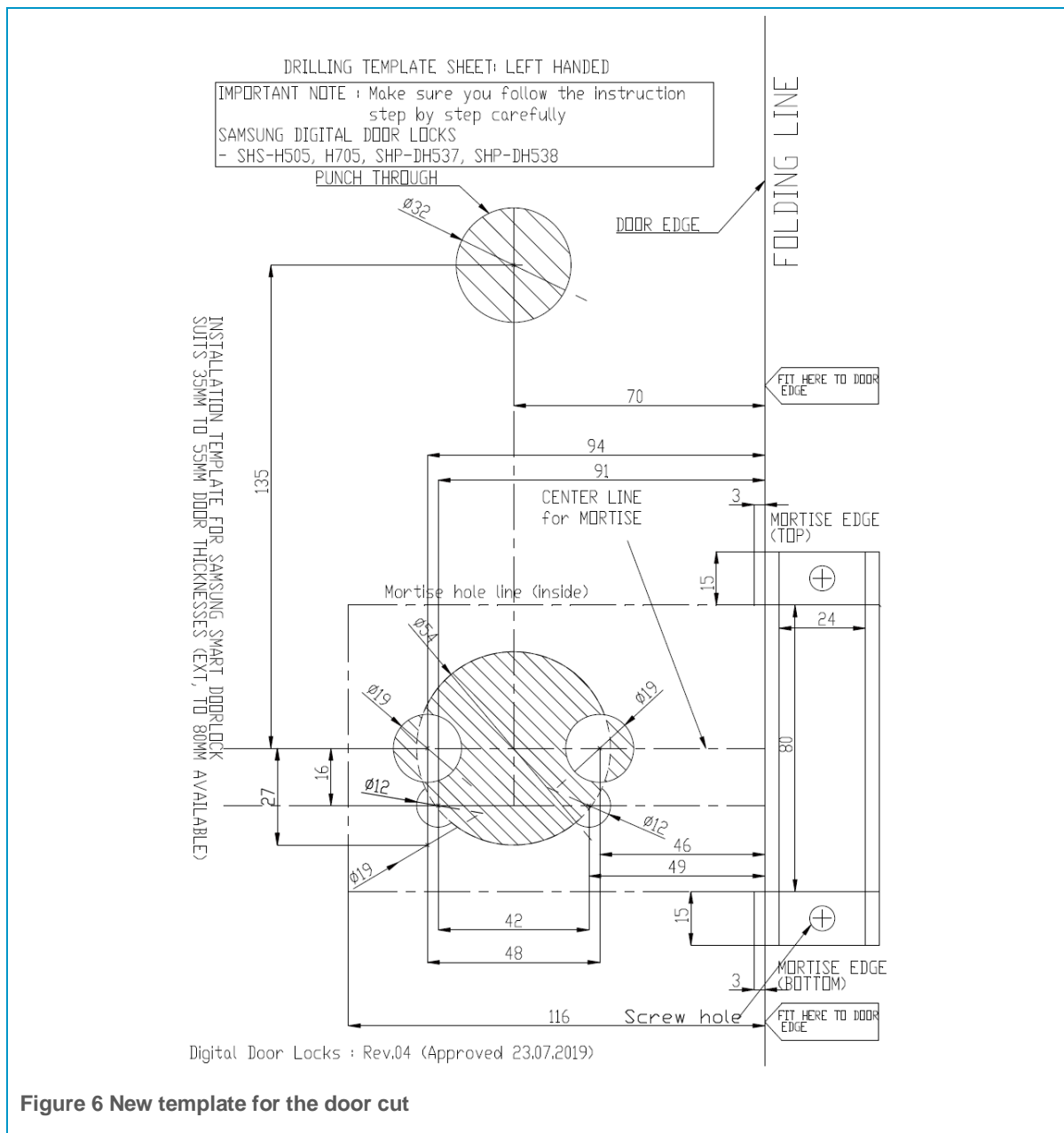


Figure 6 New template for the door cut

Table 4 Specimen description

Item	Description	
Product name	SHP-DH537 smart door lock	
Backset	70 mm (measured)	
Lockset type	Mortice lock	
Location of door latchset	Unexposed side: The lockset was installed 8 mm away from the latch edge. The lockset was 155 mm above from the sill. Exposed side: The lockset was installed 35 mm away from the latch edge, 180 mm above from the sill.	
Cut of	To fit the mortice lockset	
Product Name	SHS-H705 smart door lock	
Backset	70mm	
Lockset type	Mortice lock (No latching function)	
Cut of	To fit the lockset	
Location of the door latchset	Unexposed side: The lockset was installed 8 mm away from the latch edge. The lockset was 480mm above from the sill. Exposed side: The lockset was installed 8mm away from the latch edge, 500mm from the sill.	
Pre-test functionality test		
Opening and closing cycles	The doors were 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	1.9 N (measured).	
Closing force	1.9 N (measured)	
Latching force	32.1 N (measured)	
Average clearance measurements	Top edge	2.9 mm (measured)
	Latch edge	1.1 mm (measured)
	Hinge edge	2.9 mm (measured)

Discussion

If the proposed SHP-DH537 and SHS-H705 smart door lock does not initiate failure of the pilot scale doorset before failure occurred on the referenced doorsets, then it is not expected that substituting the door lockset in the referenced test with the proposed door locksets will not have detrimental effect on the performance of the referenced doorsets.

AS 1530.4:2014 states that sustained flaming on the surface of the unexposed face for 10 seconds or longer constitutes integrity failure. AS 1530.4:2014 also states that latching mechanism ceasing to be engaged constitutes integrity failure. During the reference test – FRT190245 – the SHP-DH537 and SHS-H705 did not initiate failure of the doorset for the duration of the test.

Results from the pilot scale test – FRT190245 – show that the SHP-DH537 and SHS-H705 smart door lock are positively assessed for the test periods as indicated in our conclusion.

Performance of SHS-H505FMK/AU, SHP-DH538MC/AU, SHP DH538MU/AU, SHP-DH525MK/EN Digital Locksets

It has been confirmed by the report sponsor that SHS-H505FMK/AU, SHS-H705FMK/EN, SHP-DH538MC/AU, SHP-DH538MU/AU, SHP-DH537MC/AU, SHP-DH537MU/AU and SHP-DH525MK/EN digital Locksets are manufactured from the same materials, have the same operating mechanism design and similar construction as the tested SHP-DH537 and SHS-H705 digital Lockset.

AS1530.4-2014 Clauses 7.9.7 (i) and (j) stipulates:

(i) Changes may be made in the operating characteristics of latchset or lockset hardware, provided the changes do not require modification of the door leaf or door frame and changes to the functions of latchsets involving the operating mechanism.

(j) Changes may be made to the materials of the essential latching components, provided the melting point of any part is the same or higher.

The manufacturer\supplier of the SHS-H505FMK/AU, SHS-H705FMK/EN, SHP-DH538MC/AU, SHP-DH538MU and SHP-DH525FMK/EN Digital Locksets has confirmed in writing that in comparison to the SHP-DH537 Digital Lockset:

- The changes made to the lockset do not require modification to the door leaf or frame nor do they change the function of the latch operating mechanism.
- The materials remain otherwise as tested or of higher melting point.

AS 1530.4:2014, clause 7.9.7 (l) states: **Where locksets or latchsets are operated by a steel shaft, their surface-mounted furniture may be varied provided—**

(i) the melting point of any part is not reduced; the material used in all the various locksets mentioned under “variations considered in this report (page 1)” are the same.

(ii) any replacement handle or knob is not so massive or asymmetrical as to introduce a turning moment about the operating shaft which exceeds 0.07 Nm.

(iii) any replacement lever handle is not so massive or asymmetrical as to increase the turning moment about the operating shaft by more than 10%;

(iv) any replacement escutcheon plate adequately covers any hole in the door leaf formed to accommodate the lockset or latchset but does not increase the area of the face of the door leaf covered by the escutcheon by more than 20%.

The tested lockset's covers the greatest area of door leaf out of the proposed locksets.

Change in colour of the locksets

The manufacturer\supplier of the locksets has confirmed that the paint is less than 0.5mm thick.

AS1530.4-2014 Clauses 7.9.7 (a) stipulates:

Variations may be made in electroplated or other metallic finishes and in powder coats and non-nitrocellulose paint finishes not greater than 0.5 mm thick.

Based on the above and in absence of any foreseeable detrimental effects, it is considered that the proposed latchsets will achieve an integrity performance on the target doorset listed below.

Conclusion

Based on the discussion above, it is the opinion of this laboratory that the doorsets listed below will achieve the fire resistance level (FRL) shown in

Table 5 if they are fitted with SHS-H505FMK/AU, SHS-H705FMK/EN, SHP-DH538MC/AU, SHP-DH538MU/AU, SHP-DH537MC/AU, SHP-DH537MU/AU and SHP-DH525MK/EN 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 latchset is defined by the field of application of the doorset that the door latchset is installed upon.

Table 5 Conclusion of assessment

Test reference	Description	FRL
FSV 1382a	Single leaf TVC30 core Firecore doorset, nominally 38mm thick.	-/60/30
FSV 1418a	Single leaf TVC40 core Firecore doorset, nominally 48mm thick.	-/60/30
FSV 1391a	Double leaf TVC40 core Firecore doorset, nominally 48mm thick.	-/60/30

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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