

Regulatory Information Report

RIRF21004

**Fire resistance test for two door sets in a steel
stud wall, opening in each direction**

Client: JE Dennison Limited

Test method: AS1530.4-2014

Report Date: 24/06/2026

Test number: PF21004



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1.1 Document revision schedule

Revision #	Date	Description
1	07/11/2024	Issued to Client
2	24/06/2026	Typo mistakes are corrected

1.2 Signatories

Report	Name	Signature	Date
Prepared by:	Alexey Kokorin		24/06/2026
Authorised by:	Andrew Bain (Authorized signatory)		24/06/2026



All tests reported herein
have been performed in
accordance with the
laboratory's scope of
accreditation

2. Report Summary

Two 1170mm x 2445mm x 142mm (nominal) doorsets were tested opening in and out from the fire. Both doors were installed in 90mm Duplex Steel Stud framed wall with two layers of 13mm FR plasterboard each side.

Doorset 01 comprised of the K2-2 Lip stainless steel frame and 50mm thick K2 GRP Gypsum Core Door Leaf with Gelcoat/Resin coating. The door was fitted with a latching mechanism, closer, air gill, windows and intumescent seals. Jambs were grouted.

Test results for doorset R01 - opening away from the furnace	
Structural adequacy	Not applicable
Integrity	No failure at 96 minutes
Insulation	82 minutes
Fire resistance level (FRL)	-/90/60

Doorset 02 comprised of the K2-2 Lip stainless steel frame and 50mm thick K2 GRP Gypsum Core Door Leaf with Gelcoat/Resin coating. The door was fitted with a latching mechanism, closer, air gill, windows and intumescent seals. Jambs were grouted.

Test results for doorset R02 - opening into the furnace	
Structural adequacy	Not applicable
Integrity	92 minutes
Insulation	82 minutes
Fire resistance level (FRL)	-/90/60

This report shall not be reproduced, except in full.

The test results relate to the specimens of the product in the form in which they were tested. Differences in the composition or thickness of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product, which is supplied or used, is fully represented by the specimens, which were tested.

The specimens were supplied by the sponsor and the Laboratory was not involved in any selection or sampling procedures.

The results of these fire tests may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions.

3. General Information

3.1 Testing Scope

Applicable Standards:

AS 1530.4-2014 Section 7 – Doorsets and Shutter Assemblies

NZS 4520-2010 Section 3 – Testing the Fire-Resistance of Fire-Resistant Doorsets

Departures from Testing Method:

No departures from the testing method

Test conditions:

The test conditions complied with the test method.

3.2 Contact Details

Accredited Testing Laboratory

Fire TS Lab - Passive Fire Inspection and Test Services Ltd

Accreditation Number - 1335

1/113 Pavilion Drive, Mangere, Auckland, 2022

New Zealand

Contact e-mail: tests@firelab.co.nz

Client/Applicant:

JE Dennison Limited

Level 1 26 Canon St., Timaru,

New Zealand

Contact e-mail: brad.dennison@jedennison.co.nz

Manufacturer/Supplier:

Same as Client/Applicant

3.3 Specimen Preparation, Conditioning and Timeline

Specimens conditioning and delivery to Laboratory:

Construction of the separating element was performed by the laboratory in line with Client instructions. The specimens were installed by the Client. The laboratory was not involved in sampling of the materials. The laboratory checked materials during construction of the specimen.

Testing date:

12/04/2022

Installation completion date:

11/04/2022

Termination of The Test:

The test was discontinued at 96 minutes.

3.4 Use of Reports

A regulatory information report was issued in addition to the full test report PF21004. This provides the minimum information required for regulatory compliance.

This report shall not be reproduced, except in full.

This report details the methods of construction, test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in AS 1530.4. Any significant variation with respect to size, constructional details, loads, stresses, edge or end conditions, other than that allowed under the field of direct application in the relevant test method, is not covered by this report.

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

The test results relate to the specimens of the product in the form in which they were tested. Differences in the composition or thickness of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product, which is supplied or used, is fully represented by the specimens, which were tested.

The specimens were supplied by the sponsor and the Laboratory was not involved in any of selection or sampling procedures.

The results of these fire tests may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions.

4. Specimen Description

4.1 Supporting Construction

Separating Element		
1.1	Item / Product Name	Steel Stud Frame and plasterboard separating element
	Measurements	3000mm x 3000mm
	Thickness	142mm
1.2	Item / Product Name	Rondo 90mm Duplex Steel Stud
	Measurements	Width / Height (W/H): 92mm x 60mm
	Installation	Used to construct separating element frame
1.3	Item / Product Name	Rondo 90mm Steel Stud
	Measurements	Width / Height (W/H): 92mm x 33.5mm
	Installation	Used to construct separating element frame
1.4	Item / Product Name	Rondo 90mm Steel Track
	Measurements	Width / Height (W/H): 92mm x 28mm
	Installation	Used to construct separating element frame
1.5	Item / Product Name	Rondo 90mm Steel Deflection Head Track
	Measurements	Width / Height (W/H): 92mm x 50mm
	Installation	Used to construct separating element frame
1.6	Item / Product Name	GIB Fyreline
	Measurements	Width / Height (W/H): 600mm x 3000mm
		Thickness (T): 13mm
	Installation	Used to construct separating element, covering the steel frame
1.7	Item / Product Name	Rondo 142 Perimeter Channel
	Measurements	Width / Height (W/H): 30mm x 10mm
	Installation	Used to create an external angle around the perimeter of door frame openings

Door Leaf		
2.1	Item / Product Name	K2 GRP Gypsum Core Door Leaf with Gelcoat/Resin coating
	Measurements	Width / Height (W/H): 1100mm x 2404mm
		Thickness (T): 50mm (nominal)
Door Frame		
2.2	Item / Product Name	K2-2 Lip Frame
	Measurements	Width / Height (W/H): 1170mm x 2445mm
		Thickness (T): 142mm
Door Furniture		
2.3	Item / Product Name	Lockwood Artefact 202 Series
	Measurements	Width / Height (W/H): 162mm x 162mm
	Installation	Installed to door leaves prior to leaf installation by client representatives using manufacturer supplied hardware
Door Lockset		
2.4	Item / Product Name	Lockwood 3572 Mortice Lock
	Installation	Installed to door leaves prior to leaf installation by client representatives using manufacturer supplied hardware
Door Closer		
2.5	Item / Product Name	Lockwood 7726DA Closer
	Measurements	Width / Height (W/H): 268mm x 75mm
		Thickness (T): 54mm
	Installation	Installed to door leaves prior to leaf installation by client representatives using manufacturer supplied hardware
Door Grille		
2.6	Item / Product Name	Kilargo IFD-450/450 Grille
	Measurements	Width / Height (W/H): 500mm x 500mm
		Thickness (T): 7mm
	Installation	Installed in the aperture of door leaves prior to leaf installation by client representatives using manufacturer supplied hardware
Door Hinges		
2.7	Item / Product Name	K2 Lift-Off Hinges

	Measurements	Width / Height (W/H): 120mm x 86mm
	Installation	Installed to door leaves and door frames prior to leaf installation by client representatives using countersunk machine screws
Door Kickplate		
2.8	Item / Product Name	Stainless Steel Sheet
	Measurements	Height (H): 300mm
		Thickness (T): 1.2mm
	Installation	Installed to door leaves prior to leaf installation by client representatives
Door Threshold Seal		
2.9	Item / Product Name	Raven RP8si Drop Seal
	Measurements	Width / Height (W/H): 25mm x 50mm
		Length (L): 1100mm
	Installation	Installed to door leaves prior to leaf installation by client representatives using manufacturer supplied hardware
Frame Seal		
2.10	Item / Product Name	K2 Hygienic Intumescent Silicone Seal
	Measurements	Width (W): 12mm
	Installation	Installed to the perimeters of the door frame in door stop recess prior to leaf installation by client representatives

Vision Panel		
2.11	Item / Product Name	Schott Pyranova 30 Glass
	Measurements	Width / Height (W/H): 655mm x 415mm
	Installation	Two panes were installed to door leaves prior to leaf installation by client representatives

Sealant		
3.1	Item / Product Name	Sika Sikaflex 400 Fire
	Measurements	600mL Sausage

	Installation	Installed in perimeter gaps around door frame on top of backing rod by client representatives
3.2	Item / Product Name	Sika Sikaflex AT Façade
	Measurements	600mL Sausage
	Installation	Installed on perimeter seal around door frame by the laboratory on behalf of client representatives
Grout		
3.3	Item / Product Name	Dricon Brick Mortar
	Measurements	30Kg Bag
	Installation	Used to backfill the door frame profile after frame installation by the laboratory on behalf of client representatives

Fixings		
4.1	Item / Product Name	WG Koala Self-drilling Screws
	Measurements	25mm
	Installation	Used to fix steel stud frame together
4.2	Item / Product Name	GIB Grabber Self Tapping Screws
	Measurements	32mm
	Installation	Used to fix the first layer of plasterboard to the steel studs and tracks
4.3	Item / Product Name	GIB Grabber Self Tapping Screws
	Measurements	41mm
	Installation	Used to fix the second layer of plasterboard to the steel studs and tracks
4.4	Item / Product Name	CSK Machine Screw
	Measurements	M8x100
	Installation	Used to fix the door frame to the aluminium plate, installed by client representatives
4.5	Item / Product Name	CSK Machine Screw
	Measurements	M5x10mm
	Installation	Used to fix the door hinges to the door frames, installed by client representatives

4.6	Item / Product Name	Unbranded Screw
	Measurements	45mm x 10g
	Installation	Used to fix the door hinges to the steel backing plate and door frame, installed by client representatives
4.7	Item / Product Name	Unbranded Pop Rivet
	Measurements	5mm x 10mm
	Installation	Used to fix the aluminium plates to the door frames, installed by client representatives

Miscellaneous

5.1	Item / Product Name	Inorganic Plastic H packer
	Measurements	Thickness (T): Varies
	Installation	Used to space the door frame from the separating element, installed by client representatives
5.2	Item / Product Name	Aluminium Plate
	Measurements	Width / Height (W/H): 80mm x 200mm
		Thickness (T): 6mm
	Installation	Fixed to the separating element steel studs using rivets, installed by client representatives
5.3	Item / Product Name	Steel Backing Plate
	Measurements	Thickness (T): 5mm
	Installation	Fixed to the door frames and hinges, installed by client representatives
5.4	Item / Product Name	PEF Backing rod
	Measurements	Thickness (T): 12mm
	Installation	Installed in perimeter gaps around the door frame, recessed 10mm from exposed and unexposed faces, installed by client representatives

4.2 Gap Measurement and Cycling

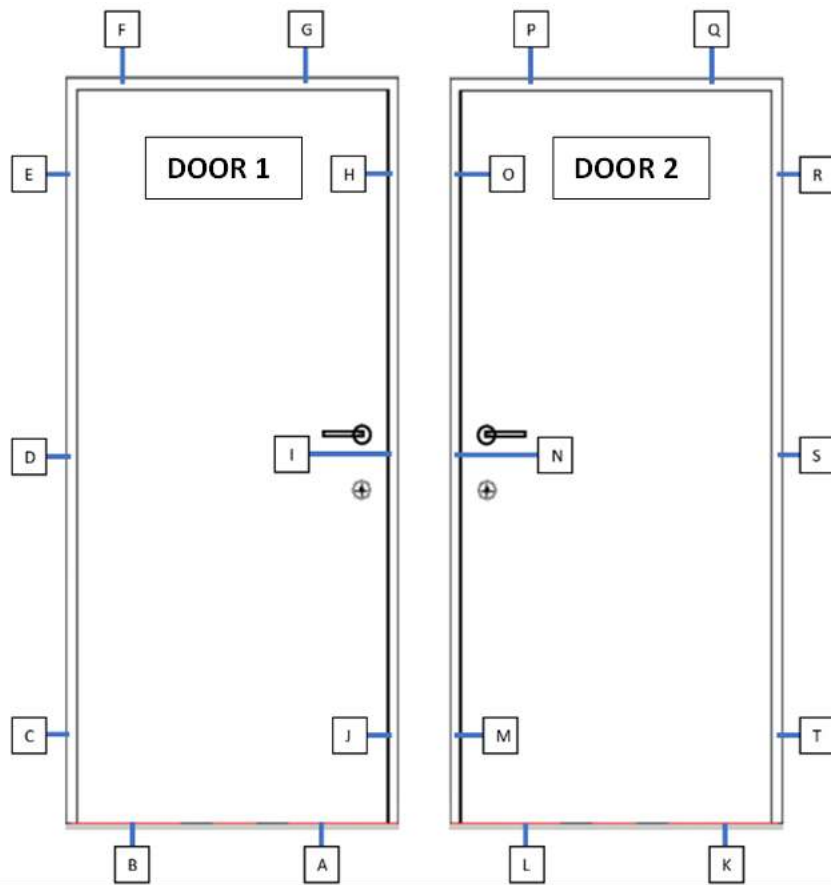


Figure 1 – Gap Measurement Locations

50 Openings of each door at 75 degrees completed prior to Gap Measurement.

Unexposed Door 1

A – 9.5mm	B – 8.5mm	C – 4mm	D – 4.5mm	E – 4.5mm
F – 3.5mm	G – 3mm	H – 0.5mm	I – 2.5mm	J – 2mm

Exposed Door 2

K – 8mm	L – 7mm	M – 2mm	N – 2.5mm	O – 2mm
P – 4mm	Q – 3.5mm	R – 5mm	S – 5mm	T – 4mm

5. Test results

5.1 Observations during the test

TIME	TEST	SP #	OBSERVATIONS/REMARKS
Mins	FACE		
1	U	1	Cotton pad test for 30 seconds near the top of the grille – Pass
51	U	2	Cotton pad test for 30 seconds near the of the grille – Pass
57	U	2	Roving Thermocouple test near top right corner of the grille - 187°C
59	U	2	Cotton pad test near top right corner of the grille – Pass
60	U	2	Roving Thermocouple test near top right corner of the grille - 194°C
82	U	2	Roving Thermocouple test near the top of the grille – 229.8°C- FAIL - The temperature at any location on the unexposed face of the test specimen exceeds the initial temperature by more than 180°C.
82	U	1	Roving Thermocouple test near the top of the grille – 217°C- FAIL - The temperature at any location on the unexposed face of the test specimen exceeds the initial temperature by more than 180°C.
92	U	2	Open flame for 10 seconds at the top right corner - FAIL - Flaming to the unexposed face for 10 seconds or longer shall be deemed Integrity failure.
96			Test Discontinued.

NOTE: E – Exposed Face (inside furnace)
U – Unexposed Face (outside furnace)
SE – Separating element

5.2 Doorset 1

Specimen Details	Door Frame (2.1), Door Leaf (2.2), Furniture (2.3), Lockset (2.4), Closer (2.5), Grille (2.6), Hinges (2.7), Kickplate (2.8), Threshold Seal (2.9), Perimeter Seal (2.10), Vision Panel (2.11), Sealant (3.1), Sealant (3.2), Brick Mortar (3.3), Screws (4.1, 4.2, 4.3, 4.4, 4.5, 4.6) Rivets (4.7), Packers (5.1), Plate (5.2, 5.3), Backing rod (5.4)
Support	Supported by Steel Frame System (1.2), (1.3), (1.4), (1.5), (1.6), (1.7)
Specimen Dimensions	Width / Height (W/H): 1170mm x 2445mm
	Thickness (T): 142mm
Fire Stop Application	Asymmetrical
Additional Info	The frame is made of 1.6mm thick stainless steel, welded at the junction of the stiles and the head section and ground flush on the architrave face. The ends of the profile have been capped at the bottom of the frame. The door frame profile includes a single rebate, without backbends. It has been manufactured to accommodate a 90mm steel stud and two layers of plasterboard on each side. The door frame has 4 x K2 Doors Lift-off Hinges, 60mm backing plates at fixing locations, 10mm diameter crush tubes, and a 5mm thick hinge backing plate. The hinges are fixed to the door frame using screws (4.5) fixed to a backing plate (5.3). An intumescent seal (2.10) was installed into the doorstop rebate. The frame is backfilled with Dricon 12.5 MPa Mortarplaster, filled to the door head surface. The hardware installed to the door leaf consists of the following: - 15mm Pyronova / Space / 15mm Pyronova - Furniture - LW Artefact 202 series - Lock - LW 3572 Mortice Lock - Closer - LW 7726DA - Door Grille - IFD-450/450 Kilargo - Hinges - K2 Lift-off - Kickplates - 1.2mm S/S 300mm high - Frame seal - K2 Intumescent bulb - Threshold seal - Raven RP8si The door includes a 425mm x 665mm cutout for the vision panel, located 1165mm from the bottom of the leaf, and 198mm from the latch stile.

	The door includes a 460mm x 460mm cutout for the grille, located 400mm from the bottom of the leaf, the centre of the door. The hinges were fixed to the door using screws (4.6). The door hardware was installed using manufacturer-supplied fixings, installed following manufacturer-supplied templates.
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Test results for doorset R01 - opening away from the furnace

Structural adequacy	Not applicable
Integrity	96 minutes
Insulation	82 minutes
Fire resistance level (FRL)	-/90/60

5.3 Doorset 2

Specimen Details	Door Frame (2.1), Door Leaf (2.2), Furniture (2.3), Lockset (2.4), Closer (2.5), Grille (2.6), Hinges (2.7), Kickplate (2.8), Threshold Seal (2.9), Perimeter Seal (2.10), Vision Panel (2.11), Sealant (3.1), Sealant (3.2), Brick Mortar (3.3), Screws (4.1, 4.2, 4.3, 4.4, 4.5, 4.6) Rivets (4.7), Packers (5.1), Plate (5.2, 5.3), Backing rod (5.4), Plaster (5.5)
Support	Supported by Steel Frame System (1.2), (1.3), (1.4), (1.5), (1.6), (1.7)
Specimen Dimensions	Width / Height (W/H): 1170mm x 2445mm
	Thickness (T): 142mm
Fire Stop Application	Asymmetrical
Additional Info	The frame is made of 1.6mm thick stainless steel, welded at the junction of the stiles and the head section and ground flush on the architrave face. The ends of the profile have been capped at the bottom of the frame. The door frame profile includes a single rebate, without backbends. It has been manufactured to accommodate a 90mm steel stud and two layers of plasterboard on each side. The door frame has 4 x K2 Doors Lift-off Hinges, 60mm backing plates at fixing locations, 10mm diameter crush tubes, and a 5mm thick hinge backing plate. The hinges are fixed to the door frame using screws (4.5) fixed to a backing plate (5.3). An intumescent seal (2.10) was installed into the doorstop rebate. The frame is backfilled with Dricon 12.5 MPa Mortarplaster, filled to the door head surface. The hardware installed to the door leaf consists of the following: - 15mm Pyronova / Space / 15mm Pyronova - Furniture - LW Artefact 202 series - Lock - LW 3572 Mortice Lock - Closer - LW 7726DA - Door Grille - IFD-450/450 Kilargo - Hinges - K2 Lift-off - Kickplates - 1.2mm S/S 300mm high - Frame seal - K2 Intumescent bulb - Threshold seal - Raven RP8si The door includes a 425mm x 665mm cutout for the vision panel, located 1165mm from the bottom of the leaf, and 198mm from the latch stile.

	The door includes a 460mm x 460mm cutout for the grille, located 400mm from the bottom of the leaf, the centre of the door. The hinges were fixed to the door using screws (4.6). The door hardware was installed using manufacturer-supplied fixings, installed following manufacturer-supplied templates.
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Test results for doorset R02 - opening into the furnace

Structural adequacy	Not applicable
Integrity	92 minutes
Insulation	82 minutes
Fire resistance level (FRL)	-/90/60

6. Photos

6.1 Photos before the test



Figure 1 – Exposed face before test



Figure 2 – Unexposed face before test