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PREPARED FOR

PIVOT STOVES & HEATING



THERMAL TESTING OF THE PIVOT STOVES & HEATING ROOM SEAL FLUE 8 KIT IN A FLAT CEILING AND ROOF PENETRATION ACCORDING TO APPENDIX F OF AS/NZS2918:2018

Report Number: ASFT21086-PRELIMINARY REPORT
Issue date: 15 October 2021

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Report Distribution

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Revision Details

Revision	Date	Comments
0	15/10/2021	Preliminary report – awaiting payment and engineering drawings of Flue Kit

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QD-001R1

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1. INTRODUCTION

Thermal Clearance testing of the Pivot Stoves & Heating Room Seal Flue 8 kit flue system took place on October 13 & 14, 2021 at the Australian Solid Fuel Testing Laboratory located at 3 Garden Street, Morwell, Victoria. The testing was performed by Mr G.W. Mooney and Mr S. Marland.

2. PROCEDURE

Testing was conducted as per Appendix F of AS/NZS2918;2018, Hot sites were located with the aid of an infra-red thermometer. Thermocouple tips were stapled onto the test surfaces, with black tape over the first 100 mm to facilitate consistent and accurate recording of temperatures. Thermocouple positions are shown in the table below:

Thermocouple No.	Position	Thermocouple No.	Position
1	Flue gas temperature	17	RHS Wall, 250mm above Ceiling, 200mm from corner
2	Ceiling – Ring Inner Right	18	LHS Wall, 350mm above Ceiling, 200mm from corner
3	Ceiling – 50mm Right	19	RHS Wall, 350mm above Ceiling, 200mm from corner
4	Ceiling – 100mm Right	20	LHS Wall, 450mm above Ceiling, 200mm from corner
5	Ceiling – 150mm Right	21	RHS Wall, 450mm above Ceiling, 200mm from corner
6	Ceiling – 200mm Right	22	LHS Wall, 550mm above Ceiling, 200mm from corner
7	Ceiling – Ring Inner Left	23	RHS Wall, 550mm above Ceiling, 200mm from corner
8	Ceiling – 50mm Left	24	LHS Wall, 1000mm above Ceiling, 200mm from corner
9	Ceiling – 100mm Left	25	RHS Wall, 1000mm above Ceiling, 200mm from corner
10	Ceiling – 150mm Left	26	LHS Wall, 1950mm above Ceiling, 200mm from corner
11	Ceiling – 200mm Left	27	RHS Wall, 1950mm above Ceiling, 200mm from corner
12	LHS Wall, 50mm above Ceiling, 200mm from corner	28	Roof – Ring Inner Front
13	RHS Wall, 50mm above Ceiling, 200mm from corner	29	Roof – Ring Inner Rear
14	LHS Wall, 150mm above Ceiling, 200mm from corner	30	Roof – Ring Inner Left
15	RHS Wall, 150mm above Ceiling, 200mm from corner	31	Roof – Ring Inner Right
16	LHS Wall, 250mm above Ceiling, 200mm from corner	32	Ambient temperature

5. RESULTS

5.1 Ambient and Test Surface Temperatures

The Table below show the Ambient temperatures during testing of the Flue kit.

Hot Fire	Flue Fire
14.9 – 17.2	18.9 – 20.7

5.2 Hot Flue Test

The Flue kit was tested in accordance with Section F8.1 of AS/NZS2918;2018. The Flue gas temperature was maintained at $760 \pm 20^\circ\text{C}$ until the maximum temperatures on each surface had been reach.

Below is a table of the maximum temperatures reached above Ambient.

Position	Thermocouple Number	Hot Fire Test ($^\circ\text{C}$)
Ceiling	2	30.7
RHS Wall	27	34.5
LHS Wall	13	43.1
Roof	31	54.7

5.3 Flue Fire Test

The Flue kit was tested in accordance with Section F8.2 of AS/NZS2918;2018. The Flue gas temperature was raised from $760 \pm 20^\circ\text{C}$ to $1125 \pm 20^\circ\text{C}$ within 10minutes, then held at $1125 \pm 20^\circ\text{C}$ for a period of 30minutes.

Below is a table of the maximum temperatures reached above Ambient.

Position	Thermocouple Number	Flue Fire Test ($^\circ\text{C}$)
Ceiling	2	72.8
RHS Wall	15	99.5
LHS Wall	14	98.4
Roof	28	99.6

5.4 Structural Integrity Test

The Pivot Stoves & Heating Room Seal Flue 8 kit was tested in accordance with Section F8.3 of AS/NZS2918;2018. The Flue gas temperature was raised and kept at $760 \pm 20^{\circ}\text{C}$ then raised to $1125 \pm 20^{\circ}\text{C}$ within 10minutes, then held at $1125 \pm 20^{\circ}\text{C}$ for a period of 10minutes. This process was repeated three times.

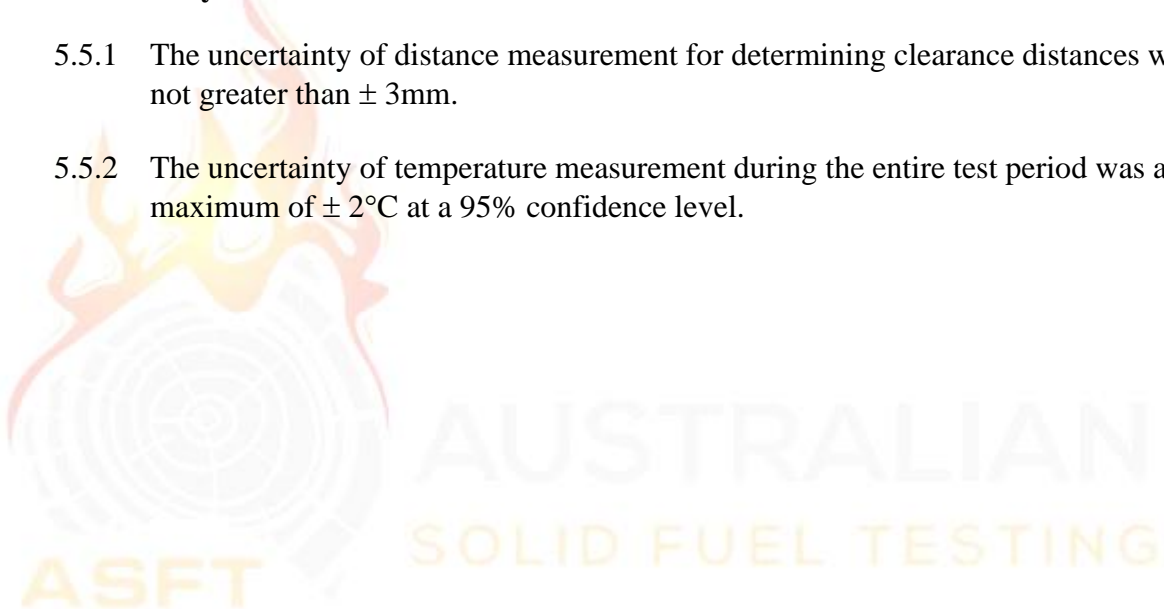
The Pivot Stoves & Heating Room Seal Flue 8 kit was dismantled the following day and the components inspected for their Structural Integrity.

No Structural Integrity issues were found.

5.4 Uncertainty of Measurement Statement

5.5.1 The uncertainty of distance measurement for determining clearance distances was not greater than $\pm 3\text{mm}$.

5.5.2 The uncertainty of temperature measurement during the entire test period was a maximum of $\pm 2^{\circ}\text{C}$ at a 95% confidence level.



6. FLUE KIT CONSTRUCTION DETAILS

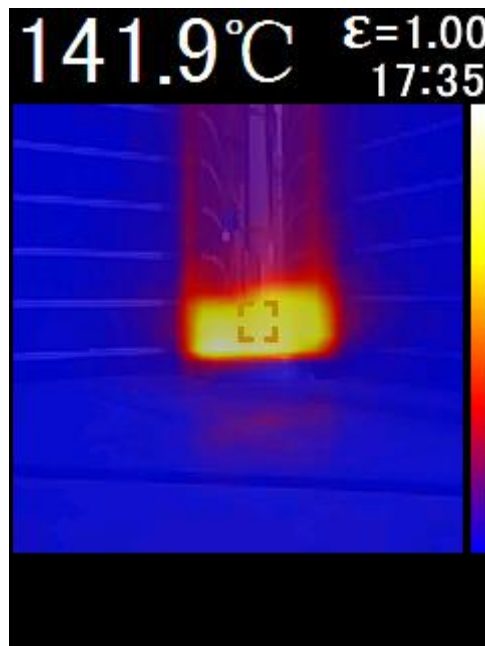
The test results reported directly relate to the Flue kit/flue system tested. The details of the Flue kit given in this section include features which may affect safety clearances. Any change in the design/construction of this Flue kit or flue may invalidate this report. Below are the constructions details of the Flue kit:

Flue Model: Room Seal Flue 8 kit	Serial No: N/A
Manufacturer: Pivot Stoves & Heating	
Active Flue diameter: 200mm Material thickness: 0.5mm	Length: 1000mm
Ceiling ring diameter: 455mm 100mm upstand with 25mm isolite board on outside of upstand for 50mm (screwed hard to ceiling) then 45mm wide air gap to outside of ring. Made of 1.2mm galvanised steel	
Outer Casing below Ceiling diameter: 250mm Outer casing fixed to active and packed with quartz insulation Material Type/Thickness: 0.5mm stainless steel (painted black)	Length: 340mm
1 st Outer Casing Above Ceiling diameter: 250mm Outer casing fixed to active and packed with quartz insulation Material Type/Thickness: 0.5mm stainless steel	Length: 1000mm
2 nd Outer Casing Above Ceiling diameter: 250mm Outer casing fixed to active and packed with quartz insulation Material Type/Thickness: 0.5mm stainless steel	Length: 1000mm
Cowl Height: 270mm	Diameter: 300mm
Material Type: Stainless Steel	
Area of Venting in Cowl: No venting	
NOTE: Accuracy of measurement is $\pm 5\%$ of the measured value	

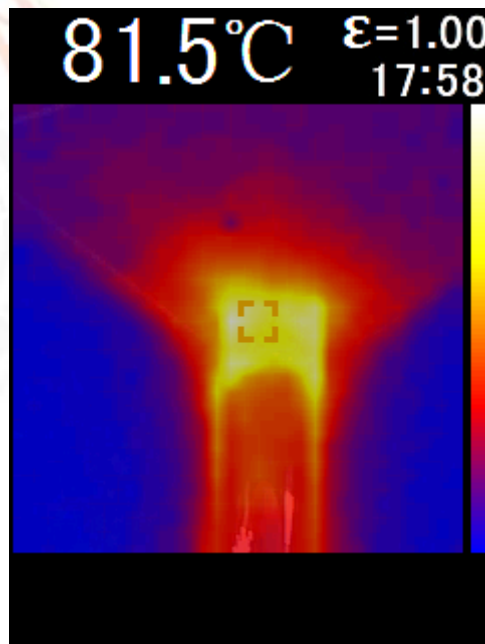
7. CONCLUSION

The Pivot Stoves & Heating Room Seal Flue 8 kit installed in a Flat Ceiling and Roof Penetration conforms to the requirements of Australian/New Zealand Standard 2918:2018, when tested in accordance with Appendix F.

APPENDIX 1: Thermal images of flue during testing



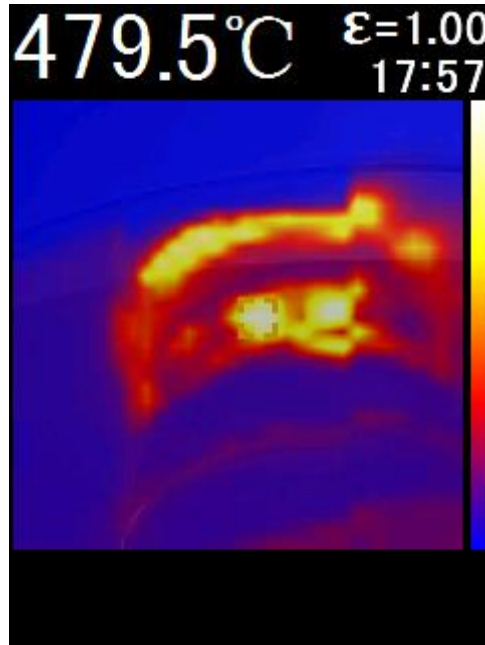
Above the ceiling



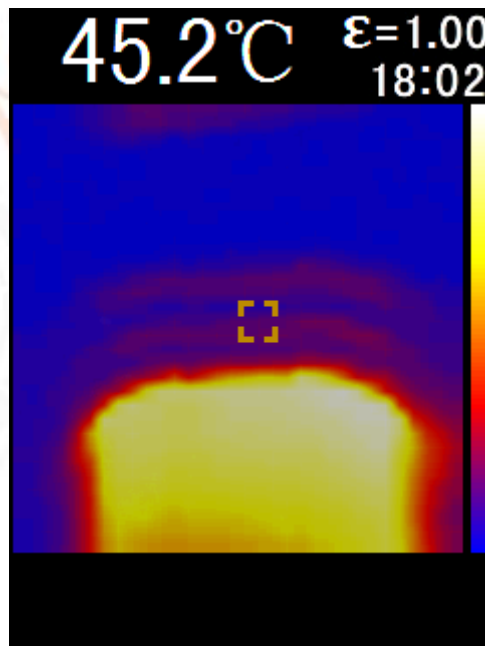
Below the roof



ALIAN
TESTING



Above Roof



Below ceiling



ALIAN
TESTING

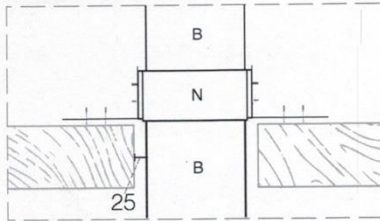
APPENDIX 2: Flue Kit Installation Manual Supplied with the flue kit at time of Testing

Insulated Room Sealed Flue Kit

8" Full Room Seal Flue Kit
 RSF FK8FULLYSEALED

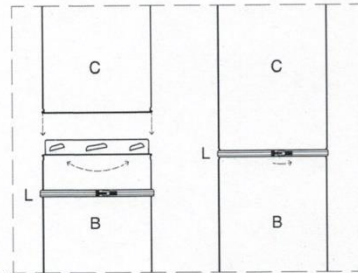
Also available as
 RSF FK9STANDARD

Optional Support Brace



NOTE:
 The optional support brace (N) has the ability to adjust to any angle of adjacent roof beams
 There is a 25mm clearance between the flue and any timber at all times

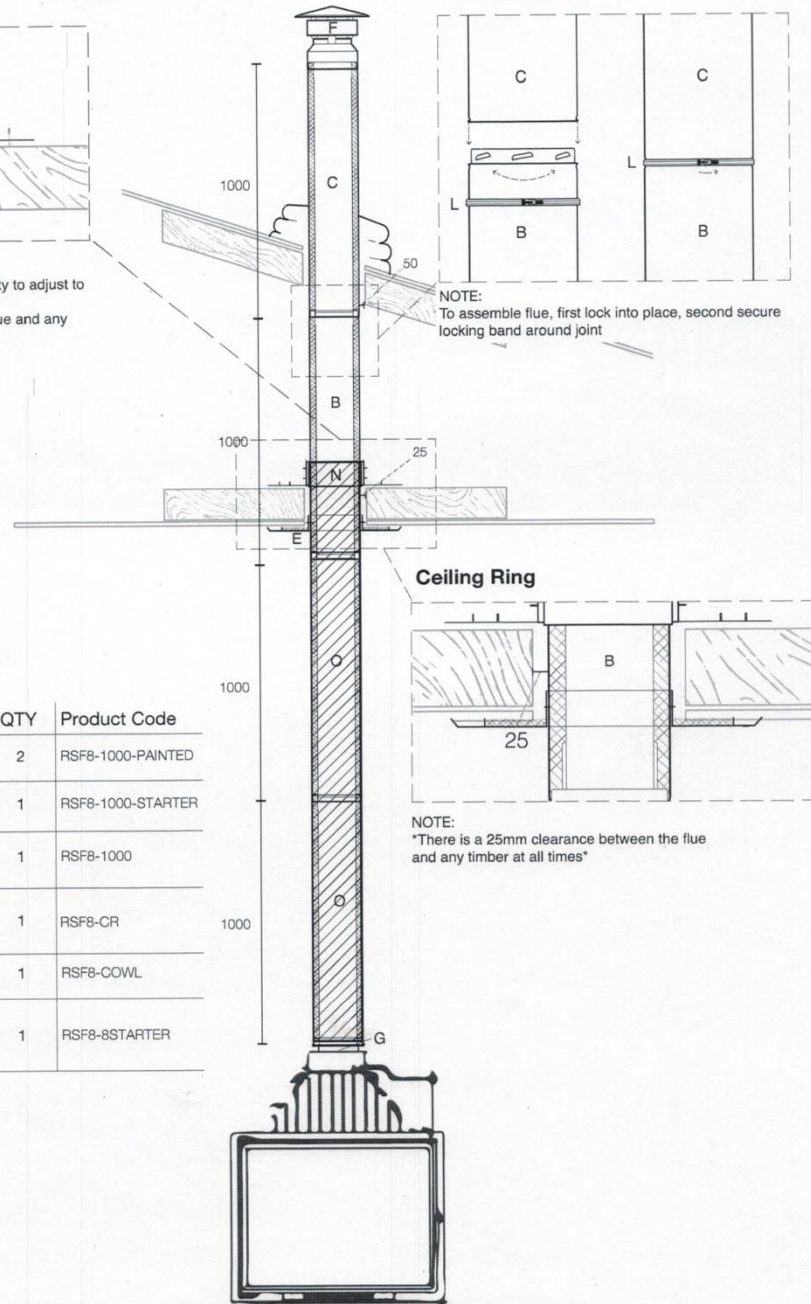
Flue Assembly



NOTE:
 To assemble flue, first lock into place, second secure locking band around joint

Full Room Seal Flue Kit

Item	QTY	Product Code
O	2	RSF8-1000-PAINTED
B	1	RSF8-1000-STARTER
C	1	RSF8-1000
E	1	RSF8-CR
F	1	RSF8-COWL
G	1	RSF8-8STARTER



NOTE:
 There is a 25mm clearance between the flue and any timber at all times